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GENERAL HISTORY

OF THE

DICHLAMYDEOUS PLANTS,

COMPRISING COMPLETE

DESCRIPTIONS OF THE DIFFERENT ORDERS;

TOGETHER WITH THE

CHARACTERS OF THE GENERA AND SPECIES, AND AN ENUMERATION OF THE CULTIVATED VARIETIES;

THEIR PLACES OF GROWTH, TIME OF FLOWERING, MODE OF CULTURE, AND

USES IN MEDICINE AND DOMESTIC ECONOMY;

THE SCIENTIFIC NAMES ACCENTUATED, THEIR ETYMOLOGIES EXPLAINED, AND THE CLASSES AND ORDERS

ILLUSTRATED BY ENGRAVINGS,

AND PRECEDED BY INTRODUCTIONS TO THE LINNÆAN AND NATURAL SYSTEMS,

AND A GLOSSARY OF THE TERMS USED:

THE WHOLE

ARRANGED ACCORDING TO THE NATURAL SYSTEM.

BY GEORGE DON, F.L.S.

IN FOUR VOLUMES.

VOL. III.—CALYCIFLORÆ.

LONDON:

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INDEX TO THE THIRD VOLUME,

COMPRI\n
SYST\n
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THE

GARDENER'S AND BOTANIST'S DICTIONARY.


Flowers hermaphrodite, monoecious or dioecious (f. 1. b. c. f. 3. b. c.), axillary. Calyx gamosepalous (f. 3. a. b.), 5-toothed, sometimes obsolete. Corolla 5-petalled (f. 2. a. f. 1. c. f. 3. c.), but usually only 3-petalled, distinct from the calyx, and sometimes somewhat continuous with it, rising from the margin of the torus, sometimes fringed, constantly yellow, white, or red, very cellular, with strongly marked, reticulated veins. Stamens 5, either distinct, or joined in 3 parcels, and sometimes all together; filaments rarely pilose; anthers 2-celled, very long, sinuous, rarely ovate and short. Style rarely almost wanting, crowned by 3-5 lobed stigmas, which are thick and velvety, but rarely fringed. Ovarium 1-celled, with 3 parietal placentas. Fruit fleshy, more or less succulent, crowned by the scar formed by the calyx, 1-celled (f. 3. c. f. 2. b.), with 3 parietal placentas, which are indicated on the outside by nerves. Umbilical funicle tumid towards the seeds. Seeds frequently obovate, flat, fixed to the parietes of the fruit, enclosed in an arillus, which is either juicy, or dry and membranous; testa coriaceous, often thick at the margins; hylum oblique at the top of the seed. Embryo straight, flat, without albumen. Cotyledons foliaceous, palmately nerves; radicle basilar, directed towards the hylum.—Roots annual or perennial, fibrous or tuberous. Stems herbaceous, climbing by means of tendrils. Leaves palmate, or with palmate ribs, succulent, covered with numerous asperities. Tendrils solitary, lateral, divided or undivided. Flowers solitary, panicked, or in fascicles. Bracteas usually wanting. Branches rising between the leaves and tendrils.

This order is nearly related to Passiifloraceae, to which they are so closely allied, as hardly to be distinguishable, except in their monopetalous corolla, sinuous stamens, unisexual flowers, and exalbunminous seeds, the habit of both being nearly the same. There is an affinity between the order and Cactaceae in the perigynous insertion of the stamens, the inferior ovary, the single style with several stigmas, the quinary division of the flower, connected with the ternary division of the fruit, and some analogy in the nature of the floral envelopes. The small tribe Handirdocea consists of plants having the habit of Cucurbitaceae, but some resemblance in their fruit to that of Locytiaceae, which, as is well known, border close upon Myrtaceae; but beyond this resemblance of the fruit, which appears altogether to be a structure of analogy rather than that of affinity, there is nothing to confirm the approachment. Cucurbitaceae is one of the most useful orders in the vegetable kingdom, comprehending the melon, the cucumber, the choko, and the various species of gourd and pumpkin, all useful as food for man. A bitter laxative quality perhaps pervades all these, which in the colocynth is so concentrated as to become an active purgative principle. The colocynth of the shops is prepared from the pulp of Cucumis colocynthus; it is of so drastic and irritating a nature, as to be classed by Orfila among his poisons; but, according to Thunberg, this gourd is rendered perfectly mild at the Cape of Good Hope, by being properly pickled, Ainslie 1. p. 85. The bitter resinous matter in which the active principles of colocynth are supposed to exist, is called by chemists colocynthine. A waxy substance is secreted by the fruit of Benincasa hispida. It is produced in most abundance at the time of its ripening. Delisle describes the leaf of Peullea cordifolia, is asserted by M. Drapiez to be a powerful antidote against vegetable poisons. Edinb. phil. journ. 4. p. 221. The fruit of Trichosanthes palmata, pounded small, and intimately blended with warm cocoa-nut oil, is considered a valuable application in India for cleansing and healing the offensive sores which sometimes take place in the inside of the ears. It is also supposed to be a useful remedy poured up the nostrils in cases of ozaema. Ainslie 2. p. 85. The root of Bryonia possesses powerful purgative properties, but is said to be capable of becoming wholesome food, if properly cooked. The perennial roots of all the order appear to contain similar bitter drastic virtues, especially that of Momordica charantium or Squirtling
Cucurbitaceae.

Cucumber. An extremely active poisonous principle, called elatine, has also been found in the placenta of the fruit of this plant. It exists in such extremely small quantity, that Dr. Catterick only obtained 6 grains from 40 fruit. Edinb. phil. journ. 3. p. 207. An ingenious explanation of the cause of the singular ejection of the seeds of this plant will be found in Dutrochet's *Nouvelles Recherches sur l'Exosmos*. The root of *Bryonia rostrata* is prescribed in India internally in electroly in cases of piles. It is also used as a demulcent, in the form of powder. That of *Bryonia cordifolia* is considered cooling, and to possess virtues in complaints requiring expectorants. Ainslie 2 p. 21. The root of *Bryonia epigaea* was once supposed to be the famous colomba-root, to which it approaches very nearly in quality. The tender shoots and leaves of *Bryonia acida* are aperient, having been previously roasted. Ainslie 2 p. 212. The seeds of all the species are sweet and oily, and capable of forming very readily an emulsion. Those of *Amphelosicos sciedens* are as large as chestnuts, and said to be as good as almonds, having a very agreeable flavour. When pressed they yield an abundance of oil, equal to that of the finest olives. De Candolle remarks that the seeds of this family never participate in the property of the pulp that surrounds them.

**Synopsis of the Genera.**

**Tribe I.**

*Nhandirobee*. Tendrils axillary, in the place of peduncles. *Flowers dioecious.*

1 *Feuillea*. Calyx of the male flowers 5-cleft. Petals 5, joined at the base. Stamens 5, inserted with the petals, sometimes 10, but 5 of them are sterile. Calyx of the female flowers 5-cleft. Petals 5, distinct. Styles 3; stigmas broad, bifid. Fruit globose, fleshy.

2 *Zanonia*. Male flowers. Calyx 3-lobed (f. 1. a.). Petals 5, joined into a 5-parted rotate, spreading corolla (f. 1. b.c.). Stamens 5, joined at the base; anthers 1-celled. Female flowers. Calyx with a long turbinate tube, and a 5-lobed limb. Corolla as in the male flowers. Styles 3, spreading, bifid at the apex. Fruit long, turbinate, fleshy; seeds winged (f. 1. d.e.).

**Tribe II.**

*Cucurbitae*. Tendrils lateral, stipular. *Flowers hermaphrodite, dioecious, or monocious.*

3 *Lagenaria*. Calyx campanulate, with subulate or broadish segments; corolla white; petals obovate. Stamens 5, triadephous. Stigmas 3, thick, 2-lobed. Fruit 3-5-celled. Flowers dioecious.


6 *Benincasa*. Flowers polygamous, monocious, solitary; calyceine segments with undulated, toothed margins. Petals obovate, spreading, curled. Stamens in 3 parcels; anthers irregular, with distant circumvolutions. Stigmas very thick. Flowers yellow.


11 *Elaterium*. Flowers monocious; male ones racemose or corymbose. Calyx with inconspicuous teeth. Corolla hardly gamopetalous. Filaments and anthers joined. Female flowers solitary. Calyx ciliated at the base, with the neck filiform. Style crowned by a capitate stigma. Capsule coriaceous, reniform, ciliated, 1-celled, 2-3-valved, many-seeded, bursting elastically. Flowers yellow or white.


14 *Sechium*. Flowers monocious, yellow. Calyx 5-toothed, with 10 foveole. Corolla joined with the calyx. Stamens 4-5, monadelphous. Style thick; stigma capitate, 3-5-cleft. Fruit obovate, 1-seeded.


17 *Amphoscyos*. Flowers dioecious. Male flowers. Calyx turbinate, 5-cleft (f. 3. a); segments denticulated (f. 3. b).
Corolla 5-petalled (f. 3. c.) ; petals oblong, fringed (f. 3. d.). Stamens 5, in 3 parcels. Female flowers. Limb of calyx 5-toothed.

Corolla as in the male. Stigma capitulate, 3-lobed, ex Bojer. Fruit fleshy, 2–3 feet long, and 8 inches thick, elongated, furrowed (f. 3. c.). Flowers purple.


19 Involucrinia. Flowers monocoeous. Male ones umbellate, sessile; bracteas reniform, fringe-toothed, involucriform. Tube of calyx obconical; sepals linear, acute. Anthers joined together. Female flowers solitary, on long peduncles.


21 Anthria. Flowers monocoeous. Male flowers. Calyx campanulate, 5-toothed. Corolla joined with the calyx, ventricose, red, 5-parted. Stamens 2. Female flowers with a calyx and corolla as in the males, and 2 sterile stamens. Style semibifid; stigmas bifid. Fruit 2–4-celled, many-seeded, somewhat tetragonal.

† Genera not sufficiently known.

22 Zuca. Flowers solitary, axillary. Bracteas large, concave, involving a large, coloured, 5-sepaled calyx, and girded by 5 scales at the base. Stamens 5.

23 Alla sia. Flowers hermaphrodite. Calyx gamosepalous, girded by a short involucrum. Segments 5, acutish, pilose. Corolla 4-petalled; petals pilose. Stamens 4, but more probably 8, joined by two; anthers 2-lobed. Style subulate, crowned by an acute stigma. Berry fleshy, large, oblong, obtuse, 1-celled, many-seeded.

24 Grono vie. Flowers hermaphrodite. Calyx funnel-shaped, 5-parted; scales 5, linear, petal-formed, pellucid, alternate with the calycine segments. Stamens 5, free, alternating with the scales. Style crowned by a capitate stigma. Berry dry, nearly globose, 1-seeded, crowned by the dry permanent calyx.


Tribe I.


Lin. syst. Dioccia, Pentándria. Flowers dioecious. Male flowers. Calyx 5-cleft beyond the middle. Petals 5, rather joined at the base, inserted in the throat of the calyx, and alternating with the sepals. Stamens 5, inserted with the petals, and alternating with them, sometimes 10, but when this is the case, 5 of which are always sterile. (ex Juss.) Anthers 2-celled, didymous. Female flowers. Tube of calyx adnate to the ovary; limb 5-cleft. Petals 5, distinct, or joined at the base, oblong. Lamelle or abortive stamens 5, sometimes alternating with the petals (ex Juss.). Styles 3. Stigmas broad, bluntly bifid. Fruit globose, fleshy, 3-celled, indehiscent, with solid bark and a large fleshy trigonal central axis; cells many ovulate. Ovula erect from the centre. Seeds compressed, oval. Embryo straight. Cotyledons flat, rather fleshy.—Intratropical American, rather frutescent climbing herbs. Leaves alternate, petiolate, exstipulate, palmately nerved, coriaceous, glabrous. Tendrils axillary, spirally twisted, in place of peduncles. Peduncles axillary, 1 or many-flowered. Flowers small. Seeds oily, bitter. This genus has a habit emulating Passiflora. Fruit in the form of that of Couroupita, a genus of Lecythidaceae.

1 F. punctata (Poir. dict. 4. p. 418.) leaves 3-cleft or ternate, beset with glandular dots on both surfaces along the nerves, but more especially beneath; lobes of leaves lanceolate, rather cut. 2. C. S. Native of St. Domingo. Trichosanthes punctata, Lin. spec. 1432. amén. acad. 3. p. 423. exclusive of the country. Feuillea trilobata, Reichs. syst. 4. p. 253.

Dotted-leaved Feuillea. Pl. cl.

2 F. trilobata (Lin. spec. ed. 1. p. 1014.) leaves rather glaucous on both surfaces, 3-parted or trifid; lower lobes obtuse, upper ones acute. 2. C. S. Native of Brazil. F. scandens, Lin. spec. ed. 2. p. 1457. F. hederaecea, Poir. dict. 4. p. 419. Chandirobra or Nhandirobra, Margr. bras. 46. lower figure. Three-leaved-leaved Feuillea. Pl. cl.

3 F. cordifolia (Poir. dict. 4. p. 418.) leaves glandless, cordate, acuminate, or somewhat 3-cleft, and rather serrated. 2. C. S. Native of the West Indies. Plum. ed. Burm. t. 209. F. scandens, Lin. spec. ed. 2. p. 1457. F. hederaecea, Turp. in dict. ac. nat. with a figure. The leaves of this species are said to be a powerful antidote against vegetable poisons.

Heart-leaved Feuillea. Pl. cl.

2 F. Javilla (H. B. et Kunth, nov. gen. amer. 2. p. 124.) leaves glandless, roundish, sinuately cordate, acuminate. 2. C. S. Native of New Granada, in woods near Turbo, where it is called Javilla by the inhabitants. Seeds with subulate margins, hence this species agrees with the genus Zanonia.

Javilla Feuillea. Pl. cl.

 Cult. A light rich soil will suit the species of Feuillea; and cuttings of them will root readily under a hand-glass, in heat. They are well fitted for training up rafters in stores.


Lin. exer. Dioccia, Monadelphia. Flowersdioecious. Male. Calyx 3-cleft (f. 1. a.). Petals 5, joined into a 5-parted rotate corolla (f. 1. b. c.). Stamens 5 (f. 1. c.); filaments flat, connected at the base; anthers 1-celled, adnate to the tops of the filaments. Female. Tube of calyx long, turbinate; limb 5-
lobed. Corolla as in the male. Styles 3, spreading, bifid at the apex. Fruit long, turbinate, fleshy, having a circular line at the apex, formed from the vestige of the calyx, opening by 3 valves at the top, 3-celled; the rind solid: central placenta fleshy, large, trigonal; cells bioluate. Seeds ovate, margined by a foliaceous wing (f. 1. e. d.), exalbaminous. Embryo inverted.—Smooth, climbing, Indian plants. Leaves alternate, petiolate, exstipulate, ovate-lanceolate, cordate at the base, acuminate, quite entire. Tendrils axillary. Peduncles also axillary and racemose. This genus, from the general form of the fruit, is like the genus Coriaria, but from the characters it is allied to Feuillea. The interior fabric of the seeds is unknown.

Sect. I. ZANONIA (see genus for derivation). Blum. l. c. Cells of fruit 2-seeded. Fruit elongated, somewhat tetragonal.

1 Z. INDICA (Lin. spec. 1137.) leaves elliptic, acute, rather cordate at the base; racemes axillary. h. C. S. Native of Malabar, Ceylon, and Java. Blum. l. c. Pinuarvilli. Rheed. 6. t. 47 and 48.

Indian Zanonia. Pl. cl.

Sect. II. Alsomitra (from aleae, alas, a grove, and mira, nitra, a girdle; the plants grow in groves and entwine round the trees by means of ring-like tendrils.). Blum. l. c. Cells of ovary many-seeded. Fruit hemispherical, truncate at the apex, or elongated.

2 Z. MACROCA'RIA (Blum. l. c.) leaves ovate-elliptic, acutish, rounded at the base; racemes axillary. h. c. S. Native of Java, on the mountains of Parang.

Large-fruited Zanonia. Pl. cl.

3 Z. SARCOPHYLLA (Wall. pl. rar. asiat. 2. p. 28. t. 135.) leaves trilobulate; leaves thick, fleshy, ovate, obtuse, quite entire. h. c. S. Native of the East Indies, in sterile situations along the banks of the trawaddi. The plant climbs by means of simple and slender tendrils. The leaves are of a pale glaucous colour. Flowers small, very numerous, forming ample, greenish, nodding panicles. The different sexes are produced in distinct plants.

Fleshy-leaved Zanonia. Shrub cl.

4 Z. CLAVICERA (Wall. l. c.) smooth; leaves trilobar; leaves oblong, acuminate, quite entire; fruit large, clavate. h. c. S. Native of Silhet, where it is called in the Bengalese language Khinobera. The fruit is 3 inches long, and as thick as a thumb.

Club-bearing Zanonia. Shrub cl.

5 Z. ANGULA'TA (Wall. l. c.) smooth; stem angular; leaves simple, somewhat hastily lanceolate, cordate at the base; fruit large, clavate. h. c. S. Native of Silhet. The fruit is as long as a finger, and very thick.

Angular-stemmed Zanonia. Shrub cl.

6 Z. CISSOIDES (Wall. l. c.) stem filiform, angular; leaves pedate, with 5 or 7 leaflets; leaflets lanceolate, acuminate at both ends, coarsely and cuspilately serrated; petioles and peduncles pilose. h. c. S. Native of Nepaul.

Cissus-like Zanonia. Shrub cl.

7 Z. LAXA (Wall. l. c. p. 29.) stem filiform, much branched, bifurcantly pilose; leaves trilobar; leaflets acuminate, serrated, intermediate one lanceolate, lateral ones half cordate; petioles and peduncles pilose. h. c. S. Native of Silhet.

Loose Zanonia. Shrub cl.

8 Z. HETEROSPER'MA (Wall. l. c.) stem filiform, very slender; leaves pedate, with 5 leaflets; leaflets lanceolate, acuminate, serrated; capsule clavate, angular, borne on very long capillose peduncles; seeds sebaceous from scales. h. c. S. Native of Mount Taong Dong, near Ava. Capsule chartaceous, trigonal, 5 lines long, with a 3-toothed mouth. The scales on the seeds are elegantly imbriicated, and girded by a narrow margin.

Variable-seeded Zanonia. Shrub cl.

Cult. See Feuillea, p. 3. for the culture and propagation of the species.

Tribe II.

CUCURBITACEÆ (plants agreeing with Cucurbita in important characters). D. C. prod. 3. p. 299. Tendrils lateral, stipular. Flowers hermaphrodite, dioecious, or monoecious.

III. LAGENARIA (from lagena, a bottle; form of fruit of some of the species). Ser. diss. l. c. D. C. prod. 3. p. 299.—Cucurbita species of author.

Linn. sect. Diceria, Polydiophyta. Calyx campanulate; segments subulate or broadish, shorter than the tube. Corolla white; petals obovate, rising from beneath the margin of the calyx. Male. Stamens 5, in 3 parcels, the fifth one free. Female. Style almost wanting; stigmas 3, thick, 2-lobed, granular. Fruit 3-5 celled. Seeds ovate, compressed, 2-lobed at the apex, with tumid margins. Flowers monoecious.

1 L. vulga'ris (Ser. ms. ex D. C. prod. 3. p. 299.) plant musky scented, clothed with soft pubescence; stems climbing; tendrils 3-4-cleft; leaves cordate, nearly entire, bidentate at the base, pilose, rather glaucous; flowers monoecious, stellate, spreading much, in fascicles; connectives of anthers beset with oblong-ovate, acute papillae; fruit pubescent, but when mature quite smooth; flesh white, edible. C. c. H. Native within the tropics. Cucurbita lagenaria, Lin. spec. 1434. Sieh. hort. 1. t. 69.—Rumph. amb. 5. t. 144.—Mor. hist. 2. p. 22. sect. 57. t. 5. f. 1, 2, 3. Flowers large, white. Fruit shaped like a bottle; when ripe of a pale yellow colour, some near 6 feet long, with a roundish bottom and a neck; the rind becoming hard, and being dried, contains water: it is then of a pale bay colour. The bottle-gourd is called Charhari by the Arabians. The poor people eat it, boiled with vinegar, or fill the shells with rice and meat, thus making a kind of pudding of it. It grows in all parts of Egypt and Arabia, wherever the mountains are covered with rich soil. In Jamaica and many other places within the tropics, the shells are generally used for holding water or palm wine, and serve as bottles. The pulp of the fruit is often employed in resedative poultices; it is bitter and purgative, and may be used instead of colocynth.

Var. a. goi'arda (Ser. ms. ex D. C. l. c.) fruit unequally biventricose.—Moris. hist. sect. 1. t. 5. f. 1. Dodon. pempt. 668. f. 1. Bottle gourd. Gourd des périers.

Var. b. gongour'da (Ser. l. c.) fruit ventricose at the base, neck oblong.—Rumph. amb. 3. p. 398. t. 144. Brahm. icon. t. 17. Commonly called Gongunode.

Var. c. dépre'essa (Ser. l. c.) fruit globose, depressed.

Var. c. turbinata (Ser. l. c.) fruit somewhat campanulate pear-shaped. Mor. hist. sect. 1. t. 5. f. 2. Dodon. pempt. 668. f. 2. Gourd trompette, Gourd massein, or Trumpet gourd.


2 L. VITATTÁ (Ser. l. c.) leaves roundish-cordate, somewhat re pand, obsolescely denticulated, rough; peduncles crowded, 1-flowered; fruit pear-shaped, striped lengthwise, puberulous.

LIN. Syst. Diocia, Polygalëphila. Calyx tubularly campanulate; segments subulate, hardly the length of the tube. Petals hardly joined together or to the calyx.—Male. Stamens 5, in 2 parcles.—Female. Stigmas 3, thick, bipartite. Fruit 3-6-celled. Seeds ovate, compressed, not marginate. Flowers monoeccious or hermaphrodite, yellow.

1 C. Melo (Lin. spec. 1436.) stem trailing, scabrous, cirrhiferous; leaves roundish, angular, petiolate; male flowers having the tube of the calyx rather venicose at the base, and rather dilated at the apex; stamens inclosed; anthers shorter than their connectives; the hermaphrodite flowers with the anthers as in the males; stigmas 3-4, shortly 2-lobed; fruit ovate or sub-globose, 8-12-furrowed; flesh sugary, yellow, red, or white. —F. Native of Asia. Called rhetimou by the Hindoos; Melon, Engl. and Fr.; Melone, Germ.; Melone, Ital.

The melon is a tender annual, producing one of the richest fruits brought to the dessert, and has been cultivated in England since 1570, but the precise time of its introduction is unknown. It was originally brought to this country from Jamaica, and was, till within the last fifty years, called the musk-melon. The fruit, to be grown to perfection, requires the aid of artificial heat and glass throughout every stage of its culture. Its minimum temperature may be estimated at 65°, in which it will germinate and grow; but it requires a heat of from 75° to 80° to ripen its fruit, which, in ordinary cases, it does in 4 months from the time of sowing the seed.

Varieties.—There are numerous varieties, many of which, especially those raised from seeds brought from Italy and Spain, are not worth cultivating. The best sorts are included under the name of Cantaloops, an appellation bestowed on them from a seat of the Pope near Rome, where this variety is supposed to have been originally produced. The general character of the Cantaloops is a roundish form, rough, warty, or netted outer rind; neither very large in fruit or leaves. The Romans, an Italian sort, is next in esteem, are generally oval-shaped, regularly netted; the fruit and leaves middle-sized, and the plants great bearers. Many varieties of both these sorts, however, that were formerly in esteem, are now lost, degenerated, or supplanted by others of Spanish or Persian origin. The following is a descriptive list of the sorts.

List of Melons.

Var. a, reticulatus (Ser. in D. C. prod. 3. p. 300.) fruit roundish or oblong, with a grey reticulated rind. —Blackw. herb. t. 329. The following sorts of melons belong to this variety:—

1 Beechwood melon. This is an excellent, early, greenish yellow kind, with a netted rind and a greenish-white flesh, of a middle size.

2 Melon maraicher. The flesh of this sort is very thick and watery; hardly sweet-scented.

3 Melon de l'officier. A late melon, with a thin yellow rind, and pale red sugary flesh. It is of inferior quality but large in size.

4 Melon des Carmes. A well-flavoured large fruit, with a thick orange rind, and juicy sugary pulp.

5 Melon de Langois. A middle-sized, ribbed fruit, with orange-coloured, sugary, sweet-scented flesh.

6 Melon succin de Tours. Fruit large, with firm, sugary, orange-coloured flesh.

7 Succin à chair blanche.

8 Succin à chias.

9 Succin vert.

10 Succin à petits grains.

11 Succada. A late green middle-sized netted melon.

Var. b. Cantalupé (Ser. in D. C. prod. 3. p. 300.) fruit large, with broadly ribbed, and furrowed, warty, thick rind. The following sorts belong to this variety.

1 Early Cantaloup. A deep-furrowed, early, middle-sized kind, with white, deeply-furrowed, thin skin; and orange-coloured flesh, not very highly flavoured. It sets well, and is a great bearer.

2 Silver Cantaloup. Cantaloup argenté. A shallow-furrowed, middle-sized fruit, and before it is full grown is mixed with silver and green.

3 Large black Holland cantaloup. Cantaloup gros noir de Hollande. A large fruit, with green, furrowed, thin rind: and red rather coarse flesh.

4 Hybrid cantaloup. A small good early fruit, with a whitish rind and red pulp.

5 Montagu cantaloup. This is a variety produced from the Italian green-fleshed and the smooth scarlet-fleshed cantaloup. A middle-sized, early good fruit, but with a thick, yellow, furrowed rind and pale red flesh, which is soft and juicy, and completely melting in the mouth.

6 Netted cantaloup, or White-seeded cantaloup. This is a very juicy, highly-flavoured, small fruit, with a thin, netted, yellow rind.

7 Orange cantaloup. A small, round, pale yellow, netted fruit. The flesh, when just fit for cutting, is orange; but when ripe it is more red. In respect to flavour, it is excelled by none of the melon tribe, being juicy, sugary, and rich. The plant is a free grower, an early settler, and a great bearer.

8 Black rock cantaloup. A large late melon, with a thick dark green rind, and salmon-coloured flesh. It is juicy, but not very high flavoured.

9 Carcumbered rock cantaloup. Very like the black rock, as to colour and flavour, but differs in being cheese-shaped. There are a small and a large kind of this; the smaller kind is the best.

10 Lee's rock cantaloup. Rather long than round, and more green than black. Much the same in flavour as the preceding.

11 Scarlet-fleshed cantaloup. A middle-sized early good fruit, with a thick yellow rind and red sweet flesh. It is particularly high flavoured.
12 Italian green-fleshed. A middle-sized early good fruit, with a thick yellow rind and green flesh: in flavour both rich and sweet.

13 Ionian green-fleshed cantaloup. A large thin-skinned lemon-coloured and lemon-scented fruit, of excellent flavour, but not a great bearer.

14 Egyptian green-fleshed. A middle-sized early good fruit, with a thin white netted skin and green flesh: in flavour resembling the preceding.

15 Dutch green-fleshed. An indifferent sort.

16 Crimean green-fleshed. A useless late fruit, of middling size, with a thin green skin and pale red flesh.


18 Green-fleshed Musciputatan. A very small and excellent early sort, with green skin and green flesh.

19 Green-fleshed Valparaiso. Not very good.

20 Red-fleshed Valparaiso.

21 Dutch rock. A rather large good fruit, with a thick yellow rind, and orange-coloured flesh.

22 Early rock. A good early fruit.

23 Golden rock. A middle-sized fruit, with a thick yellow rind and pale red flesh, of excellent flavour.

24 Scarlet rock.

25 Silver rock. A large late fruit, with a thick yellow rind, and pale red flesh, which is juicy, sweet, and well-flavoured.

26 Netted scarlet-fleshed. A good sort.

27 Smooth scarlet-fleshed. A middle-sized fruit, of excellent flavour. The rind is thick, smooth, and yellow, and the flesh orange-coloured.

28 Windsor scarlet-fleshed. A rather large, excellent-flavoured, late kind, with thick green rind, and salmon-coloured flesh.

29 Lee's Roman. A middle-sized, longish, shallow-furrowed fruit. Rind hard, partly netted, and pale yellow: the flesh full yellow and pretty high flavoured, but not very juicy.

30 Large netted Roman. The largest of the Romanas, regularly netted all over, and shallow-furrowed, often attaining a large size. Rind hard, and pale yellow, the flesh full yellow, but not very juicy: very high-flavoured, if eaten sharp ripe.

31 Pair's Roman. A small oval fruit, the rind greenish yellow when ripe, and the flesh a pale yellow, not very juicy; but well-flavoured and agreeable.

32 Early Polignac. An early rich middle-sized fruit, with a thick yellow rind, and pale red flesh. It is in frequent cultivation.

33 Portuguese. There are two varieties of this kind, a small and a large sort; they are noted as good bearers and early, but well-flavoured and agreeable.

34 Sweet Italian. A large orange-coloured sort, of moderate quality.

35 Netted succado. A middle-sized late green-skinned sort.

36 Small Levant. A middle-sized sort, with a thick green skin and pale red flesh. Not of good quality.

37 Smooth yellow-fleshed Valparaiso. A middle-sized, late, green, thin-skinned sort; the flesh white, of moderate flavour.

38 Brasilian. An inferior middle-sized sort, with thin green skin and orange-coloured flesh.

39 Melon d'été d'Odessa. A rather large, late, indifferent fruit, with thin orange skin and white flesh.

40 Melon d'Olor. A very small fruit, with yellow skin and white flesh, of good quality.

41 Netted French melon. A rather large late fruit, with a thick yellow rind and yellow flesh, of bad quality.

42 Nittgen. A late green, thick-skinned sort, with white flesh.

43 Queen Amy's melon, early queen, or queen's pocket melon. A very small fruit, with ornamental striped thin skin, and white flesh.

44 Carthagena. A large high-flavoured fruit, with a thick orange-coloured rind and pale red flesh.

45 Cassabar. A large late fruit, with green thin skin, and white flesh.

46 Cephalonia. A large oblong fruit, with thin yellow skin and green flesh, of tolerable flavour.

47 Choisy. A large fruit of little use: the skin is thick and yellow, and the flesh pale red.

48 Gahoon. A large late fruit, of little value; with yellow skin and yellow flesh.

49 Greco, ostrich egg. A middle-sized late fruit, of excellent flavour: the skin as well as the flesh is green. The plant is rather tender.

50 Gros Prescott fond blanc. A large late fruit, with a thick yellow rind, and orange-coloured flesh.

51 Petit Prescott. Fruit depressed, crowned at the top; ribs warty: flesh delicious.

52 Cantaloup natif d'Allemagne. An early fruit, with a greenish-yellow smoothish rind, but not of good quality.

53 Cantaloup boite de Siun. Fruit very much depressed, with a dark green rind, full of warty ribs.

54 Hardy ridge. A middle-sized late fruit, with a thick yellow rind and red flesh, of good flavour.

A list of melons which are hardly known; but none of them are perhaps worth cultivation.

1 De Andalusie. 2 Cantaloup à chair verte. 3 Cantaloup à find noir. 5 Cantaloup Galleux. 6 Chili musk. 7 Crimean. 8 Citron. 9 D'Espagne. 10 Fagor. 11 Fin hatif. 12 Golden egg. 13 Grand Mogul. 14 Green Spanish oval. 15 Gros Galleux à chair verte. 16 Hardy scarlet-fleshed. 17 Highlever. 18 D'Hiver. 19 Large Astrachan. 20 Levant. 21 Melon gris des Carmes. 22 Melon de Honda. 23 Melon de Jaffa. 24 Melon Turc. 25 Madeira. 26 Mendoza. 27 Le Mogul. 28 De Petron. 29 Pine apple or Melon d'Arunas. 30 Musk melon. 31 Carthagena musk melon. 32 Murray's pine-apple. 33 Noir de Hollande très gros. 34 Turkish melon. 35 Valentin or winter melon. 36 Wynestay.

Iar. γε, Multénsis (Ser. in D. C. prod. 3, p. 300.) fruit with a smooth thin rind. This variety is divisible into two parts, as Maltese Melons and Persian Melons.

* Maltese melons.

1 Melon de Malte blanc or Melon de Malte à chair blanche. An early middle-sized ovate-oblong fruit, with white watery sugary flesh.

2 Melon de Malte jaune. Flesh of fruit orange-coloured, sweet-scented.

3 Melon de la Morière ou de Candie, or Melon de Malte à l'hiver. This kind is cultivated in various countries bordering on the Mediterranean sea, and particularly in the orange gardens at Hiers, near Toulon, whence its fruit is sent to Paris. The skin is thin; the flesh white, firm, sugary, and juicy; not rich, but pleasant. The shape oval, size about a foot long and eight inches broad; of a dark green colour. This fruit is regularly imported, and may be had in the fruit shops from September to January.

** Persian melons.

1 Daree. A good-sized fruit; skin thin and green; flesh white, high-flavoured. A late fruit.

2 Damphsa melon. An excellent, late, rather large fruit, of nearly a cylindrical form, and netted; rind thin and yellow when ripe; flesh green, quite melting, and of excellent flavour. The fruit will keep, if hung up by its stalk, for some time.

3 Large gernerke. An excellent early green-skinned sort, of considerable size; flesh green.
Small gernex. This is much smaller than the last-named sort; the skin is yellow and the flesh green.

Goorgab. A middle-sized late fruit, with yellow rind and white flesh. A useless sort.

Green Hoosainee. A middle-sized late sort, of good quality; rind thin, green; flesh white.

Striped Hoosainee. A very good late sort, with green-yellow rind, and white flesh.

Kasan sugar melon. A good sort.

Keiseng. This is said to be one of the best Persian melons; the skin is thin, pale yellow, and red, and the flesh white.

Kerching. A very good sort, of considerable size; the skin is lemon-coloured, and the flesh white.

Melon of Erivan. A middle-sized good fruit, with yellow skin and red flesh.

Melon of Nukhawan. This is an excellent late kind; the skin is yellow, and the pulp white.

Melon of Nusserabad. A middle-sized fruit of indifferent quality.

Melon of Sena. A middle-sized fruit of indifferent quality.

It is a late sort, with yellow rind and green flesh.

Green Persian. A fruit of indifferent flavour.

Oldaker's Persian. A fruit of considerable size but no merit; the rind is orange-coloured, and the flesh green.

Sir Gore Ouston's Persian. A large fruit of good quality; the skin is yellow and the flesh white.

Sweet melon of Isphahan. This is said to be one of the very best melons. It grows to a large size; the skin is yellow and the flesh green, crisp, sugary, and rich in taste.

Tabibee melon.

Teheran melon.

Salonica. A round fruit, with a gold-coloured rind, and white flesh; improves in flavour and richness till it becomes quite soft; consistence of its pulp nearly that of a water melon, and very sweet.

On the degeneracy of the larger varieties of Persian melons.—Mr. Knight thinks that it would be strange if very large and excellent variety of melon did not degenerate, under our ordinary modes of culture. For every large and excellent variety of melon, must necessarily have been the production of high culture and abundant food; and a continuance of the same measures to it, in its highly improved state, must be necessary to prevent its receding in successive generations from that state. Abundant food, it is true, is generally, perhaps always, given by the British gardener to his melon plants: but sufficient light, under the most favourable circumstances, can only be obtained during a part of the year, and a sufficient breadth of foliage to enable the melon plant properly to nourish a fruit of large size and rich saccharine quality, so that it may obtain the highest state of growth and perfection which it is capable of acquiring, has rarely, and probably never, been given in any season of the year, by any British gardener. Mr. Knight has cultivated the Sweet Isphahan melons, and found it a very superior variety. He has cultivated this variety generally in brick pits, surrounded by hollow walls, through which warm atmospheric air at all times enters abundantly; putting each plant in a separate large pot, and suffering it to bear one melon only: but the fruit sets sufficiently well in a common hot-bed. The rind of the Isphahan melon, being very soft and thin, the fruit is apt to sustain injury on the lower side; they should be raised above the ground a little by some means while young, so that the air may pass under them. When seeds of the Isphahan melon are only wanted, it is quite time enough to sow in the beginning of April, so that the fruit may ripen in August. Very valuable varieties of melons may be obtained, for one generation at least, by cross breeding among the smaller and more Hardy varieties of green and white-fleshed melons and the large Persian varieties. It is generally supposed that the offspring of cross-bred plants, as of animals, usually present great irregularity and variety of character; but if a male of permanent character and habits, and, of course not cross-bred, be selected, that will completely overrule the disposition to sport irregularly in the cross-bred variety: alike in the animal and vegetable world, the permanent habit always controlling and prevailing over the variable. The finest varieties of melon are usually supposed by gardeners to be fruits of as easy culture as the pine-apple, but experience has led us to draw a contrary conclusion. If the leaves of the melon plant be suddenly exposed to the influence of the sun in a bright day, which has succeeded a few cloudy days, for a short time only, they frequently become irreparably injured. If the air of the bed be kept a little too damp, the stems of the plants often canker, and the leaves and stalks sustain injury in the common hot-bed; and, if the air be too dry, the plants, and consequently the fruit, are injured by the depredations of the red spider.—Loud, gard. mag. vol. 7. pp. 186, 187, 188.

In the cultivation of the melon, Knight observes, "it is a matter of much importance to procure proper seed. Some gardeners are so scrupulous on this point, that they will not sow the seed unless they have seen and tasted the fruit from which they were taken. It is proper, at least, not to trust to seeds which have not been collected by judicious persons. Some make it a rule to preserve always the seeds of those individual specimens which are first ripe, and even to take them from the ripest side of the fruit. A criterion of the goodness and probable fertility is generally sought by throwing them into a vessel containing water; such as sink are considered as good, and likely to prove fertile, and those that float imperfect. It is remarked of seeds brought from the Continent, that they must have more bottom heat, and the young plants less water, than are necessary for seeds ripened in this country, or young plants sprung from these."

The culture of the melon is an object of emulation among gardeners, and the fruit of the best sorts have a peculiarly rich flavour, thought by some to bear some resemblance to that of the pine-apple. "Ripe fruit," Abercrombie observes, "may be had by forcing at any season, but the main crops, raised for the general demand, are seldom cut, at the earliest, before May, and the last succession mostly ceases to yield fruit after October."

"To ripen the best large fine kinds," McPhail observes, "as great an atmospheric heat, and a bottom heat to its roots also, is required as is sufficient to ripen the pine-apple in this country; but as the melon is produced from an annual plant, the seeds of which must be sown every year, it requires a different mode of culture. Different methods of culture, and various kinds of earth and of manures have been recommended and used successfully in rearing of melons. The great thing, after planting, is to give them plenty of atmospheric heat, and a sufficiency of external air, and water. Those methods which are most simple and the least expensive, and best calculated to assist in making a suitable climate for the melon to grow in and ripen its fruit well, should be preferred."

Soil.—Abercrombie says "The melon will succeed in any unenriched loam, rich in vegetable rudiments, with a mixture of sand, but not too light. The following is a good compost: two-thirds of top-soil earth from a sheep common, adding sharp sand, if the earth contains little or none, till half is sand; one-sixth of vegetable mould; and one-sixth of well-considered horse-dung. Or, if the earth is not obtained from a pasture, rotted sheep-dung may be substituted for the last. The ingredients should have been incorporated and pulverized by long previous exposure and turning over. The compost should be dried under shelter before it is used, and warmed in the frame.
CUCURBITACEÆ. IV. Cucumis.

for potting.” M'Phail says, “Melons will grow and produce fruit of a good flavour, if they be planted in any kind of earth, not of too light a texture, whether it be taken from a quarter of the kitchen garden or from a corn-field, mixed well with good rotten dung; but earth of a loamy nature is the best, because it retains moisture longer than lighter earth. Earth, dug from the surface of a common, where sheep and cattle have long been pastured, is excellent for the melon. It should be broken well, and lie a few months before it is used, and if it be exposed to a winter's frost it will do it good. This sort of earth, if it be taken from the surface of the common, will require no manure the first year of using. I would here mention that unless the earth which I used for the melon plants was very strong, I made it a practice, when the melon-beds were wholly earthed up, to tread the surface all over, which makes the earth retain its moisture longer than if it were left loose.”

Earth for melons, according to Nicol, “may be thus composed: one-half strong brown loam from a pasture, a quarter light sandy earth, an eighth part vegetable mould of decayed tree leaves, and an eighth part rotten stable-yard dung. The mould for both cucumbers and melons should be well incorporated, should be exposed to frost, and be frequently turned over to aerate.” It appears from a passage in Moret's second journey into Persia, p. 147., that pigeons' dung has from time immemorial been much sought after for manuring melons. Immense pigeon-houses are built on purpose to collect it, and when there is a dearth, as melons produce the earliest return of food, every one is eager to cultivate them, and that kind of manure, being then in great demand, sells very high. During the famine in Samaria, mentioned in 2 Kings, ch. vi., it is said to have sold for five pieces of silver the cub.

A correspondent in the garden mag. 2, p. 404., on melon compost, and on the influence of soil on Hydrængæa hortensiæ, has always used for his melons the compost to which the Dutch so strongly adhere, viz. one-third strong hazel loam, one-third scoriings of ditches, and one-third rotten dung, exposing the mixture two years to the influence of the summer and winter, to evaporate what noxious qualities may lurk in the earths: for it is well known, that in proportion to the degree of salt of iron, it will be proportionably sterile. He had often observed the leaves of his melon plants turn yellow, occasionally plants died, for which he could not account; he suspected iron, as it pervaded his district, to be the cause; but as a magnet would not take up any of the compost, his attention was diverted from that point. Similar results in future seasons again called his attention to it, and he added lime, to correct the sulphate of iron, if any; but he lost his whole crop, which he fancied by the application of the lime.

As during winter a red oxide filtered from the compost heap, he again felt certain of the presence of iron. He submitted the compost to the test of burning, and having by that means got rid of the superabundant carbon, the magnet immediately detected the iron. He changed his soil, and has never lost since any melon plants. The experiment proves that the old test of the loadstone may be defeated by the presence of other adherent matter; for though it was inactive over the cold soil, it acted in full force upon the soil when, by roasting, it had discharged its gas. While a profitable experiment resulted on the one hand, a great amount occurred on the other, with some greenhouse plants. He mixed the compost fresh from the ditch with water, and found a precipitation of iron. He used the soil and water to Hydrængæa hortensiæ, a cutting from the common pink variety, and it so altered the pink colour of the flower to purple, as to form a new plant. He applied the same to other plants, in some of which it altered the colour of the flowers, but in others it had no effect.

Estimate of sorts.—Examine the list. The cantaloups are in the highest estimation for quality and neatness, although not uniformly such great bearers as others in the list.

Time of beginning to force.—“From the time of sowing, ripe fruit may be cut in about fifteen weeks, as an average period; when many short and winter days fall in the course, it may last eighteen weeks; but when the forcing is not commenced until the days are nearly twelve hours long, and continually lengthening, ripe fruit is sometimes cut in ten weeks. The period also depends upon the sort. Little time is gained by beginning excessively early. The early and main crops are commonly originated from the middle of January to the first week of February, the latter or succession crops at the beginning of March; and late crops, intended to fruit at the end of summer, in the middle of April. M'Phail and Nicol sow in January. “The latter says, “I formerly cut melons for three years successively on the 15th, 12th, and 10th of May, and never sowed before the last week of January or 1st of February. In 1788, when at Rainham Hall in Norfolk, I sowed melons on the 12th of March, and cut ripe fruit on the 20th of May. The kind was the Early golden cantaloup. This shows how little is to be gained, or rather how much may be lost by early forcing.”

Growing the seed externally. The plants may be originated in a cucumber-bed, and this is the general practice; but Abercrombie prefers a separate bed, built a slight degree higher than for the cucumber at the same season, and adapted to a one or two-light frame, according to the quantity to be raised.” Nicol raises the melon almost exactly in the same manner as he does the cucumber.

Choice of seed.—“Seed under the age of two years is apt to run too much to vine, and show more male than female blossoms; but new seed may be mellowed by being carried in the pocket a fortnight or more, till the heat of the body has dried and hardened it. Seed 20 years old has been known to grow and make fruitful plants, but seed that has been kept 3 or 4 years is quite old enough, and less likely to fail than older.” M’Phail says it is best not to sow melon seed till it be 2 or 3 years old. It cannot be too old if it be sound and grow well. Nicol says, “I have sown melon seeds 20 years old, from which I have raised very healthy and fruitful plants.” Kal. p. 396. Miller and Nicol say young melon seeds may be worn in the pocket, near the body, for several months previous to sowing, which has the effect of fully maturing them. “If seeds of the last season,” Nicol observes, “be sown without taking this precaution, or something similar, the plants will not be fruitful, but will run much to vine, and show chiefly male blossoms.” — Kal. p. 396.

Sowing.—Abercrombie says, “Having moulded the bed, and proved the heat, sow in pans 3 inches or pots 4 inches deep, rather than in the earth of the bed, Sow a second portion in 5 or 7 days, to provide against failure. Do not at once plunged the pots to the rims.” — Pr. gard. p. 105.

Treatment till removed to the fruiting-pit.—“As soon as the plants appear, give air cautiously, guarding the aperture with matting at night and on frosty or gloomy days. At favourable opportunities wipe the condensed steam from the glasses. When the seed-leaves are about half an inch broad, prick the plants into small pots, 5 inches in diameter, 3 in each pot, giving a little aired water just to their roots, then plunge the pots into the earth of the hot-bed partially or to the rims, according to the heat. Admit fresh air every day in moderate weather, at the upper end of the lights, raised an inch or two, according to the temperature of the external air, more freely when sunny than cloudy, shutting closer or quite close as the afternoon advances towards the evening, or sooner, if the weather changes cuttily cold, and cover the glasses every night with mats, and uncover in the morning, as soon as the sun is high enough to reach the
frames. Give occasionally a very light watering, when the earth appears dry. As the plants advance into the first rough leaves, the first runner-bud in the centre should be stopped, by cutting or pinching the top off, close to the first or second joint, an operation which strengthens the plants, and promotes a lateral issue of fruitful runners. Be careful to support a regular tenor of heat in the bed, by laying first an outward casing of straw-litter round the sides, to defend it from the weather; afterwards, if the heat declines, remove the above casing, and apply a moderate lining of hot dung to one or more of the sides. In matting at night, be careful not to drive the rank steam of the linings into the beds, by letting the ends of the mats hang down.

Fruiting-bed.—Form it as directed for the cucumber-bed, but 6 inches deeper. M'Phail says, "4 feet high, and after it has stood about a week, try it down, and make it level, and set the frames upon it."

Moulding the bed.—Abercrombie directs to "mould it by degrees to 8, 10, or 12 inches' depth, first laying the compost in little hills of that thickness, one under each light, with the intervals earthed only 2 or 3 inches for the present, till the general heat is moderated." M'Phail lays in, under each light, a small hill of earth about 1 foot high.

Planting.—When the earth of the hills is warmed by the heat of the bed, and the plants have leaves 2 or 3 inches broad, or have begun to push lateral runners, turn them out of the pots, with the ball of earth entire; set a ball containing one plant in the middle of each hill, inserted clean over the ball; or set at most 2 plants under the centre of a large light. After planting, give a gentle watering over the hills and round the roots, avoiding to wet the shanks of the plants; shut down the glasses close, till the heat and steam arise, then give air moderately. Extend a slight shade over the glasses in the middle part of warm summer days, if the plants shrink or flag their leaves before fully rooted in the hills, which they will be in 2, 3, or 4 days after planting.

Temperature.—"The melon requires a minimum heat of about 65° from the time of germination till the fructification, and the heat of about 75° to fruit in."—Abercrombie. M'Phail, as appears from the table in his "Gardener's Remembrancer," kept his melon and cucumber frames at the same temperature; stating, that if any person kept melon or cucumber plants in their greenhouses, he would be sure to fail of success. Nicol's medium heat for melons is 70°. The proper temperature must be kept up by repeated linings, at least till the middle of July. After that, sun-heat may suffice to ripen the crop. Till this season the greatest care is necessary not to burn or overheat the plants. M'Phail says, "examine daily with your hand the heat of the bed, pushing your fingers into the dung immediately under the hills of earth in which the plants grow; and if you find the heat likely to be too powerful, pour cold water all round the bottom of the hills of earth, to lower the heat of the bed. Remember this must be daily attended to till the heat of the bed be so declined in the middle, that the roots of the plants be in no danger of being hurt by the heat of the dung under them. In case this necessary precaution has been neglected, till the heat immediately under the stems of the plants has become too hot, pour plenty of water 80° warm round about the sides of the hills in which the plants grow, and among the stems of the plants, which will bring the earth and dung immediately under the plants to the same degree of heat as the water which is poured into it. When the heat in the middle of the bed becomes so cool that there is no fear of its being too great for the roots of the plants, watering that part of the bed to keep the burning heat down of course must cease, and as the roots of the plants extend, earth may be added to the hills. As soon as the heat of the bed declines, linings must be applied to it, which will set it into a fresh fermentation, and then the surface upon the bed must be examined occasionally, by pushing the hand into it in different parts, and when a burning heat is felt, pour in some water as before directed. In this way you should persevere, still keeping a strong heat in the linings. Remember that the surface of the bed all round about the hills should be left uncovered with earth, and the dung should be loo-eened occasionally, to let the heat rise freely to nourish the plants."

In July, "melons will do without heat in the linings, but I found by experience that they do best by keeping a heat in the linings all the summer. If a heat be kept constantly in the linings, and the plants watered sufficiently, they will continue to produce fruit till the middle of October."

Air.—As long as weak steam is perceived to rise from the bed, leave an aperture, even at night, for it to escape; guarding against the influx of cold air by a curtain of matting. Admit fresh air to the plants by tilting the glasses more or less at the most favourable hours in a dry day. After the bed has come to a sweet heat, shut down close at night. As the fruit enlarges, it becomes more necessary to seize every proper opportunity of admitting air; raising the lights from 1 to 4 inches, according to the season, the heat of the bed, and temperature of the external air, shutting close if that should turn cold, and always timely towards evening. As confirmed summer approaches, admit air still more freely. Nicol says, "air should be freely admitted, though not in such quantity as for the cucumbers, which do not require so high a temperature as melons do. In sunshine, however, the mercury in the thermometer should be kept down, by the admission of air to about 80° or 75°?" M'Phail says, "look into your melon-pits in the morning, and if there is a dew on them, standing like beads round the edges of the young leaves, it is a good sign; but if there is no dew on them, in the form I have described, they are not in a very prosperous condition. The air in the frames is not sweet; they either want water or sprinkling of water, or else the heat of the air in the frames is too great in the night. In hot weather melons are better to have air left at them all night, and in very warm weather to take the glasses entirely off in the evening, and put them on again in the morning; by this means the plants will get refreshment from the dew in the night."

Water.—After the plants are placed on the hills, give copious turns of waterings, increase them as the season advances, and the growth of the plants advance. "Water circumspectly and scantily while the fruit is setting or young in growth, as too much moisture would make it decay. Take a warm morning for watering before the middle of May; in summer the afternoon or evening. Use soft water warmed to the air of the frame, and let as little as possible fall on the setting or new set young fruit; nor much near the main head of the plants, for fear of rotting that part. Shut down the lights after watering for a short time; and if in the morning part, and a strong sun, spread a mat over, to prevent the sun from injuring the plants by acting on the water lodged on the spray of the leaves. As a strong steam will now arise, remove the mats in an hour or two, and raise the glasses at the top, to give vent to the steam and give air to the plants. As the fruit becomes nearly ripe, lessen the quantity of water given, barely keeping the plant from flagging, and withhold water when the fruit begins to turn colour." Nicol says, "water once in 4 or 5 days in the afternoon, watering over the foliage. Repeat the waterings oftener, as the season and the growth of the plants and fruit advance, in order to swell them out the better."—Kalender, p. 387. M'Phail says, "If the weather is warm and dry, the melons will probably sometimes require water twice a week; if the weather is wet and cloudy, they will not require it so often."—Gard. C.
CUCURBITACEE. IV. CUCUMIS.

Rem. p. 300. Knight, finding that the leaves of melons sustained great injury from the weight of the water falling from the watering-pot, pours the water on the tiles which cover the surface of the bed. See Training.

Earthling.—Perform this operation as directed for the cucumber, after the heat of the dung has become moderate, earthing up by degrees the intervals between the hills, till the depth of the earth becomes equal. Eight or ten inches’ depth of earth M’Phail states to be enough for the roots of the plants to run in, provided the bed or fermenting mass beneath be made of leaves of trees, or of dung well prepared; for if the bed be the earth be in a good state, the roots will grow into it, and draw from thence considerable nourishment to the plants. The roots of the melon do not naturally run deep; they extend horizontally not far from the surface, especially in forcing frames, where the moist warm air is more confined than in the open atmosphere.—Gard. Rem. p. 63. In early forcing, leave unfilled up with earth a space of about 7 or 8 inches wide, against the inside of the frames, immediately adjoining the hot linings.

“By this method the heat of the linings do more powerfully warm the air in the frames, than if the earth was made level home to the sides of the boards of the frames to which the linings adjoin. But if melons be not planted earlier than the month of May, this precaution need not be attended to, unless the weather prove uncommonly cold, and the air little streight. As the plants advance into the first runners, 3 or 4 joints in length, if no fruit be shown, stop them at the third joint, in order that they may produce fruitful laterals; and as the runners extend, train them over the surface of the bed with neat pegs. Many of these runners, as the plant proceeds, will show embryo fruit at the joints; but a great many barren ones are occasionally produced, and hence it becomes necessary to regulate them. Abercrombie says, ‘cut out the superabundant, unfruitful, or evidently useless shoots, especially the very weak and most luxuriant, for the middle-sized are the most fertile.’ Nicol says, ‘melons should be kept moderately thin of vines, though not so thin as cucumbers (the foliage being smaller), which should never be much lopped at one time, as they are also apt to bleed. All bruised, damped, or decayed leaves should be carefully picked off as they appear, and the plants should be kept clear from weeds, or any rubbish that may be conveyed into the frames by wind or otherwise. M’Phail directs to ‘cut out from the melon-frames all superfluous or decaying shoots. Stop shoots a joint or two before the fruit, and also cut off the ends of the long running shoots immediately before showing fruit, if there is a leading shoot coming out by the side of it; for you ought to remember always in pruning melons, that a fruit will not swell well except there be a growing shoot before it; and this shoot, which is called a leader, because it leads or draws the sap from the roots to and past the fruit, should be stopped before a joint, that will, if the plant is in good health, sprout out again. Do not let your plants get too full of leaves, and cut off the oldest and worst leaves first. This ought to be done at least once or twice a week, by which method they will be nearly always in a medium state of thinness, and the plants and fruit will derive advantages which they would be deprived of were they suffered to become overcrowded with leaves and shoots, and then a great many cut out at one time. If melons are of a large kind, no more than 3 or 4 joints should be left on a plant to swell off at one time; if smaller three or four fruit may be left.”—Gard. Rem. p. 278.

Knight, in an ingenious and philosophical paper on the culture of the melon, states “that his crops of melons failed, because watering over the foliage, pruning, weeding, &c. had removed the leaves, on the extended branches, from their proper position, and these leaves, being heavy, broad, slender and feeble, on long footstalks, were never able to regain it. In consequence, a large portion of that foliage which preceded or was formed at the same period with the blossoms, and which nature intended to generate sap to feed the fruit, became diseased and sickly, and consequently out of office, before the fruit acquired maturity.” To remedy this defect, the plants were placed at greater distances from each other, viz. one plant of the Salutina variety, to each light of 6 feet long by 4 feet wide. The earth was mixed with tiles and lines, as described in the previous instructions, and hooked down over them with pebbles. They were thus secured from being disturbed from their first position, the leaves were held erect, and at an equal distance from the glass, and enabled, if slightly moved from their proper position, to regain it. “I, however, still found that the leaves sustained great injury from the weight of the water falling from the watering-pot; and I therefore ordered the water to be poured from a vessel of a proper construction, upon the brick tiles, between the leaves without at all touching them, and thus managed, I had the pleasure to see that the foliage remained erect and healthy. The fruit also grew with very extraordinary rapidity, ripened in an unusually short time, and acquired a degree of perfection which I had never previously seen. As soon as a sufficient quantity of fruit, between the lines, had ripened, I allowed the melons to drop, and recommended the further production of foliage to be prevented, by pinching off the lateral shoots as soon as produced, wherever more foliage cannot be exposed to the light. No part of the full grown leaves should ever be destroyed; however distant from the fruit and growing on a distinct branch of the plant, they still contribute to its support; and hence it arises, that when a plant has as great a number of growing fruit upon part of its branches, as it is capable of feeding, the blossoms upon other branches, which extend in an opposite direction, prove abortive.”—Loud. encycl. gard. p. 618.

Setting.—“As the fruit bearers come into blossom, you may assist the setting of the fruit, by impregnating some of the female blossoms with the male flowers, as described for the cucumber. The melon, however, will also set naturally, and produce fertile seeds, if the time of fructification fall at a season when the glasses can be kept almost constantly open.”—Abercrombie. Nicol says, “he has proved experimentally, that melons not impregnated will not swell off so fair and handsome as impregnated ones, and, therefore, considers it more necessary to attend to this operation in melons than in cucumbers. Therefore let nature be assisted in this work, considering that she is more under restraint here than if the plants grew in the open air, where the wind, insects, and other casualties, might be helped.”—Kalend. p. 384.

Care of fruit.—“As the fruit increases to the size of a walnut, place a flat tile or slate under each to protect it from the damp of the earth; the slab thus interposed will also assist the fruit to ripen, by reflecting the rays of the sun.”—Abercrombie. M’Phail says, “The fruit should lie upon dry tiles. When the fruit is young, it is better to have a gentle shade of leaves, but when it is full swelled, it should be entirely exposed to the sun.” Nicol advises placing the fruit on bits of slate or glass some time before it begins to ripen, as the flavour might else be tainted, but by no means slate or moss the whole surface of the bed, lest you encourage the red spider. Think on the reflection of the sun upon the slates or tiles, in hot weather particularly, and of his additional force in shining through glass. It is more consonant to the nature of the plants that they be trained on the earth. By mossing the surface, the indolent may find a pretext, as it no doubt, in some measure, lessens the labour of watering. But it is wrong to do so, in so far as it hampers and encourages the breeding of various insects, and as the fruit approaches to maturity, taints it with an unpleasant effluvia.”
Time of maturation.—"The interval between the setting of the fruit and perfect maturity is generally from 30 to 40 days; but the plants in the same bed, and the vines on the same plant, often show some difference in the time of reaching maturity."—Abercrombie.

Cutting the fruit.—"Ripe melons are distinguished by their full size; sometimes by turning yellowish, more constantly by imparting an agreeable colour, often by the base of the footstalk, close to the fruit, cracking in a little circle. On these indications, the fruit should be cut before too mellow or dead ripe, that it may eat with a lively sharp flavour. The morning is the time for cutting." Melons, Nicol observes, "if allowed to remain on the plant till they be of a deep yellow colour (which many do) lose much of their flavour. They should, therefore, be cut as soon as they begin to change to a greenish yellow, or rather, as soon as they begin to smell ripe. They may lie in the frame for a day or two, if not immediately wanted, where they will acquire sufficient colour. But if they are let remain many days in the frame, they will become as insipid as if they had been left too long on the plant."

Saving seed.—"The ordinary mode is to request the seeds of particularly fine fruits, of approved sorts, to be returned from table. The best way, however, is to pick some of the best ripe fruit, take out the seed, clean it from the pulp, and let it be well dried and hardened, and then put it up in paper."—Abercrombie. Nicol says, "wash it very clean, skimming off the light seeds, as those only that sink in water will grow."—Kal. p. 396. Great care must be taken that the sorts, from which seeds are saved, are genuine and distinct. When different sorts are planted in the same frame, this cannot be the case.

Second crop from the same plants.—"When the fruit of the first crop is off, a second crop may be obtained from the stools, which often proves more productive than the first. If the first crop is taken before the middle of June, the second will come in at a very good time. For this purpose, as soon as the fruit is cut, prune the plant, shorten the vigorous healthy runners at a promising joint. At the same time take off all decayed leaves, stir the surface of the mould, and renew it partially by 3 inches depth of fresh compost. Water the plant copiously, shutting down the glasses for the night. Shade in the middle of hot days, and give but little air until the plants have made new radicles and shoots. Afterwards repeat the course of culture above described, from the stage when the first runners are sent out till the fruit is cut." Nicol says, "When all the fruit of the first crop are cut, suppose in 3 or 4 weeks, the plants may be prune for the production of a second crop, equal and perhaps superior to the first. They should be cut pretty much in, in order to cause them to push plenty of new vines, which will be very fruitful, observing always to cut at a joint of some promise, and to thin out all decayed or unhealthy vines, dead leaves, &c. Observe also to cut an inch or two above the joint you expect to push, and then to bruise the end of the stem so lopped with the thumb and finger, which will, in a great measure, prevent it from bleeding. The plants should be shaded from the mid-day sun for a week or ten days, exposing them to his full rays by degrees. Now, also, let the mould in the frame be well watered, in order to put the roots in a state of active vegetation; point over the surface with a small stick, or little wedge, and cover the whole with about 2 inches of fresh mould. This will greatly encourage the plants, and cause them to make new fibres near the surface. At this period air need not be admitted very freely, especially while the glasses are covered, but rather as it were endeavour to force the plants into new life. After they begin to shoot, water, admit air, prune, train, and otherwise manage the plants as before directed. If the season be fine, they may yield you a third crop by a repetition of the above rules, coming in in September, which might be very gratifying. I once had 52 full-sized fruit produced in a 3-light frame, a second crop, and two dozen on a third off the same plants, the early golden cantaloupe. Of the first crop 26 fruit, two were cut the 10th of May. Thus, a 3-light box produced, in one season 102 full matured melons." McPhail says "if you intend to have melons as long as there is a sufficiency of sun to ripen them tolerably well, you had best put linings of warm dung to some of your beds. These, if applied in time and kept on, will east fresh heat into the beds, and with other necessary assistance, the plants will grow as long as you want them."

Plan of obtaining a second crop of melons.—"When the first crop of fruit is nearly gathered, cuttings are taken from the extremities of the shoots which show the most fruit; these are cut off close under the second advanced joint, or about the fifth leaf from the top; the two largest leaves at the bottom of the cutting are taken off, and thus prepared, are inserted in 24-sized pots, two in each pot, in light rich soil, gently shaken down. After being watered, the pots are placed in a 1-light frame, on a hot-bed previously prepared, and plunged in the moderately dry soil, with which it is covered. The frame is kept close and shaded for a few days, and in a week the cuttings will have struck root. The old melon-plants, with the soil in which they grew, are now all cleared out of the frames, fresh soil to the depth of 12 inches put in, and the beds well lined with fresh dung. In 10 days from the time of inserting the cuttings they will be ready to plant out, which is done in the usual way. When the plants have pushed about 14 inches, the end of each shoot is pinched off, to cause them to produce fresh runners, and the fruit which showed on the cuttings will swell rapidly, and in 3 weeks after replanting the beds, abundance of fine fruit may be expected. This way of getting a second crop is far more certain than either pruning back the old plants, or planting seedlings; because cuttings grow less luxuriantly, are less liable to casualties, and are much more prolific."—Harrison ex Loud. gard. mag. 2. p. 414.

Culivation of the Persian varieties of the melon.—T. A. Knight (Hort. reg. no. 6. p. 263.) erected a small forcing-house for the exclusive culture of this fruit, and grew them by means of fire heat. This house consists of a back wall, nearly nine feet high, and a front wall nearly 6 feet, inclining a horiztonal space 2 feet wide and 30 feet long. The fire-place is at the east end and very near the front wall; and the flue passes to the other end of the house, within 4 inches of the front wall, and returns back again, leaving a space of 8 inches only between the advancing and returning course of it, and the smoke escapes at the north-east corner of the building. The flue is composed of bricks laid flat, in order to give a temperate permanent heat, and the returning one with them standing on their edges, the usual way. The space between the flues is filled with fragments of burnt bricks, which absorb much water, and generally give out moisture to the air of the house. Air is admitted through apertures in the front wall, which are 4 inches wide and nearly 3 in height, and which are situated level with the top of the flues, and are 18 inches distant from each other. The air escapes through similar apertures near the top of the back wall. These are left open, or partially or wholly closed, as circumstances require. Thirty-two pots are placed upon the flues, each being 16 inches wide and 14 inches deep; but they are raised by a piece of stone or brick to prevent their coming in actual contact with the flues. In each of these pots one melon-plant is put, and afterwards trained upon a trellis, placed about 14 inches distant from the glass, and each plant is permitted to bear but one melon only. The height from the ground at which the trellis is placed, is such as can be con-
veniently walked under, to discover the appearance of red spiders or other noxious insects; and by this method two, and even three crops may be obtained in one season. Being so liable to burst, Mr. Knight raised the points of the fruit higher than the stems, and not one failed to ripen in a perfect state; they were found to ripen very well hanging perpendicularly, but the Lepidium grew very deformed.

Late crop on old hot-beds.—To ripen melons, not earlier than the month of August, M'Phail **generally made beds of dung which had first been used for linings to the early cucumber and melon-beds. For this purpose, this kind of dung is better than new dung, because it does not heat violently, and for a considerable time keeps its heat. Leaves of trees make very good melon-beds, but they do not produce heat enough alone for linings; but of whatever materials melon-beds be made, the air in the frames among the plants should be kept sweet and strong, otherwise the plants will not grow freely. It may be known whether the air be sweet or whether it be not, by putting the head in under the lights and smelling it. But it frequently happens to be difficult to bring dung-beds into a requisite state of kindliness for these delicate plants, for if the dung by any means get and retain too much water, before its noxious vapours pass off by evaporation, it will stagnate and become sour, and until these pernicious qualities be removed, which requires time and patience, the plants will not grow kindly; and besides this, although corrupted, stinking air hinders the growth of plants of the melon kind, it greatly promotes the health and forwards the breeding of different kinds of insects, which feed upon and otherwise hurt fruits and plants, and esculent vegetables of various kinds.

A method of growing the melon, adopted by Mr. Lowell, (Gard. mag. 7. p. 461.) varies in one or two very essential points from any that he has seen adopted; first in well bedding and firmly rooting the plants to support a good crop of fruit; second in early setting and preserving the first fruit, and forcing the whole of the plants luxuriantly through the whole of the period necessary for their maturity. To effect this he prepares his beds with dung well watered and fermented, or tan, not wishing such a strong heat as for cucumbers. He sows his seeds in pots, in which the plants remain until they are turned into the hills, leaving only 3 plants in each pot. These he places in the dung, in order to start them as soon as the bed is made up, unless there should be another bed in use at the same time. As soon as the second rough leaf appears, he puts a hill of good melon soil under each light, composed of good loam and turf, adding a sixth part of good rotten dung, well mixed with the spade, but not sifted. This he waters if dry, and treads in the hills firmly, making a hole in the centre, and turning out a pot of plants with the ball entire into each hole. Should the weather be very warm, he waters them overhead abundantly, and in the space of a fortnight they will have grown to four or five joints each: he then stops them down to three joints. By this time the heat of the bed will have become reduced to such a temperature as to allow of moulding up the plants, well heading in and watering as you proceed. As the plants will at this time be strongly rooted, and in vigorous growth, in the course of three days they will have pushed a strong shoot from each of the three eyes in a horizontal direction, and they will seldom fail of showing fruit at the first joint; you may rely at least on two out of three of these fruits setting. Before the fruit comes to blossom, the bed must be covered 1½ inch thick with dry sand, but mould will do, and do not water the bed any more for at least 3 weeks. This prevents the newly formed fruit from turning yellow and damping off. All shoots that appear, except the three above mentioned, must be removed. As these shoots will show fruit at the first or second joint, if such fruit be set and taken care of, it will be three parts grown before the vines will have reached the side of the bed, arriving at perfection in nearly half the time it would have done if the vines had been left in confusion. Particular care must be taken in pruning; never to stop the three shoots that bear the fruit, nor yet the lateral ones produced from the same joint as the fruit. These lateral shoots will show fruit at the first joint, which fruit must be preserved until the other is swelling, then take off this lateral shoot, but do not stop the vine. But should any accident happen to the other fruit, the shoot bearing it must be taken off, and the lateral shoot treated as a main one, when the fruit on it will swell accordingly; and all the laterals that spring from the main shoot must be stopped, leaving one joint and leaf only.

On the cultivation of the melon.—J. Holland (Gard. mag. 7. p. 575.) plants off his seedlings singly in 60-sizied pots, and when sufficiently advanced in growth they are stopped so near the seed-leaf, as only to admit of them throwing out 2 lateral shoots, and when these principal leaders extend to 2 or 3 joints, they are finally planted out into frames or pits, having the bottom heat arranged according to the advanced state of the spring months. Five melons were produced by a plant set in the centre of a two-light frame in the beginning of May, upon an old bed that had been previously employed for raising radishes. A dung lining was added to the back and one end of the frame, which was all the artificial heat the plant received, one vine was trained to the back and the other to the front of the frame. His practice is never to stop the vines until they have extended as far as their confinement will permit, and the laterals from the two leading vines, as they advance in growth, are trained to the right and left over the bed with nest pegs, and every fruit blossoms, as it expands, is carefully impregnated and placed upon a tile under the shade of a neighbouring leaf. In a day or two, or as soon as he thinks the fruit will set, he stops the vine at the first or second joint beyond it. In this way he proceeds, in setting all the fruit he can, until the surface of the bed is covered with foliage, which is never deranged more than can be avoided. While the fruit is setting, he gives air very freely, sometimes he draws the lights quite off for a few hours on sunny days, and he also, by applying or withholding heat or water, endeavours to keep them in a state betwixt luxuriance and debility, for in either extreme they will not set well. Having advanced thus far, he commences swelling them off. He begins this with pinching off all the ends of the lateral shoots that have not already begun to swell, and when the fruit begins to swell, he now gives no more air than will prevent the sun from searching their leaves. He looks over them every morning, and takes off all the blossoms as they appear, and stops every young shoot back to one joint above that of the vine which produces it. He watches over them every afternoon in fine weather, and before the sun has quite left the frame, he syringes or waters them all over, leaves, fruit, and all, and shuts down the glasses for the night. He always prefers performing this while the departing rays of the sun have sufficient strength to raise a sweet vaporous heat of about 90°, which serves them to feast upon long after the sun has disappeared. A few days of such treatment will determine which fruit will take the lead in swelling off, out of which he selects 2 or 3 to each plant, according to the sort, and all the rest he cuts away. As the fruit advances in growth, it is necessary at intervals to turn them a little on the tiles, to prevent them from growing flat, and discoloring on one side, and also from rotting. When they have attained as large a size as he thinks the sort will admit, he leaves off watering, and again gives all the air he can, by taking the lights entirely off when the weather is favorable; and if the season is not too far advanced, he leaves them to ripen without any other assist-
Cucurbitaceœ. IV. Cucumis.

For an early crop of melons, he grows the small early cantaloup, 1 plant in a light when the frame is narrow, and 2 if wide, with 2 or 3 fruit on each plant, which in general weigh from 2 to 3 pounds each. He succeeds with these with the scarlet and green-flesh, planted and trained as above, the produce of which is from 2 to 6 pounds. His principal crop is, however, from the black rock, which he has grown of all sizes up to 15 lbs. weight; the plants are much more hardy than many other sorts, it is a good bearer, the fruit handsome, and the flavour excellent. The sort which he grew so large was originally from France, and in its primeval state was a rock; but it has lately been strongly impregnated with the scarlet, flesh, which fruit it now resembles in all its characters, except in growing much larger. The largest melon weighed 244 lbs. The above is Mr. Holland's general practice of cultivating the melon, which practice he says he will still continue to adhere to unless fully convinced he can adopt a better.

Insects and diseases.—To prevent melon plants from being infested with insects or injured by diseases of any kind, no better method can be adopted than to keep the plants constantly in a healthy, vigorous, growing state; for this purpose, M'Phail observes, "they must be constantly attended to, giving them plenty of heat and water. In warm weather in the spring and the summer, they should be watered occasionally all over the fruit and leaves, till the earth in which they grow be thoroughly moistened, and a stronger heat than usual be kept in the frames about the plants for a few hours; also the lights should be shut down every afternoon, with a good strong heat among the plants. If there be sufficient moisture in the earth the greatest sun heat in the afternoon will not hurt the plants, but it might scorch the sides of the large fruit, exposed to the sun-beams operating upon the glass, which should be guarded against. The frames and lights should be kept clean and painted over once every year. Melon plants are subject to be infested and hurt by the mildew and by the canker. These diseases come upon them because they are not in a good climate, they have not a sufficiency of heat, or the dung and earth of the bed is in a stagnated state. Melon plants are liable to be greatly injured by an insect called the red spider, which increases surprisingly in hot dry weather. As I said before, nothing will prevent plants from the inroads of disease and insects but heat, sweet air, and a sufficiency of water, which sweetens the atmosphere, and makes it healthy for vegetables as well as for animals. All things will eradicate disease and insects from melon plants but good management, strong heat, and plenty of water given all over them. Diseased plants, or plants much infested with insects, cannot produce good healthy fruit. The mildew is a most pernicious disease to all sorts of plants. On melons it generally makes its first appearance on the oldest leaves and on the extremities of the young shoots. The cause of it, I apprehend, is unhealthy nourishment comprehended in the elements, or their not harmonising in the promotion of the growth of the plant; for by practitioners it may be observed, that when a dung hotbed gets into a stagnated sour state, the plants do not grow kindly, the air in the frames is saturated with unhealthy particles, and so also must be the juices drawn into the plants by their roots. These must breed diseases, if preventive means be not applied. It cannot be reasonably supposed that plants of a delicate nature will continue in a healthy state growing upon a heap of stinking dung, and in confined air. When melon plants have become diseased, or much infested with the red spider, they should either be destroyed, or effectual means used to cure them. To destroy the plants is easy; to cure them let the following methods be put in practice: get plenty of horse-dung thrown up in a large heap, turn it over once or twice, shaking and mixing it well, and let it lie till its rankness be somewhat evaporated, and if there be linings at the beds, take them entirely away, examine the dung of the beds, and if it be wet and has a bad smell, take a sharp-pointed stake, and make holes all round in the sides of the beds unto their centre, in such a slanting way that the water may easily run out of them; then make a strong lining of the prepared dung all round the beds, and by occasional augmentations, keep up the linings nearly to a level with the surface of the earth in which the plants grow. As soon as the linings have cast a strong heat into the beds, scatter some flour of sulphur all over the plants, and keep as strong a heat in the frames as the plants can bear; a heat of 120° will not destroy them, if the stench of the linings he prevented from getting in among the plants. Water the plants all over their leaves about once a week, with clean water 100° warm, and if the sun shine keep the lights close shut down all day, and cover them up in the evenings, leaving a little air all night at each light, to prevent a stagnation of air among the plants. Continue this process till the mildew and the insects disappear, and the plants appear to grow freely, and afterwards manage them in the usual way, taking care to keep up a good strong heat in the linings. This method sets the old stagnated bed in a state of fermentation, which makes the moisture run out of it, and dries it so, that water given to the plants has free liberty to pass off. If the linings do not heat the air in the frames sufficiently, let some of the earth in the inside all round the sides of the boards be removed, to let the heat from the linings rise freely in the frame."—Abercrombie.

Culture of melons in a dung-pit.—"A glazed pit to receive either stable-dung, leaves, or tanners' bark, is calculated to ripen superior fine fruit. The well of the pit may be formed either by a nine-inch wall, or by strong planking, a yard in depth, from 6-8 feet wide, and in length from 10-20 feet or more as required. A low glass-case is to be fitted to it, adapted to the growth of the melon. Having raised the plants in a small seedbed, as for the frame crop, ridge them out into the pit in the usual manner. Give the proper subsequent culture, and when the strength of the fermenting mass begins to decline, add linings outside the pit, if inclosed by boards, but if inclosed by a nine-inch wall, cut away as much of the dung and earth within, and throw it out, as will admit a lining of well-tempered dung."—Abercrombie.

Culture of melons in a fixed pit.—One such as that proper for the nurseries of pinery is here understood; and the plants being raised in the usual way, and the bed, whether filled with dung, tan, or leaves, or a mixture of these, being moulded, planted about the end of July. Nicol prefers for such late crops "the early golden cantaloup, the orange cantaloup, and the netted canta-
loup, planting a part of the pit with each." A very mild bottom heat is sufficient for the purpose here in view; and if the pit has been occupied in forcing asparagus, French-beans, or straw-
berries, on a bark, or a bark and dung, or on a bark and leaf heat, it will require no other preparation than to be stirred up and have a little fresh materials added, keeping the fresh bark, dung, or leaves well down, and finishing the bed with some of the smallest and best reduced. When it has settled a few days, let it be moulded all over to the thickness of 12 or 15 inches; previously laying on a little more of the above small materials, in order to keep the plants well up to the glass, as the bed will fall considerably in the settling. It should be formed, and the mould should be laid on in a sloping manner from back to front, so as in some measure to correspond with the glasses. All being ready for the plants, they may either be planted in a row, in the middle of the pit, at 2 feet apart, or may be planted in 4 rows at 4 feet apart; or, if they have been planted in nursing, in a pot; plant in the centre of each light, as directed for the common hot-bed, in March. Let them have a little water
and be shaded from the sun for a few days, exposing them to his rays by degrees. The further management of the plants differ in nothing from that of melons in a hot-bed till September, when it will be proper to apply fire heat."

About the beginning of September it will be proper to apply fire heat, in order to further the progress of late fruit, and to dry off damps. Let the fires be made very moderate at first, however, and increase their strength as the season becomes more cold and wet. Keep the mercury up to 70° in the night, and in the day by the addition of air keep it down to about 80° or 75°. Very little water will now suffice for the plants, as their roots will be fully established, and be spread over the whole bed; the heat of which will also have subsided. They should only, therefore, have a little water once in 8 or 10 days, and as the fruit begins to ripen off, entirely withhold it. Keep the plants moderately thin of vines and foliage; be careful to pick off all dashed leaves as they appear; and fully expose the fruit to the sun as it ripens, in the manner directed for melons in the hot-bed. In this manner I have often had melons in October and November fully swelled, and in good, but not of course in high perfection, for want of sun to give them flavour. Any who have a pit of this kind, however, for the forcing of early vegetables, strawberries, flowers, &c. cannot, perhaps, occupy it to a better purpose in the latter part of the season, as the trouble is but little, and the expense not worth mentioning.

Culture of melons in Mr. Phail's pit.—The inventor of this pit says, "For the purpose of raising melons early, for many years I cultivated them on a brick-bed, on the same construction as that which I invented for rearing early cucumbers, excepting only that through the pit of each 3-light box I carried no cross flues. When this bed was first set to work, I had the pits filled level with the surface of the flues, with well fermented dung or with the dung of old linings from the cucumber-bed. In each 3-light division I made the pit about 3 feet 6 inches wide and 10 feet long, and 3 feet deep below the surface of the flues. On the surface of the dung in the pits, I had laid about 10 inches thick of good earth, in a ridge of about 20 inches wide, from one end of the pit to the other. When this was done, I made a lining round the bed, and as soon as the earth became warm, I set the plants into the ridge of the earth, and gave them a little water, and kept a strong heat in the frames, and filled up the pit gradually as the roots and plants advanced themselves."

"The dung or leaves of trees in the pit require not to be changed every year, neither need the earth for the plants be removed entirely every season, for by experience I found it to do very well by digging, and mixing with it some fresh earth and manure in winter, and exposing it to the rains, the frost, and the snow."—"In forcing melons early, the surface of the cross flues, as well as the surrounding and outside ones, should be kept bare of mould till the days of the spring get long, which will let the heat of the linings arise freely through the covers of the flues to warm the air among the plants. After the cross flues are covered with earth, those which surround each frame may be left uncovered till the month of May or June."—Gard. rem. p. 64.

The culture in the brick bed is, in other respects, the same as that already given for melons in frames, and cucumbers in brick beds. See the monthly table of temperature under the cucumber.

Culture under hand-glasses.—"A successive or late crop, to fruit in August and September, may be raised on hot-bed ridges under hand-glasses. Sow in a hot-bed from the middle of March to the middle of April. When the plants have been up a few days, while in the seed-leaves, prick some into small pots, two plants in each; water and plunge them into a hot-bed, managing as directed for the young frame plants, till the rough leaves are from 2-4 inches long, and the plants ready to shoot into runners. From the middle of March to the third week of May, when the plants are a month or five weeks old, they will be fit to ride out under hand-glasses. With well-prepared stable-dung, or, with a mixture of fermented tree-leaves, build the hot-bed four feet wide and 2 feet thick, the length according to the number of glasses intended, allotting the space of 4 feet each. In a week or ten days, or when the dung and leaves are brought to a sweet or well-tempered heat, mould the bed 10 or 12 inches thick, then place the glasses along the middle, and keep them close till the bed has warmed the earth. The same, or next day, insert the plants; turn them out from the pots with the ball of earth entire, and allotting plants for each glass, insert the ball into the earth, clean down over the top, closing the mould about the stems. Give a little water and place the glasses over close. From about nine in the morning till three in the afternoon, of the first two or three days, shade the plants till they have taken root, when admit the sun more freely, yet only by degrees from day to day, till they can bear it fully without flagging much. Give air daily, in temperate weather, by tilting the edge of the glasses on the south side, an inch or two; but in the present stage of the plants shut close at night. Cover with mats till morning, constantly keeping the glasses over. Give occasional moderate waterings with aired water. Cover in the day time with mats in bad weather, or heavy or cold rains; and continue the night covering until confirmed summer in July. Meanwhile attend to the heat of the bed; if this be declined, so that the minimum temperature does not 65° at night, with the aid of cutting, line the sides with hot dung, covered with a layer of mould. The renewed heat from the linings will forward the plants in fruiting, while the earth at top will enlarge the surface for the runners, and the bed for the roots. When the runners have extended considerably and filled the glasses, they must be trained out. Accordingly, at the beginning of June, in favourable settled warm weather, train out the runners, cutting away dwindling and useless crowding shoots; then the glasses must be raised all round, 2 or 3 inches, upon props to remain day and night. Cover with mats in cold nights and bad weather, but first arch the bed over with rods or hoop-bands to support the mats. Apply moderate waterings as necessary in the morning or afternoon. Oiled paper frames, formed either arch-wise, or with 2 sloping sides, about 2 feet or 2 feet 6 inches wide, the width of the bed, are very serviceable in this stage. Some persons use them from the first, under a deficiency of hand-glasses. But the proper time for having recourse to them, is when the plants have been forwarded in hand-glasses till the runners require training out beyond the limits of the glasses, some time in June; then removing the glasses, substitute the oiled frames, as these paper screens will entirely afford protection from heavy rains or tempests, as well as from nocturnal cold, and also screen the plants from the excessive heat of the sun, while, being pellicid, they admit its influence of light and warmth effectually. Give proper admission of free air below, and occasional watering. With respect, however, to the crop for which no oiled paper frames have been provided, continue the hand-glasses constantly on the bed, over the main head and stem of the plants throughout the season, to defend those capital parts from casual injuries by the weather. Throughout June, and thence to the decline of summer, be careful, if much rain or other unfavourable weather, or cold nights occur, to shelter the beds occasionally, with an awning of mats or canvass, particularly when the plants are in blossom. Likewise turn in some of the best full set exterior fruit under the glasses, or some spare glasses might be put over the outside melons, to forward them without check to maturity. Some will be ready to cut in July, others in August, the more general time, and in September; they being generally, after setting, from 30-40 days.
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in ripening. The crop coming in at the decline of summer will not ripen well, unless guarded from cold at nights, and assisted by limings. The fruit that do not ripen may be used for mangoes.

"Wide ridge, or the fruiting-bed, may be made 6, 7, or 8 feet wide, for the plants to have an ample surface for their extending runners, defended either with a regular frame, and glasses of proportionate dimensions, or a case formed of an inch and a half boarding, ranged connectedly along both sides of the bed, without any external cross divisions, other than top cross bars, to stay the sides and support the glasses."

Method of growing crops of melons in the open borders.—The mode of cultivating cucumbers on ridges of shallow beds of half-spent dung in the open air, is well known to gardeners; and in warm situations melons may be grown in the same manner. The sorts grown by Mr. Greenshields were the black roots, green-fleshed, netted, and early cautalum. The seeds of the first crop were sown about the middle of March, in pots in a cucumber-frame, and the bed or ridge was prepared in the first or second week in May, 4 feet wide, and 1 foot higher at the back or north side than in front. Hand-glasses, with 2 or 3 plants in each, are placed, 4 feet apart, along the centre of the bed. Very little air is given till the plants have filled the glasses, but when these appear to get crowded with vines, the glasses are raised up, and the plants allowed to grow up in the manner of ridged cucumbers. If the vines are very thick, a few of the weakest may be pinched off, and the top of each leading shoot or vine removed. No more pruning will be necessary for the season. Setting the fruit at this season of the year is quite necessary. To have handsome fruit, not more than one or two should be left on the plant. They will begin to ripen about the first week in August, and continue to be produced through that month and part of September. To prolong the season, seeds may be sown three weeks later, planted out like the first crop, and when there is appearance of frosty nights, a cucumber-frame and sashes may be placed over them. By this means tolerably good melons may be had till the end of October.—Greenshields, ex Loud. gard. mag. 3. p. 182.

There is another method of cultivating melons in the open air; that is, to raise a bed of old tan, and tramp it well and firmly down, placing some stakes and boards behind to keep up the tan, so that the bed may slope in front; 6 inches of mould should be placed on the tan, and the melon plants planted into it. Grass or leaves may be placed at the back of the bed to keep up the heat. The plants should be reared on a hot-bed.


C. Deliciosa (Roth. cat. 3. p. 397.) angles of leaves blunt; fruit roundish-ovate, pubescent, with white, very fragrant flesh, and a thin rind. C. F. Native of the East Indies, but now cultivated in Spain. Perhaps only a variety of the common melon.


3 C. sativus (Linn. spec. 1437.) stems rough, bearing tendrils; leaves cordate, obscurely 5-lobed, petiolate, terminal lobe the largest; flowers on short peduncles, largish, usually by threes; male flowers having the tube of the calyx tubularly-campanulate, and with a spreading deflexed limb; fruit long, somewhat triquetrous, smooth or prickly, and usually shining, having the carpels distinctly separable in the inside. C. F. Native of Tartary and the East Indies.—Blackw. herb. t. 4.—Lob. strap. 563. f. 1. The cucumber is called Kettmon and Timou by the Hindoos. Flowers yellow, as in the rest of the species.

The cucumber is called concombre in French; gurke in German; and Citriulo in Italian; it is a tender annual, a native of the East Indies, and was introduced in 1578. It is a trailing and climbing plant, with large, roundish, rough leaves, furnished with tendrils, and if sown in the open air in May, produces flowers from July to August. The cucumber is of nearly as great antiquity as the vine, for Moses, the earliest Jewish author, mentions it as abounding in Egypt when the children of Israel were there, above 3000 years ago. (Numbers, chap. ii.) In England it is cultivated generally and extensively in forcing frames, and in the open air, and especially near large cities and towns. "Not only gentlemen," as M'Pheil observes, "but almost every tradesman who has a garden and dung, have their cucumber-frame." In Hertfordshire, whole fields are annually seen covered with cucumbers, without the aid of dung or glass, and the produce of which is sent to the metropolis for pickling. In March, cucumbers fetch in the London market a guinea a dozen; in August and September a penny a dozen. The village of Sandy, in Bedfordshire, has been known to furnish 10,000 bushels of pickling cucumbers in one week.

Use.—The green fruit is used as salad; it is also salted when half grown; and preserved in vinegar when young and small. In Germany and Poland, barrels of half, and also full grown cucumbers, are preserved from one year to another by immersion in deep wells, where the uniform temperature and exclusion of air seem to be the preserving agents.

Varieties.—The principal of these are as follow:—

List of cucumbers.

1 Early long prickly.—This fruit is from 5-7 inches long, of a green colour, with few prickles. The plant is a good bearer, and upon the whole this is the best cucumber for the general summer crop, the flesh being very crisp and pleasant.

2 Largest green prickly.—From 7-10 inches long; it has a dark green skin, closely set with small prickles. This is a hardy sort, but does not come early.

3 Early short prickly.—Not more than 4 inches long; the skin green and rather smooth, but with a few small black prickles. This is one of the hardiest and earliest sorts, and is often preferred for the first crop.

4 Dutch or white short prickly.—Though not much cultivated, is recommended by some as preferable even to the early long prickly; it has fewer seeds, is evidently different in taste from most other cucumbers, but of agreeable flavour.

5 Cluster cucumber.—A very early sort; the flowers appear in clusters of 3 or 4 together; the fruit is seldom more than 5 inches long; it is at first of a fine green colour, but becomes yellowish as it ripens. The stems of this variety are much inclined to climb by means of their tendrils upon sticks; the leaves are small, and the plant altogether occupies but little room.

6 Smooth green Roman.—An early sort; the fruit becomes large and long, and is quite smooth; the plants grow very strong, and require a good deal of room.

7 White Turkey.—The stalks and leaves are larger than in the other varieties; the fruit also is very long, sometimes from 10-15, or even 20 inches; it is quite straight, and has a smooth skin, destitute of prickles; it is produced sparingly, and late in the season.

8 Long green Turkey.—Sometimes sown for the late crop. Late cucumbers, however, are much less cultivated than the early varieties, most gardeners being of opinion, that these kinds which are best for the early crop, are also best for the late.

9 Nipaul.—Fruit very large, usually weighs upwards of 12 lbs., measures in girth 24 inches, and in length 17 inches; flavour pleasant, and esteemed for standing. It is a native of Nipaul, from whence it was introduced to the botanical garden at Calcutta; but it is not likely that it ever will be much cultivated in this country.

Culture.—The culture of the cucumber, as a table esculent,
is chiefly carried on by artificial heat, and is therefore treated of under that head. For pickling it is chiefly cultivated in the open ground, by what is termed drilling. To have a crop in the natural ground, the seed is sown in warm compartments of rich earth, towards the end of May or beginning of June, when the weather is settled, warm and dry. The plants should mostly remain where sown, to produce late fruit towards the end of July, or more generally in August and September; small for pickling, and in larger growth for ordinary consumption. Sow a portion in a warm border, and the main crop in an open compartment. Dig the ground neatly even. Trace lines with intervals of 5 or 6 feet; and in the lines mark stations 3½ feet distant, then with a trowel at each of these spots, form shallow circular saucer-torn cavities in the surface, 10 or 12 inches wide and about an inch deep in the middle. Sow in the middle of each cavity 8 or 10 seeds, half an inch deep. When the plants are come up, and begin to put forth the first leaves in the centre, thin them to 3 or 4 of the strongest in each hole. Earth these up a little between and close round the stems, pressing them a little asunder, and give them some water to settle the earth below and above. In their advancing growth train out the leading runners, supplying them with required waterings in dry weather 2 or 3 times a-week, and sometimes every day in very dry hot weather, in July, August, or September. At this season water early in the morning and late in the afternoon towards evening."

Gathering.—"The crop comes in sometimes towards the end of July, but more generally not before August in full production; continuing till about the middle or end of September, when the plants begin to dry up. Be careful to gather the fruit in a fine state both for pickling and other purposes. They must be quite young for pickling, not exceeding 2 or 3 inches in length."—Abererombie.

Forcing cucumbers.—To produce cucumbers at an early season, is an object of emulation with every gardener; and there is scarcely any person who has not a cucumber-bed in his garden. We shall lay down a systematic view of the practices of the most approved gardeners in the culture of this plant, as has been our usual custom with other garden plants. Cucumbers are forced in hot-beds, pits, and hot-houses, and the heat of fire, and warm water, and steam, and dung, have been applied to their culture; but dung, as the author last quoted observes, is the only thing yet found out, by the heat of which the cucumber may be advantageously cultivated.

Soil.—Cucumbers, like every other plant, will grow in any soil, though not with the same degree of vigour, provided they be supplied with a sufficiency of heat, light, water, and air. For early forcing, Abererombie recommends a mould or compost of the following materials: "One third of rich top-soil, from an upland pasture, one-third of vegetable mould, and one-sixth of well decomposed horse-dung, with a small quantity of sand." M'Phail used vegetable mould made from a mixture (accidental) of the leaves of elm, lime, beech, sycamore, horse and sweet chestnut, spruce, and Scotch fir, walnut, laurel, oak, evergreen oak, ash, &c. and among them withered grass and weeds of various kinds. "This vegetable mould," he says, "without a mixture of any thing besides, is what I used for growing cucumbers in, and by experience I found it preferable to any other moulds, earths, or composts whatever, either in my new method of a brick bed, or in the old method of a bed made of horse-dung." Nicol says, "soil thus composed will produce cucumbers in great abundance: three-fourths light rich black earth from a pasture, an eighth part vegetable mould of decayed tree-leaves, and an eighth part rotten cow-dung." Kal. p. 593. W. T. Aiton gives the following as the compost used in Kew Gardens: "Of light loam a few months from the common, one-third part, the best rotten dung one-third part, leaf-mould and heath-earth of equal parts, making one-third part. The whole well mixed for use." G. Mills states that the soil he uses "is half-bog or black mould, got from a dry heathy common, and half leaf-mould : after lying 12 months in a heap, the compost is fit for use."

Time of beginning to force. Abererombie says, "Managers who have to provide against demands for early cucumbers, must raise the seedlings from 10-12 weeks before the fruit will be required, according to the length of the days in the interval. In proportion as the entire course embraces a greater part of the mid-winter, the liability of failure from obstacles in the weather will be greater. The last fortnight in January, or first week in February, is a good time for beginning to force the most early crop. In the subsequent months, both main and secondary crops may be started as required, and will come forward more freely. To have a constant succession, seedlings should be raised twice a month. As the course of forcing more coincides with the natural growing season, the length of it will be reduced to 8, 7, or 6 weeks." M'Phail says, "those who are desirous of having cucumbers early, had best sow seeds about the 20th of July, they require five or six days the first year, but the spring and autumn are the best seasons. Cucumber plants may be made to bear fruit plentifully from about the middle of March till the middle of September; but from the middle of September till the middle of March their produce will be but scanty. Cucumber-plants, raised from seed in October, will begin to produce fruit in February or March, and will continue to bear till the following month of October, provided they be kept in frames and get plenty of heat and water," Nicol recommends the middle of January. He says "Some begin sooner, but it is straining hard against the stream to little purpose. If the dung be prepared and the bed be got ready, so as to sow about the first of February, the success will often be greater than by sowing a month earlier, the growth of the plants being frequently checked by bad weather, and sometimes they are entirely lost." Aiton, in the paper above quoted, sowed on the 12th and 20th of August, with a view to cultivate in stoves, a regular supply of this vegetable being annually required for the royal tables. G. Mills sows on the first of October.

Sorts.—Abererombie recommends the short prickly for very early fruit, and the long prickly kinds for the chief early and main summer crops. Nicol says every gardener has its favourite sort of cucumber, and it is no easy matter to advise. He names as early sorts generally known, the early short prickly as the earliest; the early smooth green, a long fruit, the long green prickly, and the white prickly, a white fruit.

Choice of seed.—"It is advisable," Abererombie observes, "to have that at least from 2-4 years old, in preference to newer seed, which is more apt to run luxuriantly in vine, and the plants from it do not show fruit so soon or so abundantly as those from seed of greater age. But when seed has been kept more than 4 years, it is sometimes found to be too much weakened."

Forming the seed-bed.—"A one-light frame," Abererombie says, "will be large enough for ordinary purposes. Choose a dry sheltered part of the melon-ground, and form a bed for a 1-light frame. When high winds are suffered to blow against a cucumber-bed, they have a very powerful effect on it, for in that case the heat will not only be greatly abated, but also forced and driven into the corners of the frames, and, consequently, some parts thereof are rendered too cold, whilst other parts are made too hot, and of course the plants are all equally endangered, retarded in their growth, and perhaps some, if not all of them, totally destroyed. Therefore, when a cucumber-bed is about to be built, the first object of consideration should be, to have it, as well as possible, sheltered from the high winds and
boisterous, stormy weather." Having put on the frame and waited till the bed is fit for moulding, lay in five or six inches' depth of the proper earth or compost. M'Phail "makes up a bed of good dung, four feet high, for a 1-light box." Nicol "builds a bed of dung, carefully fermented, to the height of 5 feet at back, and 4 at front, keeping it a foot larger all round than a 1-light frame, or about five or six feet by three or three and a half. He then covers with turf, and on that lays fine sand, as free of earth as possible, to the depth of about 6 inches, laying in a sloping manner, corresponding with the glass and within 6 inches of it; over which lay an inch or two of dry light earth." Aiton and Mills also prepare a bed for a 1-light box; the latter forms it on a stratum of wood 1 foot high for drainage, and 8 inches higher in the middle than at the sides, as the sides are liable, from the weight of the frame, to settle faster than in the middle, which causes the piles of earth to crack; by which in fruiting-beds more especially the roots of the plants are greatly injured.

Sowing.—Abercrombie sows some seeds in the layer of the earth, which he spreads over the bed, putting them in half an inch deep. He also sows some seed in 2, 3, or more small pots of the same kind of earth, which may be plunged a little into that of the bed. M'Phail sows in a pot filled with rich earth, covers about 2 inches thick, and sets the pots on the surface of the naked dung on the bed. Nicol sows immediately after the bed is made, without waiting till the heat arises, which he says is losing time, and the opportunity of bringing on vegetation by degrees as the heat rises. He sows in a broad pan 4 inches deep, or in small pots 3 or 5 inches in diameter, and as much in depth. These he fills with "fine light earth" or vegetable mould, and covers the seeds 2 inches. He ploughs these to the brim in the back part of the bed (which, it will be re-collected contains a stratum of earth 6 inches thick, over one of sand and another of turf), puts on the light, and lets the frame be matted at night, in the ordinary way.

Raising plants from cuttings.—M'Phail says, "Instead of raising cucumber plants from seeds, they may be raised from cuttings, and thus kept on from year to year, in the following manner; the method of sticking them in is this: take a shoot which is just ready for stopping, cut it off just below the joint, behind the joint before which the shoot should have been stopped, then cut smooth the lower end of the shoot or cutting, and stick it in fine leaf or other rich mould, about an inch deep, and give it plenty of heat, and shade it from the rays of the sun till it be fairly struck. By this method, as well as by that of laying, cucumber plants may readily be propagated." J. Mearns, gardener at Shobden Court, near Leominster, propagates his cucumber-plants for a winter crop in this way, and finds that the plants raised from cuttings are less succulent, and therefore do not so readily damp off, or suffer from the low temperature, to which they are liable to be exposed in severe weather; that they come into bearing immediately as they have formed roots of sufficient strength to support their fruit, and do not run so much to barren vine as seedlings are apt to do. He takes the cuttings from the tops of the bearing shoots, and plants them in pots 9 inches deep, half filled with mould. He then waters them, covers the tops of the pots with flat pieces of glass, and plungs them into a gentle bottom heat. "The sides of the pot act as a sufficient shade for the cuttings during the time they are striking, and the flat glass, in this and similar operations, answers all the purposes of bell-glasses. The cuttings form roots, and are ready to pot off in a fortnight."

Temperature of the seed-bed.—Abercrombie says, "The minimum heat for the cucumber is 58° at the coldest time of night, in the day-time 65° is sufficient for the maximum; because air admitted, when the sun has great influence, will do more good than a higher heat. M'Phail says, "If it were possible to keep the heat in the frames always to 80°, with the concurrence of proper air and moisture, I am of opinion that that would be a sufficient heat for the production of the cucumber." Nicol keeps the air in the bed to about 65° in the night, allowing a few degrees of a rise in sunshine. Aiton rears and fruits his plants in a stove. Miller says, "The heat I wish to have in the seed-frame is from 65° to 75°."

Treatment of the plants until removed to the fruiting-bed.—After sowing, Abercrombie "continues the glasses on the frame, giving occasional vent above for the steam to evaporate, that the bed may keep a moderate heat, and not become too violent. The plants will be up in a few days, when it will be proper to admit air daily, but more guardedly, at the upper end of the light, which may be raised from half an inch to an inch or two, according to the temperature of the weather, that the plants may not draw up weak, or be injured by the steam. In frosty weather hang part of a mat over the aperture. When the plants are a little advanced, with the seed-leaves about half an inch broad, take them up, and prick some in small pots of light earth, previously warmed by the bed. Put 3 plants in each pot, and insert them a little slopingly, quite to the seed-leaves. Plunge the pots into the earth, and you may prick some plants also into the earth of the bed. Give a very little water just to the roots; the water should be previously warmed to the temperature of the bed. Draw on the glasses; but admit air daily to promote the growth of the plants, as well as to give vent to the steam rising in the bed, by tilting the lights behind, from half an inch to an inch or two high, in proportion to the heat of the bed and temperature of the weather. Cover the glasses every night with garden-mats, and remove them timely in the morning. Give twice a-week, once in two days, or daily, according to the season, a very light watering; keep up a moderate lively heat in the bed by requisite linings of hot dung to the sides."

M'Phail, having sown, and placed the pots on the naked bed, says, "the plants will come up in a few days, and when they have fully expanded their seed-leaves, transplant them into small pots, 3 plants in each pot. Set them on the surface of the dung in the bed, and let a little air be left at the light day and night, to let the steam pass off freely."—"When the seedling plants have one or two joints, stop them, after which they generally put forth 2 shoots, each of which let run till they have made 1 or 2 clear joints, and then stop them, and afterwards continue throughout the season to stop the plants at every joint." Nicol directs to guard the seed from mice, which generally swarm about hot-beds, by laying a pane of glass over the pot or pan till they come up; and afterwards at night by covering with a pot of equal size, till the seed-leaves have expanded and the husks have dropped; for until then the plants are liable to be destroyed. The cover, however, should always be removed by sunrise, and be replaced in the evening. It is at night these vermin generally commit their depredations. No air need be admitted till the heat begins to rise, and steam begins to appear; but after that the lights should be tilted a little every day, in whatever state the weather may be, until the plants break ground. Air must then be admitted with more care, and if frosty or very chill, the end of a mat should be hung over the opening, that the air may sift through it, and not immediately strike the plants. A little air will be given from time the seeds begin to chip; and if a very strong heat rise, the pots should be raised a little to prevent the roots from being injured. They should be frequently examined on this account, and if the heat be violent, should be set loosely on the sand, or be placed entirely on the surface. The air of the bed should be kept to about 68° in the night, allowing a few degrees of a rise in the sunshine. If the weather be severe, the mats must be doubled D.
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or tripled, and if mild perhaps a single one will suffice. But
unless in very bad weather they should always be removed by
sunrise, in order to admit all the sun and light possible to the
plants, which are very essential to their welfare. When the plants
are about an inch and a half high, they are then fit to be pricked
out into nursing pots. These pots should be about 3 or 4
inches in diameter at top, and as much in depth. The mould
to be used should be the same as that in which the seeds are
sown, and should be laid in the frame a few hours previous to
potting, in order to bring it to a proper degree of warmth, that
the tender fibres be not chilled by it. Let the pots be filled
about one half with the earth, turn the plants carefully out of
the seed-pot; place three in each, against the side of the pot,
and so as their leaves may be just above its margin; then cover
the roots with the mould, rubbing it fine between the fingers,
and filling the pots nearly to the brim. Work over the sand
in the frame to its full depth, plunge the pots to within an inch
of their rims, and cover the whole surface with a little dry earth as
at first, and level with the top of the pots. Then give a little
sized water, in order to settle the earth to the roots of the plants.

The plants will now require due attention. Let air be admitted
to them as freely as the state of the weather will allow, and
supply them moderately with water once in 2 or 3 days. Exa-
mine the pots frequently, if the heat be violent, lest the roots
be scorched, setting them loosely or pulling them up in that
case, or if thought necessary, placing them entirely on the sur-
face. If much steam abound in the bed at this time, it may be
proper to leave the light tilted half an inch in the night, ob-
serving to hang the lap of a single mat 2 or 3 inches over the
tilt. But if the bed was carefully turfed over, as directed at
making up, this will seldom be necessary, never but in thick
bOarv weather. Mat up carefully at night, but make a point
of admitting all the sun and light possible to the plants; therefore,
uncover always by sun-rise; and frequently wash and wipe the
glasses clean, outside and inside, as they are often clogged by a
mixture of steam and dust. Also, occasionally stir the surface
of the sand or earth in the frame with the point of a stick, in
order to expirate vapour, that hovers on the surface, and so
purify the internal air of the bed. If the heat begin to decrease,
and particularly if the weather be severe, it may be necessary to
line one or more sides of the bed, that the plants may receive
no check in their growth. If it be a 1-light box, both back and
front may be lined at the same time, and, if necessary, in 10 or
12 days, the two sides; and if much steam arise from the
lining in after they come into heat, it may be well at night to
leck up the edges of the mat, lest it be thrown into the bed.”

Mills, as soon as the seed-leaves of the plants are fully ex-
anded, transplant them singly into pots of 48th size, gives a
little water and air night and day. His temperature for seed-
lings, as already stated, is from 65° to 75°. With this heat and
water, as the earth in the pots becomes dry, and a little air night
and day, so as to keep the internal air in the frame sweet, and
fluctuating between the degrees of heat above mentioned, the
plants will be fit for finally transplanting out in a month, that is,
by the 14th of November, into the fruiting-framcs.

- Forming the fruiting bed.—Abercrombie directs, “When the
plants are advanced in some tolerable stocky growth, that is,
when the first rough leaves are 2 or 3 inches broad, or when the
plants have been raised about five weeks, transplant them to the
larger hot-bed, with a 2-light or 3-light frame, sometimes
called the ridging-out-bed.” Form the bed on general prin-
ciples, of superficial extent, according to the frame it is to sup-
port, leaving from 4 to 6 inches all round, and fixing the height
according to the season. Thus in January, Abercrombie directs
“the bed to be 3 feet 9 inches high in front, 4 feet 6 inches at
the back, and 6 inches larger than the frame all round. In February,
3 feet 3 inches high at the front, 4 feet at the back, and 4 inches
to spare round the frame. In March, 3 feet high in front, 3 feet
6 inches at back, and 4 inches beyond the frame every way.”

“Put on the frame and glasses presently after the body of the
dung is built up, to defend it from the weather. At the same
time raise the glasses a little at the upper end, in order both
to draw up the heat sooner, and to give vent to the rising steam,
until the bed is reduced to a regular temperature. In con-
nection with the thermometer, the cultivator may be assisted to form
a judgment of this by trying sticks, that is, 2 or more sharp-
pointed smooth sticks, thrust down in different parts of the bed,
which at intervals may be drawn up, and felt by a quick grasp
of the hand. The smell of the vapour is also a criterion; it
should not be strong and fetid, but mild and sweet. While
taking care that the heat is not so intense as to burn the mould
when applied as below, let it not be suffered to evaporate un-
necessarily by dehcy. If the temperature appear to be not suf-
ciently high, take off the frame, and add another course of dung.”

M’Phail, when he fruits the cucumber on dung beds, begins
to make preparation for the fruiting-bed, about 3 weeks before the
plants are ready to be planted for good. The dung collected,
after being well worked, is “made up into a bed of about 4 or
5 feet high, and the frames and lights set upon it. It is after-
wards suffered to stand for a few days to settle, and until its
violent heat be somewhat abated; and when it is thought to be
in a fit state for the plants to grow in, its surface is made level,
and a hill of mould laid in just under the middle of each light,
and when the mould gets warm the plants are ridged out in it.
After this, if the bed has become perfectly sweet, and there be
heat enough in it, and the weather prove fine, the plants will
grow freely.” Nicol builds his fruiting-bed about 4 feet high in
front, and it is 3 feet more than the frame all round. He turfs it,
and lays on sand as in forming the seed-bed, if the dung has not been well fermented. “But otherwise, placing a
thick round turf, a yard over, in the middle of each light, so that
as its centre may be exactly under the plants, will generally be
found sufficiently safe.” The frames are now put on, and the
beds matted up at night to make the heat rise the sooner.

Mills says, “Well preparing the dung is of the greatest im-
portance in forcing the cucumber, and if not done before it is
made into a bed, it cannot be done after, as it requires turning
and watering to cause it to ferment freely and sweetly; fresh
dung from the stable will require at least 6 weeks’ preparation
before it will be fit to receive the plants. A month before it is
made up into a bed, it should be laid in the heap, turned three
times and well shaken to pieces with a fork; and the outsides
of the heap turned into the middle and the middle to the outsides,
that the whole may have a regular fermentation, and if any ap-
pear dry, it should be made wet, keeping always between the
two extremes of wet and dry. A dry spot of ground should be
chosen to prepare the dung on, that the water may drain away
from the bottom of the heap. The dung having been a month
in heap, I make the bed as follows: I form a stratum one foot
high of wood of any kind, but if larger the better (old roots of
trees or any other of little value will do). This is to drain the
water from the bottom of the bed, for after a month’s prepara-
tion, with every care, it will frequently heat itself dry, and re-
quire water in large quantities, which, if not allowed to pass off
freely, will cause the frame to sweat, and the cucumber planl will not grow freely. On this bottom of wood,
I make the bed 4 feet high with dung, gently beating it down
with a fork. This is done about the 1st of November, and by
the month of February the 4 feet of dung will not be more than
2 feet thick, which, with a foot of wood, at the bottom, will
make the bed 3 feet high. This I consider a good height; for
if lower, it cannot be so well heated by linings, which is the
only method of warming it in the months of February and March, as by that time the first heat of the bed will have quite declined. Having made the bed, I put on the frames and lights, which I shut close till the heat rises. I then give air night and day, sufficient to allow the steam to pass off, and once in 2 days I fork the surface over, about 9 inches deep, to sweeten it, and if in the operation I find any part dry, I carefully wet it. The bed being quite sweet, I prepare it for the mould, by making the middle about 8 inches lower than the sides, as the sides are liable from the weight of the frames to settle farther than the middle, which often causes the hills of earth to crack, by which the roots of the plants are greatly injured."—Mills ex Loud. enchyed. gard. p. 632.

"Moulding."—"As soon," Abercrombie observes, "as you deem the bed to have a lively, safe, well-tempered heat, which may be in a week or 10 days after building, proceed to mould it. Earth the middle of each light, laying the mould so as to form a little hill from 6 to 10 inches in height, according as seed is to be sown, or plants from the seed-bed inserted. Then earth over the intervals between the hills, and the sides of the frame only, from 2 to 4 inches, as a temporary measure, until the heat is ascertained to be within safe limits. After the whole bed has been for some time covered, examine the mould; if no traces of a burning effect appear discoverable by the mould turning of a whitish colour, and caking, it will be fit to receive the plants. But if the earth appears burnt, such part should be replaced by fresh, and vacuities made to give vent to the steam, by drawing every part of the hills from the centre. When the bed is in fit order, level the mould to 6 inches deep to receive the seeds; but to receive plants in pots the hills of earth should be kept 10 inches deep or more. If there be any motive for haste, while an excess of heat is to be suspected, the danger from burning may be obviated by leaving vacuities in the top of the mould; by placing patches of fresh cow-dung or decayed bark to receive the pots of seeds or plants; and by boring holes in the bed with a round pole, sharpened at the end, which holes should be filled up with hay or dung when the heat is sufficiently reduced. Some persons place a layer of turf with the sword downwards between the dung and the mould; but this, if ever expedient, is only in late forcing; for in winter the full effect of a sweet well-tempered heat is wanted, much of which, by being confined at the top, may be forced out at the sides." M'Phail, in moulding common hot-beds, also raises hills in the centre of each light in the usual way. Gard. rem. p. 51. Nicol gathers up from the surface of the beds a sufficient quantity of earth to raise hills whereon to plant; one exactly in the middle of each light, about a foot broad at top, and to within 6 inches of the glass. If the frames be a proper depth, they should be 12 or 15 inches high above the turf. Kal. p. 365. Mills puts under the centre of each light one solid foot of earth, the top of which is hardly within 9 inches of the glass, and the top of the plants when planted in it will be within 3 inches of the glass.

"Planting out."—Abercrombie, when the temperature is ascertained to be right, brings the plants in their pots; turns over the hills of mould, forming them again properly, and then proceeds to planting. "Turn those in pots clean out, one pot at a time, with the ball of earth whole about the roots, and thus insert one patch of three plants which have grown together, with the ball of earth entire, into the middle of each hill, earthing them neatly round the stems. Also any not in pots, having been pricked into the earth of the bed if required for planting, may be taken up with a small ball of earth, and planted similarly. With water warmed to the air of the bed, give a very light watering about the roots, and shut down the glasses for the present, or till next morning. Shade the plants a little from the mid-day sun a few days till they have taken root in the hills, and cover the glasses every evening with large mats." Nicol, before planting, if the beds have settled anywhere unequally, rectifies and sets level the frames, by placing boards, slates, or bricks under the low corners, so as to make them correct. He then makes up the outsides of the bed with dung a few inches higher than the bottoms of the frame, over which he lays some dry litter or fern fronds, and planks at top to walk on. He then takes the pots of plants, each of which are supposed to have got two or three rough leaves, and making a hole in each hill, full large enough to receive the balls, turns them out of the pots as entire as possible, placing them level with the surface of the hill, fitting the earth round their sides, and settling all with a little water. In the case of planting older plants than the above, at a farther advanced period of the season, or such as have quite filled the pots with their roots, the balls may be reduced a little, and the fibres should be singled out, if anywise matted. But the above plants are supposed to have barely filled the pots with roots, and then the balls should be kept entire, that they may not receive a check in transplanting.

"Temperature for fruiting plants."—Abercrombie's minimum is 55°, and maximum in the day time 65°, the same as for the seed-bed. M'Phail says, "It appears that during the winter and spring months the medium heat of the air in the frames should be 75°, and the maximum heat 80°. But when the sun shines the heat of the air in the frames is increased to a much higher degree; so that reckoning this heat, the medium for that of the air in the frames may be 80°." Gard. rememb. p. 59. Nicol's medium heat for cucumbers is 60°; in sunshine he admits as much air as will keep down the thermometer to 60°. Kal. p. 366. Mills, in the fruiting frames, wishes "to have at all times from 70 to 90 degrees of heat, which I regularly keep up by applying linings of hot dung, prepared one month previously, in the same manner as that for the beds. For the first month I cover the glass with a single mat only; and as the nights become cold, I increase the covering, using hay, which I put on the glass, and cover that with a single mat. I regulate the heat at night by the warmth of the glass under the hay, for when the glass is warm, which should be in two hours after covering up, a little air is required. When the glass and hay covering are warm, which is easily known by putting the hand under the hay on the glass light, the internal heat of the bed will be about 78 degrees, in which degree of heat the cucumbers have grown in length in 16 hours one inch and a quarter. I give a little water round the insides of the frames, as often as I find them dry, which causes a fine steam to rise, and I think it better than changing the mould, for if this latter practice is often repeated in winter, when the sun's power is insufficient to absorb the moisture, and the glasses can be but little open to allow the damp to pass off, the earth in a few weeks will lose its vigour, and the roots of the plants will perish. Great care should also be taken, at this season, not to injure the roots by too much heat, which is not less detrimental than too much moisture: they can only be secured by keeping up a regular warmth, just sufficient to expel the damp, which arises in the night from the fermenting dung."
building a bed." When the heat decreases, Nicol cuts away the old dung perpendicularly by the frame, and adds new linings, (generally beginning with the back first,) 2 feet broad to the height of 6 inches about the bottom of the bed frame. As it will sink considerably in heating, he adds to it in a few days. Mills applies linings of hot dung prepared a month previously.

Covering.—This must be nightly performed till June, proportioning the warmth of the cover to the heat of the air in the bed, and that of the external air. Mats are laid next the glass; on these a layer of hay, and over these mats, made fast by boards, but not hanging over the linings, is the usual mode, early in the season. M'Phail says, "My method of covering up was as follows: in the first place I laid clean single mats on the light in length and breadth, just or nearly to cover the sashes, taking care not to suffer any part of the mats to hang over the sashes, on or above the linings, for that would be the means of drawing the steam into the frames in the night time. On these mats was spread equally a covering of soft hay, and on the hay was laid another covering of single mats, upon which were laid two, or sometimes three or four rows of boards, to prevent the covering from being blown off by the wind. The mats laid on next to the glass are merely to keep the seeds and dust, which may happen to be in the hay, from getting into the frames among the plants. If the bed be high, in covering up steps or short ladders must be used by those whose office it is to cover and uncover; and great care must be taken not to break or injure the glass."

Air.—Abercrombie directs to "admit air every day when the weather is moderate, without much wind; and always more freely on sunny days, than when cloudy or cold and frosty. Open the lights behind, only a little at first, sooner or later in the day, according to the temperature of the season; increasing the opening from about half an inch to 1, 2, or 3 inches, or very little more (decrease the opening occasionally, if the weather in the early part of the season changes very cold); and shut close in the same gradual order towards afternoon, generally shutting close in the evening, unless in the early state of the bed, a considerable heat and steam continues. In this case you may occasionally leave open about half an inch, hanging the end of the mat before each opening." M'Phail says, "A cucumber plant delights in a strong heat, and in sweet wholesome air; but if the air in which it grows be contaminated, unhealthy, or impure, the plant will not continue long in a healthy flourishing condition. Whatever is disagreeable to the smell becomes in time hurtful to the cucumber plant; therefore whoever would wish to know if the air in a cucumber house be clean and healthy nature for the plants, should smell to it." He adds, in giving and taking away the air, do it gradually, that is, by little and little at a time, which without doubt is the best way: for sudden changes are always attended with unpleasant consequences. A due proportion and continual supply of fresh air is at all times necessary, and more or less is required according to the heat of the linings, the temperature of the weather, and the thickness of the coverings put on at nights. Gard. rememb. p. 42. Nicol admits air regularly in as large portions as the state of the weather will allow, being careful to let off rank steam, if it abound, by leaving a tilt, even in the night. Mills says, "My usual time of giving fresh air to the frames, and permitting the foul to escape, in the winter months, (that is, from the middle November to the middle of February,) is as follows: between 8 and 9 in the morning I raise the lights, and let the confined air pass off, shutting them again; about 10 I give a little air; at 11 more; at one I lower the lights a little, and between 3 and 4 I close them entirely. About two hours after the covering of hay has been put on, I give a little air for the night. Should the weather be changeable, the lights must be raised or lowered more or less, as circumstances may require; but some air about the times of the day above mentioned is absolutely necessary to keep the plants in a free growing state."

Water.—"Give necessary waterings with water warmed to the air of the bed, mostly in the forenoon of a mild day, in early spring, and in the morning or afternoon in the advanced season of hot sunny weather."—Abercrombie. M'Phail says, "The quantity of water requisite to be given to the plants depends upon the heat of the bed, the strength and age of the plants, and also on the temperature of the weather. When the weather is cold, wet, and gloomy, and the air moist, they require less water than when the weather is clear, and the air more dry. If too much water be given, or if water be given too often, it will hinder the fruit from setting and swelling kindly; and if too little water be given, the plants will grow weak, and the fruit hollow. I seldom watered the plants with water warmer than 85°, nor colder than 65°; although in general I tried by the thermometer the warmth of the water I used, yet it is not necessary so to do. Whatever I say to know if the water be of a proper temperature is to take a mouthful of it, and when it feels neither hot nor cold, then it is in a fit state for accelerating the growth of the plants, or for making them grow fast. I made a constant rule never to water the plants but with clean sweet water; and if the water be clean and sweet, I am of opinion it makes little or no difference whether it be pump water, spring water, rain water, or river water. However, it is a good quality in water to bear soap, and make a lather therewith, which rain and river water readily do; but the pump and spring waters are found too hard to do it, yet this may easily be remedied in them, by letting them stand a few days in the open air, and sun's rays. With regard to the time of the day in which the watering ought to be performed, I think it is not material, nor did I ever make any rule with respect to the time, but gave them water at any hour of the day, when I saw they stood in need of it, and when it best suited my conveniency. Those who have hot-houses may get their water warmed there, and those who have no hot-houses may get some from the house, or from some other place where water is frequently heated. One gallon of hot water will properly water several gallons of cold water." Tate says "in spring and in the summer months the water may be warmed by exposure to the rays of the sun. Nicol airs his water "by some means or other;" waters once in two or three days after planting, and liberally from the rose of the watering pot as the plants advance. The time chosen is the afternoon about 4 or 5 o'clock, in order not to scorch the plants, which, he says, often happens, when, after morning waterings, the sun's rays suddenly dart on the plants. Kal. p. 366—355. J. Mearns, already mentioned, uses water impregnated with sheep's dung, as does Mr. Knight. Mearns tried this water first "on some cucumber plants in the Pine stove, which had been planted in January, but which in consequence of duli weather had become weak, and of a pale green colour; he applied the liquor to the roots, and in a few days a great change in the appearance of the plants was produced; the foliage assumed a hardy green, the shoots acquired an unusual degree of strength, with short joints, and although the stover had scarcely any air given to it, yet the fruit swelled rapidly, and attained a large size." These plants continued in bearing till May, and were then cut back to within 6 inches of the root, when they started again with vigour. "No water was ever given over the leaves, but a continued supply of the liquid pigeon-dung manure to the roots," Mearns. ex Loud. ency. Gard. p. 635. For Mills's practice as to watering see his process under temperature.

Earthing.—"Observe," says Abercrombie, "in proper time when the first heat of the bed is moderate, to begin adding more earth between the hills, as the extending roots require to be
CUCURBITACEÆ. IV. CUCUMIS.

covered, or the runners to be supported with mould; raising it by degrees equal with the tops of the hills, all in level order from 8 to 10 inches thick." Pract. Gard. p. 72. Nicol, "by the time the plants have sent out runners, and the roots spread quite over the hills, enlarges them; beginning by stirring up the earth in the other parts of the frame to its full depth with a hand-fork or weeding-iron, breaking it fine if anywise caked by the heat. To this add fresh mould, sifted or finely broken, and in a dry state, so as to raise the surface nearly to the level of the hills; laying it in a sloping manner from back to front. Previously he rectifies the position and level of the frames, and raises them so that the glass may be eight or nine inches above the mould in the centre." Kal. p. 307.

Training.—To force the cucumber into early fruit, Abercrombie directs to *stop the runners as soon as the plants have made two rough leaves; as the bud that produces the runner is disclosed at the base of the second rough leaf, it may be cut off or picked out, or if the runner has already started it may be pinched off close. This is called stopping at the first joint, and is necessary for a stronger stocky growth, and an emission of fruitful laterals; and from these other prolific runners will be successively produced. The vines, without the process of stopping, would generally be both weaker, and so deficient of fertile runners, that they would sometimes extend 2 or 3 feet without showing fruit. When plants which have been once stopped have extended the first runners to three joints without showing fruit, they are to be again stopped for the purpose of strengthening the plant, and disposing it for bearing. As fertile runners extend, train them out regularly along the surface, fastening them down neatly with pegs." McIlholl stops his plants when they have two joints; and "when the plants shoot forth again after the second stopping, they seldom miss to show fruit at every joint, and also a tendril; and between the tendril and the showing fruit, may clearly be seen the rudiment of another shoot, and when the leading shoot has extended itself fairly past the showing fruit; so that in pinching off the tendril and the shoot, the showing fruit is not injured. This stopping the leading shoot stops the juices of the plant, and is the means of enabling the next shoot (the rudiment of which was apparent when the leading shoot was stopped) to push vigorously, and the fruit thereby also receives benefit. When the plants are come into bearing, if the vines are suffered to make two joints before they are stopped, at the first of these joints, as I before said, will be seen showing fruit, a tendril, and the rudiment of a shoot; but at the second joint there is seldom to be seen either showing fruit or the rudiment of a shoot; but only a tendril, and the rudiments of male blossoms. It is therefore evident, and but reasonable, that the shoot should be stopped at the first of these joints; for were the shoot to be let run past the first joint, and stopped before the second, perhaps no shoot would ever spring forth at the said second joint, but only a cluster of male blossoms or leaves, which would serve for no good purpose, but would rather exhaust the juices of the plant, which ought to be thrown into the productive parts of it. If the plants are suffered to bear too many fruit, that will weaken them, and in such case some of the shoots will lose their leaders, that is, the rudiments of some of the shoots will not break forth, the numbers of fruit having deprived them of their proper share of the vegetative juices. The rudiments of some of the shoots may also be injured by accident, which sometimes prevents their pushing; but from whatever cause this happens it matters not, for by the losing of its leader the shoot is rendered unfruitful, and therefore should be cut entirely off. In the course of the spring and summer months, several shoots break forth here and there from the old ones. When too many break out, cut off the weakest of them close to the old shoots, and those which remain, with regard to stopping, serve nearly in the same manner as young plants. If the old shoot from which the new one bursts forth lie close to the moulds, it sometimes sends forth roots from the same joint from which the young shoot proceeded, by which the young shoot is much invigorated, and the old plant in some measure renovated. When this young plant is fairly formed on the old shoot, it somewhat resembles a young plant formed and struck root on a strawberry runner; and if the shoot were to be cut off on each side of the newly formed plant, and no part of the plant left in the frame but itself, by proper treatment it would soon extend itself all over the frame. In winter, when the plants are young, and before they come into bearing, it sometimes happens that they send forth too many shoots; in that case, cut the weakest of them off, not suffering them to become crowded and thick of vines, for that would weaken, and prevent the plants from bearing so early as they ought to do. Keep the leaves of the plants always regularly thin. The oldest and worst of them cut off first, and cut off close to the shoot on which they grow. This is necessary and right, for if any part of the stalk of the leaf were to be left, it would soon putrify and rot, and perhaps destroy by damp the main branch from which it proceeded." Nicol. "Cucumber plants will put out runners or vines, whether the heart-buds be picked out or not, which is a matter of trivial concern, although much insisted on by some, as being necessary to their doing so at all. For my own part I never could discover any difference, and I have repeatedly made the comparison in the same bed, which otherwise of course could not be fair. When the vines have grown to the length of 4 or 5 joints, and if fruit appear on them, they may be stopped at one joint above the fruit; but otherwise, they may be allowed to run the length of 7 or 8 joints, and may then be stopped, which will generally cause them to push fertile shoots. These should be regularly spread out, and be trained at the distance of 8 or 10 inches apart."
sooner than those raised from seeds, but they are not of so long
duration.

Upright training.—"Cucumber plants being climbers by
means of their tendrils, some branchly sticks being placed to any
advancing runners, they will ascend and produce fruit at a dis-
tance from the ground, in a clean growth, free from spots, and
well flavoured."

Setting the fruit.—"The cucumber," Abercrombie observes,
"bears male and female blossoms distinctly on the same plant.
The latter only produce the fruit, which appears first in mini-
tature, close under the base, even before the flower expands.
There is never any in the males; but these are placed in the
vicinity of the female blossoms: the fruit of which will not
otherwise swell to its full size, and the seeds will be abortive.
The early plants under glass, not having the full eurrent of the
natural air, nor the assistance of bees and other winged insects,
to convey the farina, the artificial aid of the cultivator is neces-
sary to effect the impregnation. At the time of fructification
watch the plants daily; and as soon as a female flower, and some
male blossoms are sufficiently expanded, proceed to set the fruit
the same day, or next morning at farthest. Take off the male
blossom, detaching it with part of the foot-stalk. Hold this
between the finger and the thumb; pull away the flower leaf
close to the stamens and anthers, which apply close to the stigma
of the female flower, twisting it a little about, to discharge
thereon some particles of pollen or fertilizing powder. Proceed
thus to set every fruit, as the flowers of both sexes open, while
of a lively full expansion, and generally perform it in the early
part of the day, using a fresh male if possible for each impreg-
nation, as the males are usually more abundant than the female
blossoms. In consequence the young fruit will soon be ob-
served to swell freely. Cucumbers attain the proper size for
gathering in about 15, 18, or 20 days from the time of setting,
and often in succession for 2 or 3 months or more in the same
bed by good culture. The above artificial operation will be
found both necessary and effectual in forcing the cucumber,
between the decline of autumn and May, while the plants are
mostly shut under glass. In plants more fully exposed to the
free air, in the increasing warmth of spring, and in having the
full open air in summer, from June and July till September, the
impregnation is effected mostly or wholly by nature. The male
flowers being by some ignorantly denominated false blossoms,
are often plucked entirely off, or not well enough strengthened
the plant; but this should not be generally done. Where crowded
too thin in clusters, some may be thinned out
moderately; but their agency being absolutely necessary in fer-
tilizing the females, they should only be displaced as they begin
to decay, except where they are superabundant.

It is the female blossoms of flowers," M'Phail observes, "that bear the
fruit; but if they were not to be impregnated by the male
flowers they would prove barren and unfruitful. The female
blossoms are easily to be distinguished from the male ones, for
the rudiment of the fruit is apparent at the bottom of the female
flower, and the flowers have no stamina, but have three small
pointed filaments, without summits; whereas the male blossoms
have not any rudiment of fruit about them, but in the centre of
the flower are three short stamina, which are inserted in the
corolla. When the female or fruit blossoms are in full blow,
take the male blossom which is in full blow, and holding it in
one hand, with the other split and tear off the corolla, taking
care not to part the stamina or male parts. Then hold the male
blossom thus prepared between the finger and thumb of the
right hand, and with the left hand gently lay hold of the female
blossom, and holding it between the two fingers, put the prepared
male blossom into the centre of the female blossom, and there
the farina or pollen of the anthers cling or sticks to the
stigmas, and thus the impregnation of the fruit is effected, and
the plants are thereby rendered fruitful, which, being in frames
in a climate by art made for them, would otherwise in a great
degree be rendered barren and unproductive; and which I have
frequently known to have been the case, even when at the same
time the plants were in a vigorous flourishing state. Generally
leave the prepared part of the male blossom sticking in the
centre of the female one, and take a fresh male blossom to every
female blossom. But if the male blossoms run scarce, which
seldom or never happens, make one male blossom do for two or
three females." Nicol states, that cucumbers will grow and
will arrive at full size without the female flowers being impreg-
nated: the seeds, however, will prove abortive. The directions
he gives for impregnating are in substance the same as those of
M'Phail. The fruit being set and swelling, some lay fragments
of glass or slate beneath it in order to keep it clean, and to ad-
mitt as much air and light as possible to the under side, so as to
cause its approach in greenness to the upper.

On keeping a fine bloom on cucumbers.—The art of producing
and keeping a fine natural bloom on cucumbers, either for a
gentleman's table for show, or for the market, merits great at-
tention, both as to the perfect appearance of the fruit, and also
to the general culture of the plant, after the fruit is set. From
that time a strong bottom heat should be given with dung linings
or, if late in the spring, short grass laid round the frame on the
dung, will cause a very strong heat. Water ought then to be
given plentifully, always at the back part of the frame; and
at no time should the plants be watered over their leaves, when
the fruit is wanted for its fine delicate bloom and long regular
shape. A fine foliage over all the bed is likewise a very essen-
tial point; and leaves should never be picked off near the fruit,
as it thereby deranges the juices of the plant, and consequently
the fruit does not swell off finely. Air also should be given
very sparingly in the middle of the day, even in bright sunshine,
and generally there should be a little left in the night, when the
bottom heat is very strong, as by that means the air in the frame
is kept sweet. When the fruit is fit to eat, for any of the
above purposes, great care should be taken to pack it in narrow
wooden boxes, in the largest nettle-leaves that can be got, filling
up the interstices with well-beaten moss, and covering over with
soft leaves of any kind. It may then be sent to a great distance
with a fine bloom, and, upon the whole, in a perfect state.—
Gathered in Yorke, Long. 6, lat. 50. 30.

Gathering the crop.—Cucumbers are used green and unripe,
and before they have attained their full size. They are cut and
gathered when 4, 5, 6, or 8 inches long, according to the kinds.
To this size they attain in 10 days or a fortnight in the best
part of the season.

To save seed.—"Select some best summer fruit, from good
productive plants, which permit to continue in full growth till
they become yellow. Then cut them from the vine, and place
them upright on end in the full sun for 2 or 3 weeks, when they
may be cut open, and the seed being washed out from the pulp,
spread it to dry and harden; then put it up in papers and
bags for future sowing; it will remain good many years; and
seed of 3 or 4 years' keeping is preferable for early frame
crops.

On forcing cucumbers.—In growing cucumbers under lights,
"the most obvious defects," according to Mr. Allen, "are com-
pound of too light a quality," and "dung not sufficiently worked
before it is earthed over." Mr. Allen has been in the habit of
growing early cucumbers under frames, on common dung-beds,
for twenty years, always producing abundance of fruit from
March till October. In 1823 he worked 70 lights for the
London market, the produce of which was 3360 cucumbers, or
4 dozen to a light, "a greater product than is usually obtained

8
CUCURBITACEÆ. IV. CUCUMIS.

by any of the ordinary methods of treatment." The beds are made in December or January, the hot horse-dung having been previously turned and watered 5 or 6 times. Before earthing it, round flat mats, about 15 inches in diameter, formed by coiling up a band of straw, 1 inch in diameter, and 10 feet long, are to be prepared and placed on the dung, under the centre of each light. Rye straw is preferred for these mats, as it does not encourage mice. A bushel of compost, consisting of loam and rotten dung, is placed on each mat, and 1 plant in preference to more, on the top of each hillock; the top of the plant should be left about 3 inches from the glass; the mould should then be dressed up round the hillock, and be pressed close to the roots, and within 1 inch of the seed-leaves of the plant; these, at no time of earthing, should be covered, for this is very apt to cause canker. The earth should be kept within the bounds of the straw mat, and not be suffered to mix with the dung, as that would cause a burning, which is not only troublesome, but in many instances fatal to the prosperity of the plant; because if the earth is once burnt, its vegetative quality is destroyed, and water will have no effect on it. The only remedy in such a case is to remove the mould, fork up and water the dung, lay on a little rye straw, and replace the earth. After ridging out, from one quarter to one inch of air is given in the day, and about one quarter during the night. The covering must be very slight for the first 3 or 4 weeks, and must not hang over the sides. "The heat must be kept up by augmenting the linings once a-week, turning over and watering them when they heat so as to become dry. The bed inside the frame will require forking up about 9 inches deep, 3 times a-week; the hillocks at the same time should be examined, and a round pointed stick, of about an inch in diameter and 18 inches long, must be thrust about 12 inches in the dung, under the straw mat, making 5 or 6 perforations under each hillock. Into each of the holes so formed, pour from the spot of a watering-pot as much water as the state of the bed seems to require; this may be ascertained from the facility with which the perforator goes into the bed. If the bed is husky or burning, the stick will go in with difficulty, and then a large pot of water is required to a hillock; on the contrary, if the bed is in a free state of working, the perforator will go into it very easily, and then a sprinkling from the rose of the pot will be sufficient." A great object of Mr. Allen seems to be to sweeten, rot, and moisten the dung under the frame for the roots of the plants, while the heat is principally supplied by the linings. "The dung," he says, "from the continued forking and watering, will become in a fine state to receive the roots of the plants; these, after passing through the proper depth of compost, placed over the dung, which is about 8 inches, will readily strike into the dung, and bear a productive crop of cucumbers throughout the summer, without their leaves flagging or requiring any shade. For ascertaining the proper periods to make additions to the earth, the best criterion is the appearance of the roots through the sides of the hillock. This should be earthed over about 3 inches, each time forking out the dung 2 inches below the mat, to give a greater depth of earth each time of performing the operation. The last time this is done, the depth of mould at the back of the frame should be 20 inches. It will be necessary to raise the frame and lights as the plants advance in growth." Water should be given plentifully 3 times a-week, without wetting the leaves or fruit, "pouring it against the back of the frame, for the mould will dry faster against the back than the front, in consequence of the heat being there heavier, and the air being admitted there." "In pruning, the runners should not be cut or thinned out, the tops only should be pinched, and at every joint, beginning where the plant has 2 rough leaves, and the second rough leaf is about an inch in diameter. That will cause the plant to produce fruit and a fresh runner in succession at every joint; it will likewise add to the strength of the plant." Pinch off the tendrils and male blossoms, and fecundate artificially in the early part of the season. The sort of cucumber which Mr. Allen finds most productive is the Southgate, and he prefers seed 3 or 4 years old to new seed.—Loud. gard. mag. vol. 1. p. 416, 417.

Insects and diseases.—The thrips sometimes attack early cucumbers, and are to be destroyed by fumigation. The red spider rarely makes its appearance; when he does water must have been improperly withheld. Some soils produce canker in the shoots, especially where they branch from the main stem. When this is the case, the only resource is to renew the soil and the plants.

Growing the cucumber under hand-glasses.—The following method is given by M'Phail as that generally practised: "The seeds are sown some time about the middle of April in a cucumber or melon-bed, and when they come up, they are potted out into small pots, 2 or 3 plants in each pot, and are kept properly watered, and stopped at the first and second joints. About the middle of May, a warm situation, where the mould is very rich is pitched on, and a trench is dug out about 2 feet deep, 3 feet broad, and the length is proportioned according to the number of glasses it is intended for. This trench is filled with good warm dung, and when the dung has come to its full heat, it is covered over with 8, 10, or 12 inches' depth of rich mould. The glasses are then set upon it about 3 feet distant from each other, and when the mould gets warm under them, the plants are turned out of the pots with their balls whole, and plunged into the mould under the glasses, and a little water given them to settle the mould about their roots, the glasses set over them, and after they have made roots, and begin to grow, in fine days, the glasses raised a little on one side, to let the plants have the free air; and as the weather gets warmer and warmer, air is given more plentifully to harden the plants, so that they may be able to bear the open air and run from under the glasses. When the plants begin to fill the glasses, they are trained out horizontally, and the glasses are set upon bricks or such like, to bear them from the plants. After this the plants require nothing more but to be supplied with water when the summer showers are not sufficient, and to stop them when they run too thin of branches, and thin them of leaves or branches when they are likely to become over-crowded. In warm summers and in warm situations, by this mode of management, the plants will bear plentifully for about 2 months, provided they be not attacked by insects or weakened by diseases." Abercrombie describes the practice somewhat different, but with his usual detail and order. He says, "To have a general summer crop, to fruit in hot-bed ridges under hand-glasses, sow some seed of the long prickly kind in a hot-bed, under a frame or hand-glass, or in any cucumber hot-bed in cultivation, about the middle of March, or thence till the middle of April. When the plants have been up 3, 4, or 5 days, prick some in the same or another hot-bed, 3 or 4 inches asunder. A portion may be put in small pots, 2 plants in each, and plunged in a bed. Give water, and shade from the sun till they take root; and manage as for the frame crop. In 3 or 4 weeks, when advanced in the first rough leaves, about 2 inches broad, and stopped at the first joint as directed in the early crop, the plants should be ridged out, that is, transplanted into hot-bed ridges, under hand-glasses, to remain for fruiting. The period for this may fluctuate from the middle of April to the beginning of May. Having a sufficient quantity of prepared dung, make a hot-bed on the level ground, 3½ or 4 feet wide, and 2½ feet high, the length as required, according to the number of hand-glasses intended. Earth it at top 6 or 8 inches thick, and place the hand-glasses along the
middle at 3½ feet distance. Sometimes the bed is made in a moderate trench, 12 or 15 inches deep, in some good soil in the kitchen-garden, in order to have the excavated earth of the trench ready at hand for moulding the bed. When the earth under the glasses is warm, proceed to put in the plants, removing them from the nursery-bed, with as much earth as will adhere about the roots. If you have any plants in small pots, turn them out with the ball entire, and plant 3 plants under each glass. Give a light watering; put down the glasses, and shade the plants from the sun, till they have taken root, after which let them enjoy the sun and light fully, only covering the glasses and bed every night with mats till June, or commencement of warm weather. Admit air every mild day, by propping up the southward side of the glasses 1 or 2 inches; moderate waterings will be necessary twice a-week or oftener. As the plants push runners of considerable length, train them regularly. When extended to the limits of the glasses, and when the weather is settled warm, about the beginning or middle of June, they should be raised upon 3 props 2 or 3 inches high, and the runners trained out in regular order, but cover them on cold nights with mats, for the first week or two. Continue the glasses, and circumspectly water in dry weather, as may be necessary; the plants will produce fruit in June, July, August, &c. in plentiful succession. To obtain a crop from hot-bed ridges, under hand-glasses, you may, in default of plants raised in a previous nursery-bed for transplanting, sow seed under the glasses in April or May, inserting several seeds in the central part under each glass. When the plants have been up a few days or a week, thin them to 3 or 4 of the strongest in each patch, managing them afterwards as the others. They will come into bearing about the end of June or July, and thence to September. (Should there be a scarcity of dung to make a regular bed,) in the last week of April, or in May, 1 may dig circular holes 2 feet wide, a spade deep, and 4 or 5 feet asunder; fill them with hot dung, trodden down moderately firm, and earthened over 6 inches. In these put either plants or seed, and place on the glasses; the plants will produce fruit in June or July till September. (In default of hand-glasses,) make a hot-bed, or holes of dung, as above, in May; put in plants or seed, and defend with oiled paper frames, to remain constantly, day and night, till settled warm weather in June or July. Give the additional protection of mats over the paper frame in cold nights and bad weather. In the culture of all the crops, give proper supplies of water in dry warm weather, 2 or 3 times a-week, or every day in the hottest season of June, July, and August. In the hot-bed ridges, made above ground, in April or May, 1 may dig circular holes 3 or 4 weeks or more after making, the heat be much declined, and the nights or general season remain cold, let a moderate lining of hot dung be applied to the sides, which will both throw in a reviving heat, and widen the bed for the roots and runners of the plants to extend."

*Cultivation of the cucumber in a fluid pit.—* Nicol says, "Those who would have cucumbers on the table at Christmas (a thing sometimes attempted,) will find it more practicable, and less troublesome, if the plants be grown in a fluid pit, in the manner of late melons, than if they be grown in a common hot-bed. In this case the cucumbers should take place of the melons planted in this compartment in July, and which will, by the middle or end of the month, have ripened off all their fruit of any consequence. The seeds of some of the earliest (the best for early being also best for late) should be sown in small pots about the first of the month, and should be placed in the pit along with the melons, or under a hand-glass, on a slow dung heat; where let the plants be nursed, and be prepared for planting about the second or third week in the month, as hinted at above. Observe to sow old seeds, not those saved this season, which would run more to vine than to fruit. Let the pit be prepared for their reception, by trenching up the bark or dung, and by adding fresh materials, in so far as to produce a moderate growing heat; observing the directions given for preparing the pit for the melons in July, and moulding it (however cucumber earth) all over to the depth of 1 foot or 14 inches. The plants may be placed closer in planting them out than is necessary in a spring hot-bed. They may be planted at the distance of a yard from each other, and 2 rows lengthwise in the pit, as they will not grow very vigorously at this late season. They should be moderately supplied with water once in 4 or 5 days, and should always be watered over the foliage, the more especially when strong fire-heat becomes necessary, as cucumbers naturally like a moist rather than a dry heat. The temperature should be kept up to about 64° or 65° in the night, by the aid of the flues, and by matting, or otherwise covering the pit. Air should be as freely admitted as the state of the weather will allow, and so as to keep the mercury down, in sunshine to about 70°. The plants will require little other pruning than to stop the vines, as they show fruit at the joint or two above it; for they will not push manysuperfluous shoots. Observe to pick off all damped leaves as they appear; and otherwise carefully attend to them, as above directed, while they continue to flourish, or to do any good worthy of such attendance."

*Cultivation of the cucumber in M'Phail's brick-bed pit.—* "When I used," observes M'Phail, "to cultivate cucumbers on a dung-bed, the fruit were sometimes watery and ill-tasted; but after 1 began to cultivate them on a brick bed, the fruit were constantly firm and well flavoured, which is certainly occasioned by the goodness and wholesomeness of the food with which the plants are fed or nourished." M'Phail's pit has many advantages over a common hot-bed; there is no chance of burning the roots of the plants in it, the linings being placed all on the outside, without any dung underneath the plants. "All the materials of my newly-invented bed are clean and sweet; and the flues being made perfectly close, no tainted or bad-smelling air can get through them into the bed; so that it is of little or no concern whether the dung of the linings be sweet or otherwise, or whether the linings be made of dung or of any thing else, provided there be a sufficient heat kept in them, and no pernicious steam be drawn in among the plants by the current of air. A sheltered dry situation is of the first consequence for this pit. The bed being built, " when the frame is about to be set upon it, a layer of mortar is spread all round upon the upper course of brick-work, on which the bottoms of the frames are to rest. Thus the frames are set in mortar on the bricks; and the flues are, with a bricklayer's brush, well washed, and rubbed with a thick grout, made of lime and water, which stops every crack or hole, and prevents the steam of the linings from getting into the frames. This washing of the flues I had done once a-year, for no crack or hole must ever be suffered to remain unstopped in the flues. I found little or no trouble in keeping the flues perfectly close, nor is it indeed likely that they should become troublesome, if the bed stands on a sound foundation, for the heat of the dung has not that powerful effect on the flues, as fire-heat has on the flues of the hot-house; because the heat of dung is more steady and not so violent as the heat of the fire, and, besides, the flues of a cucumber-bed are almost always in a moist state, which is a preventive in them against cracking or rending. When the brick is well built, the flues about 3 feet in depth below the surface of the flues. The pits I had filled up about a foot high, some of them with rough chalk, some of them with small stones, and some of them with brick-bats; this is to let the wet drain off freely from the mould of the beds. After this filling up with chalk, stones, and broken
bricks, there is a vacancy in the pits, about 4 feet deep below the surface of the flues; this vacancy I had filled to a level with the surface of the flues, with vegetable or leaf mould; and in putting it in, it was gently pressed, to prevent it from sinking too much afterwards. On the surface of the mould with which the pits were filled, under the middle of each light, and which is just in the centre of the mould in each pit, make hills of mould, in the same form as is commonly done on a dung-bed. These hills are to set the plants in, and are to be raised at first nearly close to or within a few inches of the glass. Raising the mould at first pretty high the glass is necessary, on account of the sinking of it; for as the frames are set on bricks, they cannot sink; but mould newly put in is sure to settle, and the measure of the settlement will ever depend upon the lightness and texture of the mould with which the pits are filled. Therefore, these and such-like matters must be left to the discretion of those who are intrusted with the direction and management of the frames. When the bed is thus finished, and ready for the reception of the plants, if the flues be strewed over with mould, so that their surface be just covered, to a stranger it is altogether a deception, for in every respect it has the appearance of a dung-bed. The ashes of the frames which I used were glazed in lead; but if any person who rears early cucumbers have lights which are not glazed in lead, but are slate-glazed, the vacancies between the glass had best be filled up close with putty, to prevent too much air from getting into the frames in the cold days of winter. The frames under my management were constantly kept in good repair, and painted over once every year. This method, I am clearly of opinion, is more profitable than if the frames were neglected for 2 or 3 years, and then have a thorough repair, with 2 or 3 coats of paint. When frames are new painted, they should be suffered to lie and sweeten for some time, at least for 2 or 3 weeks, or until the disagreeable smell of the paint is somewhat lessened. Although the frames I used were of a very good size, yet if they were a little smaller or larger, they would answer the purpose very well. Therefore those who intend to build a bed after my plan, have no occasion to make new frames merely for the purpose, but they may get the bed built to fit the frames they are already in possession of. The linings are to be applied to the bed a few days before the plants are ready for finally planting out, in order that the soil under the frames may be properly warmed for their reception. The dung, of which the linings are to be made, may either be cast together into a heap, to bring it to a heat before it be laid round the bed, or it may be laid round the bed as it is brought from the dung-yard; but whichever of these methods be taken, when the linings are making up, the dung should be well shaked, and laid up lightly, so that the heat of it may come up freely. As it takes some days before the linings are able to warm the earth in the bed sufficiently for the reception of the plants, the rank steam of the new dung linings is evaporated, unless the dung came immediately from the stables, which seldom is the case. The linings are to be made nearly 3 feet broad in their foundation, and tapered up to about 30 inches at the top, by which they will retain their heat long, and in sinking will keep close to the bed, which is what should at all times be paid proper attention to. In the winter and spring months, the linings should be trodden upon as little as possible, for treading on them would be the means of stagnating the heat. But should it at any time, in managing the plants, be found necessary to stand or kneel upon them, boards should be laid on their tops for that purpose; which will prevent the weight of a person from taking that effect on them which it otherwise would do. As the linings sink they are to be raised with fresh dung, but they should seldom be raised higher than the level of the mould in the frames on which the plants grow, especially when there is a strong heat in them; for when there is a great heat in them, if they are kept higher than the level of the mould, the heat dries the air in the frames too much. Nor should they be suffered to sink much below the level of the mould in the frames, for that, on the contrary, would cause too much moisture in the frames, especially in the winter and spring months. When the heat begins to be too little, notwithstanding the linings being kept to their proper height, the fresh unexhausted dung underneath should be taken away, and that which was laid aside put in the foundation, and fresh dung laid above it, in lieu of that which was carried away. Both the side linings, may be raised the same time, but both of them should never be renewed together; for if both were to be renewed at the same time, it would for a time cool the frames too much, and when the heat of both came to their full strength, it would probably be too powerful to the roots of the plants when extended to the flues. I seldom or never renew the end linings, because I found the heat of the side ones fully sufficient; for as there are flues or vacuities in every part of the bed, the steam being fluid, circulates in and warms every part thereof. And for the very same reason there is no occasion for having a strong heat in both the side linings at one and the same time, except in very cold weather. In making up and pulling down the linings, care should be taken not to injure the brick-work. The covering the lights in the winter and spring is absolutely necessary; for, notwithstanding the heat of the linings, it would be impossible to keep up a proper degree of heat in the frames for the plants without covering. Therefore, the covering up in the evenings and uncovering in the mornings must be particularly attended to, and more or less put on according to the heat of the linings and temperature of the weather. After the bed is set to work, heat and sweet moisture are the two principal agents required for promoting the growth and vigour of the plants; therefore if there be a heat kept in the linings, strong enough to keep the heat in the centre of the pits of mould fluctuating between 80° and 90°, cold water may be poured on the flues twice or thrice a week. There is no danger of creating damps or impure air in the frames by watering the flues; for the water is no sooner poured on them, than it runs down their sides, and passes clear off through the drains of the bed: consequently, water being poured upon the flues, gives only a momentary check to the heat of the frames; for the flues being at all times full of hot steam, when the watering is finished, the heat quickly resumes its former vivacity, and raises a warm vapour in the frames, well adapted for promoting vegetation, and for increasing the growth, and invigorating the plant in all its parts. The mould round about the sides of the pits close against the inner sides of the flues, should be kept nearly on a level with the surface of the flues, and as it is the mould that joins to the flues which receives the first and greatest heat from the linings, it should be continually kept in a moist state; for if the mould against the flues be suffered to become dry and husky, air will be generated in the frames disagreeable to the plants. In all other respects, the culture of cucumber or melon on M'Phail's brick-bed, corresponds with the culture of these fruits on common dung-beds. M'Phail has, in his "Gardener's Remembrancer," as well as in his "Treatise on the Cucumber," given the temperature of one of his beds for every day in the year, of which the following table shows the extremes for every month:

<table>
<thead>
<tr>
<th>Month</th>
<th>Morn.</th>
<th>Noon</th>
<th>Even.</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>from 58° to 80°</td>
<td>60° to 80°</td>
<td>from 51° to 77°</td>
</tr>
<tr>
<td>February</td>
<td>60° - 88°</td>
<td>60° - 90°</td>
<td>58° - 84°</td>
</tr>
<tr>
<td>March</td>
<td>62° - 83°</td>
<td>65° - 90°</td>
<td>62° - 85°</td>
</tr>
<tr>
<td>April</td>
<td>69° - 84°</td>
<td>68° - 93°</td>
<td>64° - 90°</td>
</tr>
<tr>
<td>May</td>
<td>67° - 79°</td>
<td>70° - 90°</td>
<td>68° - 95°</td>
</tr>
</tbody>
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"By the heat described in these tables, and plenty of water, the cucumber plants, the seeds of which were sown on the 23rd day of October, were maintained in a healthy fruit-bearing state in the brick frame of my inventing, from the month of January to the beginning of December." The melon plants in the management of the author, were kept in about the same degree of heat which he has given for the culture of the cucumber, in the forcing frames; and he ventures to predict that if any person keep melon or cucumber plants in nearly the same degree of heat, as is set down in the foregoing plant tables, and the house well in other respects, the way to do which he thinks he has clearly pointed out in this treatise, he is persuaded they will not fail in having success. He adds, that notwithstanding the objections of some who have not been successful in making trial of his bed, "it is now generally approved of, and in practice by numbers of the best gentlemen’s gardeners in the kingdom, and by various market gardeners in the neighbourhood of London." West’s pit, however, seems superior to M’Phail’s, as requiring much less dung, presenting a much more neat and orderly appearance, and giving a greater command of temperature.

Cultivation of the cucumber in a common pit without flues.—Some form a narrow dung-bed along the middle of each pit, leaving room for adding a lining on each side when the plants well in other respects. The method succeeds very well late in the season; but at an early period the sinking of the bed from the glass leaves the plants at a great distance from the light.

Cultivation of the cucumber in houses.—"Cucumber plants," M’Phail observes, "will grow in a hot-house, where the pineapple is cultivated; but they will not be very long lived there, for that is not a healthy climate for them." "In August sow the seeds in boxes filled with vegetable or other light earth, and place them on shelves on the back side of the hot-house, where the sun may not be interrupted from shining on them in the short days. They may perhaps produce a few fruit in the month of December or January." Gard. rememb. p. 301. Abercrombie says, "some gardeners plant the cucumber in the frame without the disadvantage of December. Fruiting this plant in the house in narrow boxes 3 feet long, and full 20 inches deep, may be found much commodious than pots. The boxes may stand upon the crib-trellising over the flues, or be suspended near the back wall, 18 inches from the upper tier of lights, so as not to shade the regular house plants: this is the best situation for a very early crop. The plants may be originated in small pots, plunged into the bark-bed, in order to be transplanted with a half ball of earth into the borders. Those who aim to have fruit at Christmas introduce seedlings about the middle of August." "The chief deviation from the course of the hot-bed is, that the plants must be trained in the house upright, for which purpose form a light temporary trellis of laths. Give water every other day at least," Pract. Gard. p. 618. We have already quoted the particulars of Aiton’s method of raising cucumber plants in August, with a view to their being fruiting in the stove through the winter. We now subjoin the remainder of that paper. "The plants being raised on a well prepared one light hot-bed, when the cotyledons or seed-leaves became nearly of full growth, the plants were potted out, two into each pot, known to gardeners about London by the name of upright thirty-twos. When these pots became filled with roots, the plants were again shifted into larger ones, called sixteens, and removed from the seed-bed into a three light frame, with a sufficient bottom heat to allow a considerable portion of air being given day and night, both in the front and back of the frame. About the middle of September, the plants having again filled their pots with roots, and become stocky, were taken from the frame to the stove, and after a few days received the last shifting into larger pots of the following dimensions: at top 14 inches over, the bottom 10 inches across, and 12 inches deep, all inside measure; each pot at equal distances apart, having three side drain holes near the bottom, and a larger one in the centre of the bottom, and containing about three pecks of solid earth. The cucumber plants were fruited this season in a pinery. On the front edge of the back line of this stove, a fascia-boarding, 6 inches deep, was affixed the whole length of the building, forming all along a trough or inclosure for a reserve of compost, after the exhaustion of the mould in the pots had taken place. The pots were now placed in regular order upon the mould-trough over the flue at 3 feet apart, and remained in this station for good, for succession. A setting of the second sowing was placed upon the end flues of the house; underneath each pot was set an upright circular garden pan, 6 inches deep, and 14 inches in diameter, which being filled with earth, the pots were plunged therein about 2 inches deep, and the drain holes being sufficiently covered with mould, served as outlets to the roots. From this time the fire heat of the stove was kept day and night at 60° or 65° of Fahrenheit’s thermometer, varying only a few degrees when the sudden influences of the sun or steam produced an additional glow of climate. The plants being now established and vigorous, required stopping the laterals and fruit; and these second and third lateral shoots in their turn were stopped also, and the blossoms from time to time set, as usual, for succession of supply. Waterings were necessary only when the surface of the earth was evidently dry, and light sprinklings of soft water, tempered in the stove, were occasionally given over the leaves of the plants and path with good effect. Steam from a well regulated flue was considered always favorable to the cultivation, but applied sparingly on account of its scalding effect upon the leaves, when the vapour proved overheated. For the mildew, flower of brimstone, coloured leaf-green by a little soot, has been applied with the best success in all stages of the disease, and copious fumigations of tobacco were used for the destruction of the several species of the aphid tribe; and this simple practice with cucumbers have been produced abundantly in the months of October, November, December, and part of January, in all the royal gardens of His Majesty during a series of years." Aiton ex encycl. gard. p. 642, 643.

Cultivation of the cucumber in Week’s patent frame.—Only two instances in which this ingenious invention has been tried are known to us, both of which are mentioned at the end of "Week’s Forcer’s Assistant." The chief objection to it is, that the bed or stratum of earth in which the plants are grown, being but of moderate depth, and surrounded by air above and below, is extremely difficult to retain an equable moisture. There are several other structures for growing cucumbers and melons in besides those mentioned above; but none of them appear to us to have much importance.

On a mode of producing a crop of cucumbers during winter.—James Reed, (Gard. mag. 3. p. 23,) places his winter cucumber bed in a vinery. In this vinery the air could be admitted both by the front and top lights. About the 20th of September the cucumber seeds were sown on a moderate hot-bed in the open air, and heated in the usual manner until they were ready to ridge out. This generally happened about the beginning of
November, at which time the shoots of the vines were withdrawn from the house, and a dung-bed formed in the floor of the vineyard in the usual way. After placing the frame and mound on the bed, it may be left without the lights until the rank steam has passed off. After this, the plants being placed in the hills, and the ashes put on, the following are the leading features of management during the winter. Make fires in the evening, so as to warm the air of the house to from 56° to 60°, and in very severe frosts it may be raised to 70°. In the mornings of the coldest weather, and shortest days, make a strong fire, so as to raise the heat to nearly 70° when the house is shut up. About 8 o'clock, and from that time to half past 9, give plenty of fresh air, by opening the front sashes and top lights, after which, and during the remainder of the day, give plenty of air to the cucumbers, by tilting the sashes in the usual way. In mild weather, and during sunshine, the lights may be taken entirely off the cucumbers for some hours each day; and immediately after forming new linings, the top lights may be left open a little all night to permit the escape of rank steam. The advantage of this mode of growing cucumbers during winter is, the comparative certainty of an early and good crop at one-third of the trouble and expense of the common method out of doors. By this practice fruit may be cut in January. The vines may be introduced in the beginning of March, and will break beautifully and regularly in consequence of the genial steam of the dung. In April the shade of the vine leaves will have rendered the house too dark for the culture of the cucumber, and as by this time cucumbers are plentiful in the common hot-beds out of doors, the bed in the vineyard may be cleared away, and the vines treated in the usual way till the following November.


4. C. flexuosus (Lin. spec. 1437.) stems trailing, scabrous, flexuous, circirrhiferous; leaves cordate-ovate, somewhat lobed, dentilicated, stalked; flowers in fascicles in the axils of the leaves; calyx very pilose; fruit long, cylindrically-furrowed, furrowed, flexuous, replicate, white or yellow. ○. F. Native of the East Indies.—Lob. stirp. p. 563. f. 2. Dodon, pempt. p. 66. f. 2. Ger. herb. p. 763. f. 3. Fruit the size of a large pear, eatable, and delicious. It is cultivated about Nagasaki and elsewhere in Japan; is ripe in June, and is called by the Dutch Banket Melon.

Far, β, reflexus (Ser. ms.) leaves angularly-lobed. C. réflexus, Ziech.


5. C. Jamaica'nsis (Bert. ex Spreng. syst. 3. p. 46.) leaves cordate, 3-lobed, quintuple-nerved, glabrous, quite entire, beset with scabrous dots beneath; lobes acuminated; fruit nearly globose. ○. F. Native of Jamaica.


6. C. macrac'ápos (Wenderoth ex Mart. rase. bras. ex Linna. 5. p. 39.) leaves cordate, rather angular, acute, sharply-denticulated, scabrous from hairs; fruit oblong, oblongately striated and spotted, remotely tuberculated. ○. F. Native of Brazil.

Long-fruited Cucumber. Pl. tr.

7. C. Ch atræ (Lin. spec. 1457.) plant very villous; stems trailing, bluntly pentagonal, flexuous; leaves petiolate, roundish, bluntly angled, dentilicated; flowers small, on short peduncles; fruit pilose, elliptic, tapering to both ends. ○. F. Native of Egypt and Arabia.—Alp. exot. egypt. p. 54. f. 40.—Banlh. hist. 2. p. 248. f. 5. The fruit is rather watery; the flesh almost of the same substance with the melon; the taste somewhat sweet, and cool as the water-melon. The grandees and Europeans in Egypt eat it as the most pleasant fruit they have, and that from which they have to apprehend. With us it is very indifferent. It is most common in the fertile soil around Cairo, after the inundation of the Nile. Chate is the Egyptian name of the plant.


8. C. Duda'ain (Lin. spec. 1437.) plant hispid; lower leaves roundish, upper ones somewhat 5-lobed, cordate at the base, dentilicated; tendrils simple; petals ovate-roundish; male flowers having the calyx rounded at the base, the throat dilated, and with the connectives longer than the anthers; hermaphrodite flowers having the tube of the calyx ovate and pilose; stigmas 4-6; fruit globose, smoothish, variegated, rarely warty: with white sweet-scented, but insipid flesh. ○. F. Native of Persia. And. bot. rep. t. 548. C. odoratissimus, Mench. meth. 654.—Dill. hort. clt. 223. t. 177. f. 218.—Walth. hort. p. 133. t. 21. The fruit is variegated with green and orange, and oblong unequal green spots; when full ripe becoming yellow, and at length whitish. It has a very fragrant vinous musky smell, and a whitish, flaccid, insipid pulp. Dudaain is the Hebrew name of the fruit, rendered mandrake in Scripture, which is perhaps C. prophe'tatárum.


9. C. Co'xosox (Thum. jap. p. 524.) plant rather pilose; stem trailing, striated; leaves cordate, somewhat lobed, stalked, rather pilose; flowers small; fruit oblong, glabrous, 6-10-furrowed; flesh firm. ○. F. Native of Japan. Fruit larger than a man's head. Flowers aggregate, rather hispid stalks. This plant is cultivated every where in Japan for the sake of its fruit, which, when preserved, is sold under the name of Comme-mon, and is a common food among the Japanese. It is also frequently eaten by the Dutch at Batavia, and is sometimes brought to Holland.

Common Melon. Pl. tr.

10. C. Sep'tem (Meyer, prim. essaq. p. 278.) leaves cordate-ovate, somewhat 5-lobed; fruit oval, muricate, acuminated at both ends. ○. F. Native of Guiana, in the island of Wac-hanana. C. angúria, Rausch, but not of Lin. ex Steud. nom. It differs from our C. angúria in the leaves being subpalmate, with angular recesses, and in the fruit being globose-elliptic.

Hedge Melon. Pl. tr.

11. C. lineá'tus (Bosc, journ. hist. nat. 2. p. 251. t. 37.) stem climbing, pentagonal; tendrils trifid, longer than the leaves; leaves cordate, palmate, acutish, serrulata; petioles short; flowers usually twin, almost sessile; female ones having an oblong-ovate calyx, and lanceolate segments; petals ovate, retuse; fruit oblong-oblong, lined with green, 16-ribbed. ○. F. Native of Cayenne.


12. C. prophe'tatárum (Lin. spec. 1436. amon. acad. 4. p. 295.) stem trailing, striated; leaves cordate, 5-lobed, dentilicated; lobes obtuse; flowers axillary, 2-5-together, stalked; male ones with a campanulate calyx, and obovate petals; calyx of the female flowers globose at the base, 12-striped, and hispid; limb campanulate, crowned by teeth; fruit globose, echinated, variegated, size of a cherry. ○. F. Native of Arabia. Jacq. hort. vind. 1. t. 9.—Blackw. herb. 589. C. grossularioidés, Hortul. The plant has a nauseous odour. The fruit equals the Cobeynthus in bitterness.


14. C. angú'ria (Lin. spec. 1456. but not of Rausch. ex Steud. e 2.
CUCURBITACEE. IV. CUCUMIS. V. LUFFA.

CUCURBITACEA.

leaves but D. lobe and fruit female
Native
leaves fruit native
angles petioles fruit fruit
angular, tary.

It Europeans, season, very in English, 772. Mill.

Large-fruited 18

The plant serves both for food, drink, and physic to the Egyptians. The fruit is eaten in abundance during the season, which is from the beginning of May until the overflowing of the Nile, that is, to the end of July. It is the only medicine the common people use in ardent fevers: when it is ripe or almost putrid, they collect the juice, and mix it with rose-water and a little sugar. The fruit should be eaten cautiously by Europeans, especially when taken in the heat of the day; but it is much used within the tropics, and in Italy. The fruit is large, green externally, white fleshed, reddish towards the centre, juicy, and refreshing, but not high flavored. It is generally considered the melon of the Jews, mentioned in various parts of the Bible. It requires nearly the same treatment as the common melon, but a larger frame to admit its more extended shoots to spread themselves.

Citrus or Water Melon. Fl. May, Sep. Ch. 1597. Pl. tr.
16 C. MEXICANUS (Wildl. spec. 4. p. 613.) leaves cordate and angular, rather hoary; angles rounded; fruit cylindrical, muricated; male flowers aggregate, nearly sessile; female ones solitary.

17 C. MEGACAREA leaves palmate; fruit long, ovate, very full of anastomosing fibres, which look like net-work when the fruit is dried up.

Large-fruited Cucumber. Pl. tr.
18 C. PECLUSignum (Wildl. I. c. p. 614.) leaves cordate, rather angular, acutish, sharply toothed, scabrous; fruit, elliptic, obtus, pubescent, green, painted with more obscure narrow stripes. F. Native country unknown. Fruit 3 inches long, elliptic, and an inch thick, obtuse at both ends, covered with fine down.

19 C. MACULATUS (Wildl. spec. 4. p. 614.) leaves cordate, obliquely angular, roundly obtuse, denticulated, scabrous; fruit elliptic, narrow at the base, glabrous, when young painted with broad green stripes; but when mature, white, variegated with green spots; connectives much longer than the anthers. F. Native of Guinea. Fruit smooth. Ser. diss. l. c. t. 3.

20 C. colocythus (Lin. spec. 1435.) stems trailing, rather hispid; leaves cordate-ovate, multifidly lobed, covered with white pili beneath; lobes obtuse; petioles equaling the limb of the leaf; tendrils short; flowers axillary, solitary, pedunculate; female ones having the tube of the calyx glabrous, and rather hispid, crowned by a spreading campanulate limb, and narrow segments; petals small; fruit glabrous, glabrous, yellowish at maturity, with a thin solid rind, and very bitter flesh. F. Native of Japan and Turkey. —Blackw. herb. t. 441. —Sabb. hort. 1. t. 70. —Mor. hist. sect. 1. t. 6. f. 1. Fruit about the size of an orange. The colocynth is a native of Turkey. The fruit is about the size of an orange; its medullary part, freed from the rind and seeds, is alone made use of in medicine; this is very light, white, spongy, composed of membranous plates, of an extremely bitter, nauseous, acrimonious taste. The fruit is gathered in autumn, when it begins to turn yellow, and is then peeled and dried quickly, either in a stove or in the sun. Newmann got from 7680 parts, 1680 alcohol extract, and then 2160 watery; and inversely 3600 watery, and 224 alcoholic. The seeds are perfectly bland, and highly nutritious; and we learn from Captain Lyon, that they constitute an important article of food in Northern Africa. The extract of colocynth is one of the most powerful and useful of cathartics, but there is no more efficacious way of lessening its violence than by reducing its dose.

Colocynth or Bitter Cucumber. Fl. May, Aug. Ch. 1551. Pl. tr.
21 C. CAMPECHIANUS (H. B. et Kunth, nov. gen. amer. 2. p. 123.) stem ciriroidiform; leaves cordate-roundish, sinuately 5-lobed, toothed;lobes rounded, intermediate one the largest; male flowers racemose, few; tube of calyx villous; fruit unknown. F. Native on the shores about Campeachy. Perhaps a variety of C. prophetarum, according to Spreng. syst. 3. p. 47. Campeachy Cucumber. Pl. tr.
22 C. PERIENOS (E. James, exped. rock. mount. 2. p. 345. and in isis 1824. p. 235.) leaves triangularly cordate, with undulated margins; tendrils trichotomous; lobes of calyx subulate; fruit orbicular, smooth, usually 4-celled; seeds ovate, gibbous, with an acute margin. F. Native of or cultivated in North America. Flowers about the size of those of Cucurbita Pino. Fruit nearly sessile.

Perennial Cucumber. Pl. tr.

Cult. See culture of the Cucumber and Melon in the open air in the proper place, for the culture of the rest of the species.

V. LUFFA (Lufff is the Arabic name of L. Egytipica).

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Cav. icon. i. p. 7. t. 9. D. C. prod. 3. p. 302.—Cucumis species of authors, and Monomorica species of authors.

LIN. SIST. Moraesia, Pentandria. Male flowers yellow, in panicles; tube of calyx hemispherical, with the segments longer than the tube. Petals free, deciduous from being ruptured at the base. Stamens 5, not joined. Anthers very fleshy. Female flowers solitary; tube of calyx oblong-clavated, with the segments shorter than the tube. Stamens almost abortive. Stigmas reniform. Fruit ovate, 3-celled. Seeds 2-lobed at the base, reticulated. Flowers yellow.

1 L. PEA'TIDA (Cav. icon. i. p. 7. t. 9.) stem furrowed; leaves cordate, 5-angled, scabrous; the angles acute and serrated; tendrils umbellate; fruit mucronate, not crowned by the limb of the calyx. F. Native of the East Indies, the islands of Bourbon and France, as well as in many places on the western
CUCURBITACEÆ. V. LUFFA. VI. BENINCASA. VII. ERYTHROPAulum.

29
cost of Africa, in fields, hedges, and among bushes. Sims, bot. mag. 1638. Ojoung Bhumü is its Hindoo name.


2 L. cordifolia (Blume, bijdr. p. 929.) leaves cordate, acuminate, sharply toothed, scabrous; flowers dioecious; male ones rather umbellate; female ones solitary; fruit furrowed and wrinkled. ○ F. Native of Java, on the mountains, where it is called by the natives Aroy kajornayan, AroY Kalayar hurit, but Tiwak by the Hindoos.

Heart-leaved Luffa. Pl. tr.

3 L. acutangula (Ser. in D. C. prod. 3. p. 302.) stem twisted; leaves cordate, somewhat 3-lobed, acutely toothed; tendrils univalved, or 2-3-cleft; fruit oval, 10angled, crowned by the linear calyce segments: the rind hard; seeds flat, roundish-oblong, black, and shining at maturity. ○ F. Native of China, and plentiful in India near the habitations of the Indians. Cucumis acutangulus, Lam. spec. 1436. Jact. hort. ind. 3. p. 73, 74. ex Lam. dict. 2. p. 74.—Rumph. amb. 5. p. 408. t. 149. Dringi is the Hindoo name of the plant. Leaves like those of Tussilago Petasites or Vitis, with the scent of Datura stramonium. Male flowers umbellate, female ones solitary. Fruit insipid, but is eaten by the natives of India boiled or pickled.


4 L. plankeata ('a) (Ser. mss. in D. C. prod. 3. p. 302.) leaves cordate, doubly toothed; tendrils 2-3-cleft; fruit obovate, crowned by the marcescent limb of the calyx. ○ F. Native of the East Indies. Cucumis acutangulus /, Lam. dict. 2. p. 74.—Plank. phyt. t. 172. f. 1.

Plunkett’s Luffa. Pl. tr.

5 L. Catte-piicinna (Ser. mss. in D. C. prod. 3. p. 303.) stem tetragonal; leaves cordate, roundish, somewhat 5-lobed, angular; sepals broadly ovate, acuminate; fruit oblong-ellip- tic, mucronate, lined with warts, and crowned by the calyce segments; seeds ovoa. ○ F. Native of Malabar.—Cattpicina, Rheed. mal. 8. p. 15. t. 8. Leaves nearly the size and form of those of Allthea a rosca. Male flowers size of those of Prinodia tenofolia.

Catte-piicinna Luffa. Pl. tr.

6 L. Eeyptica (Mill. dict.) leaves roundish-cordate, lobed; lobes angular, cut at the base, with incumbent margins; tendril simple; fruit ovate-clavate, 10-angled, crowned by the segments of the calyx. ○ F. Native of Arabia. Monardiaca Luffa, Lam. spec. 1435. L. Arábunn, Alp. pl. egypt. p. 199. t. 58.—Mor. hist. 2. p. 35. sect. 1. t. 7. f. 1, 2.—Sabb. hort. 1. t. 62. The Egyptians call the plant Luff or Loff: they cultivate it, and it climbs up the palm-trees, covering, and elegantly adorning their trunks. It is also cultivated largely in China and Cochín-china, if Loureiro’s plant be the same (Coch. p. 590.). The fruit when young is made into a pickle, like the mango, but it has a disagreeable taste, and is not accounted very wholesome.


7 L. Pétolaka (Ser. mss. in D. C. prod. 3. p. 303.) stems terete; leaves cordate, 5-7-lobed; lobes acute, serrated, middle one very long; tendrils bifid; segments of the calyx oblong and bluntish; petals obcordate, toothed, shorter than the calyx segments; fruit ovate-clavate, mucronate, woolly, afterwards furrowed, green, spotted with white, with watery flesh. ○ F. Native of the East Indies.—Pétola, Rumph. amb. 5. p. 405. t. 147.

Pétola Luffa. Pl. tr.

8 L. Pentandrea (Wall. cat. no. 6751.) leaves cordate, downy, 5-7-lobed, mucronately denticulated; middle lobe the longest; female peduncles 1-flowered, solitary; male ones umbellate? ○ F. Native of the East Indies, in Rungpur and Mungeri.

Pentandrous Luffa. Pl. tr.

9 L. graveolens (Roxb. ex Wall. cat. no. 6752.) downy; leaves cordate, obsoletely lobed, and mucronately denticulated; flowers axillary, 2-4 together, on very short peduncles; fruit mucrinated. ○ F. Native of the East Indies, in in Mirkapur.

Strong-scented Luffa. Pl. tr.

10 L. amara (Wall. cat. no. 6754.) scabrous; leaves cordate, 5-7-lobed, middle lobe the longest, all acute; female peduncles 1-flowered, solitary: male ones racemose; fruit long, downy. ○ F. Native of the East Indies, in Rungpur and Gualpara.

Bitter Luffa. Pl. tr.

11 L. hederae (Wall. cat. no. 6755.) leaves cordate, palmately 5-lobed, mucronately denticulated; female peduncles 1-flowered, solitary: male ones racemose; fruit oblong. ○ F. Native of the Burman Empire, at Amherst, and below Melloa.

Ivy-like Luffa. Pl. tr.

12 L. echinata (Roxb. ex Wall. cat. no. 6756.) scabrous; leaves cordate, 5-lobed; lobes rounded, mucronately denticulated; female peduncles 1-flowered, solitary; male ones umbellately racemose; fruit roundish, echiinated by spines. ○ F. Native of the East Indies, in Bandel, Deyra, and Dhooon.

Echinated-fruited Luffa. Pl. tr.

13 L. satiata (Hamilt. ex Wall. cat. no. 6757.) scabrous; leaves cordate, angularly toothed; peduncles racemose. ○ F. Native of the East Indies, in Nathpur, where it is called Satpatia.

Satiata Luffa. Pl. tr.

14 L. parvula (Hamilt. ex Wall. cat. no. 6758.) roughish; leaves 5-7-lobed; lobes acuminate, mucronately denticulated; female peduncles 1-flowered, solitary; fruit long, downy when young. ○ H. Native of the East Indies, in Puraniya.

Small Luffa. Pl. tr.

Cult. Sow the seeds in a hot-bed, and afterwards treat the plants as recommended for ridiging out cucumbers.


L.N. syst. Polygámia, Monóecia. Flowers polygamous, monocious, solitary, yellow. Segments of the calyx short, broad with undulate, toothed margins. Staminodes in 3 bundles in the male flowers, divaricate. Petals obovate-rounded, curved, and undulate; anthers very irregular, with distant convolutions. Female flowers with the stamens as in the males, but usually nearly abortive. Stigmas very thick and irregular. Seeds with thickish margins.

1 B. cerifera (Savi, l.c.) plant very hairy, with a musky scent; leaves cordate, somewhat 5-lobed; lobes acutish and crenated; tendrils simple; fruit ovate-cylindrical, woolly, pendulous, green. ○ F. Native of the East Indies. Cecubíra cerifera, Fisch. cat. hort. Gorenk. ex Savi, l. c. B. cylindrica, Hortul. Cumbilam, Rheed. mal. 8. p. 5. t. 3. The fruit is either short or long, but always covered with numerous fragrant hairs, and clothed with glaucous, glittering bloom. Flowers sometimes hermaphrodite.

Wax-bearing Benincasa. Fl. May, Cl. 1827. Pl. tr.

Cult. Sow the seeds on a hot-bed in spring; and afterwards treat the plants as in ridging out cucumbers.

VII. ERYTHROPAulum (from ἐρυθρός, erythros, red, and παλός, palos, a shaking; application not evident). Blum. bijdr. p. 921. D. C. prod. 3. p. 303.

I.N. syst. Monóecia, Pentandria. Flowers monocious, perhaps only from abortion. Limb of calyx obliquely 5-toothed. Petals 5, ovate, alternating with the teeth of the
calyx, bicellular at the base inside. Stamens 5, opposite the petals, borne at the margin of the tube; filaments short; anthers erect, dehiscing at the side. Style short. Fruit clavate, 1-celled, 3-valved; valves fleshy, partible into two. Seed one coated.

1 E. scandoensis (Blum. bijdr. p. 922.) shrub climbing; leaves stalked, rather peltate, oblong, acuminate, quite entire, glabrous; peduncles branched, axillary; pedicels rather umbellate. The fruit is called Aroy want Ban hong by the natives.

Climbing Erythrophalum. Shrub cl.

Cult. A mixture of loam, peat, and sand, or vegetable mould, will suit this plant; and cuttings will grow freely in the same kind of soil, if placed in heat.

VIII. TURIA (Arabic name of one of the species). Forsk. fl. agr. p. 165. no. 35. Lam. dict. 8. p. 139. D. C. prod. 3. p. 303.

Lin. syst. Monoeция, Pentádria. Flowers monoeocious, male ones umbellate. Calyx 5-parted; segments lanceolate, spreading. Corolla 5-petalled, rotate, yellow. Stamens 5, erect, filiform, in 3 bundles; anthers irregularly curved; rudiment of germ half globe. Female flowers having the calyx and corolla as in the male, but with the stamens castrated. Germin cylindrical, thickened. Stigma 5, 2-lobed. Fruit cylindrical? attenuated, villous, warted.

1 T. cylindrica (Forsk. l. c.) stems twining, 5-angled, scabrous; leaves palmate; lobes toothed; tendrils trifid; fruit terete, attenuated at both ends, villous, crowned by the style and calyx.—Native of Arabia Felix. Gymn. syst. nat. 1. p. 403. ex Lam. dict. 8. p. 140. Flowers yellow.

Cylindrical-fruited Turia. Pl. tw.

2 T. Lelója (Forsk. l. c. p. 165.) stem striated, mealy; leaves 5-lobed, cordate at the base; lobes angular, middle longest, but not lobed; fruit conical, glabrous; seeds size of a small pea. 2. F. Native of Arabia. Gymn. syst. nat. 1. p. 403. ex Lam. dict. 8. p. 140. Lelója is the Arabian name of the plant. Flowers green.

Lelója Turia. Pl. tw.

3 T. cordáta (Lam. dict. 8. p. 140.) leaves cordate, angular, ciliated, 2 inches long.—Native of Arabia Felix. The fruit, when matured, opens at top by a lid, and ejects its seeds with force. Forsk. fl. agr. p. 166.

Cordate-leaved Turia. Pl. tw. trailing.

4 T. Giléf (Forsk. l. c. p. 166.) stem 6 angled, scabrous; leaves 3-lobed, dentilicate, scabrous on both surfaces; fruit ovate, 10-furrowed, glabrous.—Native of Arabia. Flowers small, green. Fruit smaller than a nut, greyish at maturity, dehiscing, with revolute valves. Giléf is the Arabian name of the plant.

Giléf Turia. Pl. tw. trailing.

5 T. Mogádd (Forsk. agr. p. 166.) stem terete, smooth; leaves 3-lobed, quite entire; lateral lobes somewhat 3 lobed; fruit oval-oblong, quite glabrous.—Native of Arabia Felix. Flowers large, white. Immature fruit green, spotted with white, but when mature yellow and eatable. Mogádd is the Arabian name of the species.

Mogádd Turia. Pl. tw. trailing.

Cult. See Cucúrbita, p. 41, for culture and propagation.


Lin. syst. Monoeция, Polyadéphia. Flowers monoeocious or dioecious. Petals joined at the base. Male flowers with a 5-toothed calyx. Stamens in 3 bundles; anthers flexuous. Female flowers with a trifid style. Fruit ovate or globose, smooth; perhaps always few-seeded. Seeds ovate, hardly compressed, more or less margined. Tendrils simple, rarely forked.

* Leaves angular.

1 B. rostro'ata (Rottl. nov. act. serol. 4. p. 215, and Willk. spec. 4. p. 616.) stem filiform, furrowed; leaves cordate, obtuse, dentilicate, scabrous; peduncles axillary, solitary; fruit ovate, angular, acuminate. C. F. Native of Tranquebar. Fruit the size of a pea. Plant scabrous, but when cultivated it becomes smooth in every part. The root of this species is prescribed in India internally in diaphytes, in cases of piles.

Rostrate-fruited Bryony. Pl. cl.

2 B. Perrotetti'ana (Ser. miss. in D. C. prod. 3. p. 304.) tendrils simple, capillary; leaves broadly cordate, unglute, sessile, villous, scabrous, with undulated margins; male flowers, as on p. prod. peduncles; female flowers sessile; fruit ending in a long taper point, sessile, clothed with very long and very numerous hairs; seeds compressed, blue-coloured, granularly edged, and covered with adpressed hairs. 2. S. Native of Senegal. Flowers white.

Perrotet's Bryony. Pl. cl.

3 B. Microna'ta (Blume, bijdr. p. 923.) leaves cordate-ovate, mucronate, rather angular, and repandly denticulated, scabrous from dots above, and smooth beneath; flowers in fascicles, dioecious; berry oval. 2. S. Native of the East Indies, on the mountains, where it is called Parinengie by the natives.

Var. b. denticulata (Ser. in D. C. prod. 3. p. 304.) leaves all undivided,-obliquely denticulated; fruit usually contracted in the middle. 2. G. Native of the Cape of Good Hope. The tender shoots of this plant are aperient, having been previously roasted.


5 B. Verbreadoc'ca (Ait. hort. kew. ed. 1. vol. 3. p. 285. ed. 2. vol. 5. p. 246.) leaves cordate, angular, beset with callous dots above and with pili beneath, therefore scabrous on both surfaces; flowers umbellate; fruit globose; seeds smooth. 2. G. Native of the Catary Islands. Willk. spec. 4. p. 616. Fruit the size of a sloe.


6 B. Sca'bra (Blum. bijdr. p. 923.) leaves cordate, cuspidate, undivided, and somewhat angular, denticulated, scabrous above, rough on the veins beneath; flowers monoeocious; umbels on short peduncles; fruit globose.—Native of the East Indies, on the mountains, particularly in Java. Cucúrbita scabra, Blum. cat. hort. buit. no. 105. Aroy korreg kotak of the Javanese. Allied to B. scabra and B. Japónica.

Rough Bryony. Pl. cl.

7 B. Punca'ta (Thunb. prod. 13.) leaves cordate, angular, callous above, and pilose beneath; peduncles 1-flowered. 2. G. Native of the Cape of Good Hope.

Dotted-leaved Bryony. Pl. cl.

8 B. Repán'da (Blum. bijdr. p. 923.) leaves cordate, cuspidate, repandly denticulated, scabrous above and puberulous beneath; umbels pedunculate; flowers dioecious; buxous globose.
Native of Java, in the higher mountain woods of Bureangang.

Repand-leaved Bryonia.  Pl. cl.

9 B. cordata (Thumb. in Hoffm. phyt. blatt. 5. ex Pers. ench. 2. p. 594.) leaves cordate, scabrous, denticulated; flowers axillary, twin.  Z. S. Native country unknown. B. Thunbergiana, Dietr. ex Steud. nom.

Heart-leaved Bryonia.  Pl. cl.

10 B. angulata (Thumb. prod. 13.) leaves 5-angled, scabrous on both surfaces; flowers unbellate.  Z. G. Native of the Cape of Good Hope.

Angular-leaved Bryonia.  Pl. cl.

11 B. leucocarpa (Blume, bijdr. p. 924.) leaves ovate-oblong, acuminate, deeply cordate at the base, somewhat repandly denticulated, beset with rough dots above, paler beneath; peduncles usually twin, few-flowered; flowers monocous; berries globose.  Z. S. Native of Java, at the foot of Mount Salak.

White-fruited Bryonia.  Pl. cl.

12 B. acutangula (Thumb. prod. 13.) leaves angular, entire, smooth, glabrous.  Z. G. Native of the Cape of Good Hope.

Acute-angled-leaved Bryonia.  Pl. cl.

13 B. graecus (Lin. mant. p. 128.) leaves cordate, lobed, beset with callous dots above and glandular at the base beneath: terminal lobe obtuse; tendrils simple; fruit oblong, prickly at the base; prickles few, reflexed (ex icon. Burrn.) reddish.  Z. S. Native of the East Indies. Lour. coch. 595.—Rumph. amb. 5. t. 166. f. 1. Peduncles 1-flowered. Flowers large, white, androgynous. Berries red.


14 B. Moimoi (Ser. miss. in D. C. prod. 3. p. 305.) leaves cordate, 5-angled, acutely denticulated; terminal angle elongated and acute; tendrils simple; fruit prickly at the base; prickles few, reflexed; fruit red.  Z. S. Native of Ceylon and of Senegal, in hedges, in which last place it is called Moimoi, according to Adanson. Sencg. p. 159. Burrn. eyzl. t. 19. f. 1. Flowers large, white.

Moimoi Bryonia.  Pl. cl.

15 B. geminata (Blum. bijdr. p. 924.) leaves ovate-cordate, or somewhat hastate, bluntish, obsoletely denticulated, scabrous from dots; flowers pedunculate, twin, monocous; berries oval.  Z. S. Native of Java, about Linga-jattie at the foot of Mount Tjermani, where it is called Wawalahan by the natives.

Twin-flowered Bryonia.  Pl. cl.

16 B. Cochinchinesis (Lour. coch. 595.) leaves 5-angled, rough; flowers monocous, large, axillary, solitary, on long peduncles; fruit ovate, acutish at both ends, 10-angled, red, smooth; seeds oblong-ovate, compressed, smooth.  Z. G. Native of Cochinchina, in hedges. Flowers yellow.

Cochin-china Bryony.  Pl. cl.

17 B. Abyssinica (Lam. dict. 1. p. 497.) stem villous on the apex; tendrils simple; leaves cordate, toothed, large, soft, nearly glabrous; upper ones angularly-lobed; pedicels and peduncles very villous; flowers twin, yellow; fruit unknown.  Z. G. Native of Abyssinia and neighbouring parts of Africa.

Abyssiniana Bryony.  Pl. cl.

18 B. Jaroxica (Thumb. jap. p. 325.) leaves cordate, undivided, and angular, toothed, green above, and beset with very minute hairs: pale beneath, and beset with scaly dots.  Z. G. Native of Japan, near Nagasaki.

Japan Bryony.  Pl. cl.

19 B. sagittata (Blum. bijdr. p. 925.) leaves on short petioles, sagittate, glaucous-beneath; male peduncles subumbellate, female ones 1-flowered.  Z. S. Native of Java, about Batavia, in humid bushy places. Allied to B. heterophylla and B. umbellata.

Sagittate-leaved Bryony.  Pl. cl.

20 B. Bluemei (Ser. miss. in D. C. prod. 3. p. 305.) leaves ovate-cordate, or cordately-sagittate, acuminated, repandly dentilicate, scabrous; flowers monocous, male ones umbellate, female ones solitary; berries oblong.  Z. S. Native of Java, near Batavia, among bushes. B. heterophylla, Blum. bijdr. p. 925., but not of Steud. Allied to B. marginata.

Blume’s Bryony.  Pl. cl.

21 B. marginata (Blum. bijdr. p. 924.) leaves cordate-ovate, acuminated, rather angular at the base, obsoletely denticulated, marginate, rough; umbels on long peduncles; berries oblong.  Z. S. Native of Java, about Rompian, where it is called Korro-routeng Kambibie by the natives.

Marginate-leaved Bryony.  Pl. cl.


Umblellated-flowered Bryony.  Pl. cl.

23 B. amplexicaulis (Lam. dict. 1. p. 496.) stem angular, glabrous; leaves smooth, cordate, rather angular, stem-clasping, dotted, and glaucous beneath; upper leaves generally narrowly 3-lobed; flowers small, solitary, axillary, pedunculate; fruit solitary, acuminated, smooth.  Z. S. Native of the East Indies. Flowers white.

Variable-leaved Bryony.  Pl. cl.

24 B.? heterophylla (Steud. nom. p. 128) lower leaves cordate, upper ones cordate or denticulate; tendrils solitary; flowers solitary, pedunculate, hermaphrodite; fruit scarlet; seeds blackish.  Z. S. Native of Cochinchina and China.

Solena heterophylla, Lour. coch. p. 514. Flowers pale.

Dowry Bryony.  Pl. cl.

25 B. ? heterophylla (Steud. nom. p. 128.) leaves cordate, somewhat 5-lobed; lobes acute, with spiny teeth; pedicels villous; tendrils long, much branched; flowers small, white, downy, umbellate.  Z. G. Native of the Levant. Flowers whitish.

Madder Bryony.  Pl. cl.

26 B. Maderaspatana (Berg. pl. cap. p. 351.) stem angular, cirrhose, glabrous; leaves cordate, oblong, acuminated, toothed, scabrous from small callous dots above, hairy beneath; stipulas awl-shaped, solitary; flowers twin, axillary.  Q. S. Native of the East Indies. Cucumis Maderaspatana, Lin. spec. 1438.—Pluk. altn. t. 170. f. 2.

Madras Bryony.  Pl. cl.

27 B. hederaefolia (Jacq. fragm. 73. no. 230. t. 113.) dioecious; root thick, fleshy; stem terete, glabrous, with the internodes distant; tendrils very long, simple; leaves cordate, somewhat 5-angled, quite entire, rather wrinkled above, and hispid beneath; racemes simple, many-flowered; calycine segments of the male flowers lanceolate and acute; lobes of the corolla ovate, acute, yellowish.  Z. S. Native of Teneriffe.

Flowers yellowish.

Ivy-leaved Bryony.  Pl. cl.

28 B. ? heterophylla (Ser. miss. in D. C. prod. 3. p. 306.) stem filiform, furrowed, rough, with the internodes longer than the leaves; tendrils simple, narrow, and spirally twisted; leaves cordate, lanceolate, on short petioles, somewhat 5-angled, bluntly toothed, clothed with a kind of roughomentum beneath; terminal lobe elongated; fruit thin, globose, sessile, smooth; seeds wrinkled from dots, girded by a slender zone.  Z. S. Native of the island of Timor. Flowers white.

Althaea-like Bryony.  Pl. cl.

29 B.? pedunculosa (Ser. miss. in D. C. prod. 3. p. 306.)
plant pilose; stem pilifer, striated, having distant internodes; tendrils bifid; leaves on long petioles, cordate, long-acuminate, crenately toothed, beset with long, distant hairs; flowers large, in loose racemes; peduncles longer than the leaves; pedicels long, pilose; fruit unknown. **G.** Native of Nipaul.

*Hedgehogs.* Pl. cl.

30 B. RIEDELI (Blum. bijdr. p. 925.) leaves on short petioles, oblong, cordate, rather angular at the base, remotely denticulated, smoothish, dotted above, glaucous beneath; upper leaves hastately 3-lobed; male pedicels disposed in dense racemes, 1-flowered, bearing one bracteae in the middle of each, female pedicels solitary, 1-flowered. **L.** Native of Java and Malabar, on the mountains. Rheod. mal. 8. t. 26. The plant is called *Aroy-hui-Walleh* by the natives of Java.

*Rheode's Blyony.* Pl. cl.

**Leaves lobed.**

31 B. FRIECA (Rottl. in nov. act. berol. 4. p. 223.) stem furrowed, glabrous; leaves coriaceous, somewhat cordately 3-lobed, usually dentate, rough; lateral lobes somewhat 2-lobed, intermediate one elongated, acuminate; flowers monocious, male ones umbellate, female ones solitary; berries globose. **S.** Native of Java, about Rompilen, in corn fields. Wild. spec. 4. p. 610.—Blum. bijdr. p. 925. *Corro-bontung* of the natives of Java. The root of this species was once supposed to be the famous colombo-root, to which it approaches very nearly in quality.

*Earth Blyony.* Cht. 1815. Pl. cl.

32 B. SCABRELLA (Lin. suppl. 421.) stem muricate, hispid; leaves 3-lobed, toothed, closely hispid on both surfaces; lateral lobes dilated, angular, intermediate one elongated, acuminate; petals hispid; flowers axillary, nearly sessile, numerous; fruit nearly globose, beset with a few obverse strigie; seeds muricate. O. F. Native of the East Indies. Wildl. spec. 4. p. 619. *Balbon tengang* of the Hindoos. Flowers yellow. *Habit of Melothria.*

**Var. a.** leaves smaller; seeds tuberculare. Blume, l. e.

**Var. b.** leaves coarsely toothed, as in the preceding variety, and beset with scarce striige; berries elliptico-globose. Blume, l. c.


33 B. LATEBROSA (Ait. horiz. kew. ed. 1. vol. 3. p. 384. ed. 2. vol. 5. p. 347.) leaves somewhat 3-lobed, pilose, attenuated at the base, hardly cordate, running down the petiole on one side only. **G.** Native of the Canary Islands. Flowers white.


34 B. THLEORAYA (Thumb. prod. 13. but not of Lour.) leaves 3-lobed, smooth above, and scabrous beneath. **G.** Native of the Cape of Good Hope.

*Three-lobed-leaved Blyony.* Pl. cl.

35 B. STIPULACEA (Willd. spec. 4. p. 620.) stem shrubby? furrowed; tendrils trifid; leaves cordate, 3-lobed, toothed, glabrous, smooth on both surfaces; stipules roundish, concave, serrated; flowers monocious, solitary; fruit ovate, acutish, glabrous, yellow, 5-celled, many-seeded. **G.** Native of Cochinchina. B. triloba, Lour. coch. p. 595. but not of Thumb. B. agristis, Rausch. ex Steud. nom. phan. p. 123. Flowers white.

**Var. b.** perpusilla (Blum. bijdr. p. 926.) leaves membraneous, deeply cordate, 3-lobed, obscurely denticulated, scabrous from margins above, smooth beneath: lateral lobes rather angular, intermediate one elongated, acuminate; flowers umbellate, monocious; fruit pea-formed. **S.** Cultivated perpusilla, Blum. cat. hort. but. p. 105. Native of Java, in the shady parts of mountains. The plant is called *Hamphr Bogor,* and *Korres koda* by the Javanese.

*Large-stipited Blyony.* Pl. cl.

36 B. AMERIAENA (Lam. dict. 1. p. 498.) root thick; stem angular; leaves cordate, 3-lobed, angular, wrinkled, with spine-formed teeth; lobes of corolla narrow, white inside; fruit ovate, red, few-seeded; seeds compressed. **S.** Native of the Antilles.—*Plum. spec. 3. icon. p. 66. ex Willd. spec. 4. p. 620.

*American Blyony.* Pl. cl.

37 B. GUINEENSIS; leaves cordate, petiolate, 5-lobed; lobes acute, toothed; peduncles axillary, many-flowered; tendrils axillary. **O. S.** Native of Sierra Leone. Flowers red.

*Guinea Blyony.* Pl. tw.

38 B. COROOLFILA (Lin. spec. p. 1483.) leaves cordate, oblong, 5-lobed, toothed, scabrous from callous points; terminal lobe hardly longer than the rest; tendrils twin; flowers racemose, monocious; stems distinct; fruit globose, black; seeds unknown. **G.** Native of Europe, in woods and hedges, as in Sweden, Denmark, and Carniola. Lam. ill. t. 769. Fl. dan. t. 813. Flowers whitish or yellowish.


40 B. JUCIFER (Jacq. fl. austr. t. 195.) stem climbing; leaves cordate, 3-lobed, toothed; flowers callous, from callous points; terminal lobe the longest and very dissimilar, perhaps always; tendrils simple; flowers racemose, dioecious; follicles pilose at the base; fruit globose, red; seeds ovate-globose, rather compressed, grey, variegated with black. **H.** Native of Europe, in hedges; plentiful in England, particularly in calcareous counties. Smith, engl. bot. t. 483. Mill. fig. t. 71.—Blackw. herb. t. 37. B. albiflora, Huds. 437. Wood. med. bot. t. 189. Flowers white, with elegant green ribs and veins. The root grows sometimes to an immense size; it is a famous hydrogogue, and highly purgative and acrid, a drachm of it in substance, or half an ounce of it infused in wine, is said to be a full dose; others give 2 drachms in dyspeptic cases. As a purgative it has great effect on some, while on others it has hardly any; but it frequently becomes diuretic and diaphoretic. A cold infusion in water is used externally in scabies pains. A cataplasm of it is a most powerful disinfectant. The best season to take up the roots for use in is autumn. It is called in English, *white wild vine,* *wild hops,* *white Blyony,* *wild hop,* _Tetter-berry._

**Var. b.** lutea (Ser. mss. in D. C. prod. 1. c.) leaves deeply lobed; lateral lobes nearly linear, terminal one lanceolate, bidentate laterally; fruit and seeds yellow. **H.** Native of Auvergne, in hedges and woods.


41 B. VITIS (Lin. comm. 2. p. 404.) leaves cordate, 5-lobed, apiculate, scabrous from hairs; peduncles umbiliferous. **G.** Native country unknown.


42 B. CREATICA (Lin. spec. 1139.) root fleshy; stems climbing; leaves cordate, 5-lobed, quite entire, ciliated, muricate on both surfaces; terminal lobe the largest; tendrils simple, spiral; flowers dioecious; female ones axillary, twin; fruit globose, red; seeds smooth, ovate. **O. H.** Native of Candia. Desf. coroll. p. 91. t. 70. ann. mus. 12. t. 17. Flowers pale.


43 B. QUEQUELOBA (Thumb. prod. 13.) flowers dioecious; leaves 5-lobed, scabrous above; lobes very blunt, mucronately toothed, mucrinated behind; tendrils simple; peduncles of male flowers 1-flowered, twin; calyx broadly campanulate, and acutely toothed; corolla campanulate, half 5-cleft; fruit unknown. **G.** Native of the Cape of Good Hope. Ker. bot. reg. 82. Sims, bot. mag. 1820. Flowers brown.

44 B. Nipalensis (Ser. mss. in D. C. prod. 3. p. 307.)... Native of Nipaul.

*Nipaul* Bryony. Pl. cl.


46 B. acetus (Desf. fl. atl. 2. p. 360.) stem slender; leaves somewhat 7-lobe'd; lobes lanceolate, acute, entire, or toothed; tendrils simple; male peduncles many-flowered; calycine segments narrow, acute; fruit unknown. 2. H. Native of the kingdom of Tunis, in hedges. Corolla campanulate, spirally cleft, twice the size of that of *b. alba*.

Acute-lobed Bryony. Pl. cl.

47 B. variata (Mill. dict.) leaves palmate, with lanceolate segments, which are dotted above and smooth beneath. 2. S. Native of America. Fruit ovate, scattered. Variegated Bryony. Pl. cl.

48 B. marajo's (in D. C. prod. 3. p. 308.) stem thick, striated; leaf cordate, lobed; angles cut; lobes toothed; petioles long; male flowers large, racemose, on long peduncles; female ones solitary, pedunculate; fruit obtlong, pilose. 2. S. Native country unknown. Leaves large, size of those of the common vine.

Large-leaved Bryony. Pl. cl.

* *** Leaves palmate.

49 B. racemosa (Mill. dict. and Swartz, prod. 116. fl. ind. occid. 2. p. 1148.) lower leaves rather palmate, upper ones 5-lobe'd and undivided; segments of the leaves ovate; flowers racemose; pedicels rather secund; fruit oval. 2. S. Native of Jamaica and St. Domingo, in woods and hedges.—Plum. and Ed. 83, t. 97. Roots oblong, fleshy. Flowers yellowish.

Racemose-flowered Bryony. Pl. cl.

50 B. pinatifida (Burch. cat. geogr. no. 2098. voy. 1. p. 547.) leaves ternately palmate, with pinatifid lobes, and linear and oblong, obtuse, veinless segments. 2. G. Native of the Cape of Good Hope.


51 B. tenuffolia (Gill. mss. ex Hook. et Arn. in bot. misc. 3. p. 234.) leaves 3-parted; segments bipinnatifid; female peduncles solitary, simple, equal in length to the petioles; fruit oval, smooth, 2-seeded. 2. G. Native of Chili, in the Pampas, in the province of Cordova; and in sandy places near Santa Fe, and also of Buenos Ayres. The vernacular name of the plant is *Agi del Toreno*.

Fine-leaved Bryony. Pl. cl.

52 B. levius (Thumb. prod. 13.) leaves cordate, palmate, serrated, smooth; flowers axillary, rather umbellate. 2. S. Native of the Cape of Good Hope.

Smooth Bryony. Pl. cl.

53 B. palmata (Lin. spec. 1438.) leaves cordate, palmate, smooth, 5-parted, with lanceolate, repandly serrated segments, lateral segments the shortest; fruit large, globose. 2. S. Native of Ceylon.


55 B. acutocapitata (Willd. 1. c. p. 624.) leaves palmately 5-parted; with linear-lanceolate, 5-parted lobes, having sebacious margins; tendrils simple; peduncles axillary, 1-flowered. 2. S. Native of the East Indies.

Holhocks-leaved Bryony. Pl. cl.

56 B. lacinioba (Lin. spec. 624.) leaves palmately 5-parted, cordate, rough, and blistered; with obluro-lanceolate, acuminated, serrated segments; petioles nutribucted; peduncles 1-flowered, nutribucted; corollas hairy inside, or tormentose, but smooth on the outside; fruit the size of a cherry, striated with white; seeds obovate, circled by a longitudinal elevated zone. 2. S. Native of Ceylon. Hern. Hort. lund. 95. t. 97. *Aray-periadinge* of the Hindoos. Flowers yellow.


57 B. cucumerosa (Ser. in D. C. prod. 3. p. 308.) seeds rusty, transversely oblong, surrounded by a very thick dotted zone. 2. S. Native country unknown. Cucumerosum, Thunb. ex Gurtin. fruct. 2. p. 485.

Cucumber-like Bryony. Pl. cl.

58 B. africana (Thumb. prod. 13. but not of *Lin*.) root tuberous; upper leaves palmately 5-parted; lobes oblong, deeply toothed; lower leaves cordate, having the angles toothed. 2. G. Native of the Cape of Good Hope. Willd. spec. 4. p. 624.—Herm. par. 107. t. 108. Male flowers in subumbellate panicles. Fruit mucronate.


59 B. saana (Lam. dict. 1. p. 497.) stems slender; lower leaves roundish-cordate, quite entire; upper ones deeply 3-lobe'd; lobes obtuse. 2. S. Native of Africa.

Dwarf Bryony. Pl. cl.


61 B. digitata (Thumb. prod. 13.) leaves digitate; with linear 2-lobe'd sebacious segments; flowers umbellate. 2. G. Native of the Cape of Good Hope.

Digitate-leaved Bryony. Pl. cl.

62 B. wallischina (Ser. mss. ex D. C. prod. 3. p. 309.) stem filiform, striated; leaves nearly sessile, sagittate, rugged from warts; terminal lobe lanceolate-linear, very long, somewhat dentilicate; lateral lobes oblong, redexied, remotely dentilicate; male flowers in fascicles, numerous, on short peduncles; fruit unknown. 2. G. Native of Nipaul. B. filiformis, Roxb.

Wallich's Bryony. Pl. cl.

Cult. The hardy perennial species are plants of easy culture, only requiring to be planted in the ground. The stow perennial species should be grown in pots, and the stems trained up the rafters. The seeds of annual kinds require to be sown in a hotbed in spring, and when the plants are of sufficient size may be planted out in a sheltered situation. All the species are propagated by seeds. None of them are worth growing, except in botanic gardens.

Lan. syl. Monocica, Polyndaphikia. Flowers monocious; male ones with a 5-toothed calyx, and a 5-parted corolla; teeth of calyx subulate. Filaments 3? or more probably 5, in 3 bundles. Female flowers with a trifid style, and a thickish trifid stigma. Fruit 1-seeded from abortion, usually beset with spines. Seeds obovate. Male and female peduncles many-flowered, usually rising together from the same axilile.

1 S. angulatus (Lin. spec. 1438.) leaves cordate, angular, denticulated, scabrous; lobes 3-5, acuminate; tendril umbellate; male flowers in corymbose heads, each head on a long common peduncle; female flowers sessile, in bundles at the tops of the peduncles; fruit ovate, spinouscent, and tomentose; seeds truncate at the base, and very blunt at the apex. 

Native of North America. Lam. ill. t. 796. f. 2.—Dill. elht. 58. t. 51. f. 59. Flowers sulphur-coloured. Fruit beset with yellow spines, and curlingomentum.


2 S. Bryoniefolius (Moris, hort. taur. sem. 1831.) leaves cordate and angular, denticulated, hispid below; teeth of calyx obsolete; capsule clammy and warted. C. S. Native country unknown. This species differs from S. angulatus and S. parviflorus in the stem being hardly pilose on the joints, the rest smooth; in the peduncles being short, the flowers umbellate; male ones 5-8 pedicellate, female ones almost sessile.


3 S. Parviflorus (Willd. spec. 4. p. 630.) branches glabrous; leaves cordate, rather angular, denticulated, roughish; tendrils trifid; male flowers racemose, on long pedicels; female ones in sessile capitulate umbels; fruit crowned by the permanent calyx, size of an orange; seeds unknown. F. Native in the temperate parts of mountains about Quito, near Chillo, at the height of 4000 feet. Not of Mexico, H. B. et Kunt. nov. gen. amer. p. 2. p. 119. Flowers whitish. Fruit rarely solitary.


4 S. Baderoa (Hook. et Arn, in bot. misc. 3. p. 234.) leaves cordate, angular, minutely denticulated, glabrous on both surfaces; angles acuminate; lobes at the base of the leaf lying over each other; tendrils trifid; flowers few, capitate in both sexes; female peduncles one-half shorter than the male ones; fruit ovate while young. Y. G. Native about Valparaiso. Baderoa bryoniefolia, Bertero.

Baderoa's Single-seeded Cucumber. Pl. cl.

5 S. Pentaedrus (Wall. cat. no. 6682.) leaves cordate, denticulated, flowers racemose; racemes numerous, sometimes aggregate, and branched. ? S. Native of the East Indies. Pentaedrous Single-seeded Cucumber. Shrub cl.

6 S. Depeii; leaves broadly cordate, 7 lobed; lobes acuminate, middle lobe the longest; margins acutely denticulate, rough on both surfaces from conical hairs; male racemes elongated; fruit glomerate, ovate, nearly glabrous, but beset with strong retrograde prickles. S. Native of Mexico, near Jalapa. Flowers smaller than those of S. angulatus, but larger than those of S. parviflorus. Sicyos, nov. spec. Schlecht. et Cham. in Linn.ana. vol. 5. p. 88. Seeds the size of those of Citrus medica.

Depeii's Single-seeded Cucumber. Pl. tr.

7 S. Acutes (Rafin. fl. bore. p. 118.) climbing; leaves lobed; fruit glomerate, ovate, acute, bristly; bristles echinate, interwoven. F. Native of Louisiana.


8 S. Microphyllus (H. B. et Kunt, gen. et spec. amer. 2. p. 119.) branches roughish; leaves sinuate-cordate, 7 lobed, denticulated, roughish; tendrils smoothish, trifid; male flowers on long peduncles and pedicels; female flowers in crowded, nearly sessile heads; fruit echinated from bristle-formed hairs, size of an apple seed; seeds unknown. F. Native of Mexico, on the burning Mount Jorullo, at the height of 1620 feet. Small-leaved Single-seeded Cucumber. Pl. July, Sep. Clt. 1823. Pl. tr.

9 S. Pachycarpus (Hook. et Arnott, in Beech. bot. p. 83.) branches glabrous; leaves cordate, 5-7 lobed, denticulate, glabrous above and papillose, scabrous beneath; tendrils glabrous, trifid; male flowers in panicles; female ones in crowded heads; fruit ovate, rostrate, unmarked. F. Native of the Island of Oahu, on the Diamond Hill among the volcanic rocks. Allied to S. microphyllus.


10 S. Vittifolius (Willd. spec. 4. p. 626.) the whole plant clothed with very fine clammy down; leaves cordate, with a roundish recess, 5 lobed, toothed. F. Native country unknown. Flowers yellow, twice the size of those of S. angulatus. Fine-leaved Single-seeded Cucumbers. Clt. ? Pl. tr.


12 S. Triquetrous (Moc. et Sesse, fl. mex. ined. ex D. C. prod. 3. p. 309.) stem bluntly furrowed; leaves cordate, 5 lobed; lobes broad, obtuse, somewhat denticulate; tendrils much branched; calyx and corolline lobes 3; male flowers racemose, pedunculate, aggregate subtendiculate; female flowers subumbellate; fruit elongated, unmarked, triquetrous; seed oblong-cylindrical. F. Native of Mexico, in Chilapa. Flowers yellow. Fruit 6 lines long, acuminate, somewhat 3-winged. Triquetrous-fruited Single-seeded Cucumber. Pl. tr.

Cult. Sow the seeds in the hot-bed in spring, and treat the plants as directed for Guards, p. 42. Not worth growing except for curiosity.


Lin. syl. Monocica, Monodelphia. Flowers monocious, white or yellow; male ones disposed in racemes or corymbs; calyx petaloid, campanulate, with hardly conspicuous teeth, and with the corolla hardly gamopetalous. Female flowers solitary, or rising from the same axis with the males. Calyx elongated, petaloïd, echinated at the base, and girding the carpels; neck filiform, more or less elongated, at length dilated, and bearing the corolla and stamens. Style thick; stigma capitate. Capsule coriaceous, reniform, echinated, 1-celled, 2-3-valved, many-seeded, opening plastically, and ejecting the seeds.

1 E. gennelli (D. C. prod. 5. p. 310,) leaves cordately subagitate, somewhat 5 angled, with the middle angle acuminate; tendrils bifid; male flowers in long racemes; neck of calyx long, campanulate; petals ovate, acutish; fruit curved, 3-celled; prickles distant. F. Native of Mexico. Moc. et Sess. fl. mex. icon. ined.

2 E. cavatriculata (Dim. syl. 1873.) leaves cordate, angular, denticulated, echinated, roughish above; flowers white, sweet-scented; male ones in panicles; female ones solitary; tube of calyx terete above the ovariun, not dilated at the apex; petals linear-lanceolate, acute; fruit kidney-shaped, hispid;
seeds winged? flat, tridentate at the base, ex Kunth. O. F. Native of South America, in the hot regions of the province of Caracas, on the shore of Lake Tacarigua, in Laguna de Valencia; and in the Island of Cura, at the height of 690 feet. Lam. ill. t. 743. Jacq. amer. 241. t. 154. icon. pict. p. 115. t. 292. Corolla yellow. Fruit size of an olive.

**Cucurbitaceae.**

**XI. Elaterium.** XII. Momordica.

35. *petals* Native male bractea middle fruit calyx Charantia, Native Native tendrils peduncles male leaves lobes anthers tube tendrils tendrils males oblong, peltately hispid flowers lobed, white. form, not seeds of O-

**Carthaginian Squirtling Cucumber.** Fl. June, July. Clt. 1823. Pl. cl. 73.

3 E. **Tamnoches** (Willd. enum. p. 950.) leaves cardate, acuminate, remotely serrated, smoothish above, and hairy beneath; flowers yellowish; female flowers having the tube of the calyx campanulate above the ovaryum; petals 4-7, ovate; style very short; stigma large, flat; fruit 2-valved, few-seeded; seeds unknown. O. F. Native of Mexico. E. hastatum, Brouss. but not of H. B. et Kunth.


4 E. **hastatum** (H. B. et Kunth, nov. gen. amer. 2. p. 120.) leaves cordately sinuated, triangularly hastate, acuminate, denticulated, rather scabrous above, and glabrous beneath; tendrils simple or bifid; male flowers racemose, pedicellate, minute; fruit oblong, reniform, muricate, 2-valved, size of an olive; seeds 6, roundish, compressed, tridentate at the base. O. F. Native of Mexico, on the declivities of the burning Mount Jorullo, and the temperate regions near Patzcuara, at the height of 1620 or 3320 feet. Habit of Melothria pendula, according to Kunth.

**Hastate-leaved Squirtling Cucumber.** Pl. tr.

5 E. **quadrijugum** (D. C. prod. 3. p. 310.) stem, peduncles, petioles, and tendrils downy; leaves cardate, orbicular, 7-angled; tendrils bifid, pilose; male flowers umbellate; calyx long, tubular, articulated towards the base, and dilated at the apex, with the limb hardly evident; petals 4, linear-lanceolate, acute; female flowers hardly pedunculate, like the male ones; style filiform, crowned by an ovate stigma; fruit very pilose. O. F. Native of Mexico. Moc. et Sesne, fl. mex. icon. inde. Flowers white.

**Quadrijugum Squirtling Cucumber.** Pl. tr.

6 E. **brachystachyum** (D. C. prod. 3. p. 310.) leaves 3-lobed, quite entire, ciliated; middle lobe oblong, acuminate; flowers cream-coloured; male ones in spikes; tube of calyx campanulate at the apex; female flowers with a very gibbous hispid calyx, and a short neck, which is campanulate at the apex; capsule oblique, incurved, echinated with 8-10 long soft prickles, 2-3-valved, larger than those of the other species. O. F. Native of Mexico.

**Short-spiked Squirtling Cucumber.** Pl. tr.

7 E. **torqueatum** (D. C. prod. 3. p. 310.) leaves somewhat peltately cardate, 5-lobed, dentilicate; terminal lobe the longest, and acuminate; tendrils trifid; flowers greenish-white; male ones in racemes; female ones solitary, echinated at the base, with the neck long and bell-shaped at the apex; petals oblong, bluntish; capsule oblong, 2-valved, acuminate, echinated, with soft prickles. O. F. Native of Mexico. Pl. mex. icon. inde.

**Colored Squirtling Cucumber.** Pl. tr.

8 E. **trifolium** (Spreng. syst. 3. p. 477.) leaves ternate, cut. O. F. Native of Virginia.

**Trifoliate-leaved Squirtling Cucumber.** Pl. tr.

**Cult.** Sow the seeds in a hot-bed in spring, and put the plants out as directed for Gourds, p. 42.


elem. bot. no. 392.—Poppye, Neck. l. c. no. 391.—Ecbalium, Rich.

**Lin. syst.** Monetia, Polypadélphia. Flowers monoecious, white or yellow, on filiform unibracteate peduncles, perhaps always. Male flowers with a 5-cleft calyx, and a very short tube. Corolla 5-parted. Stamens in 3 bundles; anthers connate. Female flowers with 3 sterile filaments, or probably 5, joined in 3 bundles, a tridit style, and a 3-celled ovaryum. Fruit usually muricate, (perhaps always) opening elastically at maturity, and expelling the seeds. Seeds compressed, reticulated, perhaps always.

1 M. **Balsamea** (Lin. spec. 1405.) leaves palmately 5-lobed, toothed, glabrous, shining; fruit roundish-ovate, attenuated at both ends, angular, tuberculated, orange-coloured, splitting irregularly and laterally; bractea cordate, toothed, in the middle of the peduncle; aril red. O. F. Native of the East Indies. Lam. ill. t. 791. f. 1. Charantia, Lob. pempt. t. 670.—Ludv. ect. t. 127.—Blackw. herb. 6. t. 539. a. b. Flowers yellow. This plant is famous in Syria for curing wounds. They cut open the urripe fruit, and infuse it in sweet oil, and expose it to the sun for some days until the oil becomes red. It is applied to a fresh wound on cotton. The Syrians esteem this next to balsam of Mecca. The plant is also used to form arbours or bowers.


2 M. **muricata** (Willd. spec. 4. p. 602.) leaves somewhat palmately 7-lobed,cordate at the base; lobes remotely toothed, acuminate; tendrils almost simple; fruit ovate, acuminate, muricate; bractea cordate, quite entire. O. F. Native of the East Indies. Pavel, Rhed. mal. s. t. 10.


3 M. **charantia** (Lin. spec. 1408.) leaves somewhat palmately 7-lobed, dentate, rather hairy; tendrils downy; fruit oblong, acuminate, angular, tuberculated, copper-coloured or red; pulp yellow and soft; bractea cordate, quite entire, below the middle of the pedicle; seeds oblong, tuberculated (ex Rumph.) arillus of a reddish blood-colour. O. F. Native of the East Indies. Sims, bot. mag. t. 2455.—Rheed. mal. s. t. 17. t. 9. Popareth of the Hindoos. Corolla yellow. Seeds wrinkled very irregularly, yellow bay-coloured, and irregularly tuberculated towards the margin. Allied to the preceding species, but very distinct.

4 M. **Roxburghiana;** downy; leaves cardate, palmately 7-9-lobed, and lobately toothed; tendrils simple; peduncles 1-flowered, solitary, bearing a bractea under each flower; fruit long, muricate. O. H. Native of the East Indies, in Patna. M. charantia ♂ of authors. M. muricata, Roxb. but not of Willd. Roxburgh’s Momordica. Pl. tr.

5 M. **Senegalensis** (Lam. dict. 4. p. 239.) leaves deeply palmate, somewhat serrated, pale and villous beneath; fruit ovate, mucronate, tubercular, orange-coloured or red. O. F. Native of Senegal.


6 M. **cylindrica** (Lin. spec. 1413.) stem 5-angled; leaves cordate, somewhat lobate, angular, toothed; flowers yellow; fruit cylindrical, very long, rather villous, reticulated; bractea quite entire at the base of the pedicle; seeds black. O. F. Native of Ceylon and China. Willd. spec. 4. p. 605. The fruit of the species, according to Rumphius, does not open elastically, being composed of so many reticulated tough fibres.

**Cylindrical-fruited Momordica.** Pl. tr.
CUCURBITACEÆ.

7 M. HEMNEANA (Wall. cat. no. 6744.) leaves 3-lobed, mucronately denticulated; peduncles 1-flowered, solitary, furnished each with a large bractea under the flower, which encloses it before expansion; tendrils simple. C. F. Native of the East Indies. Flowers large.

8 M. SEBANGULATA (Blum. bijdr. p. 928.) leaves deeply cordate, acuminate, rather angular, mucronately denticulated, seceding above; flowers dioecious, 1-bracteate, cordate, quite entire at the top of the peduncle. C. F. Native of Java, on Mount Salak, where it is called by the natives Aroy Gambas. Allied to M. cylindrica and M. dioica. The inflorescence of this plant agrees with the figure in Rumph. amb. 5. t. 150. ex Blume. Fruit fibrous.

**Angular-leaved Momordica.** Pl. cl.

9 M. PAI'NA (Hamilt. ex Wall. cat. no. 6742.) leaves cordate, triangular or hastate, sometimes lobed at the base, acuminate at the apex, coarsely toothed; tendrils simple; female peduncles 1-flowered, solitary; male ones racemose; racemes aggregate; fruit round, beset with a few scattered prickles. C. F. Native of the East Indies, in Goyalpara.

10 M. TUBIFLORA (Roxb. ex Wall. cat. no. 6749.) plant white from down; leaves round, angularly and roundly lobed, cordate at the base; tendrils simple; fruit oblong, acuminated, ribbed; peduncles 1-flowered, solitary, bracteate. C. F. Native of the East Indies.

**Tube-flowered Momordica.** Pl. tr.

11 M. PUBIS (Mart. réise bras. ex Linnaea. vol. 5. p. 40.) stems angular, climbing, clothed with resinous farina at top; leaves ovate-orbicular, acuminated, with a roundish recess, cordate, obsoletely 3-lobed, denticulated; male corymbus erect, axillary; female flowers solitary, axillary, drooping; fruit oblong, crested longitudinally from waris. C. F. Native of Brazil.

**Purging Momordica.** Pl. cl.

12 M. OPERCULATA (Lin. spec. 1433.) leaves 5-lobed, toothed; fruit elliptic, angular, tuberculated, operculated by a deciduous bead. C. F. Native of America. Comm. rar. 23. t. 22. ex Lin. and Willd. spec. t. p. 693. This plant is probably referable to the genus Luffia. The top falling off from the fruit when it is green.


13 M. ELATHEUM (Lin. spec. 1434.) plant seceding, hispid, and glaeeulent; stem dwarf, without tendrils; leaves cordate, somewhat lobed, crenate-toothed, very ruged, on long petioles; fruit ovate, obtuse, hispid, and seceding, on long peduncles; seeds bay-coloured. C. F. or C. H. Native of the south of Europe. Sinis, bot. mag. 1814.—Blackw. herb. t. 108. Woodv. med. bot. t. 43. Elëtherium corydophillum, Meuxh. mat. p. 563. Edulium L. C. Rich. Root thick. Flowers yellow. Fruit green, expelling the seeds when ripe. Perhaps a proper genus. Dr. Chutterback has lately ascertained that the active principle of wild cumbner is contained almost exclusively in the juice around the seeds, and that genuine ELATHEUM is the matter which subsides spontaneously from the juice obtained without pressure. He found that the eighth part of a grain thus prepared seldom failed to purge violently, and of this according to Dr. Barry, from 55 to 64 per cent, were soluble in alcohol of 0-905. The bitter principle found in it is not in itself purgative, but quickens the action of elatin when combined with it. Elatin is a new principle obtained by Dr. Barry of a green colour; it is purgative in very minute quantities. In medicine a few grains of elatherium operates as a drastic purgative, and was sometimes used in dropics. It is high priced, and seldom used, though recommended by Dr. Ferrar.

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14 M. ? LAMBERTI'NA (Ser. in D. prod. 3. p. 311.) hispid; stems prostrate, flexuous; tendrils nearly simple; flowers 4-seeded, denticulated, seceding; petals short; flowers fruit solitary, elliptic, pilose; peduncles short, hispid. C. F. Native of the East Indies. Ecbalium L. C. Rich. Allied to M. elatérîus, but distinct.

15 M. ECHINATA (Muhl. ex Willd. spec. 4. p. 605.) leaves cordate, with 5 lobed angles; lobes acuminated, quite entire, glabrous; tendrils multifid; fruit roundish, 4-seeded, echinated by bristles. C. H. Native of the western parts of Pennsylvania, near the river Ohio. Sieyos lobata, Michx. amer. 2. p. 217. Fruit roundish, size of a gooseberry, beset with long subulate bristles, very like those of Sieyos, but 4-seeded. Flowers yellow.

**Echinated-fruited Momordica.** Pl. tr.

16 M. dioïca (Roxb. ex Willd. spec. 4. p. 605.) stem angular, climbing; leaves cordate, acuminated, toothed, glabrous on both surfaces; tendrils filiform; flowers dioecious; female ones solitary; fruit elliptic, mucrinated. C. F. Native of the East Indies.

**Dioecious-flowered Momordica.** Pl. cl.

17 M. RENGÉ'RA (Wall. cat. no. 6743.) leaves cordate, dentate or distantly and mucronately denticulated; peduncles long, 1-flowered, solitary, furnished each with a kidney-shaped hooded bractea, just below the flower; tendrils simple. Y. S. Native of the Burman Empire, about Prone.

**Kidney-bearing Momordica.** Pl. cl.

18 M. HAMILTONIANA (Wall. cat. no. 6748.) leaves cordate, toothed, crenated, acuminated; bracteae toothed; peduncles 1-flowered, solitary; tendrils simple; fruit hispid. C. F. or C. H. Native of the East Indies, in Goyalpara and Goangachora. Flowers large.

**Hamilton's Momordica.** Pl. cl.

19 M. BICOLOR (Blum. bijdr. p. 928.) leaves deeply cordate, somewhat 5-angled, bluntish, glabrous, mucronately denticulated, with rather strigose margins (when dry dotted above), glandular beneath; flowers dioecious, pedunculate, axillary, usually 3-together; fruit oblong, glabrous, variegated with red. C. F. Native of Java, in calcareous soil near Kuripan, where it is called Aroy Pupassang by the natives. Nearly allied to M. dioïca.

**Var. a.** base of leaves deeply cordate. Native of the Moluccas.

**Var. b.** leaves cordately 3-lobed; lateral lobes angular. Native of Java, on Mount Parang.

**Two-coloured-fruited Momordica.** Pl. tr. or cl.

20 M. ACULEATA (Poir. dict. suppl. 3. p. 223.) stem slender, climbing; leaves palmately pedate, with 5-7 dentately lobed segments, having white scattered dots above, but with the nerves and petioles beset with short prickles beneath; petioles and middle nerves clothed with rough reflexed hairs; male flowers racemose, on long peduncles; female flowers solitary, hardly pedunculate; fruit subglobose, glabrous, size of a pea. C. F. Native country unknown.

**Prickly Momordica.** Pl. cl.

21 M. HYSTRIX (Gill. spec. ex Hook. et Arn. in bot. misc. 3. p. 234.) leaves 5-lobed, glabrous, smooth, somewhat curvated at the base; lobes mucronate, denticulated, middle lobe the longest; tendrils simple; male and female flowers rising from the same axis; male ones disposed in racemes; female ones solitary, pedunculate; fruit oblique, ovate, echinated with strong bristles. C. F. Native of Buecos Ayres.

**Porcupine Momordica.** Pl. tr.
22 M. \textit{lanata} (Thunb. prod. 13.) leaves ternately pinnatifid, scabrous; fruit woolly. ☑ F. Native of the Cape of Good Hope.

\textit{Woolly-fruited Momordica.} Pl. cl.

23 M. \textit{? sicyoides} (Ser. in D. C. prod. 3, p. 312.) stems twining, terete; tendrils simple; leaves triangularly cordate, somewhat 5-lobed, serrulately; female flowers pedunculate, solitary; calyx ovate, pilose, with narrow linear segments; fruit ovate mucronate, very pilose, of a yellowish orange-colour at maturity; seeds subglobose. ☑ F. Native of China—Brazil. Icon. t. 12.

\textit{Sicyoid-like Momordica.} Pl. tw.

24 M. \textit{spectabilis} (Lin. miss. ex Smith in Rees' cyc1. vol. 23.) stems furrowed, rugose; leaves cordate, 5-lobed, undulated, rugose from tubercles; male flowers racemose; racemes on long peduncles; tube of calyx very long; bracteas dilated, toothed, scabrous; female flowers solitary, on short peduncles; seeds elliptic, furrowed, hispid. ☑ F. Native country unknown.

\textit{Sicyoid-flowered Momordica.} Pl. cl.

\textit{Cult.} \textit{M. Elaterrium} and \textit{M. Lauvertii} being hardy, their seeds should be sown in the open border. The seeds of the rest of the species should be sown on a hot-bed in spring, and the plants put out afterwards as directed for \textit{Gourds}, p. 42.


\textbf{Lin. syst.} \textit{Momécea, Monadelphia.} Flowers monoeocious. Male flowers with a 5-parted calyx; and a 5-parted corolla, having an undulated rose margin. Stamens 5, diadelphous, having a gland alternating with each fascicle; one of the fascicles bearing 2 anthers, the other trigonal, and bearing 3 anthers. Anthers sessile, stellate. Female flowers with a parted corolla and calyx. Ovarium inferior, beset with 5 series of warts. Style trifid, girdled by 3 glands at the base; stigma 2-lobed. Fruit fleshy, 5-celled, but when mature 1-celled, 3-9-seeded. Seeds girdled by mucilaginous red aril, flat, nerved, with anastomosing veins, and a rugged edge. Perhaps a proper genus.

1 N. \textit{Cuspidata} (Rafn. l. c.) Native of Kentucky, North America. Perhaps the same as \textit{Moméridca batsaménsa}?

\textit{Cuspidate Neuroperma.} Pl. tr.

\textit{Cult.} See Sicyos p. 34. for culture and propagation.


\textbf{Lin. syst.} \textit{Momécea, Monadelphia.} Flowers monoeocious. Yellow. Male flowers with a somewhat 5-toothed calyx, exca
tated into 10 hollows, and with the corolla joined with the calyx. Stamens 4-5, monadelphous, free at the apex, diverging; anthers corolate, distant. Female flowers with a calyx and corolla, as in the male, but without stamens. Style thick; stigma subcapitate, 3-5-cleft. Fruit obcordate, 1-seeded. Seed ovate, flat, compressed.

1 S. \textit{elute} (Swartz, fl. ind. occid. 2, p. 1150.) stems terete, striated, smooth; leaves cordate, angular, rugose beneath; lobes connivent at the base, toothed; terminal angle longest and acu
nated; tendrils 4-5 cleft; male flowers racemose; female flowers solitary, arising from the same axis as the males; fruit large, obovate, 5-furrowed, gibbous at the apex, echinated by stiff hairs. ☑ F. Native of the West Indies, common. Sicyos edulis, Swartz, Prod. 116. Lam. dict. 1. p. 156.—Jacc. amer. p. 258. t. 193. Chayóta edulis, Jacq. amer. 2, t. 245. This plant is known in South America under the name of \textit{choko} and \textit{chajade}. The fruit is green, shining on the outside, whitish, and fleshy within, differing in size and singular in structure, containing one seed each, which is sometimes an inch long, and placed at the very top of the fruit; when it is ripe it protrudes itself a little, and puts forth many fibres at its extremity. In many of the West Indies the inhabitants put the fruit into soups or puddings, or boil it and eat it with their meat as a substitute for turnips or greens, in which state it is generally looked upon as wholesome and refreshing, but it is too insipid to be much liked. The fruit serves to fatten hogs in the mountains and inland parts of Jamaica, where the plant is much cultivated. The natives of Cuba notice two varieties; one which is most common they call \textit{choko}; it is best with harmless prickles, sometimes in great abundance, and sometimes with very few, and is about 4 inches in length; the other, less frequent, called \textit{chajade frances}, is for the most part entirely destitute of prickles, and is about the size of a hen's egg.


2 S. \textit{America} (Lam. dict. 7. p. 50.) leaves cordate, angular; flowers racemose; fruit glabrous, a little compressed, size of a pigeon's egg; seed oval-elliptic. ☑ F. Native of Jamaica. Fruit eatable like the last. This is perhaps the \textit{chajade frances} mentioned above.

\textit{American Choko.} Pl. cl.

2 S. \textit{Palmaeatum} (Ser. in D. C. prod. 3, p. 313.) stems terete, bluntly furrowed; tendrils simple; leaves palmately lobed, scabrous; stipula or bracteae sessile, corolate, 3-5 cleft; male flowers racemose; common peduncle short, many-flowered; filaments monadelphous at the base, and divericate towards the apex; female flowers twin, nearly sessile; fruit prickly, green, size of a silt. ☑ F. Native of Mexico, in Acachaltampa. S. palmátum, Moc. et Sessee, fl. mex. icon. ined.

\textit{Palmae-leaved Choko.} Pl. cl.

\textit{Cult. See Cucurbita, p. 42. for culture and propagation.}


\textbf{Lin. syst.} \textit{Momécea, Polyadelpia.} Flowers monoeocious. Male flowers with a 5-toothed calyx and a campylanthe corolla; petals orifoliate or toothed, not fringed. Filaments 5, in 3 parcels. Female flowers. Style 1; stigmas 3, fringed. Fruit 3-celled, many-seeded. Seeds unknown.

1 M. \textit{pendula} (Lin. spec. p. 49.) leaves cordate, 5-lobed, toothed; tendrils simple; female flowers solitary, on long peduncle; corolla rather pilose, denticulated; fruit ovate, nearly globose, pendulous. ☑ S. Native of South America, and the southern parts of North America. Lam. ill. t. 28. f. 3.—Pluk. alm. t. 85. f. 5.—Sloan. jam. p. 327. t. 142. f. 1.—Plum. spec. 5. t. 66. f. 2. Stems rooting at every joint. Flowers small, pale yellow. Fruit about the size of a pea, changing to black when ripe. In the West Indies these are pickled when green by the inhabitants.


2 M. \textit{forida} (Desr. in Lam. dict. 4. p. 87.) root fleshy, tur
tip-formed; leaves cordate, a little toothed, pilose, almost sessile; tendrils simple; male flowers racemose; peduncles short, few-flowered; female flowers solitary, sessile along with the males; fruit ovate, muricate, mucronate, pilose, of a dirty yellow colour; seeds obovate, compressed. ☑ S. Native of Guinea. Trichosanthes falcédissima, Jacq. coll. 2. p. 341. icon. rar. 3. t. 624. Flowers yellow. Herb fetid when bruised.


3 M. \textit{? indica} (Lour. cochr. p. 35.) stems angular; leaves triangular, denticulated, rough, small, on long petioles; flowers usually solitary, pedunculate, white; fruit ovate-oblong, smooth, small, whitish green. ☑ S. Native of Cochlin-china, in Bengal. —Rumph. amb. 5. t. 171. f. 2. ex Lour. l. c. Flowers white.
Indian Melothria. Pl. tr.

Cult. See Siegus, p. 54, for culture and propagation. The plants will exist through winter if kept in a stove.

XVI. TRICHOSANTHES (from греч. thrice (thrix) trikos, a hair, and αυτος, anthos, a flower; fringed or ciliated corollas). Lin. gen. no. 1476. D.C. prod. 3. p. 313.—Ceratoanthus, Juss. gen. p. 396.—Angulina, Mich. gen. 12.

Lin. syst. Monoe'cium. Monadsphila. Flowers monococious, white. Male flowers: Calyx rather club-shaped, 5-parted; lobes appressed, furnished with 5 teeth on the outside, which alternate with the lobes. Corolla 5-parted, ciliated; filaments 3, but probably 5, joined by twos; anthers joined, with very flexuous cells. Female flowers. Calyx 5-toothed. Corolla 5-parted (f. 2, a.), ciliately jagged. Style trifid (f. 2, d.). Stigma oblongly subulate. Fruit oblong, 1½ or 3-9-celled (f. 2, c). Seeds compressed, tumicate, blunt, very much deformed?

1 T. Angulina (Lin. spec. 1432) stem pentagonal; leaves cordate, 3-lobe; (reapantly toothed, puberulous; tendrils trifid, very long; male flowers racemose; racemes on long peduncles; calyces lobes very short, tooth-formed; lobes of corolla ovate, ciliately jagged; fruit terete-oblong, ending in a long beak, hispid, splitting. © F. Native of China. Lam. Ill. t. 794. Sims, bot. mag. 472.—Mill. fig. t. 32.—Mich. gen. 12. t. 9. Cucumin anguins, Lin. spec. 1437. Ex Lam. dict. 2. p. 75.—Rumph. amb. 5. p. 407. t. 148. Kukhijinjang of the Himala.

Flowers white. Fruit near a foot long.


2 T. Costata (Blum. biijdr. p. 933) leaves corolate, 3-lobe, denticulated, scabrous; lateral lobes somewhat 2-lobe; male flowers racemose, bracteate; female ones solitary; fruit ovate, oblong-rubbed. © F. Native of Java, about Batavia and the western provinces, on the margins of rivers, where it is called lopan by the natives.

Ribbed-fruited Snake-Gourd. Pl. tr.

3 T. Columbina (Jacq. fil. eclog. t. 128) stems furrowed, thickish; tendrils bifid; leaves roundish, corolate, 3-5-lobe; lobes short, broad, toothed; male flowers in panicles; common peduncles very long; female flowers sessile, solitary or in the same axes with the males; calyx very long, with a reflexed limb; fruit nearly terete, very long, lined; seeds obovate, red. © F. Native country unknown.

Viper Snake-Gourd. Pl. tr.

4 T. Nerifolia (Lin. spec. 1432) stem slender; leaves corate, 3-nerved; toothed; petiole short; tendrils bifid; male flowers racemose; racemes on long peduncles; lobes of corolla oblong, ciliate jagged; female flowers solitary; fruit ovate, acutish, green, lined with white, about the size of a hen's egg. © F. Native of the East Indies. Rhed. Hort. mal. 8. t. 17.

Nerve-leaved Snake-Gourd. Pl. tr.

5 T. officinalis (Hamilt. ex Wall. cat. no. 6694) scabrous; leaves corolate, denticulated; petiole hispid; female peduncle 1-flowered, solitary; fruit round, smooth. © © S. Native of the East Indies, in Chilimari.


6 T. Scabra (Lour. cooh. p. 589) branches woody, furrowed; leaves corolate, roundish, wrinkled, scabrous; tendrils bifid; flowers monococious; corolla shortly ciliated; fruit roundish, red, 10-angled, 5-celled; seeds flat, oblong. © G. Native of Cochini-china. Flowers white. Fruit small.

Scabrous Snake-Gourd. Shrub cl.

7 T. Cuspidata (Lam. dict. 1. p. 188) stem twining; leaves cordate, oblong, acute, toothed; tendrils simple; male flowers unknown; female flowers nearly sessile, on short peduncles; calyx long, tubular, with nearly linear, acute, stalked, ciliate, fringed segments; fruit ovate, ending in a long point. © F. Native of the East Indies.—Rheed. Mal. 8. t. 15. T. Caudata, Wildsp. 4. p. 600.

Cuspidate-fruited Snake-Gourd. Pl. tw.

8 T. Angulata (Lam. dict. 1. p. 190) stems angular, very slender, villous; leaves cordate, roundish, small, angular; tendrils forked, longer than the leaves; male flowers panicked; common peduncles much longer than the leaves; female flowers solitary, peduncule. © F. Native of the East Indies. Petals fringed.

Angular-stemmed Snake-Gourd. Pl. tr.

9 T. Villosa (Blum. biijdr. p. 954) leaves corolate, tricuspidate, obsoletely denticulated, villous; peduncles 1-flowered; fruit nearly globose, striated with white. © F. Native of Java, about Rompian and Buitenborg, where it is called Badug by the natives. Fruit indischiscent.

Villous Snake-Gourd. Pl. tr.

10 T. Ovigerum (Blume, l. c.) leaves deeply corolate, mucronate, sometimes sinuated, mucronately denticiled, shining above, and rough beneath; female peduncles 1-flowered; fruit ovate, vittate. © F. Native of Java, on Mount Salak, where the plant is called Tiwuk by the natives.

Egg-bearing Snake-Gourd. Pl. tr.

11 T. Grandiflora (Blum. l. c.) leaves large, quintuple-nerved, ovate, sometimes tricuspidate, quite entire, coriaceous, quite glabrous; flowers bracteate, disposed in dense spikes. © F. Native of Java, in humid places on the mountains, where the plant is called by the inhabitants Kalayar Budak.

Great-flowered Snake-Gourd. Pl. tr.

12 T. Coriacea (Blum. l. c. p. 935) leaves somewhat quintuple-nerved, corolate, acuminated, quite entire, coriaceous, reticulated above and glabrous, but paler and rough beneath; male flowers bracteate, in loose racemes, on elongated peduncles. © F. Native of Java, on Mount Salak, where the plant is called by the inhabitants Piet-tjyn-tjelling. Allied to T. grandiflora.

Coriaceous-leaved Snake-Gourd. Pl. tr.

13 T. Heteroclita (Roxb. ex Wall. cat. no. 6694) leaves smooth, coriaceous, 3-lobed, seldom 5-lobed; lobes acuminated, entire; peduncles racemose; tube of calyx long. © © S. Native of the East Indies, in Gualypara.

Variable-leaved Snake-Gourd. Shrub cl.

14 T. Cucumisina (Lin. spec. 1432) febrif; stems tetragonal, rather pilose; leaves corolate, angular, rather villous, petiole, with white nerves, and mucrinated petiole; tendrils bifurcate; male flowers disposed in something like umbels; female flowers solitary, on short peduncles; calyces lobes ovate; petals fringed at the apex; fruit ovate, mucronate, smooth, green, lined with white, but at last becoming orange-coloured; seeds with sinuated margins. © F. Native of Java, in the province of Bantam. Blum. biijdr. p. 934.—Rheed. Mal. 8. t. 15. Flowers white. The seeds are sometimes used in disorders of the stomach and bowels, and the plant is celebrated for its virtues in Hortus Malabaricus.


15 T. Anaba (Lin. spec. 1432) stems terete, glabrous; tendrils simple; leaves corolate, triangular, sinuated, scabrous from dots, stalked; female flowers solitary; peduncles longer than the leaves; calyx long, tubular, with lanceolate, acute segments; petals roundish-ovate, fringed; fruit ovovate-oblung, 9-celled, green, striped with longitudinal white lines; flesh white and
bitter; seeds oblong, narrow. 〇 F. Native of St. Domingo.

—Plum. descr. pl. amer. t. 100.

Bitter-fruited Snake-Gourd. Pl. tr.

16 T. hexasep'tema (Blumm. bijdr. p. 935.) leaves 3-nerved, ovate, tricuspidate, quite entire, coriaceous, glabrous; male flowers bracteate, disposed in racemes: female flowers solitary; fruit globose, 6-seeded. 〇 ? F. Native of Java, at the foot of Mount Salak, where it is called Aroy-pitiung-Tjelleng by the natives.

Six-seeded Snake-Gourd. Pl. tr.

17 T. Russell'ana (Wall. cat. no. 6096.) smoothish; leaves cordate, hastately 3-lobed, nearly entire; tendrils simple; peduncles 1-flowered. 〇 ? S. Native of the East Indies.

Russell's Snake-Gourd. Shrub cl.

18 T. Macrao'apa (Blum. l. c.) leaves cordate, orbicular, 5-lobed, but sometimes 3-lobed, coriaceous, glabrous; lobes ovate, acuminate, quite entire; lateral lobes rather bifid; fruit large, globose; stem suffruticose. 〇 ? S. Native of Java, on the mountains.

Long-fruited Snake-Gourd. Shrub cl.

19 T. tricuspi'data (Lour. coch. p. 589.) stems shrubby; tendrils trifid; leaves cordate, tricuspidate, denticulated, glabrous, many-nerved; stipules roundish, thick, created; flowers spicate, or perhaps paniedite; bracteas large, toothed; fruit yellow, small, ovate, 2-celled, 2-seeded. 〇 F. Native of Cochín-china; and among bushes and on the margins of rivers in Java. Flowers white. Tricuspidate snake-Gourd. Pl. cl.

20 T. Pilosa (Lour. coch. p. 588.) stems suffruticose, very long, furrowed; tendrils bifid; leaves cordate, denticulated, pilose on the veins, lower ones palmate, upper ones 3-lobed; male flowers? in spikes; bracteas large, lanceolate, ciliated; fruit ovate, acute, scarlet, 1-celled; seeds rhomboid, compressed, lobed, brown. 〇 ? S. Native of Cochín-china. Flowers white as in the rest of the species, fringed with curling hairs.

Pilose snake-Gourd. Shrub cl.

21 T. Laciniosa (Klein, ex Willd. spec. 4. p. 601.) stems filiform, angular, glabrous; leaves deeply cordate, palmately 5-7-lobed, remotely toothed, glabrous on both surfaces; male flowers disposed 4 or 6 in a corymb; petals ovate, toothed; female flowers solitary: petals ciliately fringed. 〇 ? F. Native of the East Indies.

Jagged-leaved Snake-Gourd. Pl. tr.


23 T. Chin'kese (Ser. in D. C. prod. 3. p. 315.) leaves cordate, triangular, bluntish, rather angular; petioles short; tendrils simple; male flowers solitary; calyx long, clavate, rather pilose; petals obovate, with fringed margins; female flowers solitary, almost sessile; tube of calyx ovate, acuminate, pilose: petals not fringed; fruit ovate, striated, ending in a long point. 〇 F. Native of China. Brauna. icon. t. 13.

China Snake-Gourd. Pl. tr.

24 T. Tann'ifolia (Poir. dict. suppl. 1. p. 386.) stems glabrous, striated; tendrils simple; leaves ovate-roundish, rather lobed, or entire, scabrous above; male flowers small, in loose racemes; petals villous? reflexed; fruit ovate, mucronate, glabrous. 〇 F. Native of Porto Rico.

Tamusnus-leaved Snake-Gourd. Pl. tr.

25 T. ru'bera (Blumm. bijdr. p. 936.) leaves deeply cordate, tricuspidate, denticulated, rather tomentose beneath; female flowers solitary; fruit ovate, acute. 〇 F. Native of Java, on the mountains, where the plant is called by the natives Aroy-kalayar-burun.

Downy Snake-Gourd. Pl. tr.

26 T. globo'sa (Blumm. bijdr. p. 936.) leaves palmately 3 or 5-lobed, quite entire, glabrous; lobes linear, acute; male flowers bracteate, disposed in dense spikes, on thick peduncles; female flowers solitary; fruit globose. 〇 F. Native of Java, on Mount Salak, where the plant is called Aroy-jantang by the natives.

Globose-fruit-Snake-Gourd. Pl. cl.

27 T. Palm'ii (Roxb. ex Willd. cat. no. 6688.) puberulous; leaves cordate, 3-5-lobed; lobes denticulated; peduncles racemose; corolla fringed. 〇 ? S. Native of the East Indies. Bracteas toothed.

Palmate-leaved Snake-Gourd. Shrub cl.

28 T. Tribol'iata (Blum. l. c.) leaves ternate; leaflets denticulate, scabrous; lateral ones gibbous at the base; male flowers bracteate, disposed in something like racemes; female flowers solitary; fruit ovate, muricate (ex Rumph); seeds complicate, denticulated? 〇 F. Native of Java, in the province of Krawang, near Tjirardjas. Monómórica trifoliáta, Lin. spec. 1494. Amára sylvestris, Rump. amb. t. 153. f. 2.

Triboliate-leaved Snake-Gourd. Pl. cl.

29 T. Lob'ata (Wall. cat. no. 6693.) downy or puberulous; leaves 5-7-lobed; lobes mucronate at the apex, narrowest at the base, denticulated; tendrils branched; peduncles long, bearing a raceme of flowers at the top. 〇 ? S. Native of the East Indies.

Lobed-leaved Snake-Gourd. Pl. cl.

Cult. So the seeds in a hot-bed in spring, and afterwards treat the plants as if they were cucumbers. The shrubby and perennial species should be protected from the frost and cold by placing them in the stove in winter: cuttings will root readily.

XVII. AMPELOSICYS (from aμpελος, ampolo, a vine, and σικος, sicos, a cucumber; intermediate habit.) Pet. Th. veg. d'Afr. p. 68. t. 22.—Fellíüaria, Hook, bot. mag. no. 2751. and 2752. (July 1827.) Fellíüaria, Smith. in bot. mag. t. 2751. Fellíüaria, Bojer, in litt. (1826.) and Delidd. mem. soc. hist. par. vol. 3. p. 314. (July 1827.)

Lin. syst. Diosécia, Monandíphlía. Flowers dioecious. Male flowers. Calyx tubinate (f. 3. a.), 5-cleft; segments acutely denticulated (f. 3. b.). Corolla 5-petalled (f. 3. c.); petals oblong, fringed. Stamens 5, disposed in 3 bundles. Female flowers. Limb of calyx almost wanting, 5-toothed (ex Smith). Corolla as in the male. Stigma capitata, 3-lobed (ex Bojer), 5-lobed (ex Smith). Fruit fleshy (f. 3. c.), 2-3 feet long, and 8 inches thick, elongated and furrowed, divided into 3 twin cells (ex Bojer), into 3 cells (ex Smith). Seeds compressed, nearly orbicular, reticulated on the outside. Cotyledons thick, oily. A climbing plant, with pedate leaves and showy purple flowers.

1 A. scändens (Pet. Th. l. c.) 〇 S. Native of the south-eastern coast of Africa, on the shores of Zanquebar. It has also been gathered in the Mauritius, where it is called by the negroes Koumé. Fellíüaria pedíata, Smith, l. c. t. 2681. a female plant. Telfíária pedíata, Hook, bot. mag. t. 2751 and 2752. with male flowers and fruit. Jol-...
liffia Africana, Delib. l. c. t. 6. Male plant and seed. The seeds are as large as chestnuts, and as good as almonds, and when pressed they yield an abundance of oil, equal to that of the finest olives.


*Cult.* Any light soil will suit this plant, and cuttings root readily under a hand-glass, in heat. It is a strong coarse growing plant, and therefore requires a great deal of room, both for the roots and the branches, or it will not flower.


Lin. syst. *Monocoa, Monandra*. Flowers monocious. Corolla campanulate, yellow; petals joined together and to the calyx. Male flowers. Calyx hemispherically campanulate. Stamens 5, in 3 bundles, or joined at the apex; anthers abruptly curved, both at the base and the apex, the rest straight and parallel. Female flowers. Calyx obovate-ellate, narrowed towards the top, or campanulate, and always circumscribed under the limb after flowering. Anthers usually sterile. Stigma 3, thickish, 2-lobe. Fruit 3-5-celled. Seeds ovate, compressed, with hardly tumid margins. 1 C. *Maxima* (Duch. in Lam. dict. 2. p. 151.) leaves coriace, very rugged; petiole hispid; tube of calyx obvate, ending in a short neck; fruit globose, somewhat depressed, yellow, red, or green. O. F. Native country unknown. Tourn. inst. p. 106. no. 2. t. 34. Leb. icon. 641. f. 2. Cucurbita Potiro, Pers. ench. 2. p. 593.

Var. *a*, *Potiro* (Ser in D. C. prod. 3. p. 316.) stems very long, climbing; tendrils strong; fruit large, yellow, or orange-coloured, hollow at maturity. *Common yellow gourd, potiron jaune commun, gourge de la France*. The shells of the fruit are generally used for holding water.

Var. *β*, *Erivis* (Ser. in D. C. prod. 3. p. 316.) stems very long, climbing; fruit green, large, hollow at maturity. *Large green gourd, Gros potiron vert de la France*. The shells of the fruit of this sort are also used as calabashes.

Var. *γ*, *Gourgero* (Ser. diss. in mem. soc. gen. vol. 3. pt. 2. t. 1.) stems assurgent, dwarf; nodes close; tendrils abortive; leaves ovate, coriace, 3-5-lobed, somewhat coelade; lobes narrow; fruit small, green, or yellow, full at maturity. *Gourgeron ou petit potiron vert*. Large Hollow Gourd. Fl. Jul. Aug. Ch.?. Pl. cl. or tr. 2 C. *Melopepo* (Lin. spec. 1435.) leaves coriace, obtuse, somewhat 5-lobed, dentilicate; tendrils usually transformed into very imperfect leaves; calyx hemispherically campanulate, short, having the throat much dilated; fruit depressed; carpels irregular, rising beyond the throat of the calyx; flesh dry, spongy, white; cells 4-5. O. F. Native country unknown. Willd. spec. l. c. p. 610. C. polymorpha Melopepo, Duch. in Lam. dict. 1. p. 157.—Bauh. hist. 2. p. 224. with a figure. Pepo maximum clupeatus, Mor. hist. 1. sect. 1. t. 8. Fruit flattened at both ends. It is of great use in long voyages, for it can be kept several months in a fresh state, and is commonly made into pies, like the pumpkin, or boiled and eaten with meat instead of turnips or potatoes. *Bouquet de d'extracte, bouquet de préite, et pastisson de la French.*


3 C. *moschata* (Duch. ex dict. scienc. nat. 11. p. 234.) corolla campanulate, very narrow at the base; leaves soft, tomentose; fruit oval or spherical, depressed; flesh yellow or orange-coloured, musky. O. F. Native of Martinique. C. *Indica rotundifolia*, Dakech. hist. 616. f. 3.

XVIII. CUCURBITA.


4 C. *Cératocéas* (Marr. reise, in bras. ex Linnaea. 5. p. 39.) leaves coriace, nearly orbicular, bluntly somewhat 5-lobed, denticulate; fruit large, oblong-pear-shaped, or cylindrical, lined longitudinally, glabrous; flesh subgranular. O. F. Native of Brazil.

*Horned-fruited Cucurbita*. Pl. tr.

5 C. *villosa* (Blum. biijdr. p. 931.) leaves roundish, coriace, 5-lobed, scabrous; lobes acute, sinuate denticulate; peduncles 1-flowered, those of the male longer than those of the female flowers; fruit oblong, villous. O. F. Gathered in the gardens in the East Indies. By the Javanese it is called *Baligo*.

*Villos Gourd*. Pl. tr.

6 C. *Péru* (Lin. spec. 1435.) leaves coriace, obtuse, somewhat 5-lobed, denticulate; calyx ending in a neck beneath the limb; fruit roundish or oblong, smooth. O. F. Native of the Levant. C. *polymorpha oblonga*, Duch. in Lam. dict. 2. p. 155. This species is called *Pumpkin* and *poinpion*, in English; *Gourmon, Citrouille impero, gourge de Saint Jean in French; Popone in Italian*. There are several varieties of poinpion, but the most striking are the two following: *Var. a, abroton échelé* (Willd. spec. 4. p. 509.) fruit roundish. C. major subrotunda, &c. Bauh. pin. 215. *Var. β, oblonga* (Willd. l. c.) fruit oblong. *Pepo oblongus*, Bauh. pin. p. 311.

The pumpkin is the melon or millon of our early horticulturists, the true melon being formerly distinguished by the name of musk melon. Though commonly cultivated in gardens for curiosity, yet in some country villages in England, the inhabitants grow it on dunghills, and train the shoots to a great length on the grass. When the fruit is ripe, they cut a hole on one side, and having taken out the seeds, fill the void space with sliced apples, adding a little sugar and spice, and then having baked the whole, eat it with butter. On the Continent, as well as in many other parts of the world, the fruit is a good deal used in soups, and also stewed or fried in oil or butter. Pumpkin-pie is also very common in many parts of the world.

Moles of dressing some varieties of the gourd.—Mr. Crichton (Cal. mem. vol. 4.) prefers the cheese-gourd, some of which have weighed with him 1 cwt., and the vegetable marrow; but he very judiciously attaches much more importance to the kind of cooking than to the variety cultivated. He therefore subjoins two receipts for the use of the cheese-gourd, and one for vegetable marrow.

To make soup of cheese-gourd.—Take the fleshly part of the gourd when ripe, and cut it into small pieces; put it into a pan with a small bit of butter, set upon a slow fire until it melt down to a purée; then add milk, in the proportion of half a gallon to 1 lb. of gourd, let it boil a short time with a little salt and sugar, enough to make it taste a little sweet; then cut some slices of bread very thin, toast them very well, and cut them into small dice, put them in a dish, and pour the pure over them, and serve it up.

Cheese-gourd dressed in the Spanish way.—When ripe cut the fleshly part into slices about half an inch, score it across into small dice about half through on one side of the slices; scrape a little of the fat of the bacon, and put it into a saucepan, with a little parsley, shallots, and musroomus chopped very small, adding a little salt and pepper; put them on a slow fire to fry a little, and place this seasoning upon the cut sides of the gourd slices. Put the whole into a quick oven, with a little butter or olive oil, and when baked a little serve up in a dish.


7 C. *Farinosa* (Blum. biijdr. p. 931.) leaves roundish, coriace, rather angularly 7-lobed, a little strigose; lobes acuminate, toothed; peduncles 1-flowered; fruit oblong, large, covered with a kind of glaucous mealliness. O. F. Native of Java, in
fields and in gardens, where the plant is called Doligo by the natives. Allied to C. Pepo. Compare Rumph. amb. t. 143, according to Blume.

Meal-y-fruited Gourd. Pl. tr.

8 C. verreciosa (Lin. spec. 1435.) leaves coriace, deeply 5-lobed, denticulated; middle lobe narrow at the base; fruit roundish-elliptic, warty. O. F. Native country unknown.—Bauh. hist. 2. p. 222, with a figure. C. polymorpha verrucosa, Duch. in Lam. dict. 2. p. 155. The plant, flowers, and seed &c. are like those of C. Pepo, but the fruit is smaller, with a harder, almost woody rind. Called Barbareine, and Barbaresque saugeine in French. The warty gourd is common in most parts of America, where it is cultivated as a culinary fruit. It varies in form and size, being round, flat, shaped like a bottle, or oblong; the rind is white when the fruit is ripe, and covered with large protuberances or warts. It is commonly gathered when half grown, and boiled by the inhabitants of America, to eat as a sauce to their meat. In England it is only cultivated as a curiosity.


9 C. subverreciosa (Wildl. spec. 4. p. 609.) leaves coriace, deeply 5-lobed, denticulated; middle lobe narrow at the base; fruit clavately-elliptic, rather warty. O. F. Native country unknown. Perhaps a hybrid from C. verrucosa, but the fruit is very different.


10 C. galantia (Willd. l. c. p. 667.) plant very scabrous; leaves subcordate, 3-lobed, cuspidate, sharply denticulated; fruit globos, smooth, having the appearance and colour of an orange. O. F. Native country unknown. The orange-gourd is rather more tender than the other sorts. It has been hitherto chiefly cultivated for curiosity, and when trained spirally round a pole, or against a wall, and loaded with its yellow fruit, it is very ornamental. The fruit should be used like those of other sorts of pumpkin or gourd.

Var. a. argentina (Ser. in D. C. prod. 3. p. 317.) fruit globose, 5-celled; pulp fibry, yellow, nearly dry, with a solid dark green rind, which at length becomes orange-coloured.—Orangine or Pissou orange in French; orange-gourd, English.

Var. b. colubynthoides (Ser. in D. C. prod. 3. p. 317.) kind of fruit thinner and variegated; pulp dry. Called Colouminelle or Fausse colouminelle in French, and False coloumin in English.


11 C. cocinea; fruit round, scarlet, about the size of an orange. O. F. Native of Sierra Leone.

Scarlet-fruited Gourd. Pl. tr.

12 C. ovirera (Linn. mant. p. 126.) leaves coriace, angular, 5-lobed, denticulated, pubescent; calyx oblong, ending in a short neck, and cut round after flowering to the neck. O. F. Native of Aestranae. C. polymorpha pyridaris, Duch. in Lam. dict. 2. p. 154.—J. Bauh. hist. 2. p. 222 and 223. f. 1. C. sylvester, Dod. pempt. 670. f. 1. C. pyriformis, Lob. hist. 367. f. 2. Herb and flowers very like those of C. Pepo, but less scabrous. Fruit obovate or ovate, smooth, greenish or yellowish, figure of an egg. Called in French Gowgourdette, and Vegetable marrow, in English.

Var. a. pyriformis (Ser. diss. l. c. t. 1.) leaves 5-lobed with undulated margins; lobes oblong-ovate, denticulated, rarely lobulate; fruit pear-shaped, green, or yellow, lined longitudinally with white.

Var. b. subglobosa (Ser. in D. C. prod. 3. p. 318.) leaves bluntly lobed; lobes broad, short; fruit obovate, globos, green lined with white; flesh red.

Var. g. grisea (Ser. l. c.) leaves 3-5-lobed, narrow; middle lobe trapeziform, usually lobulate; fruit larger, greener grey, spotted with white, hardly lined.

Vol. III.
17 C. mammeata (Molina, l. c.) leaves many-parted; fruit spherical, beset with protuberances. \( \odot \). F. Native of Chili.

Tender Gourd. Pl. tr.

18 C. lanosa (Mill. dict.) leaves rough, lobed; fruit woody. \( \odot \). F. Native of South America. This is a large gourd, and is cultivated for the sake of the shell of the fruit, which will frequently contain between 2 and 3 quarts. Where aloes is manufactured in any quantity, it is commonly preserved in these shells; but in Jamaica they are used to hold water, and small grain.


19 C. multiflora (Forst. ex Spreng. syst. 5, p. 45.) leaves broadly cordate, 5-lobed, acute, denticulated, glabrous; flowers minute, crowded in cymes. \( \odot \). F. Native of the Society Islands.

Many-flowered Gourd. Pl. tr.

Cult. The species of Cucurbita are propagated from seeds, which are large, and require to be covered nearly an inch. Sow in April in a hot-bed, under a frame or hand-glass, to raise plants for transferring to the open garden at the end of May, under a warm aspect, or for planting out in the middle of May on a trench of hot dung under a hand-glass or half shelter; otherwise sow at the beginning of May, under a hand-glass, without bottom heat, for transplating into a favorable situation; or sow 3 weeks later (after the 20th) at once in the open garden, under a south wall, for the plants to remain. The smaller fruited kinds do best trained to an upright pole or trellis. From time to time early cup the stems of the plants. As the shoots extend 5 feet or more, peg down at a joint, and they will take root. Water copiously whenever warm weather without showers makes the ground arid. Mr. Gray (Gard. mag. vol. 1. p. 150.) plants in paths between asparagus beds, and lets the vines of the gourds run over them; and he considers that their large leaves do good to the asparagus roots, by protecting them from the sun, while the tall stems of the asparagus afford a shelter to the leaves of the gourds. In very dry seasons they are an excellent substitute for cabbages and turnips, when the drought is apt to burn up these vegetables. Mr. Gray therefore recommends, especially where the soil is liable to be burnt up in summer, planting the vegetable narrow and other cucurbiteous plants as a reserve crop. The tender tops of all the edible species of Cucurbitaceae, boiled as greens or spinach, are a fully more delicate vegetable than the fruit. It must be worth something to gardeners and cooks to know that either or both may be used for this purpose when scarcely anything else can be got.


LIN. SYST. Monocica, Monadelphia. Flowers monocious. Male flowers umbraculate, sessile, involucrated by reniform bracteas, which are dentately fringed at the apex; common peduncle very long, furnished each with an oblong bractea at the base. Alabaster nearly like those of the rose. Tube of calyx obovate; limb with acute linear sepal. Corolla, stamens, and filaments unknown. Anthers joined, with the cells as in the rest of the Cucurbitaceae. Female flowers solitary on long peduncles, rising from the same axillary as the males, as well as of the same form.

1. I. Wallisii (Ser. I. c. t. 4.) leaves deeply 5-lobed, cut, scabrous; lobes obovate-oblong, coarsely toothed; tendrils quinquifid. \( \odot \). F. Native of Nipaul.

Wallis's Involucraria. Pl. cl.

Cult. See Cucurbita for culture and propagation.


LIN. SYST. Monocica, Monadelphia. Flowers monocious. Calyx of 5 sepals, inclosed in a large, undivided, 1-flowered sheath; sepals subulate, striated, coloured, joined together at the base. Corolla campanulate; petals 5, ovate-lanceolate, nerved. Stamens 5, in 3 bundles, and with the anthers connected at the apex. Style 1; stigmas 3, sagittate, horizontal. Berry muricated, 1-celled, many-seeded. Seeds orbicular, large, reticulated, with tubercular margins.

1. M. Cochinchinensis (Lour. 1. c. p. 506.) a large shrub, with 5-lobed leaves, the superior lobes acuminated, and the inferior ones obtuse, short, and denticulated; flowers yellow, solitary, on long peduncles; fruit reddish purple both inside and outside, scentless. \( \odot \). F. Native of Cochinchina and China. Monomorica Cochinchininensis, Spreng. syst. 3, p. 14. The seeds and leaves are aperient and abortergent.

Cochin-china Muricia. Shrub.

Cult. A mixture of peat and sand will answer this shrub; and cuttings will root in the same kind of soil.

XXI. ANGURIA (one of the Greek names for the cucumber, from αγγος, αγγος, a vessel; shape of fruit). Lin. gen. no. 599. Juss. gen. p. 395. Lam. ill. t. 747. D.C. prod. 3, p. 318.—Monomorica spec. of authors.—Psiguria, Neck. elem. bot. no. 384.


1. A. integrifolia (Nees et Mart. in nov. act. bonn. 12, p. 9.) leaves ovate, denticulated, 5-nerved, glabrous; peduncles 4-6-flowered, bractless; female flowers unknown.—Native of Brazil, at the river Ilheos. Flowers red.

Intire-leaved Anguria. Pl. cl.

2. A. thalorata (Lin. spec. 376.) root bitter; stems slender; leaves deeply 3-lobed, or somewhat 5-lobed, veiny; lobes a little toothed; tendrils simple; male flowers large, in racemes, female flowers, white, almost sessile; fruit ovate-oblong, subumbrellate, green, spotted with white; seeds oblong, falcate, 2. \( \odot \). F. Native of Martinico.—Plum. ed. Burm. pl. amer. t. 22. Jacq. amer. p. 243. t. 156. ed. pict. p. 119. t. 234. Flowers vermilion coloured.


3. A. pedatiseta (Nees et Mart. in nov. act. bonn. 12, p. 10.) leaves pedately 5-parted; lobes quite entire; tendrils subumbellate; corymbas many-flowered; flowers triandrous? fruit oblong, striated, attenuated both at the base and apex; pulp white, spongy, rather acid; aril black. \( \odot \). F. Native of Peru. Monotomica pediseta, Lin. spec. 1454. Lam. dict. 4, p. 241.—Feuill. per. 1. p. 754. t. 41. Flowers white. Two or three segments of leaves lobed. The Peruvians use the fruit in soups.

Pedate-cut-leaved Anguria. Pl. cl.

4. A. pedata (Lin. spec. 376.) stems slender, terete; leaves pedately 5-parted; lobes lanceolate, toothed; tendrils longer than the leaves; flowers inodorous, male ones in racemes; racemes on long peduncles; female one solitary; fruit oval-oblong, green, variegated with white. \( \odot \). S. Native of St. Domingo. Jacq. amer. 242. t. 155. ed. pict. t. 233.—Plum. ed. Burm. pl. amer. 23.7. Flowers with orange-coloured petals.

5. *A. rösea* (H. B. et Kunt, nov. gen. amer. 2. p. 122.) branches glabrous; leaves truncate-orbulate at the base, quite entire, 3-lobed at the apex, glabrous, membranous; tendrils undivided, glabrous; male flowers disposed in racemes; calyx cylindrically campanulate, ventricose at the base, with a 5-parted rose-coloured limb, having the segments roundish and longer than the tube; stamens 2, sessile. Z. S. Native of New Granada, in temperate places near Turbaco, at the height of 6000 feet. Flowers rose-coloured.

Rose-coloured-flowered Anguria. Pl. cl. 6. *A. umbrosa* (H. B. et Kunt, l.c. p. 121.) leaves pedately 5-parted, sinuate-orbulate; lobes quite entire, ovate-lanceolate, outer ones much the shortest and divaricate; flowers panicled; peduncles very long; calyx roughish, having the tube ventricose at the base, of a vermilion colour; stamens 2, free; anthers linear; female flowers unknown. Z. S. Native of the temperate provinces of New Andalusia, near Bordones and Cumanacoa.

Shaded Anguria. Fl. June, July. Clt. 1827. Pl. cl. 7. *A. trifoliiata* (Lin. spec. 1576.) stems thickish, terete, rugged; tendrils simple; leaves palmately ternate; leaflets entire: lateral ones unequal-sided; male flowers in racemes pure; tube of calyx long and ventricose; peduncles short; fruit irregularly ovate-oblong, blunted mucronate, 4-celled, green, lined with white; flesh of fruit red, and sweet. Z. S. Native of St. Domingo.—Plum. pl. amer. t. 99.

Trifoliate Anguria. Fl. June, July. Pl. cl. Cult. The species of this genus delight in a light rich soil, and may be propagated either from seeds or cuttings.

† Genera allied to Cucurbitaceae, but are not sufficiently known.


Lin. syst. unknown. Flowers solitary, axillary. Bractea large, concave, involving a large, coloured, 5-sepalid calyx, and girded by 5 scales at the base. Stamens 5.—A doubtful genus, said to be related to the order Passiflorae; but according to St. Hilaire (mem. mus. 9. p. 130.) it belongs to Cucurbitacceae, from the lateral situation of the tendrils.

1. *Commersoniana* (Sert. in D. C. prod. 3. p. 319.) Native country unknown.

Commerson's Zucca. Pl. cl. Cult. See Anguria for culture and propagation.

XXIII. ALLASIA (allana, allas, a sausage; from the colour and form of the fruit resembling a sausage). Lour. coeh. p. 85. D. C. prod. 3. p. 319.

Lin. syst. Tetrándria, Monogynia. Flowers hermaphroditic. Calyx gamosepalous, girded by a short involucrum; segments 5, acutish, hairy. Corolla 4-petalled; petals roundish, very hairy, small. Stamens 4 or perhaps 8 joined by two; anthers 2-lobed? Style subulate; stigma acute. Berry fleshy, large, oblong, obtuse, pendulous, 1-celled. Seeds imbedded in the pulp, ovate, compressed, turmid.

1. *A. Pa'yos* (Lour. l. c.) a tree, with spreading unarmed branches; opposite digitate leaves; the lobes 5, oval, quite entire and pilose; flowers nearly terminal, pale; peduncles many-flowered. B. S. Native of the eastern coast of Africa, on the shores of Mozambique. Jaraéctia Brasiliana, Pison, bras. p. 166. ex Lour. l. c. Flowers pale. Fruit brownish-red. Payor Allasia. Tree.

Cult. A light rich soil will suit this tree, and cuttings will strike root in the same kind of soil under a hand-glass in heat.


1 G. sca'ndens (Lin. spec. 292.) Z. S. Native of Vera Cruz. Jacq. coll. 3. p. 197. icon. rar. t. 538. Lam. ill. t. 144. f. 2. G. Humboldtiana, Ræm. et Schult. syst. 5. p. 492. Fruit ribbed, while young. Flowers greenish-yellow. Leaves 5-lobed. The hairs on the leaves sting like those of a nettle. Climbing Gronovia. Fl. June, July. Clt. 1731. Pl. cl. Cult. Being a tender annual plant, the seeds of it require to be sown on a hot-bed; and after the plants have grown a sufficient size in the seed-pot, they should be potted off singly into other pots, and after a time placed in the stove, and trained upon sticks.

XXV. KOTIBIA (this genus is dedicated to Peter Kolbe or Kolben, a German traveller, who published a description of the Cape of Good Hope). Beav. f. d'ow. 2. p. 91. t. 120. D. C. prod. 3. p. 320.

Lin. syst. Dioica, Monadelphia. Flowers dioecious. Male flowers with a gamosepalous calyx, composed of 5 joined sepals, having a crenulately margined; the corolla is gamopetalous, and 5-lobed; lobes lanceolate, with glandular edges. Nectarium? 5-leaved, having lanceolate lobes, which taper to the base, with their edges plumously dilated. Stamens 5, monadelphous; filaments short; anthers long, connivent. Pistillum unknown.

1 K. e'legans (Beav. l. c.) stem sarmcentose, bearing tendrils; leaves glabrous, petiolate, cordate; peduncles 4-flowered. Z. S. Native of the western coast of Africa, in the kingdom of Benin. Flowers red. Nectarium blue. Elegant Kolbin. Pl. cl. Cult. A light rich soil will suit this elegant plant, and cuttings will root in the same kind of mould under a hand-glass in heat.

Order CIV. PAPAYACEE (this order contains only the Papaw trees). Martius, 1829.—Papayae, Agardh. 1824.—Caricéeae, Turp. in atl. du dict. des sc. nat.

Flowers unisexual. Calyx inferior, minute, 5-toothed. Corolla monopetalous; in the male tubular, with 5 lobes and 10 stamens, all arising from the same line, and of which those that are opposite the lobes are sessile, the others on short filaments; anthers adnate, 2-celled, bursting longitudinally; in the female divided nearly to the base into 5 segments. Ovarium superior, 1-celled, with 5 parietal polyspermic placenta. Stigma sessile, 5-lobed, lacerated. Fruit succulent, indesicient, 1-celled, with 5 polyspermic parietal placenta. Seeds enveloped in a loose mucous coat, with a brittle pitted testa. Embryo in the axis of the fleshy albumen, with flat cotyledons, and a terete radicle, turned towards the hilum.—Trees, without branches, yielding an acrid milky juice. Leaves alternate, palmately lobed, standing on long terete petioles.

It was the opinion of Jussieu that the genus upon which this tribe is based, was a compound of the genera *Manacoa* and *Sycospermum*. No plant belonging to the family is now known in the West Indies. For the genus *Kotibia*, and its congeneric, *Sca'ndens*, Dr. Hooker states, that the leaves of the latter species are so tender, that they are destroyed by the atmosphere of the city of London.
order is founded, held a sort of middle station between \textit{Urticace} and \textit{Cucurbitaceae}. Auguste St. Hilaire has, however, well remarked upon this subject, that the only relation that it has with \textit{Urticace} consists in the separation of sexes, its milky juice, its habit, which is like that of some species of \textit{Ficus} or \textit{Fig}, its foliage, which is not very different from the \textit{Cecropia}, and the position of its stigmas; and to these it wisely attaches very little importance. Its fruit brings it near \textit{Cucurbitaceae}; but its true place is probably nearer to \textit{Passifloraceae}, with which it altogether agrees in the appearance of its testa, in its unilocular fruit, with parietal polyspermous placentas, and its having a calyx and corolla present, differing, however, widely in its habit, and monopetalous flowers.

The fruit of the Papaw is eaten when cooked, and is esteemed by some persons; but it appears to have little to recommend it. Its great peculiarities are, that the juice of the unripe fruit is a most powerful and most efficient vermifuge; the powder of the seed even answers the same purpose, and that a principal constituent of this juice is febrine, a principle otherwise supposed peculiar to the animal kingdom, and to fungi. The tree has moreover, the singular property of rendering the toughest animal substances tender, by causing a separation of the muscular fibres; its very vapour even does this.


Lin. syst. \textit{Die'a}cia, \textit{Decindiaria}. Character the same as the order.

1 C. \textit{PAPA\'YA} (Lin. spec. 1406.) leaves palmately 7-lobed; segments deeply lobed, oblong, acute; male flowers corymbose, \textit{b. S.} Native of both Indies.—Rumph., amb. 1. t. 50, 51.—Merian, Surin. t. 40. Rheed. mal. 1. t. 15. f. 1. Hook. bot. mag. 2898. Ker. bot. reg. 459. The papaw tree is a native of South America and the West Indies, whence it was brought by the Spaniards and Portuguese to the Philippines and the Moluccas; and from these islands, it being of very quick growth, it spread to all the other countries of India. In three years from seed a papaw tree will be 20 feet high, and loaded with flowers and fruit; and for the sake of this fruit the plant is generally cultivated; it has a pleasant sweetish taste, and is much liked by many people; when young it is generally used for sauce; and when boiled and mixed with lime-juice and sugar, is not unlike, or much inferior to, that made of real apples, for which it is commonly substituted. But Sloane says, the fruit is not in general gathered before it is ripe; cut into slices, soaked in water till the milky juice is out, and is then boiled and eaten as turnips, or baked as apples. The juice of the pulp, according to Descourtiz, in the \textit{Flore Medicale des Antilles}, is used as a cosmetic to remove freckles on the skin, caused by the sun; and the negroes in the French colonies employ the leaves to wash their linen instead of soap. As a medicinal plant the papaw tree is particularly deserving of notice. Hernandez long ago spoke of the milky juice of the unripe fruit as a powerful vermifuge; which has been confirmed by M. Charpenter-Cossigni, as mentioned in the Asiatic Researches by Dr. Hemsing (vol. 2. p. 162). A single dose, that gentleman says, is sufficient to cure the disease, however abundant the worms may be. Another writer (Pourpee Desportes) recommends the use of the powder of the seed instead of the juice. But the most extraordinary property of the papaw tree, is that which is related first, I believe by Browne, in his natural history of Jamaica, namely, that \textit{it water impregnated with the milky juice of this tree is thought to make all sorts of meat washed in it tender: but 8 or 10 minutes' steeping, it is said, will make it so soft that it will drop in pieces from the spit before it is well roasted, or turn soon to rags in the boiling.} This circumstance has been repeatedly confirmed, and moreover, that old hogs and old poultry which are fed upon the leaves and fruit, however tough the meat then, the flesh might otherwise be, is thus rendered perfectly tender, and good if eaten as soon as killed, but then the flesh passes very soon into a state of putridity. In the third volume of the Wernerian Society's Memoirs there is a highly interesting paper on the properties of the juice of the papaw tree, by Dr. Holder, who has witnessed its effects in the Island of Barbadoes, and speaks of them as known to all the inhabitants. The juice causes a separation of the muscular fibres. Nay, the very vapour of the tree serves this purpose; hence many people suspend the joints of meat, fowls, &c. in the upper part of the tree in order to prepare them for the table. Such is the effect upon hogs that feed upon the fruit, that the good housewives reject the flesh of such it if it be destined for salting, well knowing that it is not sufficiently firm for the purpose. It is not known whether the juice of this fruit is used in the same manner to render the animal matter or febrine contained in the juice of the Papaw. Two specimens of the juice were brought from the Isle of France; in the one the juice had been evaporated to dryness, and was in the state of an extract; in the other the juice was preserved by being mixed with equal bulk of rum. \textit{Both} were subjected to analysis by Vauquelin. The first was of a yellowish white-colour, and semitransparent; its taste was sweetish; and it had no smell, and was pretty solid; but attracted moisture when kept in a damp place. The second was reddish brown, and had the smell and taste of boiled beef. When the first specimen was macerated in cold water, the greatest part of it dissolved; the solution frothed with soap. The addition of nitric acid coagulated it, and rendered it white; and when boiled, it threw down abundance of white flakes. When the juice of the papaw tree is heated with water, the greatest part dissolves; but there remains a substance insoluble, which has a greasy appearance. It softens in the air, and becomes viscid, brown, and semitransparent. When thrown on burning coals it melted, let drops of grease exude, emitted the noise of meat roasting, and produced a smoke which had the colour of fat volatilized. It left behind it no residue. The substance was febrine. The resemblance between the juice of the papaw tree and animal matter is so close, that one would be tempted to suspect some imposition, were not the evidence that it is really the juice of the tree quite unquestionable. Thomson's System of Chemistry, extracted from the Annales de Chimie, vol. 13. p. 267. Febrine had been previously supposed to belong exclusively to the animal kingdom; but it has since been found in other vegetables, especially in \textit{Foug}. The name \textit{papaw} is abridged from \textit{papaw-iati}, its name in Malabar.


2 C. \textit{stipitifolius} (Jacq. fil. ex Spreng. syst. 3. p. 905.) leaves palmately 7-cleft; segments oblong, acute, middle one trifid; fruit oval, smooth. \textit{b. S.} Native of Peru, about Lima. Flowers yellow. Fruit the shape and size of an orange, edible like the rest.

Citron-formed Papaw. Clt. 1820. Tree 10 to 20 feet.

3 C. \textit{polystachy} (Walld. spec. 4. p. 815.) leaves cordate, 3-cleft; leaves angular, angles acute; flowers corymbose; fruit pear-shaped. \textit{b. S.} Native of Peru, and Chili, on the cliffs along the shore of Valparaiso. Feuille. per. 2. p. 52. t. 39. f. 1. C. Prosopoda, Lin. spec. 1166. ? Flowers rose-coloured. Fruit
yellow, pear-shaped. A doubtful species of the genus, from its small size and branched stem.

**Pear-shaped** Papaw. Clt. 1823. Shrub 3 to 6 feet.

4 C. cauliflora (Jacq. schedbr. 3. p. 33. t. 311.) leaves palmately 5-lobed; intermediate lobe sinuated; segments lanceolate, acuminate; male peduncles usually 5-flowered, rising from tubercles on the trunk. b. s. Native of South America, in the province of Caracas and of Trinidad. Flowers yellowish.

**Stem-flowered** Papaw. Clt. 1806. Tree 10 to 20 feet.

5 C. microcarpa (Jacq. schedbr. 3. p. 32. t. 309 and 310.) leaves 3 or 5-lobed; intermediate lobe 3-lobed; male flowers corymbose. b. s. Native of Caracas and Chili. Flowers yellowish. Fruit the size of a cherry.

**Var. ß., monoica** (Desf. in ann. mus. 1. p. 273.) lower leaves entire (smaller), cauline ones 3-lobed, upper ones 5-lobed; lobes somewhat pinnatifid; flowers monocious, subtruncate, erect. w. s. Native country unknown. Petioles channelled.

**Small-fruited** Papaw. Tree 10 to 12 feet.


**Spiní** Papaw. Clt. 1821. Tree 20 to 30 feet. Cult. These trees grow well in any light rich soil. They may be brought into a fruit bearing state in our stoves, by planting them in large pots, or in tubs made for the purpose.

**Order CV. PASSIFLOREÆ (plants agreeing with Passiflora in important characters).** Juss. ann. mus. 6. p. 102.

D. C. prod. 3. p. 321.

Calyx of 5 (f. 5. a.) or 10 sepals (f. 4. a. f. 6. a. f. 7. a.), combined into a short or elongated tube (f. 7. c.), free at the apex, disposed in 1 or 2 series; outer lobes large, foliaceous; inner ones alternating with the outer ones, and more petal-like than them, sometimes these last are wanting altogether; the sides or throat are lined by filamentous (f. 6. a.) or annular (f. 5. b. f. 6. c.) or membranous coloured processes, which are disposed in one or more series, having the bottom usually closed by a lid-formed appendage. Petals 5 in the tribe Paropsieæ, but wanting altogether in the tribe Passifloreæ. Stamens 5 (f. 4. b. f. 5. d. f. 7. c.), but indefinite in the genus Smeathmannia. Filaments opposite the exterior lobes of the calyx, joined into a long tube which sheaths the stipe of the ovaryum; anthers fixed by the back, petale (f. 4. b. f. 5. c.), reflexed, turned outwards, but reversed they are turned inwards, 2-celled, bursting lengthwise. Torus elongated into a long cylindrical stipe. Ovarium seated on the stipe, ovate, free. Styles 3, rising from the same point (f. 6. c. f. 5. d. f. 4. d.), crowned by a stigma each, which is somewhat 2-lobed. Fruit naked (f. 7. g.), or surrounded by the calyx (f. 8. a.), stalked, 1-celled, 3-valved, having a polyspermous parietal placenta in the middle of each valve; the valves sometimes dry and dehisce, sometimes fleshy and indehiscent. Seeds attached in several rows to the placenta, usually clothed with a large pulpy aril, compressed, and generally scrobiculate. Embryo straight, in the centre of the fleshy thin albumen, having a terete radicle, which is turned towards the hylum; cotyledons flat and foliaceous.—Herbs or shrubs for the most part climbing. Leaves of many forms, alternate, stipulate, usually bearing glands on the limb or petiole. Peduncles axillary, some of which are changed into tendrils from abortion, others are simple, and bear 1 flower each, very rarely branched and many-flowered; however, all the peduncles are floriferous in the upright species, or those that do not climb: always articulated under the flower, and generally furnished with a 3-leaved involucrum at the articulation.

The real nature of the floral envelopes of this remarkable order, is a question upon which botanists entertain very different opinions, and their ideas of its affinities are consequently much at variance. According to Jussieu (Dict. scienc. vol. 38. p. 49.) the “parts taken for petals are nothing but inner divisions of the calyx, usually in a coloured state, and wanting in several species;” and therefore, in the judgment of this venerable botanist, the order is apetalous, or monochlamydous. De Candolle adopts the same view of the nature of the floral envelopes as Jussieu; but he nevertheless considers, we think with propriety, the order polypetalous. Other botanists consider the outer series of the floral envelopes as the calyx, and the inner as the corolla; the one is green and the other coloured. The nature of the filamentous appendages, or rays as they are called, which proceed from the orifice of the tube, and of the membranous or fleshy, entire or lobed, flat or plaited annular processes, which lie between the petals and the stamens, are ambiguous, but are probably abortive stamens. With regard to the affinity of Passifloreæ, Jussieu, swayed by the opinion he entertain of their being apetalous, and De Candolle, who partly agrees and partly disagrees with Jussieu in his view of their structure, both assign the order a place near Cucurbitaceæ; but when we consider the stipitate fruit, occasionally valvarius, the parietal placenta, the sometimes irregular flowers, the stipulate leaves, and the climbing habit of these plants, it is not difficult to admit their affinity with Capparidaceæ and Violaceæ, the dilated disk of the former of which is probably analogous to the innermost of the annular processes of Passifloreæ.

The plants composing the Passifloreæ, are the produce of South America and the West Indies, where the woods are filled with their species, which climb about from tree to tree, bearing at one time flowers of the most striking beauty, and of so singular an appearance, that the zealous Catholics who discovered them adopted Christian traditions to these inhabitants of the South American wildnesses, and at other times fruit tempting to the eye and refreshing to the palate. Several are found in Africa, and a few in the East Indies, of which the greater part belong to the genus Modéeeæ.

Nothing is known of the properties of this order, further than that the succulent fruit and pulp that surround the seeds are fragrant, juicy, cooling, and pleasant in several species.

**Synopsis of the genera.**

**Table I.**

**Paropsieæ.** Petals 5. Ovarium sessile. Upright shrubs without tendrils.

1 **Smeathmannia.** Nectaria 1-leaved, urceolate, surrounding the base of the stamens. Stamens indefinite; anthers incumbent. Stigmas 5, peltate. Capsule inflated, papery, 4-5-valved.
leaves oblong, acute at the base, shining; nectarium cut, beardless. P. S. Native of Sierra Leone, in the mountains, where we have seen it growing in great plenty, and where it forms beautiful upright bushes, loaded with delicate white flowers.


3 S. Media (R. Br. in Lin. trans. 13. p. 221.) branches glabrous; leaves obovate-oblong, obtuse at the base, glabrous, rather opaque. P. S. Native of Sierra Leone. Flowers white.

Intersealate Smeathmannia. Shrub 6 to 8 feet.

Cult. These elegant shrubs grow best in a mixture of loam, peat, and sand; and young cuttings of them strike root freely in the same kind of soil under a bell-glass, in heat.

II. PAROPSIAS (from παρωπής, paropsis, a dish of meat; the seeds are inclosed in a fleshy arilus, of an agreeable sweet taste, much esteemed by the natives of Madagascar, as well as by Europeans). D. C. prod. 3. p. 322.


Edible Paropsis. Shrub 5 to 6 feet.

Cult. For culture and propagation see Smeathmannia.

Tribe II.

PASSIFLORE-VERE. (true passion-flowers.) Calyx with a 5-parted limb. Petals 5 or wanting. Stamens 5 in all, except one plant, which has only 4. Ovarium pedicellate. Some of the pedicels changed to tendrils. Stems generally climbing.


L. Syst. Monadelphia, Pentádria. Tube of calyx very short, having the throat ornamented with a multiple filamentous crown (f. 4. a.). Berry generally pulpy, rarely somewhat membranous.


1 P. Glauca (Humb. et Bonpl. pl. equin. 1. t. 22.) arborescent; leaves obovate-oblong, glaucous beneath, and bearing glands in the axils of the veins; petioles glandless; peduncles dichotomous, 3-5-flowered. P. S. Native of South America, on Mount Quindio, P. amethystalina, Mikin. P. arborescens. Spreng. syst. 3. p. 42. Flowers white. Crown tipped with yellow.

Glaucous Passion-flower. Tree 20 to 30 feet.

2 P. Emarina (Humb. et Bonpl. l. c. t. 23.) arborescent; leaves obovato-lanceolate, acuminate, or emarginate, pubescent beneath, and biglandular at the base; petioles glandless; peduncles dichotomous, 3-5-flowered. P. S. Native of Peru, on the Andes. Flowers white?

Emarginate-leaved Passion-flower. Shrub 10 to 16 feet.

3 P. Ova (Martin. ind. D. C. prod. 1. c.) arborescent; leaves oval, obtuse at both ends, somewhat cuneated at the base, glabrous, glandless beneath; petioles biglandular at the apex; peduncles 2-flowered. P. S. Native of French Guiana.

Ovate-leaved Passion-flower. Shrub.
Sect. II. Polyx'anthema (from πολυς, poly, many, and ανθος, anthos, a flower; in reference to the peduncules bearing many flowers). D. C. mem. soc. gen. 1. pt. 2. p. 435. prod. 3. p. 322. Peduncules many-flowered, sometimes twin, with a tendril in the middle, sometimes solitary and branched, the middle ending in a tendril. Involucrum wanting or very small. Limb of calyx 3-lobed. Petals 5. Stems climbing.

4 P. cirkifiôra (Juss., in ann. mus. 6. t. 41. f. 1) leaves pedate, glabrous; petiole branched, biglandular above the base; leaflets 5, ovate, having 1 tooth on each side at the base; peduncles branched, bearing flowers and tendrils. Native of French Guiana, in woods. Form of leaves like those of P. pedata. Crown variegated with white, yellow, and red.

Tendril-flowered Passion-flower. Shrub cl.

5 P. septen'ata (D. C. prod. 3. p. 323) leaves pedate; petioles branched, glandless; leaflets oblong, having 1 tooth on each side at the base; tendrils simple, distinct from the peduncles. Native country as well as the flowers unknown.

Septen'ate-leaved Passion-flower. Shrub cl.


7 P. sxtên'dora (Juss. loc. c. t. 37. f. 1.) clothed with soft velvety down; leaves coriace at the base, very broad, truncate at the apex, 3-lobed; petioles glandless. Native of St. Domingo and Jamaica.

Six-flowered Passion-flower. Shrub cl.

8 P. genniniflôra (D. C. prod. 3. p. 322) pubescent; leaves cuneated at the base, very broad, truncate, sinuate 3-lobed at the apex, glabrous beneath and shining above; petioles glandless. Native of Brazil.

Twin-flowered Passion-flower. Shrub cl.

9 P. molucca'na (Reinw. in Blum. bijdr. p. 938) leaves oblong, mucronate, somewhat emarginate at the base, quite entire; petioles biglandular; cymes bifid, many-flowered. Native of the Moluccas.

Molucca Passion-flower. Shrub cl.


10 P. tet'ändra (Banks, herb. ex D. C. prod. 3. p. 323) glabrous; leaves oval-oblong, acuminate, quite entire, glandless. Native of New Zealand. Flowers small, greenish.

Tetrandrous Passion-flower. Shrub cl.


11 P. fâ'llida (Lin. amen. 1. p. 218. t. 10. f. 2. exclusive of the synonymes) leaves glabrous, ovate, acuminate, 3-nerved; petioles biglandular above the middle; pedicels 1-3 together. Native of St. Domingo and Brazil.—Plum. amer. p. 75. t. 89. Ker. bot. mag. t. 600. Flowers small, yellowish-green.


12 P. cu're'a (Lin. amen. i. p. 219. t. 10. f. 3) leaves glabrous, ovate, glandular beneath, between the axis; petioles glandless; pedicels solitary. Native of the islands of Providence and Bahama. Jacq. icon. rar. 3. t. 606. Flowers blood-coloured, an inch and a half in diameter. Berries purplish.


13 P. Cayá'nille'en (D. C. prod. 3. p. 323) leaves glabrous, ovate, glandless, ciliated with stiff hairs; petioles glandless; pedicels solitary. Native of the West India Islands. Ciprea, Cav. diss. 10. p. 448. t. 273. Flowers pale purple; crown copper-coloured, but violaceous at the base.


14 P. multiplô'ra (Lin. amen. 1. p. 221. t. 10. f. 7) leaves ovate-oblong, entire, clothed with velvety down beneath; petioles very short, biglandular at the apex; pedicels numerous in the axes of the leaves. Native of St. Domingo, Cav. diss. 10. t. 272. There are varieties with the leaves either glabrous or downy above. Plum. amer. t. 90. Flowers greenish. Style purplish.


15 P. aur'icula (H. B. et Kunth, nov. gen. amer. 2. p. 131) leaves glabrous, ovate, rounded at the base, glandular beneath; petioles arched by 2 glands beneath the middle; pedicels 1 or 2 together. Native of the banks of the Oriñoco, in shady places, at the cataract of Maypure. Flowers white, but the calyx is greenish on the outside.


16 P. Nipaule'nis (Wall. tent. t. 11) smooth; leaves coriaceous, quite entire, 5-nerved, glandular beneath and on the petioles; peduncles bracteate, aggregate; crown triple, exceeding the calyx. Native of Nipaul, on woody hills in the great valley. Leaves glaucous, furnished with 2 glands underneath at the insertion of the nerves, and 2 in the middle of the petioles. Peduncles 2-3-flowered. Flowers small, white, with a greenish crown. Berry yellow, about the size of a small cherry.

Nipaull Passion-flower. Shrub cl.

17 P. lito'taris (H. B. et Kunth, l. c. p. 138) leaves beset with silky hairs on both surfaces, hastately 3-lobed, and nearly entire; petioles bearing 2 stipitate glands above; pedicels 2-3 together. Native of Peru, on the sea-shore near Patihlica, and in the valley of Lima. Flowers with a green calyx.

Sea-shore Passion-flower. Shrub cl.

18 P. glabra'ta (H. B. et Kunth, l. c. p. 135) leaves glabrous, shining, glandular beneath, half orbicular, truncate 2-lobed; lobes very short, spreading; petioles glandless; pedicels solitary, or twin. Native of New Granada, near Turbaco. Related to Maruthia accella. Flowers small, white; crown yellow.

Smooth Passion-flower. Shrub cl.

19 P. pure'scens (H. B. et Kunth, l. c. p. 133) leaves semi-orbicular at the base, lunately 2-lobed; lobes ovate-oblong, acute, divaricate, with an awn in the recess between the lobes, and as well as the petioles downy and glandless; pedicels solitary. Native of South America, in shady places of the province of Caracas. P. Lockhârtii, G. Don, in Loud. hort. brit. p. 269. Flowers small, greenish white.

Downy Passion-flower. Shrub cl.

20 P. bilôbâ'ta (Juss. ann. mus. 6. p. 107. t. 37. f. 2) leaves smooth, 2-lobed, rounded at the base, 3-nerved, glandless; lobes
obtuse, emarginate, rather diverging; petals short, glandless; pedicels twin. \( \gamma \), \( \omega \). Native of St. Domingo. Taucônia bilobàta, Sprengr. ex S. p. 44. Flowers very small, greenish.

**Tri lobed-leaved Passion-flower.** Shrub cl.

21 P. \textit{Mexicana} (Juss. l. c. p. 108. t. 58. f. 2.) leaves glabrous, 2-lobed, rounded at the base, 3-nerved; lobes oblong, diverging a little, glabrous beneath; petals short, glandless; pedicels twin. \( \gamma \), \( \omega \). Native of Mexico, about Acapeculo. Flowers small, white.

**Mexican Passion-flower.** Cl. 1820. Shrub cl.

22 P. \textit{Dictamo} (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 3. p. 324.) leaves glabrous, 2-lobed, somewhat emarginate at the base, 3-nerved, glandless beneath; lobes oblong, divaricate; petals glandless; pedicels twin. \( \gamma \), \( \omega \). Native of New Spain, where it is called \textit{Dictamo}.

**Dictamo Passion-flower.** Shrub cl.

23 P. \textit{Normal}is (Lin. amen. 5. p. 498.) leaves glabrous, 3-nerved at the base, somewhat cordate, glandular beneath, somewhat 3-lobed; middle lobe small, lateral ones so much divaricate as to form a straight angle; petals very short, glandless. \( \gamma \), \( \omega \). Native of Jamaica. Brown, jum. p. 328. Flowers small, pale coloured. Fruit purple, downy.

**Normal Passion-flower.** Fl. May, June. Cl. 1771. Sh. cl.

24 P. \textit{Bauhinifolia} (H. B. et Kunth, l. c. p. 132.) leaves downy beneath, and rather glandular, elliptic, rounded at the base, 2-lobed at the apex; lobes obtuse; petals glandless, downy; pedicels solitary or twin, downy. \( \gamma \), \( \omega \). Native of Quito, in temperate places. Flowers small, white.

**Bauhinio-leaved Passion-flower.** Shrub cl.

25 P. \textit{Triquetra} (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 3. p. 324.) leaves glabrous, glandular beneath, ovate, 3-nerved, equally 3-lobed at the apex; lobes mucronated by a bristle each; petals glandless; pedicels twin. \( \gamma \), \( \omega \). Native of Mexico.

**Three-bridled Passion-flower.** Shrub cl.

26 P. \textit{Miserabilis} (H. B. et Kunth, nov. gen. amer. 2. p. 136.) leaves glabrous, reticulately 3-nerved, cordate, 3-lobed; lobes obtuse, emarginate, and are, as well as the petals, glandless; pedicels solitary. \( \gamma \), \( \omega \). Native of South America, between Turbaco and Carihuela, in very hot places. Flowers small, with a greenish calyx, and violetaceous crown.

**Miserable Passion-flower.** Shrub cl.

27 P. \textit{Coriacea} (Juss. in ann. mus. 6. p. 105. t. 39. f. 2.) leaves smooth, coriaceous, glandular beneath, peltate, 3-lobed; middle lobe obtuse; lateral ones acuminate, 2-nerved; petals biglandular in the middle; pedicels twin. \( \gamma \), \( \omega \). Native of South America, near Honda; and perhaps also in Mexico, according to icon. fl. mex. ined. Flowers small, greenish.

**Coriaceous-leaved Passion-flower.** Shrub cl.

28 P. \textit{Difformis} (H. B. et Kunth, l. c. p. 136.) leaves glabrous, coriaceous, glandular beneath, peltate, somewhat 3-lobed, transversely lanceolate; petals biglandular in the middle; pedicels solitary. \( \gamma \), \( \omega \). Native of New Granada, in temperate places on the Andes. Allied to \textit{P. coriacea}. Perhaps the same as the figure in Henn. mex. p. 435. upper figure. Flowers with a greenish calyx, and violetaceous crown tipped with yellow.

**Deformed Passion-flower.** Shrub cl.

29 P. \textit{Augustifolia} (Swartz, prod. p. 97.) leaves glabrous, glandless, somewhat peltate: lower ones ovate, the rest lanceolate, 2 or 3-lobed; petals short, biglandular above the middle; pedicels solitary or twin. \( \gamma \), \( \omega \). Native of the Caribbean Islands. Ker. bot. reg. t. 189. P. heterophylla, Jacq. hort. schenck. t. 181. \textit{Ciceria heterophylla}, Muench. P. longifolia, Lam. dict. 3. p. 40. Flowers yellowish, with the rays purple at the base.

**Loose-leaved Passion-flower.** Fl. May, June. Cl. 1774. Shrub cl.

30 P. \textit{Maculata} (Scut. ex hort. bon. and Coll. hort. rip. p. 101.) leaves glabrous, deeply 3-lobed, painted with white on the upper surface; lobes nearly equal, oblong, acute: upper ones bluntly trifid, intermediate one rather larger than the others; petals glandless; pedicels solitary or twin, rather pilose. \( \gamma \), \( \omega \). Native of Curasson. Pluk. t. 210. f. 3. Perhaps the same as \textit{P. miniata} of Lin. Flowers greenish.

**Spotted-leaved Passion-flower.** Fl. June, July. Cl. 1820. Shrub cl.

31 P. \textit{Graecica} (Link, enum. hort. belor. 2. p. 182.) leaves subcordate, glandrous, 3-lobed; lobes roundish, beset with 2-4 glands; petals biglandular; peduncles axillary, solitary: fruit egg-shaped. \( \gamma \), \( \omega \). Native country unknown. Lindl. bot. reg. t. 870. Flowers whitish. Rays blue and white.

**Sleuder Passion-flower.** Fl. Aug. Cl. 1823. Shrub cl.

32 P. \textit{Lutea} (Lin. amen. 1. p. 224. t. 10. f. 13.) leaves almost glabrous, cordate, trifid; lobes ovate, mucronate by a bristle, and are, as well as the petals, glandless; pedicels twin. \( \gamma \), \( \omega \). Native of Virginia and Florida, and of the West Indies. Jacq. icon. rar. 3. t. 607. Ker. bot. reg. t. 79. Flowers pale yellow.

**Yellow-leaved Passion-flower.** Fl. May, June. Cl. 1714. Shrub cl.

33 P. \textit{Miniata} (Jacq. hort. vind. t. 29.) leaves glabrous, glandless, 5-nerved, trifid: lobes ovate, middle one drawn out most; petals biglandular at the apex; pedicels twin. \( \gamma \), \( \omega \). Native of South America. Sowerby in Lin. trans. 2. p. 27. t. 5. f. 6. Ker. bot. reg. t. 144. P. hederacea, Lam. Flowers greenish yellow, with white rays. Nectarium fourfold, inner one with an entire brown rim, the outerrenflated, of a dusky purple colour, the other ciliate, with capillary black hairs, with yellow tips; outmost one having the filamentous appendages twice as long as the others, dark purple at the base, and yellow from the middle to the tip.


34 P. \textit{Mirobula} (Lin. amen. 1. p. 227. t. 19. f. 16. exclusive of the synonyms of \textit{Hern.} and \textit{Pluk.}) leaves rather hairy between glands, somewhat 5-nerved, 3 cleft; lobes ovate, middle one much the largest; petiole biglandular above the middle; pedicels twin. \( \gamma \), \( \omega \). Native of the West Indies. Plum. amer. t. 85. A.-B. P. parvifolia, Swartz, prod. p. 97. Flowers whitish.

**Hairy Passion-flower.** Fl. Sept. Cl. 1778. Shrub cl.

35 P. \textit{Suberosa} (Linn. l. c. p. 236. t. 10. f. 14.) leaves glabrous, somewhat ciliated, 5-nerved at the base, ovate, somewhat cordate, usually 3-lobed; lobes ovate, acute: middle one larger than the rest; petioles biglandular above the middle; pedicels twin. \( \gamma \), \( \omega \). Native of the West Indies and South America. Smith, exot. bot. t. 1. t. 28. Plum. amer. t. 84. Jacq. schenck. t. 2. t. 165. Flowers of a greenish yellow colour; crown purple at the bottom. Fruit purple when ripe.

**Cork-barked Passion-flower.** Fl. June, Sept. Cl. 1759. Shrub cl.

36 P. \textit{Felata} (Cay, diss. 10. p. 147. t. 275.) leaves pubescent above, glandless, 3-nerved, rather peltate, 3-lobed beyond the middle; lobes lanceolate, divaricated; petals biglandular in the middle; pedicels solitary. \( \gamma \), \( \omega \). Native of the Antilles, in hedges, as well as in Virginia. Ker. bot. reg. 505.

—Plum. amer. t. 85. Flowers greenish.


37 P. \textit{Hederacea} (Cay. l. c. p. 448.) leaves somewhat pubescent, glandless, 3-nerved, trifid: lobes ovate, obtuse; petals biglandular in the middle; pedicels solitary. \( \gamma \), \( \omega \).
Native of the Antilles, in hedges. Plum. amer. t. 84.


P. farnosum (Smith in Rees’ cycl. no. 28.) leaves clothed with velvety hairs on both surfaces, glandless, cordate, unequally 3-lobed, rarely 2-lobed; lobes obtuse; petioles velutine; pedicels bearing 3 bracteoles each. t. & S. Native of the West Indies. Allied to P. rubra. Flowers small, greenish.

Cloth-leaved Passion-flower. Shrub cl. 49

P. bracteata (Balb. in litt. ex D. C. prod. 3. p. 325.) leaves glabrous, glandless, divided into 3 parts even to the base; leaflets petiolate, trifid, attenuated at the base, and very blunt at the apex; pedicels solitary or twin. t. & S. Native of St. Domingo.

Bertero’s Passion-flower. Shrub cl.

Sect. V. Decaloba (from cecum, deka, ten, and λοβος, lobos, a lobe; in reference to the 10 calyceate lobes). D. C. mem. soc. gen. 1. pt. 2. p. 435. prod. 3. p. 325.—Passiflora, Bory, ann. gen. 2. p. 138. Calyx 10-lobed, the 5 inner are probably petals. Involution wanting or very small, and distant from the flower. Pedicels 1-flowered, rising from the same axis as the simple tendrils.


P. repens (Lin. amm. 1. p. 222. t. 10. f. 9.) leaves velvety, cordate at the base, 2-lobed, with an awn in the recess between the lobes, glandless beneath, and on the petioles; pedicels solitary; ovary hairy, subglobose. t. & S. Native of the West Indies and the adjacent continent. Plum. amer. t. 83. Ker. bot. reg. t. 95. Stem reddish, silky. Flowers of a greenish yellow colour; crown red. Berry red.


P. capsulata (Lin. l. c. p. 231.) leaves downy, cordate at the base, 2-lobed, with an awn in the recess between the lobes, and are, as well as the petioles, glandless, pedicels solitary; ovary elliptic-oblong, and is, as well as the fruit, acutely hexagonal, glabrous. t. & S. Native of the West Indies. Plum. icon. amer. t. 138. f. 2. The flowers are reddish according to Plummer, but according to other authors they are whitish.

Fruit small, purple when ripe. Var. Al. acutidoba (D. C. prod. 3. p. 325.) leaves deeply 2-lobed, hardly pubescent above, painted with white. t. & S. Native of Brazil.

Var. γ. gminifolia (D. C. l. c.) leaves glabrous, hardly cordate at the base; branches triangular; pedicels twin. t. & S. Native of Jamaica. P. capsularis, Smith in Rees’ cycl. no. 22.


P. biflora (Lam. dict. 1. no. 36.) leaves glabrous, glandular beneath, cordate at the base, 3-nerved, truncate, somewhat 2 or 3-lobed; petioles short, glandless; pedicels twin. t. & S. Native of the West India Islands, and South America. P. lunata Smith, icon. pict. t. 1. Ker. bot. reg. 577. P. vespertilio, Lawr. pass. t. 8. Flowers white; rays of crown yellow. The Mexican plant differs in the leaves being roundly cuneate at the base, not cordate, and in the lobes being less divaricate.

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P. Leschenaultii (D. C. prod. 3. p. 326.) leaves semi-ombilicate at the base, somewhat truncate at the apex, tricuspidate, pubescent on the nerves beneath, glandless; petals biglandular in the middle; petaloid twin, 1-flowered. t. & S. Native of the East Indies, among the Neelgherry Mountains, where it is called by the inhabitants cvvaymonko. Bryonia tricuspidata, Lesch. herb. Flowers unknown.

Leschenaultii’s Passion-flower. Shrub cl.

P. geniculata (D. C. l. c.) leaves glabrous, glandular beneath, cuneately-rounded at the base, 3-nerved, truncate at the apex, subtruncate; petals long, glandless, pedicels twin, hardly longer than the petioles. t. & S. Native of the Island of St. Lucia. Flowers party-coloured.


P. Rohrii (D. C. l. c.) leaves nearly glabrous, ovate, somewhat truncate at the base, 3-nerved, blunt and somewhat 3-lobed at the apex; petals biglandular, rather velvety; pedicels solitary. t. & S. Native of Cayenne.

Rohri’s Passion-flower. Shrub cl.

P. penduliflora (Bert. in herb. Balb. ex D. C. l. c.) leaves glabrous, roundly obovate, 3-nerved, glandular beneath; nerves extending beyond the border of the leaf; petals glandless; pedicels solitary; petioles 2-lobed, rarely somewhat 3-lobed; peduncles pendulous, bracteolate beneath the middle. t. & S. Native of Jamaica, on the mountains. Flowers pale; threads of crown few and glabular.

Pendulous-flowered Passion-flower. Shrub cl.

P. hemicycla (Meyer, prim. ess. p. 225.) leaves glabrous, glaucous and glandular beneath, 3-nerved at the base, semicircular, somewhat 3-lobed at the apex; petals pubescent, glandless; pedicels twin, shorter than the petals. t. & S. Native of Guiana, about Essequibo; and of Trinidad. Flowers white.


P. vespertilio (Lin. amm. 1. p. 223. t. 10. f. 11.) leaves glabrous, glandular beneath, 1-nerved, cuneate at the base, divaricately 2-lobed, rarely somewhat 3-lobed; petals very short, glandless; pedicels solitary. t. & S. Native of South America.—Dill. hort. ethl. t. 137. f. 164. Flowers white, small.


P. retusa (Hook. et Arnott, in bot. misc. 3. p. 235.) leaves smoothish, biglandular beneath, cuneate at the base, or rounded, 3-nerved, 3-lobed; lobes mucronulate, middle one truncate, lateral ones divaricate, prolonged; petals glandless; pedicels solitary, exceeding the petals. t. & S. Native of Brazil, on the banks of the Uruguay; and at Santa Borgia. Closely allied to P. vespertilio.

Retusa-leaved Passion-flower. Shrub cl.

P. Maximiliana (Bory, ann. gen. 1819. vol. 2. p. 149. t. 24.) leaves glabrous, divaricately 2-lobed, drawn out a little in the middle, somewhat cordate at the base, red and biglandular beneath; petals glandless; pedicels solitary or twin, longer than the petals. t. & S. Native of Brazil. P. discolor, Link etotto, abh. 1. p. 13. t. 5. Lodl. bot. cab. t. 565. P. vespertilio, Ker, bot. reg. t. 597. This plant differs from P. vespertilio in the leaves being cordate at the base, not cuneate, blood-coloured beneath; and in the pedicels being three or four times longer. Flowers greenish; crown white.


P. Jorullesis (H. B. et Kunth, nov. gen. amr. 2. p. 133.) leaves glabrous, glandular beneath, semi-ombilicate at the base, 3-nerved, truncate at the apex, 2-lobed; petals puberu-
PASSIFLOREÆ. III. PASSIFLORA.

Faults and glandless; pedicels twin.  h. S. Native of Mexico, on the burning Mount Jorullo. Flowers greenish?

Jorullo Passion-flower. Shrub cl. 53 P. sievoides (Schlecht. et Cham. in Linnaea. vol. 5. p. 88.) leaves cordate, 3-lobed, sharply subdentate or quite entire, glaucous beneath, hairy, biglandular in the recesses, smoothish above; lobes triangularly acuminate, middle lobe the longest; petals hairy, biglandular in the middle; glands large, ciliate; stipular half ovate, cuspitudate acuminate; peduncles twin; bracteas filiform, small, approximating the flower.  h. S. Native of Mexico, in woods near Jalapa. Flowers pale. Habit of Bopyrnia.

Siyous-like Passion-flower. Shrub cl. 54 P. elongata (Swartz, prod. p. 97.) leaves glabrous, glandular beneath, oblong, rounded at the base, 3-nerved, 3-lobed at the apex; petals glandless; pedicels solitary.  h. S. Native of Jamaica, among bushes. P. elongata, Poir. suppl. 2. p. 839.


55 P. lyrifolia (Tuss. ant. t. 4.) leaves glabrous, glandular beneath, ovate at the base, 3-nerved, 3-lobed at the apex; lobes oblong, acute, middle lobe very small; petals glandless; pedicels solitary or twin.  h. S. Native of South America. Probably sufficiently distinct from the preceding and following species.


56 P. tuberosa (Jacq. Hort. sjenbr. t. 496.) leaves glabrous, glandular beneath, rounded at the base, 3-nerved, 3-lobed at the apex; lobes oblong, acute, middle lobe very small; petals glandless; pedicels twin; branches of root tuberos.  h. S. Native of South America. Ker, bot. reg. t. 432. P. punctata, Lodd. Bot. cab. t. 110. Lower leaves usually painted with white on the upper surface. Flowers greenish white; outer crown at the base, tipped with purple and white. Style purple.


57 P. rotundifolia (Lin. l. c. p. 235.) leaves rather glandular, velvety beneath, nearly orbicular, 3-nerved, 3-lobed; petals glandless; pedicels twin; berries globose, hairy.  h. S. Native of the Antilles. Plum. Icon. amer. t. 138. f. 1. Cav. diss. t. 290. Flowers white.

Var. β, Jacquinii (D. C. l. c.) leaves glabrous beneath; pedicels solitary; leaflets of involucrum ovate.  h. S. Native of Carthagena, in the woods. P. rotundifolia, Jacq. obs. t. 46. f. 1. Petals whitish; rays of crown yellow.


58 P. antronifolia (H. B. et Kunth, nov. gener. amer. 2. p. 136.) leaves puberulous beneath, glandular, ovate, roundly truncate at the base, 3-nerved, roundly 3-lobed at the apex; middle lobe emarginate; petals glandless, and are, as well as the pedicels, downy, and twin; berries spherical, glabrous.  h. S. Native of South America, on Mount Quindiu, at the river Cuello. Flowers large.

Adler-leaved Passion-flower. Shrub cl.

59 P. obtusae; leaves 3-lobed, somewhat cordate, truncate, velvety; lateral lobes divericate; intermediate one obsolete, emarginate; petals emarginate, shorter than the calyx; tube of calyx rotate, depressed; inner crown pubescent, plicate, lying on the base of the stipe, in the disc, outer crown radiate; ovarium vilous.  h. S. Native of the north-eastern coast of South America, but in what place we gathered it is now forgotten. Flowers small, pale green, with a downy pedicel: the inner crown is downy and purple: the outer crown has its lower half purple, and its upper white. This species seems to come nearest to P. antronifolia of Bonpland.

Obscura Passion-flower. Fl. Aug. Nov. Clt. 1823. Sh. cl. 60 P. mollis (H. B. et Kunth, l. c. p. 137.) leaves concescent beneath, glandular, ovate-cordate at the base, 3-nerved, 3-lobed at the apex: lateral lobes very small; petals glandless, and are, as well as the pedicels, pubescent; pedicels twin; berries globose, puberulous.  h. S. Native of South America, on Mount Quindiu. Flowers not seen.

Soft Passion-flower. Shrub cl.

61 P. punctata (Lin. amen. 1. p. 224. t. 10. f. 12.) leaves glabrous, transversely oval, glandular beneath, 3-nerved at the base, and emarginately cordate, very bluntly 3-lobed at the apex; petals glandless; pedicels solitary, longer than the petals.  h. G. Native of Peru. Feuil. per. 2. t. 11. Flowers with whitish petals: and violet rays, tipped with yellow.

Dotted-leaved Passion-flower. Shrub cl.

62 P. erythronoides (H. B. et Kunth, l. c. p. 140.) leaves hispid, cordate at the base, 3-nerved, palmately 3-lobed, sharply-toothed; petals biglandular at the apex, hairy; pedicels hairy, twin; berries elliptic, glabrous.  h. S. Native of Mexico, near Santa Rosa. Flowers greenish.

Bryony-like Passion-flower. Shrub cl.

SECT. VI. GRANADELLA. (Granadilla or Granadille is the French name of some Passion-flowers, so called from the resemblance of the fruit, in size and colour, to a pomegranate, with this difference, that it is not crowned by the calyx). D. C. in mem. soc. gen. 1. pt. 2. p. 435. prod. 3. p. 327. — Anthocinia, Bory, ann. gen. 2. p. 138. Involucrum 3-leaved under the flower; leaflets entire or toothed, never jagged. Calyx 10-lobed; the 5 inner lobes are probably petals. Pedicels 1-flowered, rising from the same axis as the teardrops, which are simple.

* Pedicles entire.

63 P. serratofolia (Lin. amen. 1. p. 217. t. 10. f. 1.) leaves pubescent beneath, ovate-lanceolate, acute, serrulated, feather-nerved; petals bearing 4 glands, and are, as well as the pedicels, pubescent.  h. S. Native of South America. Cav. diss. t. 279. Sims, bot. mag. t. 651. Jacq. hort. sjenbr. 1. p. 4. t. 10. Mart. dec. 4. t. 36. Flowers with purple petals, and the filaments of the crown pale purple at the base, and from thence bluish.


64 P. nitida (H. B. et Kunth, l. c. p. 130.) leaves glabrous, oblong-elliptic, acuminate, serrulaté, feather-nerved; petals biglandular.  h. S. Native in woods about the Orinoco. Very nearly allied to the preceding species. Flowers about the size of those of P. corvula, with a reddish calyx: crown with blue filaments, ringed with white.

Shining-leaved Passion-flower. Shrub cl.

65 P. guazuméolzæ (Juss. ann. mus. 6. t. 39. f. 1.) leaves glabrous, ovate-oblong, acuminate, denticulated; petals biglandular; crown one-half shorter than the calycine lobes.  h. S. Native of New Granada, in very hot places. Flowers large, with a whitish calyx.

Guazuma-leaved Passion-flower. Shrub cl.

66 P. coccineæ (Aubl. guian. 2. t. 224.) leaves glabrous, ovate, coarsely toothed, acutish; petals bearing 4-5 glands; bracteas ovate, sub serrated, velvety.  h. S. Native of Guiana, where it is also cultivated; and Maranham, in Brazil. Cav. diss. t. 280. Flowers scarlet, with orange-coloured rays. Fruit full of juicy sweet edible pulp.
PASSIFLORÆ. III. Passiflora.

67 P. vetusta (D. C. prod. 3. p. 327.) young leaves pubescent, at length glabrous, cordate, acutish, minutely lobed, serrated; petioles biglandular; bracteas glandularly serrated. S. Native of Brazil. Allied to P. cocinea. Flowers perhaps red or scarlet.

Velvet Passion-flower. Shrub cl.
68 P. glandulosa (Cav. diss. t. 281.) leaves glabrous, ovate, coarsely toothed, acutish; petioles biglandular; bracteas entire, biglandular at the base. S. Native of Cayenne. Taeṣōnia glandulosa, Spreng. syst. 3. p. 43. Fruit the size of a hen's egg.

Glandular Passion-flower. Shrub cl.
69 P. mecononata (Lam. dict. 3. p. 33.) leaves glabrous, ovate-cordate, obtuse, entire; petioles biglandular; stipulas broad-ovate, awned; bracteas oblong, serrate-crenated. S. Native of Brazil, at Rio Janeiro. Cav. diss. t. 282.

70 P. maliformis (Linn. amoen. 1. p. 220. t. 10. f. 5.) leaves glabrous, ovate, somewhat cordate at the base, acuminate, entire; petioles biglandular; bracteas ovate, acute, joined at the base, larger than the flower. S. Native of St. Domingo, Porto-Rico, &c. Plum. icon. amer. t. 82. Ker, bot. reg. t. 94. Leaves long and broad. Flowers sweet-scented, and beautiful, of various shades; the petals white, and the rays blue; the outer divisions of flowers are red. This species is called the apple-flowered Granadilla or sweet calabash. The fruit round, smooth, about 2 inches in diameter, of a dingy yellow-colour when ripe; the coat is hard and stringy, nearly a quarter of an inch in thickness, half of very agreeable gelatinous pale yellow pulp, which is eaten with wine and sugar.

71 P. tiliifolia (Linn. amoen. 1. p. 219. t. 10. f. 4.) leaves glabrous, cordate, entire, acute; petioles glandless; stipulas and bracteas entire, oval, acuminate. S. Native of Peru. Fertil. per. 2. t. 12. Flowers red; rays crimson, with a white line. Fruit globose, variegated with red and yellow, containing a sweet watery pulp. (f. 4.)

72 P. serratiflora (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 3. p. 328.) leaves glabrous, cordate, acute, entire; petioles bearing 4 glands; stipulas and bracteas ovate, acute, serrated. S. Native of Mexico. Fruit edible.

Serrate-stipuled Passion-flower. Shrub cl.
73 P. ligulata (Juss. ann. mus. 6. t. 40.) leaves glabrous, cordate, acuminate, entire; petioles bearing 4-6 glands; stipulas and bracteas ovate-lanceolate, acuminate; bracteas ovate, entire. S. Native of Peru. Flowers party-coloured.


74 P. quadrangularis (Lin. spec. 1356.) leaves glabrous, cordate at the base, ovate, acuminate; petioles bearing 4-6 glands; stipulas ovate, and are, as well as the bracteas, entire; branches tetragonally winged. S. Native of Jamaica and South America. Ker, bot. reg. t. 14.—Jaq. amer. t. 143. pict. 218. Flowers highly odoriferous; calycine lobes white within; petals of the same shape, red within, and white outside. Crown 5-fold; outer rays in a double row, longer than the petals, round, white, and variegated with violet. The common granadilla or granadilla vine bears large fruit, of an oblong shape, about 6 inches in diameter, and 15 inches in circumference. It is externally of a greenish yellow, when ripe soft and leathery to the touch, and quite smooth; the rind is very thick, and contains a succulent pulp of a purple colour, which is the edible part. Wine and sugar are commonly added to it. The flavour is sweet and slightly acid, and is very grateful to the taste, and cooling in a hot climate. It has been successfully cultivated for its fruit in a few places in this country.

Var. β. sulcata (D. C. prod. 3. p. 328.) fruit furrowed transversely.

Cultivation of Granadilla (P. quadrangularis). Mr. Mitchell keeps a plant in a box 18 inches square, fixed on a level with the curb in one corner of a tan-pit. The sides of the box are perforated, to admit the roots to run among the tan, and the shoots are trained like vines, under the rafters. In autumn the shoots are pruned back to within two or three eyes of the old wood; and in March following, or just before the plant begins to break, it is taken out of the box, the root and ball reduced, and repotted in fresh compost. Abundance of water in the flowering season enables the plant to set its fruit without artificial impregnation. A strong plant will produce 40 fruits in a season in regular succession, from the end of June till Christmas. Half that number will grow to a larger size. Gard. mag. 2. p. 203. The Pass. lavrjolía and Pass. edulis may be cultivated in the same way for their fruit.

75 P. mauritiana (Pet. Th. ann. mus. 6. p. 65.) leaves glabrous, cordate at the base, ovate, acuminate; petioles bearing 4-6 glands; bracteas lanceolate, acuminate, denticulated.

Mauritius Passion-flower. Shrub cl.
76 P. alata (Att. iort. kew. 3. p. 306.) leaves glabrous, somewhat cordate, ovate, acute; petioles bearing 4 glands; stipulas lanceolate falcate, somewhat serrated; pedicels terete; branches tetragonally winged; bracteas a little toothed. S. Native of Peru. Sims, bot. mag. t. 66. Sowery in Lin. trans. 2. p. 23. t. 3. f. 6. Flowers very sweet-scented, the upper side of the calyx and petals deep crimson; rays variegated with purple, white, and crimson.

77 P. latifolia (D. C. prod. 3. p. 328.) leaves glabrous, broadly cordate, acuminate; lateral nerves approximate at the middle of the base; petioles glandular; stipulas and bracteas oval-oblong, entire; branches terete. S. Native of Peru. Flowers pale red.

Broad-leaved Passion-flower. Shrub cl.
78 P. albida (Ker, bot. reg. 677.) leaves glabrous, roundish-cordate, entire; petioles biglandular in the middle; stipulas ovate-lanceolate, setosely apiculated; bracteas approximating the flowers, soon falling off; pedicels twice the length of the leaves. S. Native of Brazil, near Rio Janeiro. Flowers white, not pale red as in the preceding. Column inclined. Staminodia second. Crown yellowish.

79 P. ornata (H. B. et Kunth, nov. gen. amer. 2. p. 129.) leaves glabrous, ovate-elliptic, acute, crenulatæ; petioles big-
Passifloræ. III. Passifloræ.

Passion-flower. S. Native of New Granada, in temperate places. Flowers white, with blue rays mingled with white.

Plumed Passion-flower. Shrub cl. 80 P. longipes (Juss. ann. mus. 6. t. 33. f. 1.) leaves glabrous, oval-lanceolate, somewhat cordate at the base, entire; petioles biglandular at the apex; stipulas and bracteas lanceolate; pedicels twice the length of the leaves. 8. S. Native of New Granada, on Mount Quindiu. Flowers about the size of those of P. coccinea, pale red.

Long-stalked Passion-flower. Shrub cl. 81 P. laurifólia (Lin. l. c. p. 229. t. 10. f. 6.) leaves glabrous, ovate-oblong, entire; petioles biglandular at the apex; stipulas setaceous, length of petioles; bracteas ovate-oblong, glandularly serrated at the apex. 8. S. Native of the West Indies Islands and South America. Used to be called also water-loen. The flowers are red and violet and sweet-scented; the fruit about the size of a hen’s-egg, but rather more elongated, and tapering equally at both ends; when ripe it is yellow, and dotted over with white spots. It contains a whitish watery pulp, which in the West Indies is usually sucked through a small hole made in the rind, which is tough, soft, and thin; the juice has a peculiar aromatic flavour, is delicately acid, and allays thirst agreeably.

Laurel-leaved Passion-flower or Granadilla. Fl. June, July. Shrub cl. 82 P. tinnifólia (Juss. 1. c. t. 41. f. 2.) leaves glabrous, oblong, entire; petioles biglandular in the middle; stipulas setaceous; bracteas oblong, hardly crenated. 8. S. Native of Cayenne, and about Essequibo. Very like P. laurifólia. Times-leaved Passion-flower. Fl. July. Sh. cl. 83 P. acumináta (D. C. prodr. 3. p. 328.) leaves glabrous, ovate-lanceolate, acuminate, entire; petioles biglandular at the apex; bracteas oblong, obtuse, entire. 8. S. Native of Brazil.

Acuminated-leaved Passion-flower. Shrub cl. ** Leaves lobed, parted, or cut to the base.

84 P. indecora (H. B. et Kunth, l. c. p. 131.) leaves puberulous beneath, rather glandular, semi-ornicicular, lunate, subcordate; lobes ovate, divaricate; petioles glandless, pubescent; stipulas linear, pubescent; bracteas ovate. 8. S. Native of New Granada, in temperate places. Perhaps belonging to the section Deciduæ.

Indecorous Passion-flower. Shrub cl. 85 P. fulchílæa (H. B. et Kunth, l. c.) leaves glabrous, somewhat glandular, semi-ornicicular, truncate 2 or 3-lobed; petioles glandless; stipulas linear-subulate; bracteas oblong, large, entire. 8. S. Native of South America, in the province of Caracass. Flowers white, with yellow rays ringed with blue.

Neat Passion-flower. Shrub cl. 86 P. racemósas (Brot. in Lin. trans. 12. t. 6.) leaves quite glabrous, rather peltate, glaucous beneath, for the most part 3-lobed; petioles usually bearing 4 glands; pedicels twin, forming terminal racemes, in consequence of the upper leaves being abortive. 8. S. Native of Brazil. Sims, bot. mag. 2001.

P. princeps, Lodd. bot. cab. t. 84. Flowers of a deep red or scarlet colour. Racemes pendulous. There is a variety having the outer ray of the crown white.


Blood-coloured-flowered Passion-flower. Fl. Ju. Oct. Clt. Shrub cl. 88 P. cártilleo-racemosæ (Sah. in Hort. trans. 4. p. 758. t. 9.) leaves quite glabrous, rather coriaceous, 3-5-lobed; lobes undulat, somewhat toothed at the base; petioles bearing 4 glands; pedicels axillary, solitary, 1-flowered. 8. S. A hybrid raised from the seed of P. racemósas, impregnated by the pollen of P. cártillea. Like the male parent, it will live throughout the winter in the open ground, with a little protection in severe weather. Lodd. bot. cab. t. 573. Flowers purple.

Blue-racemosae Passion-flower. Fl. June, Oct. Hybrid 1820. Shrub cl. 89 P. álato-cártilleo (Lindl. bot. reg. t. 848.) leaves glabrous, cordate, 3-lobed; lobes quite entire, ovate-lanceolate; petioles bearing 2-4 glands; stipulas auriculate, acuminate, the petioles terete, much longer than the pedicels; branches quadrangular. 8. S. A hybrid, raised from the seeds of P. álata, impregnated by the pollen of P. cártillea. Lobes of calyx rose-coloured on the outside. Petals white inside. Crown triple; outer filaments appendages variegated with black, blue, and white.

Winged-blue Passion-flower. Fl. June, Oct. Hybrid 1823. Shrub cl. 90 P. stipuláta (Aubl. guian. 2. p. 325.) leaves glabrous, glaucous beneath, cordate at the base, 5-nerved, trifid; lobes ovate, entire; petioles bearing 2-4 glands; stipulas oblong, somewhat auricled, macronate, and as are also the bracteas entire; peduncles about equal in length to the petioles. 8. S. Native of Cayenne and Brazil; and of Mexico, near Jalapa. P. glandula, Ker. bot. reg. t. 88, but not of Humb. Flowers whitish; crown variegated with purple and white.

Stipulata Passion-flower. Fl. Aug. Sept. Clt. 1779. Sh. cl. 91 P. raddiána (D. C. prodr. 3. p. 329.) leaves glabrous, somewhat cordate at the base, 5-nerved, trifid; lobes ovate, glandelary subcarnass at the base; petioles bearing 2 glands in the middle; stipulas ovate, dimidiate, awned; peduncles 4 times longer than the petioles. 8. S. Native of Brazil, where it was detected by Raddi.

Raddi's Passion-flower. Shrub cl. 92 P. álæa (Link. et Otto. abd. t. 33.) leaves glabrous, glaucous beneath, somewhat cordate at the base, 5-nerved, 3-lobed; lobes ovate, somewhat glandularly serrated at the base; petioles biglandular in the middle; stipulas cordate; superior peduncles longer than the petioles. 8. S. Native of Brazil. Flowers white. Very nearly allied to P. Raddiana.

White-flowered Passion-flower. Shrub cl. 93 P. setácea (D. C. l. c.) leaves velvety beneath, 3-nerved at the base, somewhat cordate, trifid; lobes ovate-oblong, acute, serrulat; petioles velvety, biglandular at the base; bracteas ovate, acuminate, ciliately serrated. 8. S. Native of Brazil, near Rio Janeiro.

Setacea-bracteae Passion-flower. Shrub cl. 94 P. menispermiális (H. B. et Kunth, nov. gen. amer. 2. p. 137.) leaves hairy beneath, pubescent above, roundish-cordate, angularly 3-lobed, sharply toothed; petioles hairy, usually bearing 4 glands; stipulas large, dimiditarily subcoriaceous, awned,
hence toothed on one side. $\beta, \varphi$. Native of South America, near Jaen de Bracamores. Flowers unknown.

Moon-seed-leaved Passion-flower. Shrub cl.

93 P. Siphonanthus (Ort. dec. 6. p. 78.) leaves glabrous, cordate, 3-lobed; lobes serrated; middle lobe more extended than the side ones; petals bearing 2-4 glands in the middle; stipulas semi-cordate, mucronate; bracteas cordate. $\beta, \varphi$. Native of New Spain.

Subulata-leaved Passion-flower. Shrub cl.

96 P. puncna (Ruiz et Pav. inded. ex D. C. prod. 3. p. 329.) leaves velvety beneath, rather scabrous above, 5-nerved, broadly subcordate, trifid; lobes sharply serrated, acute; petals velvety, glandless; stipulas setaceous; bracteas ovate, serrated. $\beta, \varphi$. Native of South America, probably of Peru. Flowers scarlet. Agreeing in habit with Tac sahia.

Scarlet-flowered Passion-flower. Shrub cl.

97 P. Incarnata (Lin. amon. 1. p. 230. t. 10. f. 19. a. c.) leaves glabrous, somewhat constricted at the base, 5-lobed, deeply trifid; lobes lanceolate, serrated; petals biglandular at the apex; stipulas small; bracteas glandularly serrated; ovarium villous. $\beta, \varphi$. Native of South America and Virginia, Abl. hort. farr. t. 50. 52. 58. Mor. ex. 2. p. 6, sect. 4. t. 1. f. 9. Calycine lobes; ovarium glabrous. $\beta, \varphi$. Native of Brazil. Flowers white. Fruit purple, edible. Purple-fruited Passiflora, Sab. in hort. trans. 3. p. 99. t. 3. Purple-fruited Granadilla, Sab. The flowers are fragrant, of a white colour tinged with purple. The fruit changes to a dark livid purple on becoming ripe, and much resembles the fruit of the purple eggplant. The shape is elliptic, an inch and a half in diameter, and 2 inches from the stalk to the top; the pulp is orange-coloured, and the seeds numerous; the taste acid, and the flavour somewhat like that of an orange. It produces fruit abundantly in stores.


98 P. edulis (Sims, bot. mag. t. 1893.) leaves glabrous, 3-lobed, serrated; petals biglandular at the apex; bracteas glandularly serrated; crown about equal in length to the calycine lobes; ovarium glabrous. $\beta, \varphi$. Native of Brazil. Flowers white. Fruit purple, edible. Purple-fruited Passiflora, Sab. in hort. trans. 3. p. 99. t. 3. Purple-fruited Granadilla, Sab. The flowers are fragrant, of a white colour tinged with purple. The fruit changes to a dark livid purple on becoming ripe, and much resembles the fruit of the purple eggplant. The shape is elliptic, an inch and a half in diameter, and 2 inches from the stalk to the top; the pulp is orange-coloured, and the seeds numerous; the taste acid, and the flavour somewhat like that of an orange. It produces fruit abundantly in stores.


99 P. Serrulata (Jacq. obs. 2. t. 46. f. 2.) leaves glabrous, 3-lobed, finely serrated; lobes oblong, middle one the longest; petals biglandular in the middle; bracteas entire. $\beta, \varphi$. Native of South America, in the woods of Carthagena. Flowers variegated with crimson and white, sweet-scented, 2½ inches wide.

Serrulata-leaved Passion-flower. Shrub cl.

100 P. Cuneifolia (Cav. dis. 10. t. 292.) leaves glabrous, 3-lobed, serrated; lobes ovate, acuminate; petals biglandular; bracteas large, ovate, entire; crown 3 times longer than the calyx. $\beta, \varphi$. Native of South America.


101 P. Triploa (Ruiz et Pav. ined. ex D. C. prod. 3. p. 330.) leaves glabrous, cordate, 3-lobed; lobes ovate-elliptic, obtuse, somewhat dentilicate; petals biglandular at the apex; stipulas ovate-cordate, dentilicate; bracteas large, ovate, mucronate. $\beta, \varphi$. Native of Peru.

Three-lobed-leaved Passion-flower. Shrub cl.

102 P. vitrifolia (H. B. et Kunth, nov. gen. amer. 2. p. 138.) leaves downy beneath, cordate, deeply 3-lobed; lobes ovate, acuminate, sharply toothed, with the sinuses biglandular; petals biglandular at the base, pubescent; bracteas glandularly toothed. $\beta, \varphi$. Native of South America, on the banks of the rivers Magdalena and Cassiquiarens. Flowers yellowish; outer crown orange-coloured; inner crown white.


103 P. filosa (Ruiz et Pav. inded. ex D. C. prod. 3. p. 330.) plant biped from rigid hairs; leaves cuneate at the base and cordate, 3-lobed; lobes coarsely toothed, ovate-lanceolate; petals biglandular; stipulas ovate-cordate; bracteas oblanceolate, ciliated. $\beta, \varphi$. Native of Mexico. (v.s. in herb. Lamb.)

Pilos Passion-flower. Shrub cl.

104 P. Adenopyga (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 3. p. 330.) leaves glabrous, cordate at the base, 5-nerved, 3-lobed; lobes ovate, acuminate, somewhat serrated; petals bearing 2 pedicellate glands; bracteas deeply serrated. $\beta, \varphi$. Native of Mexico.

Stalked-glanded Passion-flower. Shrub cl.

105 P. filamentosa (Cav. dis. 10. t. 294.) leaves glabrous, 5-parted, serrated; petals biglandular at the middle; bracteas serrated longer than the calyx or nearly equal to it. $\beta, \varphi$. Native of South America. Sims, bot. mag. 1923. Flowers with whitish petals and blue crown, coloured very like those of P. caerulea.


106 P. Palma (Lodd. bot. cab. no. 97. Link, ennum. 2. p. 183.) leaves glabrous, palmately 5-parted, somewhat serrated; serratures glandular; crown a little shorter than the calyx. $\beta, \varphi$. Native of Brazil. P. filamentosa $\beta$, Ker. bot. reg. 584. Flowers the size of those of the following species; bluish; crown variegated with blue, purple, and white.


107 P. cereum (Lin. amon. 1. p. 231. t. 10. f. 20.) leaves glabrous, 5-parted; lobes oblong, quite entire; petals bearing 4 glands at the apex; stipulas fallac; bracteas ovate, entire; crown shorter than the calyx. $\beta, \varphi$. Native of Brazil and Peru. Curt. bot. mag. t. 28. Herb. amat. t. 102. Sowerby in Lin. trans. 2. p. 25. t. 4. t. 4. Calycine segments pale greenish white; the petals are nearly of the same shape and size. Styles purplish. Rays of the crown in two circles, purple at bottom, white in the middle, and blue at the ends. Fruit egg-shaped, size of a Mogul plum, yellow when ripe. The flowers have a faint scent, and continue but one day, like many other species of this genus. This is the only kind which can be considered truly hardy.

Var. $\beta$, angustifolia; lobes of leaves narrow; plant flowering later than the species. A hybrid.

Var. $\gamma$, glaucophylla; leaves glaucous beneath.

Var. $\delta$, Codileu (Sweet, fl. gard. t. 126.) leaves of oblong-lanceolate, serrated; petals biglandular at the apex; stipulas rather lunate, serrately ciliated; bracteas ovate, obtuse, serrated; threads of crown rather shorter than the corolla. $\beta$. A hybrid. Flowers whitish; petals tinged with blue; outer crown variegated with purple, white, and blue.


108 P. Serrata (Lin. amon. 1. p. 232. t. 10. f. 21.) leaves glabrous, 7-parted, 7-nerved; lobes serrated; petals bearing 4 glands; bracteas joined to the middle, acute, entire. $\beta, \varphi$. Native of Martinique. Plum. amer. t. 79. Petals white-coated. Crown variegated with purplish violet and white.

PASSIFLOREÆ. III. PASSIFLORA.


109 P. LOUREI (Lam. dic. 3. p. 30.) stem, petioles, and leaves clothed with soft velvety down on both surfaces; leaves truncate at the base, 5-nerved, trifid; lobes ovate-acuminate, somewhat dentate. Ψ. Native of the West India Islands. P. fe'tida, var. α, Lin. amoen. 1. p. 228. t. 10. f. 17. Plam. ans. 186. P. gossypifolia, Desv. in Ham. prod. p. 48. — Giseck, icon. fasc. 1. t. 20. Flowers whitish. Plant setid when bruised.


114 P. fe'tida (Cav. diss. 10. t. 289.) stems and petioles hispid; leaves villous on both surfaces, 5-nerved, cordate at the base, 3-lobed; lobes nearly entire, lateral ones very short, middle one acuminate. Φ. or Χ. Native of the Caribee Islands and South America. Sims, bot. mag. 2619. Ker.


115 P. ACRIFLÓLIA (Schlecht. et Cham. in Linnaea. 5. p. 89.) The whole plant scurfy from hairs; leaves deeply cordate, pedately 5-7-nerved, cuneate within the recesses, 5 and sometimes 7-lobed; paler and glandless beneath; lobes acuminate, subserrate; teeth mucronate; petioles biglandular at the apex; glands stipitate, recurved at the apex; stipulas semi-ovate, serrately toothed; teeth subulate; peduncles twine, involuted in the middle; involucrum multifidly jagged, hardly glandular. Ψ. Native of Mexico, in woods near Jalapa. Flowers a little larger than those of P. fe'tida.

Sycamore-leaved Passion-flower. Shrub cl.

116 P. ciliāta (Ait. hort. kew. 3. p. 310.) stem glabrous; petioles rather pilose; leaves glabrous, somewhat 5-nerved, cordate at the base, trifid; lobes acuminate, ciliated. Ψ. Native of Jamaica. Curt. bot. mag. t. 288. Petals greenish on the outside and red within. Rays of crown variegated with white and purple. Stipe of ovary deep purple, with darker spots.


† Species not sufficiently known.

* Leaves entire.

117 P. APPENDICULATA (Meyer, essq. p. 223.) leaves glabrous, glandular beneath, 3-nerved, rounded from the base, oblone, mucronate; petioles biglandular, puberulous; pedicels, shorter, than those of the involucrum wantin. Ψ. Native of Guiana, in shady sandy places. Perhaps belonging to either section Cica or Decaloba.

Appendiculate Passion-flower. Shrub cl.

118 P. CYATOPHORA (Desv. in Ham. prod. p. 48.) leaves oblong-lanceolate, undivided, undulated and narrowed in the middle, mucronulate, 3-nerved, subcordate at the base, quite glabrous above and nerve, glanecescent beneath; petals biglandular; glands large, lateral, hollow, cup-shaped, usually twine; involucrum wanting. Ψ. Native of Guiana. Perhaps belonging to section Cica or Decaloba.

Cup-bearing Passion-flower. Shrub cl.

119 P. FÉRIFRÓSUS (D. C. prod. 3. p. 331.) leaves glabrous, ovate, acuminate, feather-nerved; petioles biglandular; pedicels solitary; fruit pear-shaped. Ψ. Native of Brazil.

Pear-shaped-fruited Passion-flower. Shrub cl.

120 P. lanceolātata (Desv. in Ham. cl. c.) branches compressed, angular, ciliated with down; leaves lanceolate, acute, mucronulate, rounded at the base, with the sides subscurfurled, pilose on both surfaces, quite entire; petals biglandular; pedicels two, capillary; fruit on a long pedicel. Ψ. Native of the Antilles. Flowers scarlet. The rest unknown.

Lanceolate-leaved Passion-flower. Shrub cl.

121 P. tetraedrāta (D. C. prod. 3. p. 331.) leaves ovate, quite entire? petals bearing 4 glands; bracteas toothed; stem tetragonal, membranous. Ψ. Native of Brazil. Vand. fl. lus. et bras. in Reeve. script. 148. Perhaps P. aletta or P. quadrangulāris.

Four-glanded Passion-flower. Shrub cl.

122 P. TRIKOROMÉFÓLIA (D. C. prod. 4. p. 331.) stems erect; leaves cordate, ovate, acuminate, unequally serrated, rather puberulous; calyx double; petals spatulate. Ψ. Native country unknown. Flowered in the Botanic Garden at Schenbr. P. guazumae夕阳ia, Jacq. fragm. p. 18. but not of Juss. This plant perhaps belongs to a different genus, not belonging to this order.
Cacao-leaved Passion-flower. Shrub 4 to 6 feet. 123 P. Cochin-chinensis (Spreng. syst. app. p. 316.) leaves opposite, glabrous, ovate, undivided, quite entire; petioles biglandular; flowers axillary, twin, 5-cleft; berry ovate. h, u, G. Native of Cochin-china, among bushes. P. pallida, Lour. coch. p. 527. This species differs from all the other Passifloras in the opposite leaves; it is perhaps therefore a species of *Malpighia*. Flowers large, pale.

Cochin-china Passion-flower. Shrub cl.

124 P. SINGAPORENSIS (Wall. cat. no. 1232.) leaves glabrous, oblong; the rest of the plant unknown. h, u, S. Native of Singapore, in the East Indies. Like P. laurifolia. Singapore Passion-flower. Shrub cl.

125 P. PENANGIANA (Wall. cat. no. 1233.) leaves ovate-oblong, entire, acuminate; tendrils trifid. h, u, S. Native of Penang. Flowers unknown.

Penang Passion-flower. Shrub cl.

* * * Leaves 2-lobed.

126 P. LUNATA (Juss. herb. ex D. C. prod. 3, p. 331.) leaves rather downy beneath, glandular, 3-nerved, ovate at the base, lunately truncate at the apex; nerves ending each in a bristle; petioles glandless; pedicels thin; bracteas linear. h, u, S. Native of Peru. Perhaps belonging to the section *Cicca* or *Decaloba*.

Moon-shaped-leaved Passion-flower. Shrub cl.

127 P. CONTRAYRÆVA (Smith, in Rees' cycl. no. 23.) leaves glabrous, deeply 2-lobed; lobes oblong, obust, hardly diverging; calyx multifid. h, u, S. Native of Mexico—Hern. mex. p. 501. lower figure. Allied to *P. Mexicana* and *P. Dicot.*, but differs from them in the flowers being multifid, not 5-cleft. The root is famous for its medicinal virtues, being sweetish with some pungency and fragrance, and is considered a powerful counterpoison, deobstirum, cordial, &c.

Contrayræa Passion-flower. Shrub cl.

128 P. CUNÉATA (Willd. enm. p. 696.) leaves glabrous, glandular beneath, cuneated at the base, somewhat 2-lobed at the apex, with a mucrone between the lobes; petioles glandless; pedicels thin; calyx 10-cleft, the 5 inner divisions are called petals. h, u, S. Native of Caracas. Perhaps belonging to section *Decaloba* or *section Granadilla*.


129 P. bicorrinis (Mill. dict. no. 15.) leaves glabrous, stiff, 2-lobed; pedicels long, horizontal; fruit oval. h, u, S. Native of South America, at Cardagena. Flowers small, white.

Two-horned-leaved Passion-flower. Shrub cl.

130 P. cypriola (In Rees' cycl. no. 20.) leaves petiolate, glandular beneath, 5-7-nerved, reticulately veined, 2-lobed, furnished with a mucrone between the lobes; pedicels bearing 2 or 4 glands. h, u, S. Native of New Granada. Flowers unknown.

Buckler-leaved Passion-flower. Shrub cl.

* * * Leaves 3-lobed.

131 P. CEPHALÉMA (Bory, ann. gen. 2, p. 152. t. 22. f. 2.) leaves glabrous, rather glandular beneath, somewhat 3-lobed, margined at the base; lobes divaricate, linear, obtuse; rounded; petioles very short, biglandular beneath the middle. h, u, S. Native country unknown, and has never flowered in the gardens of Europe.

Headed-flowered Passion-flower. Cl. 1826. Shrub cl.

132 P. MULTIFLORUM (Jacq. fragm. no. 169. t. 67. f. 1.) leaves glabrous, wrinkled beneath, cordate at the base, simple, 2 or 3-lobed, acuminate, very minutely serrated; petioles biglandular. h, u, S. Native of South America, at Caracas. Willd. enm. 637. Flowers unknown. The plant agrees with *P. inescarnita* in the shape of the leaves.

Many-formed Passion-flower. Cl. 1820. Shrub cl.

133 P. HETEROPHYLLA (Lam. dict. 3, p. 41.) leaves glabrous, acute, lower ones lanceolate, nearly sessile; middle ones on short petioles, 3-parted; upper ones pedate, in consequence of the petiole being branched at the apex; tendrils wanting; pedicels solitary, without an involucrum; calyx 10-lobed, or the 5 inner lobes, so called, are petals. h, u, S. Native of St. Domingo. Plum. ed. Burm. t. 139. f. 1. Perhaps belonging to section *Decaloba* or section *Astrophyta*. Flowers yellowish.

Variable-leaved Passion-flower. Cl. 1817. Shrub cl.

134 P. HERMANI (D. C. prod. 3, p. 332.) leaves velvety, 5-lobed; involucrum small, of 3 entire leaflets; calyx 10-parted. h, u, S. Native of Curacao. Flowers white. Allied on one hand to *P. kirskit* and on the other to *P. kibisi-cifolia*.

Hermann's Passion-flower. Shrub cl.

135 P. ? TUBIFLORA (H. B. et Kuth, nov. gen. amer. 2. p. 139.) leaves glabrous, coriaceous, rounded at the base, 3-lobed; lobes oblong-lanceolate, equal, entire; petioles biglandular in the middle; pedicels thin; tube of calyx about equal in length to the 5 lobes of the limb. h, u, S. Native of Mexico, in arid places near Acapulco and Etambu del Egidio. Probably a species of *Tascionia*. Flowers with a greenish calyx.

Tube-flowered Passion-flower. Shrub cl.

Cult. All the species of this elegant and curious genus, are well suited for climbers in conservatories and stoves, being free growers, and of easy culture. They thrive well in very light soil, and the more room they are allowed, both for roots and stems, the freer they will grow and flower. They are all easily raised from cuttings planted in sand or mould, placed in heat; and the younger the cuttings are, the sooner they will strike root. Most of the species ripen fruit in our stoves, and consequently many fine varieties have been raised by impregnating the stigmas of one with the pollen of another. Several hybrids, raised from seeds set by the pollen of *P. corcula* are nearly hardy. Several of the species are marked greenhouse, in which they will grow and flower freely. *Passiflora corcula* is the only species that can be considered quite hardy, and it requires a sheltered situation; it is therefore safest to plant against a wall, that it may be protected by a mat in severe weather. They thrive well in any soil, and cuttings of it are readily rooted, under a hand-glass.

Culture of the edible species of *Granadilla*.—All the species will fruit even in large pots; but it is best to plant them in an angle of a stove, which has been parted off, either by boards or brick-work, as low as the pit goes. At the bottom of the cavity formed by this division, should be laid some brick rubbish, over which may be thrown a little dead tan, and the whole be then filled with equal parts of very old tan, and a compost of leaf-mould and rotten dung; therein the roots will strike freely, and will even spread through the partition into the pit. They do not require the full heat of a piec-stove, for they flourish best in a temperature of from 65° to 70°; but they will not bring their fruit to perfection if kept in a common greenhouse or conservatory, though they will grow and flower in it. The shoots as they advance may be trained near to and under the inclined glass of the stove; the first flowers will appear in May, and the blooming will continue until September, the fruit setting the whole time; but if it does not set well it will be advisable to impregnate the stigmas, by applying the pollen with a feather. As they grow, the very strong shoots should be cut out from their origin; for these do not bear fruit so abundantly as those which are less vigorous; but the fruiting-branches must not be shortened on any account.

The temperature must be kept up equally during the time of flowering and fruiting; the crop will begin to come in August, and will continue until January, but the earlier produce is the best. When the crop is all off, which will be early in January,
the heat must be reduced to about 50°, so as to check and stop the growth. This being effected, the shoots must be well cut in. As little old wood as possible, besides the main stem, which rises from the pit to the glass, and a few pieces (about 2 or 3 feet of each) of the old branches should be retained; for all that is to be trained under the glass to bear in each year, ought to be the growth of the same season. It is found that the shoots break better and in greater quantity from the older wood than from that of two years’ standing. In this dormant and reduced state it is to be kept during January and February, after which the necessary heat may be applied to cause it to resume its functions for the ensuing season.

IV. DISEEMMA (from eio, dis, two, and στεμμα, stemma, a crown; in reference to the crown of the flower being double, or in two). Lab. sert. cald. p. 78. D. C. prod. 3. p. 332.

Lin. syst. Monadelphia, Pentandria. Tube of calyx short, furrowed below. Crown of throat double; outer one composed of distinct filamentous threads; inner one tubular, with an entire or toothed border. The rest as in Passiflora. All the species are either natives of New Holland or New Caledonia.

* Petioles biglandular at the apex.

1. D. aurantiaca (Labill. cald. t. 79.) leaves glabrous, ovate at the base, broadly 3-lobed; lobes obtuse, middle lobe the longest; lateral ones furnished with a kind of appendage each on the outside; braeactea bristle-formed, glandular at the apex, rather remote from the flower; petioles biglandular at the apex; threads of outer crown about equal in length to the inner lobes of the calyx or petals. H. G. Native of New Holland. Passiflora aurantiaca. Forst. prod. p. 326. Cav. diss. 10. p. 457. Murucuia aurantiaca, Pers. ench. 2. p. 222. Flowers orange-coloured, with the tube of the inner crown green, longer than the simple upright rays that surround it.

Orange-flowered Disemma. Shrub cl.

2. D. Herbertiana (D. C. prod. 3. p. 332.) leaves pubescent, cordate at the base, broadly 3-lobed; lobes ovate, acute; petioles biglandular at the apex; pedicels twin, 1-flowered; braeacteae bristle-formed, very remote from the flower; threads of outer crown 3 or 4 times shorter than the inner calycine lobes or petals. H. G. Native of New Holland, in the interior. Passiflora Herbertiana, Ker. bot. reg. 737. Murucuia Herbertiana, Sweet. Flowers white and greenish, with the crown yellow.


3. D. Baueri; leaves 3-lobed, sparingly glandular beneath; lobes oblong, retuse, middle one more prolonged; braeacteae and stipulas secundae; rays filiform, longer than the corolla, which is plicate; disk 5-lobed. H. G. Native of New Island. Fruit oval, blood-coloured. Flowers at first pale yellow, but at length orange-coloured, with the segments keeled and rather undulated, green on the outside. Murucuia Baueri, Lindl. coll. t. 36.

Baueri’s Disemma. Shrub cl.


** Petioles glabrous.

5. D. adiantifolia (D. C. l. c.) leaves glabrous, glandular beneath, truncate at the base, 3-5-lobed; lobes obtuse, somewhat 3-lobed; petioles glandless, a little longer than the pedicels; braeacteae subulate, scattered. H. G. Native of Norfolk Island. Passiflora adiantifolia, Ker. bot. reg. 233. Passiflora aurantiaca, Audr. bot. rep. t. 295. but not of Forst. Passiflora glabra, Wendl. coll. t. 17. Passiflora Adiantum, Willd. enum. 698. Murucuia adiantifolia, Sweet. Flowers yellow at first, fading to an orange-colour, with the inner crown green, longer than the purple rays that surround it.


Cult. See Passiflora, p. 55, for culture and propagation. Splendid and curious climbing shrubs.


Lin. syst. Monadelphia, Pentandria. Tube of calyx furrowed below. Crown of throat simple, erect, tubularly-conical, truncate (f. 5. b. f. 6. c.); threads of crown not free, but joined together into a tube.—Habit of Passiflora. Petioles glandless.

—Species all natives of the West Indies.

Sect. I. Pentaeria (from πέντε, pente, five; calyx 5-lobed). D. C. prod. 3. p. 332. Calyx 5-lobed (f. 5. a.).


Sect. II. Drecania (from δρέκανος, a pigeon’s egg, flesh-coloured when ripe. Both the syrups and decoction of the plant is much used in the leeward parts of Jamaica, where it is frequent; and it is said to answer effectually all the purposes for which syrup of poppies and liquid laudanum are generally administered. The flowers are most in use; they are commonly infused in, or powdered and mixed immediately with
wine or spirits; and the composition is generally thought a very effectual and easy narcotic. Browne names it bull-hoof or Dutchman's laudanum, which are probably the vulgar names of the plant in Jamaica.

*Var. β;* leaves rounded at the base, somewhat 3-lobed.

*Cav. l. c.*

Small-eyed *Murucuja.* Fl. July, Aug., Clt. 1730. Sh. cl. *Cult.* Climbing shrubs, with the habit of *Passiflora,* bearing beautiful flowers. Their culture and propagation are the same as that recommended for that genus, see p. 36.


Lin. syst. *Monadelphia, Pentandria.* Tube of calyx long (f. 7. č.), with a 10-cleft limb (f. 7. ě.); the 5 inner lobes probably petals; throat furnished with a scaly membrane. Habit of *Passiflora.*

Sect. I. *Eutacsonia* (*eu,* well or good, and, *Tacsonia*; this section contains the genuine species of the genus). D. C. prod. 3. p. 333. Involuturng large, 3-leaved (f. ě.;) bracteas sometimes free, sometimes joined together.

*Leaves undivided.*


Adulerata *Tacsonia.* Shrub cl.

2 T. *Lanka* (Juss. ann. mus. 6. t. 59. f. 1.) leaves woolly beneath, glabrous above, ovate-cordate, entire, with somewhat revolute edges; petioles glandless; stipulas narrow, hidden among the tomentum of the stem. 7. S. Native of the Andes, about Quindiu. B. B. et Kunth, nov. gen. amer. 2. p. 141. Flowers white?

Woolly *Tacsonia.* Shrub cl.

**Leaves 3-lobed.**

3 T. *Trifolia*ta (Juss. l. c. p. 393.) whole plant white from silky tomentum; leaves trifoliate; leaflets ovate-oblong, quite entire; petioles glandless; stipulas half stem-clasping, ciliated with glands. 7. S. Native of Peru, in the valley of Canta.

Trifoliate *Tacsonia.* Shrub cl.

4 T. *Sanguinea* (D. C. prod. 3. p. 334.) leaves tomentose beneath, reticulately veined, smooth above, deeply 3-lobed; lobes acute, serrated; petioles glandless; bracteas glandularly-toothed. 7. S. Native of the West Indies. *Passiflora* sanguinea, Smith, in Rees' cyc. no. 45. Flowers deep red.

Blood-coloured-flowed *Tacsonia.* Shrub cl.

5 T. *Pinnatistipula* (Juss. l. c.) leaves white from velvety down beneath, trifid beyond the middle; lobes serrated; stipulas pinnate; petioles with 4-8 glands. 7. S. Native of Chili. Sweet, fl. gard. new. ser. 2. t. 156. Passiflora pinnatistipula, Cav. icon. 5. t. 428. Flowers rose-coloured or purplish; crown deep brown.

*Var. β, penipes* (Smith, in Rees' cyc. no. 48. under *Passiflora*) stipulas palmately parted into subulate lobes, one of which is pinnate at the apex.

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6 T. *Micrantha* (D. C. prod. 3. p. 334.) clothed with velvety tomentum; leaves trifid, somewhat cordate, 3-5-nerved; lobes ovate-lanceolate, serrated; petioles bearing small glands, which are hidden among the tomentum; stipulas pannally parted into capillary lobes. 7. S. Native of Peru.

Small-glanded *Tacsonia.* Shrub cl.

7 T. *Tomentosa* (Juss. l. c. p. 394.) leaves tomentose, trifid beyond the middle, 3-nerved; lobes ovate, serrated; petioles bearing 6 pedicellate glands; stipulas falcate, serrated on the outside. 7. S. Native of Peru. P. tomentosa, Cav. diss. 10. t. 275, 276. Flowers rose-coloured.

Tomentose *Tacsonia.* Shrub cl.

8 T. *Manicata* (Juss. l. c. t. 59. f. 2.) leaves somewhat tomentose beneath, trifid beyond the middle; lobes ovate-oblong, serrated; petioles bearing 3-4 glands at the apex; stipulas roundish, spreading, crestedly toothed on the outside. 7. S. Native of Peru, about Loa. H. B. et Kunth, nov. gen. Amer. 2. p. 139.

*Var. β;* lobes blunter and more tomentose beneath. Native of Villa de Ybarra.


Manicata-stippled *Tacsonia.* Shrub cl.

Sect. II. *Bracteogama* (from  βας, brakys, a cover, and γαιας, gamos, marriage; in reference to the bracteas of the involucrum being joined together). D. C. prod. 3. p. 334. Bracteas of involucrum 3, joined together into a tube.

9 T. *Triopia* (D. C. prod. 3. p. 334.) clothes with hoary hairs beneath, pubescent above, deeply 3-lobed; lobes oblong, diverging, serrated; petioles bearing 2-4 glands; stipulas manicated, denticulated, awned at the apex. 7. S. Native of Peru. *Passiflora* triopia, Ruiz et Pav. ined. (v. s. in herb. Labau).

Trigonal *Tacsonia.* Shrub cl.

10 T. *Pedunculalis* (Juss. l. c. p. 395.) leaves downy on the nerves beneath, cordate at the base, 3-nerved, trifid; lobes ovate, obtuse, serrated; petioles bearing 4 glands; stipulas ovate-lanceolate, acuminate, serrated. 7. S. Native of Peru. *Passiflora* pedunculalis, Cav. icon. 5. t. 426. Murucuja pedunculalis, Spreng. syst. 3. p. 43. Flowers purple or rose-coloured.

*Var. β, Dombejina* (D. C. prod. 334.) leaves of lobes acute; bracteas entire.


Very soft *Tacsonia.* Shrub cl.

12 T. *Tripartita* (Juss. l. c. t. 60.) leaves rather tomentose beneath, smooth above, 3-parted; lobes lanceolate, serrated; petioles bearing 6-8 glands; stipulas manicated, crestedly toothed. 7. S. Native of South America, in woods about Quito. H. B. et Kunth, l. c. 2. p. 142. Flowers rose-coloured.

Tripartite-leaved *Tacsonia.* Shrub cl.


I
PASSIFLORE. VI. TACSONIA.

Var. β, longiflora (D. C. prod. 3. p. 335.) leaves pubescent beneath; lateral lobes sometimes 2-lobed. η. S. Native of Peru. T. longiflora and T. Tásco, Pers. ench. 2. p. 223.

Flowers rose-coloured or purplish.

Mixed Taconia. Shrub cl.

14 T. speciosa (H. B. et Kunth, nov. gen. amer. 2. p. 143.) leaves glabrous, cordate at the base, reticulately 3-nerved, deeply 3-lobed; lobes ovate-oblong, sharply serrated; petioles bearing 6-8 pedicellate glands; stipulas suborbicular, awned, dentilculated. η. S. Native of Santa Fe de Bogota. Murucuja speciosa, Spreng. syst. 3. p. 43. Flowers rose-coloured.

Showy Taconia. Shrub cl.

15 T. glaeb'ërima (Juss. ann. mus. 6. p. 394.) leaves glabrous, coriaceous, 3-lobed; lobes ovate-lanceolate, stiffly serrated; petioles biglandular at the apex; stipulas glove-formed, dentately crested. η. S. Native of Peru, on the Andes in shady places. Flowers purple.

Quite-glabrous Taconia. Shrub cl.

16 T. Anastomosans (Lamb. herb. ox. D. C. prod. 3. p. 335.) leaves glabrous, coriaceous, cuneate at the base, 3-nerved, trifid; lobes ovate-lanceolate, callyx serrated; petioles bearing 4 glands; stipulas ovate, awned, callyx serrated. η. S. Native of Peru.

Anastomosing-veined Taconia. Shrub cl.

17 T. parvifölia (D. C. prod. 3. p. 335.) leaves glabrous, glaucous beneath, 3-5-nerved, trifid; lobes ovate-lanceolate, acutely serrated; petioles bearing 4 glands; stipulas semi-cordate, callyx, nearly entire. η. S. Native of Peru. Ruiz et Pav. (v. s. in herb. Lamb.)

Small-leaved Taconia. Shrub cl.

VII. PASCHANTHUS. VIII. MODECCA.

Var. β, conicalulata (D. C. l. c.) petioles thicker, and channelled at the base.

Glandular Taconia. Shrub cl.

19 T. Rohria (D. C. prod. 3. p. 335.) leaves glabrous, coriaceous, ovate-oblong, acuminated, quite entire, feather-nerved; petioles biglandular at the base, about equal in length to the pedicels; bracteas subulate, near the flower. η. S. Native of Cayenne. Passiflora glandulosa, Cav. diss. 10. t. 281.

Var. β, conicalulata (D. C. l. c.) petioles thicker, and channelled at the base.

Sect. III. Distępʰаna (from ëcë, dis, double, and στεφάνος, stephanos, a crown; in reference to the double crown in the throat). Juss. l. c. D. C. prod. 3. p. 335.—Distephoa, Salisb. in litt. Involucrum small, 3-leaved; leaves free, biglandular in the axils. Throat of callyx bearing a membranous tube, and a series of ligule.

18 T. glandulös (Juss. l. c. p. 391.) leaves glabrous, coriaceous, ovate, acuminated, quite entire, feather-nerved; petioles biglandular at the base, about equal in length to the pedicels; bracteas subulate, near the flower. η. S. Native of Cayenne. Passiflora glandulosa, Cav. diss. 10. t. 281.

Var. β, conicalulata (D. C. l. c.) petioles thicker, and channelled at the base.

Glandular Taconia. Shrub cl.

19 T. Rohria (D. C. prod. 3. p. 335.) leaves glabrous, coriaceous, ovate-oblong, acuminated, quite entire, feather-nerved; petioles biglandular at the base, one-half shorter than the pedicels; bracteas subulate, remote from the flower. η. S. Native of Cayenne.

Rohr’s Taconia. Shrub cl.

20 T. Stottystępʰa (D. C. l. c.) leaves glabrous, coriaceous, ovate, acuminated, quite entire, feather-nerved; petioles biglandular at the base; bracteas ovate, obtuse, fidiaceous. η. S. Native of Cayenne. Cav. diss. 10. t. 281. lit. x.

Stottys Taconia. Shrub cl.

21 T. cintrícula (Juss. l. c. p. 392. in a note.) leaves ovate, coriaceous, quite entire, feather-nerved; petioles biglandular at the apex. η. S. Native of Cayenne. (v. s. herb. Juss.)

Cintra-leaved Taconia. Shrub cl.

† Species belonging to section Distephoa, but doubtful.


Four-glanded Taconia. Shrub cl.

23 T. quadrí glandulös (D. C. l. c.) leaves glabrous, ovate-lanceolate, feather-nerved, with a few coarse acute teeth; petioles biglandular at the base; bracteas oblong, biglandular. η. S. Native of the West Indies.

Four-glanded Taconia. Shrub cl.

24 T. Ruiz's Taconia. (D. C. l. c.) leaves pubescent, ovate, lanceolate; petioles biglandular at the base; bracteas ovate-lanceolate, acuminated, glandularly serrated, and glandular on the back. η. S. Native of the East Indies.

Downy Taconia. Shrub cl.

Sect. IV. PALLANTHUS (from ψαλλεις, psallos, naked, and antheta, anthes, a flower; in reference to the flowers being naked, without the involucrum). D. C. prod. 3. p. 395. Involucrum none under the flower.

25 T. trińe'ëvia (Juss. l. c. t. 58.) leaves tomentose beneath, oval, 3-nerved; nerves protruding so much as to form teeth; petioles glandless; callyx 10-lobed. η. S. Native of South America, in shady places at the river Cassiquiare. H. B. et Kunth, l. c. p. 142. Flowers rose-coloured?

Three-glanded-leaved Taconia. Shrub cl.

26 T. viridi'flòra (Juss. ann. mus. 6. p. 380.) leaves petiole, 3-lobed; callyx 5-lobed. η. S. Native of Mexico, in the vicinity of Aacupalco. Passiflora viridiflora, Cav. ion. 5. t. 424. Intermediate between Taucinia, Passiflora, and Murucuja. Flowers green.

Green-flowered Taconia. Shrub cl.

Cult. The species have the habit of Passiflora, and some of them are equally showy. Their culture and propagation are the same, see p. 56.

VII. PASCHANTHUS. VIII. MODECCA.

(VII. PASCHANTHUS (from πασχεω, pascho, to be in a passion, and ανθος, anthes, a flower; the same meaning as Passiflora). Burch. trav. 1. p. 543. D. C. prod. 3. p. 336.


1 P. répandus (Burch. l. c.) leaves glabrous, glaucous, oblong-linear, repand, 1-nerved, bearing 3 glands beneath; petioles very short, glandless; peduncles bearing a tendril, and two 1-flowered pedicels. η. G. Native of the Cape of Good Hope.

Rependant Paschanthus. Shrub cl.

Cult. This very singular plant, being a native of the Cape of Good Hope, will thrive in a green-house, and will form an excellent climber for the rafters. Its culture and propagation are the same as that recommended for Passiflora, see p. 56.


LAN. SYST. Díóctia, Monadèélphía. Flowers dioecious. Calyx permanent, campanulate, 10-cleft (f. 8. b.); 5 outer lobes ovate acute; 5 inner lobes petaloid or probably petals (f. 8. b.). Scales 5-10 (f. 8. c.), rarely wanting, rising from the calyx. Stamens 5, inserted in the torus? monadéélphous: anthers standing, Ovarium (f. 8. d.) on a short stipe. Stigma 3, petaloid (f. 8. c.). Capsule bladdery, 1-celled, 3-valved, one or many-seeded. Seeds furnished by rows of terebules (f. 8. f.), arillate, fixed to 3 parietal placentas, which are adnate to the middle of the valves.—Habit of plants between Passiflora and Bryénia.
PASSIFLOREAE. VIII. Modecca. IX. Deidamia. X. Vareca.

1 M. palma'ta (Lam. dict. 4. p. 269.) leaves glabrous, variously palmately lobed, glandular beneath; stipules spinescent; pedicels bracteal. 之乡. S. Native of Malabar. Flowers yellowish. Probably many species are confused under this name.

Var. a, Naróla (D. C. prod. 3. p. 386.) lobes of calyx acuminate; petaloid lobes or petals wanting; fruit globose.—Rheed. mal. 8. t. 20.

Var. β, palmodecca (D. C. l. c.) lobes of calyx acutish; petaloid lobes or petals feathery palmately; fruit globose. 之乡. S. Rheed. l. c. t. 21.

Var. γ, Ólía (D. C. l. c.) lobes of calyx very much acuminate; petaloid lobes or petals wanting; fruit ovate.—Rheed. l. c. t. 22.

Palmate-leaved Modecca. Shrub cl.

2 M. lÓba'ta (Jacq. fragm. t. 131.) leaves glabrous, cordate at the base, 3-5-7-lobed, glandless; petioles biglandular at the apex; pedicels bracteal. 之乡. S. Native of Sierra Leone. Ker, bot. reg. t. 131. Flowers yellowish. (f. 5.)


S. M. integri'follía (Lam. dict. 4. p. 299.) leaves glabrous, ovate-lanceolate, usually entire, much acuminate; pedicels bracteal, very short, few-flowered; fruit globose. 之乡. S. Native of Malabar.—Rheed. mal. 8. t. 23.

Entire-leaved Modecca. Shrub cl.

4 M. wight'iana (Wall. cat. no. 6704.) smooth; leaves cordate, triangularly ovate, entire; tendrils simple; capsule bladerry; seeds scrobiculato. 之乡. S. Native of the East Indies, on the Gíngee Hills. Like M. integri'follía, Lam.

Wight's Modeca. Shrub cl.

5 M. ale'na (Wall. cat. no. 6766.) leaves deeply cordate at the base, oblong, acuminate; leaves at the base rounded, pedicels umbellate on the top of shortish peduncles; tendrils simple. 之乡. S. Native of Stíchet.

Allen Modeca. Shrub cl.

6 M. acumín'ata (Blum. bijdr. p. 940.) leaves ovate-oblong, acuminate, somewhat cordate at the base, and biauriculate; flowers racemose, rising from elongated axillary tendrils; fruit ovate, acuminate. 之乡. S. Native of Java, on Mount Salak. Allied to M. integri'follía according to Blume.

Acuminated-leaved Modeca. Shrub cl.

7 M. heteróphylla (Blum. bijdr. p. 940.) leaves undivided or 3-lobed, acuminate, somewhat cordate at the base, and somewhat biauriculate; fruit oblong, acuminate at both ends. 之乡. S. Native of Java, on Mount Gede.

Variable-leaved Modeca. Shrub cl.

8 M. diversifóllía (Wall. cat. no. 6763.) smooth; leaves triangularly ovate; upper ones 3-lobed, peltate at the base; lateral lobes sometimes bifid; pedicels 1-flowered, bracteal; tendrils simple. 之乡. S. Native of the East Indies. Fruit bladerry, 3-valved. Root tuberosous. Momórdica heteróphylla, Wight, mss.

Diverse-leaved Modeca. Shrub cl.

9 M. cordí'follía (Blum. bijdr. p. 939.) leaves membranous, on short pedioles, cordate, mucronulate, biauriculate at the base; flowers corymbose, dichotomous, rising from elongated axillary tendrils. 之乡. S. Native of Java, on Mount Salak.

Heart-leaved Modeca. Shrub cl.

10 M. obtus'a (Blum. bijdr. p. 939.) leaves coriaceous, oblong-cordate, obtuse, biauriculate at the base; flowers corymbose, dichotomous, rising from short axillary tendrils. 之乡. S. Native of Java, on Mount Salak.

Obtuse-leaved Modeca. Shrub cl.

11 M. varificó'ra; leaves oblong-lanceolate, entire, acuminate, glabrous; tendrils simple; pedicelles axillary, dichotomous. 之乡. S. Native of Sierra Leone. Flowers small, yellow.

Small-flowered Modeca. Shrub cl.

12 M. macro'phylla (Blum. bijdr. p. 939.) leaves coriaceous, oval, bluntish at both ends, somewhat auriculate at the base; flowers corymbose, dichotomous, rising from axillary tendrils. 之乡. S. Native of Java, on Mounts Salak, Parang, &c.

Long-leaved Modeca. Shrub cl.

13 M. austrálaís (R. Br. ined. ex D. C. prod. 3. p. 337.) leaves glabrous, somewhat peltate at the base, corolling down the petiole in an auriculate manner at the base, acute, entirely, glandless. 之乡. S. Native of New Holland, in the gulph of Carpentaria.

Southern Modeca. Shrub cl.

14 M. brac'cata (Lam. dict. p. 210.) leaves scabrous from the tubercles on both surfaces; palmately lobed, emarginate at the base; pedicels bracteate, racemose; calyxes somewhat serrated. 之乡. S. Native of the East Indies.

Bracteated Modeca. Shrub cl.

Cult. See Passiflora, p. 56, for culture and propagation. The flowers of the species are by no means showy.


Lin. syst. Monadéphfüa, Penta-Octándria. Calyx 5-6-parted; lobes petaloid; crown a simple series of filamentous appendages, rising from the interior part of the calyx. Stamens equal in number to the lobes of the calyx; filaments joined at the base into a column. Ovarium ovate. Styles 3-4. Capsule pedicellate, 3-4-valved. Seeds arillate.—Climing Madagascar shrubs, with axillary tendrils, impari-pinnate leaves, and glandular petioles.


2 D. com'ersoni'ana (D. C. l. c.) leaflets elliptic, mucronate at the apex; peduncles 5-7-flowered; flowers pentandrous. 之乡. S. Native of Madagascar. Commersen's Deidamia. Shrub cl.


Cult. See Passiflora, p. 56, for culture and propagation.

X. VARECA (altered from WALWARECA, the name of the fruit in CEYLON). Gaertn. fruct. 1. p. 219. t. 6. f. 6. D. C. prod. 3. p. 337.

Lin. syst. unknown. Flowers unknown. Berry 1-celled; pulp divided into numerous partial cells for the reception of the seeds. Placentas 3, parietal, many-seeded.

1 V. Zeyla'sica (Gaertn. l. c.) Native of CEYLON. Nothing but the fruit of this plant is known. Ceylon Vareca. Shrub cl.
Order CVI. MALESHERBIACEAE. (This order only contains the genus *Malesherbia*). D. Don, in edinb. phil. journ. 1827. p. 321.—Passiflorae, Tribe III. Malesherbiæ, D. C. prod. 3. p. 337.

Calyx tubular (f. 9. b.), membranous, inflated, 5-lobed (f. 9. a.); lobes imbricated in aestivation. Petals 5 (f. 9. b.), alternating with the segments of the calyx, permanent, convolute in aestivation, arising on the outside of the short membranous crown (f. 9. c.). Stamens 5-10, perigynous; filaments filiform, distinct, or connected with the stipe of the ovarium; anthers versatile. Ovarium superior (f. 9. g.), stipitate, 1-celled, with the placentas at the base, from which the ovaries arise by the intervention of umbilical cords. Styles 3, filiform, very long, arising from distinct points at the apex of the ovarium (f. 9. d.); stigmas clavate. Fruit capsular, 1-celled, 3-valved, membranous more or less, many-seeded. Seeds attached by umbilical cords to placentas, arising either from the axis of the valves, or from their base; testa crustaceous, brittle, with a fleshy crest, and no arillus. Embryo terete in the centre of fleshy albumen, with the radicle next the hymen.—Herbaceous or half-shrubby plants, clothed with glandular pubesceence. Leaves alternate, simple lobed, without stipules. Flowers axillary or terminal, solitary, yellow or blue.

This order agrees with *Passiflorae* on the one hand, and *Turneraceae* on the other. From the former they differ in the insertion of their styles, in their versatile anthers, in their short placentas, membranous fruit, terete embryo, want of arillus, and stipules; and altogether in their habit. From *Turneraceae*, to which their habit nearly allies them, they differ in the presence of a perigynous membrane, in the remarkable insertion of the styles, and in the want of all trace of an arillus; agreeing with that order in the aestivation of the corolla, and in the principal other points of their structure. The plants are unknown except as objects of great beauty.


Lin. syst. Pernardria, Monogynia. Character the same as that of the order.


Linear-leaved Malesherbia. Pl. 2 to 3 feet.

4. M. *humilis* (D. Don, l. c.) plant very villous; leaves jagged; throat of calyx dilated; crown simple, acutely toothed; anthers roundish. f. G. Native of Chili about Coquimbo. Stems procumbent. Flowers white.

Dwarf Malesherbia. Fl. Cl. 1832. Pl. procumbent.

5. M. *coronata* (D. Don, l. c.) plant clothed with glandular pubescesence; leaves linear, minutely toothed; throat of calyx dilated; crown simple, toothed. f. G. Native of Chili, at Valparaiso. Flowers blue; crown white. Sweet, fl. gard. new. ser. t. 167. (f. 9.)

Crowned Malesherbia. Fl. Cl. 1832. Pl. 2 to 3 feet.

6. M. *paniculata* (D. Don, l. c.) leaves lanceolate, acuminate, quite entire; flowers in fascicles; crown 10-cleft, with the segments tridentate. f. G. Native of Chili. A stiff erect shrub. Flowers small, in bundles at the tops of the branches.

Punicellated-flowered Malesherbia. Shrub 1 to 2 feet.

7. M. *tenuefolia* (D. Don in edinb. phil. journ. Oct. 1832.) leaves nearly pinnate; segments linear; calyx tubular; crown deeply lobed. f. G. Native of the south of Peru, in the province of Tarapaca at Huataconda, where it is commonly called *Agri de Zorra*, i. e. Fox capsicum. Flowers reddish, according to the dried specimen.


Cult. This genus is composed of curious plants, bearing very showy singular flowers, and are therefore worthy of culture as ornaments. A mixture of loam, peat, and sand, or any light rich earth is a good soil for them. The shrubby species may either be increased by seeds; or young cuttings will root if planted in light soil, under a hand-glass. The seeds of annual kinds require to be sown in a hot-bed, in order to forward the plants; and after they have grown an inch in height, they may be potted off into small pots, and afterwards shifted into pots of increasing size, as they grow. Some of them may be planted out into the open border, in a sheltered situation, where they will probably flower and seed freely.


Tube of calyx adhering to the ovarium, or girding it closely (f. 10. a. f. 12. a.); limb 5-parted (f. 11. a. f. 12. a.), rarely 4-parted, permanent. Petals equal in number to the lobes of the calyx (f. 12. b. f. 11. b.), with an inflexed valvate aestivation, or double that number (f. 10. b.), and disposed in 2 series; those of inner series, when present, usually much smaller (f. 10. b.) than those of the outer, scale-formed and truncate at the apex, inserted in the throat of the calyx. Stamens indefinite, arising from within the petals, disposed in several series, either distinct (f. 10. c.), or joined at the base in several parcels before each petal, within the cavity of which they lie in aestivation; filaments subulate (f. 10. g.), unequal, the outer ones frequently destitute of anthers. Ovarium adnate.
to the calyx (f. 10. a. f. 11. c.), or inclosed within it, 1-celled, with several parietal placentas (f. 11.), or with 1 free central lobed one. Style 1, composed of 3-5-7-jointed ones, crowned by as many lobes or stigmas. Capsule dry or succulent, crowned by the calyx (f. 10. d. f. 11. g. f. 12. c.), 1-celled, with several parietal placentas (f. 11.), originating at the sutures, and therefore may be called marginal, 5-4-7-valved; placentas equal in number to the valves, sometimes drawn out so far as to form dissepiments (f. 11.f.). Seeds numerous, without arillus. Embryo lying in the axis of a fleshy albumen; with the radicle pointing to the hilum, and flat cotyledons.—American herbs more or less pilose or hispid, with the hairs or bristles usually stinging like those of the nettle, in consequence of their secreting an acrid juice. Leaves opposite or alternate, exstipulate, simple, but usually variously divided. Peduncles axillary, 1-flowered. Flowers elegant. This order is distinguished from Onagrarıve by its unilocular ovary, and indefinite stamens, part of which are sterile; and perhaps by the latter character, and the additional 5 petals, connected with Passiflorıe, with which they sometimes also accord in habit. Their rigid stinging hairs, climbing habit, and lobed leaves resemble those of some Urtı-ceae. On the same account they may be compared with Cicurbi-tocce, with which they further agree in their inferior unilocular fruit, with parietal placentas, and in the very generally yellow colour of their flowers. This, indeed, is the order with which, upon the whole, Loa-seae must be considered to have the closest affinity.

**Synopsis of the genera.**

1 BARTONIA. Tube of calyx cylindric (f. 10. a.); limb 5-parted (f. 10. a.). Petals 5-10 (f. 10. b.), about equal in shape. Stamens numerous (f. 10. c.). Capsule 3-7-valved; each placentas bearing 2 rows of seeds.

2 BLUMENBA'CHIA. Tube of calyx spirally twisted (f. 11. c.); limb 5-parted (f. 11. g.). Petals 10 (f. 11. b.); 5 outer ones cussate, and the 5 inner ones scale-formed, each scale inclosing 2 sterile filaments. Fertile stamens disposed in 5 bundles (f. 11. b.). Fruit dividing into 10 parts at the base.

3 LO'AS. Tube of calyx not twisted (f. 12. a.); limb 5-parted (f. 12. d.). Petals 10 (f. 12. b.); the 5 inner ones scale-formed, bearing 2 sterile filaments inside. Outer series of stamens sterile and free; inner ones disposed in 5 bundles, but distinct. Capsule 1-celled, 3-valved at the apex.

4 CA'DÖRHA. The fruit is oval, bursting into 3 valves from the base upwards; the placentas then separate from the sides of the capsule, and have the appearance of 3 arched columelle. The rest as in Loa-as.

5 MENTSE'LI. Tube of calyx cylindric (f. 13. b.); limb 5-lobed (f. 13. d.). Petals 5 (f. 13. a.). Stamens free, usually disposed in bundles (f. 13. c.). Capsule turbinate, 3-valved, few-seeded (f. 13. f.).

6 KLAPO'ROTHIA. Calyx with a turbinate tube, and a 5-parted limb. Petals 4. Stamens numerous, 4-5 sterile in front of each sepal, and 4-5 fertile in front of each petal. Fruit baccate, few-seeded.
posed in a leafy panicle. ♀. Native of Chili, in the Jarillal, or uncultivated grounds between Mendoza and the mountains; generally by the side of dry water courses, at about 3000 feet above the level of the sea. Sweet, fl. gard. new ser. t. 182. B. sinuata, Preal. rel. Henk. 2. p. 38. Petals 10, pale yellow; Filaments all dilated. Stigmas 3-lobed. This species does not turn black on drying, as in the other species, and is readily distinguished from them by the beautiful white down on the stem.

Loasa. Fl. July. Sept. Clt. 1831. Pl. 1 to 4 feet. Cult. The seeds of the species should be raised in a gentle heat in spring; and when the plants are of a proper size, they should be potted separately in small pots, and shifted from size to size of pots as they grow; the pots should be well drained with sherds; and in the winter they should be placed on a dry shelf in a greenhouse or frame. The flowers are very showy, and the plants are therefore worth cultivating in every garden.


Lin. syst. Polydelephia, Polyantria. Calyx 5-parted (f. 11. g.), with the tube adhering to the ovary. Petals 5 (f. 11. b.), inserted in the top of the calycine tube, cucullate, equal, spreading. Scales 5 (f. 11. b.); alternating with the petals, and inserted with them, furnished with 3 sterile filaments at the back of each, and clasping 2 subulate appendages inside. Stamens indefinite, inserted in the top of the calycine tube (f. 11. b.), disposed in 5 bundles, one opposite each petal; anthers 2-celled, bursting inwardly. Ovary joined to the tube of the calyx. Style simple (f. 11. f.). Capsule marked with 10 spiral ribs, 1-cellcd, 10-valved; 5 of the valves thicker and broader than the other 5, with the placenta not reaching the axis; the other 5 narrower, with placenta almost reaching the axis (f. 11. k.), and bearing the seeds. Seeds rugose.—Branched, climbing, or trailing herbs, covered with stinging hairs. Leaves opposite, lobed. Flowers axillary, solitary, bracteate.


2 B. palmata (St. Hil. fl. bras. 2. p. 208.) leaves deeply and palmately 3-5-lobed; lobes pinnatifid. ♂. Native of Brazil, on the confines of the province of Rio Grande de St. Pedro do Sul. Flowers with white petals; scales with ciliated edges, yellow at the base, lined with white, and red above it, tipped with vermilion colour.

Palmate-leaved Blumenbachia. Pl. tr.

3 B. latifolia (St. Hil. fl. bras. 2. p. 209. t. 118.) leaves trilobate; lateral segments 3-lobed, unequal-sided, terminal one equal-sided, 3-5-lobed. ♂. Native of Brazil, in the province of St. Paul, between the towns of Rio Grande de St. Pedro do Sul and St. Francisco de Paulo. Flowers with white petals, and yellow scales tipped with orange colour. (f. 11.)

Bread-leaved Blumenbachia. Pl. tr.

4 B. punicea; plant very hispid; leaves opposite, pinnatifid, having the segments jagged; calycine lobes jagged, shorter than the petals, which are cuculate; bundles of stamens polyandrous. ♂. Native of Peru. Loasa punicea, Ruiz et Pav. fl. per. 5. t. 446. ined. (v. s. herb. Lamb.)

Scarlet Blumenbachia. Pl. 1 to 2 feet.

5 B. pterosperma; hispid; leaves opposite, pinnatifid, rather cordate at the base; segments toothed; peduncles long, 1-flowered, axillary; calycine segments toothed, shorter than the petals, which are cuculate; bundles of stamens polyandrous; stem climbing; seeds bordered by a wing. ♂. Native of Peru. Loasa pterosperma, Ruiz et Pav. fl. per. 5. t. 448. (v. s. herb. Lamb.)

Winged-seeded Blumenbachia. Pl. cl.

6 B. sepaliâ; stem climbing; leaves opposite, pinnatifid, with the segments pinnatifid or coarsely toothed; peduncles long, axillary, 1-flowered; calycine segments jagged, linear, longer than the petals, which are cuculate; bundles of stamens polyandrous. ♂. Native of Peru. Loasa sepaliâ, Ruiz et Pav. fl. per. 5. t. 449. ined.

Hedge Blumenbachia. Pl. cl.

7 B. micrantha; hispid; leaves opposite, ovate, serrate, petiolate; peduncles many-flowered, racemose, terminal, and rising from the forks of the stem; calycine lobes ovate, much shorter than the petals, which are cuculate, and holding 2 stamens each. ♂. Native of Peru. Flowers very small. Loasa micrantha, Ruiz et Pav. fl. per. 5. t. 442.

Small-flowered Blumenbachia. Pl. 1 foot.

8 B. grandiflora; leaves opposite, petiolate, oblong, runcate, acute, somewhat cordate at the base; pedicels 1-flowered, rising from the forks of them; stem climbing. ♂. Native of Peru. Loasa contorta, Lam. dict. 3. p. 579. D. C. prod. 3. p. 340. Juss. ann. mus. 5. p. 25. t. 3. f. 1. Loasa physiopetala, Ruiz et Pav. fl. per. 5. t. 447. ined. Flowers yellow.

Great-flowered Blumenbachia. Pl. cl.

Cult. Elegant annual plants, with very showy flowers; their culture and propagation are the same as that recommended for the species of Loasa, see p. 64.


Lin. syst. Polydelephia, Polyantria. Calyx 5-cleft, with the tube adhering to the ovary (f. 12. a.). Petals 5 (f. 12. k.), cuculate, equal, spreading, inserted in the top of the tube; scales 5, inserted with the petals, furnished with 3 sterile filaments on the back of each, and girding 2 subulate appendages inside. Stamens indefinite, inserted in the top of the calycine tube, disposed in 5 bundles (f. 12. b.), opposite the petals; anthers 2-celled, bursting inwardly. Ovary joined to the calyx. Capsule crowned by the lobes of the calyx (f. 12. a.), 3-valved at the top, 1-celled; placenta linear, alternating with the valves. Seeds rugose.—Branched, decumbent, or climbing herbs, beset with stinging hairs. Leaves alternate, or opposite, toothed or lobed. Flowers axillary, extra-axillary, or opposite the leaves, solitary or racemose.

* Leaves opposite.

1 L. tríóra (Juss. ann. mus. 5. p. 24. t. 1. f. 3.) leaves cordate at the base, usually 3-lobed; lobes acute, toothed; middle lobe usually somewhat 3-lobed; pedicels axillary; caly-
cine leaves small, acute. O. H. Native of Peru and Chili, about Valparaíso. Ruiz et Pav. fl. per. 5. t. 444. ined. Seeds petaloid, equally and bluntly 3-lobed. Flowers small.

**Three-lobed-leaved Loasa.** Pl. 1 foot.

3. **L. acerifolia** (Juss. l. c. p. 24. t. 1. f. 2.) leaves nearly opposite, cordate at the base, 5-7-lobed; lobes acute, toothed; pedicels shorter than the floral leaves; calyce lobes oblong, acuminate. O ? H. Native of Chili and Peru. Loasa viti-folia, Ruiz et Pav. fl. per. 5. t. 443. ined. L. tricolor, Ker. bot. reg. 667. Seeds as in L. triloba, but the calyce lobes are twice the length. Flowers with yellow petals and red scales.

**Maple-leaved Loasa.** Pl. tr.

3. **L. BRYONIEFOLIA** (Schrad. cat. hort. goett. 1823. pl. rar. hort. goett. with a figure) leaves cordate, lower ones 5-lobed, stalked, upper ones 3-lobed, almost sessile; all the lobes are sinuately lobed; pedicels exceeding the floral leaves; calyce lobes a little toothed, acuminate. O. H. Native of Chili. Stem erect, briskly. Flowers yellow, hardly smaller than those of L. acerifolia. Stigma blunt. Seeds without aril; hynum lateral.

**Bryony-leaved Loasa.** Pl. 1 foot.

4. **L. striida** (Lam. dicr. 3. p. 581.) leaves cordate at the base, many-lobed; lobes acute, toothed, lower ones unusually pinnatifid; pedicels axillary; calyce lobes oblong, toothed, shorter than the petals; wings of the corona very small, toothed, and stalked; stamens much shorter than the petals; style straight, shorter than the stamens; sepals erect, much shorter than the pear-shaped fruit. O. H. Native of Chili and Peru, on the mountains. Juss. ann. mus. 5. p. 25. t. 2. f. 2. Trat. tabl. 1. t. 23. Hook. exot. fl. t. 83. bot. mag. 2372. Ruiz et Pav. fl. per. 5. t. 445. Petals spreadingly reflexed, yellow, red at the base; scales red. Lobes of leaves bluntest. Stems prostrate.

Var. ? leaves more deeply lobed; lobes narrower.—Chili, about Valparaíso. L. tricolor, Lindl. bot. reg. 667.


5. **L. sagittatta** (Hook. et Arn. in bot. misc. 3. p. 228.) stems twining, pubescent; leaves all petiolate, opposite, cordately-sagittate, acuminate, with rather lobed margins: the lobes crenated; peduncles axillary and terminal, few-flowered; calyce lobes ovate-oblong. O. H. Native of Chili. There has none of the stinging hairs, so peculiar to this genus, been observed on this species.

**Sagittate-leaved Loasa.** Pl. tw.

6. **L. elongata** (Hook. et Arn. in bot. misc. 3. p. 230.) stems much elongated, nearly simple, shining; leaves remote, opposite, petiolate, cordate at the base, 5-7-lobed; peduncles axillary, few-flowered, twice the length of the leaves; calyce lobes broadly ovate, shorter than the petals, which are red; fruit hemispherical. O. H. Native of Chili, about Coquimbo.

**Elongated-stemmed Loasa.** Pl. 2 to 3 feet.

7. **L. prostrata** (Gill. miss. ex Arnott, in Cheek, edinb. journ. 3. p. 274.) stems prostrate, flexuous; leaves opposite, sessile, cordate, ovate, deeply angular; peduncles axillary, 1-flowered, about twice the length of the leaves; calyce lobes lanceolate, longer than the fruit, and about equal in length to the pedals; valves of capsule closely beset by long, rigid hairs; seeds egg-shaped, large, with a smooth testa. O. H. Native of Chili, on La Cuesta de los Manantiales, Cerro de San Pedro Nolasco, &c. Plant covered with long, rigid, stinging hairs.

Var. ? (Coomingii) (Hook. et Arnott, in bot. misc. 3. p. 230.) segments of leaves bipinnatifidly and sinuately toothed. About Valparaíso, and on the mountains near Aconcagua. In the species the segments of the leaves are simply and sinuately toothed.

**Prostrate Loasa.** Pl. prostrate.

8. **L. PaUllida** (Gill. miss. ex Arn. in Cheek, edinb. journ. 3. p. 274.) epidermis of stem loose, and shining; leaves opposite, all petiolate, ovate, coarsely toothed; panicles opposite, axillary, much longer than the leaves; pedicels short, in the forks, about equal in length to the flowers; calyce lobes linear-oblong, one half shorter than the petals. O. H. Native of Chili, among loose debris, on the banks of the El Rio del Yesso, near Arroyo de San Nicholas, at the elevation of about 5000 feet, &c., where it is called by the inhabitants Cavallena. The plant is most nearly allied to L. selacefolia, Juss. but that does not appear to have the loose epidermis on the stem, and the leaves are much larger. The pedicels in the forks of the panicle are elongated.

**Pale Loasa.** Pl. prostrate.

9. **L. lateritia** (Gill. miss. ex Arnott, in Cheek, edinb. journ. 3. p. 275.) stems almost wanting; leaves opposite, on long petioles, pinnate; segments roundish, crenated, lobed; peduncles twin, 1-flowered, terminal, about equal in length to the leaves; calyce lobes oval, exceeding the tube, but one half shorter than the corolla. O. H. Native of Chili, at Los-imposibles, near the foot of the descent from the Plancheon towards Chili, and in El Valle de Tray Carlos, at the base of the volcano of Pateroa, at an elevation of 9900 feet. This species is readily distinguished by its large flowers of a brick red colour, and by its very short stems and radical branches, each of which bear 1 or 2 pairs of opposite leaves, and between the upper pair of which arise 2 1-flowered peduncles, terminating the branch. Seeds with a strongly reticulated testa like the next species; and as in it the hairs are short and not stinging.

**Brick-coloured-flowered Loasa.** Pl. prostrate.

10. **L. pinmatifida** (Gill. miss. ex Arnott in Cheek, edinb. journ. 3. p. 275.) stems nearly erect; leaves opposite, on long petioles; radical and lower ones pinnate; segments pinnatifid, with roundish approximate lobes; upper leaves pinnatifid; peduncles axillary, usually 1-flowered; calyce lobes ovate, much shorter than the corolla, and half the length of the fruit. O. H. Native of Chili, at La Cuesta del Inga, at an elevation of about 9900 feet. Plant with short rigid, but not stinging hairs.

**Pinmatifid-leaved Loasa.** Pl. 1 foot.

11. **L. Dissecta** (Hook. et Arn. in bot. misc. 3. p. 240.) stem erectish, strong, a little branched at the apex, with a loose white epidermis; petioles opposite, lower ones elongated, becoming gradually shorter to the top of the stem; leaves tripinnatifid, with the ultimate segments ovate-obtuse; pedicels short, rising from the forks of the stem; calyce lobes narrow-oblong, not half so long as the petals. O. H. Native about Valparaíso, Los Osos de Agua, and Aconcagua.

**Dissected-leaved Loasa.** Pl. 1 foot.

12. **L. heterophylla** (Hook. et Arn. in bot. misc. 3. p. 228.) stem prostrate, dichotomous; leaves opposite, on short petioles; lower ones small, hasteately triangular, coarsely toothed; lower floral ones nearly reniform, 5-lobed, with the lobes nearly equal, and furnished with 1 or 2 teeth each; but the middle lobe of the uppermost leaves is rather lengthened; peduncles in the forks longer than the leaves; calyce lobes oblong-lanceolate, about equal in length to the petals; fruit conically hemispherical. O. H. Native about Valparaíso? and at Los Osos de Agua. The stem is rarely pubescent; but the branches, particularly in their upper part, and the turbinate tube of the calyx, are provided with long sharp spreading hairs.

**Variable-leaved Loasa.** Pl. prostrate.

13. **L. acanthifolia** (Lam. dicr. 3. p. 579.) leaves cordate at the base, pinnatifid; lobes acuminate, sinuately toothed; pedicels axillary, and also from the forks, solitary, 1-flowered; lobes of calyx narrow, acuminate, reflexed, equal in length to the petals, which are bidentate. O. H. Native of Chili. Juss. ann. mus. 5. p. 25. t. 3. f. 2. L. nitida, bot. mag. 2372? L. cymbepcastala, Ruiz et Pav. fl. per. 5. t. 442. b. ined. Ortiga
Chiñca, Feuill. obs. 2. p. 757. t. 43. Petals yellow. Scales red. Herb erect, 4 feet high. The leaves are often alternate.

**Acanthus-leaved Loasa.** Pl. 4 to 5 feet.

14. **L. Ruiziana**; leaves opposite, ovate, closely serrated, hairy from dusk, petiolate; peduncles axillary and terminal, 1-flowered; calyce segments acute, much shorter than the petals, which are cucullate. \( \odot \). H. Native of Peru. L. incana, Ruiz et Pav. fl. per. vol. 5. t. 441. ined. (v. s. herb. Lamb.)

**Ruiz's Loasa.** Pl. 1 foot.

15. **L. sclareaefolia** (Juss. l. c. 5. p. 25. t. 1. f. 1.) leaves ovate-oblong, sinutately lobed; lobes acute, toothed; upper leaves sessile; pedicels solitary, 1-flowered in the forks of the stem; calyce lobes oblong, acuminate, shorter than the petals. \( \odot \). H. Native of Chili, where it is called Urtica brava, Tratt. t. 22. Scales emarginate at the apex.

**Sclere-leaved Loasa.** Pl. tr.

16. **L. Placeli** (Lindl. in Hort. trans. 6. p. 97.) leaves coriace at the base, many lobed; upper ones sessile; pedicels axillary; sepals hardly toothed, reflexed, length of petals; the wings of the corona sessile, and quite entire; the longest of the stamens as long as the petals; style bent, longer than the stamens; capsule obovate, shorter than the reflexed sepals. \( \odot \). H. Native of Chili. L. acanthifolia, Ker, bot. reg. t. 785. but not of Juss. Flowers yellow, with red scales.


17. **L. grandiflora** (Lam. Dict. 3. p. 580.) leaves opposite; upper ones alternate, coriace at the base, 5-lobed; lobes deeply toothed; flowers axillary and terminal, on long pedicels; lobes of calyx acuminate, shorter than the petals. \( \odot \). H. Native of Peru. Juss. ann. Mus. 5. p. 26. t. 4. f. 2. Tratt. tab. t. 29. Ruiz et Pav. fl. per. 5. t. 440. Leaves long on leaves, and upper on short petioles. Flowers yellow. Scales oblong, 2-lobed, not appendaged on the outside.


18. **L. floribunda** (Hook. et Arn. in bot. misc. 3. p. 239.) root simple, fusiform; stem short, with a loose epidermis, simple beneath the indorcescence, but much branched and panicle above; leaves ovate-oblong, petiolate; cauline ones opposite, sinutately lobed, coarsely toothed, coriace at the base; lower floral ones alternate, sinutately lobed; upper floral ones smaller, cuneate at the base, toothed or quite entire; pedicels short, rising from the forks of the stems; calyce lobes elliptic, acute, incutinate at the base, shorter than the apical leaved petals; scales furnished with 3 appendages each on the back above the middle. \( \odot \). H. Native about Valparaiso, and on the Cordillera of Chili.

**Dandelion-flowered Loasa.** Pl. 1 foot.

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19. **L. lossensis** (H. B. et Kunth, nov. gen. Amer. 6. p. 116.) leaves alternate, and nearly opposite, ovate-oblong, 3-5-lobed; lobes irregularly toothed; middle lobe very large; flowers terminal and axillary, somewhat racemose; lobes of calyx ovate, acuminate, 3-nerved. \( \odot \). S. Native of Peru, near Loasa. Leaves white beneath. Flowers yellow. Scales rounded at the apex, drawn out into a lobe at both ends. Herb suffruticos branched.

**Loasa Loasa.** Shrub.

20. **L. argemoneoides** (Juss. ann. Mus. 5. p. 26.) leaves coriace at the base, sinutately lobed, tomentose on both surfaces, white beneath; flowers terminal and axillary, pedicelate; lobes of calyx lanceolate, one-half shorter than the petals. \( \odot \). S. Native of South America, near Santa Fe de Bogota. Humb. et Bonpl. Pl. equin. 1. p. 53. t. 15. H. B. et Kunth, nov. gen. Amer. 6. p. 26. Tratt. tab. t. 30. Flowers nearly 3 inches in diameter. Scales bidentate, furnished with 2 acute lobes, which are gibbous at the base.

**Argemone-like Loasa.** Pl. 6 to 10 feet.

21. **L. ranunculifolia** (Humb. et Bonpl. Pl. equin. 1. p. 50. t. 14.) leaves all alternate, somewhat orbicular, coriace, toothed, clothed with yellowish tomentum above, and silky white tomentum beneath; flowers terminal and axillary, somewhat racemose; lobes of calyx much longer than the petals. \( \odot \). S. Native of Peru, on the Andes near Cajamarca. H. B. et Kunth, nov. gen. Amer. 6. p. 117. Tratt. tab. t. 27. Flowers large, yellow. Scales bidentate, bigibbous at the base.

**Crow-foot-leaved Loasa.** Pl. 2 feet.

22. **L. incana** (Graham in edinb. Phil. Journ. Oct. 1830.) plant suffruticos, reddish, eremoct. leaves scattered, petiolate, ovate-lanceolate, hoary, deeply serrated, scabrous; peduncles 1-flowered, opposite the leaves. \( \odot \). G. Native of Peru, from Yazo to the valley of Canta. Corolla white. Whole plant covered densely with harsh barbed white hairs, intermixed by a few stinging ones. Cuticle paper, and peeling off.


23. **L. xanthifolia** (Juss. l. c. t. 2. f. 1.) leaves petiolar, coriace, oblong, acute, coarsely toothed; pedicels extra-axillary; lobes of calyx oblong, hardly acute. \( \odot \). H. Native of Peru. Flowers small, yellow. Stems a foot and half high. Tratt. tab. t. 26. Xanthis-leaved Loasa. Pl. 1\frac{1}{2} foot.

24. **L. chenopodiifolia** (Lam. Dict. 3. p. 550.) leaves petiolar, somewhat ovate, deeply toothed; racemes loose, leafy, terminal; flowers drooping. \( \odot \). H. Native of Peru. Perhaps a mere variety of the preceding, according to Juss. ann. Mus. 5. p. 26.

**Goose-foot-leaved Loasa.** Pl. 1 to 2 feet.

25. **L. pariavelioflora** (Schrd. pl. rar. bras. indic. ex D.C. prod. 3. p. 342.) leaves on long petioles, ovate-axillary, sinutately 3-5-lobed, hoary; flowers racemose; racemes extra-axillary, few-flowered, shorter than the leaves; lobes of calyx eugast. \( \odot \). H. Native of Brazil, in the provinces of the Mines. Peduncles and calyces brisly. Flowers with white petals and brown scales. Bristles or sterile stamens at back of scales white.

**Small-flowered Loasa.** Pl. trailing.

26. **L. aspera** (Ruiz et Pav. Pl. per. 5. t. 441. b) hispid; leaves alternate, angularly lobed, and coarsely toothed; peduncles solitary, lateral; calyx long, very hispid; calyce segments ovate, longer than the petals. \( \odot \). H. Native of Peru.

**Rough Loasa.** Pl. 1 to 2 feet.

27. **L. ambrosisteifolia** (Juss. l. c. t. 4. f. 1.) leaves petiolar, bipinnatifid; lobes and lobules bluntish; pedicels extra-axillary; lobes of calyx lanceolate-linear, acute, shorter than the petals. \( \odot \). H. Native of Peru. Stem a foot high, hardly branched. Herb beset with yellowish prickles. Flowers yellow, an inch in diameter. Tratt. tab. t. 51. Scales bidentate, not appendaged on the outside.


28. **L. volubilis** (Juss. l. c. t. 5. f. 1.) leaves alternate and opposite, bipinnatifid; lobes linear, obtuse; flowers terminal and axillary, pedicelate; lobes of calyx a little toothed, one half shorter than the petals; stem twining. \( \odot \). H. Native of Chili, near Concepcion, in sandy places; and of Peru. Tratt. tab.
Twinling Loasa. Pl. tv.
20 L. TRIPHYLLA (Juss. l. c. p. 27. t. 5. t. 2.) leaves for the most part cut into 3 stalked, oblong, toothed segments; a few tripartite; pedicels extra-axillary; calyces lobed elliptic-oblong. • H. Native of Peru, in the high plains. Tratt. tab. 1. t. 21. H. B. et Kunth, nov. gen. amer. 6. p. 118. Steams ascending.

Three-leaved Loasa. Pl. ascending, 1 foot.
30 L. PAPAVERIFOLIA (H. B. et Kunth, nov. gen. amer. 6. p. 118.) leaves trilobate; segments or leaflets stalked, oblong, toothed: middle leaflet large, pinnatifid; flowers opposite the leaves, disposed in something like racemes; lobes of calyx elliptic, 3-nerved. • H. Native of the Andes, about Quindin. Stem simple, ascending. Flowers white. There is a figure in the Flora Mexicana which agrees with this plant, except that the petals are drawn bifid at the apex.

Cult. All the species of Loasa bear such beautiful flowers, that they are all worth cultivating for ornament, but they are so full of stings that it is impossible to handle them. The seeds of the annual species should be sown early in spring in the open ground, and the plants so raised will flower and produce seed the same season; or the seeds may be sown in pots, and reared in a hot-bed, and the plants may afterwards be planted out in the open border, in any convenient situation. All the species require a rich light soil and a warm situation. Some of the species are said to be perennial; we suppose all would be so if they were protected from frost.


Lin. syst. Polydolphia, Polyandria. Calyx 5-parted; segments jagged. Petals 5, unguiculate, concave. Scales 5, petaloid, emarginate, or 4-toothed at the apex, each furnished with 4 sterile filaments inside. Stamens numerous, disposed in 5 bundles. Style trigonal, permanent; stigma 3, connivent. Capsule ovate-oblong, with elevated spiral ribs, crowned by the reflexed calyx, 1-celled, many-seeded, opening at 3 of the sutures. Placentas marginal in the valves, but at length distinct from them. Seeds angular, echinated by bristles or reticulated.

—Usually climbing plants, with the habit of Loasa, beset with stinging hairs. Peduncles 1-flowered. Flowers yellow. This genus differs from Loasa and Blumenbachia in the echiscence of the capsule, in the scales being furnished with 4 sterile filaments instead of 3, and in many other points. There are several plants now referred to the genus Blumenbachia which belong to this genus; viz. B. grandiflora, which is Calypophora contorta, Presl. relq. Haeck. 2. p. 42. and B. punicea, which is evidently the Calypophora cireifolia, Presl. l. c. t. 54. and carduiola, Presl. l. c. p. 42.

1 C. CORONATA (Hook. et Arn. in bot. misc. 3. p. 238.) stems short; leaves opposite, petiolate, pinnate; segments bin pistatifid: lobes dentiliculat; peduncles axillary, 1-flowered, elongated; calyces lobes pinnatifid, with linear segments, longer than the ovarium. • H. Native of Chili, on both sides of the Cordillera of the Andes, between Mendoza and Chili, at an elevation of 8500 to 11,000 feet. The furrows of the fruit are nearly straight, or hardly spiral, so that this species partakes in some degree of the characters of Loasa. Loasa coronata, Gill. miss. ex Arnott, in Check, in edinb. journ. 3. p. 274. C. ab sinthofolia, Presl. in relq. Haeck. 2. p. 43.

Cult. See Loasa for culture and propagation.

V. SCYPHANTHUS (scyphos, scyphos, a cup, and anthos, a flower; in reference to the form of the flower). Sweet, fl. gard. t. 258.

Lin. syst. Polydolphia, Polyandria. Calyx deeply 5-parted, permanent, equal. Petals 5, inserted in the base of the calyx, on very short claws, concave, equal. Scales inserted with the petals, peltate at the apex, lobed, 3-lobed. Stamens numerous, perigynious, the 10 exterior ones destitute of anthers; and these are placed by two opposite the scales, and are longer than the rest, which are disposed in 5 fascicles opposite the petals; anthers 2-celled, erect. Ovarium prismatic, siliquiform; style one, erect, trigonal. Capsule prismatic, siliquiform, crowned by the tube of the calyx, 3-valved at the apex; seeds oval, wrinkled.—A twining herb, having its branches beset with retrograde stigmas. Leaves opposite, pinnatifid; superior ones bipinnatifid, hispid from hairs. Flowers sessile, erect, solitary, yellow.

1 S. ELEGANS (Sweet, l. c.). • H. Native of Chili. Stem dichotomous. Segments of leaves obtuse, ciliate. Gramnateocarpus volubilis, Presl. symb. bot. 1. p. 61. t. 38.


Lin. syst. Icoandria, Monogynia. Calyx permanent, with a cylindrical, somewhat 5-furrowed tube, and 5 lanceolate or subulate, equal lobes (f. 13. d.). Petals 5 (f. 10. a.), equal, inserted in the upper part of the tube of the calyx. Stamens indefinite (f. 13. e.), multiple the number of the petals, and inserted with them; filaments free, usually disposed in 5 bundles; anthers erect, ovate, bilocular. Ovarium adnate to the calycine tube. Styles 3, connected to the middle or to the top, marked by 3 corresponding stripes. Capsule turbinate cylindric, crowned by the calyicine lobes (f. 13. f.), 1-celled, 3-valved at the apex. Seeds 3-6-9, or irregular in number in consequence of abortion, inserted in 3 parietal placenates. Erect, branched, dichotomous herbes, rough from bearded or glabnodate stiff hairs. Leaves alternate, or nearly opposite, coarsely toothed. Flowers of a deep orange colour, solitary, almost sessile in the forks of the stem, or pseudo-axillary from one of the branches being abortive, expanding in the height of the sun.


1 M. ASPERA (Lin. spec. ed. 1. p. 516.) petals roundish-oval, obtuse, hardly longer than the calyceine limb, but much exceeding the stamens. • F. Native of the Antilles (Plum. ed. Burnu. t. 174. f. 1); Jamaica (P. Browne, jam. p. 249.); St. Domingo (Bertero). Seeds 5; parietal smooth, compressed. Hairs on plant glabrous at the apex.


** Stamens 30-100, the 10 exterior ones the longest. Seeds 6-9. Flowers larger than those of the last section.

3 M. nISPRA (Willd. spec. 2. p. 1176.) petals obovate, mu-

K.
crationately acuminated, longer than the calyx; stamens 30-35; leaves and flowers nearly sessile. **G.** Native of Mexico. \[Fig. 15.\] 4. **G.** Native of New Granada, on the Andes about Pasto. Seeds scabrous, 6-9.

**Scabrous**-seeded Mentzelia. Pl. 1 to 2 feet.

5. **M. grandiflora** (Ruiz et Pav. fl. per. 5. t. 441. ined.) petals obvolute, pointed, much longer than the calyx; calycine lobes ovate-lanceolate, acuminate, reflexed when the flowers are open; stamens numerous, from 30-40, unequal, outer ones the longest; leaves alternately ovate, coarsely toothed, on short petioles. **G.** Native of Peru.

**Great-flowered** Mentzelia. Pl. 2 to 3 feet.

7. **M. alta** (Pav. in herb. Lamb.) calyx covered with long hairs; calycine segments lanceolate, much shorter than the petals; stamens numerous; leaves cordate, lobed, obtuse, alternate, clothed with soft hairs; peduncles many-flowered. **G.** Native of Mexico. (v. s. in herb. Lamb.)

**Hairy** Mentzelia. Pl. 1 foot.

8. **M. stipitata** (Moc. et Sessee. fl. mex. icom. ined. ex D. C. prod. 3. p. 343.) petals oval, mucronately cuspidate, much longer than the calyx; stamens 30-40; flowers and leaves stipitate. **G.** Native of Mexico. Presl. in Haen. relic. 2. p. 40. Branches, pedicels, and ovaries scabrous from hairs. Leaves ovate, acuminate, 3-lobed, doubly toothed. Flowers lateral and terminal, solitary.

**Stipitate**-flowered Mentzelia. Pl. 1 to 2 feet.

**Culture.** The species grow well in any light rich soil; and cuttings will root readily in sand, under a glass-house. They are also easily reared from seeds, which ripen in this country.

**VII. KLAPROTHIA** (in honour of Martin Henry Klaproth, of Berlin, a celebrated chemist, and great friend of Humboldt). \[H. B. et Kunth, nov. gen. amer. 6. p. 121. t. 337. D. C. prod. 3. p. 343.\]

**Lin. syn.** *Icacinaria, Mosograea.* Calyx permanent, with a turbinate tube and a 4-parted limb; lobes ovate, equal. Petals 4, on very short claws. Stamens numerous, especially 4-5 fertile ones in front of each petal; these are longer than the others, and 4-5 sterile ones in front of each sepul; these are pilose, and somewhat dilated at the apex into a 2-lobed membrane. Styles 4, connected together almost to the apex in one. Ovarium 1-celled, 8-nerved inside, and 4-ovulate; ovula pendulous, fixed to the nerves opposite the sepals. Fruit baccate. Herb twining; branches scabrous from retrograde hairs. Leaves oppositely disposed, sharply toothed, stalked. Peduncles cymose or Corymbose at the tops of the branches. Flowers white.

**Order CVIII. TURNERACEAE** (plants agreeing with *Turneria* in important characters). \[H. B. et Kunth, nov. gen. amer. 6. p. 123. D. C. prod. 3. p. 345.\]

Calyx free, usually coloured more or less, profoundly 5-cleft (f. 14. a.), deciduous; lobes equal, imbricate in estivation. Petals 5, equal (f. 14. b.), inserted into the upper part of the tube of the calyx, and alternating with its lobes, narrow at the base, twisted in estivation. Stamens 5, inserted in the upper part of the tube of the calyx below the petals, and alternating with them; filaments free, flat; anthers oblong, erect, 2-lobed (f. 14. c.). Ovarium free, 1-celled (f. 14. d.), many-ovulate. Ovula ascending (f. 14. f.), fixed to 3 linear parietal placentas. Styles 3 (f. 14. e) or 6, usually more or less deeply bident, and cleft into many stigmas at the apex (f. 14. c.). Capsule 3-valved, 1-celled (f. 14. f.); valves bearing the seeds in their middle, along a longitudinal placentum, opening from the apex as far as the middle. Seeds subcylinndrical, curved, crustaceous, reticulated, furnished with a thin, membranous arillus on one side. Hilum situated at the base of the seed. Embryo in the centre of a fleshy albumen, somewhat incrusted, spartulate, with the radicle turned towards the hilum, and with plano-subconvex cotyledons.—Shrubs, subshrubs, and herbaceous plants, with a simple pubescence. Leaves alternate or scattered, simple, exstipulate, with occasionally 2 glands at the apex of the petioles, toothed, rarely pinnatifid. Flowers axillary, sessile, or pedunculate; the peduncles either distinct or connected with the petioles, simple and 1-flowered or branched and many-flowered, articulated in the middle or furnished with 2 small bracteoles. Petals yellow or yellowish, rarely blue. This order is placed by De Candolle between *Loasa* and *Faucariaeae*, chiefly it would seem on account of its manifest relation to the former, and its perigynous stamens. With *Maltracia* it agrees in the twisted estivation of the corolla and habit. With *Loasa* and *Passiflora*, they have also much in common. In the structure of the fruit it agrees with *Violaceae* and *Cistaceae*, but differs in the petals and stamens being inserted into the calyx, and the circumstance of their certain relationship to *Cistaceae* gives great weight to the ingenious approximation, by M. Du Petit Thours, of *Passiflora* to *Violaceae*. The presence of glands upon the ends of the petioles of *Turneracaeae* is a confirmation of their affinity to the former. It is distinguished from *Loasa* by the fruit being superior and 1-celled, with parietal placentas, and by the definite stamens; the former character is, however, weakened by the nearly superior fruit of some *Loasa*.

**Synopsis of the Genera.**

**1. Turnera.** Styles 3 (f. 14. e), simple, divided at the apex into multifid stigmas (f. 14. e). Capsule opening from the top to the middle.
2 Perique'ta. Styles 3, deeply 2-parted, crowned by 2 multifid stigmas each. Capsule opening from the top to the base.


—Turnera, sect. 1. Lam. ill. t. 212. dict. s. p. 141.


§ 1. Peduncles united with the petals, bi-nectarate.

* Leaves biglandular at the base.

1 T. ulmifolia (Lin. spec. ed. 1. p. 965.) leaves oblong, acute, serrated, pubescent above, but clothed with white tomentum beneath, and biglandular at the base; flowers almost sessile; styles shorter than the stamens. ½. S. Native of South America everywhere; common in Brazil. Lin. bort. cliv. 122. t. 10.—Sloan. hist. 1. t. 127. f. 4.—Mill. fig. t. 268. f. 2.


2 T. cuneiformis (Juss. in Poir. dict. 8. p. 142.) leaves confluently oblongate, coarsely serrated, pubescent above, but clothed with white tomentum beneath, and biglandular at the base; flowers nearly sessile. ½. S. Native of Brazil, about River Janeiro. Spreng. nov. prov. 42. St. Hl. fl. bras. 2. p. 215.

3 T. ulmifolia var. nana (Juss. in Poir. dict. 8. p. 142.) leaves oblong-lanceolate, coarsely serrated, cuneate at the base, and quite entire, pubescent; flowers sessile; styles exceeding the stamens. ½. S. Native of Brazil, island of Trinidad, and Mexico. T. elegans, Otto, l. c. Link, enunc. 1. p. 203. Petals pale yellow, or sulphur-coloured, with purplish-brown claws. Bracteoles subulate. Flowers as large as those of Bladder-kelmia.


4 T. laticarpa (St. Hl. fl. bras. 2. p. 213.) leaves roundish-ovate, unequally crenate-toothed, clothed with soft hairs above and woolly tomentum beneath, biglandular at the base; flowers on short peduncles; styles a little shorter than the stamens. ½. S. Native of Brazil, in the southern part of the province of Goyaz. Petals yellow, rather truncate at the apex.

Dead-nettle-leaved Turneria. Shrub 1 to 2 ft.

5 T. lanceolata (St. Hl. fl. bras. 2. p. 214.) leaves linear-lanceolate, acute, nearly entire, hairy, biglandular at the base beneath; flowers almost sessile. ½. S. Native of Brazil, in the province of Goyaz and Minas Geraes. Petals oblong-oblong, yellow. Styles exceeding the stamens a little.

Lanceolate-leaved Turneria. Shrub ½ to 1 ft.

6 T. oblongifolia (St. Hl. fl. bras. 2. p. 215.) leaves oblong, acute, obsoletely and dentately serrated, beset with rufescent hairs, biglandular at the base beneath; flowers almost sessile; styles a little longer than the stamens. ½. S. Native of Brazil, in the provinces of Minas Geraes and St. Paul, in grassy pastures and fields. Petals oblong, obovate, yellow.

Obovate-leaved Turneria. Shrub 1 to 1½ ft.

7 T. cuneata (Moc. et Sesse, fl. mex. icon. incd. ex D. C. prod. 3. p. 346.) leaves oblong, coarsely serrated, but quite entire at the base, and hardly attenuated, clothed with red villous pubescence beneath, biglandular at the top of the petiole; flowers sessile; styles longer than the stamens. ½. S. Native of Mexico. This species is very like T. triomiloma, but differs in the leaves being on shorter petioles, and in being hardly attenuated at the base, as well as in the hairs on the lower surface of the leaves being appressed. Bulb submucous. Flowers blue.

Blue-flowered Turneria. Pl. ½ to 1 ft.

8 T. subulata (Smith, in Rees's cycl. vol. 36. no. 2.) leaves ovate, acute, serrated, clothed with white soft hairs; bracteoles linear-subulate; flowers sessile. ½. S. Native of New Granada. Capsules plicate. Glands of leaves broad.

Subulate-bracteate Turneria. Pl. 1 ft.

9 T. acuta (Spreng. syst. 1. p. 940.) leaves lanceolate, acuminate at both ends, crenately serrated, glabrous; flowers sessile. ½. S. Native of Jamaica. Flowers yellow, about the size of those of Linum trigynum. Petals 3-4 lines long. Bracteoles setaceous, appressed to the calyx. Perhaps T. acuta, Willd. red. in Roem. et Schultes, syst. 5. p. 678, exclusive of the country.

Acute-leaved Turneria. Shrub 1 foot.

10 T. affinis (Mart. reis. bras. ex D. C. prod. 3. p. 346.) plant downy; leaves linear-lanceolate or lanceolate, acute, attenuated and biglandular at the base, remotely and acutely serrated, pubescent; stem suffruticoso; branches twiggly; flowers petiolate; bracteas shorter than the calyx. ½. S. Native of Brazil, at Rio Jaquinhonha and Rio Verde Grande.

Bee-bearing Turneria. Shrub 1 foot.


Silky Turneria. Shrub 1 to 2 ft.

12 T. mollis (H. B. et Kuhn, l. c. p. 126.) leaves ovate-oblong, coarsely crenately serrated, clothed with silky hairs on both surfaces, canescence beneath; flowers sessile; styles plicate. ½. S. Native of New Granada, near Honda. Petals yellow, with violaceous caps. Capsule roundish-ovate.

Soft Turneria. Shrub 1 foot.

13 T. longiflora (St. Hl. fl. bras. 2. p. 216.) leaves oblong, obtuse, crenately toothed, biglandular at the base beneath, woolly on both surfaces, but especially beneath; flowers sessile; styles 3-times longer than the stamens. ½. S. Native of Brazil, in the province of Minas Geraes. Petals obovate-oblong, yellow, red at the base.

Long-flowered Turneria. Shrub 1 to 1½ foot.

14 T. leucocarpos (St. Hl. fl. bras. 2. p. 217.) leaves lanceolate, acute, crenately toothed, lower ones glandless, upper biglandular at the base beneath, clothed with silky pubescence on both surfaces, and with yellowish tomentum beneath; flowers sessile in fascicles. ½. S. Native of Brazil, in the province of Minas Geraes. Petals oblong-ovate, of a golden yellow colour.

Yellownish Turneria. Shrub 2 to 3 ft.

15 T. incana (St. Hl. fl. bras. 2. p. 217.) leaves oblong or K 2.
oblong-lanceolate, acutish, crenately-toothed, clothed with velvety pubescence above, and hoary tomentum beneath, and biglandular at the base; flowers sessile; styles one half shorter than the calyx. ♂ S. Native of Brazil, in the province of Goiás. Petals yellow, ovate-oblong.

**Hoary Turnera.** Shrub 1 to 2 feet.

16 T. hermannioides (St. Hil. fl. bras. 2. p. 218.) leaves oblong-oblong, cuneated, unequally toothed, clothed with white tomentum on both surfaces, biglandular at the base beneath; flowers sessile; styles a little longer than the stamens. ♀ S. Native of Brazil, in that part of the province of Minas Geraes called Minas Novas. Petals oblong, marked with brown veins.

**Hermainna-like Turnera.** Shrub 1 to 1½ foot.

17 T. melochioides (St. Hil. fl. bras. 2. p. 219.) leaves oblong-oblong, obtuse, narrowed at the base, unequally crenate-toothed, rather roughish above, and clothed with rufescent tomentum beneath, biglandular at the base; flowers sessile; styles a little shorter than the stamens. ♀ S. Native of Brazil, in the province of Minas Geraes. Petals ovate, yellow.

**Melochia-like Turnera.** Shrub 1 to 2 feet.

18 T. na'na (St. Hil. fl. bras. 2. p. 219.) leaves ovate, rounded at the apex, crenated, pubescent on both surfaces, but especially beneath, biglandular at the base; flowers sessile; styles 3-times longer than the stamens. ♀ S. Native of Brazil, in the southern part of the province of Goiás, on a mountain called Serra dos Pyreneas, near the town called Meia. Petals oblong, pale yellow.

**Filaceous Turnera.** Shrub 1 foot.

* * Leaves glandless.

20 T. genistoides (St. Hil. fl. bras. 2. p. 220.) leaves linear, acutish, glandless, hairy; flowers sessile; styles twice the length of the stamens. ♀ S. Native of Brazil, in the province of Minas Geraes, near Tejucó. Petals obovate-oblong, glabrous.

**Genista-like Turnera.** Shrub ½ to 1 foot.

21 T. chamaedepioides (St. Hil. fl. bras. 2. p. 221.) leaves oblong-oblong, acute, deeply toothed, glandless, pubescent on both surfaces, but especially beneath; flowers on short peduncles; styles exceeding the stamens. ♂ S. Native of Brazil, in that part of the province of Minas Geraes called Minas Novas, on the banks of the river Jiquitinhonha. Petals rose-coloured?

**Germainaud-like Turnera.** Shrub ½ to 1 foot.

22 T. pinnaütida (Juss. in Poir. dict. 8. p. 144.) leaves obovate-oblong, cuneated, toothed, or pinnagregated, glandless, hairy or tomentose; flowers sessile; styles 3-times longer than the stamens, purple. ♀ S. Native of Brazil, in the province of Cisplatin, in pastures and fields. Petals scarlet, denticulated at the apex.

*T. β. angostiloba (D. C. prod. 3. p. 347.) stems diffuse; leaves hairy, pinna aggregated; lobes narrow, acute; flowers of a dirty red or copper colour. ♀ S. Native of Brazil, about Monte Video, and in the province of Cisplatin.

*T. γ. carnea (St. Hil. fl. bras. 2. p. 222.) stems ascending, 6 inches high; leaves hairy, oblong-lanceolate, cuneated, deeply toothed; petal pale red, usually marked at the base with a dark purple spot each; filaments puberulous. ♂ S. Native of Brazil, in the province of Cisplatin.

**Pinnatifid-leaved Turnera.** Shrub ½ foot.

23 T. serris (Smith in R. sess. cyc. no. 6.) leaves obovate-wedge-shaped, serrated or pinna aggregated, very hairy on both sides, without glands; peduncles axillary, partly combined with the footstalks; outer calyx linear. ♀ S. Native of Monte Video and Buenos Ayres. Flowers tawny, red.

**Bristly Turnera.** Pl. ½ to ¾ foot.

24 T. pumilea (Lin. amoen. 5. p. 395.) leaves broad-lanceolate, deeply serrated, hairy; flowers sessile, propped by 2 linear bracteoles; styles and stamens length of petals. ♀ S. Native of Jamaica, in arid fields. Swartz, obs. 116.—Sioane, jam. hist. t. 127. f. 6.—Pumilea, no. 1. P. Browne, jam. 188. Stem hardly 3 inches long. Plum. icon. t. 150. f. 1. Flowers small, yellow.

**Dwarf Turnera.** Fl. July. Cl. 1796. Pl. ¼ foot.


**Small-leaved Turnera.** Shrub 1 foot.

§ 2. Peduncles distinct from the pedioles, axillary. Flowers bicnacteolate.

26 T. rep'estris (Aubl. guian. 1. p. 289. t. 113. f. 1.) leaves linear, serrated, glabrous, glandless; flowers nearly sessile, bearing 2 setaceous bracteoles at the base. ♀ S. Native of Guiana, in the fissures of humid rocks, at the river Sinemari. Petals yellow, somewhat toothed at the apex, 3 lines long. Flowers small.


27 T. rupest'scens (Aubl. l. c. p. 290. t. 113. f. 2. but not of Mill.) leaves lanceolate, acuminiated, equally serrated; flowers nearly sessile, bearing 2 sessile, lanceolate-linear bracteoles. ♀ S. Native of Guiana, in the fissures of rocks, on the banks of the river Sinemari. Very like T. rep'estris, but differs in the leaves being broader, and in the serratures being more crowded. Flowers small, yellow.

**Far. latifolia (D. C. prod. 3. p. 347.) leaves ovate, acute. ♀ S. Native of Cayenne.

**Shrubby Turnera.** Shrub 5 to 8 feet.

28 T. tomentosa (H. B. et Kunth, nov. gen. amer. 6. p. 125. but not of Willd.) leaves oblong, irregularly crenate-serrate, pubescent above, but clothed with canescent tomentum beneath, glandless at the base; flowers sessile, with 6 stamens and 6 petals. ♂ S. Native of South America, in the province of Venezuela. Styles hairy, about equal in length to the stamens. Petals yellow.

**Tomentose Turnera.** Shrub 1 foot.

29 T. sino'oides (Lin. mant. p. 38.) leaves obovate-cuneated, serrated, quite entire at the base, rather tomentose on both surfaces, pilose on the veins and margin beneath; flowers on very short pedicels; bracteoles linear, hairy. ♀ S. Native of Brazil. Habitat of T. eitoides. Petals obovate, yellow.

**Sidá-like Turnera.** Shrub 3/4 foot.

30 T. carpinifólia (H. B. et Kunth, l. c.) leaves oblong-lanceolate, doubly serrated, puberulous, biglandular at the base; flowers on short pedicels; bracteoles ovate, acuminate, serrated. ♂ S. Native on the humid banks of the river Orinoco, near Maypures, T. acuta, Willd. rel. in Rom. et Schult. syst. 6. p. 678. ex Kunth. Flowers yellow. According to Willd. the flowers are petioled; if such be the case, the plant belongs to the preceding section.

**Hornbook-leaved Turnera.** Shrub 1 to 2 feet.

31 T. durte'ana (St. Hil. fl. bras. 2. p. 223.) leaves ovate,
obtuse, crenated, glandless, pubescent above, hairy, tomentose beneath; peduncles simple. f. S. Native of Brazil. Petals oblong, striated, yellow, denticulated at the apex. Styles about equal in length to the calyx.

Willow-leaved Turnera. Shrub 2 to 3 feet.

38 T. capitata (St. Hil. l. c. p. 215.) leaves elliptic-oblong, or oblong-lanceolate, acute, denticately serrated, nearly glandless, pubescent above, and clothed with yellowish tomentum beneath; flowers sessile, forming a many-flowered head at the tops of the branches. f. S. Native of Brazil, in the province of Minas Geraes, on the margins of woods near Poso Alto, not far from the confines of the province of St. Paul, and on the iron mountains near Nossa Sura da Conceicao. Petals oblong-oblong, pale yellow. Styles much shorter than the stamens.

Capitate-flowered Turnera. Shrub 3 to 1 feet.


40 T. glabra (D. C. prod. 5. p. 547.) leaves linear, obtuse, sub serrated, narrowed at the base, glandless; racemes few-flowered; pedicels rising from the axes of small linear leaves and shorter than them, articulate and bracteolate above the middle. f. S. Native of St. Domingo. Stems erect, glabrous. Flowers yellow.

Glabrous Turnera. Pl. 1 to 2 feet.

41 T. cistoides (Lin. spec. 387.) leaves linear-lanceolate, serrated, pubescent above, tomentose beneath, glandless at the base; racemes terminal, leafy; pedicels rising from the axis of lanceolate leaves and shorter than them, articulate and bracteolate above the middle. f. S. Native of South America, in sterile places, Suriname, Jamaica, St. Domingo, Georgia, &c. Sloan. jam. hist. 1. p. 127. f. 7. Plum. ed. Burm. t. 150. f. 1. Swartz. obs. 117. T. hishita, Bert. flavus. Flowers small, yellow.


42 T. spera (Poir. dict. 8. p. 144.) leaves elliptic, sessile, a little toothed, pubescent above, and rather tomentose beneath, glandular; stem hardly pubescent, rough; racemes leafy, terminal; pedicels rising from the axis of the leaves, and shorter than them, articulated above the middle. f. S. Native of French Guiana. Flowers yellow. Perhaps a variety of T. cistoides or of Periquita villosa.

Rough Turnera. Pl. 1/2 foot.

† Species not sufficiently known.


Sweet-scented Turnera. Shrub.

44 T. nikita (Willd. rel. in Reem. et Schult. syst. 5. p. 678.) leaves linear-lanceolate, unequal, bluntly serrated, clothed with stellate tomentum on both surfaces; flowers axillary, solitary; stem branched, hairy. f. S. Native of Brazil. Flowers yellow.


45 T. braziliensis (Willd. rel. l.c.) leaves lanceolate, quite entire, clothed with hispid pubescence; flowers axillary, sessile, aggregate. f. S. Native of Brazil. Leaves biglandular at the base. ex Spreng.
Brazilian Turner. Fl. Ju. Jul. Ct. 1810. Pl.$\frac{1}{2}$ to 1 ft. 46 T. integri folia (Wild. rel. l. c.) peduncles 1-flowered, axillary; leaves linear-lanceolate, pubescent, glandless.—Native country unknown. Leaves revolute, sessile, strigose above, but clothed with stellate tomentum beneath. Peduncles branched, bracteless, (exo Sprmg. syst. 1. p. 942.)

Entire-leaved Turner. Pl.? 47 T. vire scapa (Wild. rel. l. c.) leaves ovate, serrated, pilate, biglandular at the base; flowers bibracteate; bracteae linear-scatceous. $\ddot{O}$. $\dddot{S}$. Native of Brazil.

Twiggy Turner. Pl. $\frac{1}{2}$ to 1 foot. 48 T. corchorifolia (Wild. rel. l. c.) leaves oblong, doubly serrated, tomentose beneath. $\ddot{O}$. $\ddot{S}$. Native of Brazil. The rest unknown.

Corchorus-leaved Turner. Pl. $\frac{3}{4}$ to 1 foot? 49 T. Desvaiuxii (D. C. prod. 3. p. 348.) stem suffruticos, branched; branches assurgent, hairy; leaves ovate, obvuse, cre- nately toothed at the base, rather pilose beneath; flowers axil- lary, on long peduncles.—Native of Guiana. T. birta, Desv. in Hamilt. prod. p. 33. but not of Wild. Deveaux's Turner. Pl. 1 foot.

Cult. All the species of Turné are elegant plants when in flower, and thrive well in any light rich soil. They seed freely in this country, and may be propagated by that means: cuttings also root freely, under a hand-glass, in heat. The seeds of annual species may be reared on a hot-bed in spring; and some of the plants may be planted out into the open border, in a warm sheltered situation, where they will probably flower and ripen their seeds, if the summer prove dry and warm.


LIN. Syst. Pentândria, Tri-Hexagynia. Calyx campanulate. Style 6, or 3 bipartite ones; stigmas multifid, flagellate. Capsule 3-valved from the apex to the base. Perhaps this genus is sufficiently distinct from the preceding. Habit of Turnéra racemosa, but which plant is only furnished with 5 styles, not 6. Flowers pedicellate, in the axils of the upper leaves. Pedicels bracteate, articulate above the middle. 1 P. villosa (Anbl. l. c.) leaves ovate-oblong, erosely toothed, wrinkled, clothed with rufous villi. $\ddot{O}$. $\ddot{S}$. Native of Guiana, in sand by the sea-side. Turnéra rugosa, Willd. spec. 1. p. 1504. Poir. dict. 8. p. 145. Turnéra villosa, Rausch. Corolla yellow.

Villous Piriquesta. Pl. 2 feet. 2 P. tomentosa (H. B. et Kunth, nov. gen. amer. 6. p. 128.) leaves oblong, acutish at both ends, irregularly crenate-serrate, pubescent above, clothed with soft hoary tomentum beneath. $\ddot{S}$. $\ddot{N}$; Native of South America, between Atures and Maypures, on the Orinoco. Turnéra tomentosa, Wild. rel. in Rem. et Schultes, syst. 6. p. 678. but not of H. B. et Kunth, Corolla yellow.

Tomentose Piriquesta. Shrub 1 to 2 feet.

Cult. The culture and propagation of these plants are the same for the annual species of Turnéra, see p. 70.

ORDER CIX. FOQUIERACEÆ (plants agreeing with Foquiera in important characters). D. C. prod. 3. p. 349.—Portulaceae affines, H. B. et Kunth, nov. gen. amer. 6. p. 81.

Calyx of 5 permanent sepals; sepals imbricate, ovate or roundish. Petals 5, combined into a tube, inserted in the bottom of the calyx or torus; limb of corolla 5-lobed, regular. Stamen 10-12, inserted with the corolla, exserted; anthers 2-celled. Ovary free, sessile. Style filiform, trilob at the apex. Capsule trigonal, 3-celled; valves bearing dissepiments in their middle, which go as far as the centre of the fruit, and therefore the capsule is 3-celled. Seeds compressed, winged, fixed to the centre of the fruit or axis, few when the capsule is mature, but numerous when it is in a young state. Embryo straight, in the centre of a fleshy albumen, with flat cotyledons.

—Trees or shrubs, natives of Mexico. Leaves in fascicles when young, in the axils of spines or cushions, quite entire, oblong, and rather fleshy. Flowers scarlet, disposed in a termi- nal spike or panicle.

This order is separated from Portulacea by De Candolle, as he tells us, (Mem. portul. p. 4) for the following reasons: first, because their petals cohere into a long tube, of the same nature as that of gamopetalous Crassulaceæ; second, because their capsule consists of 3 loculicidal cells, that is to say, which separate through the middle, forming 3 septiferous valves; and thirdly, because their embryo is straight, with flat cotyledons, and stationed in the centre of a fleshy albumen. They approach the monopetalous Crassulaceæ in the structure of their flowers; and Turnériaceæ and Loasaceæ in the form of their fruit.

Synopsis of the genera.

1 FOQUIERÁ. Sepals ovate, mucronate, free, 2 exterior and 3 interior. Limb of corolla spreading reflexed. Stamens 10-12, hypogynous.

2 BRONNIA. Sepals roundish; limb of corolla erect. Stamens 10.


LIN. Syst. Decârdia, Monogynia. Calyx coloured; sepals ovate, mucronate, 2 exterior and 3 interior, free. Corolla hypogynous; tube cylindrical, a little arched; limb spreading reflexed, nearly regular. Stamens 10-12, hypogynous, ex- serted; filaments ciliated below, and cohering together; anthers coriace. Ovaria 18, on each placenta, in 2 rows. Fruit unknown. A somewhat spinose shrub. Spikes terminal, erect. Flowers scarlet. Leaves oblong, rather fleshy.

1 F. FORMOSA (H. B. et Kunth, l. c.). $\ddot{S}$. Native of Mexico. Echeveria spicata, Moc. et Sesse, fl. mex. icon. ined. Flowers flesh-coloured, an inch long. Leaves scattered, according to Kunth's figure; but according to the figure in the fl. mex. they are a little narrower and in fascicles: therefore the 2 figures mentioned are very unlike each other.

Shozy Foquiera. Shrub 6 to 10 feet.

Cult. A light rich soil will suit this very showy shrub; and young cuttings will root freely under a hand-glass, in heat.


LIN. Syst. Decârdia, Monogynia. Calyx permanent; sepals 5, roundish. Tube of corolla cylindrical, straight; limb
erect. Stamens 10; filaments filiform, exserted; anthers ovate. Style exceeding the stamens. Cells of fruit 1-seeded when mature. A spinose shrub, with fascicles of obovate-oblong, membranous leaves in the axils of the spines. Flowers paniced, scarlet. It differs from the last genus in the placentas being drawn in more to the centre of the fruit.


Spiny Bronnia. Tree 12 to 14 feet. Cul. See Fouqueria. 1. p. 70. for culture and propagation.


Calyx free, or somewhat adnate to the very base of the ovarium (f. 15. a. f. 18. a.), usually of 2 sepals (f. 16. a. f. 18. a.), seldom of 3 or 5 (f. 20. a.), cohering at the base. Petals usually 5 (f. 15. b. f. 17. b.), but sometimes 3-4-6, very rarely wanting altogether, either distinct (f. 18. b.), or cohering into a short tube at the base (f. 15. b.), alternating with the sepals when the number is equal. Stamens inserted along with the petals, irregularly into the base of the calyx, and sometimes perhaps in the torus, variable in number in the species of the same genus, all fertile; filaments distinct, adnate to the base of the petals (f. 15. g.), and usually opposite them where the number is equal; anthers ovate, 2-celled, opening lengthwise, versatile (f. 18. c.). Ovarium one, usually roundish (f. 15. c.), 1-celled (f. 15. f.). Style sometimes single, filiform, cleft into numerous stigmas at the apex (f. 15. c.); sometimes wanting or nearly so; when this is the case the stigmas are distinct (f. 17. c.), and rise in numbers from the top of the ovarium. Capsule 1-celled, opening either transversely (f. 15. f.), or by the 3 valves from the base to the apex; but they are also occasionally 1-seeded and indehiscent. Seeds numerous when the fruit is dehiscent, attached to the central placenta (f. 15. f.). Albumen farinaeous. Embryo curved round the circumference of the albumen, with a long radicle, and oblong cotyledons.—Fleshy shrubs or herbs. Leaves alternate, rarely opposite, entire, usually succulent, without stipulas, or sometimes with membranous ones on each side of the petioles. Flowers axillary or terminal, usually expanding in the sun, and of short duration. The 1-seeded genera of this order agree in character with the order Portulacaeae, and the apetalous genera with the order Ficoideae. This order is related in nearly every point of view to Caryophyllaceae, from which they scarcely differ except in their perigynous stamens, which are opposite the petals when equal to them in number, and two sepals; the latter character is not, however, very constant. The presence of scarous stipulas in several Portulacaeae, although perhaps an anomaly in the order, indicates their affinity with Caryophyllaceae, from which the monospermus genera of Portulacaeae are distinguished by the want of symmetry in their flowers, and by the stamens being opposite the petals, instead of the sepals. So close is the relationship between these orders, that several of the genus Gigninsia in Portulacaeae have been referred to Pharmaceae in Caryophyllaceae, and several Portulacaeae have been described by authors as belonging to genera of Paronychiae. De Candolle remarks, that his Gigninsia brevicalis resembles certain species of Andróneae, and that Portulacaeae have been more than once compared to Primulaeae (mem. p. 14.), and the same author remarks in his prod. 3. p. 351. that the genera with definite stamens, and hairy axillae approach Ciceae, while the apetalous genera tend towards apetalous Ficoideae.

Insipidity, want of smell, and a dull green colour, are the usual qualities of this order, of which the only species of any known use are common Parslane and Claytoria perfoliata, which resemble each other in properties.

Synopsis of the genera.

1. TRIAN'THEMA. Sepals 5, concrete at the base, coloured. Petals wanting. Stamens 3, rarely 10 or more. Styles or stigmas 1-2, rarely 3. Capsule opening transversely.


3. PORTULACA. Calyx bipartite (f. 15. a.), at length falling off. Petals 4-6, equal (f. 15. b.), free or concrete at the base. Stamens 6-15 (f. 15. g.). Style one, 3-5 cleft at the apex (f. 15. c.); or style wanting, and the stigmas 3-8 elongated. Capsule opening transversely (f. 15. f.).


8. CALANDRINA. Calyx 2-parted (f. 18. a.). Petals 3-5 (f. 18. b.), free or rather connate at the base. Stamens 4-15 (f. 18. c.). Style one, very short, tripartite at the apex (f. 18. c.); lobes clavate. Capsule oblong-elliptic, 3-valved. Seeds wingless.

9. PORTULACARIA. Calyx of 2 sepals, membranous. Petals 5, permanent. Stamens 5, or probably 10, 5 of which are abortive. Style wanting; stigmas 3, spreading, glandular. Fruit triquetrous, winged, indehiscent, 1-seeded.

PORTULACEE.


12 Moéstia. Calyx of 2, rarely of 3 sepals. Petals 5, rather connate at the base, 3 of which are a little smaller than the rest. Stamens usually 3 in front of the smaller petals, making 9, very rarely 3-4. Capsule 3-valved, 3-seeded.


16 Ateleria. Calyx 2-parted, coloured. Petals 5. Stamens 10, membranous, connected into a hypogynous tube, the 5 inner ones abortive. Style one, crowned by a depressed capitate stigma. Capsule bladdery, membranous, valveless. Seeds numerous in the bottom of the cell.


Lin. syst. Pent-Deccindria, Monogynäia. Sepals 5, permanent, connected together at the base, rather coloured on the inside, and mucronated under the apex. Petals wanting. Stamens 5-10, rarely more, distinct, inserted in the bottom of the calyx; anthers kidney-shaped. Ovary ovate. Styles or stigmas filiform 1-2; rarely 3. Capsule opening transversely below the middle; the upper valve, which separates like a lid, is hollow, and contains a seminiferous cell; therefore both cells are either simple, or of two divisions, one or few-seeded. - More or less fleshy herbs, which are sometimes suffruticoses at the base. Leaves opposite, quite entire, petiolate. Petioles dilated into a stipula-formed membrane on both sides. Flowers axillary, sessile, usually by threes.

sect. i. Zaléya (meaning not explained by Burmann), Burm. fl. ind. p. 110, D. C. Prod. 3. p. 352. Stamens 10 or more.

1 T. Polyantha (Blum. bijdr. p. 1137.) stems herbaceous, procumbent; branches terete; leaves linear, obtuse; flowers pedunculate, solitary, polyandrous, trinervus. 2. 8. Native of Batavia, in boggs.

Polyandrous Trianthes. Pl. cr.

2 T. Govinda (J. am. ex Cat. no. 6638.) stems suffruticos, trailing; leaves opposite, elliptic, emarginate at the apex; those opposite each other of unequal size; flowers axillary, aggregate, sessile. 2. 8. Native of the East Indies, in Manggee. Plant glaucous. The number of stamens and styles unknown. Govinda Trianthes. Shrub prostrate.


4 T. Trigeta (Rottl. et Willd. in nov. act. nat. berol. 4. p. 180.) stems herbaceous, dichotomous, branched; branches compressedly triquetrose; leaves somewhat spatulate, petiolate; flowers axillary, sessile. - Native on the coast of Coromandel. Structure of flower unknown. Trigétrea Trianthes. Pl. diffuse.

5 T. Humíra (Thunb. fl. cap. p. 389.) stems frutescent, trailing, terete; leaves lanceolate, attenuated at both ends. 2. 6. Native of the Cape of Good Hope, in Konde Bokeveld. Stamens 10, alternate ones shorter. Thunberg in his prodromus says the flowers are monogyrous, but in his flora he says they are digynous. Var. ?; other than 10, one-half shorter than the calyx, fixed by pairs to the base of the calycine segments. - Native of the Cape of Good Hope, at Hex River.

Trailing Trianthes. Shrub tr.

6 T. Aces (Thunb. fl. cap. p. 399.) stems frutescent, diffuse, 2-edged; leaves lanceolate, attenuated at both ends, acuminated. 2. 6. Native of the Cape of Good Hope. Stamens 10. Style 1, very short.

Two-edged-stemmed Trianthes. Shrub diffuse.


7 T. Pentandra (Lin. munt. p. 70.) stems rough from velvety hairs; leaves elliptic, obtuse, flowers crowded in the axils of the leaves. 2. (ex Forsk.) (ex Lin.) Native of Arabia. Roçama digyna, Forsk. l.c. Roçama Arabica, Genl. syst. 1. p. 455. Phuk. phy. t. 120. f. 3. ex Lin. T. pentandra, Gürtn. fruct. 2. p. 213. t. 128. f. 5. Lam. ill. t. 375. f. 2. Stamens 5. Styles 2. Perhaps 2 species are here confused, the stems being, according to Linnaeus, erect and shrubby, and according to Forskal annual and prostrate. Var. ?; other than 5, sessile emarginate at the apex. - Native of the East Indies. T. roçama, Roxb. hort. beng. p. 34.


8 T. Monogyra (Lin. munt. p. 69.) stems herbaceous, diffuse, dichotomous, branched, glabrous; leaves oval, obtuse, opposite, one of them smaller than the other; flowers axillary, sessile, bibracteolate. 2. 6. Native of Jamaica, Curassow, and Mexico. D. C. pl. grass. t. 109. Lam. ill. t. 375. f. 1. T. portulacæastrum, Sauv. meth. p. 127. Lin. spec. 635. T. procmabens, Mill. - Phuk. aln. t. 55. f. 4. Stamens usually 5, alternating with the sepals, but sometimes 10. Styles 1 or 2. Lower cell of capsule about 4-seeded; upper one 1-seeded.


9 T. Cristallina (Vahl. symb. 1. p. 32.) stems shrubby, diffuse, terete, glabrous, papillose; leaves linear or lanceolate, opposite, one of them smaller than the other; flowers crowded, axillary. 2. 6. Native of Arabia and the East Indies. Papulária cristallina, Forsk. desc. p. 69. Stamens alternating with the petals. Style 1.

Iey Trianthes. Shrub diffuse.

Cult. The seeds of the species of Trianthes require to be sown on a hot-bed in spring; and about the end of May they may be planted out in the open border in a warm sheltered situation, where they will probably flower and seed. Some are said
to be shrubby, these it will be requisite to treat as other stow plants; and cuttings of them will be easily rooted.

II. CYPSELEA (from kypsele, a bee-hive; in reference to the form of the capsule). Turp. in ann. mus. 7. p. 219. t. 121. f. 5. D. C. prod. 3. p. 333.—Radiâna, Rafin. speecli. 1. p. 88.

Lin. syst. Di-Trimandria, Dicygnum. Calyx campanulate, permanent, coloured, 5-petalled; lobes obtuse, 2 of which are smaller than the other 3. Corolla wanting. Stamens 2-3, inserted in the calyx and alternating with its lobes (ex Turp.), or opposite the smaller lobes (ex Rafin.). Ovarian free, 1-celled Style hardly any, 2-petalled, or stigmas 2. Capsule 1-celled, many-seeded, opening transversely. Seeds fixed to an ovular, central placenta, very small, and very numerous.—Herbs, natives of St. Domingo, with the habit of Moâsta or Crip'ta, rather succulent, annual, and glabrous. Leaves opposite, obovate; petioles widened into a stipule-formed, jagged membrane. Flowers axillary, small, greenish, solitary, on short pedicels.


III. PORTULACA (from porto, to carry, and lac, milk; plants milky). Tourn. inst. t. 118. Adans. fam. 2. p. 242. Juss. gen. p. 312.—Portulaca species of Lin.—Meridiâna, Lin. et Schrank.—Lêmià, Vand. in Röm. script. p. 116. t. 7. f. 15.—Merida. Neck. Lin. syst. Octo-Dodecandria, Monogynia. Calyx free from or adhering to the ovular at the very base, bipartite (f. 15. 1.), at length cut round about at the base, and falling off. Petals 4-6 (f. 15. b.), equal, distinct, or joined together at the very base, inserted in the calyx. Stamens 8 (f. 15. g.)—13; filaments free, sometimes adnate to the bottom of the corolla (f. 15. g.). Ovarian roundish. Style 1 (f. 15. d.), 3-6-cleft at the apex (f. 15. c.), or the style is wanting; but in this case, the stigmas are 3-8 and elongated. Capsule sub-globose (f. 15. f.), 1-celled, opening transversely in the middle. Seeds numerous, fixed to a central placenta (f. 15. f.).—Humble fleshy herbs. Leaves scattered, quite entire, thick, usually bearing hairs in the axes, crowded, or somewhat verticillate about the flowers. Flowers expanding from 9 till 12 o'clock in the morning, if the sun shine, otherwise they remain closed.—This is a heterogenous genus, and probably divisible, but easily distinguished by the capsule opening transversely.

* Flowers yellow. Axis of leaves or joints pilose.


—Blackw. icon. t. 287.


Var. b, sativa (D. C. prod. 3. p. 353.) stems diffuse; branches erectish. O. H. Native of South America, and now cultivated in some parts of Europe. P. doméstica, Lob. icon. p. 388. P. sativa, Haw. misc. p. 136. syn. 122. P. latifolia, Horn. hort. hafn. 2. p. 491. There is a variety of this with green leaves (P. viridis, Hortul.), and yellowish leaves (P. aërea, Hortul.). The young shoots and succulent leaves are esteemed cooling, and are used in spring and summer as an ingredient in salads, and as pot-herbs and pickles. The plant was formerly in much more request than at present. Both the green and yellow-leaved sorts are raised from seed, and for a bed 4 feet by 4 feet, sown either broadcast or in drills, 9 inches apart, one-eight of an ounce will suffice. Each variety is somewhat tender; the green, which is usually preferred, is perhaps rather the hardiest. An early crop may be sown in February or March, on a moderate hot-bed; the plants will require the aid of a gentle heat till the middle of May, when the seed may be sown in a warm border. If a continued succession is required, sow every month during summer, till August, or while the plant can be raised; generally in small drills, from 3-6 inches aunder. The plants will soon come up; they should remain where sown. In very dry hot weather, water thrice a-week. The shoots may be gathered for use when they are from 2-5 inches in height, and are well furnished with leaves. Cut them off low, and the bottom part will soon sprout out again. When seed is required, leave some of the first open border plants to run; they will set seed in Autumn.


2 P. parvifolia (Haw. syn. p. 122.) leaves cuneiform, minute, fleshy; stem much branched, prostrate; flowers sessile, or on long peduncles. O. H. Native of Jamaica. Probably only a variety of P. sativa, but the plant is much smaller, and the leaves are 10-times smaller.


** Flowers yellow. Axis of leaves or joints pilose.

3 P. foliosa (Ker. bot. reg. 793.) stem diffuse; branches erect; leaves subulate; flowers solitary at the tops or in the forks of the branches, surrounded by white hairs and a many-angled, yellowish, and rather inconspicuous perianth. O. F. Native of Guinea, near Accra. P. Guineensis, Spreng. There is a plant figured in fl. mex. of Moc et Sesve, called by them P. stelliformis, a native of Mexico, which is very like this species. Flowers small, yellow.


5 P. lanuginosa (H. B. et Kunth, nov. gener. amer. 6. p. 74.) stems procumbent, branched; leaves terete; obtuse, upper ones in whorls; flowers in clusters of 2-5, surrounded by soft hairs; petals ovate-spatulate, obtuse. O. F. Native of South America, on the banks of the Amazon. Style 1; 3-5-cleft at the apex. Petals 4-5, yellow. Woolly Purslane. Pl. pr.

6 P. marginata (H. B. et Kunth, l. c. p. 72.) stems rather dichotomous; leaves cuneately spatulate, rounded at the apex, subverticillate, obsoletely veined, margined with red; axis hairy; flowers 5-7 in each head, involucrated. O. F. Native near Caracas, in Venezuela. Said to be allied to P. oleracea. Flowers yellow.

Marginated-leaved Purslane. Pl. pr.

7 P. laportottana (St. Hils fl. bras. 2. p. 190.) stem suffruticos at the base, pilose in the axils of the leaves; leaves lanceolate, flatish, narrowed at the base, acute, longer than the hairs; flowers crowded at the tops of the branches; petals ob-
cordate, mucronulate, shorter than the calyx.  h. S. Native of Brazil; in that part of the province of Minas Geraes called Minas Novas, near Nossa Senza da Penha. Flowers yellow, surrounded by hairs and crowded leaves.

*Larrotte's Purslane*. Shrubs ½ to 3 foot.


9 P. euribacalis (H. B. et Kuntx, nov. gen. amer. 6. p. 73.) stems ascending, corymbose branched above; leaves lanceolate, acute, nerveless; upper leaves in whorles; axils pilose; flowers 4-8, crowded into a head.  O. F. Native of South America, in sandy places and on dry mountains on the sea-shore near Laguna. Pedals 5, ovate-oblong, emarginate, orange-coloured. Stamens 27-30. Style 6-8-cleft. Said to be allied to P. halimoides.

Red-stemmed Purslane. Pl. ascending ½ foot.

10 P. hirsutissima (St. Hil. fl. bras. 2. p. 121. t. 114.) stem suffrutescent at the base, pilose at the axes of the leaves; leaves opposite, oblong-lanceolate, flat, tapering to both ends, acute, shorter than the flowers; flowers crowded at the tops of the branches; petals obcordate, mucronulate, a little longer than the calyx.  h. S. Native of Brazil, in that part of the province of Minas Geraes called Minas Novas, near Bom-Tim and Nossa Senza da Penha, and also near Tejucu. Flowers yellow, surrounded by a whorl of the upper leaves and axillary hairs.

Very hairy Purslane. Shrub ½ to 1 foot.

11 P. mucronata (Link, exm. hort. berol. 2. p. 2.) stem erect; leaves oblong, with a short taper point; floral leaves 8, constituting an involucrum; axils pilose; flowers terminal, sessile.  O. F. Native country unknown.


** ** Flowers purple; axils pilose, or perhaps sometimes naked.

13 P. pilosa (Lin. spec. 639.) stem diffuse; joints beset with long hairs; leaves alternate, linear-lanceolate, convex on the back, bluish, about equal in length to the axillary hairs; floral leaves in whorles; flowers crowded at the tops of the branches, sessile, surrounded by long hairs; petals ovate, acute, a little longer than the calyx.  O. F. Native of South America, about Curassao, in Brazil, Martinique, Jamaica, &c. in sandy places near the sea. Gaertn. fruct. 2. p. 212. t. 128. f. 4. Haw. misc. p. 137. Ker. bot. reg. 792.—Wolk. norib. 341. with a figure. Herm. par. 215. Comm. hort. anat. 1. t. 5. Flowers 5-parted, pale purple, expanding from 10-12 o'clock in the morning, if the sun is out. Stamens about 20. Root tuberous.


14 P. lana'ta (Rich. act. soc. hist. nat. par. 1792. p. 109.) stems diffuse; leaves linear-subulate, flat; hairs of the axilla and joints longer than the leaves; flowers terminal, surrounded by hairs and a whorl of leaves.  O. F. Native of Cayenne. Petals red, obcordate. Stamens 15 and more. Perhaps only a variety of P. pilosa.

Wolly Purslane. Pl. ½ to ½ foot.

15 P. pilosissima (Hook, bot. misc. 2. p. 221.) plant annual? small; stems branched, decumbent; leaves terete, oblong; fascicles of hairs twice or thrice longer than the leaves.  O. H. Native of Peru, at Yazo, in the valley of Canta. The flowers are concealed by long white solitary tufts of hairs. It comes nearest to the P. lanata, Rich.

Very pilose Purslane. Pl. ½ to ½ foot.


Shaded Purslane. Pl. ½ to ½ foot.

17 P. pusilla (H. B. et Kuntth, l. c.) stems branched; axils naked? leaves scattered, elliptic, nerveless, rounded at both ends; flowers solitary, almost sessile.  O. F. Native on the Orinoco, among rocks near Maypures, and of Trinidad. Flowers rose-coloured, 4-5-petalled. Stamens 11-14. Style triad.


18 P. Hilaireana (stem trailing, herbaeous, pilose in the axils of the leaves linear-lanceolate, convex on the back, flat in front, acute, longer than the axillary pili; flowers crowded on the tops of the branches; petals obcordate, much longer than the calyx.  O. F. Native of Brazil, in the province of St. Paul. P. grandiflora, St. Hil. fl. bras. 2. p. 192. but not of Hook. Flowers purple, surrounded by crowded leaves and hairs.

St. Hilaire's Purslane. Pl. ½ to ½ foot. trailing.

19 P. grandiflora (Hook, in bot. mag. 2883.) stems diffuse, branched; leaves scattered, cylindrical, acute, with pilose axes; flowers 3-4 together, terminal, crowded, surrounded by a whorl of leaves and crowded hairs; petals longer than the calyx; style 8-9-cleft at the apex.  O. F. Native of Chili. There are varieties of this plant with either purple or yellow large flowers. Root tuberous.

Var. a, major? (Hook, in bot. misc. 3. p. 241.) leaves an inch or an inch and a half long.—Bot. mag. t. 2885.

Var. b, microphylla (Hook. et Arn. l. c.) leaves hardly half an inch long. P. Mendocienensis, Gill. mss. Both varieties are found between Rio Saladillo and Mendoza.

the calyx, obovate-roundish. 2 G. Native of Chili, in the plains near Mendoza. Plant stout, in proportion to its height. Flowers large, bright reddish purple.

Gillies's Purslane. Pl. 1 to ½ foot.

21 P. teretifolia (H. B. et Kunth, l. c.) stems creeping, corymbose branched; axils rather pilose; leaves scattered, terete, acutish; flowers 3-5 in a head, sessile, involucrated, and surrounded by hairs. O. F. Native of South America, on the sandy banks of the river Orinoco and Rio Negro, near Car- chana, Maypures, San Carlos, &c. Very like P. rubiculoides, but differs in the flowers being purple. Stamens 18-24.

Terete-leaved Purslane. Pl. creeping.

22 P. axilliflora (Pers. ench. 2. p. 6.) stems procumbent; leaves oblong, fleshy, in young plants they are opposite; flowers solitary, axillary. O. F. Native country unknown. Meridiàna axillifóra, Schrank. bot. zet. 1804. p. 354. Corolla and stamens rose-coloured.

Axil-flowered Purslane. Pl. pr.

† Species not sufficiently known.

23 P. imbriátá (Forsk. deser. 92.) leaves crowded, ovate, acute, flat beneath, and convex above, opposite; joints hairy at the base; flowers sessile, terminal. O. H. Native of Arabia. Flowers yellow, large. Usually as if they were tetragonal, from the leaves being imbricated on them in 4 rows.

Imbricate-leaved Purslane. Pl. pr.

24 P. Cañera (Thunb. fl. cap. p. 399.) stem weak, branched, glabrous; leaves linear-oblong, alternate; flowers axillary, pedicellate; pedicels bibracteate. O. F. Native of the Cape of Good Hope. Corolla yellow, 6-petalled. Style trifid. Capsule probably 2-celled and 2-valved.

Caffriana Purslane. Pl. pr.

25 P. Arabica (Forsk. deser. 92. no. 81.) calyx of 4 permanent sepals.—Native of Arabia. The rest unknown.

Arabian Purslane. Pl. ?

26 P. Flavia (Forst. fl. esc. p. 72.). O. F. Native on the shores of the Society Islands, where it is booted and eaten by the natives, and called by them Aturi. This plant has not been described, and is probably nothing else but P. oleracea.

Yellow-flowered Purslane. Pl. pr.

27 P. Wightiana (Wall. cat. no. 6845.) plant diffuse; leaves small, intermixed with numerous soft leathy stipulas; flowers sessile, terminal, almost hidden by the white bracteas. š. S. Native of the East Indies, at Sadras, in moist sand. A singular species.

Wight's Purslane. Pl. ½ foot.

Cult. Being mostly annual plants, growing naturally in sandy soil near the sea, the seeds should be sown in dry warm situations in spring; or it is perhaps better to sow them on a hotbed in spring, and plant them out towards the end of May into the open border; or they may be grown in pots and set in the greenhouse or in a frame.

IV. GRAHAMIA. V. ANACAMPseros.

IV. GRAHAMIA (in honour of Mrs. Maria Graham, a great traveller in South America, particularly in Brazil, Peru, and Chili.) Gill. ms. ex Hook. et Arn. in bot. misc. 3. p. 241.

Lin. syst. Jovibudia, Monogynia. Calyx of 2 permanent, oblong-lanceolate, mucronate, concave, still sepals, propped by 8 or 9 imbricate bracteae, similar to the sepals. Petals 5, obo- vate, mucronate. Stamens numerous, about 40; filaments filiform, monadphous at the base; anthers erect, 2-celled. Ovarium oblong, 1-celled. Style filiform, thickened upwards; stigmas 4, but usually 5, linear. Capsule 1-celled, 5-valved. Seeds numerous, compressed, broadly winged, each fixed by a podosperum to the central axis.—A smooth branched shrub, with alternate, oblong, obtuse, fleshy leaves, bearing hairs in the axils. Flowers solitary, terminating short or elongated branches, with white sepals and petals; and having the filaments purple at the base, and the anthers and stigmas yellow.

1 G. africana (Gill. ms. ex Hook. et Arn. l. c. p. 242.). š. D. G. Native of Chili, among bushes, in the Travésia between San Louis and Mendoza, especially near the river Desaguarero, at the altitude of 1500 feet. Xeranthus salicosis, Miers, to. 2. p. 539.

Africana-flowered Grahamia. Sitrub 1 foot.

Cult. See Portulacca for culture and propagation.


Lin. syst. Dodecandra, Monogynia. Calyx of 2 sepals (f. 16. a.); sepals opposite, oblong, rather concrete at the base. Petals 5 (f. 16. b.), very fugacious. Stamens 15-20 (f. 16. d.), filaments distinct, inserted in the bottom of the calyx along with the petals, and adhering a little to them. Style filiform, trifid at the apex (f. 16. d.). Capsule conicol, 1-celled, 3-valved (f. 16. c.), with the valves cleft longitudinally in the middle, and therefore the capsule appears as if it was 6-valved (f. 16. c.). Seeds numerous, winged, fixed to a central placenta. Very dwarf herbs or subshrubs, natives of the Cape of Good Hope. Leaves ovate, fleshy. Axils bearing filamentous subscarsious stipulaceous hairs. Bractes membranous, usually lobed into setaceous segments. Pedicels 1-flowered, elongated, disposed in racemes. Flowers of a rose-purple colour or white, expanding only in the heat of the sun.


2 A. intermediá; leaves very numerous and dense, expanded, flat, convex on the outside, retusely deltoid at the apex; axillary threads twisted, brown. š. D. G. Native of the Cape of Good Hope. Rulingia intermediá, Haw. in plit. mag. march 1828. Very like A. polypophyllum, but almost one half smaller, but taller; also like A. filaments, but broader; the leaves more numerous, leaves crowded, paler; and the axillary threads yellow, not white.


4 A. rubens (D. C. prod. 3. p. 556.) leaves ovate, acuminate, dilated, shining, dark green, somewhat reflexed at the


**FIG. 16.**


**LIN. SYST.** Deca-Dodecandria, Monogynia. Calyx of 2 ovate sepals, deciduous. Petals 5 (f. 17. 6.), hypogynous, or inserted in the bottom of the calyx, distinct or joined a little way at the base. Stamens 10-20, inserted along with the petals, and generally adhering a little to them, and joined together at the base. Style filiform, cleft at the apex into 3 spreading or close stigmas. Stigmas bearing papillae inside. Capsule 3-valved, 1-celled, many-seeded. Seeds wingless, kidney-shaped, scabrous, fixed to the central placenta.—Fleshy herbaceous, or suffrutescent plants. Leaves alternate, quite entire, exstipulate. Flowers very fuscous, expanding only in the heat of the sun, cyanose or racemose. Cymes or racemes usually forming terminal panicles.


2. **T. NAPFORME** (D. C. Prod. 3. p. 357.) root tuberous; radical leaves terete, subulate, fleshy, cymes terminal, dichotomous, corymbose; stamens 3, alternating with the petals. \( \gamma \). F. Native of Mexico. Claytôния tuberosa, Moc. et Sesse, fl. mex. icon. ined. Root tuberous, turnip-formed. Stems numerous from the neck of the tuber, almost leafless at the base, but cymose and dichotomous at the apex. Flowers white. This species from habit and inflorescence agrees with the preceding, but differs materially in having only 5 stamens, not 3, a tuberous root. It is not a Claytôния, but a Claytonia alternans, with the petals, not opposite them; nor a Calandria from the calyx not being deciduous.

**Turnip-formed-rooted Talinum.** Pl. ¾ to 1 foot.


**Var. \( \beta \), albilorum** (D. C. prod.

**FIg. 17.**
PORTULACEÆ. VI. TALINUM. VII. LEWISIA.

3. p. 357.) flowers white. ¹ D. G. Native of South America, by
syst. vég, but not of Thunb. Portulaca paniculata, Lin. spec. 2.
p. 640. Talinum fruticosum, Willd. spec. 2. p. 864. The
calyx is said to be of 5 sepals, but this assertion we suspect to
be erroneous.

5 T. TETANDRIA (Willd. spec. 2. p. 862.) stem shrubby, erect;
leaves flat, channelled, wedge-shaped, emarginate, mucronate;
racemes simple; racis triquetrous. ¹ D. S. Native of the Antilles, on the sea shore.
Portulaca triangulāris, Jaq. obs. 1. p. 35. t. 23. Rulingia tri-
angulāris, Ehrh. beitr. 3. p. 134. Flowers yellow, size of those
of the preceding species.

5 T. FÄTENS (Willd. spec. 2. p. 863. var. a.) stem suffruti-
cose, erect; leaves flat, glabrous, lower ones obovate, obtuse,
upper ones lanceolate, acute; panicle terminal; peduncles alter-
nate, dichotomous, bracteal; petals oblong, acute, 3 times
longer than the calyx. ² D. S. Native of Martinico, St.
Domingo, Mexico, New Granada, and Brazil, on rocks by the sea;
or of Buenos Ayres. Portulaca paniculata, Jaq.
amer. p. 148. Portul. pāntes, Jaq. hort. vind. 2. t. 151. Ru-
língia pāntes, Ehrh. beitr. 3. p. 135. T. paniculatum, Gaertn.
fr. 2. p. 219. t. 128. but not of Mench. nor of Ruiz et Pav.
Flowers small, red, 3 lines in diameter. The leaves of the plant
are used in the same manner as common purslane in Brazil.

1 to 2 feet.
6 T. ANDREWSI (Sweet, hort. p. 170.) stem suffruti-
cose, erect; leaves glabrous, ovate-lanceolate, sessile; panicle
branched, terminal; petals oblong, obtuse. ³ D. S. Native of the
West Indies. T. pāntes, Andr. bot. rep. t. 255. Flowers
large, red.

7 T. REFLIEXUM (Cav. icon. 1. p. 1. t. 1.) stem suffruti-
cose, erect; leaves flat, lanceolate or oval, obtuse, usually opposite;
panicle terminal; peduncles usually opposite, dichotomous,
barrel-shaped. ³ D. S. Native of South America. Sims. bot.
p. 141. T. pāntes β, Willd. spec. 2. p. 863. T. dichótomum,
Ruiz et Pav. syst. fl. per. p. 118. This species is very nearly
allied to T. pāntes, but differs in the flowers being yellow, not
red or purple, as in that plant, and the plant is probably biennial.

8 T. CUCNTOLOUM (Willd. spec. 2. p. 864.) stem shrubby,
erect; leaves flat, wedge-shaped, obtuse, mucronate; panicle
terminal; lower peduncles 3-flowered. ⁴ D. G. Native of Arabian
Felix, by Suridud and Hadie; also of the East In-
dies. Portulaca cuncfíola, Vahl. symb. 1. p. 333. Origia portu-
lacifíolia, Forsk. descrip. p. 103. Flowers of a reddish violet-
colour.

9 T. POLYGALOIDE (Gill. ms. ex Arnott, in Cheek, edinb.
journ. vol. 3. p. 354.) stem shrubby, erect, branched a little;
branches striated, angular; leaves flat, linear, mucronate (when
dry very narrow, with revolute edges); peduncles bitrackate at
the base, when bearing the fruit deflexed, axillary, emulating a
simple raceme. ⁵ D. G. Native of Chili, in the Jarihal, and
along the foot of the mountains near Mendoza, at an elevation
of 3000 to 4000 ft above the sea. Flowers about a fourth of
an inch in diameter, yellow, fading to red. The stem appears
not to be at all fleshy, according to the dried specimens.

Polygala-like Talinum. Pl. ½ to 1½ foot.

Sect. III. TALINÉLÜM (a diminutive of Talinum). D. C.
prod. 5. p. 358.—Talinum, Ruiz et Pav. syst. fl. per. p. 65.
Style thick. Stigmas 3, thick, flatish.—Generally annual
herbs; and probably should have been joined with the genus
Calandrinia.

10 T. REVOLUTUM (H. B. et Kunth, nov. gen. amer. 6. p.
76.) stem shrubby, simple; leaves glabrous, lanceolate, obtuse,
narrowed at the base, with revolute margins; peduncles terminal,
somewhat dichotomous, few-flowered; petals awned, glaucular
towards the base. ⁶ F. Native of South America, in shady
places near Cunuma. Flowers yellow. Stamens about 48.
Fruit unknown.

Revolute-leaved Talinum. Pl. ½ foot.
11 T. MUCRONÁTUM (H. B. et Kunth, l.c.) stems erectish;
leaves glabrous, oblong or oblong-lanceolate, obtuse, somewhat
mucronate, cucurred, and narrowed at the base; peduncles ter-
minal, 2-3-cleft, many-flowered; flowers racemose; petals mucronate. ⁷ D. F. Native of New Andalusia, near Bor-
dones, in shady humid places. Petals yellow, length of calyx.
Stamens about 56.

Mucronate-leaved Talinum. Pl. ½ to 1½ foot.
12 T. POLYAINDERUM (Ruiz et Pav. syst. fl. per. p. 115.) leaves
roundish-obovate, acuminate; flowers racemose, polyandrous;
petals obcordate, quite entire. ⁸ F. Native of Peru, on the
hills called Lomas towards Pongo. Herb a foot high, and
noxious to cattle. The rest unknown.

Polyandrous Talinum. Pl. 1 foot.
13 T. CRENA'TUM (Ruiz et Pav. l.c.) leaves roundish-
oblave, acuminate; flowers racemose; petals eremulatad; sta-
mens about 20.—Native of South America, on hills about
Pongo in the province of Atiquipa. Herb a foot high, and
called by the natives Langua de Faco, as the preceding
plant. The rest unknown.

Crenated-pelted Talinum. Pl. 1 foot.
14 T. MENSIEIUS (Hook. fl. amer. bot. 1. p. 225. t. 70.)
cauliscent; leaves linear-spatulate; lower ones on long petioles;
margins naked; superior ones and sepals acutely keeled, glan-
dularly ciliated on the back; flowers pedulcuate, axillary. ⁹
H. Native of the north-west coast of America, south of Col-
bumbia. The habit is that of a species of Talinum, without hav-
ing seen the flowers; it may, however, when better examined
turn out to be a species of Calandrinia. Root annual, rather
fusiform.

Menzies’s Talinum. Pl. ½ foot.

Cult. Pretty succulent plants, most of which require the
heat of a stove; a mixture of loam, peat, and sand, or any
light soil will suit them; and cuttings of them are very readily
rooted. The seeds of the annual species may be reared on a
hot-bed, and afterwards planted out in the open border about
the end of May.

VII. LEWISIA (in honour of Captain M. Lewis, who accom-
panied Captain Clarke to the Rocky Mountains of North Amer-
p. 345. t. 70. fl. bor. amer. 1. p. 223.

Lan. syst. Dodecandria, Monogynia. Calyx of 5 sepals;
sepals rather membranous. Petals 9-12, inner ones gradually
the smallest. Stamens 13-16, hypogynous; anthers linear.
Ovarium globose. Ovula many, fixed to a free central recep-
tacle. Style deeply 6-parted; segments filiform; stigmas ob-
tuse.—Plant herbaceous, stemless. Roots fascicled. Leaves
terete, fleshy. Sepals 1-flowered.

1 L. REDIVIVA (Pursh. l.c. Hook. l.c.) ¹ Y. H. Native of
North America.

Fur. a; root blood-coloured; flowers white. Native on the
banks of Clarke’s river.
Var. β; root white; flowers rose-coloured. Native of the subalpine regions of the Rocky Mountains, on the west side, and abundant at the junction of the Spokane river with the Columbia, on dry stony rocks; also of the Flathead and Salmon rivers, in similar situations. The roots of this variety are gathered in great quantities by the Indians on the west side of the Rocky Mountains, and highly valued on account of their nutritive qualities. They are boiled and eaten as sapsap or arrow-root, and are admirably calculated for carrying on long journeys; two or three ounces a day being quite sufficient for a man, even while undergoing great fatigue. Perfect flowers of the plant have not yet been seen by any botanist, and therefore the genus is not well known, and probably may hereafter verge into Tacamahac.


Cult. A mixture of loam and brick-dust will be a good soil for this plant; and it may be propagated by dividing the plant at the root, by cuttings, or by seeds.


Linn. syst. Dodécandria, Monógynia. Calyx permanent, bi-partite (f. 18, a.), sepals roundish-ovate. Petals 3-5 (f. 18, b.), hypogynous, or inserted in the bottom of the calyx, distinct or connected together at the very base, equal. Stamens 4-15, inserted in the torus or base of the petals, distinct, generally alternating with the petals. Style 1, very short, tripartite at the apex; lobes collected into a clavately capitate stigma (f. 18, c.). Capsule oblong-elliptic, 1-celled, 3-valved, many-seeded. Seeds adhering by capillary funiculus to the central placenta.—Successor or fleshy glabrous American herbs, having the habit of Salm. Leaves quite entire, radical or alternate. Pedicels 1-flowered, axillary or opposite the leaves. This genus hardly differs from Tacamahac, as far as its characters are yet known.

* Stemens 10-15.

1 C. PANICULATA (D. C. prod. 3, p. 358.) plant caulescent, branched; leaves obovate-oblong, acuminate; flowers panicled; pedicels 5 times longer than the bracteas. O. F. Native of Peru, in the province of Chancay, commonly called Losa, on sandy hills; and in the province of Atiquipa, at Pango, where the plant grows a foot high, and is called there Oréjas de Perro and Castanuelas. Tacamahac paniculatum, Ruiz et Pav. syst. fl. per. p. 115. Portulaca carnosa, Domb. herb. Leaves glabrous, fleshy. Stem erect, paniculately branched at the apex. Sepals 2, ovate, permanent. Stamens 10-15. Capsule 3-valved, length of the calyx. Flowers purpureus.


Tongue-leaved Calandrini. Pl. 1 foot.

3 C. CISTIFLORA (Gill. miss. ex Arnott, in Check, edibm. journ. 3. p. 355.) glabrous; stem ascending, suffruticosum; branches leafy at the base, and nearly naked towards the apex; leaves linear-lanceolate, acutatus; raceme terminal, few-flowered; pedicels elongated; bracteas minute, foliaceous; sepals ovate, acute; stamens numerous. O. F. Native on the Andes of Mendoza and Chili, in many places at an elevation above the sea, from 9,000 to 10,000 feet. The flowers are pretty large, and purple. It ranks near C. lingulata.

Rock-rose-flowered Calandrini. Pl. ascending.

4 C. AFINNUS (Gill. miss. ex Arnott, in Check, edibm. journ. 3, p. 355.) plant glabrous and stemless; leaves elongated, linear, obtuse, attenuated into the petiole; indurated bases of petioles imbricated and dilated; peduncles radical, 1-flowered, naked, one-half shorter than the leaves. O. D. G. Native on the Andes of Chili, at El Serro de San Pedro Nolasco. This species is closely allied to C. acaulis, but differs in the flowers having numerous stamens.

Alced Calandrini. Pl. 1/4 foot.

5 C. CAPITATA (Hook. et Arn. in bot. misc. 3. p. 244.) root annual; stems erect, smooth, and nearly simple; leaves linear, smoothish, ciliate; racemes capitate, many flowered, terminal, and axillary, pedunculate; flowers nearly sessile; sepals roundish, truncate at the apex, beset with long pili on the back. O. F. Native on the Cordillera of Chili, and near Collina.

Capitate-flowered Calandrini. Pl. 1/2 foot.

6 C. RAMOSSIMA (Hook. et Arn. in bot. misc. 3. p. 244.) root annual; stems many from the same neck, leafy, branched; axillary branches horizontal; leaves linear, pilose, ciliate with long hairs at the base; racemes short, few-flowered; sepals roundish, truncate, bluntly tridentate at the apex, beset with long pili on the back. O. F. Native of Chili, about Valparaiso.

Much-branched Calandrini. Pl. 1/2 to 1 foot.

7 C. CUSINGII (Hook. et Arn. in bot. misc. 3. p. 244.) root slender, annual; stems many from the same root, procumbent, leafy, dichotomously branched; leaves linear, attenuated at the base, beset with adpressed hairs; racemes few-flowered, terminal; sepals roundish, tridentate at the apex, pilose on the back. O. F. Native of Chili, about Valparaiso; and on the Cordillera of Chili. The upper part of the stems, racemes, and calyces are beset with glandular viscid hairs. The whole plant has a purplish hue. In this character this species approaches near to C. ramosissima, but in habit they are very distinct.

Cuming’s Calandrini. Pl. procumbent.


Umbellate-flowered Calandrini. Pl. 1/2 foot.

9 C. PICTA (Gill. miss. ex Arnott, in Check, edibm. journ. 3. p. 356.) plant caulescent, sparingly branched, perennial, glabrous; leaves obovate spatulate, attenuated into the petiole at the base, glaucous; corymb cy- mose, terminal, many-flowered; pedicels much exceeding the bractees, which are roundish, membranous, and edged with purpure; sepals roundish, reticulated by purpure; stamens numerous. O. F. Native on the Andes of Men- doza, in many places at the elevation of 10,000 feet above the sea. This is one of the most beautiful of the species; and according to habit comes near C. glauca, but differs in the stamens being numerous.

Painted Calandrini. Pl. 1 foot.

10 C. ARENA (Cham. miss. ex Hook, et Arn. in bot. misc. 3. p. 246.) plant glaucescent; stems numerous, prostrate, glabrous, leafy; leaves linear; common peduncle terminal, naked, simple or branched; racemes corymbose; pedicels a little longer than the bractees; bractees oval, membranous, painted by a dark purple branched middle nerve; seeds glabrous. O. F. Na- tive of Chili, about Valparaiso. Closely allied to C. pietà, Gill. but very distinct from it.
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PORTULACEÆ. VIII. CALANDRINIA.

Sand Calandria. Pl. prostrate.
11 C. linearłoża (D. C. prod. 3. p. 350.) stem ascending, a little branched at the base; branches erect, radical and caulein leaves linear, glabrous, bluntish; corymb terminal, a little branched; calyx glandular. ȳ. D. G. Native of South America. Perhaps the same as Talinum lineare, H. B. et Kunth, nov. gen. amer. 6. p. 77, which is found in the arid valleys of Mexico.

Linear-leaved Calandria. Pl. ascending.

13 C. seric^a (Hook. et Arn. in bot. misc. 3. p. 244.) root petioles, woody, with a multiple neck; stems erectish, very leafy at the base; leaves linear, acute or subulate, clothed with silky hairs; racemes few-flowered, corymbose; upper pedicels hardly equal in length to the bracteas; sepals ovate, tridentate at the apex, clothed with long silky villi; stamens numerous. ȳ. D. G. Native of Chili.

Var. a. longipes (Hook. et Arn. l. c.) lower pedicel elongated, slender, much longer than the rest and the bractea. On Sierra Bella Vista, and Acancunga; and on the Cordillera of Chili.

Var. β, a'quipes (Hook. et Arn. l. c.) pedicels all nearly equal. Near Colliná and Queonta. In both varieties the leaves vary much in length, from 1 to 2 or even 3 inches.

Silky Calandria. Pl. 1 foot.
14 C. tenellâ (Hook. et Arn. in Beech. bot. p. 24.) stems ascending, branched at the base; leaves narrow-linear, glabrous; racemes terminal, branched; sepals glabrous, triangular, coriaceous, acuminate. ȍ. G. Native of Chili, at Valparaiso. Very closely allied to C. pilosissima, but differs from it in being quite glabrous and in its smaller size. This is said to be only a variety of C. pilosissima. Hook. et Arn. in bot. misc. 3. p. 245.

Weak Calandria. Pl. ascending.


* * * Stamineas from 1 to 9.


Caulescent Calandria. Pl. pr.
17 C. procumbens (Moris. hort. taur. sem. 1831.) glabrous, caulescent, filiform, procumbent, branched; leaves succulent, linear, obtuse, alternate; pedicels axillary, and opposite the leaves; sepals triangular; flowers triandrous or hexandrous; capsule 3-celled. ȳ. H. Native of South America. This species differs from C. compréssâ of Schrad. in being glabrous, in the stems being procumbent, in the stamens being 3-6, and in the sepals not being corolate at the base, &c.

Procumbent Calandria. Pl. pr.
18 C. compréssâ (Schrad. in litt. ex D. C. l. c.) plant caulescent and succulent; leaves linear, ciliated; flowers racemose; calyx compressed; sepals triangular, coriaceous, unequal, acuminate. ȍ. F. Native of Chili. Plant a span high, erect, simple, or somewhat divided, with short hairs on the peduncles and calyces. Leaves obtuse, marked with a longitudinal line above, somewhat keeled beneath: radical ones 1½ or 2 inches long. Pedicels an inch and a half long. Flowers small, purple. Stamens 3-4. Capsule 3-4-valved. Schrad. ms.

Var. β, adscéndens (D. C. l. c.) plant smaller; stem ascending. Talimuin adscéndens, Hort. berol.

Compressed-calvad Calandria. Pl. ¼ foot.
19 C. dentículâta (Gill. ms. ex Hook. et Arn. in bot. misc. 3. p. 243.) plant glabrous; stem suffruticoso, leafy; leaves lanceolate, acute, suboblong at the base; raceme terminal, 1-3 or few-flowered; pedicels elongated; sepals rounded-ovate, with denticulately-serrate margins. ȳ. D. G. Native of Chili, along with C. andicola. The lower part of the stem is much branched.

Denticulated-calvad Calandria. Shrubs 1 foot?
20 C. andicola (Gill. ms. ex Hook. et Arn. in bot. misc. 3. p. 242.) plant wholly glabrous; stem suffruticoso, leafy towards the apex: leaves cuneate-oblong, acute, attenuated at the base; raceme terminal, 1-3 or few-flowered; pedicels elongated; sepals roundish, hardly mucronulate at the apex, with quite entire margins; petals a little longer than the calyx; flowers with few stamens. ȳ. D. G. Native of Chili, on the eastern side of the Cumbre, and at El Alto de la Laguna. Closely allied to C. cistidóföra, but apparently quite distinct. From C. dentículâta it can only be distinguished by the entire margins of the sepals.

Andes Calandria. Pl. ½ to 1 foot.
21 C. acu'tus (H. B. et Kunth, l. c.) plant stemless; leaves elongated, linear, obtuse; peduncles radical, 1-flowered, bibracteate in the middle, one half shorter than the leaves. ȳ. D. G. Native of Quito, on Mount Rucu-Pichincha, in humid places. Cósma prostrata, Domb. herb.

Stemless Calandria. Pl. ½ foot.
22 C. tuffîda (Hook. et Arn. in bot. misc. 3. p. 243.) root annual, slender; stems erectish, simple, rather leafy, pilose; leaves linear, acute, pilose; radical ones elongated; upper cauline ones edged with long hairs, embracing a few flowers in their axils; raceme corymbose, dense, terminal; bracteas ciliated with long hairs; lower ones exceeding the racemes; sepals ovate, trifid at the apex, with a few hairs on the back, but more numerous on the margins; stamens 5. ȍ. H. Native of Chili, about Valparaiso. This and C. Gillíésì and C. sericea seem closely allied to C. umbellâtâ.

Tßffîd-bracteate Calandria. Pl. ½ foot.
23 C. Gillíésì (Hook. et Arn. in bot. misc. 3. p. 243.) plant perennials, woody, with a multiple neck; stems erectish, simple, very leafy at the base, but sparingly so at the apex; leaves oblong-linear, beset with adpressed hairs; raceme corymbose; lower bracteas hardly equal in length to the pedicels; sepals ovate, somewhat tridentate at the apex, and beset with long pili on the back; stamens 5. ȳ. D. G. Native of the Andes, of Mendoza, and Chili; Cordillera of Chili; and Los Ojos de Agua. C. umbellâtâ, Gill. ms.

Gillíés Calandria. Pl. ½ foot.
24 C. diffusâ (Gill. ms. ex Arnott, in Check, edinb. journ.
Portulaceae. VIII. Calandrinia. IX. Portulacaria. X. Ullucus. XI. Claytonia.

3. p. 355.) plant caulescent, glabrous, diffuse; branches leafy at the base and nakedish at the top, 1-2-flowered; leaves spatulate-lanceolate, acute, quite entire; flowers terminal; sepals orbicular, quite entire. \( \text{\textdollar} \). D. G. Native of the Andes of Chili, near El Paso de los Pequenos, at an elevation above the sea of 10,000 feet. The number of stamens in the flowers of this species has not been determined.

Diffuse Calandrinia. Pl. 1 foot.

25 C. glauca (Schrad. in litt. ex D. C. l. c.) plant caulescent, glabrous; leaves spatulate-lanceolate, acute, fleshy, glaucous; racemes few-flowered; fruit-bearing peduncles, 1½ inch long, reflexed; bracteas ovate, acute, membranous, and spotted with purple. \( \text{\textdollar} \). D. G. Native of Chile. Stem a foot high. Leaves an inch and a half long, thick, tapering into the petioles. Flowers a little larger than those of C. compacta. Sepals broadly ovate, purple, concave, reticulated with black. Capsule larger than the calyx, 5-valved. (Schrad. ms.)

Glaucous Calandrinia. Pl. 1 foot.

26 C. densiflora (Gill. ms. ex Arnott, in Cheek, edinb. journ. 3. p. 356.) plant caulescent, perennial, glabrous; branches numerous from the neck of the root, simple, leafy at the base, nakedish towards the apex; leaves narrowly spatulate, glaucous; racemes crowded, terminal; pedicels hardly longer than the bracteas; sepals broadly ovate; flowers with few stamens, 3-4. \( \text{\textdollar} \). D. G. Native on the Andes of Mendoza, at El Portezuela del Valle Hermosa.

Crowded racemed Calandrinia. Pl. 1 foot.

27 C. cespitosa (Gill. ms. ex Arnott, in Cheek, edinb. journ. 3. p. 356.) plant tufted, stemless; leaves linear-spatulate; peduncles radical, 1-flowered, naked, 9-times longer than the leaves; sepals broadly ovate; flowers with few stamens; stigmas 1-5; capsule 4-5-valved. \( \text{\textdollar} \). D. G. Native on the Andes of Mendoza and Chili, and many places, at the elevation above the sea of from 9000 to 11,000 feet.


Ciliated-leaved Calandrinia. Pl. ½ foot.

30 C. l'yea (D. C. prod. 3. p. 359.) leaves spatulate-lanceolate; flowers axillary, solitary, peduncled. \( \text{\textdollar} \). F. Native of Peru, about Chancay and Lima, among rocks. Herb a foot high. Talinum album, Ruiz et Pav. l. c. Flowers white.

White-flowered Calandrinia. Pl. 1 foot.

31 C. nitida (D. C. l. c.) stems ascending, glabrous, leafy; leaves oblong-spatulate, acute, glabrous, attenuated at the base; peduncles axillary, solitary, shorter than the leaves; sepals roundish, obtuse, pilose on the backs; stamens 1-9. \( \text{\textdollar} \). F. Native of Chili, in fields and waste places, at Conception, in the tract of Huaipey and Moquita; also about Valparaíso and Quillota. Herb half a foot high. Talinum nitidum, Ruiz et Pav. l. c.

Niiid Calandrinia. Pl. ½ foot.

32 C. monandra (D. C. l. c.) leaves spatulate-lanceolate; flowers in spikes, secund, monandra. \( \text{\textdollar} ? \). F. Native of Chili, on arid hills about Concepción, near the river Andalien. Talinum monandra, Ruiz et Pav. l. c. Herb a hand and a half high.

Monandra Calandrinia. Pl. ½ foot.

Cult. Calandrinia is a fine genus of succulent plants; their culture and propagation are the same as that recommended for the species of Talinum, p. 77. The seeds of annual species may be sown in a hot-bed in spring, and the plants planted out into the open border, in a dry sheltered situation, about the end of May.


Cult. This plant will grow in any dry light soil; and young cuttings will root readily in sand under a hand-glass.

X. ULLUCUS (Uullo o Melloco is the name of the plant in Quito). Lozano, in senan. nov. gran. 1809, p. 185. D. C. prod. 3. p. 360.


1 U. tuberosus (Loz. l. c.) \( \text{\textdollar} \). D. G. Native of South America, in the province of Quito, growing in gardens, where it is called Ulluco o Melloco. The root is mucilaginous and edible.

Tuberos-rooted Ullucus. Pl. 1 foot.

Cult. For the culture and propagation of this succulent plant see Anacampseros, p. 76.

XI. CLAYTONIA (in honour of John Clayton, who collected plants, mostly in Virginia, and sent them to Gronovius, who published them in his Flora Virginica). Lin. gen. 287.
PORTULACEE.


LIN. SYST. Petúndária, Monogynía. Calyx of 2 oval, opposite, permanent sepals (f. 20. a. f. 19. b.). Petals 5, obcordate (f. 20. b.), or obovate (f. 19. a.), hypogynous, equal, unguiculate; claws connate at the base. Stamens 3 (f. 20. b.), inserted at the claws of the petals. Ovary sessile. Style 1, trilobed at the apex; locules stigmatic inside. Capsule 1-celled, 3-valved, 8-seeded, pedicels sessile.—Herbs glabrous, rather succulent, usually perennial. Leaves quite entire; radical ones petiolate; upper usually opposite and sessile, and sometimes connate. Racemes terminal. Flowers white or rose-coloured.

§ 1. Scape with 2 opposite leaves, which are sometimes connate.

* Roots fibrous, annual.

1 C. perfoliáta (Donn, hort. can. p. 25.) leaves without nerves; upper ones connate or perfoliate, forming a roundish disk; radical leaves petiolate, oval—rhomboid; lower pedicels of raceme in bundles; petals entire or somewhat emarginate. O. H. Native of Mexico, on the mountains of St. Augustin; and on the rocky mountains in North America; also of Cuba, if C. Cubáesi, Bonpl. ann. mus. 7. p. 82. t. 6. pl. equin. t. 26. be the same.—Sims, bot. mag. 1366. Líonia perfoliáta, Haw. syn. p. 12. Flowers small, white. Root fibrous. Leaves edible, and used like those of the Purslane.


2 C. alsínóides (Sims, bot. mag. 1566.) root fibrous; leaves reticulately veined, rhomboid, acute; upper leaves opposite, sessile, ovate, mucronate; radical ones petiolate, ovate, acuminate; pedicels of raceme for the most part solitary, braceless; petals emarginate. O. H. Native of the north-west coast of America, at the sources of the Columbia; particularly plentiful about Indian villages, where it seems to hold the place of chickweed in our country. Flowers white.

Var. β, rósea (D. C. prod. 3. p. 361.) flowers rose-coloured; leaves almost nerveless. O. H. Native of Nootka Sound. C. Síbúrica, Sims, bot. mag. 2243. Sweet, br. fl. gard. t. 16. but not of Pall.


3 C. unaschénsis (Fisch. in Rüm. et Schult. syst. 5. p. 434.) leaves curved; upper ones opposite, sessile, rhombovate; radical ones petiolate, ovate—lanceolate, acuminate; racemes twin; bracteas ovate; pedicels solitary, twice longer than the bracteas; petals emarginately bifid. O. H. Native of the Island of Unashenka, in humid sandy places. C. bifida, Wild. Wild.-floral. The petals are said to be white in the dried state.


4 C. parvifólia (Doug. ann. ex Hook. fl. bor. Amer. 1. p. 225. t. 73.) root fibrous; radical leaves numerous, linear—spatulate, 3-nerved, with anastomosing veins, on long petioles; the 2 cauleine ones joined into a perfoliate, ovate leaf, which is reticulately veined; racemes solitary, rather compound, unibraceate. O. H. Native of North America, abundant along the course of the Columbia, in open parts of the forest, VOL. III.

FIG. 19. where wood has been burnt, or the ground turned up by deer. Flowers rose-coloured and white. This species differs from C. perfoliáta in its linear—spatulate radical leaves, ovate bracteas, and profusion of small flowers. (f. 19.)

Small-flowered Claytonia. Pl. 1/4 foot.

5 C. spatula élata (Doug. ann. ex Hook. fl. amer. bor. 1. p. 226. t. 74.) plant minute; root fibrous; radical leaves numerous, narrow, linear—spatulate; the 2 cauleine ones ovate, acute, and sessile; racemes solitary, unibracteate; petals entire. O. H. Native of the north-west coast of America, in the valleys of the Rocky Mountains. Corolla longer than the calyx. Stems many from the same root. This is the smallest of all the species. Spatulate-leaved Claytonia. Pl. 1/4 foot.

6 C. sarmentósa (Meyer, nov. pl. in mem. acad. de Mouron. vol. 17.) sarmentose; leaves narrowed: radical ones oblong, obtuse, petiolate; cauleine ones ovate, somewhat cordate, stem clasping, but distinct; racemes terminal, solitary, braceless; petals emarginate.—Native of St. George, one of the Antillean Islands.

Sarmentose Claytonia. Pl. sarmentose.

* * *

* Roots tuberous or fusciform.

7 C. virginíca (Linn. spec. 394.) leaves all narrow, linear, oblong, 3-nerved, with anastomosing veins; radical leaves very few; racemes solitary, nodding; pedicels elongated; lower ones bracteate; petals emarginate. O. H. Native of North America, in New England, Virginia, and Carolina, in humid woods; and of Kotzebue's Sound. The leaves of the plant, from the last-mentioned habitat, are remarkable for their broadness. Pluk. alm. t. 102. f. 3. Flowers white.


8 C. grandifólia (Sweet, fl. gard. 216.) root tuberous; leaves linear—lanceolate, attenuated at both ends; racemes solitary, many—flowered; petals oval, obtuse, entire; sepals very blunt. O. H. Native of North America, near Montreal, and on the Sasachewan. C. Virginica, var. β, média, D. C. prod. 3. p. 361. D. C. pl. grass. t. 131. Flowers pink or rose-coloured, with darker branched veins, and a yellow spot on the claw.


9 C. acutifólia (Sweet, hort. brit. edit. 2.) root tuberous; leaves all long, linear—lanceolate, 3-nerved, with anastomosing veins; racemes solitary, nodding; pedicels elongated; lower ones bracteate; petals elliptic, entire, acute at both ends; sepals acutish. O. H. Native of North America, in humid parts of woods. C. Virginica, Sims. bot. mag.ir. 941. C. Virginica, var. a, acutifólia, D. C. prod. 3. p. 361. Flowers white.


11 C. lanceolátá (Pursch, fl. bor. amer. 1. p. 175. t. 5.) root tuberous; radical leaves very few, oblong, on long petioles; cauleine ones elliptic, sessile, all 3-nerved, with anastomosing veins; racemes solitary, nodding; pedicels elongated; lower ones bracteate; petals deeply emarginate. O. H. Native of North America, in the valleys of the Rocky Mountains, in a rich soil; and perhaps in Eastern Siberia. Flowers large, white. It is very nearly allied to C. tétaná da Fisch.


12 C. Aéctica (Adams, aust. nes. 5. p. 94.) leaves nerve-
less, fleshy; cauline ones sessile, ovate; radical ones petiolate, subspatulate; racemes secund; petals obvate, somewhat emarginate. 2. H. Native of Arctic Siberia, towards the mouth of the Lena. C. Chunissöö, Led. ex Spreng. syst. 1. p. 790. Flowers large, white, or pale yellow, with an orange throat.

Arctic Claytonia. Pl. ¼ to ½ foot.

15 C. Veštěna (Fisch. in litt.) root tuberous; leaves veined; radical ones oblong; cauline ones opposite, nearly sessile; stem diclinotomous; peduncles long, somewhat corymbose; petals entire. 2. H. Native of Siberia. C. Joannisina, Roem. et Schultes, syst. 5. p. 436. This species differs from the true C. Siberica in the leaves being narrower, in the petals being white, and in the inflorescence. Flowers secund, at first nodding. Callyclic lobes obtuse. Corolla appearing as if it were pedicellate.


Tuberosous-rooted Claytonia. Pl. ¼ to ¼ foot.

16 C. Sibirica (Lin. spec. 294.) root fusiform; leaves veined: radical and cauline ones ovate; raceme secund; petals bifid. 2. H. Native of Siberia, in boggy places. Linnia. Lin. act. holm. 1746. t. 5. Radical leaves quite glabrous, petiolate; cauline ones 2, opposite, sessile. Stamens inserted in the petals. Flowers rose-coloured.


§ 2. Stem leaffy. Leaves all alternate. Plants resembling Calandrinia in habit.

17 C. Linearius (Doug. miss. ex Hook. fl. bor. amer. 1. p. 224. t. 71.) stems branched; leaves narrow-linear, obtuse, 3-nerved; racemes terminal, secund, bracteate at the base; petals entire. 2. H. Native of North-west America, in moist rocky places; on the Great and Little Falls of the Columbia, abundant. Stems filiform, leafy. Petals obvate. (f. 20.)

Linear-leaved Claytonia. Pl. ¼ to ½ foot.

18 C. Filiculbis (Doug. miss. ex Hook. fl. bor. amer. 1. p. 224. t. 72.) stems branched at the base: lower leaves obvate, acute, reticulately veined, running into petioles; cauline leaves linear-spatulate; racemes terminal; flowers bracteate; petals entire. 2. H. Native of the north-west coast of America, on rocks in Nootka and Queen Charlotte’s Sound; plentiful on moist rocks of the Columbia, near the ocean. Flowers largeish.

Thread-stemmed Claytonia. Pl. ¼ foot.

19 C. Stolonifera (Meyer. 1. c.) stem erect, branched, bearing stolons at the base; leaves nearly sessile, oblong-spatulate, acute, a little nerved; racemes subcorymbose, lateral, bracteless; petals entire. 2. H. Native of Unalaska.ka

Stoloniferous Claytonia. Pl. ¼ foot.

20 C. Paryphilia (Moc. icon. pl. nook. ined. ex D. C. prod. 3. p. 861.) leaves nervess; cauline ones alternate, elliptic, acute, attenuated at the base; radical ones like the cauline ones on short petioles; racemes few-flowered; pedicels solitary, bracteate; petals acutely emarginate. 2. H. Native of North-west America, at Nootka Sound. Flowers rose-coloured.

Small-leaved Claytonia. Pl. ¼ ½ foot.

A very doubtful species.

21 C. nemorosa (Willd. rel. in Roem. et Schultes, 5. p. 436.) leaves ovate; superior ones tern; racemes twin. 2. H. Native of South America, in the shady woods of Javita. Perhaps this plant ought to be removed from the genus. ex H. B. et Kunth, nov. gen. amer. 6. p. 80. The plant, according to Bonpland, has a quadrangular stem; opposite petiole leaves; terminal dichotomous spikes; a 5-parted calyx; a semi-5-left corolla; a short style, 2 stigmas, and a 1-celled, many-seeded capsule.

Grace Claytonia. Pl.?.

Cult. The greater part of the species of Claytonia are very delicate little plants, especially those with tuberous roots: these grow best in a border of peat soil, and are increased by seeds, which sometimes ripen plentifully. The fibrous-rooted kinds, being all annual, the seeds of them only require to be sown in the open border, in a rather moist shaded situation; and if they are allowed to scatter their seeds, plants will rise every year in abundance.


Lin. syst. Triandria, Trigynia. Calyx of 2, rarely of 3 sepals. Petals 5, connected a little way at the base, 3 of which are smaller than the other 2. Stamens inserted in the claws of the petals, usually 3 in front of each of the smaller petals, very rarely more. Ovarium sessile. Style very short, 3-parted; divisions sparingly reflexed. Capsule 1-celled, 3-valved, 3-seeded.—European, glabrous, aquatic, or bog herbs. Leaves opposite. Flowers axillary, small; this genus is hardly distinct from Claytonia.

1 M. Fontana (Lin. spec. p. 129.). 2. W. H. Native of Europe and North America; also of South America, in bogs, ponds and ditches.


Fountain or Water-chickweed. Fl. April, May. Brit. Pl. ¼ to ¼ ½ foot.

Cult. This plant will grow in any moist soil, or in water.


Lin. syst. Triandria, Trigynia. Calyx 3-parted; lobes elliptic, obtuse, petals wanting. Stamens 3, alternating with the parts of the calyx, and hypogynous. Ovarium 1, oval, Styles 3, short, acute. Capsule 1-celled, 3-valved, 3-seeded.
Seeds fixed to the central placenta.—A small smooth herb, native of North America. Radical leaves 3, entire, linear-lanceolate, acute. scape 1-flowered, length of leaves. This genus is hardly known, but it only appears to differ from *Mollugo* in the want of petals.


*Autumnal Leptrina.* Pl. 1/2 to 3/4 foot.

*Cult.* The seeds of this plant only require to be sown in the open ground, in a moist situation; and if the plant is allowed to scatter its seeds, there will be plenty of plants each year.

XIV. *COLOBANTHUS* (from *kolobos*, kolobos, maimed, and *anthos*, anthos, a flower; in reference to the want of petals). Presb. in reliq. Haenk. 2. p. 13. t. 49. f. 2.

*Lin. syst.* *Tetra-Hezändria, Tetra-Pentagyinia.* Calyx 4-5-parted. Petals wanting. Stamens 4-5, alternating with the segments of the calyx. Sigmas 4-5. Capsule 4-5-valved, many-seeded. Both Bartling and Kunth insert this genus in the order *Caryophyllaceae*, while the stamens are decidedly perigynous, and therefore ought to come among the Portulaceae.

1. *C. Aretioides* (Gill. mss. ex Hook. et Arn. in bot. misc. 3. p. 246.) root perennial, with a multiple neck; calyx 5-parted; segments ovate; capsule 5-valved. 2. *F.* Native of Chili, at Los Hornillos, El Paramillo San Isidro, and on the Andes of Mendoza.

*Arethusa-like Colobanthus.* Pl. 1/2 foot.


*Quito Colobanthus.* Pl. 1/2 foot.


*Cult.* See *Portulaca* for culture and propagation, p. 75.

XV. *GINGINSIA* (in honour of M. Gingins, who has written upon the genera *Viola* and *Lacunula*). D. C. prod. 3. p. 362.—Pharmacæum species of authors.

*Lin. syst.* *Pentandria, Trigynia.* Calyx 5-parted; lobes oval, permanent, petaloid on the inside and at the margins. Petals wanting. Stamens 5, inserted in the bottom of the calyx, and alternating with its lobes; anthers 2-celled, inserted by the base. Ovarium surrounded at the base by a 5-lobed fleshy scale. Style wanting. Stigmas 3, crest-formed. Capsule 3-valved, 1-celled. Seeds numerous, fixed to the central placenta.

—Cape shrubs. Leaves irregularly verticillate, opposite or alternate, filiform or linear, furnished with scarious stipulas at the base. Peduncles axillary, elongated, bearing umbels of pedicellate flowers at the apex; branches of umbels numerous, divided, many-flowered. This genus differs from *Pharmacæum* and all the other Caryophyllaceae genera in the stamens being perigynous, and in the leaves being usually alternate; and from all the genera in the order *Parenchyma* in the stamens alternating with the sepalis, not opposite them.

§ 1. Leaves linear.


*Short-stemmed Ginginsia.* Pl. 1/2 foot.

2. *G. Elocauta* (D. C. l. c. with a figure; prod. l. c.) leaves alternate, linear, crowded at the tops of the branches; stipulas linear-elongated, ciliately jagged; peduncles more than 3-times longer than the stem. 5. G. Native of the Cape of Good Hope. Pharmacæum incaicum, Lin. mant. p. 358. but not of others. Pharmacæum lineare, Andr. bot. rep. t. 329. Flowers whitish.


*Orange-flowered Ginginsia.* Pl. 1/2 to 3/4 foot.

§ 2. Leaves filiform.

4. *G. Albens* (D. C. l. c.) plant caulescent; leaves filiform, mucronate, irregularly whorled or alternate; stipulas small. 5. G. Native of the Cape of Good Hope. Pharmacæum albens, Thumb. fl. cap. p. 274. 5. *Pharm. lineare* of Thum. bot. rep. t. 329. but the leaves are linear in Andrews's plant, not filiform. Flowers greenish on the outside, but yellowish inside and on the edges.

*Whith Ginginsia.* Pl. 1/2 to 3/4 foot.

5. *G. Conferta* (D. C. l. c.) plant caulescent; leaves opposite, crowded, terete, mucronate; stipulas cut into many seatacous hairs, one half shorter than the leaves. 5. G. Native of the Cape of Good Hope. Lam. ill. t. 214. f. 8. Pharmacæum incaicum, Thum. fl. cap. 273. Sims, bot. mag. 1883 but not of Lour.


*Small-leaved Ginginsia.* Pl. 1/2 to 3/4 foot.


*Terete-leaved Ginginsia.* Shrub 1 foot.

*Cult.* A mixture of loam, peat, and sand will answer the species of this genus; and the pots in which they are grown should be well drained with shreds. The best way of propagating them is by seeds.

XVI. *AYLMERIA* (in honour of Aylmer Bourke Lambert, F.R.S. F.S.A. and V.P.L.S. the celebrated botanist, to whom we owe many obligations in the prosecution of the present work).

Lin. syst. Monadelphía, Pentándria. Calyx 2-parted, coloured. Petals 5. Stamens 10, joined into a membranous hypogynous tube; the 5 outer ones abortive; and the 5 inner ones opposite the petals, bearing 3-celled anthers. Style 1; stigma depressed, capitated. Utriculus membranous, valveless. Seeds numerous, lenticiform, in the bottom of the cell.—Australian perennial herbs. Stems terete, joined, dichotomous upwards. Leaves linear, opposite, or in whorls. Stipulas scarious. Flowers beautifully coloured, in terminal corymbs. According to Martius, the genus is related to Paronychieæ, but this is doubtful, in consequence of the stamens being hypogynous, and also particularly so in their being opposite the sepals. The calyx is of 2 sepals, as in Portulaca, and the petals are 5, as in most of the order, and the stamens are 10, as in Trianthéa.

1 A. rosea (Mart. l. c.) stems straightish, and are, as well as the leaves, glabrous; stipulas ciliate serrulately; corymb compact. 9. G. Native of New Holland, on the western coast. Flowers rose-coloured.

Rosic-coloured flowered Aylmeria. Pl. 1 foot.

2 A. violacea (Mart. l. c.) stems diffusely dichotomous, and are as well as the leaves glabrous; stipulas quite entire; corymb loose. 9. G. Native of New Holland, on the west coast. Flowers violaceous.

Fioiacceus-flowered Aylmeria. Pl. 1 foot.

Cult. See Ginginias for culture and propagation, p. 83.

XVII. HYDROPYXIS (from ὑδρός, ὑδάς, water, and πνεῦμα, ἀναθήμα, a box; the plant is an inhabitant of water, and the capsule resembles a box, from its opening transversely). Rafin. fl. lud. p. 49. D. C. prod. 3. p. 364.

Lin. syst. Tetrandria, Morogynia. Calyx permanent, 5-parted, bibratecre on the outside; the two inner lobes the smallest. Corolla peripetalous (perhaps inserted in the calyx), crateriform, unequally 5-loped. Stamens 4, didynamous, inserted in the corolla; anthers hasteate. Ovarium superior. Style simple, crowned by a capitate 5-loped stigma. Capsule 1-celled, many-seeded, triangular, opening transversely. Central placenta free. This genus is likely to be nearer related to Utriculária than to any other.


Marsh Hydrophyxis. Pl. creeping.

Cult. This plant should be grown in a pot filled with peat, and placed in a deep pan of water. It is easily propagated by separating the runners.


Calyx of 5 sepals (f. 21. a. f. 22. a.), seldom of 3-4; sepals sometimes separate to the base, sometimes joined to the middle (f. 22. a.), and sometimes nearly to the apex (f. 24. a.). Petals small, scale-formed (f. 22. a.), emulating sterile stamens, inserted upon the calyx between the lobes, occasionally wanting (f. 23. a.), or converted into superabundant stamina. Stamens perigonous, exactly opposite the sepals (f. 22. a.), if equal to them in number, but sometimes fewer by abortion; filaments distinct; anthers 2-celled (f. 21. c.). Ovarium free. Styles 2-3, either distinct (f. 24. a.), or partially combined (f. 22. d.). Fruit small, dry, 1-celled, usually membranous, either valveless and indinchis, or opening with 3 valves. Seeds either numerous, fixed to a free central placenta, or solitary and pendulous, upon a funicle, arising from the base of the cavity of the fruit. Albumen farinaceus. Embryo cylindrical, lying on one side of the albumen, curved more or less, with the radicle always pointing towards the hilum. Cotyledons small.—Herbaceous or half-shrubby branching plants, with opposite or alternate, often fascicled, entire, sessile leaves and scarious stipules. Flowers small, usually whitish green, sometimes sessile and axillary, and sometimes variously disposed in terminal cymes. Bracteas scarious, analogous to the stipulas.

This order comes very near Portulaceæ, Amaranthaceæ, and Caryophyllaceæ, from which it is distinguished with difficulty. By excluding the section Sclerántheæ, their scarious stipula will distinguish them from the two last-mentioned orders, and there is scarcely any other character that will; for there are Caryophyllaceæ that have perigonous stamens, as Lárrea and Adenaria; and Paronychieæ which have hypogynous ones, as Poly- carpaea, Stipulácidea, and Ortégia. From Portulaceæ it is scarcely to be known with absolute certainty, except by the position of the stamens before the sepals instead of the petals. With Grassulaceæ, particularly Tillea, they agree very much in habit, but their concrete carpella will always distinguish them. De Candolle comprehends in the order various plants without stipulas; but as the latter organs seem to be an essential part of their character, the tribes Queríaceæ and Minuartiæ are excluded, and will be found elsewhere.

Synopsis of the genera.

Tribe I.

Teóphi'n. Calyx 5-parted (f. 21. a.). Petals and stamens 5, inserted in the bottom of the calyx (f. 21. b.). Styles 3 (f. 21. c. e.), free, or connected together a little at the base. Leaves alternate, stipulaceous.

1 Telephium. Styles 3, spreadingly reflexed, concrete at the base. Capsule pyramidal, trigonal, 3-valved, 3-celled at the base, and 1-celled at the apex. Seeds numerous, fixed to the central placenta, in 6 rows.

2 Corrióia. Style short; stigmas 3 (f. 21. c.). Capsule 1-seeded, indischis, covered by the calyx. Seed suspended by a funicle, originating at the bottom of the capsule.

Tribe II.

Illece'bre. Calyx 5-parted (f. 22. a.). Petals 5 or wanting. Stamens 2-3, inserted in the bottom of the calyx (f. 22. a.). Styles free or somewhat concrete at the base (f. 22. d.). Capsule indischis, 1-seeded. Funicle long, rising from the bottom of the capsule, bearing a subependulous seed at the apex.—Herbs, rarely shrubs. Leaves opposite, acute, with scarious stipulas.

3 Hernía. Calyx almost 5-parted. Scales or petals 5, filiform, entire, but sometimes wanting or very small. Stamens 5, or only 2-3 from abortion. Styles 2, short, distinct, or concrete at the base. Capsule covered by the calyx.
‡ Gymnocalcium. Calyx almost 3-parted. Petals 5, emulating sterile filaments. Stamens 5. Style 1; stigma simple. Capsule valveless, covered by the indurated calyx.


6 Illecebrum. Calyx 5-parted, or nearly 3-sepalled, ending on the back at the apex, in an awned horn. Petals wanting, but there are 5 subulate scales in place. Stamens 2-5. Style hardly any; stigmas 2, capitate. Capsule covered by the calyx, divisible into 5 at the stripes.

7 Paronychia. Calyx 5-parted (f. 22. a.). Petals or scales 5, linear. Stamens 5 (f. 22. a.). Style 1; stigmas 2 (f. 22. d.). Capsule indehiscent or 5-valved, covered by the calyx.

8 Pentacema. Calyx 4-parted; segments very unequal, outer 3 spiny at the apex, inner 3 navicular, armed on the back. Stamens 5. Stigmas 2, short. Capsule 1-seeded.

9 Cardonea. Calyx 5-parted; lobes drawn out on the back at the apex into a straight horn. Petals wanting. Stamens 5, 2 sterile ones obcordate, flat. 3 fertile ones obcordate at the base, bearing each an antheriferous filament in the recess. Styles 2, hardly concrete at the base, long, revolute. Fruit oval-oblong.

Tribe III.

Polycarpeae. Calyx 5-parted (f. 23. a.). Petals 5, or wanting. Stamens 1-5, inserted in the bottom of the calyx. Styles 2-3, sometimes distinct, sometimes concrete. Capsule 1-celled, many-seeded. Seeds fused to the central placenta.—Herbs or subshrubs. Leaves opposite. Stipules scarious. The stamens in this tribe are almost hypogynous, and truly so in some genera, as in Polycarpa, Stipulacida, and Ortégia, and therefore verge closely on the order Caryophyllaceae.


13 Averbia. Lobes of calyx thickened in the middle, keeled. Petals 5, or only 3 from abortion. Stamens 5, inserted in the bottom of the calyx. Style 1, trifid at the apex. Capsule 1-celled, 3-valved, many-seeded.

14 Ortegia. Lobes of calyx keeled a little. Stamens 5, 3 fertile, inserted in the torus, the other 2 scale-formed and sterile. Style 1, capitate at the apex or bifid. Capsule 3-valved, many-seeded.


16 C'herdia. Lobes of calyx petaloid inside, ending in a bristle each at the apex. Petals wanting. Stamen one, in front of one of the sepals. Style filiform, bifid at the apex. Capsule 1-celled, many-seeded.

Tribe IV.

Polliechiæ. Calyx 5-toothed; tube urceolate. Stamens 1-2, inserted in the throat of the calyx. Petals wanting. Stigma bifid. Utriculus or fruit valueless, 1-seeded. Bracteas and calyx increasing after flowering, and becoming fleshy, so as to form something like a berry.—Suffrutaceous herbs, with opposite or subverticillate stipulaceous leaves.

17 Polliechia. Character the same as that of the tribe.

† Genera belonging to Paronychieæ, but are not sufficiently known.

18 Lithophila. Calyx 3-parted, acute. Petals 3. Scales or abortive stamens 2, opposite the sepals. Stamens 2, placed at one side of the ovary. Style thick, bluntly emarginate at the apex. Fruit unknown. A very minute glabrous herb.

19 Sellówa. Calyx urceolate, 5-cleft, membranous, 10-ribbed. Petals 5, alternating with the lobes of the calyx. Stamens fixed in the middle of the segments of the calyx, and shorter than them; anthers didymous. Style 1; stigma obtuse. Capsule 5-valved, 1-celled, 1-seeded. A smooth herb, with the habit of Illecebrum verticillatum.

Tribe I.

Telephieæ (plants agreeing with the genus Telephium in important characters). D. Č. prod. 3. p. 366. Calyx 5-parted (f. 21. a.). Petals and stamens 5 (f. 21. b.), inserted into the bottom of the calyx. Styles 3 (f. 21. c.), distinct, or somewhat concrete at the base.—Leaves alternate, stipulaceous.


Lin. syst. Pentandria, Monogynia. Calyx 5-parted, permanent; lobes oblong, concave. Petals 5, inserted in the bottom of the calyx, and alternating with its lobes, and about equal in length to them. Stamens 5, opposite the sepals, and inserted in their bases. Styles 3, spreading reflexed, concrete at the base. Capsule pyramidal, trigonal, 3-valved, 3-celled at the base, and 1-celled at the top from the dissepiments not being extended so far. Seeds numerous, disposed in 6 rows on the central placenta. Embryo lateral, curved, but not annular. Albumen mealy.—Subshrubby, procumbent, many-stemmed, glabrous, glaucous herbs. Leaves alternate, rarely opposite, stipulaceous. Flowers white or greenish white.


2 T. Oppositifolium (Lin. spec. 388.) leaves opposite; flowers in racemose corymbs, crowded. 2. H. Native of Barbary.
Paronychiea. I. Telephium. II. Corrigiola. III. Herniaria.

Shaw, spec. p. 572, with a figure. Flowers white. Perhaps only a variety of the preceding.

**Opposite-leaved Orpine.** Pl. tr.

3. **T. laxiflorum** (D. C. prod. 3. p. 366.) leaves alternate; peduncles opposite the leaves, trifid at the apex; middle pediceil 1-flowered, lateral ones elongated, and usually 3-flowered. 2. G. Native of the Cape of Good Hope. Herb glaucous. Leaves alternate, distant, obovate, mucronate; petiole short, margined, with a membrane. Capsule subglobose, 5-celled nearly to the apex. Perhaps a proper genus, but the habit is truly that of *Telephium*.

**Loose-flowered Orpine.** Pl. tr.

**Cult.** All the hardy species of *Orpine* grow well in any light soil; and may either be increased by cuttings or parting at the root; they are well adapted for ornamenting rock-work. The last species being a native of the Cape of Good Hope, requires the protection of a green-house in winter.


**Lin. syst. Pentändria, Trigýnia.** Calyx 5-parted (f. 21.a.), permanent. Pedals 5 (f. 21. b.), equal to the calyx and inserted in it, and alternating with its lobes. Stamens 5, opposite the sepals. Style short; stigma 5 (f. 21. c.). Capsule 1-seeded, indehiscent, covered by the calyx. Seed suspended by a funicle, which rises from the bottom of the capsule.—**Procumbent glaucous herbs, with alternate stipulaceous leaves, and terminal racemose corymbs of small flowers.** Habitat of *Telephium*.


3. **C. deltòdea** (Hook. et Arnott, in Beech, bot. p. 24.) stems prostrate; leaves deltoid, long, spathulate; racemes lateral, furnished at the base by a spatulate bractea. 2. G. Native of Chili, about Concepción and Valparaíso. This plant bears a strong resemblance to *C. littorális*. Flowers white.

**Deltoid-leaved Corryiola.** Pl. prostrate.

4. **C. squamosa** (Hook. et Arn. in bot. misc. 3. p. 247.) can- dex perennial, a little branched, very sealy at the apex, from which many stems issue; stems prostrate; leaves linear, oblong; racemes corymbose, leafless. 2. G. Native of Chili, about Valparaíso, Vina de la Mar, and Playa Ancha. The lower part of the stem, which is here called a caudex, from its resemblance to that part of ferns, is to be seen in no other species of the genus; the scaly appearance at its summit is obviously caused by a congeries of stipulas. Flowers white.

**Scaly Strap-wort.** Pl. prostrate.


**Cult.** The seeds of the annual kinds should be sown in dry light soil. The culture of the perennial kind is the same as that recommended for the hardy species of *Telephium*.

**Tride II.**

**I. LECCÉRÉE** (this tribe contains plants agreeing with *LLécecrum* in some particular characters). D. C. prod. 3. p. 367. Calyx 5-parted (f. 22. a.). Petals 5, or wanting. Stamens 2-5, inserted in the bottom of the calyx. Styles distinct, or somewhat concrete at the base. Capsule indehiscent, 1-seeded. Funicle long, rising from the bottom of the capsule, bearing a somewhat pendulous seed at the top.—Herbs, rarely subshrubs. Leaves opposite, acute, with scarious stipulas.


**Lin. syst. Pentándria, Degýnia.** Calyx nearly 5-parted, somewhat coloured inside. Scales or petals 5, filiform, quite entire, alternating with the sepals, sometimes wanting or very small. Stamens 5, or only 2-3 from abortion, opposite the sepals. Styles 2, short, distinct, or concrete at the base. Capsule 1-seeded, indehiscent, covered by the calyx.—Prostrate suffrutícosa small herbs, with branched stems. Leaves opposite, stipulaceous: stipulas solitary between the leaves, broad at the base. Flowers glomerate in the axils of the leaves. Bracteas small.

§ 1. **Herniáriæ vera** (true species of *Herniaria*). Stems prostrate, small; flowers glomerate in the axils of the leaves, pubescent or hairy on the outside.

1. **H. cine'rea** (D. C. fl. suppl. p. 375. mem. par. t. 3.) plant of many stems, herbaceous, clothed with cinerose hairs; branches ascending; leaves oval, acute at both ends; flowers crowded, axillary. 2. H. Native about Montpelier, Narbonne, plentiful in Spain in dry gravelly or sandy places. In Spain the plant is called *Quenrantapéridas*. H. annua, Lag. gen. et spec. p. 12. and perhaps H. latifolia, Lapeyr. abr. p. 127.


2. **H. viré'scens** (Salzm. pl. exsic. ex D. C. prod. 3. p. 367.) herb ascending, many stemmed, smoothish; leaves oval, cili- ated; bundles axillary; few-flowered; calyx rather pilose. 2. H. Native of Mauritania, about Tangiers. It differs from *H. cine'rea* in the greenish habit, nearly as *H. kirsitæ* does from *H. glàbra*, or as *H. alpína* does from *H. incana*.

**Greenish Rupture-wort.** Pl. tr.


4. **H. nins'ta** (Lin. spec. p. 317.) plant herbaceous, prostrate, hairy; leaves oval-oblong; bundles sessile, few-flowered.
2. H. Native throughout Europe, in gravelly places. In England, near Barnet; and in Cornwall. Smith, engl. bot. 1579. Mor. hist. sect. 5. t. 29. f. 2. Pettit, brit. t. 10. Tandich, icon. t. 284. This plant is in every respect the same as H. glabra, except in the hairiness.

Var. \( \beta \), pubescent (D. C. prod. 3. p. 368.) leaves ciliated, smooth; stipulas larger. Paronychia pubescens, D. C. fl. fr. 3. p. 403.


Hairy Rupture-wort. Pl. tr.

6 H. Bessei (Fisch. ex Horn. suppl. p. 127.) stems shrubby at the base, somewhat ascending; branches elongated; leaves oblong-lanceolate, pubescent; bundles axillary, many flowered, rather loose. 2. H. Native of Tauria and Podolia. H. incana, Bieb. suppl. p. 173. H. hirsuta, D'Urv. enum. p. 28. H. Millegrâna, Pall. ex Spreng. and perhaps H. microcarpa of Presl. del. prag. which was collected on the mountains of Sicily.


7 H. macrocarpa (Sibth. et Smith, fl. gracc. t. 252.) stems fruticosulous at the base, ascending; branches sessile, pubescent; leaves ovato-lanceolate, hairy on both surfaces, as well as on the calyces; bundles few-flowered. 2. H. Native of Laconia, and by the way side between Smyrna and Bursa; also in the Balkarian Islands.

Large-fruited Rupture-wort. Pl. tr.

8 H. alpina (Vill. dauph. 2. p. 556. exclusive of the synonyme) root becoming woody at length; stems prostrate, tufted, densely leafy, suffruticosus; leaves oval, rather villous, ciliated; flowers few towards the tops of the branches, somewhat glomerous. 2. H. Native of Providence, Dauphinny, and Savoy on the Alps. D. C. fl. fr. suppl. p. 375. H. alpêsirius, Lam. dict. 3. p. 125. This plant is distinguished from H. incana at first sight by its greenish habit, not hoary.


American Rupture-wort. Pl. pr.

10 H. seti'gera (Gill. miss. ex Hook. et Arn. in bot./misc. 3. p. 247.) plant perennial, herbaceous, puberulous, many-stemmed, prostrate; leaves oblong-lanceolate, furnished with spiny bristles at the apex; flowers almost sessile, axillary, and usually solitary, puberulous on the outside; stems 3; styles united at the base. 2. F. Native of Chili, at El Aquadita, near La Punta de San Luis. This species has no scales or abortive petals, but only one style, and stigmas have been perceived.

Bristle-bearing Rupture-wort. Pl. prostrate.

11 H. Fruticosa (Linn. amen. 4. p. 269.) stem shrubby, very humble, much branched, tufted; branches short, villous; leaves small, obovate, thickish, crowded; flowers glomerous, hairy, 4-cleft. 2. H. Native of Spain, in dry exposed places; and of Mauritania, near Mascar. Desf. fl. atl. 1. p. 213.— Lob. icon. t. 85.—Barrel. icon. t. 713.


§ 2. Polygonoidea (plants with the habit of Polygonum). Stems erect, dichotomous at the apex. Flowers glabrous, disposed in loose cymes. Perhaps a proper genus.

12 H. polycosoides (Cav. icon. 2. t. 137.) erect, glabrous, shrubby; branches dichotomous at the apex; leaves ovate, cuspitate, distant. 2. H. Native of Mauritania, near Mascar; and on the hills of Spain, in Valenti, as well as in Provence. Illicecarum suffruticosum, Lin. spec. p. 298. Paronychia suffruticosum, Lam. fl. fr. 3. p. 239. Herniaria erecta, Desf. alt. 1. p. 214. H. Joançêma, Roum. et Chultes, syst. 6. p. 297. This species differs from Paronychia, in the fruit being indeliscent. The habit is very dissimilar from the other species of Herniaria, but emulates Anychia and Paronychia.


† Species not sufficiently known.

13 H. ditcho'roma (D. C. prod. 3. p. 368.) stems erect, numerous, dichotomous, herbaceous; leaves distant, oblong, mutic, and are, as well as the branches, powdery from short down; flowers cymose. 2. H. Native country unknown. Paronychia dichotoma, D. C. in Lam. dict. ency. 5. p. 25. Illiccecarum dichotomum, Pers. ench. 1. p. 261. "Calyx glaucescent, striated at the base and pubescent, profoundly 5-cleft; segments blanched, with scarious margins; sterile threads 5, alternating with the sepals, and 5 antheriferous ones opposite them, hardly shorter than the sterile ones. Style bidentate at the apex. Ovarium attenuated at the base. Ovulum one, pendulous, suspended from the top of a thread, which arises from the bottom of the capsule." Adr. Juss. in litt. 1827.

Dichotomous Rupture-wort. Pl. 2 foot to 3 foot.

14 H. lenticulata (Thunb. fl. cap. p. 245.) suffruticosus, hairy, decumbent, clothed with cinnereous villi; leaves ovate, fleshy, 2. H. Native of the Cape of Good Hope. H. incana Capeïnsis, Pers. This is a very obscure species. The Linnean plant under this name, according to Vahl and Smith, is Crēsia Crētica; but we know not what Thunberg's plant is.

Lenticular Rupture-wort. Pl. procumbent.

Cult. All the species are weedy looking plants, most of them with the habit of wild-thyme, and therefore are only worth cultivating in botanic gardens. The plants grow best in dry light sandy soil, and are increased by seeds.


Lin. syst. Pentadnria, Monogynia. Calyx almost 5-parted, permanent; segments coloured inside. Petals 5, emulating sterile filaments. Stems 5, inserted in the bottom of the calyx. Style one, crowned by a simple stigma. Capsule valveless, 1-seeded, covered by the indurated calyx.—Diffuse subshrubs, with opposite stipulaceous leaves, usually bearing fascicles of rameal leaves in the axils. Pedicels axillary, solitary, opposite, appearing crowded at the tops of the branches, from the internodes being short. The name of this genus is spelt variously by authors, viz. Gymnocarpus (Forsk.), Gymnocarpos (Viv.), Gymnocaracrum (Pers.), Gymnocarpmum (Stout.).


Shrubby Gymnocarpmum. Shrub 1 foot.

Cult. This shrub will require to be protected from frost in
winter, and for this purpose it should be grown in a pot. A mixture of sand and loam will suit the plant very well, and it may either be increased by seeds or cuttings.


L. syst. Di-Pentântridia, Digynia. Calyx 5-parted, nearly 3-sepaled; sepals subcapsulate, thickened, ending in an awn-like horn at the apex on the back. Petals wanting, or 5 subulate scales in place of the petals, alternating with the lobes of the calyx. Stamens 3-5, opposite the sepals, and inserted in their base. Style hardly any; stigma 2, capitate. Capsule covered by the calyx, 5-valved, or divisible into 5 at the stripes. Seed solitary from abortion, inserted in the side of the capsule. Embryo hardly curved, placed on one side of the albumen, which is farinaceous.—A small trailing herb, with opposite leaves, furnished with scarious stipules at the base. Flowers axillary or cymose. Bracteas scarious, smaller than the flowers.


*Whorled Knot-grass.* Fl. July, Aug. England. Pl. tr. Cult. The seeds of this plant should be sown in a moist situation, where the plants will thrive and flower freely; and if the seeds be allowed to scatter themselves, the plants will rise regularly every season. It is worth cultivating, being a small delicate beautiful plant.


L. syst. Pentântridia, Monogynia. Calyx 5-parted (f. 22. f.) lobes concave, cucullate, generally mucronate at the apex (f. 22. b.). Petals or scales 5, subulate, alternating with the lobes of the calyx. Stamens 5 (f. 22. a.). Style one, entire or bifid (f. 22. d.); lobes papiliferous inside. Capsule 1-seeded (f. 22. c.), membranaceous, indehiscent or 5-valved, covered by the calyx.—Herbaceous or suffrutescent much branched plants. Leaves opposite, stipitate; stipules scabrous, twin on both sides between the leaves. Young leaves frequently in fascicles in the axils of the old leaves. Flowers cymose or glomerate, but usually crowded in the axils of the leaves.

Sect. I. CHATONRYCHIA (from *chaton*, a head, or *onyx*, onyx, a claw; in reference to the lobes of the calyx ending in a bristle each). D. C. prod. 3. p. 370. Lobes of calyx equal, dilated at the apex, membranous, ending in an awn on the back. Scales or petals, or abortive stamens perhaps wanting. Flowers cymose.

1 P. cymosa (D. C. in Lam. dict. 5. p. 26. fl. fr. 3. p. 409.) stems erect, branched, divaricate, puberulous; leaves linear, nearly *linear*; glabrous, awned; flowers cymose, ultimate ones in fascicles. E. H. Native of Spain, Greece, Mauritania, in sandy places. Illecereum cymosum, Lin. spec. 299. exclusive of Bocc. syn. Vill. in Schrad. journ. 1801. p. 408. t. 4. Flowers greenish. This plant is allied to Illecereum, but is probably a distinct genus.


Sect. II. EUNYCHIA (altered from Paronychia). This section is supposed to contain the genuine species of the genus). D. C. prod. 3. p. 370. Lobes of calyx equal, awned, mucronate or nearly unawned, not dilated at the apex. Flowers crowded in the axils of the leaves.


3 P. brasiliâna (D. C. in Lam. dict. 5. p. 23.) stems trailing, puberulous; leaves oblong-lanceolate, narrowed both at the base and apex, mucronate, pubescent on both surfaces; flowers crowded in the axils of the leaves; calyx glabrous, deeply 5-parted; lobes ending in a long mucron each. G. Native of Buenos Ayres and Monte Video, by road sides. P. Bonaireïa, D. C. prod. 3. p. 370. Flowers white.

*Brasilian* Paronychia. Fl. May. Clt. 1820. Pl. tr. 4 P. composita (St. Hil. fl. bras. 2. p. 156.) stems trailing, puberulous; leaves oblong-lanceolate, narrow at the base and the apex, mucronate, pubescent on both surfaces; flowers crowded in the axils of the leaves; calyx turbinate, pubescent; lobes equal, ending in short points. G. Native of Brazil, in pastures in that part of the province of St. Paul called Cam-
pos Geraea, and by the sea side in the province of St. Catherine. Flowers deep brown.

**Common Paronychia.** Pl. tr.

5 P. **Chile**nsis (D. C. prod. 3. p. 370.) stems diffuse, tufted; leaves crowded, oblong-linear, mucronate, smoothish; flowers crowded in the axils of the leaves; lobes of calyx hardly mucronate at the apex. **Q. H.** Native of Chile, about Concepcion and Valparaiso. Leaves of the younger branches subspineous at the apex, of the adult ones acute. *Stipulas oblong, scarious.*

**Chili Paronychia.** Pl. ½ foot.

6 P. **Camphorosmoide**s (St. Hil. fl. bras. 2. p. 187.) stems diffuse, pubescent; leaves linear-subulate, keeled, mucronate, puberulous; flowers crowded in the axils of the leaves; calyx turbinate, smoothish: lobes equal, acutish. **O. H.** Native of Brazil, in that part of the province of St. Paul called Campos Geraes, near Engreja Velha.

**Camphorosa-like Paronychia.** Pl. diffuse.


**Arabian Paronychia.** Pl. diffuse.

8 P. **Polygonifolia** (D. C. fl. fr. ed. 3. vol. 3. p. 403.) stems trailing, branched; leaves oblong-linear, smoothish, acute, not mucronate; flowers rather crowded in the axils of the leaves; lobes of calyx ending in a short mucron each. **Q. H.** Native of Dauphiny, Spain, and Balearic Islands. Illicébrum polygonifólium, Vill. in Schrad. journ. 1801. p. 410. t. 4. Illicébrum verticillátum, Wild. spec. 1. p. 1205. Illicébrum alpinum, Vill. dauph. 1. p. 296. This plant hardly differs from *P. argéntea,* unless in the leaves being narrower.

**Knot-grass-leaved Paronychia.** Pl. tr.


**Tar, β, Mauritianæa** (D. C. prod. 3. p. 371.) leaves broader; heads large, distant. **Q. H.** Native of Mauritania and the Archipelago. Illicébrum Mauritanicæum, Willd. rel. in Rœm. et Schults, syst. 5. p. 516.

**Silvery Paronycha.** Pl. tr.


**Capitata-flowered Paronycha.** Fl. June, Aug. Ch. 1833. Pl. ½ to ¾ foot.

11 P. **Serpyllifolia** (D. C. in Lam. dict. 5. p. 26. fl. fr. ed. 3. vol. 3. p. 404.) stems prostrate, creeping, knotted, branched; leaves oblongate, flat, rather fleshy, with ciliated margins; flowers terminal; bracteas acuminate; lobes of calyx awnless. **Q. H.** Native of the south of Europe, in arid places. Illicébrum serpyllifólium, Vill. in Schrad. journ. 1801. t. 4. Flowers white.

**Silvery-tufted Paronycha.** Pl. procumbent.

12 P. **Sessiliflora** (Lam. c. p. 100.) plant densely tufted, much branched, glabrous; leaves linear-subulate, acute: superior ones longer, recurved; stipulas about equal in length to the leaves, bifid; flowers terminal, sessile; lobes of calyx arched on the inside at the apex, and ending in a long awn each on the N
outside. 2. H. Native of North America, on the more elevated hills about the Missouri, near Fort Mandan; on the dry banks of the north branch of the Saskatchewan, between Carlton House and Edmonton House. Hook. f. bor. amer. 1. p. 227. t. 75. (f. 22.)

**Sessile - flowered Paronychia.** Pl. $\frac{1}{4}$ foot.

**Sect. III. Acanthonychia** (from acana, acincba, a spine, and oö, oöz, a claw; in reference to the 3 outer lobes of the calyx, being each furnished with an awn-like spine at the apex). D. C. prod. 3. p. 372. Lobes of calyx unequal, 3 outer ones furnished each with an awn-like spine at the apex, 2 inner ones small, and nearly unarmed. Stigmas 2, sessile.

20 P. Roșe't'a (St. Hil. fl. bras. 2. p. 188. t. 113.) stems trailing, woolly; leaves linear-subulate, mucronate, smoothish; lobes of calyx unequal, 3 outer ones the largest, and furnished with a long mucron each; 2 inner ones smaller, and nearly awnless. Flowers crowded in the axis of the leaves. 2. G. Native of Brazil, in the province of St. Catharine, in sand by the sea side, where it is called by the inhabitants Rosetta. Probably a species of *Pentace'na.*

**Rosetta Paronychia.** Pl. tr.

† *Species not sufficiently known.*


22 P. sedi'fólia (Salt. init. abyss. ed germ. 1. p. 476. ex Röm. et Schultz, syst. 5. p. 523.) This species is not described.

**Stone-crop-leaved Paronychia.** Pl.

† *Plants referred by authors to the genus Paronychia, which are to be excluded.*

1 P. laun'gi'na (Poir. suppl. 4. p. 302.) is probably a species of Gomphéra.

2 P. Bengal'ënis (Röm. et Schultz, syst. 5. p. 521, but not of Juss.) is probably a species of Achyránthes.

3 P. tenell'a (Hortul. or Illicébrum tenellum of DeSf.) is perhaps a species of Alternéthia.

4 P. dichó'toma (D. C. in Lam. dict. but not of Nutt.) is Her'miária dichótoma.

5 P. subul'ata is Polycarpéa's spédisca.

6 P. linearí'sifólia is now Polycarpéa's linearí'fólià.

**Cult.** All the species of this genus are well adapted for ornamental rock-work, from their dwarf stature, and generally trailing habit. Most of them, however, grow best in small pots in sand and loam, filling the pots half way with sherdz; and they are easily increased by dividing the plants at the root, or by cuttings under a hand-glass, or by seeds. The seeds of the annual species only require to be sown in the open border or on rock-work. Some of the species are marked green-house and frame; these require to be protected from frost in winter.

**FIG. 22.**

   akaina, a thorn; in reference to the 5 spiny lobes of the calyx). Bartling in reliq. Henk. 2. p. 5. t. 49. f. 1.

**Lin. syst. Pentándria, Dígyüia.** Calyx 5-parted; segments very unequal: 3 outer ones spiny at the apex, and woolly on the margins: 2 inner ones much shorter, boat-shaped, and armed on the back. Stamens 5, without any sterile filaments; anthers 2-celled. Stigmas 2, short. Fruit 1-seeded.

1 P. ramosí'ssima (Hook. et Arn. in bot. misc. 3. p. 248.) stems trailing, woolly; leaves linear-subulate, mucronate; lobes of calyx unequal, all linear and hood-formed, ending each in a very long point on the back; flowers sessile, axillary, crowded. 2. G. Native of Brazil, on the confines of the province of Rio Grande de St. Pedro do Sul, and of the province of Cisplatin, and among rocks about Monte Video; of Chili, in Las Acharias, province of Cordova, Valparaiso, and Buenos Ayres; also of Mexico, at the foot of Mount Orizaba. Paronychia ramosí'ssima, D. C. prod. 3. p. 372. mem. paron. p. 12. t. 4. Loe'fingia ramosí'ssima, Weinm. in bot. zet. p. 608. Pent. polychémo'noïdes, Bartl. in Presl. reliq. Henk. 2. p. 5. t. 49. f. 1. Stipulas scarious, woolly.

**Much-branched Pentace'na.** Pl. tr.

Cult. See *Paronychia* for culture and propagation.

**IX. CARDIONEMA** (from ka'péa, cardia, the heart, andymph, nema, a filament; in reference to the sterile filaments being obcordate). D. C. prod. 3. p. 372. - Bivone'a, Moc. et Sesse, fl. mex. ined. but not of D. C. nor Spreng.

**Lin. syst. Pentándria, Dígyüia.** Calyx 5-parted; lobes connivent, rather coloured inside, and rather concave, drawn out on the back at the apex into a long straight conical horn each. Petals wanting. Stamens 5, opposite the lobes of the calyx, and inserted in their base; 2 of which are sterile, obcordate, and flat: and 3 fertile, obcordate at the base, bearing each a slender antheriferous filament in the recess; anthers roundish, 2-celled. Styles 2, hardly concrete at the base, long, revolute. Fruit 1-seeded, ovate-oblong. - A small many-stemmed herb. Leaves opposite, crowded, rather distich, linear, acute. Flowers sessile, axillary, small, greenish white, each furnished with 5 bracteas, 4 of the bracteas linear and entire, the fifth larger and serrulate.

1 C. multica'e'te (D. C. prod. 3. p. 373. mem. par. t. 1.) 2 G. Native of Mexico. Bivone'a multica'tis, Moc. et Sesse, fl. mex. ined.

**Many-stemmed Cardionema.** Pl. small.

Cult. This plant is to be cultivated and propagated in the same manner as that recommended for the species of *Paronychia.* It will require protection in winter, by placing it in a frame or green-house.

**Tribe III.**

**POLYCARPÆÆ** (this tribe contains plants agreeing with *Polycarpéa* in important characters). D. C. prod. 3. p. 373. Calyx 5-parted (f. 23. a). Petals 5 (f. 23. d.) or wanting. Stamens 1-5, inserted in the bottom of the calyx. Styles 2-3, sometimes distinct from the base, and sometimes connected. Capsule 1-celled (f. 23. e.), many-seeded. Seeds fixed to the central placenta. - Herbs or subshrubs. Leaves opposite. Stipulas scarious. The stamens in some of the genera are nearly hypogynous, as in *Polycárpin*, and altogether so in *Polycárpin* a, *Stiplicédia*, and *Ortégia*, and therefore these genera verge very closely on the order Caryôphylleæ, but are distinguished from them in the presence of stipulas, and number of stamens: the habit agrees with *Paronychia*.

**X. POLYCARPÆÆ** (from πολύ, poly, many, and καρπός, carpos, a fruit; a name, however, only indicating its affinity with *Polycarpus*). Lam. journ. hist. nat. 2. p. 8. t. 25. D. C. prod. 3. p. 373. St. Hil. fl. bras. 2. p. 132. — Hage's, Vent. tabl. 2.
Var. a, incisa (D. C. prod. 3. p. 374.) stems and leaves clothed with grey tomentum.


Breitlie Polycarpa. Pl. prostrata.

7 P. stella'ta (D. C. prod. 3. p. 374) stems diffuse, much branched, suffruticose; leaves usually 6 in a whorl, linear, flat, and are, as well as the branches, rather pilose; cymes terminal, many-flowered, corymbose; calyces scarious. F. Native of Guine. Achyrères stellata, Wildl. spec. 1. p. 1195. Mollia stellata, Wildl. hort. berol. Lahaya stellata, Schultes, syst. 5. p. 403 Root perpendicular, simple. Habit of P. Tererife, but differs in the leaves being linear.


8 P. corymbosa (Lam. ill. no. 2798.) stems erect, herbaceous, tomentose; branches diffuse; leaves opposite 6 in a whorl, linear, awned; cymes corymbose, loosish; calyces scarious, acuminate. F. Native of Ceylon. Achyrères corymbosa, Lin. spec. p. 296. (exclusive of the synonyme of Plukenet, which is referable to Celosia Mammontia.) Wildl. spec. 1. p. 1196. (exclusive of the synonyme of Lourie, which is referable to Polyparca spadicea.) Lahaya corymbosa, Schultes, syst. 5. p. 404. Pol. Indica, Lam. journ. hist. nat. 2. p. 8. Celosia corymbosa, Roxb. fl. ind. 1. p. 310. Bocc. mus. 44 t. 39. good.—Burn. zeyl. t. 65. f. 2. Flowers white.


9 P. spado'cea (Lam. l.c. no. 2799.) stems ascending, diffuse, branched, suffruticose at the base; branches tomentose; leaves linear, blunish, when young rather tomentose; cymes terminal, corymbose; calyces scarious. 2 Pl. 7 S. Native of the East Indies, on the coasts of Malabar and Tranquebar.—Rhed. mal. 10. t. 66. Celosia corymbosa, Wildl. spec. 1. p. 1200. exclusive of the synonyme of Rezt. Mollia spadicea, Wildl. hort. berol. Lahaya spadicea, Schultes, syst. 5. p. 405. Pólia are'nária, Lour, coch. p. 164. Allied to P. corymbosa, but is more diffuse in habit; leaves broader and shorter, in more distant whors; lobes of calyx less acuminate. Perhaps Paronychia subulata, D. C. in Lam. dict. 5. p. 25. or Illecebrum subulatum, Pers. ench. 1. p. 261. is referable to this species.

Chestnut-brown Polycarpa. Pl. 1 foot, diffuse.

10 P. Brasilia'sis (St. Hil. fl. bras. 2. p. 183.) stems erect, puberulous; leaves linear-subulate, with revolute margins, mucronate, puberulous; cymes corymb-form'd; calyce lobes very acute, puberulous; petals ovate-oblanceolate, one-half shorter than the calyx. 2 S. Native of Brazil, in that part of the province of St. Paul called Campos Geraes, near Fazenda de Jaquiraliba. Flowers densely clothed with white tomentum. Petals at first white, but at length of a dirty yellow-colour. Root fusiform, with many stems rising from the neck.

Var. β, ramosissima (St. Hil. l.c.) stems much branched; leaves setaceous; cymes branched; flowers a little smaller than those of the species. Native of Brazil, in the province of Goyaz, on the sandy Mountain called Serra dos Pyrenos; also on the road to Campo Allegre, in the province of Minas Geraes.

Brazilian Polycarpa. Pl. 3/4 to 3/2 foot.


2
12. **Polycarpus** (D. C. L. c. and mem. par. t. 5.) stems erect, branched, suffruticos; branches pubescent; leaves glabrous, oblong-linear, bluntish, twice the length of the stipulae; cymes terminal, dense, many-flowered, in crowded heads. 

13. **Triandria**, Monogynia. Calyx 5-parted; lobes ovate, with membranous margins. Petals 5, cuneate-oblong, entire. Stamens 3, inserted with the petals into the disk or torus. Style short; stigmas 3. Capsule 1-celled, 3-valved. Seeds few, fixed by funicles to the central placenta. —Small perennial dichotomous herbs, native of North America. Radical leaves almost like those of *Polycarpus* Tenoreff, ovate, petiolate; canine leaves sessile, opposite, small. Stipulas jagged. Flowers small, terminal. An intermediate genus between *Polycarpus* and *Polycarpus a, from the sepals being flatish as in *Polycarpus a,* and in the stamens being 3, as in *Polycarpus:* but differs from both in the petals and stamens being expressly hypogynous according to Richard in Michx. l. c.; the genus therefore perhaps ought to have been placed in Caryophyllaceae.


Setaceous Stipulicida. Pl. 1/2 foot. Cult. See *Ortigia,* p. 92, for culture and propagation.

XII. **Balaardia** (in honour of M. Ballard, of Montpellier, who was the first to detect a new chemical principle called borneol). St. Hil. fl. bras. 2. p. 180.

1 B. **Plateania** (St. Hil. fl. bras. 2. p. 181. t. 111.) leaves linear, about equal in length to the internodes, mucronate; cymes branched, many-flowered. Also of Buenos Ayres.

Plate *Balaardia.* Pl. 1/2 foot. Cult. The seeds of this plant should be sown on a hot-bed in spring, and the plants may be planted out in the open border in the month of May, in any warm dry situation. Not worth cultivating, excepting in a botanical garden.

XIII. **Aversia** (in honour of M. Avers, D. M. P., who has written a dissertation on the *Nicotiana Tabacum,* in which he treats of its various qualities). St. Hil. fl. bras. 2. p. 184.

1 A. **frankenioides** (St. Hil. l. c. t. 112.) stems trailing, branched; leaves lanceolate, bluntish, narrowed into the petiole, pubescent; cymes many-flowered; segments of calyx obtuse, pubescent; petals and stamens one half shorter than the calyx. —A trailing branched herb, with opposite stipulate leaves; young leaves or abortive branches in fascicles in the axils of the older leaves. Cymes branched, many-flowered.
Frankenia-like Aversia. Pl. trailing. ½ foot.

Cult. See Balárdia above for culture and propagation.


Lin. sylv. Triandria, Monogynia. Calyx of 5 sepals, or 5-parted; sepals erect, oblone, a little keeled. Petals wanting. Stamens 5, 3 of which are fertile, inserted in the torus in front of 3 of the sepals; the other 2 almost vanished, or small, sterile, and sessile-formed. Ovarium ovate. Style 1, capitate at the apex, or bifid. Capsule 3-valved. Seeds numerous, fixed to the central placenta. Embryo straight, placed on the back of the albumen.—Erect, much-branched herbs. Leaves opposite, linear, with 2 black dots at the sides, from which the stipules have fallen. Cymes dichotomous, many-flowered. Flowers greenish-white. Stamens hypogynous, as in Stipulicida and Polycarpae. 1. O. Hispánica (Lin. spec. ed. 1. p. 560.) stigma capitate. 2. H. Native of Spain, about Madrid and many other places. Cav. icon. 1 t. 47.—Clus. hist. 2. p. 174. f. 2. Vahl. enum. 2. p. 23.


2. O. dichotoma (Lin. mant. p. 175.) stigma trifid. 2. H. Native of Italy and Piedmont, about Giavena. All. act. taur. 3. p. 176. t. 4. f. 1. D. C. fl. fr. ed. 3. vol. 4. p. 726. Vahl. symb. 2. p. 25. Calyx more than that of the first species, and therefore it is more distinctly dichotomous, but divided in a similar way.


Cult. The species thrive best in light soil; and are increased by cuttings or seeds. They are well fitted for rock work, or to be grown in small pots among other alpine plants.


Lin. sylv. Tri-Pentandria, Trigynia. Calyx deeply 5-cleft (f. 23. a.), permanent; segments concave, keeled, mucronate at the apex. Petals 5 (f. 23. b.), emarginate, inserted in the tube of the calyx. Stamens 3-5, inserted in the tube of the calyx. Style trifid; lobes papilliferous inside. Capsule 1-celled, 3-valved (f. 23. e.), many-seeded. Seeds nearly ovoid, a little curved, fixed to the central placenta.—Annual, branched, dichotomous herbs. Leaves opposite, or 4 in a whorl; young ones usually disposed in fascicles in the axils of the old leaves. Flowers in cymose corymbs. Stipulas and bracteas small, scarioius.—This genus agrees with Adcnärium, but differs in the stamens being equal in number to the petals, not as in Caragphyllace, double that number.

* Flowers triandrous.

1 P. Apure'se (H. B. et Kunth, nov. gen. amer. 6. p. 40.) flowers triandrous; petals emarginate; leaves 5-10 in a whorl.


Apures All. syl. PI. 10. 1872.

2 P. tetraphyl'iurn (Lin. fl. suppl. 116.) flowers triandrous; petals emarginate; lower leaves 4 in a whorl; rameal ones opposite, obovate-oblong, rounded at the apex, mucronulate, shorter than the internodes.

O. H. Native of Europe, Canary Islands; Brazil on walls, about the town of St. Paul. In England, on the west coast; on various parts of the coast of Devonshire, Somersetshire, and Portland Island.—Smith, engl. bot. t. 1031. Krock. fl. siles. t. 42. Mollugo tetraphyla, Lin. spec. 1. p. 89.

Var. β, diaphyl'um (D. C. prod. 3. p. 387.) leaves all opposite.


** Flowers pentandrous.


4 P. petrfoo1ios (D. C. prod. 3. p. 387.) flowers pentandrous; petals quite entire; leaves opposite, obovate; flowers crowded into terminal cymes. 2. F. Native of Sicily; France about Perpignon. Hagea polycarpoideae, Biv. manjip. 3. p. 3. Mollía polycarpón, Sproeg. nov. prod. 2. p. 38. Lahiyā polycarpón, Sich. fr. 5. p. 404. Arenaria petrfoo1ios, Lapey. abr. p. 251. but not of Lin. Very like P. tetraphyllum, and, as in it, the leaves are sometimes 4 in a whorl; but besides these characters, it differs in the leaves being rounder; cymes denser; flowers a little larger, and pentandrous, &c.

Water Parsley-like Polycarpón. Pl. ⅔ foot.

Cult. The seeds of the annual species of the genus only require to be sown in the open border in spring. The last species being perennial, should be grown in a small pot, and placed among other alpine plants.


1 C. vire'scens (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 3. p. 377.) leaves opposite.

2. G. Native of Mexico. D. C. mem. par. t. 2. Flowers greenish-white inside.

Greenish-flowered Cerdia. Pl. pr.

2 C. purpur'a'scens (Moc. et Sesse, 1. c.) leaves 4 together in
a kind of whorl. 2. G. Native of Mexico. Flowers purplish inside.

Paronychie. Pl. pr. 5.G.

Cult. These plants will grow well in a mixture of loam and sand, and are easily increased by dividing at the root, by cuttings, or by seeds.

Tribe IV.


Lin. syst. Monandria, Monogynia. Calyx campanulate, 5-toothed, permanent. Petals wanting, unless the scales at the throat are to be taken for them. Stamens 1 (ex Moench, rarely 2) inserted in the throat of the calyx. Style filiform; stigma bifid. Capsule valveless, 1-seeded, inclosed in the thickened tube of the calyx.—A suffrutescent branched herb. Leaves linear, opposite, but at first sight appear verticillate, in consequence of 2 rameal leaves rising in each axil, furnished with scarious acute stipules. Flowers small, aggregate, sessile, bracteate.

1 P. campestris (Ait. l. c. Smith spicil. 1. t. 1). 5. 2. 1. F. Native of the Cape of Good Hope. Neckiria campestris, Gmel. l. c. Meerbürgia glomerata, Moench. l. c. Flowers greenish. Bracteas mixed with the flowers, cilated; scales full of sweet juice.

Field Pollichia. Fl. Sept. Cht. 1780. Pl. ½ foot. Cult. The seeds of Pollichia must be raised on a hot-bed; and when the plants are 2 inches high, they may be planted out singly into pots, placed among the greenhouse plants, and afterwards treated like them.

*Genus placed in Paronychiae, but are not sufficiently known.

XVIII. Lithophila (from lithos, a stone, and philo, to love; this plant delights to grow among stones). Swartz, fl. ind. occ. 1. p. 47. t. 1. D. C. prod. 3. p. 380.


1 L. muscoideus (Swartz, l. c. p. 48.)—Native of the desert island of Navaza, among rocks.

Miss-like Lithophila. Pl. 1 inch. Cult. This plant is not worth cultivating, unless in botanic gardens. Should it ever be introduced to our gardens, we would recommend its being grown in a pot filled with broken stones, having the crevices filled with vegetable mould. It may probably be propagated by seeds.

XIX. Sellowia (in honour of Frederick Sello, a German botanist, who was lately drowned in some creek of the Amazon; and who has sent home many fine collections of Brazilian plants). Roth. nov. spec. p. 162. D. C. prod. 3. p. 880.

Lin. syst. Pentandria, Monogynia. Calyx urceolate, 5-cleft, membranous, 10-ribbed; lobes short, lanceolate; ribs bearing alternately a petal and a stamen. Petals 5, oval, alternating with the calycine lobes. Stamens 5, fixed in the middle of the calycine lobes, and shorter than them; anthers didymous. Style 1; stigma obtuse. Capsule 3-valved, 1-celled, 1-seeded.—A quite glabrous herb, with the habit of Illecebrum verticillatum. Leaves opposite, oblong-oval. Flowers 1-2 in the axils of the leaves, small, white, and somewhat pedicellate. It is not known whether the leaves are stipulate or naked.

1 S. utricula (Roth. l. c. p. 163.)—Native of the East Indies, in bogs.

Bog Sellowia. Pl. proc. Cult. Place a pan of water under the pot in which this plant is grown.


Flowers hermaphroditic. Calyx 4-5-parted (f. 24. a.). Stamens from 1 to 10, inserted in the orifice of the tube (f. 24. a.). Ovary simple, 1-seeded. Styles 2 (f. 24. c.) or 1, emarginate at the apex. Fruit a membranous tube, inclosed within a hardened calyx. Seed hanging from the apex of a funicle, which arises from the bottom of the cell. Embryo cylindrical, curved round farinaceous albumen.—Small herbs. Leaves opposite, without stipulas. Flowers axillary, sessile. This order has been referred by De Candolle to Paronychieae, from which it differs in the absence of petals and stipulas, and therefore appears to constitute a distinct order, more nearly related to Chenopodiaceae than Paronychieae, from which the plants chiefly differ in the indurated tube of the calyx, from the orifice of which the stamens proceed, and in the number of the latter exceeding that of the divisions of the calyx. The tribe Minuartioe is probably not distinguishable from Scleranthaceae, notwithstanding the supposed presence of petals, which would perhaps be more properly called abortive stamens. All the plants contained in this order are uninteresting weeds, of no known use. 

Synopsis of the genera.

Tribe I.

Sclerantha. Calyx 4-5-toothed (f. 24. a.), with an urceolate tube. Petals none. Stamens 1-10, inserted in the throat of the calyx (f. 24. a.). Styles 2 (f. 24. c.) or 1, emarginate at the apex (f. 24. b.). Fruit an utricle, covered by the indurated tube of the calyx, 1-seeded. Seed hanging by a funicle, which arises from the bottom of the capsule.


2 Sclerantus. Calyx 5-cleft (f. 24. a.), with an urceolate tube. Stamens from 2 to 10. Styles 2 (f. 24. c.)

3 Guilleniæ. Calyx 3-cleft, with a campanulate tube. Stamens 5. Style 1, emarginate at the apex.

Tribe II.

Queriaeæ. Calyx 5-parted. Petals none. Stamens 10,
inserted in the bottom of the calyx. Capsule 3-valved. Seed hanging from a long funicle, which arises from the centre of the cell.

4 QUÆRIA. The character is the same as that of the tribe.

TRIBE III.

MINUARTEM. Calyx 5-parted. Petals wanting or very minute. Stamens 3-10, inserted in the bottom of the calyx. Styles 3. Capsule 1-celled, 3-valved. Seeds numerous, fixed to the central placenta.

5 MINUARTEM. Lobes of calyx quite entire. Styles 3. LEÆLIÆ. The 3 outer lobes of calyx bisetose at the base. Style 1, trifid at the apex.

TRIBE I.

SCLERANTHEæ (plants agreeing with Scleranthus in important characters). Paronichae, Tribe V. Sclerâanthæ. D. C. prod. 3. p. 377. Calyx 4-5-cleft, with an urceolate tube. Petals wanting. Stamens 1-10, inserted in the throat of the calyx. Styles 2 or 1, emarginate at the apex. Fruit 1-seeded membro-uous utricle, covered by the indurated tube of the calyx. Seed hanging from a long funicle, which arises from the bottom of the cell, and which is recurved at the apex.—Herbs, with opposite exstipulate leaves.


LIN. SYST. Monândria, Digynía. Calyx 4-cleft, permanent, with an urceolate tube. Petals wanting. Stamen one, inserted in the throat of the calyx. Ovarium free, 1-seeded. Styles 2. Capsule valveless, membranous, covered by the indurated tube of the calyx. Seed one, as in Scleranthus.—Australian herbs. Leaves opposite, subulate. Peduncles axillary, bearing 4 bracteas and 2 flowers at the apex, becoming after flowering elongated and stiff. The ovarium, according to Forster, is sometimes 2-seeded.

1 M. BIELOREM (Forst. 1. c.) stems tufted; branches quite glabrous; leaves denticulated at the base, the rest quite entire.


2 M. FASCICULÆTEM (R. Br. prod. p. 412.) stems many from the same neck, procumbent, branched; branches clothed with fine pubescence; leaves denticulated their whole length.

2. G. Native of Van Diemen's Land.

Fascicled Mniarum. Pl. procumbent.

Cult. A mixture of loam, peat, and sand, will suit the species of Mniarum, and they may be propagated either by seeds or cuttings.


LIN. SYST. Penta-Decândria, Digynía. Calyx 5-cleft (f. 24 a.), permanent, with an urceolate tube. Petals wanting. Stamens inserted in the throat of the calyx, 10 (f. 24 a.), rarely 5 or 2. Ovarium free, 2-seeded. Styles 2 (f. 24 c.). Capsule very thin, valveless, covered by the indurated tube of the calyx. Seed one, hanging from a long funicle, which arises from the bottom of the capsule, and is recurved at the apex.—Small herbs, with opposite linear leaves, which are rather connate at the base. Flowers small, greenish white, sessile in the axils of the forks of the branches.

1 S. PERENNIS (Linn. spec. p. 580.) flowers decandrous; lobes of fructiferous calyx closed, obtuse, with white and membranous edges. Y. H. Native of Europe and the Levant, in dry sandy fields. In England, on high open sandy fields, rare; as about Eldon, Suffolk, and plentifully near Snettington, Norfolk; near Bury St. Edmunds; and Scotland, on a gravelly bank near Forfar. Schkuhr, hantb. t. 129. Fl. dan. t. 562. Smith, engl. bot. t. 352.—Ray, syn. p. 160. t. 5. f. 1. The Polish cochineal (Coccus Polonicus) is found upon the roots in the summer months.


2 S. POLYCARPUS (Linn. spec. p. 581.) flowers subdecandrous; lobes of the calyx when in fruit rather spreading, and without any margin, acute, shorter than the tube. O. H. Native in sandy fields about Montpelier, but never gathered elsewhere in France; also of Italy, according to Linnaeus.—Column. cephr. t. 1. t. 294. It differs from S. annuus at first sight, in the flowers being one-half smaller; but it is probably merely a variety of it.

Many-fruited Knawel. Pl. procumbent.

3 S. ANNUS (Linn. spec. p. 580.) flowers subdecandrous; lobes of fructiferous calyx spreading, immarginate, acutish, about equal in length to the tube. O. H. Native of Europe, the Levant, also of North America, in dry sandy cultivated fields; plentiful in some parts of Britain. Fl. dan. 504. Smith, engl. bot. t. 351. Knawel annuus, Scop. carp. p. 501. There is a variety, according to Leers, which has only 5 or 7 stamens to each flower. The Swedes and Germans receive the vapour arising from a decoction of it into their mouths to cure the tooth-ache.


4 S. HIRÆTÆN (Presl. del. p. 65.) flowers with 3 petals and 5 stamens; calyces conniving, obtuse; stamens equaling the calyx in length; anthers hairy; stamens pubescent. O. H. Native on Mount Etna, in the open regions. Leaves subulate, glabrous. Flowers capitate.

Hairy Knawel. Pl. prostrate.

5 S. PUSÆNÆNS (R. Br. prod. p. 412.) flowers pentandrous, particularly having 5 fertile and 5 sterile stamens; lobes of fructiferous calyx spreading; leaves subulate, triquetrous, mucronate, pungent, rough on the keel and margins. O. ? H. Native of New Holland, on the south coast.


6 S. BRÝSER (R. Br. prod. p. 412.) flowers diandrous; stamens mixed with scales; lobes of fructiferous calyx erect; leaves subulate, keeled, mucronulate, almost naked on the keel and margins. O. H. Native of Van Diemen's Land.

Diandrous Knawel. Pl. procumbent.

Cult. The seeds of these plants only require to be sown in the open border. None of the species are worth cultivating except in botanic gardens.

LIN. SYST. Pen'entändria, Monog'ynia. Calyx 5-cleft, with a campanulate tube; lobes equal. Petals wanting. Stamens 5, inserted in the top of the tube, opposite the calyceal lobes, short: anthers 1-celled. Style 1, somewhat emarginate at the apex. Fruit an indelible 1-seeded utricle, covered by the calyx. Seed hanging by a funicle, which arises from the bottom of the capsule.—A South American trailing herb, with opposite branches. Stems woolly. Leaves glabrous, oblong, opposite, exstipulate, but the petioles are connate at the base. Flowers capitate, axillary. Bracteas under each flower.

1 G. IJLICERIÓIDEIS (H. B. et Kunth, l. c.) 2 G. Native of South America, near Quito, in the valley of St. Jago. Illecæbrum-like Guilleminea. Pl. 1r.

Cult. Any common light soil will suit this plant, and it may be propagated from cuttings or seeds.

Tribe II.

QUERIA/CEÆ (this tribe contains nothing but the genus Queria). Calyx 5-parted. Petals wanting. Stamens 10, inserted in the bottom of the calyx. Capsule 5-valved. Seed 1, on a long funicle, which rises from the centre of the capsule.—Herbs, with opposite exstipulate leaves.


LIN. SYST. Dec'cándria. Trig'nynia. Stamens 10, slender, unequal, sometimes 5 of which are sterile. Styles 3, very slender. Capsule membranous, 1-celled, 3-valved. Seed reniform when mature.—Small stilt annual herbs. Leaves opposite, crowded, sessile, connate, recurved at the apex. Flowers in the axils of the upper branches and superior leaves, sessile, solitary. This genus is hardly distinct from Minuartia, unless in the styles being 3; in the valves being 3, and form of the seeds, which are evidently solitary from abortion.

1 Q. HI'SPÁ'NICA (Lin. spec. p. 123.) O. H. Native of Spain, in dry exposed places. Quer, fl. esp. 6. t. 15. f. 2. Ort. cent. t. 15. f. 1.


† A doubtful species.

2 Q. DICHO'TOMA (Thumbl. in Lin. soc. trans. 2. p. 529.) O. H. Native of Japan. Ribbs, Thumbl. fl. jap. p. 337. Stem dichotomous. Flowers racemose. Corolla cylindrical, below the fruit, Thumbl. This plant does not probably belong to the order.

Dichotomous Queria. Pl. ½ foot.

Cult. The seeds only require to be sown in the open ground in any dry situation.

Tribe III.


LIN. SYST. Pen'entándria, Trig'nynia. Sepals 5, hardly joined at the very base, quite entire. Petals or abortive stamens 5, small, alternating with the sepals. Stamens 5, opposite the sepals, and longer than the petals. Styles 3, filiform. Capsule 1-celled, 3-valved. Seeds few, fixed to the central axis.—Small annual herbs. Leaves opposite, sessile, 3-5-nerved at the base, quite entire. Flowers in the forks of the branches, and in the axils of the upper leaves, solitary, small, sessile, or on short pedicles; constituting a leafy, dense, dichotomous cyme. Petals bifid, or rather nectaries. (ex Lcefl.) Stamens 10, 5 abortive. (Steven.) Petals and stamens 10. (St. Hil.) According to several specimens examined, the stamens are 10, and the 5 alternate ones are sometimes converted into petals. The genus differs from Lobelia in the sepals being quite entire, and from Queria in the fruit being many-seeded.

1 M. CAMPEST'RIS (Lcefl. itin. p. 122.) flowers distinctly pedicellate, equal in length, or a little longer than the floral leaves; sepals very unequal, 3 large and 2 smaller. O. H. Native of Spain, in dry sandy fields. Habit almost of But'fonia. Act. holm. 1758. t. 1. f. 3.


2 M. DICHO'TOMA (Lcefl. l. c. p. 121. t. 1. f. 3.) flowers almost sessile, in fascicles, shorter than the floral leaves; sepals nearly equal; mucrone of leaves oblique. O. H. Native of Spain, on hills. Act. holm. 1758. t. 1. f. 5. Plant stiff, dusky.


3 M. MON'TÁ'NA (Lcefl. l. c. p. 122. t. 1. f. 4.) bundles of flowers about equal in length to the bracteas; sepals nearly equal; mucrone of leaves straight. O. H. Native of Spain, Tauria, and Iberia, on dry hills.—Biebl. fl. taur. l. p. 90.


LIN. SYST. Pen'entándria, Monog'ynia. Sepals 5, connected at the base, 3 outer ones bisectate at the base. Petals 5, small, conniving, inserted in the bottom of the calyx. Stamens 5, alternating with the petals, or 3, 2 of them being abortive? Style 1, trifid at the apex, or divided into 3 from the base. Capsule 1-celled, 3-valved. Seeds numerous, fixed to the central placenta.—Small, annual herbs. Leaves opposite, exstipulate, margined on both sides at the base, and appendiculated, these appendages probably supply the place of stipulas. Flowers in the forks of the branches, and in the axils of the upper leaves, solitary, sessile.

1 L. HI'SPÁ'NICA (Lin. spec. p. 50.) flowers triandrous; style 1, trifid at the apex. O. H. Native of Spain, Mauritania, and South of France, in dry sandy places. Lcefl. itin. l. t. 1. f. 1. Cav. icon. 1. t. 94. L. prostrata, Wurmb. Herb clammy, pubescent. Corolla white; petals obovate, emarginate.


2 L. PEN'TÁ'NDBRA (Cav. icon. 2. t. 148. f. 2.) flowers pentandrous; styles 3, distinct from the base. O. H. Native along
the Mediterranean Sea, in the sand; and of Spain, near Valencia. Perhaps sufficiently distinct from the first.

*Pentandrous* Laeflingia. Fl. Ju. Jul. Cit. 1829. Pl. $\frac{1}{2}$ to $\frac{1}{2}$ ft.

† *Species not sufficiently known.*

3 *L. Ca$f$pi$a* (Gmel. syst. 1. p. 105.) plant smooth in every part. Found on the shores of the Caspian Sea, by Gmelin. Gmel. itin. 3. p. 310. t. 35. f. 1.

*Casp$ia$ Leeflingia.* Pl. $\frac{1}{2}$ foot.

4 *L. x *sen$i$fol*ia* (Lag. gen. et spec. p. 2.) flowers pentan-
drous; leaves orbicularly reftorn. Q. H. Native of Mexico.

*Kidney-leaved* Leeflingia. Pl. $\frac{1}{2}$ foot.

*Cult.* The seeds only require to be sown in the open border in any dry lightish soil.

**Order CXIII. CRASSULACEÆ (plants agreeing with Crá$ssula$ in important characters).** D. C. bull. philom. 1801. no. 49. p. 1. fl. fr. ed. 3. vol. 4. p. 382. prod. 3. p. 381.—Semp$	ext{-}$

**Synopsis of the genera.**

** Tribe I.**

*Crass$	ext{-}$ula* c*ele*st*es,* Carpella distinct, opening when nature by a longitudinal fissure in front (f. 26. b.).

1 *Tille*'$a$.* Divisions of calyx, petals, and stamens 3-4 (f. 25. a. b. c.). Nectariforous scales none or very small. Carpels 3-4 (f. 25. d.), constricted in the middle, 2-seeded.


3 *Das$y$t*emon. Sepals 3-7, filiform, unequal, hardly joined at the base. Petals 3-7, often 5, hardly joined at the base, rather revolute at the apex. Stamens 3-7; filaments thick. Carpels 3-5.

4 *Ske$pt$as. Calyx 5-9-parted. Petals 5-9, stellately spreading. Stamens 5-9; filaments slender. Scales 5-9, small, roundish. Carpels 5-9, many-seeded.


6 *Pur$go$lia.* Calyx 5-parted. Petals 5, imbricating at the base. Stamens 5; scales 5, emarginate. Carpels 5, gibbous on the outside, and flat inside, many-seeded.


8 *Cun$to$gyne.* Calyx 5-parted. Petals united into a 5-


10 *Ró$che.* Calyx 5-lobed. Petals 5, united into a gamopetalous corolla, with a spreading 5-lobed limb. Stamens 5. Glands and carpels 5.

11 *Kal$os$nthes.* Calyx 5-lobed (f. 26. b.). Petals united into a 5-parted corolla (f. 26. a.), with the tube cylindrical, 2 or 3 times longer than the spreading limb. Stamens 5, inserted in the tube of the corolla. Glands and carpels 5.

12 *Kal$anche.$ Calyx 4-parted; sepals hardly united at the base. Corolla gamopetalous, with a 4-parted, spreading
border. Stamens 8, adnate to the base of the tube of the corolla. Scales 4, linear. Carpels 4; styles filiform.


14 Cotyledon. Calyx 4-parted. Corolla gamopetalous, with a 5-lobe, spreadingly reflexed limb. Stamens 10, adnate at the base to the tube of the corolla. Scales oval. Carpels 5, each drawn out into a subulate style.

15 Pistorinia. Calyx 5-parted. Corolla gamopetalous, with a 5-parted spreading border. Stamens 10, adnate their whole length to the tube of the corolla. Scales 5. Carpels 5, ending each in a long filiform style.


17 Echeyeria. Calyx 5-parted (f. 27. a.); sepals erect. Petals 5, united at the base (f. 27. b.), thick, and erect. Stamens 10 (f. 27. c.), united to the petals at the base. Scales 5. Carpels 5, each ending in a subulate style.


19 Sempervivum. Calyx 6-20-parted (f. 30. a.). Petals 6-20 (f. 30. b.). Stamens twice the number of the petals (f. 30. c.). Scales toothed or jagged. Carpels equal in number to the petals.

Tribe II.

CRASSULACEÆ ANOMALE. Carpels united at the base into a many-celled capsule.


21 Penthorum. Calyx 5-parted. Petals 5. Stamens 10. Scales wanting? Carpels 5, united at the base into a 5-beaked, 5-celled capsule, which is pentagonal at the apex, and opening under the beaks. Seeds small, numerous.

Tribe I.

CRASSULACEÆ or CRASSULACEÆ LEGITIMÆ (this tribe contains the legitimate plants of the order). Carpels distinct; when mature opening on the inside by a longitudinal fissure.


Lin. syst. Tri-Tétraédrées, Tri-Tétragynias. Calyx 3-4-parted (f. 25. a.). Petals 3-4 (f. 25. b.), oblong, acuminate. Scales none, or very small. Carpels 3-4, somewhat constricted in the middle, 2-seeded.—Small, glabrous, annual herbs, inhabitants of exposed sub-humid places. Leaves opposite. Flowers small, white, for the most part axillary.—Many of the exotic species may probably belong to Bulliardia.

1 T. muscosa (Lin. spec. 186.) stems branched at the base, decumbent; leaves connate; flowers axillary, sessile, tridit. (H. Native of Europe in many places, in dry, barren, sandy, and gravelly soil; plentiful in Britain, on the most barren sandy heaths; frequent in Norfolk and Suffolk. It is a troublesome weed in the gravel walks of Holkham. Bocc. mus. t. 22. Mich. gen. t. 20. Lam. ill. t. 90. D. C. pl. grass. t. 73. Smith, engl. bot. 116. Reich. icon. t. 191. Bocc. sic. t. 29. In exposed situations. this plant becomes reddish; but in that state it is not the T. rhabdo of Gouan.


Simple-stemmed Tilliera. Pl. ½ foot.

3 T. moschata (D. C. prod. 3. p. 382.) stem prostrate at the base; branches ascending; leaves connate, oval-oblong; flowers 4-cleft, sessile in the axis of the superior leaves. (H. Native of the Straits of Magellan, on the mountains; and of the Maelove Islands. Crassula moschata, Forst. in act. soc. gott. 9. p. 26. Bulliarda Magellánica, D. C. bull. philom. no. 40.

4 Musk Tilliera. Pl. prostrate.

4 T. minima (Miers, chil. 2. p. 530.) stems diffusely branched; leaves minute, connate at the base, oval-oblong; flowers 4-cleft, crowded into whorls in the axis of the leaves, on short pedicels; petals 4, acuminate, shorter than the calyx; carpels 1-2-seeded. —Native of Chili, about Concepcion and Coquimbo. T. erécta, Hook et Arnott, in Beech. voy. bot. 1. p. 24. Allied to T. moschata and verticillaris.

Least Tilliera. Pl. ¼ foot.

5 T. verticillaris (D. C. l. c.) stems prostrate at the base, rooting; branches ascending; leaves opposite, oblong-linear; flowers 4-cleft, crowded in whorls in the axis, some of which are sessile and others pedicellate. (H. Native of New Holland. Tilliera pedunculata, Sieb. pl. exsic. nov. holl. no. 173. but not of Smith. Petals acuminate, longer than the calyx. Habit almost of Hèéchrum verticillatum.

Verticillare-flowered Tilliera. Pl. pr.

6 T. pedunculaiis (Smith, in Rees' cyc. vol. 35. no. 4.) stem erect, simple; leaves rather connate, lanceolate, acute; pedicels axillary, solitary, twice or thrice longer than the leaves; carpels truncate at the apex. (H. Native about Monte Video and Buenos Ayres, in humid places. Bulliarda Bonairensis, D. C. bull. philom.

Peduncled-flowered Tilliera. Pl. ¼ foot.

7 T. redescens (H. B. et Kunth, nov. gen. amer. 6. p. 43.) stems branched, prostrate; leaves oblong-lanceolate, ovate, mucronate, rather fleshy, connate at the base; flowers 4-cleft, on long pedicels; petals shorter than the calyx. (H. Native about Quito, near Quito. Flowers white. Carpels 2-seeded. T. comata, Ruiz et Pav. f. fl. per. 1. p. 70. t. 106. f. 6, which was found in Peru, about Chancay, on humid hills, appears to differ from Kunth's plant in the stems being rather erect.

FIG. 25.
Reddish Tillaea. Pl. pr.  
Cult. Sow the seeds among gravel, and keep it moist, either in pots or in the open ground.


LIN. SYST. Tillaeæ. Tillaeæ. Tetragyna. Calyx 4-parted. Petals 4, oval or oblong, acute. Stamens 4. Scales 4, linear. Carpels 4, many-seeded.—Small, glabrous, annual, subaquatic herbs. Leaves opposite. Flowers small, white, axillary, sessile, or pedicellate. The parts of the flower are sometimes quinaria, and therefore differ from Crassula in the form of the scales, and from Tillaea in the many-seeded carpels, as well as in the number of the parts of the flower.

1 B. VAILLANTII (D. C. pl. grass. t. 74.) stem erect, dichotomous; leaves oblong, acute; pedicels longer than the leaves. O. H. Native of France, at Fontainbleau, in humid shady places, &c. Vaill. bot. t. 10. f. 2. Tillaea aquatica, Lam. ill. t. 90. but not of Till. Vaillantii, Willd. spec. 1. p. 720. Corolla pale flesh-coloured. Stems sometimes erect and sometimes prostrate, generally rooting at the lower nodes. T. prostrata, Poir. dict. t. 7. p. 674. is perhaps referable to this plant.


Var. β. prostrata (D. C. prod. 3. p. 382.) stems procumbent. Tillaea prostrata, Schkuhr, in Ust. ann. 2. p. 21. t. 5. Horn. fl. dan. t. 1510. Stuck. p. 21. t. 3. In Horrnemman's plant the flowers are either sessile or on short pedicels.


III. DASYSTEMON (from ĉauve, dasys, thick, and πτθμων, stemen, a stamen; in allusion to the thick filaments). D. C. prod. 3. p. 382.

LIN. SYST. Tri-Heptandria, Tri-Pentagynia. Sepals 3-7, leaf-formed, unequal, hardly united at the base, equalling the corolla in length. Petals 3-7, but generally 5, erect, hardly united at the base, and revolutely spreading at the apex. Stamens 3-7, alternating with the petals, and longer than them; filaments thick; anthers erect. Carpels 3-5.—An Australian herb, covered all over with scaly papulate. Root fibrous. Stem branched at the apex. Leaves opposite, connate, linear.


IV. SEPTAS (from septem, seven; the number 7 prevailing in the fructification). Lin. gen. 463. Haw. syn. 61. D. C. prod. 3. p. 383.—Crassula species of Thunb and Willd.

LIN. SYST. Penta-Eneandria, Penta-Eneangynia. Calyx 5-9-parted, shorter than the corolla. Petals 5-9, stellately spreading. Stamens 5-9; filaments slender, acuminate; scales 5-9, small, roundish. Carpels 5-9, many-seeded.—Herbs, native of the Cape of Good Hope. Roots tuberous, quiescent in winter; tubers roundish; fibres capillary. Stems simple, terete. Leaves of 2 opposite pairs, and the pairs sometimes approximate so near as to make the leaves appear in whorls. Flowers white, disposed in something like umbels. The habit of the plants is referable to some Saxifragaceae.

1 S. CAPESSIS (Lin. amen. 6. p. 87.) leaves roundish, broadly crenated, tapering into the petioles; and the base of the petioles is rather connate; petals spreading. D. D. G. Native of the Cape of Good Hope. Andr. bot. rep. 90.—Plum. amm. 340. f. 9. bad. Lam. ill. t. 575. Crassula Septas, Thumb. fl. cap. p. 291. There are varieties of this plant, differing in the number of the floral parts from 5-9, but generally 7; and with few-flowered or many-flowered umbels; and with leaves more or less stalked, having the crenatures either simple or subcrenated. Flowers white or red.


Umbellate Septas. Fl. July. Clt. 1800. Pl. ⅓ foot. Cult. A mixture of sand, loam, and pent suit the species of this genus; and they should be watered but sparingly when not in a growing state. They are readily increased by separating the tubers of the roots.


LIN. SYST. Pentandria, Pentagynia. Calyx 5-parted, much shorter than the corolla; sepals flatish. Petals 5, stellately spreading, distinct. Stamens 5; filaments subulate. Scales 5, ovate, short. Carpels 5, many-seeded.—Fleshy shrubs or herbs, generally natives of the Cape of Good Hope. Leaves opposite, quite entire, or sub-crenated. Flowers white, rarely rose-coloured.

§ 1. Latifolia (from latus, broad, and folium, a leaf; leaves broad). Shrubby. Leaves broader, flat, with the surface and margins smooth.


CRASSULACEÆ. V. CRASSULA.


4 C. ARGENTEA (Lin. fil. suppl. p. 188.) leaves connate, ovate, entire, fleshy, glabrous, silvery; stem shrubby; corymb supra-decompound; D. G. Native of the Cape of Good Hope. Thunb. f. cap. p. 289. Flowers white; anthers black. Stem a foot or more in height. Leaves obtuse, with an acum. Silvery Crassula. Shrub 1/2 foot.

5 C. TELEPHOIDES (Haw. rev. succ. p. 5.) stems herbaceous; erect; leaves obovate-oblong, stem-clasping, minutely and punctately crenated below; flowers cymose. D. G. Native of the Cape of Good Hope. Leaves 6 inches long and 18 lines broad. Petals pale rose-coloured. Scales square. Habit almost of Sodom Telephium, but smaller and more humble; and differs in the stems being 6. D. C. Perhaps Acanthaceae, Burm. aff. t. 25. f. 2. is referrible to this plant.


6 C. RAMOSA (Ait. hort. kew. 1. p. 390.) shrubby, glabrous, branched at the base; leaves subulate, flat above, connate perfoliate, smooth, much spreading; peduncles elongated, cymosely corymbose. D. G. Native of the Cape of Good Hope. Haw. syn. p. 51. according to whom it is nearly allied to C. perfoliata. C. dichotoma. Lin. fil. suppl. p. 188. ex Wild. Flowers pink.


7 C. FRUTICULOSA (Lin. mant. p. 61.) stem shrubby, smooth; leaves opposite, subulate, acute, much spreading, and a little recurved; peduncles solitary, subumbellate. D. G. Native of the Cape of Good Hope. Flowers small, white, campanulate; anthers purple. Very like C. perfoliata, according to Thunberg; but it differs in the leaves being reflexed.


8 C. REVOLVENS (Haw. phil. mag. 1824. p. 188.) stem suffrutiaceous, slender, a little branched; branches erect; leaves linear, lean, acute, revolutely reflexed, and arched, rather distant. D. G. Native of the Cape of Good Hope. Flowers small, white, in dense terminal heads. Perhaps not distinct from C. fruticulosa.


10 C. BIPLANATA (Haw. phil. mag. 1824. p. 186.) stem suffrutiaceous, erect, with spreading branches; leaves erectish, smooth, subulate, acute, flat on both surfaces, channelled beneath. D. G. Native of the Cape of Good Hope. Very like the following. Bracteas larger. Flowers white; anthers reddish.


12 C. BIRRACETÁTA (Haw. in phil. mag. 1824. p. 187.) plant effuse, decumbent, rootling; leaves subulate, expanded, flat or furrowed above; bracteas two on each peduncle. D. G. Native of the Cape of Good Hope. Flowers white; anthers sulphur-coloured, but at length becoming brown. Allied to C. acutifolia.

Var. a, minor (Haw. I. c.) plant usually tufescent; leaves less furrowed above or flat, full of rufous dots beneath.

Var. b, major (Haw. I. c.) greenish; leaves usually furrowed above, and often dotted with brown; branches longer than in var. a.


13 C. FILEUCLAIS (Haw. in phil. mag. 1824. p. 188.) plant effusely dichotomous; leaves spreadingly recurved, lanceolate-subulate, smooth, convex beneath; branches rooting, filiform. D. G. Native of the Cape of Good Hope. Flowers white, disposed in a kind of cyme; anthers yellow. Allied to the two preceding species.


14 C. SCA'BR' (Lin. spec. p. 405.) stem suffrutiaceous, erect, terete, branched, covered with retrograde rugosities; leaves opposite, spreading, connate, linear-lanceolate, acute, scabrous, ciliated; flowers corymbose, terminal. D. G. Native of the Cape of Good Hope. Dill. hort. elth. t. 99. f. 117. Mart. cent. t. 24. Segments of flowers spreading, or a little revolute, white at first, but becoming at length brownish.


17 C. BULLU'ATA (Haw. rev. succ. p. 11.) leaves lorate-lanceolate, and are, as well as the stems, roughish from whitish blisters; flowers cymose. D. G. Native of the Cape of Good Hope. Cotylédon, &c. Mart. cent. t. 24. Flowers said to be yellow. Allied to C. scabra, according to Haworth.


Prunose Crassula. Shrub 1 foot.
19. *C. muricata* (Thunb. prod. p. 55. fl. cap. p. 283.) stem frutescent, erect; branches tetragonal; leaves connate, trinodal, searobously ciliated, obtuse; flowers subumbellate. ʝ. D. G. Native of the Cape of Good Hope. It differs from *C. tetragona* in the stem being erect, and in the leaves being searobuous.

*Muricatula* Crassula. Shrub 1 foot.


*Columnar* Crassula. *C. columnalis*. *C. thyrse*.


*Club-moss-like* Crassula. Shrub tr.


*Perforated* Crassula. Shrub 1 foot.

26. *C. marginata* (Ait. hort. kew. 1. p. 306.) stem perennial, herba cious, glabrous, pellucid; leaves connately perfoliate, roundish-ovate, ending in a recurved mucron, flat, spreading, glabrous, dotted within the margin; flowers disposed in umbel late corymbs. ʝ. D. G. Native of the Cape of Good Hope.

### Jacobsen'sia

Jacq. *scehnbr*. 4. t. 471. *C. marginata*, Thunb. prod. p. 56. fl. cap. 287. Stems prostrate, jointed, rooting. Leaves reddish beneath, quite entire, with cartilaginous margins, which are at first redish, but at length becoming white from farina. Peduncles terminal, with two lateral ones, rising from the axis of the upper leaves. Flowers white; petals lanceolate, acute. The characters and synonyms are taken from the manuscript of the Prince de Salm-Dyèk.

*Marginal-leaved* Crassula. *Fl. July, Aug. Clt. 1774.* Pl. cr. 27. *C. pellucida* (Lin. spec. p. 406.) stems nearly herbaceous, flaccid, creeping; leaves opposite, obovate, attenuated at the base, glabrous, glabrously toothed, crowded at the tops of the branches; cymes subumbellate. ʝ. D. G. Native of the Cape of Good Hope. *Dill. hort. elth. t. 100. f. 119. Jacobs, fragm. t. 44. f. 3. Thunb. Fl. cap. p. 283. Very like *C. spatulata*, but differs in being more herbaceous, in the leaves not being petiolate, in the flowers being a little larger, and more crowded; the rest similar, according to the figure of Jacquin. *Flowers* pink.


*Prostrate* Crassula. *Pl. prostrate.*

29. *C. centaurioides* (Lin. spec. p. 404.) stems herbaceous, dichotomous, prostrate; leaves opposite, sessile, flat, oblong-ovate, glabrous, punctately toothed on the margins; peduncles axillary, 1-flowered. ʝ. D. G. Native of the Cape of Good Hope. *Sims, bot. mag. t. 1765. C. pellulicida, Jacq. fragm. t. 44. f. 3.* *Flowers* rose-coloured, nearly like those of *C. spatulata*; the ultimate ones somewhat coriaceous.

*Centuary-like* Crassula. *Pl. prostrate.*


Leaves almost like those of *Mesembryanthemum deltoides*. Cormyrs few-flowered; pedicels angular. Root fusiform.

**Deltoid-leaved Crassula.** Pl. 4 foot.

33 C. corrallina (Lin. fil. suppl. p. 188.) leaves opposite, deltoid, obtuse, approximate, dotted; flowers in umblellate corymb; stems erect, dichotomously branched.  

The Habit orbicularis, Corymbs tuse, glabrous; stems, long, small, ovate, white. f. vigs petals white, Thunb. Zb. Oric/M/ar § Glomerillce G. Glomerata, Mill. dict. no. 9. Herb 4-5 inches high. Petals greenish white, rose-coloured at the apex. Stigmas purple.


36 C. rosularias (Haw. rev. succ. p. 13.) leaves radical, oblong, obtuse, minutely ciliated, flat, rosulate; runners or twigs rising from the root; scape nearly naked; bundles of flowers opposite, pedunculate.  

2. D. G. Native of the Cape of Good Hope. Very like *C. orbicularis*, but differs in the plant being 3 times the size, destitute of runners, and in the flowers being 4-5-cleft and white; it is, however, probably only a variety of it.


35 C. oreikulaæ (Lin. mant. p. 361.) radical leaves oblong, obtuse, carlinegiously ciliated, flat, rosulate; runners or twigs rising from the root; scape nearly naked; bundles of flowers opposite, pedunculate.  


**Pubescent Crassula.** Pl. ¼ foot.


37 C. glomerata (Lin. mant. p. 60.) stems herbaceous, scabrous, dichotomous; leaves linear-lanceolate; flowers solitary in the forks of the stems, ultimate ones glomerate.  


28 C. glabra (Haw. syn. p. 58. rev. p. 12.) stems herbaceous, glabrous or rather pubescent, dichotomous; leaves linear-lanceolate; flowers solitary in the forks, ultimate ones glomerate.  


29 C. strictaæ (Lin. ancom. p. 56.) stems herbaceous, erect, rather hispid, dichotomous; leaves obovate, obtuse, strigose; pedicels 1-flowered.  

D. G. Native of the Cape of Good Hope. Lam. dict. 2. p. 174. Petals ovate, length of the calyx.

**Strigose Crassula.** Pl. ½ foot.

§ 10. *Tilleoidae* (plants with the habit of *Tillea*). Small subaquatic glabrous herbaceous plants, having 4-cleft flowers.

40 C. natans (Thumb. prod. p. 54. fl. cap. p. 281.) stems erect, dichotomous; leaves connate, linear-oblong, obtuse; pedicels axillary, opposite, shorter than the leaves; petals obvolute, a little longer than the calyx.  

D. G. Native of the Cape of Good Hope. Tillea's perfoliata, Lin. fil. l. c.

**Dwarf Crassula.** Pl. ½ foot.

42 C. umbellataæ (Thumb. l. c.) stem simple, erect; leaves on short petioles, ovate, obtuse; flowers umbellate.  

D. G. Native of the Cape of Good Hope. Tillea's umbellata, Wildl, spec. l. p. 721.

**Umbellate-flowered Crassula.** Pl. 43 C. decumbens (Thumb. l. c.) stem erect or decumbent; leaves connate, terete, subulate; flowers pedicellate, fastigate at the tops of the branches.  

G. Native of the Cape of Good Hope. C. Thunbergiana, Schultes, syst. 6. p. 733. The stems are said to be decumbent in the diagnosis, but in the description erect. Scales very short, red.

**Decumbent Crassula.** Pl. decumbent.

† *Species not sufficiently known.*

* Leaves opposite.

44 C. neglectaæ (Schultes, syst. 6. p. 722.) stems herbaceous; leaves petiolate, cordate, and are as well as the branches glabrous; flowers solitary.  


**Neglected Crassula.** Pl. ½ foot.

45 C. expansaæ (Ait. hort. kew. l. p. 390.) stems herbaceous, dichotomous; leaves semicylindrical, subulate, channelled above, spreading; peduncles axillary, solitary, 1-flowered.  

G. Native of the Cape of Good Hope. Whether the leaves are opposite or alternate.


46 C. diffusaæ (Ait. hort. kew. ed. 1. vol. 1. p. 395.) stems herbaceous; leaves oblong, attenuated at the base, crenulated; peduncles opposite the leaves and axillary, solitary.  

G. Native of the Cape of Good Hope. Flowers pink? The rest unknown.


47 C. subulætaæ (Lin. mant. p. 360.) stems herbaceous, branched; leaves opposite, terete, spreading; flowers capitata.  

G. Native of the Cape of Good Hope. Herb. lugd. bat. 552, with a figure. Flowers white, ex Herm. and Petiv. gaz. t. 89. f. 8.


48 C. sylvaæticaæ (Licht. in Schultes, syst. 6. p. 726.) stems herbaceous, dichotomous, beset with strigose hairs; leaves obovate-oblong, with the margin and base beset with strigose hairs; flowers terminal and axillary, solitary.—Native of the Cape of Good Hope. The rest unknown.

**Wood Crassula.** Pl. 2.
and naked; leaves connate, triquetrous, entire, spreading, glabrous; corymb compound.  ḡ. D. G. Native of the Cape of Good Hope. This plant is omitted in Thunberg's flora, cap. and prod., and is therefore doubtful.

Ascending Crassula. Pl. decumbent.

50. C. ? ALEA (Forsk. descr. 60, but not of Hortul.) stem simple; leaves opposite, crowded, sheathing, lanceolate, cartilaginous ciliolate; peduncles dichotomous; flowers corymbic. — Native of Arabia, on the mountains of Hadije and Boka. Flowers white, 5-parted.

White-flowered Crassula. Pl. ½. foot.

51. C. ? LINEOLATA (D. C. prod. 8. p. 390.) stem herbaceous; leaves cordate, sessile; peduncles nearly terminal, axillary, approximate, umbel-formed. ḡ. D. G. Native of the Cape of Good Hope. Sims, bot. mag. 1765. Flowers yellow. Mr. Haworth has placed this species between C. rétroflexa and C. centaurioidés; but C. rétroflexa is now referable to Grammánthes, and therefore this species is probably a species of that genus.


52. C. ? AGARDHIANA (Schultes, syst. 6. p. 718.) stem suffruticose; leaf-twisted, branched; branches naked; radical leaves ovate, imbricated; cauline ones remote, alternate. ḡ. D. G. Native of the south of Spain. According to the description this is a species of Sédum or Sempervivum.

Agardh's Crassula. Pl. ½. foot.

* * Alternifólie. The leaves being alternate in the following plants, they are probably species of Sédum.

53. C. ? MICROCARPA (Sibth et Smith, fl. gréc. prod. 1. p. 217.) leaves oblong; stem thickened; capsule angular, dotted, mucil. Ṣ. H. Native of the island of Cyprus, among rocks.

Small-fruited Crassula. Pl. ½. foot.

54. C. ? FULCHELLA (Ait. hort. kew. ed. 1. vol. 1. p. 392.) leaves ovate-oblong, fleshy, reflexed; stem herbaceous, dichotomous; flowers pedunculate in the forks; peduncles turbinate. Ṣ. G. Native of the Cape of Good Hope. Haw. succ. p. 12. Lobes of calyx leaf-formed, spreading, 2 short, and 3 about equal in length to the petals, which are ovate and acute. Flowers pink.


55. C. ? SVA!S!R-SA (Ait. l. c. p. 395.) stems herbaceous; leaves alternate, rather spatulate, acute, quite entire; racemes compound. ḡ. D. G. Native of the Cape of Good Hope. Flowers white?


N. B. Plants formerly included in the genus Crassula, but are now to be excluded from the order.

1. C. ? ALTERNIFOLIA (Lin. hort. cliff. p. 497. according to the figure in Burm. afr. p. 58. t. 24. f. 1.) is probably a species of Borráginea, and perhaps B. ciliata.

2. C. ? PINNA!A! (Lour. coch. p. 182.) is a plant far separated from Crássula, and most probably belonging to the order Terebinthéseae. C. pinnata of Dum. Cours. is a species of Bryophyllum or Kalanchoe. The C. pinnata of Lin. fil. suppl. 191. is probably the same plant as Loureiro's.

Cult. Crassula is an extensive genus of rather ornamental plants, and some of which are rather grotesque. A mixture of loam, sand, and brick rubbish, is the best soil for them. Cuttings root very readily if dried for a few days, after being cut off from the plants before being planted. The seeds of the annual species should be sown in pots, and when the plants have grown a little may be separated, and planted into other pots. All the species are well fitted for a dry stove, or to be placed on shelves erected in a green-house.


Lin. syst. Pentádria, Pentágyna. CALYX 5-parted, much shorter than the corolla. Petals 5, imbricating at the base, mucronulate beneath the apex. Stamens 5; filaments subulate. Scales 5, flat inside, and gibbous on the outside. — Herbaceous half naked plants. Leaves for the most part radical. Inflorescence spicate thyrsoid. Flowers in whorles, almost sessile. The species are probably all biennial.

§ 1. Linguéfolia (from lingua, a tongue, and folium, a leaf; form of leaves). Leaves lorately tongue-formed, thick, acutit. Haw. l. c.

1 P. LINGUEFOLIA (Haw. rev. succ. p. 14.) lower leaves distinct, opposite, tongue-formed, ciliated, pubescent; stem leafy; flowers verticillate, cored, sessile. Ṣ. or ḡ. D. G. Native of the Cape of Good Hope. Crassula linguéfolia, Haw. misc. nat. p. 175. Stem simple, a foot high. Corolla ampulliform, from green to white. Perhaps only a variety of P. tomentosa.


4 P. PERTUSULA (Haw. in phl. mag. 1828. p. 184.) leaves lanceolate, recurved, beset with impressed dots on both surfaces; upper bracteas cordate, entire; scape panicled. ḡ. D. G. Native of the Cape of Good Hope. Corolla snow white.


5 P. HIRTA; radical leaves lanceolate, hairy; stem herbaceous, erect, nearly naked, rather pubescent; heads of flowers verticillate. ḡ. D. G. Native of the Cape of Good Hope. Crassula hirta, Thumb. fl. cap. 284. Like P. spicáta. Leaves fleshy, white, erect, acute. Flowers white.

Hairy Purgosia. Pl. ½. to 1 foot.


Head-bearing Purgosia. Pl. ½. foot.


Crenulated Purgosia. Pl. 1 foot.
2. Ovatifolius (from ovatus, ovate, and folium, a leaf). Leaves ovate, oval, or obovate.

8 P. Ciliata: stem succulent, sparingly branched, terete; leaves oval, oblong, flatish, distinct, ciliated; corollas terminal.


9 P. concinna: leaves oblong, ciliated, rather imbricated.

2. D. G. Native of the Cape of Good Hope. Crassa cincinna, Haw. rev. succ. This is a much larger plant than the preceding, to which it is nearly allied. Flowers white.


10 P. concinna: leaves oblong, with densely ciliated silky margins.

2. D. G. Native of the Cape of Good Hope. Crassula concinna, Haw. in phil. mag. 1823. p. 381. Allied to P. concinna, but weaker, and 4 or 5 times smaller in every part, densely ciliated. Leaves rather imbricated, and appearing as if they were disposed in 2 compressed rows. The rest unknown.


11 P. cotyledon: radical leaves connate, oblong, oblong, tomentose, ciliated; stem nearly naked, herbaceous, somewhat tetragonal; flowers disposed in a corymb composed of fascicles.


Cotyledon Purgosia. Pl. 1 foot.

12 P. capitellata (Haw. rev. p. 17.) leaves connate, oblong, glabrous, cartilaginous ciliated, spreading, longer than the internodes; flowers in whorled heads.


13 P. alpestre: leaves connate, ovate, acute, imbricating in 4 rows; heads pedunculated; stem leafy, glabrous.

2. D. G. Native of the Cape of Good Hope. Crassula alpestre, Lin. fil. suppl. p. 190. Thumb. fl. cap. 286. nov. act. nat. cur. p. 6. p. 336. f. 56. f. 4. Allied to Crassula montana, but differs in the leaves being more acuminate, not ciliated, in the stem being thicker, and clothed with leaves, and in the flowers being larger.

Alp Purgosia. Pl. ½ foot.

14 P. hemisphærica: lower leaves connate, roundish, imbricating into a round head, cartilagiously ciliated; stem nearly naked; flowers rising in fascicles from the axis, forming a panicled spike. 2. D. G. Native of the Cape of Good Hope. Crassula hemisphærica, Thumb. prod. p. 57. fl. cap. p. 292. Floral leaves very short. Flowers small, white.

Hemisphærical Purgosia. Pl. ¾ foot.

15 P. thyrsiflora (Haw. rev. succ. 17.) leaves perfoliolate, ovate, obtuse, ciliated, glabrous, erectly spreading; thyrse branched, spicate.


Thyrse-flowered Purgosia. Pl. ¼ foot.

16 P. obovata (Haw. rev. succ. p. 16.) leaves opposite, deciduous, ovate, ciliated, full of minute impressed dots; stem rather hispid; flowers axillary, in a thyrsoid spike.


leaves obliquely cuneate-ovate, dark purple; sepal or flower bearing stem, very long, and panicked. D. G. Native of the Cape of Good Hope. Crássula obliqua, Haw. rev. succ. p. 203. It approaches very near G. cultrata, but differs in the inflorescence. Flowers white.

**Dark purple-leafed Globulea.** Fl. Aug. Clt. 1823. Shrub \( \frac{1}{2} \) to 1 foot.

§ 2. *Linguáter* (from lingua, a tongue; form of leaves). Leaves lobate, obtuse, convex beneath, or narrow tongue-formed, imbricating exactly in 4 rows. Stem very short or herbarious. Scapes or floriferous stems naked. Haw. in phil. mag. 1824. p. 191.

4 G. *Linguá* (Haw. in phil. mag. 1824. p. 28.) leaves elongated, lorate, ventricosely semi-lanceolate, culturate, and are as well as the calyces ciliated. D. G. Native of the Cape of Good Hope. Leaves without dots. Flowers panicked, white; anthers yellow.


5 G. *Linguá* (Haw. l. c. p. 29.) leaves rather elongated, ventricosely semi-lanceolate, culturate, thin, flaccid. D. G. Native of the Cape of Good Hope. Very like the preceding, but much smaller.


6 G. *Capitáta* (Haw. rev. succ. p. 17.) leaves ventricosely lanceolate, culturate, rather convex beneath, imbricately decussate, when young hoary. D. G. Native of the Cape of Good Hope. Crássula capitáta, Salm-Dyck, cat. 1820. p. 14, but not of Lam. Very like G. *obvalláts*, but larger, and the leaves are more acinaciform, usually an inch and a half broad.

**Capitate-flowered Globulea.** Fl. June, Jul. Clt. 1819. Pl. \( \frac{1}{2} \) to 1 foot.


**Canescens Globulea.** Fl. Jul. Aug. Clt. 1800. Pl. \( \frac{1}{2} \) foot.


**Naked-stemmed Globulea.** Fl. May, Sept. Clt. 1732. Pl. \( \frac{1}{2} \) to \( \frac{3}{4} \) foot.

10 G. *Sulcátáts* (Haw. rev. p. 18.) stemless; leaves incurved, subulate, semi-terete, deep green, shining, broadly channelled. D. G. Native of the Cape of Good Hope. Very like G. *nudicaláts*, but differs in being glabrous, and in the leaves being broadly furrowed above.

**Furrowed-leaved Globulea.** Fl. Ju. Sept. Clt. 1818. Pl. \( \frac{1}{2} \) ft.
4. Loríce (from loratus, large; shape of leaves). Leaves long, narrowest at the apex, convex beneath, tubed, incrusting in 4 rows. Stems hermaphroditic. Scapes leafy.

11 G. IMPRESSA (Haw. in phyl. mag. 1824. p. 189.) plant stemless; leaves long-lanceolate, green, full of impressed dots; dots large, scattered, numerous. D. G. Native of the Cape of Good Hope. Leaves cespitose, decussate, rather ciliated at the base. Flowers small, pale.

Var. β, minor (Haw. l. c.) smaller; dots on leaves more obsolete.


14 G. MESEMBERYANTHEMOIDES (Haw. l. c. p. 190.) stems suffruticose, bushy, erect; leaves subulate, and are as well as the branches, branches, and calyces hispid. D. G. Native of the Cape of Good Hope. Flowers glomerate, in dense fascicles, cream-coloured. Var. β; plant a little taller; flowers not so crowded.

Fig-marigold-like Globulea. Fl. Aug. Sept. Clt. 1820. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

15 G. subincana (Haw. l. c.) stem suffruticose, erectly decumbent; leaves semiterete, subulate, acute, a little incurved, and are as well as the branches covered with soft hoary down. D. G. Native of the Cape of Good Hope. Flowers white. There are decumbent and erect varieties of this plant.


Cult. Globulea is a very pretty genus of succulent plants. Sandy loam and brick rubbish is a good soil for them; and the pots should be well drained. Cuttings root easily if laid to dry a few days after cutting off, before they are planted, to dry up the wound, that they may not rot. A good situation for the plants is on the shelves of a greenhouse.


Lin. syst. Pentándria, Pentagynía. Calyx 5-parted, much shorter than the corolla. Petals 5, united at the base into 5-parted corolla. Stamens 5. Scales 5, short. Ovary 5, terete-oblong, gibbous at the apex, ending each in a long sublateral style.—Subshrubs, natives of the Cape of Good Hope. Leaves opposite, flat, rather fleshy, cartilaginously ciliated, ovate. In-


2 C. undulata (Haw. rev. p. 9.) leaves conuate, ovate, expanded, cartilaginously crenated: superior ones ovate-elliptic, undulately incurved; styles dichotomous. D. G. Native of the Cape of Good Hope. Curtogyne undulata, Haw. syn. p. 58. Similar to the first species, but differs in all the parts being much smaller and more branched. Flowers white.


Waved-leaved Curtogyne. Fl. Jul. Aug. Clt. 1824. Sh. 1 ft. Cult. The culture and propagation of the species of this genus are the same as that recommended for Globulea, above.

A pretty succulent genus.

IX. GRAMMANTHES (from γραμμα, gramma, a writing, and ανθος, anthos, a flower; in consequence of the segments of the corolla having some supposed resemblance to the letter V marked on them; hence also its synonymous name Vauvantage). D. C. prod. 3. p. 392. mem. crass. t. 1. f. 6. Vauvantage, Haw. rev. p. 18.—Crassula species of Lin. and others.

Lin. syst. Pentándria, Pentagynía. Calyx campanulate, 5-cleft, erect. Corolla gamopetalous, having the tube the length of the calyx; and the lobes 5-6, oval, expanded. Stamens 5-6, alternating with the lobes, inserted in the tube of the corolla, and inclosed within it. Scales wanting. Carpels 5.—Herbs annual. Leaves opposite, ovate-oblong, remote, flat, sessile. Flowers disposed in cymose corymbs.


Chloroflora-flowered Grammanthies. Fl. Jul. Clt. 1774. Pl. $\frac{1}{4}$ ft. 2 G. Gentianoides (D. C. prod. 3. p. 393.) leaves ovate-oblong. D. G. Native of the Cape of Good Hope. Crassula gentianoides, Lam. dict. 2. p. 175.—Phuk. mant. 89. t. 415. f. 6. Flowers pale blue, ex Phuk. and Lam. but the flowers are more likely yellow, and have become bluish on drying. Perhaps sufficiently distinct from the preceding.

Gentian-like Grammanthies. Fl. 1 ft. Cult. Sow the seeds thinly in pots filled with a mixture of gravelly sand or lime rubbish and loam, draining them well with shers. The species are singular succulent plants.

LIN. SYST. Pentáudria, Pentágynia. Calyx 5-lobed. Petals 5, united into a gamopetalous hypocrateriform corolla; with a short tube, equal in length to the spreading limb, or shorter than it. Stamens 5, alternating with the petals, a little exerted. Glands and carpels 5.—Tall, fleshy, simple, succulent shrubs. Leaves opposite, connate at the base, thick, white. Flowers disposed in terminal corymbs, without any bracteas.


**var. albiflóra** (Haw. l. c.) flowers white. Crássula perfoliáta, D. C. pl. grass. t. 13.—Dill. hort. elth. f. 118. Mill. fig. t. 108. Comm. pral. t. 23. without any flower, and is therefore referrible to *Aloe petiáta*, Haw. in Lin. trans. t. 7. p. 25.


3 R. albiflóra (D. C. prod. 3. p. 398.) leaves distinct, ovate, acuminate, spreading, cartilaginosely ciliát. ² D. G. Native of the Cape of Good Hope. Crássula albiflóra, Sims. bot. mag. t. 2391. Flowers white, disposed like those of *R. falcata*, but larger than those of *R. perfoliáta*. Anthers blackish, and a little more exserted than those of the other species.


**Cult.** Large, succulent plants, elegant when in flower. Their culture, propagation, and treatment are the same as that recommended for *Globularia*, p. 106.

**XI. KALOSANthes** (from *kalos*, kalos, beautiful, and *anthos*, anthos, a flower; flowers elegant). Haw. rev. succ. 1821. p. 6. but not of Blume.—Dietrichia, Tratt. tab. t. 449. arch. gev. (1818.) no. 449. but not of Rausch.—Rochea, sect. 2. Franciscoce, D. C. prod. 3. p. 393.

LIN. SYST. Pentáudria, Pentágynia. Calyx 5-lobed (*f. 26. a.*). Petals 5, united into a gamopetalous hypocrateriform corolla (*f. 26. a.*), with a cylindrical tube 2 or 3 times longer than the spreading limb (*f. 26. a.*). Stamens 5, alternating with the petals; anthers in the throat of the tube of the corolla. Glands and carpels 5.—Succulent shrubs. Leaves opposite, oval, or oblong, connate, flat, cartilaginosely ciliát. Flowers disposed in cymose umbels or heads, involucrated with numerous bracteas.

1 K. coccínea (Haw. rev. p. 18.) leaves connate and ciliát at the base; ovate-oblong, acutish. ² D. G. Native of the Cape of Good Hope. Larochêa coccínea, Haw. syn. p. 50. Crássula coccínea, Lin. spec. Curt. bot. mag. t. 495. Dietrichíá coccínea, Tratt. th. t. 19.—Comm. rar. t. 24. Bradl. succ. t. 50. Burm. afr. t. 23. f. 1. Flowers scarlet; tube an inch long. According to Bryen. prod. 3. t. 20. f. 1 there is a variety with flesh-coloured flowers; and according to Bradl. succ. t. 50. and Haw. rev. p. 8. there is a variety with white flowers, but in the gardens it is not to be found but with scarlet flowers.

**Scarlet-flowered Kalosanthes.** Fl. June, Aug. Clt. 1710. Shrub 1 to 3 feet.


**Middle Kalosanthes.** Fl. Ju. Jul. Clt. 1810. Shrub 1 ft. 3 K. versicolor (Haw. rev. p. 7.) leaves oblong-lanceolate, acute, connate and sheathing at the base; stem erect, branches; flowers in umbellate heads. ² D. G. Native of the Cape of Good Hope, on the Table Mountain. Crássula versicolor, Dürch, ex Ker. bot. reg. t. 320. *Roechea versicolor,* D. C. prod. 3. p. 394. Flowers about the size of those of *K. coccínea,* having the tube white, and the segments of the limb ovate, white in the middle, edged with scarlet. *Calyx* as long as 3 of the tube of the corolla.


4 K. odoratíssíma (Haw. rev. p. 7.) leaves linear-lanceolate, gradually acuminate, connately stem-clasping; flowers in umbellate heads; segments of the corolla oblong, acutish. ² D. G. Native of the Cape of Good Hope. Crássula odoratíssíma, Andr. bot. rep. t. 26. Jacq. hort. schmbr. t. 434. *Larochêa odoratíssíma,* Haw. syn. p. 51. Dietrichíá odoratíssíma, Tratt. *Roechea odoratíssíma,* D. C. prod. 3. p. 394. The flowers are yellow, according to Andrews; yellowish, Haworth; but with red claws and white lamina, according to Jacquin; they have the scent of those of *Polýántus tubérous,* or Tube-rose.

**var. b, albí (D. C. prod. 3. p. 394.) flowers white.** ² D. G. Native of the Cape of Good Hope. Crássula capitáta, Lodd. bot. cab. t. 1029. Leaves less ciliát, according to the figure, than those of the species.

**Sweet-scented Kalosanthes.** Fl. Ju. Jul. Clt. 1793. Sh. 1 ft. 5 K. nícolor (Haw. rev. p. 7.) flowers capitae, sessile, yellow, and scarlet. ² D. G. Native of the Cape of Good Hope. Very like the preceding species, but larger and more rigid, and the leaves are more acute.


**Yellow-flowered Kalosanthes.** Shrub 1 to 2 feet!


Röchea jasminea, D. C. prodr. 3. p. 394. Flowers white at first, but becoming reddish as they fade, very like those of the common jasmine, scentless. Tube of corolla almost 3 times longer than the calyx. Heads containing 2-4 flowers.


Shrub decumbent.


10 K. fasciculata (Schultes, syst. 6. p. 709, under Larochéna,) leaves connately sheathing at the base, linear-lanceolate; flowers in fascicles; segments of the calyx lancelolate, acute, ciliated. ꞵ. D. G. Native of the Cape of Good Hope. Crassula fasciculata, Lam. dict. 2. p. 171. Leaves glabrous, carillaginously ciliated. Corolla almost as in K. coeca, but is a little shorter.

Fascicle-leaved Kalosanthes. Shrub 1 to 2 feet.

Cult. Elegant succulent shrubs, worth cultivating in every collection for the beauty of their flowers. The culture, propagation, and treatment they require are the same as that recommended for Globularia, p. 106.

XII. KALANCHOE (Chinese name of one of the species). Adans. fam. 2. p. 248. D. C. pl. grass. no. 64. D. C. prodr. 3. p. 394. Haw. in phil. mag. 1829. p. 301.—Crassulaeanae, Pers.—Veronica, Andr. bot. rep. t. 21, Véres, Wild. Lin. syst. Octandria, Tetrágamma. Calyx 4-parted (rarely 5-parted); sepals united only at the very base, lorate, acute, spreadingly recurved at the apex. Corolla gamopetalous, hypocrateriform with an obversely clavate tube, and a 4-parted (rarely 5-parted) spreading limb. Stamens 8, 4 of which are adnate to the tube, nearly to the middle, the other 4 almost to the apex. Scales 4, linear, but almost obsolete in the K. varians, Carpels 4, continuous, with the filiform styles.—Succulent sub-shrubs, from 1 to 2 feet high, erect, a little branched. Leaves opposite, fleshy, more or less irregularly impari-pinnate, or ovate, toothed or serrated, and often of a glaucous hue. Flowers disposed in loose cymose terminal panicules, yellow, or rufescence, rarely white, scentless. This is a very natural genus.

* Leaves pinnatifid.


* Leaves simple; but in K. varians some of them are tricuspidate.

3 K. varians (Haw. in phil. mag. 1829. p. 303) smooth, glaucous; leaves oval, broadly toothed; upper ones sometimes tricuspidate. ꞵ. D. S. Native of the East Indies. Flowers yellow, sometimes 3-clawed.


6 K. lanceolata (D. C. prodr. 3. p. 392.) leaves lanceolate, crenated at the apex; stem, peduncles, calyces, and corollas, villous; cymes panicled. ꞵ. D. G. Native of Arabia. Cotyledon lanceolata, Forsk. desc. p. 89. Flowers said to be reddish yellow, that is, probably brownish.

Lanceolate-leaved Kalanchoe. Shrub 1 to 2 feet.

7 K. brasiliensis (St. Hil. fl. bras. 2. p. 196.) puberulous; lower leaves roundish; middle ones obovate-lanceolate; upper ones linear; all crenately serrated; cymes dense; lobes of corolla very acute. ꞵ. D. S. Native of Brazil, near Rio Janeiro by the sea side. Corolla with a yellow tube, and a rose-coloured limb. This plant seems to be an exception from the exciting and acid properties peculiar to the rest of Crassulaceae, it being used by the Brazilians in their domestic medicine.

Brazilian Kalanchoe. Shrub 1 to 2 feet.


Alternating Kalanchoe. Shrub 1 to 2 feet.

9 K. rotundifólia (Haw. in phil. mag. July, 1823. p. 81.) plant straight and slender; leaves thick: lower ones roundish; upper ones obovate, and almost entire; flowers small. ꞵ. D. G. Native of the Cape of Good Hope. Flowers rufescence or yellow.


Cult. The species of Kalanchoe being succulent, require very little water unless when growing freely; and the pots in which they are grown ought to be well drained with sherds. A mixture of loam and sand appears to be the best soil for them. The species are easily increased by cuttings. A leaf taken off any
of the species, and laid on the pot of mould, or on a tan-bed, will shoot out young plants from the notches on the edges of the leaf.

XIII. BRYOPHYLLUM (from βρυον, bryo, to sprout, and φυλλον, phyllon, a leaf; plants spring from the notches on the edges of the leaves when taken off the plant, and placed in a moist situation). Salisbury. par. 3. D. C. prod. 3. p. 395.—Crassouvia, Comm. miss.—Physocalyxium, Vest. in fl. 1829. p. 409.—Cotyledon species, Lam.—Calanchœ species, Pers.

LIN. Syst. Octádria, Tetrágyminia. Calyx inflated, bladdery before flowering, hardly 4-cleft to the middle; lobes 4, valvate. Corolla gamopetalous, hypogynous, having a long cylindrical tube, which is bluntly tetragonal at the base; and the lobes of the limb triangular and acute. Stamens 8, adnate to the base of the tube. Glands 4, oblong.—A fleshy, erect, branched, glabrous shrub. Leaves opposite, thick, petiolar; some impari-pinnate, with one or 2 pairs of segments, the terminal segment large; solitary others, all ovate and crenate; crenate bearing an opaque dot in each, which is easily made to evolve into a plant. Cymes panicked, terminal. Flowers yellowish red, or green and red. Calyx almost like that of Silene inflata.


Cult. See Kalanchœ above for culture and propagation.


LIN. Syst. Decándria, Pentágyminia. Calyx 5-parted, much shorter than the tube of the corolla. Corolla gamopetalous; tube ovate-cylindrical; limb 5-lobed, spreadingly reflexed or revolute; lobes obtuse. Stamens 10, adnate to the base of the tube of the corolla; the upper part free, exserted or almost inclosed. Scales ovate. Carpels 5, continuous, with the styles, which are subulate.—Fleshy shrubs, native of the Cape of Good Hope. Leaves usually scattered. Flowers loose, panicked, purplish or orange-coloured. This genus has been divided into sections from the form of the corolla by the Prince Salm-Dyck, but the corolla being unknown in a great many of the species we cannot follow these divisions.

* Leaves opposite.

1 C. undulata (Haw. suppl. 20. rev. 20.) leaves opposite, rhomboid-ovate, with an acumen, pale green; older ones large and very thick, margined with red at the apex: when young lean and waved. Ɣ D. G. Native of the Cape of Good Hope. Flowers unknown. Very similar to C. orbiculata, but the stem is more humble, and the leaves longer, and less obtuse at the apex. Salm-Dyck in litt.


2 C. orbiculata (Lin. spec. 614.) leaves opposite, flat, obovately-spatulate, obtuse, with an acumen, glaucous, and mealy, margined with red; flowers panicked; caudex erect, branched. Ɣ D. G. Native of the Cape of Good Hope. D. C. pl. grass. no. 76. Ait. hort. kew. ed. 2. vol. 3. p. 108. Flowers reddish.

Var. φ, rotundifolia (D. C. prod. 3. p. 396.) leaves roundish.


Var. β, obovata (D. C. l. c.) leaves obovate, margined with red.—C. ovata, Haw. l. c. C. orbiculata var. a, D. C. pl. grass. t. 76. Curt. bot. mag. t. 321.—Mor. oxon. sect. 12. t. 7. f. 59. Herrn. lugd. bat. 551. with a figure.

Var. γ, oblonga (D. C. l. c.) leaves oblong.—C. oblonga, Haw. l. c. C. orbiculata β, Ait. l. c.

Var. ε, clata (Salm-Dyck. in litt.) leaves orbiculare obovate, white, and mealy; stem tall, firm, a little branched. C. clata, Haw. suppl. p. 20.

Var. τ, ramosa (Salm-Dyck. in litt.) leaves ovate-spatulate, white, and mealy; caudex much branched; branches effuse. C. ramosa, Haw. suppl. p. 20. C. ramosissima, Mill. dict. C. orbiculata γ, Ait. hort. kew.


3 C. crassifolia (Haw. in phil. mag. 1826. p. 272.) stem erect, shrubby; plant white from meallness; leaves rhomboid, obtusely, thick. Ɣ D. G. Native of the Cape of Good Hope. Leaves distant, decussately opposite, edged with brownish purple on the margin above the middle. Flowers not seen. Thick-leaved Cotyledon. Ct. 1824. Shrubs 1½ to 3 ft.

4 C. viridis (Haw. in phil. mag. 1826. p. 272.) stem shrubby, erect, nearly simple; leaves obovato-cuneated, green. Ɣ D. G. Native of the Cape of Good Hope. Leaves middle-sized, lean. In habitat it follows C. crassifolia.

Green Cotyledon. Shrubs 2 to 4 ft.

5 C. ramosissima (Haw. suppl. p. 25.) leaves oblong-obovate, farinose, margined with red at the apex; caudex much branched; young branches erect; old ones twisted, and crowded. Ɣ D. G. Native of the Cape of Good Hope. C. paniculata, Lin. fil. suppl. Flowers unknown. Leaves not half the size of those of the smallest variety of C. orbiculata, hardly 15 lines long, and 9 lines broad.


7 C. ungulata (Lam. dict. 2. p. 130.) leaves opposite, semi-cylindrical, channelled, glabrous, purple, and furnished with a callous point at the margin near the apex; flowers in a kind of panicle, glabrous; caudex erect. Ɣ D. G. Native of the Cape of Good Hope. Burm. afr. dec. 3. p. 24. t. 22. f. 1. Flowers purplish, pendulous. Very like C. orbiculata.

Claw-leaved Cotyledon. Shrubs 1 to 2 ft.


9 C. tricuspidata (Haw. in phil. mag. 1825. July. p. 32.) plant white from meallness; leaves narrow, usually deeply tricuspidate. Ɣ D. G. Native of the Cape of Good Hope.
Very like C. papillaris, but differs in the leaves being tricuspidate.

Triecispinate-leaved Cotyledon. Clt. 1833. Shrub 1 ft. 10 C. furtvrea (Thomb. fl. cap. p. 296.) leaves opposite, linear-oblong, fleshy, concave; glabrous; flowers panicled, gla- brous; caudex erect, nearly herbaceous. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Corolla purple, an inch long. Purple-flowered Cotyledon. Shrub 1 ft. 11 C. teretifolia (Thomb. prod. p. 83. fl. cap. p. 597. but not of Lamm.) leaves opposite, nearly terete, fleshy, hairy, obtuse, with an acumen; flowers panicled, hairy; cædix erect, simple. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Terete-leaved Cotyledon. Shrub 1 ft. 12 C. cuneiformis (Haw. in phil. mag. March, 1828. p. 155.) stems short, branched; leaves crowded, obovate, mucronate, rather white from mealliness. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Like C. crassifolia, but much more humble. Wedge-leaved Cotyledon. Shrub 1 ft. ** Leaves alternate, narrow-ovate. 13 C. curviflora (Sims, bot. mag. t. 2044.) leaves scattered, semicylindrical, glabrous; cædices of the stem, where the old leaves have fallen off, rather prominent; flowers panicled, nodding; calyxes loose; tube of corolla pentagonal, in- curved. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Flowers of a dirty yellow-colour, almost reddish, about an inch long. Styles longer than the stamens. Curve-flowered Cotyledon. Fl. Oct. Clt. 1818. Sh. 1 to 2 ft. 14 C. tuberculosa (Lamm. dict. 2. p. 139.) leaves scattered, subcyllindrical, linear-oblong, acute; cædices of the old leaves tubercular; flowers subpanicled, erect; peduncles and calyxes pubescent. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope.—Burman. afr. t. 20. f. 1. 15 C. grandiflora, N. L. Burman. prod. fl. cap. 13. C. tuberculosa, D. C. pl. gras. 1. t. 86. Flowers showy, orange-coloured, tubular, an inch or more long; limb spreading, not replicate. Tuberculosa Cotyledon. Fl. June, Aug. Clt. 1820. Shrub 1 to 2 feet. 15 C. cacaloides (Lin. fls. suppl. p. 242.) leaves scattered, terete, acute; cædices of the old leaves pitted; flowers panicled, erect, seated on a long, elongated, nearly naked stem. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Burman. afr. t. 20. f. 2. Flowers yellow, rather villous, half an inch long. Leaves deciduous when the plant is in flower; hence Burmann called it C. aphyllos. Cacalia-like Cotyledon. Fl. May. Clt. 1818. Sh. 1 foot. 16 C. ventricosa (N. L. Burman. prod. fl. cap. p. 13.) leaves scattered, linear-oblong, acute at both ends; cædices on old stems tubercular; flowers in loose racemes, pedicellate, erect; tube ventricose, pentagonal; lobes acute. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Burman. afr. dec. 3. p. 51. t. 21. f. 1. Flowers greenish, almost like those of C. hemispherica. Leaves like those of C. tuberculosa, according to Burman. Ventricosa-flowered Cotyledon. Shrub 1 to 2 feet. 17 C. sivaria (Lin. spec. p. 614.) exclusive of the synony- mous. leaves almost radical, terete, oblong, fleshy, obtuse, narrower at the base; cædix very short, thick; flowering stem erect, naked; flowers somewhat panicled. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Burman. afr. p. 43. t. 19. f. 1. Plunk. altn. t. 323. f. 1.—Willd. spec. 2. p. 754. C. teretifolia, Lamm. dict. 2. p. 139. but not of Thomb. Spurious Cotyledon. Fl. July, Aug. Clt. 1731. Shrub 1 ft. 18 C. fascicularis (Ati. hort. kew. ed. 1. vol. 2. p. 106.) leaves scattered, but in fascicles at the tops of the branches, cuneiform, obtuse, flat, thick; cædix thickened, branched; flowers panicled, pendulous, with revolute limbs. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Burman. afr. p. 41. t. 18. C. paniculata, Thumb. fl. cap. p. 396. ex Burman. syn. C. tardiflora, Bonpl. nav. t. 37. Corolla with a short, greenish, broad, subpentagonal tube, and a reddish revolute limb. Fascicled-flowered Cotyledon. Fl. July, Sept. Clt. 1759. Shrub 1 foot. * * * Leaves alternate, permanent. 19 C. trigloera (Thomb. prod. p. 83. fl. cap. p. 396.) leaves scattered, oblong-spataculate, obtuse, fleshy, of a greyish shining colour; flowers by threes, in spikes, approximate, with replicate limbs; stem suffrutescent. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope, near Zehorivier. Salm-Dyck. obs. p. 6. C. elata, Haw. suppl. Corolla with a green tube, and an acute limb, variegated with white and purple. Three-flowered Cotyledon. Fl. May, July. Clt. 1821. Shrub 1 to 2 feet. 20 C. maculata (Salm-Dyck, obs. p. 5.) leaves scattered, ovate-spataculate, somewhat suriicate at the base, fleshy, shining, marked with dark red spots on both surfaces; flowers spicate, almost alternate; limb spreading; stem suffrutescenc. \( \frac{1}{2} \). D. G. Native country unknown. C. alternans, Haw. suppl. ex Salm-Dyck. but not of Vahl. Spike terminal, generally simple. Tube of corolla green, subventricose, with the segments of the limb acute, variegated with white and purple. Spotted-leaved Cotyledon. Fl. July, Aug. Clt. 1816. Sh. 1 ft. 21 C. homoroflora (Haw. in phil. mag. 1825. July, p. 33.) leaves approximate, obovate-rahmboioid, mucronate, white and mealy; stem branched, strong, decumbent. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Allied to C. hemispherica, but more humble and branched, and the leaves are rhomboid, and more acuminate. Flowers unknown. Rhomb-leaved Cotyledon. Clt. 1823. Shrub decumbent. 22 C. jassimiflora (Salm-Dyck, obs. Haw. rev. p. 20.) leaves rather crowded, green, rhomboid-spatulate, fleshy; stem humble; peduncle terminal, branched; flowers erect, with a green tube, and a revolute limb, variegated with white and purple; pedicels long, thickened. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Allied to C. hemispherica, but the stems are more humble, thickened from the root; the leaves longer, and the flowers with the tube and limb more ample, and more like a jasmine flower. Salm-Dyck in litt. Jasmine-flowered Cotyledon. Fl. July, Aug. Clt. 1818. Sh. 1 foot. 23 C. hemispherica (Lin. spec. p. 614.) leaves scattered, ovate-rounded, thick dotted, glabrous; flowers nearly sessile, erect, along an elongated peduncle; lobes of corolla spreading. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope.——Dill. 2. t. 95. f. 111. C. hemispherica, D. C. pl. gras. 1. t. 87. Flowers small, with a green tube, and the limb variegated with white and purple. Hemispherical Cotyledon. Fl. Ju. July. Clt. 1731. Sh. 1 ft. 24 C. kotundiflora (Haw. in phil. mag. 1826. p. 273.) shrubby, dwarf; leaves straight, crowded, roundish, dirty green; branches short, decumbent. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope. Leaves flat, convex beneath, mealy. Allied to C. hemispherica. Round-leaved Cotyledon. Shrub decumbent. 25 C. macillaris (Lin. fls. suppl. p. 243.) leaves scattered, crowded into something like whorls, terete, ovate, obtuse, glabrous; flowers spreading on short pedicels, which are seated on an elongated peduncle; stem creeping. \( \frac{1}{2} \). D. G. Native of the Cape of Good Hope, near Olyants Bad. Thomb. fl. cap. p. 397. Haw. rev. p. 21. suppl. 22. Corolla tubular, glabrous, with a green tube, and a spreadingly reflexed limb, which is variegated with white and purple.
26 C. cuneata (Thunb. fl. cap. p. 352) leaves radical, cuneated, fleshly, hairy, with purple margins; stem erect, somewhat herbaceous, pubescent, viscid; corolla hairy.  fl. D. G. Native of the Cape of Good Hope.

27 C. intermedia (Haw. in phil. mag. March, 1828, p. 185,) leaves glanscent, narrow-oblong, acute, incurved; stem short, strong.  fl. D. G. Native of the Cape of Good Hope. Very like C. spinosa, but differs in being higher, in the leaves being shorter, thicker, and narrower, more channelled, and without doubt incurred.


29 C. mucronata (Lam. dict. 2, p. 112.) leaves nearly radical, oval, flat, with undulated margins, mucronate at the apex; stem branched, very short; floriferous stem naked; flowers erect, in loose panicles.  fl. D. G. Native of the Cape of Good Hope. Burm. afr. p. 44. t. 19. fl. 2. C. undulata, Haw. Lobes of corolla acute.

30 C. reticulata (Thunb. fl. cap. p. 393,) leaves scattered at the tops of the branches, terete, acute, erect, soft, glabrous; stem erect, shrubby, fleshy; flowers erect, in dichotomous panicles.  fl. D. G. Native of the Cape of Good Hope.

Dichotomous Cotel.  Shrubs ½ to 1 foot.
31 C. pinnata (Burch. cat. geogr. no. 1818, ex toy. cap. 1, p. 240.) leaves oval, rather composed, thick; panicle dichotomously branched; pedicels erect, very long, capillary; stem erect.  fl. D. G. Native of the Cape of Good Hope. Plant 6-9 inches high.

Small Cotel.  Pl. ½ to 1 foot.
33 C. trigyna (Burch. tr. fl. aff. 2, p. 226,) stemless; leaves glabrous, flattened, fleshy, cuneate-oval or nearly orbicular; flowers erect, alternate on an elongated simple scape, rarely on a bifid one.  fl. D. G. Native of the Cape of Good Hope. Corolla cylindrical, purplish, with a short reflexed limb, and a purple throat. Carpels 3.

Trigyna Cotel.  Pl. ½ to 1 foot.
34 C. cristata (Haw. phil. mag. 1827, April 1, p. 123,) leaves petiolate, cuneately triangular, curved and crested at the apex.  fl. D. G. Native of the Cape of Good Hope. Herb succulent, leafy, evergreen. Stem short, with the succulent densely clothed with fleshy hairs. Leaves erect, an inch long, thick, purplish at the apex, beset with dots of seryu1 down. Spikes terminal. Flowers small, open in the morning.

35 C. clavifolia (Haw. 1. c.) leaves petiolate, club-formed, incurved, acuminated, and rather curled at the apex.  fl. D. G. Native of the Cape of Good Hope. Allied to the preceding species; but the flowers are about twice the size, and purple.

Cult. Cotel. is a genus of pretty succulent plants. The culture, propagation, and management of the species are the same as that for Globulica, p. 106.

CULT. PISTORINIA (meaning unknown to us).  D. C. prod. 3. p. 399. mem. crass. p. 25. t. 10. f. 5.—Cotel. species of authors.


Cult. Sow the seeds in any dry situation in a light soil in the open border, or on rock-work.

CULT. UMBILICUS (from umbilicus, the navel; hollow leaves of some species).  D. C. in bull. phil. 1801, no. 19. prod. 3. p. 399. Lin. Syst. Decandria, Pentagynia. Calyx 5-parted. Corolla gamopetalous, campanulate, 5-cleft; lobes ovate, acute, erect, about the length of the tube. Stamens 10, inserted in the corolla. Scales 5, obtuse. Carpels 5, attenuated at the apex. Styles subulate.—Herbs, indigenous to the south of Europe and the Levant. Leaves rosulate or alternate, quite entire, or a little toothed. Flowers white or yellow, in branched or simple terminal racemes, never in cymes.

SECT. I. ROSULÀRIA (from rosus, a rose; in reference to the leaves being rosulate, or disposed like the petals in the flower of a rose).  D. C. prod. 3. p. 399. Sepals equal to the tube of the corolla. Leaves radical, rosulate. Scapes subpanicled, annul.—Perennial herbs, natives of the Levant, with the habit of Sempervivum.
1 U. Libanòticus (D. C. prod. 3. p. 399.) leaves radical, rosulate, cuneated, thickish, papillosé; scape naked; panicle racemose, loose. 2. H. Native of Mount Libanon, and near Damascus. Cotel. Libanòtica, Labill. synr. dec. 3. p. 3. t. 1. Flowers yellow?

Libanò Libanon Navel-wort.  Pl. ½ foot.

Houseleek-like Navel-wort.  Pl. ½ foot.
3 U. pubescens (Meyer in verz. pflanz. p. 150, under Cotel.) plant pubescent; leaves linear-oblong, bluntish; radical ones rosulate, cauleine ones scattered, erectly spreading; racemes corymbose; corolla twice the length of the calyx, with the segments of the limb acute and spreading at the apex; stem herbaceous, simple. 2. H. Native of Caucasus, among rocks in shady places on the mountains of Talush, at the altitude of 1200 to 2700 feet. Sédum pilosum, Bieb. fl. taur. 1. p. 332. Flowers reddish.
4 U. Sánchez (D. C. l. c.) radical leaves narrow, spatulate-lanceolate, long, fleshy; cauleine leaves sessile, linear; stem simple, glabrous, leafy; flowers racemose, pedicellate, usually twin.


7 U. pendulíneus (D. C. pl. grass. t. 156.) lower leaves petallate, concave, repeatedly crenated, roundish; bracteae entire; flowers tubular, pendulous, or spreading. O. H. Native of Europe, among stones and rocks, on walls and under hedges; in Britain, on moist dripping rocks and old walls. Cotyledon Umbilikus, Lin. spec. 615. var. ov. Sow. engl. bot. t. 325. Cotyledon umbilíca, Lam. C. rúpéstris, Salisb. Cotyledon Umbilikus vénéris, Blackw. herb. t. 2935. Root tuberous. Flower-bearing stem branched; with its branches bearing racemes. Flowers yellow.


Sect. IV. Pteróniáidæ (plants intermediate between Pistorínia and Umbilikus). Roots perennial, thick, woody. Leaves terete, subulate. Stems numerous, erect, simple, fistular, densely leafy, for the most part naked below, in consequence of the leaves having fallen.

11 U. lievërii; glabrous; stems herbaceous, erect, simple; leaves scattered, crowded, nearly terete, glabrous; flowers yellow; limb of corolla erect. 2. H. Native of Altai, between the river Irtsch and Lake Nöör. Stem in dry sandy fields; in fields on the mountain of Kuttchem, Arkau, and at the rivulet called Urnëchka, near Buchtornitz. Cotyledon lievërii, Led. fl. ross. alt. t. 57. fl. alt. 2. p. 197. Corolla fine red. Carpels 5-6.


12 U. subuléata; plant quite smooth, glaucescent; leaves all scattered, terete, subulate, acute, erectly spreading; racemes corymbose; corolla twice the length of the calyx, with the segments of the limb acute and erect; stem herbaceous, very simple. 2. H. Native of Caucasus, among stones, on the mountains of Taulsch, at the altitude of 2700 to 3300 feet. Cotyledon subulátula, Meyer. in varz. plznz. p. 150. Very nearly allied to U. lievërii, but the leaves are acute and erectly spreading, and the corolla is white, twice the length of the calyx, not rose-coloured, and 4 times longer than the calyx.


Flowers yellow, 5-parted, on short pedicels, collected into a cylindrical spike.  

**Spartum** (Led. fl. alt. 2. p. 200.) spikes numerous, rising from the axils of the radical or cauline leaves, somewhat fastigate.  


H. Native of Dahuria, among mountain rocks. Cotyledon malachophylla, Pall. itin. 3. append. t. O. f. 1. ed. gall. 8vo. p. 312. t. 70. f. 1. Orrostachys malachophylla, Fisch. cat.  

Flowers white, 5-parted, crowded into a dense cylindrical spike.  


16 U. thyrsifló- (D. C. l. c.) leaves oblong, quite entire, ending each in a soft spine; radical ones rosulate; stem spicate, simple.  

H. Native of the mountains of Siberia, at Aga. 


Flowers white and flesh-coloured (ex Fisch), 5-parted. Allied to U. malachophyllus.

*Thyrsiflorous Navel-wort.* Pl. 3/2 to 3/4 foot. 

17 U. leuca'ôtha; leaves terminated by a spine; radical ones rosulate, spathulate, convex beneath towards the apex; cauline ones teretily trinodal; corolla thric the length of the calyx: peduncles all 1-flowered; anthers discoloured.  


*Cult.* The hardy perennial species of this genus thrive well on rock-work, or on old walls; they will also grow freely in pots, in a soil composed of loam, peat, and sand, which should be placed among other alpine plants; these are propagated by offsets from the roots or by seeds. The seeds of annual and biennial kinds should be sown on rock-work, or in the open border, in a sandy or gravelly soil.

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**XVII. ECHEVERIA. XVIII. SEDUM.**  

Flowers yellow, 5-parted, on short pedicels, collected into a cylindrical spike.  

**V. D. G. Native of Mexico. Sweet, fl. gard. 275. Lower leaves rosulate, all white or glaucescent. Corolla of a reddish orange-colour, with a tinge of purple. Stamens white.**  


2 E. gí-bè-blô (D. C. prod. 3. p. 401. mem. crass. p. 29. t. 5.) leaves flat, cuneiform, acutely mucronate, crowded at the tops of the branches; panicle spreading; flowers on short pedicels along the branches of the panicle.  


3 E. coccínea (D. C. prod. 3. p. 401.) plant soft, pubescent; leaves spatulate lanceolate; spikes of flowers axillary, elongated, leafy.  


4 E. racemosá (Schlecht. et Cham. in Linnea 2. p. 55.) plant quite glabrous; radical leaves thickish, elliptic, acute, awnless, rosulate; scapes simple, naked; scales of scape alternate, and bracteas scale-like and caducous; racemes spike-shaped and elongated; flowers alternate, erect, on short pedicels.  

**Racemose-flowered Echeveria.** Pl. 3/2 to 1 foot.  

5 E. tere'tiófílla (D. C. prod. 1. c. mem. crass. p. 29. pl. 1. f. 1.) leaves terete, acute, scattered, almost loose at the base; spikes second, few-flowered.  

**Scarlet-leaved Echeveria.** Shrub 1 to 2 feet.  

6 E. lu'û'û'da (Haw. in phl. mag. 1831. p. 416.) plant rather tufted; lower leaves lanceolate-euncated, of a livid colour: superior ones lanceolate; flowers disposed in racemose spikes.  

**Lurid-leaved Echeveria.** Fl. Clt. 1830. Pl. 1 foot.  

**Plant subherbaceous. Flowers subgynous, yellow.**  

7 E. cespí-tósá (D. C. prod. 3. p. 401.) leaves rosulate, narrow, tongue-formed, obuncuated at the apex, and rather mucronate; flowers cyneous.  


**Cult.* Fine glaucous, succulent plants, which deserve to be cultivated in every collection. Their culture, propagation, and treatment are the same as that recommended for *Globularia,* p. 106.**  

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**XVIII. SEDUM (from seco, to sit; manner of growth, upon stones, rocks, walls, and roofs of houses). D. C. in bull. phil. no. 49. mem. crass. t. 1. f. 1. Sédium and Rhodiola, Lin. spec.  


**Lin. syst. Decândria, Pentágynia.** Calyx 5-parted (f. 29. a.); sepals ovate, usually turgid, leaf-formed. Petals 5 (f. 29. b.);
CRASSULACEAe. XVIII. Sedum.

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generally spreading. Stamens 10. Nectariferous scales entire, or hardly margined. Carpels 5.—*Herbs or subshrubs. Stems usually branched from the base. Sterile stems or surculi usually crowded with leaves. Leaves alternate, rarely opposite, fleshy, terete or flat, quite entire, rarely toothed. Flowers cymose, white, purple, or blue, but usually yellow; in some species the flowers are 4 or 6-petalled, and the stamens always double that number.

* Leaves flat. Flowers yellow.

1 S. RHODIOLA (D. C. fl. fr. ed. 3. vol. 4. p. 386. pl. grass. t. 143.) leaves oblong, serrated at the apex, glabrous, glaucous; root rather tuberous; stems simple; flowers corymbose, usually of 4 petals, ovoid, and diocious from abortion. 2 H. Native of middle Europe, on the mountains; of Siberia, and of North America, on the Arctic Sea shore, and Islands; of Newfoundland and Labrador; and on the Rocky Mountains, Kotzebue's Sound, &c.; in Britain, in the north of England, Scotland, and Wales, on the mountains. Rhodiola rosæ, Linn. spec. 1465. Smith, Engl. bot. t. 508. fl. dam. t. 185. Plant glaucous. The flowers are yellow, and are said to be sometimes hermaphrodite, but are usually of different sexes on different plants. The root is sweetish when dried; in this state a fragrant water may be distilled from it. The inhabitants of the Farro Island use it as a remedy for scurvy.

A cataplasme of the fresh roots, applied to the forehead, is said to relieve the headache, and to heal malignant ulcers. The specific name is from ρέδων, a rose; in reference to the fragrant of the roots.


Asiatic Rose-root. Pl. ½ foot.

3 S. ELOG ARMATUM (Linn. fl. alt. 2. p. 193.) leaves scattered, oblong, almost quite entire, glabrous, hardly glaucifolent; root rather tuberous; stems simple; flowers in cymose corymb; pedicels hardly exceeding the flowers in length; nectariferous scales 3 times longer than broad; carpels recurved. 2 H. Native of Altai, in alpine humid places, on the edges of rivulets. Plant glaucous. Flowers yellow? hermaphrodite, but sometimes dioecious or polygamous from abortion, as in S. RHODIOLA. Stamens 8 or 10.


4 S. ALTAR'TUM; leaves scattered, obovate-lanceolate, serrated at the apex, glabrous, glaucous; root rather tuberous; stems simple; flowers in cymose corymb; pedicels hardly exceeding the flowers in length; nectariferous scales about as long as broad; carpels recurved. 2 H. Native of Altai and Siberia. S. Rhodiola, Led. fl. alt. 2. p. 194. Rhodiola Sibirica, Hortl. Flowers yellow, ovoid, dioecious or polygamous.


5 S. HIMALAYENSIS (D. Don, prod. fl. nepr. p. 213.) stem erect; leaves oval-lanceolate, flat, acute, toothed, glaucous, smooth; corymbbs almost simple; root thick. 2 H. Native of Gosainthang, in the alpine regions of the Himalaya or Emoli. Habit of S. Rhodiola. Flowers yellow.

Himalaya Stonecrop. Pl. ½ foot.

6 S. AZIO'ON (Linn. spec. 417.) leaves lanceolate, flat, serrated, alternate, glabrous; stems erect; cymes terminal, crowded. 2 H. Native of Siberia, in woods; on shady rocks, at Lake

Teletzkoï. D. C. pl. grass. t. 101.—Amm. ruth. no. 96. t. 11. Perhaps Anacampseros Aizoon, Haw. syn. p. 112.? Flowers yellow, varying with from 4–6 petals and 8–12 stamens. Root branched, fascicled, thickish.

Ever-living Stonecrop. Fl. Jul. Sept. Ch. 1757. Pl. 1 ft. 7 S. MYHRIBUS (Linn. spec. 417.) leaves cuneiform, rather concave, bluntly serrated, rather crowded, alternate, glabrous; those of the branches crowded; stems ascending, rooting at the base; cymes terminal. 2 H. Native of Altai and Tartary, at the bottom of the ural mountains; on the upper irish. Murr. nov. comm. goét. 6. p. 35. t. 5.—Gmel. fl. sib. 4. p. 171. no. 851. t. 62. f. 1. Anacampseros hybrida, Haw. 1. c. Flowers sulphur-coloured. This is not a hybrid, but a true species. S. Altaiëca, Bess. enum. sem. cerm. 1828.

Hybrid Stonecrop. Fl. May, Jul. Ch. 1766. Pl. 1 to 2 ft. 8 S. SPATULIFOLIUM (Hook. fl. bor. amer. 1. p. 228.) glabrous; stem erect; leaves obovate-spatulate, flatish, acute; upper ones linear; cyme terminal, leafy, trichotomous; flowers pedicelled, decandrous; petals linear-spatulate, much longer than the calyx. 2 H. Native of the north-west coast of America; common on dry rocky places of the Columbia river. Flowers yellow, very like those of S. stenopetalum. Lower parts of stems decurved.

Spatulate-leaved Stonecrop. Pl. ½ to 3/5 foot.

9 S. Doughl's (Hook. fl. bor. amer. 1. p. 228.) stem erect, profliferous above from recurved branches; leaves linear-subulate, very acute, flat on the inside, and a little keeled on the back, with dry membraneous edges; cymes dichotomous; flowers sessile, decandrous; petals narrow-lanceolate, twice the length of the calyx. 0 H. Native of North America; common on rocky places on the Columbia to the mountains. Flowers yellow, like those of S. stenopetalum.

Doughl's Stonecrop. Pl. ½ foot.

10 S. a'LANDUM (Led. fl. ross. alt. ill. t. 418.) leaves scattered, linear, quite entire, flat, glabrous; root thick, of many necks; stems numerous, simple; corymb terminal, simple; pedicels about equal in length to the flowers; breadth of nectariferous scales exceeding their length; petals longer than the stamens. 2 H. Native of Altaïa, on the higher alps, about the fountains of the rivers Inja, Uba, and Sentelek, and on the mountains Kokoâs, at the sides of rivulets. Flowers at first yellow, but fading to a dirty red. Allied to S. quadrifidum.


** Leaves flat. Flowers white.

11 S. involucratum (Biebl. fl. taur. 1. p. 532.) leaves cuneiform, crenated, opposite, pubescent, ciliated; stems decinate, hairy; corymbbs crowded, involucrated; petals subulate. 2 H. Native of Caucasus, among stones, at the foot of Mount Kaischaur. Flowers white, about the size of those of S. hybridum.

Involucrated Stonecrop. Pl. 1 foot.

12 S. LATTIFOLIUM (Bert. amon. linn. p. 366.) leaves ovate, cordate, very blunt, serrated, glabrous, usually opposite; corymbbs cymose, on long peduncles; stems longer than the corolla. 2 H. Native of Switzerland, on the mountains; Germany, Italy, France, &c.—Clus. hist. 2. p. 66. f. 1. S. Teléphium, var. maxiamum, Linn. spec. 616. S. maximum, Hoffm. germ. 1. p. 156. Flowers greenish-white. Anacampseros maxima, and probably A. albicans, Haw. syn. p. 111.


13 S. OBRUSIFOLIUM (Meyer. verz. phanzz. p. 150.) plant glabrous, green; stems erect; leaves orbicularly-ovate, obtuse, nearly quite entire, with scirrous margins; lower ones opposite; rays of cyme elongated, spreading at an angle; petals nearly sessile; petals acute, longer than the calyx. 2 H. Native of Caucasus, on the Talusch mountains, towards Perim-
CRASSULACEÆ.

115

stems
CRASSULACEÆ. XVIII. SEDUM.

stems simple; leaves flat, nearly linear, entire, sessile; cymes leafy. *H.* Native of Eastern Siberia. Flowers blue.

*Blue-flowered Stonecrop.* Pl. 3/4 foot. 29 *S. deltoides* (Tenn. cat. 1819, p. 483.) stems erectish; leaves alternate, flat, deltoidly-cuneiform, unequal, crenated, and toothed; cymes lateral. *H.* Native of the kingdom of Naples, on Monte Novo and Goats' Island. Flowers purple. The rest unknown.


*Huscleck-like Stonecrop.* Pl. Jul. Aug. Cit. 1823. Pl. 3/4 ft. 31 *S. hemato'des* (Mill. dict. no. 15.) stems erect, fleshy; leaves ovate, quite entire; upper ones stem-clasping; corymb terminal. *H.* Native of Louisiana. There are two varieties of this plant, one with white and another with purple flowers. Said to be allied to *S. Telphium* and *S. Anacampseros.*


*Anacampseros* or Evergreen Orpine. Pl. July, Aug. Cit. 1586. Pl. trailing. 33 *S. fulchristum* (Michx. fl. bor. amer. 1, p. 277.) stems assurgent, glabrous; leaves scattered, linear, obtuse; cymes of many spikes; flowers sessile, of 4 petals and 8 stamens. *H.* Native of the mountains of Virginia, Carolina, and Georgia, on the banks of the river Ohio. Flowers purple. Allied to *S. re-fluxum,* according to Pursh, but according to Nutt, to *S. ternatum.*


*Spruious Stonecrop.* Fl. July, Sept. Cit. 1816. Pl. 3/4 foot. 38 *S. Euclea's* (Lind. fl. alt. fl. t. 58. fl. alt. 2, p. 191.) leaves opposite, absolutely denticulately, adnate; inferior ones broadly-elliptic; superior ones sessile, coriace; corymb terminal, compound; petals lanceolate, acute, a little longer than the stamens. *H.* Native of Altaiä, at the rivers Uba, Buchtorn, and Kokoryo; and at the Golden Lake Teletz'-ko Oseo. Flowers purple. Stem rooting at the base.


*Orpine-like Stonecrop.* Fl. July, Sept. Cit. 1810. Pl. 1 to 2 feet. 40 *S. Telphium* (Lind. spec. 616. a,b,c, ety.) leaves oblong or oval, attenuated at the base, flat, toothed, glabrous; stems erect; cymes corymbose, terminal; stamens not exceeding the corolla. *H.* Native of Europe, in exposed places; in Britain on the borders of fields, or in hedges or bushy places, on a gravelly or chalky soil. Smith, eng. bot. 1319. Curt. lond. 3, t. 25, 210, Oed. fl. dan. 866. Blackw. 191. There are several varieties of this plant:—1, leaves opposite (Anacampseros albidus, *Haw. syn. p. 111.)*—2, leaves in a whorl (Anacampseros trochilla, *Haw. syn. p. 111. Sédum triphyllum, *Haw.)*—3, leaves alternate; flowers purple (*D. C. pl. gr. t. 92. Anacampseros purpurea,* Haw. syn. p. 111. Fuchs, hist. 801, with a figure), and white (*Fuch's hist. 1, c. t. 800. Anacampseros vulgaris,* Haw. syn. p. 111.)*—4, leaves oblong-lanceolate, sharply toothed (Anacampseros arguta, *Haw. Sédum argutum, *Haw.)*—5, leaves cuneately obovate, slightly 4-toothed towards the apex; stamens decumbent (Anacampseros paeidens, *Haw. rev. p. 24.)* All these are referable to this species. A decoction of the leaves in milk is a forcible diuretic. It has been given with success in the cure of haemorrhoids.


*Common Orpine.* Fl. June, Sept. Cit. ? Pl. 1 to 2 feet. 42 *S. verticillatum* (Linn. amoen. 2, p. 532, t. 4, f. 14, exclusive of the synonyme of Raby,) stem erect; leaves 4 in a whorl, lanceolate, serrated; racemes axillary, few-flowered, shorter than the leaves. *H.* Native of Kamtchatska. Leaves a finger in length. Flowers small, purple? or pink? This species is allied to *S. Telphium* according to Steven.


43 *S. Moræne'se* (H. B. et Kunth, nov. gen. 6, p. 44.) stems branched, creeping at the base, ascending, glabrous; leaves scattered, loosely seated at the base, thick, fleshy, obtuse; cymes few; flowers nearly sessile; petals 5, oblong-linear, bluish. *H.*
Native of Mexico, near Real de Moran. The colour of the flowers is unknown, but the plant is said to be very like *S. Anglicum*, and the flowers are therefore perhaps white.

**Moran Stonecrop.** Pl. ¼ foot.


46 *S. atratum* (Lin. spec. 1673.) stem erect, branched at the base; leaves scattered, alternate, brown, or brownish, loosened at the base; cymes corymbose fastigate; petals ovate, partly mucronate; cymes stellate spreading. *S. arenaireum*, plant large, rather downy, stems slender, elongated; leaves crowded, cyme sessile, petals white, with a red keel. *S. cymosum* var. *anglicum*, petals white, with a red keel. *S. cymosum* var. *anglicum*, white, with a red keel. Carpels downy, white.

**Var. β:** lower branches lying on the ground. *S. cymosum* var. *anglicum*, petals white, with a red keel.


47 *S. glaucum* (Walld. et Kit. pl. rar. Hung. 2. p. 198. t. 181.) stems erectish, puberulous; leaves nearly terete, glaucous, alternate; sterile branches crowded, erect; cymes trifid, few-flowered; petals 6, mucronate. *H. Native of Hungary, on sandy hills. Willd. enum. p. 486. S. Hungaria, Poir. S. Anderssoni, G. Don in Lond. hort. brit. p. 181. According to Willd. this species differs from *S. saxifirmum* in the stem being a little branched at the base, in the petals being 1-nerved, not finely 3-nerved. Flowers sometimes hexandrous.


48 *S. saxifirmum* (Bieb. fl. taur. suppl. no. 574.) stem erectish, branched, when young rather procumbent; leaves nearly terete, scattered, spreading, glaucous, glabrous; cymes somewhat panicled; flowers sessile along the branches; petals 6, acuminate. *H. Native of Caucasus, on rocks. Willd. enum. 487. Flowers white; anthers bay-coloured. The flowers contain also 12 stamens, and are allied to *S. rubens*. The petals are said to be 3-nerved, the lateral nerves very fine.

**Six-leafed Stonecrop.** Pl. June, July. Chil. 1816. Pl. ½ foot.

49 *S. Andegavense* (D. C. prod. 3. p. 406.) stem erect, simple at the base, trichotomous at the apex; leaves ovate, ovate, crenate, crenate, fleshy, glabrous; lower leaves opposite, the rest alternate; flowers pentandrous in the form, and scattered and sessile along the branches; petals ovate, acutish. *H. Native of Andegavany, on walls and on schistous rocks. S. atratum*. Bost. ass. fl. p. 167. exclusive of the synonyme. *Crassula Andegavensis*, D. C. suppl. fl. fr. p. 522. Truly distinct from *S. atratum*, but perhaps only a pantropical species of *S. dasyphyllum*, and the flowers are probably white like it.

**Andegavany Stonecrop.** Pl. ¼ foot.


51 *S. brevifolium* (D. C. rapp. voy. 1808. p. 79. suppl. no. 3615. a. membr. crass. t. 4. f. A.) stems fruticulose, glabrous, twisted at the base; leaves opposite, ovate, obtuse, short, thick; cymes quite glabrous, loose, terminal; petals bluish. *H. Native of the Pyrenees and of Corsica, among rocks in dry pastures. S. spiciferum*, Lapeyr. abr. 1813. p. 239. Scapels of calyx thin, but as in *S. dasyphyllum* (to which species it is nearly allied) the red thick.

**Short-leaved Stonecrop.** Pl. ¼ foot.

52 *S. Coisius* (Duby, in D. C. syn. fl. fr. ed. 2.) stems ascending, branched at the base, twisted; leaves ovate, obtuse, hispid; sterile shoots crowded; cymes terminal, few-flowered, glabrous; petals acutish. *H. Native of Corsica, where it was detected by Ph. Thomas, on the walls of the city of Corte; and of Sardinia, at the town of Jessu. Flowers smaller than those of *S. dasyphyllum*, appearing of a dirty pale purple in the dried specimen; but white in the recent state.

**Coriscan Stonecrop.** Pl. ¼ foot.

53 *S. hispanium* (All. peded. no. 1754. t. 65. f. 5.) floriferous stems erect, nearly naked; leaves remote, alternate, oblong-cylindrical, obtuse, hairy; sterile stems crowded; cymes terminal, few-flowered; petals acuminate. *H. ex All. Y. H. ex Pour. Native of the Alps of Piedmont, Provence, Cevennes, Pyrenees, and on the mountains of Lebanon and Corsica, especially among schistous rocks. S. globiferum*, Pourr. act. to. 3. p. 327. S. hispidum, Poir. dict. 4. p. 663. but not of Desf. Petals white, downy, marked with a purple line.

**Hairy Stonecrop.** Pl. ¼ foot.

54 *S. villosus* (Bieb. fl. taur. 1. p. 322.) stems ascending, leafy; leaves oblong, obtuse, rather fleshy, hairy, alternate; radical ones in fascicles; cymes terminal, corymbose; petals lanceolate, hardly twice the length of the sepals. *H. Native about the port of Caucasus, among rocks. Allied to *S. hispanium*, but differs in the leaves being flatter, in the sepals of the calyx being twice the length, and in the duration being perennial, not biennial.

**Pilos Stonecrop.** Pl. ¼ foot.

55 *S. hispanicus* (Lin. spec. 618.) stem erect, branched, glabrous; leaves scattered, terete, obtusish, glaucous; sterile stems rosulate, crowded; cymes branched; flowers sessile along the branches of the cyme; petals 6, acuminate. *H. Native of Spain, Switzerland, and the south of Germany. Jacq. ast. 5. t. 47.—Dill. hort. elth. 2. p. 332. S. aristatum*, Tenore, fl. neap. 1. p. 250. Petals white, with a dirty red keel. Carpels glabrous. Very like *S. glaucum* and *S. rubens*, but the root is perennial.

**Spanish Stonecrop.** Pl. June, July. Chil. 1792. Pl. ¼ foot.

56 *S. album* (Lin. fl. 619.) branches perennial, rooting, when young rather puberulous; leaves ovate club-shaped, green, nearly terete, glabrous; cymes branched, terminal, sub-
corymbose; petals bluish. 2. H. Native of Europe, in dry meadows, on walls and rocks. In England on walls and roofs, not common; at Kentish Town and Bromley, Middlesex; on rocks about Great Malvern, Worcestershire; upon walls at Peterborough; but rare in Scotland. Smith, engl. bot. t. 578. Curt. Lond. t. 1. t. 31. Oed. flan. t. 66. All. ped. 1751. t. 65. f. 2. S. álbum var. γ turgidum, D. C. prod. 3. p. 406. Flowers cyr
mose, white.


58 S. grácile (Meyer, verz. phanz. p. 151.) plant glabrous and green; stems herbaceous, diffuse; leaves subulate, bluish, loose at the base, those of the sterile branches imbricate. rays of cyme elongated, much spreading; flowers decandrous, almost sessile; petals acuminate, longer than the calyx; style rather longer than the breadth of the acute capsule. 2. H. Native of Caucasus. Flowers white.

Var. a, minus (Meyer, l. c.) flowers smaller. On Mount Gutgara at the altitude of 3200 feet.

Var. β, niúus (Meyer, l. c.) flowers almost twice the size of those of var. a. On the Talus Mountains, at the altitude of 1400 to 2700 feet.

Slender Stonecrop. Pl. diffuse.
59 S. teretifólium (Lam. fl. fr. 3. p. 84. Haw. in phil. mag. Sept. 1831, p. 415.) branches elongated, rooting, perennial, quite glabrous; leaves equally terete, rather elongated, a little depressed, green, glabrous; cymes branched, terminal, subcorymbose; petals bluish. 2. H. Native of Europe, on walls, rocks, and in dry pastures. In England near Hereford. S. álbym, D. C. prod. 3. p. 406.—Fuchs, hist. 35. with a figure. Oed. flan. t. 66. D. C. pl. grass. t. 22. S. teretifólium α, Lam. fl. fr. 3. p. 84. Flowers white.

60 S. ãthóum (D. C. prod. 3. p. 407.) stems erect, a little creeping at the base; leaves semi-cylindrical, short, remote, and are, as well as the stem, glabrous; cyme terminal, somewhat corymbose, many-flowered; petals acute. 2. H. Native on the top of Mount Athos. S. turgidum, D. Urv. enum. p. 51. exclusive of the synonyms. Flowers white, like those of S. álbum, but the petals are acute and distinct.

Athos Stonecrop. Pl. ½ foot.

* * * * * Leaves tetrate. Flowers red or blue.

61 S. ceřúleum (Vahl. symb. 2. p. 51.) stem flat on the ground at the base, ascending; leaves oblong, alternate, obtuse, loosened at the base; cymes bifid, glabrous; petals 7, obtuse. 2. H. Native of Tunis, in the fissures of rocks. Shaw, itin. 530. with a figure. Sims, bot. mag. 2224. Ker, bot. reg. 520. S. azúrimum, Desf. fl. atl. 1. p. 302. Flowers not blue, but at first purplish, and fading to blue (f. 28).

62 S. heptápetálum (Poir. voy. barb. 2. p. 169. dict. 4. p. 630.) stems erect, branched at the apex; leaves ovate-oblong, scattered, depressedly gibbous; cymes panicled; petals 7, acuminate. 2. H. Native of Barbary, Corsica, and Malta, on rocks by the sea-side. D. C. fl. fr. 4. p. 392. Flowers purplish as in S. cerúleum, fading to blue. S. heptápetálum, Horn. hort. bah. suppl. p. 138, said to be originally from the Russian empire, is perhaps distinct from this species, but is not sufficiently known.

Seven-petalled Stonecrop. Pl. ½ foot.
63 S. bracteátum (Viv. fl. lyb. 24. t. 8. f. 3.) stems erect, branched at the apex, beset with spreading hairs, as well as the leaves; leaves alternate, linear, thick, obtuse; cymes trichotomous; flowers on short pedicels along the branches of the cyme; petals 5, elliptic, keeled. 2. H. Native of the Great Syratus, in Lybia on the sea shore. The colour of the flowers agrees with that of S. cerúleum, but the habit is that of S. Hípáncum. Nectariferous scales emarginate.

Bracteated-flowered Stonecrop. Pl. ½ foot.
64 S. villósum (Lin. spec. 529.) stem erect, almost simple, beset with viscid hairs; leaves semi-terete, rather remote, erect, also beset with viscid pili; cymes terminal, few-flowered; petals acuicular. 2. H. Native of Europe, in boggy places. In England in wet mountainous pastures, and the cliffs of moist rocks; in the north of Westminster, Durham, and the north-west part of Yorkshire, not unfrequent. More abundant in Scotland.—Smith, engl. bot. t. 394. Oed. flan. t. 24. D. C. pl. grass. t. 70.—Mor. hist. sect. 12. t. 8. f. 48.—Petiv. brit. t. 42. f. 7. Flowers pale red.

Var. β, penta-ádrom (D. C. fl. fr. suppl. p. 524.) stems 5, (especially those that are epipetalous) are abortive) or 6; the 4 epipetalous ones of which having vanished.

65 S. ru'bem (D. C. prod. 3. p. 405.) stem erect, branched; leaves oblong, obtuse, nearly terete, sessile, spreading, glabrous; cymes branched, pubescent; flowers sessile, unilateral along the branches of the cyme, pentandrous; petals 5, acuminate. 2. H. Native of south and middle Europe, in cultivated sandy fields. Crásula rúben, Lin. syst. veg. p. 253. D. C. pl. grass. t. 55. S. ru'bem β pentádrom, D. C. prod. 3. p. 405. Flowers pale red. Mature carpels puberulous. The epipetalous stems are all for the most part abortive, and therefore the flowers are pentandrous.

66 S. pu'berulum (D. C. mem. crass. p. 33.) stems erect, branched, puberulous; leaves scattered, terete, scutell, glabrous; cymes branched; flowers sessile along the branches of the cyme; petals 6, acuminate. 2. H. Native of Calabria. This species comes very near S. póllidum and S. ru'bem.

Pu'berulous Stonecrop. Pl. ½ foot.
67 S. póllidum (Bieb. fl. taur. 1. p. 533.) stems erect, branched; leaves oblong, obtuse, nearly terete, spreading, glabrous; cymes branched, pubescent; flowers sessile, unilateral along the branches of the cyme, decandrous; petals acuminate. 2. H. Native of Caucasus. Flowers pale red or white. Mature carpels puberulous.

Crassulae. XVIII. Sedum.


* * * * * Leaves terete. Flowers yellow.

69 S. quadrifidum (Pall. tinn. 3. p. 730. append. no. 90. t. P. f. 1.) leaves scattered, terete, bluntish; root thick, of many necks; stems numerous, erect, simple; corymb terminal, few-flowered, simple; pedicels about equal in length; length of nectariferous scales exceeding the breadth; flowers ocreant, 4-leaf; stamens a little longer than the petals. 2.H. Native of Dahania, the Ural Mountains, and Altain, in humid stony places, on the tops of the Alps. Pall. ed. gall. in Svo. vol. 8. p. 311. t. 104. f. 4. S. quinquifidum and S. hexapetalum, Haw. rev. p. 26.? Flowers yellow.

Quadrifid-flowered Stonecrop. Fl. July. Clt. 1800. Pl. 3/4 ft. 70 S. âcre (Lin. spec. 619.) stems rather creeping at the base; branches erect; leaves ovate, adnate, sessile, gilbus, erectish, alternate, glabrous; cymes trifid; flowers sessile along the branches of the cyme; petals lanceolate, acuminated. 2.H. Native of Europe, common on walls, roofs of houses, rocks, and dry sandy ground; plentiful in Britain. Bull. herb. t. 30. D. C. pl. grass. t. 117. Smith, engl. bot. 859. Woodv. med. bot. t. 231. Curt. Lond. i. t. 32. Flowers yellow. The whole plant is Acrid, and chewed in the mouth has a hot biting taste; whence, and from its common place of growth, it has the name of wall-pepper. Applied to the skin it blisters, and taken inwardly it excites vomiting. In scrofulous cases and quartan agues, it is an excellent medicine under proper management. For the former, a handful of the herb is directed to be boiled in eight pints of beer till they are reduced to four, of which 3 or 4 ounces are to be taken every morning. Milk has been found to answer this purpose better than beer. Not only ulcerous simply scrobutic, but those of a scrofulous or even cancerous tendency, have been cured by the use of this plant. It is likewise useful as an external application, in destroying fungous flesh, and in promoting a discharge in gangrenes and carbuncles.

Var. ß, diminutum (Haw. in phil. mag. 1831. p. 416.) much smaller than the species, hardly an inch high; stem creeping. 2.H. Native of the higher Alps of Provence; also on Swithan Heath, Norfolk. S. âcre ß gracile, D. C. prod. 3. p. 407. S. gracile, Clarion in D. C. fl. fr. 4. p. 393.

Var. â, elongatum (Haw. i. c.) pendulous branches 7 inches high: erect ones 4 inches; leaves loosely imbricated.


71 S. sexangulare (Lin. spec. 620.) stems branched at the base, floriferous ones erect; leaves nearly terete, adnate-sessile, usually by threes on the flowering stems, and 3 in a whorl on sterile branches, imbricating in 6 spiral rows; cymes trifid; petals lanceolate, acuminated. 2.H. Native of Europe, in dry sandy ground, and on walls. In England, but not common; as near Northfleet, Sheerness, and on the Isle of Sheppey; on Greenwhich Park wall on the south side, near the western corner; on the famous rotten walls of Old Sarum; also of Cambridgeshire. D. C. pl. grass. t. 118. Curt. Lond. i. t. 33. Smith, engl. bot. 1646. S. âcre ß, Huds. Lam. fl. fr. 5. S. spirale, Haw. in phil. mag. 1824. no. 176.—Cam. epith. 856. with a figure. Flowers yellow. Habit of S. âcre.


72 S. Bolonâeëse (Lois. not. p. 71.) stem branched at the base; floriferous ones erect; leaves nearly terete, obtuse, loosened at the base, glabrous, imbricated on all sides; cymes trifoil; flowers sessile, along the branches; petals acuminated.


Stem-clasping Stonecrop. Pl. 1/2 foot. 74 S. reflèstre (Lin. spec. p. 618.) stems branched at the base, floriferous ones erect; leaves terete-subulate, glaucescent, loosened at the base; sterile stems cylin-drical, densely imbricated; flowers cymose, 5-7-petalled; sepals bluntest. 2.H. Native of Europe, on walls and rocks. In England on St. Vincent's rock, Bristol; on Cheddar rocks, Somersetshire, and upon walls about Darlington. Engil. bot. t. 170. —Dill. ethl. 2. f. 333. Reich. icon. 3. f. 439. S. minus, Haw. in phil. mag. 1825. p. 174.? S. reflexum, D. C. pl. grass. t. 116. Flowers yellow (f. 29.)


Whitish-leaved Stonecrop. Fl. July, Aug. Brit. Pl. 1/4 foot. 77 S. Forsteriæflaxm (Smith, comp. 71. engl. bot. 1802.) stems branched at the base; flowers erect; leaves semicylindrical, bluntish, green tinged with red; sterile stems short; leaves crowded, somewhat rosetate at the tops of the branches; flowers cymose, 5-7-petalled; sepals obtuse. 2.H. Native of Wales, on rocks at the falls of Rhuddall, near the Devil's bridge, Cardiganshire; on the rocks of Hisval, overlooking the little valley of Nant-Phrancon. S. Forsteriæ, Haw. syn. p. 117. S. ruptère, D. C. pl. grass. 115.? Flowers yellow.


78 S. reflèxum (Lin. spec. p. 618. Smith, fl. brit. p. 490.) stems branched at the base; floriferous ones erect; leaves terete-subulate, green, loosened at the base; sterile shoots somewhat
cylindrical, spreading; flowers cymose, 5-7-petalled; sepals bluish.

2. H. Native of Europe, in fields and on walls; in Britain on walls and thatched roofs, abundant. Smith, engl. bot. t. 235.—Park, theat. 1. t. 754. f. 1. Flowers yellow.

Var. β. recurvatum (D. C. prod. 5. p. 408.) leaves glaucous, sterile stems somewhat reflexed. S. recurvatum, Willd. enu. suppl. 23. Perhaps a variety of S. albescens, according to Haw.


Var. ε. cristatum (D. C. l. c.) sterile branches crowded somewhat fasiculate; leaves green, spreading. S. cristatum, Schrad. hort. gact. t. 10. S. Portlandicum, Lob. icon. 380.


Green Stonecrop. Fl. June, July. Cl. 1774. Pl. 3/4 foot. 80. S. viridescens (Willd. enu. suppl. p. 25.) stems branched; flowers sterile-subulate, those of the sterile branches spreading and glaucous; flowers spreading, compressed; branches of cyme crowded, erect. 2. H. Native of Siberia. The leaves, according to Haw. in rev. p. 29, are green, and the flowers nearly white; but according to Willd. l. c. the leaves are glaucous, and the flowers greenish-yellow, therefore two species are probably confounded under this name, and perhaps both are only varieties of S. reflexum.


Subclavate-leaved Stonecrop. Cl. 1830. Pl. 1/2 foot.

82. S. stenopetalum (Pars. fl. amer. sept. 1. p. 324.) stems assurgent, glabrous; leaves scattered, crowded, adnate-sessile, compressed, subulate, acute; cymes terminal, trichotomous, and dichotomous; spikes recurved; flowers sessile, decandrous; petals 5, linear, much longer than the calyx. 2. H. Native of North America, on the banks of Clark’s river, and the Kooskooxy; and frequent on the east side of the Rocky Mountains. Flowers golden yellow. Said to be allied to S. reflexum.


2. H. Native country unknown. Very like S. altitissimum, but not half the size, more bluish-glaucous; leaves more distant, petals more acute, pale yellow.

Bluish Stonecrop. Fl. June, July. Cl. 1820. Pl. 1/4 foot. 84. S. altitissimum (Poir. dict. 4. p. 633.) stem tristichous, branched at the base; floriferous ones erect; leaves nearly terete, acute, glaucous, glabrous; superior ones scattered, flattish above; those of the sterile branches imbricated; cymes branched, many-flowered; flowers sessile along the branches of the cyme, which are twisted at the apex; petals 6-8, lanceolate, acute, spreading. 2. H. Native of the south of Europe. D. C. pl. grass. t. 116. Semperivium sederiode, Jacq. hort. vind. t. 81. and var. monstrans misc. 1. p. 133. t. 5. S. fruticosum, Broth. fl. lus. 2. p. 206. S. ruifrons, Tenore, fl. neap. t. 41. S. Niccicó, All. ped. no. 1752. t. 90. f. 1. S. Jacquinii, Haw. in phl. mag. 1825. p. 174. S. rupestre a, Gouan. S. dioicum, Dom, hort. cant. Flowers cream-coloured. Lobes of calyx bluish. A large, strong, glaucous plant.


D’Ureille’s Stonecrop. Pl. 1/2 foot.

88. S. ürtulillae (Haw. in phil. mag. 1837. p. 183.) leaves erect, linear-subulate, green, somewhat mucronulate on one side. 2. H. Native country unknown. Very like S. circinensis, and S. recurvatum, Willd. but the leaves are a little larger and flatter, greener and blunter. It is less than S. anopetalum.


Sea-shore Stonecrop. Pl. 2 inches high.


91. S. tenellum (Meyer, verz. pfl. p. 152.) plant glabrous, glaucaceous; stems herbaceous, erectish; leaves subulate, blun-
rather shorter than the pedicels; petals acute, longer than the calyx; capsule truncate at the apex, and apiculate by the short styles.  

92 S. repens (Schleich. in D. C. fl. fr. suppl. 525.) stems ascending, creeping, and branched at the base; leaves scattered, serotere, obtuse; cymes few-flowered; petals ovate.  

93 S. montagense (Bals.) S. atratum, D. C. fl. fr. no. 3415. An intermediate plant between S. atratum and S. sarácte. Pedals pale yellow.


93 S. pubescens (Vahl. symb. 2. p. 52.) stem erect, branched, pubescent; leaves alternate, elongated, obtuse, rather pilose above; cymes trifid, many-flowered; petals lanceolate.  

94 S. hispidum (Desf. fl. atl. 1. p. 361. but not of Poir.) stem erect, branched above, hirsut; leaves scattered, nearly terete, depressed above, spreading; branches of cyme filiform, rather panicled; flowers pedicellate; petals 5-6, lanceolate, acute.—Native of the north of Africa, on Mount Atlas.  

Pubescent Stonecrop. Pl. 1/4 foot.

95 S. xérum (Ait. hort. kew. 2. p. 112.) stem shrubby, branched, erect; branches twisted, glabrous; leaves scattered, oblong-cylindrical, obtuse; cymes terminal, and are as well as the calyces glabrous.  

96 S. saxifragmum (D. C. prod. 3. p. 409.) stem shrubby, branched, ascending, glabrous; branches twisted; leaves scattered, ovate-cylindrical, thick, obtuse, glabrous; cymes loose, divaricate; flowers pedicellate, beset with glandular pubescence.  

97 S. oxyptaleum (H. B. et Kunth, nov. gen. amer. 6. p. 45.) stem shrubby, glabrous, branched; leaves alternate, flat, quite entire, obvolute-spatulate, rounded at the apex, and somewhat emarginate; cymes terminal, somewhat dichotomous; flowers secund, sessile; petals 5, linear, each ending in a narrow acumén.  

98 S. dentatum (Moc. et Sesse, fl. mex. icon. ind. ex D. C. prod. 3. p. 409. mem. crass. t. 9.) stem shrubby, branched, erect; leaves scattered or opposite, obvolute-cuneate, glabrous; those of the sterile branches rostrate; thyrse panicled, much divided; flowers secund, sessile, bractless; petals 5, lanceolate.  

99 S. erranteum (Moc. et Sesse, fl. mex. icon. ind. ex D. C. prod. 3. p. 409. mem. crass. t. 9.) stem shrubby, fleshy, twisted at the base, creeping; flowering stems erect; leaves scattered, glabrous, ovate, thick, obtuse; those of the flowering stems spreading, those of the sterile stems imbricated; flowers yellow. Very like a species of Sempervivum.

Trec-like Stonecrop. Shrub 1 to 2 feet.  

100 S. acúlpum (Clark, in Spreng. nec. entd. 3. p. 161.) floriferous stems erect; leaves lanceolate, acute, quite entire; racemes subjugitate; pedicels short, secund; petals 6, lanceolate.—Native of Palestine. The rest unknown.

High Stonecrop. Pl. 1 foot.  

101 S. obtusiperforatum (Bieb. fl. taur. suppl. p. 315.) stems arising at the very base; floriferous ones erect; leaves scattered, oblong, obtuse, nearly terete, loosened at the base; corymb simple, few-flowered; petals 5, lanceolate-subulate, twice the length of the calyx.  

Sedum. Shrub 1 foot.  

102 S. lineare (Thunb. fl. jap. 187.) stems glabrous, a little branched; leaves terete, linear, opposite, stem-clasping, acute, spreading; cyme trifid.—Native of Japan.  

103 S. hirsutum (Vill. dauph. 4. p. 680. t. 45.) stems lying on the ground at the base; floriferous ones erect; leaves terete, acute at both ends, loosened at the base; those of the sterile stems densely imbricated; cymes few-flowered; petals 5, acuminate-awned.  

104 S. pruinatum (Brot. fl. lus. 2. p. 209.) stem erect, branched at the base, glaucous, glaucous, pruinose; leaves fleshy, oblong, convexly flatish, loosened at the base; cymes bi-fid; sepals and petals 6, lanceolate, acuminated, spreading.  

105 S. cinerariifolium (Bieb. in Spreng. synst. 2. p. 167.) Colour of flowers unknown.

Sedum. Shrub 1 foot.  

106 S. confertum (Deliil. fl. eg. ill. no. 451.) leaves subulate, scattered, crowded.—Native of Egypt, about Cairo.  

Crowded-leaved Stonecrop. Pl. 3/4 foot.  

107 S. quinquefolium (H. B. et Kunth, nov. gen. amer. 6. p. 46.) stems herbaceous, glabrous; leaves alternate, flat above, convex beneath, spatulate-lanceolate, acute, quite entire; racemes elongated; flowers pedicellate; petals 5, oblong, acuminate.  

108 S. color (H. B. et Kunth, l. c. p. 43.) stems herbaceous, glabrous; leaves alternate, flat, obvolute-spatulate, acutish, quite entire; racemes terminal, flowers pedicellate; petals 5, oblong, acute.  

109 S. portulaca (D. C. prod. 3. p. 410.) stems naked, red.
erect; flowers yellow, disposed in short recurved spikes; leaves linear, scale-formed, reflexed.—Native of Spain, on the rocks called Borroquillos, in Sierra Nevada. Perhaps a species of *Sempervivum*, ex Bory. ann. gen. 3. (1820.) p. 14. The rest unknown.

*Bory's Stonecrop*. Pl. ¾ foot.  
110 S. *meltantherum* (D.C. prod. 3. p. 410.) stems weak; leaves ovate, attenuated at the apex; flowers in corimbous panicles.—Native of Spain, in Sierra Nevada, on the rocks of Borroquillos. Flowers small, densely panicked, rather sweet scented. Anthers black. The rest unknown.

Black-anthered Stonecrop. Pl. ½ foot.

† *Species only known by name.*  
1 S. *stoloniferum* (Gmel. itin. 3. t. 35. f. 2.)  
2 S. *liliocentra* (L. ex Steud. nom.)  
3 S. *procumbens* (Schrank, bav. p. 726.)  
4 S. *Montregealense* (Balb.).  
N.B. Rhodiola bicornata, Lour. coch. p. 627, is totally different from Rhodiola, Lin. and is perhaps a plant belonging to *Sedum*.  

Cult. The greater part of the species being quite hardy, and all succulent, they therefore succeed best on rock-work, for which they are well adapted. Some of the rarer kinds may be grown in small pots. They succeed best in light, sandy soil, or one composed of loam and brick rubbish. All are readily increased by cuttings. The seeds of the annual species only require to be sown on rockwork. There are a few of the species marked greenhouse; these will require the same treatment as that recommended for the species of *Globularia*, see p. 106.

**XIX. SEMPERVIVUM** (from *sempervivum*, to live for ever; the tenacity of life of the Houseleek tribe is well known). Lin. gen. no. 602. Lam. ill. t. 413. D. C. in bull. philm. no. 49. prod. 3. p. 411.  

**Lin. syst.**  
*Dodecanèria, Dodecangyra.* Calyx 6-20-parted. Petals 6-20, oblong, acute. Stamens double the number of the petals. Scales at base of carpels toothed or jagged at the apex. Carpels equal in number to the petals.—Herbs sometimes stemless, with young plants rising from the axils; or caulescent, without any young plants; or shrubby and fleshy. Leaves usually revolute. Branches of eyes sometimes disposed into a corymb, and sometimes into a panicle. Petals yellow, white, or purplish.  

**Sect. 1. Chroñorum (chrono, chronic, time, and βoòa, biao, to live; plants living only for a time, and are not so tenacious of life as those of the following section).** D. C. pl. rar. gard. gen. no. 21. Young plants, none from the axils. Flowers usually yellow, rarely white. Species all natives of the Canary Islands.

* Shrubby species.  

1 S. *aizoides* (Lam. dict. 3. p. 290.) stem frutescent, erect, branched; leaves scattered, obovate, flat, quite entire, glabrous; flowers corimbosely; petals 5-8, spreading.  

2 S. *tortuosum* (Ait. hort. kew. ed. 1. vol. 2. p. 148.) stem frutescent, erect, branched; leaves obovate-spatulate, scattered, rather convex beneath; petals 7-8, spreading; scales 2-lobed.  
3 D. G. *Native of the Canary Islands. Curt. bot. mag. t. 296. D. C. pl. grass. t. 156. Flowers yellow. Leaves 11-12 lines long and 4-5 lines broad.*  

3 S. *villosum* (Haw. syn. p. 166. rev. 65. but not of Ait.) stem frutescent, erect, twisted; leaves obovate, crowded, gibbous beneath, villous; scales of flower fringed.  
4 D. G. *Native of the Canary Islands. Flowers yellow. Leaves 5 lines long and 3 lines broad. S. villosum, Ait. is referrible to S. stellatum.*  

4 S. *ciliatum* (Wild. enum. 1. p. 508. mem. crass. t. 10.) stem frutescent, glabrous; leaves oblong-obovate, somewhat spatulate, mucronate, cartilaginosely ciliated; thyrse panicked, having the branches crowded, with flowers at the apex; petals 6-7.  
5 D. G. *Native of the Canary Islands. Coll. hort. rip. append. 4. t. 7. Flowers pale yellow.*  

**Ciliated-leaved Houseleek. Clt. 1815. Shrub 1 to 1½ ft.**  
6 S. *glandulorum* (Ait. l. c. p. 147.) stem frutescent; leaves cuneiform, viscid, rather scattered, fringed with adpressed, cartilaginosely ciliate; petals 8-10.  

8 S. *glandulosum* (Ait. l. c. p. 147.) stem frutescent; leaves cuneiform, viscid, rather scattered, fringed with adpressed, cartilaginosely ciliate; petals 8-10.  
9 D. G. *Native of Madeira. Sédum glandulosum, D. C. pl. grass. t. 156.*  

**FIG. 30.**

**Clammy Houseleek. Fl. July, Aug. Clt. 1777. Shrub 1 to 2 ft.**  
7 S. *vérum* (C. Smith, mss. Horn. suppl. p. 66. Haw. in phil. mag. 1827. p. 125.) stem frutescent, erect, leafy at the base; leaves broad, cuneiform, glabrous, cartilaginosely ciliate on the margins, running into the petiole at the base, broad and blunt at the apex, and ending in a small point.  
8 D. G. *Native of the Canary Islands, on the walls of towns and the roofs of houses. Leaves green. Flowers yellow. Perhaps the same as S. latifolium.*  

**City Houseleek. Fl. Ju. Aug. Clt. 1816. Shrub 1 to 2 ft.**  
8 S. *retusum* (Haw. in phil. mag. 1827. p. 125.) stem frutescent, simple, leafy at the apex; leaves broadly cuneate, expanded, smooth, ciliated, somewhat cuneate at the apex, truncate and retuse.  
9 D. G. *Native of the Teneriff, on walls and the roofs of houses. Flowers yellow. Very like S. vérum, but differs in the form of the leaves.*  

**Retuse-leaved Houseleek. Fl. June, Aug. Clt. 1824. Sh. 1 to 2 feet.**  
9 S. *ardéum* (Lin. spec. p. 66.) stem arborescent, smooth, branched; leaves cuneiform, glabrous, ciliated, spreading and rostrate at the tops of the branches; panicle loose; petals 9-11.  
Smith, fl. grac. 473. Shrub from 3-6 feet. Flowers golden yellow.

Var. β. variegatum; leaves margined with white or purple.


10 S. fruticorum (Haaw. fil. mag. 1827. p. 125.) stem shrubby, simple; leaves crowded in a rosulate manner at the tops of the branches, spatulate cuneately, green, ciliated. β. D. G. Native of Tenerife. Flowers yellow. Very like S. arborescum, but the plant is not above half a foot high.


11 S. tabuleforme (Haaw. suppl. p. 69. rev. 69.) stem frutoscens, erect, simple; leaves spatulate, flat, ciliated, attenuated at the base, crowded at the top of the stem, and forming a rosulate flat disk, in consequence of the stems being so closely imbricated over each other. β. D. G. Native of Madeira. Stems branching after the first time of flowering. Petals 10-12, linear-lanceolate, very pale sulphur-coloured. Glands minute, pedunculate.


12 S. canariensis (Lin. spec. p. 664.) stem short, frutescent; radical leaves expanded, rosalate, obovately-spatulate, villous, large; leaves scattered along the flowering stem, ovate; branches of panicle expanded; flowers pedicellate; petals 9-10. β. D. G. Native of the Canary Islands.—Comm. hort. amst. 2. t. 93. D. C. pl. grass. t. 141. Petals white, linear.


Var. β. hybrids (Sahn-Dyck. and Haw.) all parts of plant larger.


15 S. cespitosum (C. Smith, in hort. berol. p. 58.) stem frutescent, very short, at length a little branched, leafy at the apex; leaves oblong-linear, glabrous, stiffly ciliated, marked with brown lines on both surfaces, crowded in a rosulate manner, but the cauline ones are scattered; flowers in cymose corymb, with the branchlets dichotomous; petals 7-8, spreading. β. D. G. Native of the Grand Canary Island, on rocks on the highest mountains. D. C. rupp. jard. bot. 1825. no. 13. S. ciliare, Sims, bot. mag. t. 1798. but not of Wild. S. ciliare, Haw. rev. p. 64. S. Simsi, Sweet, hort. urbub. p. 230. S. barbarum, Horn. suppl. p. 61. but not of Smith. Flowers yellow. This plant survived 18 months in paper in the herbarium of C. Smith, and afterwards when put into the earth grew.


** Herbarious plants.


Dotted-leaved Houseleek. Pl. 1 foot.


20 S. achyranthoides (D. C. iord. gen. t. 21.) stem herbarious, terete, erect, dichotomous, beset with soft spreading hairs; leaves obovately spatulate, tapering into the petiole, dotted with soft villi; flowers in loose corymb, petals 6-9, spreading; scales of flower 2-lobed, small. β. D. G. Native of the Canary Islands, among rocks. S. laxum, Haw. rev. 65. Nearly allied to S. hisatum, ex Buch. cat. Flowers yellow. This plant is nearly allied to S. tortosum, but differs in being herbarious.


21 S. pygmaeum (C. Smith, in Buch. can. p. 155.) stem dichotomous, few-leaved, 1-flowered; leaves spatulate, attenuated at the base, retrorse, hairy; calyx villous; petals awned.—Native of the Island of Lancerotta. Flowers small, yellow. Plant hardly an inch high. The rest unknown.

Pygmy Houseleek. Pl. 1 inch.

Sect. II. Jovibara (Jupiter, Jovis, Jupiter, and barba, a beard; Jupiter’s beard; application not evident). D. C. pl. rar. gen. no. 21. obs. prod. 3. p. 415. Young plants rising from the axils of the lower leaves. Flowers purplish or pale yellow.—European species.

* Flowers yellowish.


23 S. glabrum (Lin. l. c.) leaves ciliated; offsets rather contracted; petals 15-20, spreading, very long. β. H. Native of Vallais, on rocks; and probably of Austria. Curt. bot. mag. t. 507. Schrad. icon. 95. t. 26. S. grandiflorum, Haw. rev. 66. Petals yellowish, 3 times longer than the calyx.

Var. β; offsets rather loose; petals 12. β. H. Sims, bot. mag. 2115. More villous than the species.

r 2
**CRASSULACEE.**


24 S. TECTUM (Lin. spec. p. 664.) leaves dilated; offsets spreading; petals 5-9, spreading; scales of flowers cuneiform, carunculate. ². H. Native of Europe, on rocks and roofs of houses; also in many parts of Britain, on walls and cottage roofs, but perhaps not properly indigenous. D. C. pl. grass. t. 104. Smith, fl. greæ. 1920. Curt. Lond. 3, t. 29. Oed. fl. dian. 601. Blackw. t. 366. Sédum tectum. Scop. cent. ed. 2, no. 539. Flowers purplish. Stamens sometimes changed into carpels according to Pet. Thouars, in bulbl. nov. 1807. The juice of the common house-leek either applied by itself, or mixed with cream, gives present relief in burns, and other external inflammations; it is also said to cure corns. With honey it is a useful application in the throat. Boerhavia found 10 ounces of the juice beneficial in dysenteries, and others have found it useful in gonorrhoeas; but it is not admitted into modern practice. The house-leek had several names formerly, as sengreen and aggreen, both translations of Sempervivum. It has also been called jupiter's eye, bullock's eye, and Jupiter's beard. In Germany it is called hauserwe; in French le grand joubarbe, and in Italian sempervirece maggiore.


25 S. FLAGELLIFORME (Fisch. in Link, Enum. p. 2. p. 20.) leaves ovate, mucronate, papillose, with papillously ciliated margins; offsets spreading, lateral; branches of cyme bifid. ². H. Native of Siberia. Allied to S. montanum, but differs in being larger, and in the offsets being at the ends of long flagellae. The leaves of the offsets terminate in a stiff brown point; caule leaves narrower. Corolla reddish.


26 S. MONTANUM (Lin. spec. p. 665.) leaves of the offsets obovate-oblong, shortly acuminated, beset with glandular pubescence on both surfaces, obsolescently ciliated, entire, pubescent; offsets rather contracted; flowers rotate; petals 10-14, lanceolate, acuminated, spreading, 3 times longer than the calyx, scales of flowers small, nearly quite entire; style discoloured at the apex. ². H. Native of the Pyrenees and the Alps of Europe, &c. on rocks. D. C. pl. grass. t. 105. Jacq. fl. aust. 5. append. t. 41. Flowers deep red. This species differs from S. tectum in the smaller stature, and in the nectariferous scales being almost wanting; and from S. arachnoideum in the absence of the cobwebbed wool. Scales of flower square and retuse.

**Mountain House-leek.** Fl. Ju. July. Clt. 1782. Pl. ½ to ¾ ft. 27 S. PUNIKI (Braun, in bot. zeit. Jan. 1832. p. 4. t. 1.) leaves of the offsets oblong, shortly acuminated, beset with glandular pubescence on both surfaces, with ciliated margins; flowers rotate; petals lanceolate, acuminated, about 3 times longer than the calyx; germen dilated, ovate; style discoloured at the apex. ². H. Native of the Alps of Europe, as in Switzerland, Piedmont, &c.


28 S. ARACHNOIDEUM (Lin. spec. 665.) leaves covered with interwoven cobwebbed hairs or wool; offsets globose; petals 3-9, spreading; scales of flower truncate, emarginate. ². H. Native of the Alps of Europe and the Pyrenees, &c. among rocks. D. C. pl. grass. t. 106. Curt. bot. mag. t. 68. Jacq. auct. 5. append. t. 32. Flowers purple.

**Cobwebbed House-leek.** Fl. Ju. July. Clt. 1699. Pl. ½ ft. 29 S. PUMILUM (Bieb. fl. taur. 1. p. 381.) leaves lanceolate, acute, ciliated by long hairs; offsets globose; stem few-flowered; petals 12, hairy. ². H. Native of Caucasus, at the torrent of Terek, on rocks. Flowers red. Very like S. arachnoideum, but differs in the hairs on the leaves being distinct, not cobwebbed.


**Fine-leaved House-leek.** Pl. ½ foot.

**Sect. III. MONA'NTHES (from poëe, mono, one, and an-55, anthos, a flower; flowers one on each peduncle.) Hav. rev. succ. p. 68. D. C. prod. 3. p. 414. Real offsets none. Leaves clavate, crowded in a somewhat rosulate manner. Flowers purple. Glands large, orbicularly cochléate, serrulata when examined through a lens, one-half shorter than the petals, but 4 times broader, and rufous. Haw.—A very small nearly stemless herb.


**† Species hardly known.**

32 S. AFRICANUM (Mill. dict. ed. 8. no. 7.) margins of leaves serrately toothed; offsets spreading. ². D. G. Native of the Cape of Good Hope. Hav. syn. p. 367. This species has never been seen except by Miller; it is therefore doubtful. Sprengel says it is the same as S. arbóreum.

**African House-leek.** Clt. 1768. Shrub.

33 S. ? SEGUE'RI (D. C. prod. 3. p. 414.) stem herbaceous, erect; leaves opposite, oblongate,—Native on Mount Baldo.

**Sédum perrà'num, &c. Scarella in Seg. ver. 2. p. 360. t. 17. S. stellátum, Poll. fl. ver. 2. p. 114. exclusive of the synonyme of Smith. It is probably a variety of Sédum dasyphyllum, but the flowers are said to be yellow. The plant is therefore very doubtful.

**Seguer's House-leek.** Pl. ½ foot.

34 S. ? HISPA'NICUM (Wildl. enum. p. 508.) leaves subulate, semi-terete, ciliated, imbricated; cymes bifid. ². H. Native of Spain. The rest unknown. Perhaps a species of Sédum.

**Spanish House-leek.** Pl. ½ to ¾ foot.

35 S. CLAVICULA'TUM, Sieb. ? These two species are only 36 S. MUTA'BLE, Schlecht. ? known by name.

**Cult.** The greenhouse kinds of house-leek are chiefly natives of the Canary Islands. A mixture of sand, loam, and brick-rubbish is a good soil for them; and care must be taken not to give them too much water when not in flower. Cuttings taken off the plants, and laid to dry a few days, will strike root freely without any covering of glass. Cuttings of some species are difficult to obtain, such as of S. tabulifíameae, &c.; the best way in such cases is to cut the top out, and, lateral shoots will be immediately produced. The hardy kinds are well fitted for rock-work, or to grow on walls; and they are easily increased by the offsets, which are issued in great abundance. A light soil suits them best.

**Tribe II.**

**CRASSULACE.E ANOMAL.E** (the plants contained in this
tribe are anomalous in the order, in consequence of the carpels being united in a many-celled capsule, and dehiscent on the outside. D. C. prod. 3. p. 414. Carpels united at the base into a many-celled capsule.

XX. DIA M O R P H A (from ἔκασφω, diamorphao, to de-

form; in reference to the fruit, which is formed differently and contrary to the rest of the order). Nutt. gen. amer. 1. p. 293. D. C. prod. 3. p. 414.


Small Diamorpha. Pl. 1 inch.

Cult. The seeds of this plant should be sown in a pot, filled with peat, and the plants need not be shifted into other pots; but be preserved through the winter by a frame.

XXI. PENTH OR U M (from πέντε, pente, five, and ἄφοι,


LIT. Syst. Decándria, Pentágyinia. Calyx 5-parted. Petals 5. Stamens 10. Scales wanting? Carpels 5, united at the base, in a 5-seeded 5-celled capsule, which is pentagonal at the apex, and opening under the beaks. Seeds numerous, small, fixed on every side of the broad placenta, and probably exalbuminous.—Erect perennial herbs, with scattered, membranous, oblong-linear, unequally serrated leaves: and unilamellar cymes, which are turned back at the points.

1 P. sedoidea (Lin. spec. p. 620.) stem a little branched; leaves lanceolate; cymes numerous, panicled, many-flowered; seeds scabiförm. \* H. Native of North America, in bogs, from New England to Carolina, and on La Grande Chaudière. Lin. act. ups. 1744. t. 2. Lam. ill. t. 390. Flowers white or pale yellow.


2 P. Chineñse (Pursh. fl. amer. sept. 1. p. 232. in obs.) stem simple; leaves long, linear-lanceolate; cymes few, corysmbose, few-flowered; seeds ovate, horny. \* H. Native of China. D. C. mem. crass. pl. 13. Very like P. sediæides, but the seeds are certainly distinct. Stems, as in it, terete at the base, and angular at the apex.

China Penthorum. Pl. 1 foot.

Cult. The species of this genus grow freely in light sandy soil, and are easily increased by dividing at the roots. Cuttings also strike freely under a hand-glass. P. Chineñse, if ever it should be introduced to the gardens, will require protection in winter until its hardiness be ascertained.


Calyx constantly of a definite number of sepals, usually 5, but varying from 4 to 8, more or less united at the base, either cohering with the ovary, or almost distinct from it, equal or unequal, quincuncial or valvate in stivation. Petals indefinite, coloured, narrow, a little combined at the base, sometimes wantig, but in that case the inside of the calyx is coloured. Stamens indefinite, arising from the calyx, distinct; anthers oblong, incumbent. Ovarium distinct, or adnate to the calyx, many-celled, crowned by numerous distinct stigmas. Capsule either girdled by the fleshy calyx or naked, usually many-celled, but often 5-celled, opening in a stellate manner at the apex. Seeds attached to the inner angle of the cells, definite or indefinite. Embryo lying on the outside of a mealy albumen, curved.—Shrubby or herbaceous plants, variable in habit. Leaves fleshy, opposite, simple. Flowers usually terminal.

The curved embryo and mealy albumen, along with the superior calyx, and distinctly perigynous stamens, characterise these among their neighbours, independently of their succulent habit. With Crassulacea, Chenopodiace, and Caryophyllaceae they are more or less closely related. Reuarruriace and Nittrariaceae are families different in affinity. The hottest sandy plains in the Cape of Good Hope nourish the largest part of this order. A few are found in the south of Europe, north of Africa, Chili, China, Peru, and the South Seas. The succulent leaves of a few of the species are eaten, as of Tetragynia expansa, Mesembryanthemum edule, and Scevola portulacoides; others yield an abundance of soda. Mesembryanthemum nodifórrum is used in the manufacture of Moroquin leather.

Synopsis of the genera.

1 MESEMBRYANTHEMUM. Calyx of 5, rarely of 2-8 sepals. Petals indefinite, linear. Stamens indefinite, inserted in the top of the calyx along with the petals. Capsule adnate to the calyx, from 4 to many-celled; cells many-seeded.

2 TETRAGÖNIA. Calyx 4, rarely 3-cleft; lobes coloured inside. Petals wanting. Stamens variable in number. Capsule 3-8-celled; cells 1-seeded.

3 SERVÚIUM. Calyx 5-parted; lobes coloured inside. Petals wanting. Stamens 15-30, inserted in the top of the tube of the calyx. Capsule 3, rarely 4-5-celled; cells many-seeded.

4 AZIÖN. Calyx 5-parted, coloured inside. Petals wanting. Stamens about 20, inserted in the bottom of the calyx, 3-5 in each fascicle. Capsule 5-celled; cells many-seeded.

5 GLIXUS. Calyx 5-parted, coloured inside, with 3 inner sepals and 2 outer ones. Petals 5-20, tongue-shaped, 2-4-cleft at the apex. Capsule covered by the calyx, 5-celled; cells many-seeded.

6 ORYÇIA. Calyx 5-parted. Petals numerous (20), lanceolate. Stamens indefinite. Capsule glbose, 5-celled, many-seeded.

1. MESEMBRYANTHEMUM (from μεσομπροφ, meso-


LIT. Syst. Icósandra, Tetra-Polygyinia. Calyx of 5, rarely of 2-8 sepals; sepals united to themselves, and to the ovarium even to the middle; lobes unequal, usually leaf-formed. Petals innumerable, in one, but more often in many series, united among themselves at the base. Stamens indefinite, disposed in many series, inserted with the petals at the top of the calyx. Ovarium adnate to the calyx, many celled inside (4-20), but usually 5-
celled. Stigmas 4-20, but usually 5. Capsule many-celled, opening stellately at the apex, adnate to the permanent calyx. Seeds numerous. Embryo curved at the side of a mealy albumen. Cotyledons thick, very blunt.—Subshrubs, rarely herbs, almost all natives of the Cape of Good Hope. Leaves usually opposite, thick, fleshy, flat, terete or trigonal. Flowers terminating the branches, white, yellow or purple, the greater part of which open in the heat of the sun, very few of them opening in the evening. Fruit opening in a humid atmosphere, and relaying the seeds, which are then dispersed by the wind along with the sand.

In consequence of this genus being very large, we think it necessary to give a synoptical table of the sections, in order to render a reference to the species more easy.

### Synoptical Table of the Sections.

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### Subdivision I. Acaul'a (acaulis, without a stem; plants stemless or nearly so). Haw. rev. succ. p. 81. Stems wanting or very short. Root perennial. Leaves large, variable in form and thickness, but not flat.

§ 1. Spheroidea (from sphaira, sphaira, a sphere; in reference to the leaves being joined together into a globe). Salm-Dyck.—

| **M. Minutum** (Haw. obs. 126. misc. 21. rev. 82.) | Plant stemless, obconical, glaucous, without spots; flowers long, tubular. 2. D. G. Native of the Cape of Good Hope. Sims, bot. mag. t. 1376. Plant hardly the size of a common bean. Pedals pale reddish in the free part, spreading; tube slender, half an inch long, inclosing the ovary. |

**Minute Fig-marigold.** Fl. Sept. Nov. Pl. ½ inch.

| **M. Minutum** (Haw. obs. 126. misc. 21. syn. 203. rev. 82.) | Plant stemless, obconical, glaucous, with confluent rather branched spots; ovary inclosed. 2. D. G. Native of the Cape of Good Hope. Petiv. gaz. 18. f. 37; ex Haw. Flowers very pale yellow, almost white, sessile. The cultivated plants of this species are sometimes somewhat canescent. Offsets fewer from this species than from the other allied species. |

**Smallest Fig-marigold.** Fl. Sept. Dec. Cl. 1776. Pl. ½ inch.

| **M. Perpusillum** (Haw. rev. 82.) | Plant stemless, obconical, green, with strong confluent branched dots; ovary inclosed. 2. D. G. Native of the Cape of Good Hope. Very nearly allied to *M. minimum*, but the colour of the flowers is deeper, and the offsets more numerous. |

**Very-small Fig-marigold.** Fl. Sept. Dec. Cl. 1819. Pl. ½ inch.

| **M. Oboconellum** (Haw. misc. 21. syn. 203. rev. 82.) | Plant stemless, obconical, glaucous, with confluent branched dots; ovary inclosed. 2. D. G. Native of the Cape of Good Hope. Flowers straw-coloured. |

**Small-truncate Fig-marigold.** Fl. Feb. Oct. Cl. 1795. Pl. ½ inch.

| **M. Pipulliforme** (Haw. misc. 22. syn. 203. rev. 83.) | Plant stemless, rather canescent, and somewhat pubescent, very much depressed, and spotted. 2. D. G. Native of the Cape of Good Hope. |

**Button-shaped Fig-marigold.** Fl. Cl. 1795. Pl. ½ inch.

| **M. Turbiniforme** (Haw. rev. p. 84.) | Plant stemless, obconical, exactly truncate, and therefore top-formed, obscurely dotted. 2. D. G. Native of the Cape of Good Hope. |

**Top-shaped Fig-marigold.** Fl. 2 inches.
10 M. uveiforme (Haw. rev. p. 84). Plant stemless, nearly globose, green, form and size of a grape herry, with small, rather confluent deeper dots. 2. D. G. Native of the Cape of Good Hope. Burm. afr. t. 10. f. 2.?

Grape-formed Fig-marigold. Fl. Cl. 1820. Pl. ½ inch.

11 M. eucalytrum (Haw. obs. 129. misc. 22. syn. 204. rev. 84.) plant stemless, glaucous, without dots, nearly spherical; tops of leaves unequal, distinct, flat above. 2. D. G. Native of the Cape of Good Hope. Flowers unknown.

Nat-formed Fig-marigold. Cl. 1796. Pl. 1 inch.

§ 2. Subquadriifolia (the plants belonging to this section are usually furnished with about 4 leaves). Salm-Dyck, obs. 17.—

Semirotita and Obitita, Haw. rev. p. 85. Plants almost stemless. Leaves 4-6, decussate, quite entire, obtuse, flat above, convex beneath. Flowers nearly sessile, solitary. Calyx 4-6-cleft. Stigmas 4-6. The upper leaves are usually conuate, as in section Spheroideae, and at length separate, but more distinctly.

12 M. Gm. M. truncatum (Thunb. fl. cap. p. 412.) plant stemless; leaves spheroid-obconical, umbilicately truncate; peduncle solitary, 1-flowered, compressed; calyx 4-cleft. 2. D. G. Native of the Cape of Good Hope.

Truncate Fig-marigold. Pl. 1 to 2 inches.


Testiculare Fig-marigold. Fl. Nov. Cl. 1774. Pl. 1 inch.

14 M. octophyllum (Haw. rev. p. 85.) plant stemless; leaves 6-8, white, smooth, rather erectish, convex beneath, flat above. 2. D. G. Native of the Cape of Good Hope. M. testiculare γ, Haw. misc. p. 24. M. testiculare β et γ, Haw. syn. 205. M. testiculare β, Sims, bot. mag. 1573. Flowers yellow, and when expanded they are 8 or 10 lines in diameter. Calyx 6-cleft, furnished with two leaf-formed bracteae at the base. According to the Prince de Salm-Dyck, this is merely a variety of M. testiculare.

Eight-leaved Fig-marigold. Fl. Nov. Cl. 1819. Pl. ½ ft.

15 M. obtusum (Haw. misc. 25. syn. 206. rev. 86.) plant green, almost stemless; leaves unequal, semi-terete, acinaciform, obtuse; flowers almost sessile; calyx 6-lobed. 2. D. G. Native of the Cape of Good Hope. M. fusiformis, Haw. obs. 185. Old stem 2 inches high. Flowers pale red, bibracteate at the base; petals an inch long. Styles 4.

Blunt Fig-marigold. Fl. March, April. Cl. 1792. Pl. ½ ft.

16 M. Pissum (Haw. obs. 134. misc. 25. syn. 205. rev. 86.) plant almost stemless; leaves equal, half-terete, very blunt, glaucencet. 2. D. G. Native of the Cape of Good Hope. Old stem 1 or 2 inches high; branchlets very short, and alternate. Flowers unknown.

Cleft Fig-marigold. Cl. 1776. Pl. ½ foot.

17 M. Digitatrum (Thunb. fl. cap. p. 412.) plant stemless; leaves 3-4, terete, smooth, obtuse; flowers sessile, solitary, axillary. 2. D. G. Native of the Cape of Good Hope. M. digitatum, Ait. hort. kew. 2. p. 181. Flowers white, according to Thunberg. Leaves alternate. Perhaps belonging to a different section.

Finger-shaped Fig-marigold. Cl. 1775. Pl. 1 inch.

§ 3. Monifiorum (from monile, a bracelet, and forma, form; appearance of stems). Haw. and Salm-Dyck, l. c. Stems very short, moniliform, leafless in the summer. The two first leaves united even to the apex, and deciduous; the two following leaves elongated, and joined at the base, marcescent, and deciduous. Calyx 4-6-cleft, and is, as well as the leaves, full of crystaline papulae. Stigmata 7-8.

18 M. Piusiforme (Haw. misc. 23. syn. 205. rev. 93.) leaves full of crystalline papulae; the first two united into the form of a peak, the following 2 semi-terete; caudex much branched, and very dwarf. 2. D. G. Native of the Cape of Good Hope. The first leaves are produced in autumn, and the second in winter. Flowers unknown.

Peau-formed Fig-marigold. Cl. 1796. Pl. 1 inch.

19 M. moniliforum (Haw. obs. 132. misc. 24. syn. 207. rev. 93.) first leaves joined into a spherical form; the following ones half-terete, subulate, very long, green, and somewhat recurved. 2. D. G. Native of the Cape of Good Hope. Thumb. fl. cap. p. 413. Peduncles 2 inches long, terminal. Calyx 4-cleft. Petals snow white. Styles 7, ex Haw.

Necklace-formed Fig-marigold. Fl. March, April. Cl. 1791. Pl. ½ foot.


20 M. nobile (Haw. in phil. mag. 1823, p. 381.) plant rather caulescent; leaves coarsely and triquetrously ciliate, obtuse, somewhat recurved, rather concave above, marked by large elevated tubercules. 2. D. G. Native of the Cape of Good Hope. Flowers large, sessile, opening before meridian, yellow, scentless, bibracteate at the base. Calyx 6-cleft, according to Salm-Dyck.


21 M. magnipunctatum (Haw. rev. p. 86.) plant stemless; leaves perfect, usually about 4, large, elavately triquetrous, very thick, glaucencet, flat above, keeled beneath, obtuse at the apex, marked with very large and numerous dots. 2. D. G. Native of the Cape of Good Hope. M. magnipunctatum, Haw. suppl. p. 87. Flowers yellow, sessile.

Large-dotted Fig-marigold. Cl. 1822. Pl. ½ foot.

22 M. cylindrica (Haw. obs. p. 158, misc. 25. syn. 219. rev. 87. but not of Salm-Dyck,) plant stemless; leaves hoary, semi-terete at the base, attenuated, gibbously keeled at the apex. 2. D. G. Native of the Cape of Good Hope. Very like M. magnipunctatum, but is easily distinguished by its hoary aspect. Flowers unknown.

Hoary Fig-marigold. Cl. 1795. Pl. 1 to 2 inches.

23 M. aloides (Haw. suppl. 88. rev. 87.) plant stemless; leaves entire, semi-terete, green, marbled with white dots, acute upwards, rather concave above, carinate triquetrous at the apex. 2. D. G. Native of the Cape of Good Hope. Old plant tufted; root fusiform. Flowers sessile, central, yellow, middle-sized. Perhaps the same as M. compactum, no. 86. Perhaps M. aloides, Burch. trav. afd. p. 332.

Aloe-like Fig-marigold. Fl. Sept. Cl. 1819. Pl. ½ foot.

§ 5. Allinöta (from allus, white, and nota, a mark; plants marked with white). Haw. in phil. mag. Aug. 1826, p. 126. Plants almost without stems, tufted. Roots perennial. Leaves decussate, entire, obliquely incurred, green, spreading, full of large tubercular white dots, semi-terete at the base, acinaciformly triquetrous at the apex, or nearly equal-sided, more or less scattering. Flowers central, solitary, sessile, yellow. Stamenv erectly spreading, as in those of section Ringüinta.

24 M. alboïntum (Haw. in phil. mag. Aug. 1826. p. 126.) leaves acinaciformly triquetrous upwards, with a recurved
mucron, full of scattered, rather elevated whitish dots. 2. D. G. Native of the Cape of Good Hope. Flowers yellow.

White-marked Fig-margiold. Fl. Sept. Clt. 1824. Pl. 4/3 ft. 25 M. abtunatum (Haw. l. c.) leaves semi-terete, beset with white tubercular dots. 2. D. G. Native of the Cape of Good Hope. Flowers yellow. Very like M. albínotum, but the leaves are twice or thrice smaller, and more numerous. There is also a larger variety of this species mentioned by Haworth.


26 M. musculturum (Salm-Dyck and Haw. suppl. p. 87, rev. p. 89.) plant almost stemless, green, full of pellucid dots; leaves tripinuous, gradually thickening towards the apex, ciliately toothed, postulus-gibbous on the inside at the base; flowers on short pedicels; calyx 4-cleft. 2. D. G. Native of the Cape of Good Hope. Salm-Dyck, obs. 1829. p. 9. Flowers yellow, expanding in the evening, sweet-scented.


28 M. abtunatum (Haw. in phl. mag. Aug. 1826. p. 126.) plant almost stemless, canescent, wrinkled from dots; leaves semi-terete, serrulated from elevated dots, and hence somewhat toothed, postulate on the inside at the base. 2. D. G. Native of the Cape of Good Hope. Leaves with a large white postulate on the inside at the base. Flowers sessile, solitary, central, expanding in the evening.

Ter. 2. leaves more erect, entire.


29 M. musculúrum (Haw. obs. p. 165. misc. p. 30. syn. 217. rev. 90. phl. mag. 64. p. 111.) plant almost stemless, glaucous; leaves ciliately denticulated, 3 rows on each side, and full of tubercular dots, with the margins and keel ciliately denticulated at the apex; flower sessile. 2. D. G. Native of the Cape of Good Hope. Flowers small, yellow. Styles 5, very short, erect, green, a little thickened towards the apex.

Mouse-chop Fig-margiold. Fl. Sept. Clt. 1790. Pl. 4/3 ft.


31 M. lévium (Haw. in phl. mag. 64. p. 111.) plant stemless; leaves glaucenscent, marginal cilia very long, and very numerous. 2. D. G. Native of the Cape of Good Hope. Very like M. felinum, but differs according to Salm-Dyck in the leaves being narrower, more attenuated, and probably it is only a mere variety of it.

Wolf-chop Fig-margiold. Pl. 4/3 foot.


33 M. canínum (Haw. obs. p. 159. syn. 217. rev. p. 87.) plant almost stemless; leaves glaucous, carpinaceous triquetrous, rather club-shaped, incurved towards the apex, and somewhat toothed, as well as the bracteas; peduncles longer than the leaves. 2. D. G. Native of the Cape of Good Hope. D. C. pl. grass. t. 33.—Brasi. succ. t. 18. M. ringens 2. Lin. spec. 698. Flowers of a yellowish orange-colour, opening after meridian.


34 M. vulgárum (Haw. syn. p. 417. rev. p. 88.) plant almost stemless; leaves glaucous, carpinaceous triquetrous, rather club-shaped, with large teeth at the apex or entire; old leaves horizontal; bracteas entire; peduncles longer than the leaves. 2. D. G. Native of the Cape of Good Hope. M. canínum 2. Haw. misc. p. 32. Very like M. canínum, but taller, and the leaves are longer and greener, with fewer teeth. It is, however, perhaps only a variety of it. Flowers yellow.

Fox-chop Fig-margiold. Fl. May. Clt. 1795. Pl. 4/3 ft.

35 M. nyánum (Haw. syn. 218. rev. p. 88.) plant stemless, smooth, white; leaves semi-terete, entire, carpinaceous triquetrous above, and a little thickened, ending in a recurved mucron each. 2. D. G. Raised in the gardens from the seeds of M. albidum, impregnated by the pollen of M. canínum.

Hybrid Fig-margiold. Fl. May. Oct. Pl. 4/3 foot.

36 M. musculúrum (Haw. in phl. mag. Nov. 1826. p. 328.) margins and keel of leaves usually bearing but one tooth each; branches prostrate, half a foot long. 2. D. G. Native of the Cape of Good Hope. Flowers yellow, opening in the morning, scentless. This plant is very like M. musculúrum, but differs in the prostrate branches, and in the teeth of the leaves being fewer. It comes perhaps nearest in habit to M. erínum, but differs in the petals being a line broad, not capilaceous.


37 M. albidúm (Lin. spec. p. 699.) plant stemless, smooth, whitish; leaves thick, subulate, triquetrous, obtuse, with an acumen, but semi-terete at the base: all quite entire. 2. D. G. Native of the Cape of Good Hope. Dill. hor. etd. f. 232. Brasi. succ. t. 43. Sims, bot. mag. t. 1824. Haw. rev. p. 85. Flowers large, yellow, opening early in the morning, but afterwards remaining expanded through the whole day, sweet-scented. Stigmas 11. This plant is intermediate between the section Ringénia and Rostríta.


38 M. denticulúrum (Haw. obs. 149. misc. syn. 30. rev. 91.) plant stemless; leaves very glaucous, subulate triquetrous, compressed, dilately keeled at the apex; keel usually
denticulated; scape hibracteate, 1-flowered; styles 15. 2. D. G. Native of the Cape of Good Hope. Flowers pale straw-colour, 3 inches in diameter.

Var. a, cinnam (Haw. obs. 149.) leaves canescent from minute down.

Var. b, glaucum (Haw. obs. p. 151.) leaves glaucous-white, rather dilated at both ends, a little toothed.

Var. c, candidissimum (Haw. l.c.) leaves white, elongated, a little toothed, compressed on both sides.

Denticulated Fig-margirol. Fl. April. Clt. 1793. Pl. ½ ft. 39 M. robustum (Haw. misc. p. 28. syn. 211. rev. p. 91.) stem robust, a little branched, short, decumbent; leaves obtuse, dotted, subulate, pubescent inside at the base. 2. D. G. Native of the Cape of Good Hope. Flowers unknown.

Robust Fig-margirol. Clt. 1793. Pl. ½ foot. 40 M. compactum (Alt. hort. kew. 2. p. 191.) plant stemless; leaves connate, dotted, semi-terete, triquetrous at the apex, rather reflexed, acute; flowers sessile; calyx subcylindrical, 6-cleft. 2. D. G. Native of the Cape of Good Hope. Haw. syn. 211. rev. 91. Flowers yellow. A very doubtful species, and probably the same as M. sibolé, no. 20.

Compact Fig-margirol. Fl. Nov. Clt. 1780. Pl. ½ foot. 41 M. quadrifidum (Haw. misc. 28. syn. 212. rev. 91.) plant almost stemless, at length branched; leaves subulate, obtuse, hoary-glaucous, marked by a few dots towards the apex; scape terminal, 1-flowered, longer than the leaves; calyx 4-cleft. 2. D. G. Native of the Cape of Good Hope. Old stems 2-3 inches long. Flowers yellow. Styles about the length of the stamens.

Four-cleft Fig-margirol. Fl. Nov. Clt. 1793. Pl. ¼ foot. 42 M. bifidum (Haw. misc. p. 29. syn. 212. rev. p. 92.) plant almost stemless; leaves subulate, glaucous, obtuse, with many dots; scape nearly terminal, 1-flowered; calyx bifid. 2. D. G. Native of the Cape of Good Hope. Flowers yellow. Lobes of calyx 2, unequal. Allied to M. quadrifidum, but weaker, and the leaves are shorter and blunter.

Bifid Fig-margirol. Fl. Nov. Clt. 1795. Pl. ¼ foot. 43 M. bifractatum (Haw. syn. p. 215. rev. 92.) plant almost stemless, branched; leaves elongated, subulate, dotted, very glaucous; bracteas 4, decussate, shorter than the scape; calyx 5-cleft. 2. D. G. Native of the Cape of Good Hope. Very like M. rostratum. Flowers yellow, expanding in the sun.

Bibracteate Fig-margirol. Fl. April, Nov. Clt. 1803. Pl. 3/8 ft. 44 M. perpraescens (Salm-Dyck, obs. bot. ann. 1822.) plant almost stemless, branched; leaves dotted, smooth, gibbosus inside at the base, of a bluish-glaucous-colour, obtuse, and triquetrous at the apex; keel usually extended; sheaths purplish. 2. D. G. Native of the Cape of Good Hope.

Purplish Fig-margirol. Pl. ¼ foot. 45 M. rostratum (Lin. spec. p. 686.) plant stemless; leaves subulate, elongated, acute, dotted; bracteas 2, longer than the scape; calyx 4-cleft. 2. D. G. Native of the Cape of Good Hope.—Dill. clth. f. 229. without a flower. Haw. obs. p. 152. misc. 29. syn. 214. rev. 95. Flowers yellow, expanding in the sun. Styles very short, approximate.

Var. β, tuberculatum (Mill. dict. ed. 8. no. 82.) leaves tubercular on the outside.

Beaked Fig-margirol. Fl. April. Clt. 1742. Pl. ¼ foot. 46 M. ramulosum (Haw. misc. 29. syn. 215. rev. p. 92.) young plant nearly stemless; old stem 3 inches high, branched, and decumbent; leaves subulate, obtuse, pubescent inside at the base: when old expanded; scape terete, bracteate at the base; calyx 5-cleft. 2. D. G. Native of the Cape of Good Hope. M. rostratoides, Haw. obs. 154. Flowers yellow. This is the smallest of all the section.


§ 8. Linguaria (from linguat, a tongue, and forma, a form; shape of leaves). Haw. misc. p. 32. rev. p. 95. Salm-Dyck, obs. 18. Plants stemless or nearly so. Leaves more or less tongue-shaped, flat above, and convex beneath, soft, and shiny, flowers solitary, large, sessile, or pedunculate. Calyx usually 4-cleft, rarely 5-cleft. Petals shining, yellow, broadish. Stigmas 8, rarely 10. Capsule 8-10-celled.

* Disticha (from disticha, distichos, having two rows, a distich; leaves disposed exactly in two opposite rows). Haw. misc. p. 32. —Linguaria, Haw. rev. p. 95.—Glossoidea, Spreng. syst. 2. p. 514. Leaves exactly distich. Perhaps all the plants contained in this division are nothing more than varieties of one species, and probably of garden origin. The whole have been collected under the name of M. linguariae in Lin. spec. p. 669, and D. C. pl. grass. no. 71.


48 M. fragraeus (Salm-Dyck, obs. 1820. p. 8.) plant almost stemless; leaves tongue-shaped, thick, one side rather convex, and obtuse at the apex, the other side thrown out into a keel; flower on a short peduncle. 2. D. G. Native of the Cape of Good Hope. Haw. rev. p. 95. Hoffmans. verz. 1. p. 229. Otto et Link, abh. gev. t. 48. Flowers fragrant, yellow, 3 inches in diameter. Calyx 5-cleft. Allied to M. scalpfreatum, but the leaves are narrower and thicker.


50 M. grandiflorum (Haw. in phil. mag. nov. 1826. p. 388.) leaves broad tongue-shaped, long, thick, having a large pubescent on the inside at the base; petals very broad. 2. D. G. Native of the Cape of Good Hope. Flowers yellow, almost scentless, large, sessile; petals 3-4 lines broad. Leaves 3½ inches long, and 15 lines broad. Capsule subconical. This is the largest species in the present section.

Var. γ (Haw. l.c.) leaves deeper green.


51 M. medium (Haw. suppl. p. 88. rev. p. 95.) plant almost stemless; leaves tongue-formed, sloping, culturate, deep green, without any claw-like point at the apex; peduncles longer than the flowers. 2. D. G. Native of the Cape of Good Hope. Leaves 4 inches long, and an inch broad. Peduncles an inch long. Flowers yellow.


52 M. cultratum (Salm-Dyck, obs. 1820. p. 7.) plant almost stemless; leaves distich, exactly tongue-shaped, culturate at the margin and apex; peduncles compressed, rather longer than the


Var. β, rufescens (Haw. syn. p. 221.) leaves very closely imbricated, rufescent.


57 M. latum (Haw. obs. 186. misc. p. 32. syn. p. 220. rev. p. 98.) plant stemless; leaves tongue-shaped, green, obtuse, thick, usually sloping, and somewhat excavated; flowers nearly sessile; calyx 5-cleft; capsule large, conical. 2. D. G. Native of the Cape of Good Hope.—Dill. clt. f. 225. M. lingueforme β, Lin. spec. 659. Flowers yellow.

Var. β, brevica (Haw. rev. p. 99.) leaves short, very blunt, depressed on the ground; capsule small, depressed.


Var. β, luteum (Haw. l. c.) leaves of a vivid rufescent colour.


** Cruicata (from cruix, a cross; leaves disposed crosswise more or less). Haw. syn. p. 222.—Cruicata and Difformia, Haw. rev. 100, and 101. Leaves more or less cruciate, usually obliquely decussate.

59 M. cruciata (Haw. obs. p. 173. misc. 35. syn. 224. rev. 35.) plant nearly stemless; leaves linear-tongue-shaped, semi-cylindrical, very soft, cruciate; peduncles 2-edged; calyx 4-cleft. 2. D. G. Native of the Cape of Good Hope. Old stems 3 inches high. Peduncles 1–2 inches. Corolla large, yellow.

Cross-leaved Fig-marigold. Fl. May, Nov. Clt. 1732. Pl. 3/4 ft. 60 M. taurinum (Haw. syn. p. 224. rev. 100.) plant almost stemless; leaves disposed in 2 rows, obliquely cruciate, semi-terete, obtuse, very thick, of a yellowish green colour, incurved; flowers sessile; calyx bifid. 2. D. G. Native of the Cape of Good Hope. Coriaceous segments unequal. Styles 8. Old stem branched at the base, half a foot high. Flowers yellow.

Ball's-horn Fig-marigold. Fl. Sept. Nov. Clt. 1795. Pl. 3/8 ft. 61 M. salmum (Haw. suppl. p. 89. rev. p. 100.) plant nearly stemless; leaves decussate, semi-cylindrical, attenuated and acute at the apex, or oblique and bluntish; flowers exactly sessile; calyx 4-cleft; capsule half closed. 2. D. G. Native of the Cape of Good Hope. Salm-Dyck. obs. bot. 1820. Link. et Otto. abb. gew. t. 44. Flowers large, yellow. Leaves pubescent at the base, according to Haworth.

Var. β, semi-cruicata (Salm-Dyck. l. e.) leaves obliquely distich, straight, and more tongue-shaped than the species.

Salm-Dyck's Fig-marigold. Fl. Sept. Nov. Clt. 1818. Pl. 3/4 ft. 62 M. subsectum (Haw. rev. p. 101.) leaves decussate, erectish, or spreading, more or less semi-terete, subulate, acute, soft, usually pubescent at the base; ovary exerted, somewhat pedunculate. 2. D. G. Native of the Cape of Good Hope. Flowers yellow.


Variable-leaved Fig-marigold. Clt. 1705. Pl. 3/4 foot. 64 M. angustatum (Haw. obs. 176. misc. p. 34. syn. 222. rev. p. 101.) plant almost stemless; leaves linear-tongue-shaped, semi-cylindrical, very long; flowers nearly sessile; calyx 4-cleft. 2. D. G. Native of the Cape of Good Hope. Flowers yellow, having the petals broader than any other species of this section. Calyx 4-cleft; stigma 10, according to Haworth.


Var. β, brevica (Haw. rev. p. 103.) Caudex shorter.

Difformia Fig-marigold. Fl. Aug. Clt. 1732. Pl. dec. 66 M. bigibbata (Haw. in phil. mag. nov. 1825. p. 329.) leaves obliquely somewhat cruciate, semi-cylindrical, pale green, varying at the apex, usually with 2 gibbosities; capsule depressed. 2. D. G. Native of the Cape of Good Hope. Very like M. difformia, but smaller and slenderer. Flowers yellow.


67 M. bidentatum (Haw. suppl. p. 89. rev. p. 103.) plant stemless; leaves semi-cylindrical, thick, soft, oblique at the apex, and difform, bearing 2 large, almost opposite, fleshy teeth in the middle. 2. D. G. Native of the Cape of Good Hope. Flowers large, yellow, on short peduncles; petals closely toothed at the apex. Capsule a little depressed.—The figure in Dill. hort. clt. f. 241. is referrible to this plant and not to the next.

with 1 obsolescent tooth on one side, and another stronger one on the other; flowers on short pedicels; calyx 4-cleft. 2. D. H. Native of the Cape of Good Hope.—Plum. mant. t. 325. f. 4. Flowers yellow, size of those of M. linguaformae. Styles 8.


69 M. dolabriforme (Lin. spec. p. 659.) young plant stemless, but as it grows old it becomes caulescent and erect; leaves glaucous, dotted, exactly dolabriform, i. e. depressed at the base, and compressed at the apex, obtuse, and somewhat emarginate; flowers on short pedicels. 2. D. G. Native of the Cape of Good Hope.—Dill. hort. elth. f. 287. D. C. pl. grass. t. 6. Curt. bot. mag. t. 32. Haw. obs. p. 366. misc. p. 37. syn. 1. p. 219. Flora, very short, opening in the evening. Styles 5, bilabiate, longer than the stamens.

Var. β, minus (Haw. i. e. c.). M. dolabriformoldeis, Haw. obs. 168.


70 M. carinans (Haw. rev. p. 90.) plant nearly stemless; leaves elongated, somewhat incurved and spreading, semiterete at the base, compressed at the apex, and dilated into a keel, whitish and dotted. 2. D. G. Native country and flowers unknown. M. eunae, Salm-Dyck. obs. p. 20. but not of Haw. Flowers by threes, yellow, expanding in the evening. Very like M. dolabriforme.


§ 10. Gibbonsa (from gibbons, crooked-backed or bunched; back of some of the leaves). Haw. rev. p. 104.—Abbreviata, Haw. misc. 1. p. 36.—I'maquioida gibbosa, Salm-Dyck. obs. p. 18. Plants nearly stemless. Leaves differentiated, conuate a great way at the base, large, unequal, one of which is short and gibbous, the other usually oblique. Flowers sessile, or on short pedicels, small, reddish. Calyx 6-cleft. Stigmas 6.


Obusulate-leaved Fig-marigold. Clt. 1796. Pl. ½ foot.


80 M. teretisculum (Haw. obs. 410. misc. 27. exclusive of the synonyms) plant stemless; leaves triquetrously terete, firm, thick, green, dotted. 2. D. G. Native of the Cape of Good Hope. Leaves 2 inches long. Flowers unknown, but probably red.

Narly terete-leaved Fig-marigold. Clt. 1794. Pl. ½ foot.

§ 15. Bellidiflora (from bellis, a daisy, and flos; a flower; the flowers bear some resemblance to those of the daisy). Haw. rev. p. 106. Plants stemless or caulescent. Leaves triquetrous, s 2
acute at the angles, toothed at the apex. Flowers solitary, pedicellate. Petals purple on the ribs and white on the margins.

Calycx 5-cleft. Capsule 5-celled. Stigmas numerous, small, hair-formed.

81 M. bellidiflorum (Lin. spec. p. 69.) caudex short, suffrutescent; leaves triquetrous, compressed, rather acinaciform, dentilicate at the apex; pedicels short. \( \ddot{\alpha} \). D. G. Native of the Cape of Good Hope. Petals red and white.

Var. \( \beta \), glaucéscens (Haw. rev. p. 105.) leaves rather glaucous, with the teeth in 3 rows at the apex.—Dill. elth. f. 253.

Var. \( \gamma \), viride (Haw. rev. p. 105.) leaves pale green, toothed beneath on the keel.

Daisy-flowered Fig-marigold. Fl. June, Aug. Cl. 1717. Pl. \( \frac{1}{4} \) foot.

82 M. subula'tum (Mill. dict. ed. 8. no. 10.) caudex branched; leaves rather glaucous, triquetrously subulate, dentilicate at the apex. \( \ddot{\alpha} \). D. G. Native of the Cape of Good Hope. Haw. syn. 208. M. bellidiflorum simplex, D. C. pl. grass. t. 41. Flowers reddish. The plant is very like \( M. \) bellidiflorum, but is much smaller and more branched.

Subulate-leaved Fig-marigold. Fl. Ju. Jul. Cl. ? Pl. \( \frac{1}{4} \) ft.

83 M. Bartramii (Haw. rev. p. 106.) flower-stems erect, simple; leaves triquetrous, with 3 rows of teeth at the apex; pedicels rather elongated. \( \ddot{\alpha} \). D. G. Native of the Cape of Good Hope.—Bartram. af. t. 25. This species is hardly known.

Bartram's Fig-marigold. Pl. \( \frac{1}{4} \) foot.

§ 14. \( \dot{A} \)cuta (from acutus, acute; leaves acute). Haw. rev. 107. Plants stemless or nearly so. Leaves semiterete, subulate, incurved, triquetrous at the apex, green, full of pellucid dots. Flowers pedicellate; petals deep purple. Calyx 5-cleft. Stigmas 10.


Acute-leaved Fig-marigold. Fl. Apr. Nov. Cl. 1793. Pl. \( \frac{1}{4} \) ft.

85 M. percutum (Haw. obs. p. 411. rev. 107.) plant smooth, stemless; leaves semiterete, triquetrous at the top, flat above, full of pellucid dots, pale green, furnished with a minute white point at the apex. \( \ddot{\alpha} \). D. G. Native of the Cape of Good Hope. Flowers unknown. Perhaps only a variety of \( M. \) diminutum.

Dotted-leaved Fig-marigold. Fl. April, Nov. Cl. 1793. Pl. \( \frac{1}{4} \) foot.


Var. \( \beta \), caduciflum (Haw. supp. 90. rev. 107.) stem half erect; leaves longer, and with larger dots, but is perhaps only an old plant.

Diminished Fig-marigold. Fl. Apr. Clt. 1789. Pl. \( \frac{1}{4} \) ft.


87 M. macrorhizon (Haw. i. c. D. C. 1. c.) stem very short; root large, tuberous; leaves connate, bluntly triquetrous, crowded, spreading; branches erect, bent; flowers 1-3 together, nearly terminal, pedicellate. \( \ddot{\alpha} \). D. S. Native of the Island of Bourbon, among scoria near the sea. Stems 3 inches high. Flowers small, white, numerous. The leaves have an acrid taste when eaten, as those of \( Salsola \). La Lavangere, Comm. and figure. Ficoide, De Pet. Th. mel. bot. p. 37.

Large-rooted Fig-marigold. Fl. Ju. Jul. Cl. 1823. Pl. \( \frac{1}{4} \) ft.

Subdivision II. Cephalophylla (from κεφαλη, cephalé, a head, and φυλλον, phyllon, a leaf; in reference to the leaves being collected in heads at the tops of the branches). Haw. rev. 108. Stems suffrutescent, decumbent. Leaves long, triquetrous, or nearly cylindric, disposed in heads. Flowers pedunculate, yellow. Calyx 5-cleft. Stigmas 10-20. —This division is perhaps not very natural.


88 M. \( \ddot{\alpha} \)tum (Haw. syn. p. 229. rev. 108.) stems prostrate, rather nodose: adult ones nearly terete; leaves crowded in heads, semi-cylindrically triquetrous, elongated, recurved, rather glaucous. \( \ddot{\alpha} \). D. G. Native of the Cape of Good Hope.—Dill. elth. f. 255. Peduncles solitary, an inch and a half long, bibracteate at the base. Flowers straw-coloured. Calyx 5-cleft. Styles 15-18.

Var. \( \beta \), congestum (Haw. l. c.) plant more greenish; lower pair of leaves very long.

Thong Fig-marigold. Fl. Sept. Cl. 1782. Pl. pr.


Var. \( \alpha \), glaucum (Haw. l. c.) leaves rather glaucous.

Var. \( \beta \), breceiflum (Haw. l. c.) leaves shorter than in any of the other variations.

Var. \( \gamma \), lecé-ctiricus (Haw. l. c.) leaves pale green.

Var. \( \delta \), atroviiicums (Haw. l. c.) leaves dark green.


90 M. decipiens (Haw. rev. p. 110.) stems prostrate, with rather distant nodi; leaves rather crowded, long, arcuately ascending, triquetrously semi-cylindric, green, shining, minutely and finely wrinkled. \( \ddot{\alpha} \). D. G. Native of the Cape of Good Hope. Flowers pale yellow.

Deceiving Fig-marigold. Fl. May. Cl. 1820. Pl. pr.

91 M. fucum (Haw. misc. p. 39. syn. 251. rev. 110.) stems prostrate, nearly terete, with the nodi contiguous; leaves rather crowded, longish, triquetrously semi-cylindric, ascending, green, shining; stigmas 12. \( \ddot{\alpha} \). D. G. Native of the Cape of Good Hope.—Brasil. succ. t. 40. Petiv. gaz. 77. f. 10. Leaves 2 inches long, but shorter than those of \( M. \) corniculatum. Peduncels terminal, shorter than the leaves. Petals sulphur-
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Horned Fig-marigold. Fl. May. Clt. 1732. Pl. pr.

§ 17. Procumbentia (procumbens, procumbent; plants). Haw. in phil. mag. dec. 1826. p. 329. Old stems procumbent. Leaves connate at the base, long, semicircular or cylindrical.

93 M. procumbens (Haw. rev. 111.) stems flexuous, procumbent; leaves by pairs, recurved, connarum, semi-cylindrically triquetrous, glaucescent. γ. D. G. Native of the Cape of Good Hope. M. däbium, Salm-Dyck. obs. p. 22. Allied to M. tricolor, but the leaves are shorter and more expanded, etc.


95 M. purpureo-album (Haw. in phil. mag. dec. 1826. p. 329.) branches short, angular, prostrate, furrowed, yellowish; leaves green, triquetrous semi-cylindrical, full of little dots, upper ones crowded. γ. D. G. Native of the Cape of Good Hope. Peduncles filiform. Flowers showy; petals white, polished, naked, with a broad, dark, purple line. Styles 10, reddish.


§ 18. Capitata (from capitatus, headed; leaves crowded into heads at the top of the stems or branches). Haw. syn. 227. rev. 111. Salm-Dyck. obs. p. 30. Caespitose erect, much branched. Leaves crowded at the tops of the branches, alternate, very long, triquetrous, or semi-terete, without either dots or papule. Floriferous branches disposed in something like whorls, decumbent. Peduncles bracteate at the base. Flowers large, yellow. Calyx 5-lobe; lobes elongated. Petals ciliate at the base. Stigmas 10-20. The species are very nearly allied to each other.

96 M. pugioniforme (Linn. spec. 699.) stem suffrutescent, erectish; branches few, terete, decumbent; leaves alternate, crowded at the tops of branches, glandous, triquetrous; petals shorter than the calyx; stigmas 15, expanded. γ. D. G. Native of the Cape of Good Hope.—Breyn. bot. reg. f. 269. Bradl, succ. t. 14. D. C. pl. grass. t. 82. Haw. misc. 42. syn. 218, rev. 112. Flowers large, pale yellow. Perhaps the flesh-coloured and purple-flowered varieties mentioned in Breyn. cent. p. 164. belong to this species.


Var. β. rhagionginus (Haw. l. c.) stem a little branched.


Var. γ. minor (Haw. l. c.) corolla a little smaller; petals hardly ciliate. Ker. bot. reg. t. 493.


Elongated Fig-marigold. Fl. May. Clt. 1793. Sh. 1 foot.


101 M. gemeniflorum (Haw. rev. 114.) stem shrubby, diffuse; branches elongated, slender, creeping; leaves triquetrous, nearly equal-sided, rather connate at the base, acute, and a little hooked at the apex; pedicels twin or tern; stigmas 5. γ. D. G. Native of the Cape of Good Hope. M. geminatum, Jacq. fragm. t. 50. but not of Haw. Petals purple. Flowers hardly half an inch in diameter. Leaves 12-15 lines long, scabrous from elevated dots.

Twin-flowered Fig-marigold. Clt. 1819. Pl. creeping.

102 M. simplex (Haw. rev. p. 115.) stems shrubby, firm, procumbent; leaves triquetrous, equal-sided, glaucescent, full of very small dots, straight at the apex, longer than the internodes; margins not scurculated. γ. D. G. Native of the Cape of Good Hope. Flowers unknown. Allied to M. gemeniflorum, but the branches are shorter; and to M. laxum, but the internodes are shorter.

Similar Fig-marigold. Clt. 1819. Pl. pr.

103 M. laxum (Wildler. enm. p. 536.) stem loose, diffuse, shrubby; branches creeping, very slender; leaves connate, compressed, triquetrous, more green than the others, tubercularly dotted, usually shorter than the internodes: with the margins and keel finely dentilicate. γ. D. G. Native of the Cape of Good Hope. Haw. rev. 115. Flowers reddish.

Loose Fig-marigold. Fl. May. Clt. 1820. Pl. creeping.

104 M. sarmentosum (Haw. syn. 228. rev. 115.) stem shrubby, diffuse; branches prostrate, rooting, sarmentaceous; leaves crowded, compressed, triquetrous, pale green, roughish on the edges; peduncles club-shaped above; stigmas 5. γ. D. G.

**Twiggy Fig-marigold.** Fl. April. Clt. 1805. Pl. pr.

105 M. rigidicaule (Haw. rev. p. 116.) stem firm, procumbent, not pendulous; leaves long, triquetrous, equal-sided, straight, with roughish margins. h. D. G. Native of the Cape of Good Hope. The rest unknown.


106 M. validum (Haw. in phil. mag. dec. 1826. p. 329.) leaves long, pale green, with roughish margins; branches robust, stiff, succulent; flowers usually by threes; keel of bracteas entire. h. D. G. Native of the Cape of Good Hope. Flowers showy, rose-coloured, with a deeper coloured line in the middle.

**Strong Fig-marigold.** Fl. May. Ju. Clt. 1824. Pl. pr.


108 M. repens (Ait. horst. kew. vol. 2. p. 185.) stems filiform, very slender, creeping; leaves much crowded, triquetrous, acute, glaucous, scabrous from large succulent dots. h. D. G. Native of the Cape of Good Hope. Flowers reddish. (ex Ait.), yellow (ex Salm-Dyck.), rarely flowering (ex Haw. obs. p. 349. misc. 80. syn. 215. rev. 191.).


**Thick-leaved Fig-marigold.** Fl. May. Aug. Clt. 1727. Pl. cr.

110 M. Devil (Haw. in phil. mag. dec. 1826. p. 331.) plant smooth; branches filiform, a little compressed; leaves crowded about the knots of the creeping stems, bluntly and acicnofirnly triquetrous, glaucous. h. D. G. Native of the Cape of Good Hope. This species differs from *M. repens* in being smooth, not rough. Flowers unknown.

**Weak Fig-marigold.** Clt. 1824. Pl. creeping.

111 M. clavellatum (Haw. misc. 79. syn. 242. rev. 122.) branches angular, creeping; leaves crowded, expanded, oblong-ovates, triquetrous, firm, clavate, very blunt, mucronulate, green; peduncles rather compressed; stigma 5, very slender. h. D. G. Native of New Holland. Flowers like those of *M. crassifo-
lium, but more beautiful and of a deeper red. Calyx 5-stigma; stigmas sessile, green.


**Filamentous Fig-marigold.** Fl. Nov. Dec. Clt. 1795. Pl. pr.

114 M. tuberculatus (Haw. rev. p. 77. syn. 229. rev. 117.) stem shrubby, when young erect; branches eectly decumbent; leaves compressed, triquetrous, rather acicniform, and rather glaucous, usually longer than the internodes, with the margins minutely serrulato, but hardly cardulato; flowers solitary; stigma 5, expanded. h. D. G. Native of the Cape of Good Hope. Willd. enum. p. 536. Flowers middle-sized, pale purple. There is a more dense variety, and a greenish one.


116 M. edule (Lin. spec. 695.) branches expanded, with quite entire angles; leaves equally triquetrous, dotless, a little channelled, attenuated at both ends, with the keel serrulato; stigma 8. h. D. G. Native of the Cape of Good Hope.—Dill. edh. f. 274. Seb. thes. l. t. 19. f. 6. Haw. obs. 392. misc. 76. syn. 234. rev. 110. Flowers large, yellow. Calyx 5-stigma; capsule 5-celled, with the baccato calyx edible. Rarely flowering in the garden.

**Edible Fig-marigold or Hottentot Fig.** Fl. July. Aug. Clt. 1690. Shrub pr.

Flowers large, reddish. There are two varieties of this species, one with short and the other with longer branches.

**Scymnium-forsted-leaved Fig-marigold.** Fl. Aug. Sept. Cl. 1714. Shrub pr.


119 M. **rubrocostatum** (Haw. syn. p. 284. rev. 118.) stems rather procumbent, long; leaves aciciniform, with rough red edges and keel. p. D. G. Native of the Cape of Good Hope. There is a variety of this species with thicker and more compressed leaves.

Red-bordered-leaved Fig-marigold. Fl. May. Cl. 1811. Pl. pr.

120 M. **subalatum** (Haw. misc. 76. syn. 235. rev. 199.) branches 2-edged at the apex, somewhat undulate winged; leaves compressed, triquetrous, equal-sided, dotless, rather aciciniform, with cartilaginous margins, which are scabrous on both sides. p. D. G. Native of the Cape of Good Hope. Flowers unknown, but probably reddish.

**Radder-winged Fig-marigold.** Cl. 1796. Shrub pr.

121 M. **lacereum** (Salm-Dyck. obs. 1820. p. 31.) stem shrubby, erect; branches erectly spreading, 2-edged; leaves rather aciciniform, acutely triquetrous, rather compressed, glaucous, full of pellucidal dots: with the keel lacerately toothed; stigmas 10, very short, approximate. p. D. G. Native of the Cape of Good Hope. *M. aciciniforme*, D. C. pl. grass. t. 80. M. diminutum, and probably M. lacereum, Haw. rev. 119. and 131. M. Milleri, Willd. enum. suppl. 31. and M. gladiatum, Jacq. ex Salm-Dyck. Flowers large, red, opening in the sun; petals linear, very numerous. Calyx 5-cleft; lobes leaf-formed. Stigmas for the most part 10, but sometimes even to the number of 20.

**Jagged-keeled Fig-marigold.** Cl. ? Shrub 1 to 2 feet.

122 M. **virens** (Haw. rev. 121.) stem erectish; branches at length spreading; leaves compressed, triquetrous, rather aciciniform, smooth, dotted, green, pustulate on the inside at the base, having the keel roughish at the apex. p. D. G. Native of the Cape of Good Hope. Flowers reddish, disposed by threes. This species hardly belongs to this section, according to Salm-Dyck.

*Green Fig-marigold.* Fl. June. Cl. 1821. Pl. 1 foot.

§ 23. Carnicaflora (from caro, carnis, flesh, and caulisc, a stem; stems fleshy while young). Haw. in phil. mag. dec. 1826. p. 330. Stems usually elongated, weak, prostrate, and creeping: when young thick and fleshy. Leaves triquetrous, with the sides nearly equal, thick, usually soft. Flowers solitary, terminal, reddish, large, showy, and hexagonal. Capsule pulpy on the outside, even when ripe.

123 M. **equilateral** (Haw. misc. 77. syn. 237. rev. 120.) stems weak, prostrate; leaves almost equally triquetrous, greenish; peduncles angular, thickening towards the top; calyx 5-cleft; stigmas 5, short, erect. p. D. G. Native of New Holland. Flowers showy, reddish.

*Var. beta, decuminatum* (D. C. prod. 3. p. 429.) stigmas 10; branches shorter.

Equal-sided-leaved Fig-marigold. Fl. Ju. Cl. 1791. Sh. pr.

124 M. **glaucescens** (Haw. syn. p. 236. rev. 120.) stems robust, decumbently prostrate; young leaves a little incurved, triquetrous, with the sides equal, soft, glaucous: with cartilaginous, smoothish margins; flowers solitary, sessile; stigmas 7. p. D. G. Native of New Holland. Branches furrowed at the top. Calyx 5-cleft. Petals pale purple.

**Glaucescens** Fig-marigold. Fl. July. Cl. 1804. Sh. pr.

125 M. **Rossii** (Haw. rev. p. 120.) stems decumbently prostrate; leaves aciciniform, or compressedly triquetrous, glaucous, with red, smooth, cartilaginous edges. p. D. G. Native of Van Diemen's Land. Flowers unknown. Very like *M. glaucescens*.

**Ross's Fig-marigold.** Cl. 1820. Shrub pr.

126 M. **abbevillanum** (Haw. in phil. mag. dec. 1826. p. 330.) plant tufted; stems short, coarse, and prostrate, crowded; leaves acutely triquetrous, thick, green, much longer than the internodes, which are short. p. D. G. Native of New Holland. This species comes very near to *M. glaucescens*, but the leaves are more crowded. Flowers not seen.

**Short-stemmed Fig-marigold.** Cl. 1823. Shrub pr.

127 M. **virens** (Haw. syn. p. 236. rev. 120.) stems decumbently prostrate; leaves triquetrous, with the sides nearly equal, greenish; peduncles terminal, solitary, 2-edged, winged; calyx 4-cleft; stigmas 5, filiform. p. D. G. Native of New Holland. Corolla showy, pale red; petals white at the base, and obtuse at the apex.

**Greenish Fig-marigold.** Fl. June. Cl. 1804. Shrub pr.

**Subdivisions IV. Pertolia A.** From per, through, and follicum, a leaf; stem running through the leaves. Haw. rev. p. 123. Usually erect shrubs, with erect or decumbent branches. Leaves opposite, connate, and sheathing at the base, usually triquetrous towards the top, and for the most part hooked at the apex. Flowers white, red, or reddish. Calyx 5-cleft. Stigmas 5.

§ 54. Forcicata (from forcis, a pair of scissors; form and disposition of leaves). Salm-Dyck. obs. p. 83.—*Forficata* Geminiata, &c. Haw. Stems stenodent; branches erect or decumbent. Leaves opposite, triquetrous, compressed, scissor-shaped, erect, with the carinal angle drawn out. Flowers reddish, solitary, on short peduncles. Calyx 5-cleft; petals very narrow. Stigmas 5, short, thick.

128 M. **heterophyllum** (Haw. misc. 67. syn. 294. rev. 128.) stem shrubby, short; branches crowded, ascending; leaves crowded, glaucous, compressed, triquetrous, rather aciciniform: with cartilaginous edges, and a jagged keel; petals unequal, shorter than the calyx, which is large and 3-horned; stigmas 5, very short. p. D. G. Native of the Cape of Good Hope. Willd. enum. suppl. 36. Petals white.

**Various-leaved Fig-marigold.** Fl. May, Aug. Cl. 1794. Shrub 1 to 2 feet.

129 M. **mutabile** (Haw. obs. 377. misc. 74. syn. 294. rev. 133.) stem shrubby, erect; branches 2-edged; leaves nearly distinct, crowded, triquetrous, dotted: with a cartilaginous, entire keel; petals subulate; stigmas 5, short, thick. p. D. G. Native of the Cape of Good Hope. Flowers reddish.

**Changeable Fig-marigold.** Fl. Jul. Sept. Cl. 1792. Sh. 1½ ft.

130 M. **glaucescens** (Haw. suppl. 97. rev. 132.) stem shrubby, erect; leaves much crowded, compressed, triquetrous, rather aciciniform, glaucous, entire, with subcartilaginous edges, a little dotted; petals subulate; stigmas 5, short, thick. p. D. G. Native of the Cape of Good Hope. Flowers reddish. Perhaps sufficiently distinct from *M. mutabile*.

**Glaucous Fig-marigold.** Fl. Jul. Aug. Cl. ? Shrub 1½ ft.


*White-edged-leaved Fig-marigold.** Cl. 1793. Shrub ½ ft.

132 M. **inclemens** (Haw. syn. 295. rev. 133.) stem shrubby; leaves triquetrous, rather deltoid, smooth, green, with a gibbous
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134 M. Geminatum (Haw. misc. p. 92. syn. 280. rev. 123.) stems suffrutescent, dwarf; branches dichotomous, ascending; leaves coarsely a long way, triquetrous, erect, glaucous, smooth, cartilaginous at the margins. ʒ. D. G. Native of the Cape of Good Hope. Flowers unknown, but probably white.

Twin-shot Fig-marigold. Clt. 1792. Shrubb 1 foot.


Calyx 5-cleft. Stigmas 5.

135 M. Rostellatum (Haw. rev. 123.) stems branched, prostrate; leaves beaked, connate, semi-terete, subulate, recurved, dotted, green; peduncles claveate, bilabiate at the base; stigmas 5, spreading. ʒ. D. G. Native of the Cape of Good Hope. Calyx with 5 long lobes. Corolla expanded before meridian, whitish, tipped with red.


Calyx 5-cleft. Stigmas 5-7.


Var. ʒ. monacanthum (Brall. succ. f. 26.) keel of leaves furnished with only one tooth beneath.

Var. γ. cedileatum (Haw. rev. p. 125.) keel of leaves toothless. Burm. afr. t. 28. f. 3.

Perfoliate-leaved Fig-marigold. Fl. June, Aug. Clt. 1714. Shrubb 1 to 3 feet.

137 M. Uncinellum (Salsa-Dyck, in litt. and Haw. rev. p. 124.) stem shrubby, erect, with numerous branches; leaves connate and sheathing at the base, rather recurrent, triquetrous, thick, whitish, dotted, recurved at the apex; keel furnished with one tooth beneath. ʒ. D. G. Native of the Cape of Good Hope. — Dill. cthl. f. 239. Flowers reddish.


138 M. Semidentatum (Haw. suppl. 95. rev. 125.) stem shrubby, with simple striated branches; leaves connate and sheathing at the base, triquetrous, compressed, white, dotted; keel furnished with 1-4 teeth. ʒ. D. G. Native of the Cape of Good Hope. Salis-Dyck, obs. 1850. p. 9. Leaves 2 inches long. Flowers on short peduncles, reddish. Differs in the length of the leaves from M. perfoliatum.


139 M. Uncinatum (Mill. dict. ed. 8. no. 18.) stem shrubby; erect; leaves connate, and sheathing at the base, rather decurrent, green, dotted, triquetrous, furnished with 2 spines underneath at the apex. ʒ. D. G. Native of the Cape of Good Hope. Peduncles claveate, bilabiate, axillary. Calyx 5-cleft. Petals pale red, expanded both by night and by day.


141 M. Victoride (Haw. in phil. mag. Dec. 1826. p. 331.) plant depressed, stiff; branches crowded; leaves rather acuminated, white, with large dots; keel bearing one tooth near the top. ʒ. D. G. Native of the Cape of Good Hope. Leaves less perfoliate than any other of the section. Flowers not seen.

One-toothed Fig-marigold. Clt. 1824. Shrubb ½ to 1 foot.


142 M. Tumulatum (Haw. syn. p. 286. rev. 129.) stem erect, with spreading branches; leaves connate and sheathing at the base, remote, green, smooth, rather recurved at the apex; sheaths tundate at the top. ʒ. D. G. Native of the Cape of Good Hope. Leaves an inch and a half long. Flowers reddish.

Tufted sheathed Fig-marigold. Fl. March. Clt. 1802. Shrubb 2 feet.

143 M. Fuligulus (Haw. misc. 97. syn. 287. rev. 130.) stem erect, much branched; branches crowded, hardly erect; leaves connate and sheathing at the base, rather glaucescent, smooth, crowded, obtuse, ending in a rather recurved mucrone; sheaths thickened at the top. ʒ. D. G. Native of the Cape of Good Hope. Leaves an inch long. Petals reddish, with a deeper coloured line. Stigmas 5, expanded at length.

Leafy Fig-marigold. Fl. Sept. Clt. 1802. Shrub 2 to 3 ft.

144 M. Umbellatum (Lin. spec. 689.) stem erect, with erecely spreading branches; leaves connate and sheathing at the base, remote, nearly terete, and rather glaucescent, searros from dots, slender, recurved at the apex; sheaths tundate at the apex. ʒ. D. G. Native of the Cape of Good Hope. — Dill. cthl. f. 266. Haw. obs. p. 526. misc. 97. syn. 287. rev. 129. Leaves 1-2 inches long. Peduncles furnished with 2 bracteas. Flowers middle-sized, white.

145 M. Imbricatum (Haw. obs. p. 317. misc. 96. syn. 285.)
rev. 128.) stem and branches erect, subtetragenial; leaves connate and sheathing at the base, glaucous, remote, smooth, dotted, rather compressed, trigonous; calyx tubinate, much attenuated at the base. D. G. Native of the Cape of Good Hope. Peduncles bracteate even to the calyx. Corolla white, nearly an inch in diameter. Leaves nearly an inch long. 

Var. β, majus (Haw. syn. 285.) leaves green, an inch and a half long.

Imbricated-leaved Fig-margarild. Fl. July. Clt. 1792. Shrub 2 to 3 feet.

146 M. multiflorum (Haw. obs. p. 318. misc. 96. syn. 285. rev. p. 128.) stem and branches erect; leaves connate and sheathing at the base, remote, glaucous, somewhat compressed, trigonous, smooth, dotted; calyx cylindrical, hardly attenuated at the base. D. G. Native of the Cape of Good Hope. Peduncles bracteate even at the calyx. Flowers white, larger than those of M. imbricatum.—Plnt. phy: t. 117. f. 1.

Var. γ, rubrum (Haw. syn. 285.) flowers reddish; leaves greenish. Perhaps a proper species.

Var. ε, petens (Haw. l. c.) stem spreading; flowers solitary. M. petens, Willd. enul. suppl. p. 37.

Var. ω, nitens (Haw. l. c.) smooth; branches spreading; leaves green. Perhaps a proper species.


147 M. rigatum (Haw. misc. 95. syn. 283. rev. 127.) stem erect; branches very stiff, spreading a little; leaves connate, and sheathing at the base, horizontal, and are, as well as the sheaths, glabrous, but with the keel sebraous at the apex. D. G. Native of the Cape of Good Hope. Allied to M. feuilleum. Leaves 3 lines long. Peduncles bracteate nearly to the apex. Petals snow white, shining.


148 M. tendellum (Haw. obs. 315. misc. 94. syn. 283. rev. 127.) stem erect, bushy; branches filiform, decumbent; leaves connate and sheathing at the base, rather spreading, slender, and are, as well as the sheaths, sebraous at the margins. D. G. Native of the Cape of Good Hope. Flowers pinnate, snow white. Calyx 4-5-cleft. Stigmas 5, erect, subulate. Leaves 3 lines long, glau-}

Plum Fig-margarild. Fl. Aug. Clt. 1792. Shrub 1 foot.

149 M. cirtum (Haw. syn. p. 324. rev. 126.) stem erect, bushy; leaves connate and sheathing at the base, usually approximated, incurved, smooth, green, with the angles rough at the top. D. G. Native of the Cape of Good Hope. Flowers unknown, but probably white.


Var. γ, minus (D. C. prod. 3. p. 432.) smaller in all its parts. M. hamatum, Willd. ex Haw. Perhaps a proper species.

Short-sheathed Fig-margarild. Shrub 1 to 1 1/2 foot.

150 M. acuta'sculum (Haw. in phil. mag. 64. p. 424.) stem erect, bushy; leaves connate and sheathing at the base, forming a kind of rectangle, trigonous, acuminate, incurved, green, with roughish margins. D. G. Native of the Cape of Good Hope. Allied to M. cirtum, but much more dwarf. Flowers unknown.

Acute-angled Fig-margarild. Clt. 1821. Shrub 3/2 to 1 foot.

151 M. vagnatum (Haw. misc. 95. syn. 284. exclusive of var. β, rev. 127. but not of Lam.) stem erect, bushy; leaves spreading, straight, remote, trigonous, rather recurved at the apex, and are, as well as the sheaths, green and glabrous, but

with the angles rough near the top. D. G. Native of the Cape of Good Hope. Flowers pinnate, white, small, numerous. Leaves an inch long.


152 M. fariniflorum (Haw. misc. 95. syn. 284. rev. 127. but not of Jacq.) stems and branches erect; leaves connate and sheathing at the base, glabrous, erectish; keel finely serrated. D. G. Native of the Cape of Good Hope. Peduncles bracteate even to the calyx. Corolla white, small. Leaves half an inch long.

Small-flowered Fig-margarild. Fl. Aug. Clt. 1800. Shrub 1 to 2 feet.

153 M. lineolatum (Haw. rev. p. 130.) stem short, depressed; branches spreading; leaves connate, incurved and a little recurved, obtuse, trigonous, with nearly equal sides, and having the keel roughish at the apex; sheaths with a short impressed line. D. G. Native of the Cape of Good Hope. Flowers small, terminal at the tops of the branches, solitary. Peduncles an inch long, compressed, smooth, bibracteate at the base. Calyx 5-cleft, wrinkled. Petals in one series, obtuse, reddish, with a deeper coloured middle line, expanded, rather incurved. Stamens collected; filaments white at the base, and reddish at the apex; anthers pale yellow. Styles 5, subulate, diverging in a stellate manner. This is rather an anomalous species, but it approaches nearest to the section Uncinata.

Var. γ, minus (Haw. l. c.) margins of leaves roughish.

Var. γ, nitens (Haw. l. c.) leaves shining, green.

preceding species, but smaller. Stigmas erect, hardly the length of the filaments. Capsule more depressed.

*Maricacate Fig-marigold. Fl. May. Clt. 1731. Sh. ½ foot.


* Flowers aggregate, reddish.


*a* "Lunate"-leaved Fig-marigold. Fl. July. Clt. 1812. Sh. 1 ft.

159 *M. falchoreum* (*Haw*. syn. 299. rev. 127.) stem suffrutico- us, at length decumbent; leaves much crowded, small, thick, falcate, acinaciform, glaucous, largely toothed; flowers somewhat fastigate. i. D. G. Native of the Cape of Good Hope. Flowers reddish, showy, an inch and a half in diameter.


* * Flowers solitary, rose-coloured or pale red.


163 *M. incurvum* (*Haw*. misc. p. 69, syn. 300. rev. 136.) stem suffruticosum, erect; branches slender, efluso, lefafs; leaves compressed, triquetrous, very glaucous, attenuated at both ends, acinaciform. i. D. G. Native of the Cape of Good Hope. Flowers pale red.

* Var. describe (Haw. syn. 300. rev. 137.) leaves gibbously dilated below, at length deflexed.
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Var. β, revolutum (Haw. rev. p. 135.) branches second, recurved.


§ 32. Scabrida (a dim. of scaber, rough; rough or scabrous leaves). Haw. misc. 71.—Scabra, Salm-Dyck, obs. 27.—Asperifolia, Haw. rev. 138. Stems suffruticosum; branches expanded, flat-like. Leaves more or less triquetrous, rather compressed, scabrous from dots, usually a little incurred. Flowers pedunculate, reddish, middle-sized.

* Stamens collected.

171 M. scabrum (Lin. spec. 692.) stem shrubby, branched; leaves rather triquetrous, green, straight, very rough from shining warts; lobes of calyx ovate, acuminate; petals created at the apex; stamens collected. η. D. G. Native of the Cape of Good Hope.—Dill. eph. f. 251.—Haw. obs. 345. misc. 71. syn. 267. rev. 138. Flowers rose-coloured.

Var. β, purpureum; flowers purple.

Scabrous Fig-margold. Fl. July. Clt. 1731. Sh. 1 foot.

172 M. versicolor (Haw. misc. 71. syn. 268. rev. 139.) stem shrubby, branched; leaves almost triquetrous, glaucescant, scabrous from warts; lobes of calyx ovate, acuminate; petals somewhat bidentate at the apex; stamens collected. η. D. G. Native of the Cape of Good Hope. Petals variable, expanding in the heat of the sun, of a shining white or silvery colour, but when closed in the morning and evening they are pale reddish.


173 M. retroflexum (Haw. misc. 71. syn. 269. rev. 139.) stem suffruticosum; branches decrement; bark white; leaves rather triquetrous, very glaucous, scabrous; lobes of calyx retroflexed; petals distal; stamens collected. η. D. G. Native of the Cape of Good Hope. M. emarginatae, Haw. obs. 343. M. leptaleum, Haw. rev. 140. and perhaps M. elegans, Jacq. schornbr. 4. p. 18. which is referred to by the Prince de Salm-Dyck, and therefore it is M. deflexum of Salm-Dyck, obs. 27. but not of Hawthor. Petals reddish.


174 M. americana (Haw. suppl. p. 94.) stem erect, shrubby; leaves linear, obliquely triquetrous, smoothish, of a whitish glaucous-colour, imbricately crowded at the tops of the canescent branches. η. D. G. Native of the Cape of Good Hope. Flowers red. Said to be allied to M. retroflexum.


175 M. deflexum (Ait. hort. kew. 2. p. 187.) stems shrubby, rather crowded, deflexed; leaves rather triquetrous, glaucous, roughish, attenuated downwards; petals numerous, much imbricately; stamens collected. η. D. G. Native of the Cape of Good Hope. Haw. obs. 347. misc. 71. syn. 269. exclusive of the synonyms, rev. 140. There are two varieties of this species, the one having the petals pale reddish and purplish at the base, the other having the petals of a deeper colour.


* * Stamens expanded.

176 M. polyanthum (Haw. syn. 270. rev. 140.) branches bushy, expanded, crowded; bark on young stems fuscous; leaves small, glaucous, triquetrous, scabrous; flowers very numerous, panicled; petals imbricately. η. D. G. Native of the Cape of Good Hope. Flowers small, very pale red. M. flexile, Haw. rev. 141. is only a variety of this species in a younger state, which has been confirmed by Salm-Dyck.

Many-flowered Fig-margold. Fl. Aug. Clt. 1803. Shrub 1 to 1½ feet.

177 M. polyphyllum (Haw. rev. 141.) branches bushy, decumbent, assurgent; leaves much glomerated, rather robust, somewhat incurvedly recurved, clavately and bluntly triquetrous, compressed, scabrous from dots, glaucous. η. D. G. Native of the Cape of Good Hope. Flowers pale red. Stamens expanded, as in M. emarginatum. Like M. deflexum, but double the size.


178 M. violaceum (D. C. pl. grass. t. 84.) stem shrubby, erect; branches expanded; leaves triquetrously semi-terete, rough from dots, acute, glaucous; peduncles 1-flowered, naked or bracteate at the very base; lobes of calyx spreading, unarmed, but prickle-formed. η. D. G. Native of the Cape of Good Hope. Haw. rev. 141. M. parvifolium, Lam. dict. 2. p. 482. exclusive of the synonyms. M. punctatum, Jacq. schornbr. t. 442. Flowers flesh-coloured, expanding in the heat of the sun. Stamens not collected, but rather expanded.


179 M. emarginatum (Lin. spec. 692.) branches expanded; leaves triquetrous, scabrous, glaucescent; peduncles bibracteate; lobes of calyx unarmed, but spine-formed; petals deeply emarginated at the apex. η. D. G. Native of the Cape of Good Hope.—Dill. eph. f. 220.—Haw. obs. 340. misc. 70. syn. 268. rev. 142. Flowers pale red, like those of M. violaceum. Stamens expanded.


§ 33. Braeecta (braeectatus, bracteate; flowers girded by bracteae). Salm-Dyck, obs. 28. Haw. rev. 145.—Adonna Inclusa, Haw. syn. 288. Stamens erect; shrubby; branches much compressed. Leaves distinct, triquetrous, hooked at the apex, more or less scabrous from dots. Flowers girded by 2—4 broadly ovate keeled bracteae, which clasp the calyx, solitary, reddish, always expanded; inner petals thread-formed.

180 M. braeectatum (Ait. hort. kew. 2. p. 185.) stem shrubby; erect; branches compressed, of a reddish brown colour; leaves green, triquetrous; bracteae 4, broadly ovate, keeled, clasping the calyx. η. D. G. Native of the Cape of Good Hope. Haw. misc. 90. syn. 289. rev. 143. Lodd. bot. cab. 251. Petals reddish, white at the base.


181 M. aescens (Haw. syn. 289. rev. 143.) stem shrubby; branches decumbent, 2-edged, of a brownish canescent-colour; leaves acinaeiformly triquetrous; sides rather membranous below; dots large, pellucid, elevated. η. D. G. Native of the Cape of Good Hope. Flowers of a deep red colour.

Var. β, pallidum (Haw. rev. 143.) branches of a rufous corpaery colour; leaves rather incurved; petals pale reddish.


182 M. gracile (Haw. rev. 145.) stem shrubby; branches very slender, straight; leaves glaucescent, slender, rather scabrous; bracteae ovate, acute, almost clasping the calyx. η. D. G. Native of the Cape of Good Hope. M. stellatum, Haw. obs. 416. misc. 91. syn. 290. but not of D. C. There are varieties of this species with deep red, and pale red flowers.


183 M. radatum (Haw. obs. 232. misc. 90. syn. 289. rev. 144.) stem shrubby; branches crowded; bark canescent; leaves glaucescent, attenuated, and hooked at the apex; bracteae t 2
broadly ovate, clasping the peduncles above. v. D. G. Native of the Cape of Good Hope.—Dill. elth. f. 249. Corolla reddish, larger than those of its allies.


184 M. compres'sum (Haw. obs. 326: not 416: misc. 91. syn. 239. rev. 145.) stem shrubby; branches rather compressed; leaves glaucous, tripetrous, with equal sides, very rough; bracts ovate, acute, clasping the tops of the peduncles. v. D. G. Native of the Cape of Good Hope. Flowers medium-sized, reddish. Perhaps M. compressum, Horn. hort. hafn. 2. p. 454, is the same species.


185 M. pa'tulum (Haw. syn. p. 334: rev. 145.) stem shrubby; branches hardly erect; leaves linear, half erect, glaucous, roughish from pellucid dots. v. D. G. Native of the Cape of Good Hope. This species comes near to M. compressum, but is less stiff, the leaves shorter and thicker, and the flowers are larger and paler.


186 M. as'perum (Haw. rev. p. 145.) stem shrubby; leaves compressed, tripetrous, longish, of a bluish green-colour, full of pellucid dots, very scabrous, hooked at the apex; keel furnished with one tooth. v. D. G. Native of the Cape of Good Hope. Flowers unknown. Perhaps this species does not belong to the present section.

Rough Fig-marigold. Clt. 1818. Shrub 1½ foot.

187 M. serrat'um (Lin. spec. 690.) stem erect, branched; leaves opposite, distinct, tripetrous, subulate, having the carinal angle serrated, with the serratures turned backwards. v. D. G. Native of the Cape of Good Hope.—Dill. elth. f. 228. Flowers solitary, terminal, pedunculate. Calyx 5-cleft, attenuated at the base. Petals yellow, copper-coloured at the apex. Stigmas 5, short, obtuse, approximate. This species was formerly cultivated by Dillenius, but has now vanished from the gardens, and is therefore very little known.

Serrate-keeled Fig-marigold. Fl. June, July. Clt. 1707. Shrub 1 to 2 feet.

§ 34. Confôrtâ (from conferre, crowded thick together; branches). Haw. syn. 290. Salm-Dyck, obs. 29.—Eximia and Bländia, Haw. rev. 145-147. Stems shrubby; branches crowded, ascending. Leaves opposite, rather conuate, crowded, tripetrous, entire, acute, with the angles smooth. Flowers pedunculate, solitary or by threes, showy, expanding in the sun, reddish or pale rose-coloured.

188 M. am'num (Salm-Dyck in litt. ex D. C. prod. 3. p. 436.) stem branched, shrubby; leaves green, crowded, elongated, nearly tripetrous, bluntish, with a mucron; flowers terminal, showy, disposed by threes. v. D. G. Native of the Cape of Good Hope. Flowers red.

Pleasing Fig-marigold. Shrub 1 foot.

189 M. roûtânum (Haw. rev. 115.) stems suffruticoso, humpy; branches rather decumbent, elongated; leaves tripetrous, long, green, glittering in sunshine, much crowded, but more remote on the branches; flowers terminal, disposed by threes; stigmas 5-6, shorter than the filaments, rather lanceolate. v. D. G. Native of the Cape of Good Hope. Petals beautiful red, blunt.


190 M. spec'tâile (Haw. obs. 385: misc. 68. syn. 240. rev. 145.) stems rather humble; floriferous ones ascending or erect; leaves glaucous, tripetrous, and are, as well as the branches, crowded; stigmas 5, ovate, one-half shorter than the stamens, which are white. v. D. G. Native of the Cape of Good Hope. Curt. bot. mag. t. 396. D. C. pl. grass. t. 153. Leaves rather connate, sometimes furnished with one tooth at the top of the keel. Flowers beautiful reddish, 2 inches in diameter.


191 M. cacatu'rum (Mee.) Haw. syn. 290. (Lin. rev. 146.) floriferous stems erect; leaves green, glittering in sunlight, tripetrous, and are, as well as the branches, crowded; stigmas lanceolate, length of the stamens. v. D. G. Native of the Cape of Good Hope. M. conspicuum, Spreng. nov. prov. 27, but the leaves are there said to be semi-terete. Flowers beautiful red.


192 M. tur'bu'tum (Jacq. hort. vind. t. 476.) stem shrubby, branched, diffuse; leaves glaucous, elongated, acute, tripetrous, crowded; flowers on long peduncles, reddish; ovariurn contracted into a neck beneath the calyx. v. D. G. Native of the Cape of Good Hope. Petals numerous, linear, spreading much. Salm-Dyck, in litt.

Turbinate Fig-marigold. Shrub 1 foot.

193 M. blàndum (Haw. suppl. 95. rev. 147.) stem shrubby; branches numerous, compressed, ascending; leaves compressed, tripetrous, crowded, narrow, acutish, smooth; peduncles equal, longer than the bracteas; stigmas 5, short, ramanteceous. v. D. G. Native of the Cape of Good Hope. Ker. bot. reg. 582. Lodl. bot. cab. 599. Flowers large, at first white, but at length rose-coloured or pale red. Branches of a rufous chestnut colour. There are varieties of this species with glaucous and green leaves.


194 M. cu'vifólium (Haw. rev. p. 47.) stem shruppy, branches robust, terete; leaves compressed, tripetrous, glaucous; peduncles elevate, length of bractees; petals incurved. v. D. G. Native of the Cape of Good Hope. Branches rufous or boy-coloured. Leaves twice the thickness of those of M. bländum, to which it is nearly allied, and the corolla is less open. It is, however, perhaps only a variety of it.

Curred-leaved Fig-marigold. Fl. Ju. Clt. 1818. Sh. 1½ ft.


195 M. tetra'gonum (Thum. prod. 91.) stem erect, tetragonal, shrubby; leaves e cylindrically trigonal. v. D. G. Native of the Cape of Good Hope. Haw. rev. 149. Corolla yellow. This species is omitted by Haworth.

Tetragonal-stemmed Fig-marigold. Shrub 1 foot.

196 M. stràctum (Haw. misc. 82. syn. 262. rev. 149.) stem woody, branched, very stiff, straight; leaves tripetrous, obtuse, expanded, glaucous, beset with large dots. v. D. G. Native of the Cape of Good Hope. This species grows 2 or 3 feet high in the gardens, but has never yet flowered. But from a specimen of it received from the Cape by Haworth, they are said to be showy and yellow.

Straight Fig-marigold. Clt. 1795. Shrub 2 to 3 feet.

197 M. cym'boforme (Haw. obs. 264. misc. 82. syn. 263. rev. 149.) stems suffruticoso; branches e erctissim, filiform, crowded; leaves tripetrous, boat-shaped, spreading, glaucous. v. D. G. Native of the Cape of Good Hope. Flowers unknown. Perhaps M. sessile, Thum. fl. cap. 419, belongs to this species, which Thumberg says has red flowers.

Boat-formed-leaved Fig-marigold. Clt. 1793. Sh. 1 ft.

198 M. molle (Ait. hort. kew. 2. p. 192.) branches crowded, 2-edged, decumbent; leaves spreading, turbidly tripetrous, firm, canescent, with the margins blunt, and lined with dots. v. D. G. Native of the Cape of Good Hope. Haw. obs.
misc. 83. syn. 201. rev. 149. Flowers solitary, red, small, and terminal.


199 M. Thunbergii (Haw. rev. p. 150.) stem decumbent, articulated; leaves coniate, trigonal, smooth, dotless, erect; flowers solitary, terminal. f. D. G. Native of the Cape of Good Hope. M. le'Ve, Thumb. fl. cap. 425. but not of Air. Flowers yellow. Calyx 4-cleft. Perhaps this species appears to be intermediate between M. aureum and M. cymboforme.

Thunberg's Fig-margiold. Shrub decumbent.

200 M. cymboforme (Haw. in phil. mag. 1824. vol. 64. p. 124.) stem shrubby, erectish; branches few, 2-edged, hoary; leaves trigonal, boat-shaped, pale green, beset with large dots. f. D. G. Native of the Cape of Good Hope. Flowers unknown. This species appears to be intermediate between M. aureum and M. cymboforme.

Boat-leaved Fig-margiold. Clt. 1822. Shrub 1 to 2 feet.

§ 56. Airaea (from aureus, of gold; in reference to the yellow flowers). Haw. rev. 148.—Æquatorvilà, Salm-Dyck, obs. 33.—Frequentiflora, Haw. syn. 263. exclusive of some species. Stems suffruticosum, and are as well as the branches erect. Leaves distinct, dotted, blunter or acutely triquetrous, elongated, glaucous. Flowers large, solitary, yellow, or copper-coloured, expanding in sun-shine. Stigmas thick.


Orange-coloured-flowered Fig-margiold. Fl. June, Aug. Clt. 1793. Shrub 1 to 2 feet.


Subdivision VI. Teretiuscula (a dim. of teres, cylindrical; leaves nearly cylindrical). Haw. rev. 150. Subshrubs. Leaves distinct, rarely connate at the base, nearly terete, without any papule. Calyx 5-cleft. Stigmas 5, except in one of the species, which vary to 7.


204 M. verruculum (Lin. spec. 696.) stem erect; leaves much crowded, very glaucous, cylindrical, hardly triquetrous, obtuse, and a little mucronate, sebaceous, longer than the internodes. f. D. G. Native of the Cape of Good Hope.—Dill. fl. 259. D. C. pl. gr. t. 56. Haw. obs. 260. misc. 81. syn. 258. rev. 155. Flowers small, yellow, subumbellate, expanding in the evening. The stigmas are said to be 5, but Dillenius has seen them varying from 5-7.

Warted Fig-margiold. Fl. May, Ju. Clt. 1731. Sh. 1½ ft.

§ 58. Creceia (from croceus, like saffron; colour of flowers). Haw. in phil. mag. aug. 1826. p. 128. Sub-shrubs with second branches. Leaves thick, of a bluish glaucous colour, semi-terete at the base, obsolescently triquetrous at the apex. Flowers terminal, solitary, small, or middle-sized, scentless, at first yellow, but as they become older change to a copper-colour. Peduncles succulent. Calyx succulent, unequal.

205 M. vultuum (Haw. in phil. mag. aug. 1826. p. 128.) leaves obtuse; flowers small; stem branched, erect, stiff, with the nodules tumid, and throwing out roots. f. D. G. Native of the Cape of Good Hope. This species comes very near M. verrucum, var. γ. florco-cróceus, but is taller, more slender, and more branched, and the leaves and flowers are much smaller. Corolla pale yellow, but becoming of a deeper colour as they fade.

Yellow-flowered Fig-margiold. Fl. June, July. Clt. 1820. Shrub 1 to 2 feet.

206 M. luteolum (Haw. l. c. p. 120.) leaves crowded, at the apex, and a little recurved; branches slender and dense; flowers small. f. D. G. Native of the Cape of Good Hope. M. le've, Thumb. prod. ? Flowers yellow, and more numerous than those of the last species. It differs from the last in the leaves and in the more dwarf stature.


207 M. croceum (Jacq. fragm. t. 11. f. 2.) stem erect; leaves crowded, semi-cylindrical, mealy, glaucous, bluish, shorter than the internodes, somewhat sebaceous; lobes of calyx somewhat unequal. f. D. G. Native of the Cape of Good Hope. Haw. rev. 156. Leaves evidently connate. Petals obtuse, copper-coloured.

Var. β. purpureo-creceum (Haw. obs. 257. misc. 81. syn. 259. rev. 155.) flowers copper-coloured, purple on the outside. M. insititum, Willd. enum. 336. Hardly distinct from the species, and ought probably to be joined with it, according to Salm-Dyck, in litt.

Var. γ. flavo-creceum (Haw. rev. 155.) flowers yellow on both sides, but as they fade become copper coloured.


§ 39. Tenuiflora (from tenuis, slender, and flos, a flower; slender flowers). Salm-Dyck, obs. 24. Haw. rev.—Frequentiflora, Haw. syn. 263. exclusive of the species. Stems shrubby; branches slender, effuse. Leaves opposite, distinct, nearly terete, rather triquetrous or somewhat compressed, without papule. Flowers solitary, pedunculate, expanding in the morning, yellow or scarlet. This section is nearly allied to Airaea.

208 M. cockiænx(eum (Haw. obs. 247. misc. 85. syn. 265. rev. 150.) stem shrubby, erect; leaves terete triquetrous, rather compressed, obtuse, glaucous; peduncles smooth at the base; lobes of calyx bluish, nearly equal. f. D. G. Native of the Cape of Good Hope. D. C. pl. gr. t. 83. Lodd. bot. cab. t. 1032. Curt. bot. mag. 59. M. bicolorânus minus, Haw. obs. 216. M. bicolórum coccieneum, Willd. spec. 2. p. 1059. Leaves shorter than in the following species. Petals scarlet on both surfaces. There are 2 varieties of this plant, the one with obtuse leaves and the other with acute leaves.

200 M. biocolor (Lin. spec. ed. 1. p. 485.) stem shrubby, erect; leaves rather triquetrous, acute, green; peduncles and calyces scabrous; calyceal lobes unequal. ʃ. D. G. Native of the Cape of Good Hope.—Dill. eth. f. 255. Haw. obs. 241. misc. 85. syn. 265. rev. 151. This species is usually confused with M. eccessum, but the leaves are longer and the petals are yellow inside and scarlet outside. Stigmas shorter than the filaments. There are 2 varieties of this plant, one with erect branches and the other with spreading branches.


210 M. inequalis (Haw. syn. 266. rev. 151.) stem shrubby, erectish; branches always decumbent; leaves rather triquetrous, deep green; fructiferous peduncles compressedly clavate; lobes of calyx very unequal. ʃ. D. G. Native of the Cape of Good Hope. Bradl. succ. t. 7. b. ex Haworth. Very like M. biocolor, but differs in the branches being effuse, the flowers being paler on the outside, and in the calyceal lobes being longer than the membranous.


211 M. tenutiforme (Lin. spec. 693.) stem shrubby, erectish; leaves semi-terete, rather compressed, subulate, green, glabrous, longer than the internodes; peduncles elongated, naked. ʃ. D. G. Native of the Cape of Good Hope.—Dill. eth. f. 236. D. C. pl. grass. t. 82. Bradl. succ. t. 9. Haw. obs. 239. misc. p. 86. syn. 267. rev. 151. Flowers of coppery red colour. There are varieties of this species with erect and procumbent stems.


212 M. varia (Haw. mis. syn. 85. syn. 266. rev. 152.) stem shrubby, effuse, rather decumbent; leaves somewhat triquetrous, compressed, glaucous, scabrous; lobes of calyx nearly equal. ʃ. D. G. Native of the Cape of Good Hope. Petals yellow, at length becoming reddish. There are varieties of this species with distant and crowded leaves and branches.


§ 40. Adulvium (from adunca, hooked; leaves hooked at the apex). Salm-Dyck, obs. 25. Haw. rev. 152.—Adulvium claudinum, Haw. mis. 87. Stems suffruticos, hardly half a foot high. Leaves nearly terete, subulate, usually incurved, acutely pointed. At the apex. Flowers solitary, expanding before meridian, and closing in the evening, small, reddish. Petals usually striated or white at the base.

213 M. spinifome (Haw. obs. 246. mis. syn. 87. syn. 291. rev. 152.) stem suffruticos, with erect branches; leaves cylindrical, subulate, spine-formed, erect, recurved at the apex; peduncles and keels of the bracteas rather scabrous. ʃ. D. G. Native of the Cape of Good Hope. Bark of branches dark. Flowers small, pale red, with the petals paler at the base.

214 M. subadiuncum (Haw. suppl. 96. ex rev. 152.). Leaves less hooked.


214 M. curvifolium (Haw. mis. p. 88. syn. 290. rev. 152.) stems suffruticos; branches firm, erectish, roughish, angularly compressed; leaves rather distant, expanded at the base, and incurvedly recurved at the apex. ʃ. D. G. Native of the Cape of Good Hope. Flowers numerous, middle-sized, pale red. Stigmas blackish. M. verrucosum, Willd. enum. suppl. p. 37. is referred to this species by the Prince de Salm-Dyck, but this is doubted by Haworth, who gives a different character to the plant.


215 M. flexifolium (Haw. suppl. 98. rev. 153.) stem suffruticos; branches filiform, compressed, flexuous, decumbent, crowded; leaves subulate, triquetrous, incurved below, recurved and rather flexuous above, and Haw. obs. 256. misc. 65. syn. 301. rev. 151. Axils usually bearing leaves, hence the metaphorical name of stipulatum, there being no stipules. Corolla light red, paler on the under side, 2 inches in diameter.

Stipulatum Fig-marigold. Fl. May, Ju. Clt. 1723. Sh. 1 ft.

221 M. Haworthii (Wild. enum. suppl. 36. Donn. hort. cant. ed. 6.) stem shrubby, erect; leaves crowded, compressedly cylindrical, attenuated at both ends, erect when young, but spreading and glaucous when old. (Salm-Dyck. in litt.) ʃ. D. G. Native of the Cape of Good Hope. Haw. syn. 302. rev.
154. Corolla purple, 2 inches in diameter. Bark of branches rufous or castaneous. Leaves distinct (ex Haw.), connate (ex Willd.), therefore perhaps there are 2 species confused.

_Haworth's Fig-margarid._ Fl. Ju. Jul. Clt. 1793. Sh. 1 ft. 222 M. _LEPIDUM_ (Haw. in phil. mag. 1826. p. 130.) leaves recurved at the apex, rather mucronate; segments of calyx acuminate, spreading, marcescent after flowering. § D. G. Native of the Cape of Good Hope. An erect, slender shrub. Leaves nearly as in _M. prostratum_. Flowers large, white, showy, opening before meridian, longer than the peduncles.


_Smooth Fig-margarid._ Fl. Jul. Sept. Clt. 1774. Sh. 1½ ft. 224 M. _CORALLINUM_ (Haw. rev. 154. but not of Thumb.) stem straight, much branched; leaves nearly terete, incurred, smooth, rather thicker in the middle, glaucous. § D. G. Native of the Cape of Good Hope. Very nearly allied to _M. hamorthii_, but the stems are one half taller and the flowers smaller (ex Salm-Dyck. in litt.). Bark dark and bay-coloured (ex Haw.).

_Corni-stemmed Fig-margarid._ Fl. May, June. Clt. 1820. Shrub 1 foot.


_Spinose Fig-margarid._ Fl. Ju. Sept. Clt. 1714. Sh. 1 ft. 226 M. _MICROSERUS_ (Haw. in phil. mag. 1829. p. 381.) stem shrubby, erect, straight; leaves glaucose, dotted, spreading, blantly triquetrous, mucronulate; flowers reddish, disposed by threes; peduncles permanent after flowering and spinose. § D. G. Native of the Cape of Good Hope._ M. _pulverulentum_, Willd. enum. 583. ex ill. Pr. Salm-Dyck.


_Subdivision VII. Papulosa (from papulosus, full of blisters; leaves beset with papulae)._ D. C. prod. 3. p. 140.—Papulosa-teretifolia, Haw. rev. p. 79. Shrubs, subshrub or herbs. Leaves opposite, very rarely alternate, distinct, nearly terete, or thick at one end, channelled above, narrow, more or less beset with glintering papille. Calyx 4-6, but usually 5-cleft. Stigmas just so many.

§ 43. _Barbata_ (from barbatus, bearded; points of leaves). _Salm-Dyck._ obs. 27. _Haw._ rev. 190.—_Barbifolia, Haw._ syn. 277. Stems suffruticosum, branched. Leaves nearly terete, distinct, rather papulous, thick, bearded at the apex by 3 pale hairs, which are 5-10, raged at the apex. Flowers flesh-coloured, rarely white, expanding in the sun. Calyx 5-8-cleft, with as many dark green tubercles on the torus. Stigmas 5-8.

227 M. _BARBATUM_ (Curt. bot. mag. t. 70.) stem erect; branches effusely proeminent; leaves rather remote, spreading, ending in 5-6 radiating hairs at the apex; base of calyx glabrous; lobes 5, nearly equal. § D. G. Native of the Cape of Good Hope.—Dill. elth. f. 234. _D. C. pl. grass. t. 28._ M. _barbatum_ a, Lin. spec. 691. M. _stelligerum_, Haw. syn. 278. rev. 190. but not of phil. mag. _M. barbatum_, Haw. phil. mag. 1824. p. 61. Tubercles 5, dark green within the flower. Stigmas 5. Flowers flesh-coloured.

_Beaned-leaved Fig-margarid._ Fl. June, Aug. Clt. 1705. Shrub ½ to 2½ feet.

228 M. _STELLIGERUM_ (Haw. in phil. mag. 1824. p. 61. but not of his syn.) branches proeminent, elongated; leaves remote, half erect, terminating in 5 radiating hairs at the apex; calyx glabrous at the base; lobes very unequal. § D. G. Native of the Cape of Good Hope. _M. barbatum_, Haw. syn. 277. rev. 190. but not of phil. mag. _Braddl. succ. t. 5._ Curt. bot. mag. 70. Perhaps merely a variety of _M. barbatum_.

_Start-bearing Fig-margarid._ Fl. May, Oct. Clt. 1793. Sh. ¼ to ½ foot.

229 M. _INTONSUM_ (Haw. in phil. mag. 1824. p. 62.) branches erectly decumbent, diffuse, hispid; leaves terminating in 10 radiating hairs at the apex; calyx girdled by a black beard. § D. G. Native of the Cape of Good Hope. Flowers reddish.

_Var. β, albus_ (Haw. l.c.) flowers at first white, but at length becoming reddish as they fade.

_Unshaped Fig-margarid._ Fl. July. Clt. 1824. Shrub ½ ft. 230 M. _BULBOSUM_ (Haw. in phil. mag. 1824. p. 428.) root tuberous; branches rather villous; leaves horizontal, crowded, terminating in 10 radiating hairs. § D. G. Native of the Cape of Good Hope. Root referrible to that of _M. tuberosum_, the rest of the plant comes nearest to _M. intonsum_. Flowers middle-sized, reddish.

_Bulbous-rooted Fig-margarid._ Fl. Aug. Clt. 1820. Sh. 1 ft. 231 M. _STALLATUM_ (Mill. dict. no. 14.) branches short, thick; leaves tufted, hoary, thick, scabrous from papulae, terminating in many radiating hairs at the apex, and ciliated at the base; greenish; peduncles very hairy; calyx hairy at the base, 6-8-lobed. § D. G. Native of the Cape of Good Hope._ D. C. pl. grass. t. 29.—Dill. elth. f. 235. M. _barbatum_ β, Lin. spec. 691. M. _hirsutum_, Haw. misc. 105. syn. 279. M. _stelligerum_, Haw. rev. 191. phil. mag. 1824. p. 62. but not of his syn. Flowers pale red.


232 M. _DESSUM_ (Haw. obs. p. 302. misc. 105. syn. 279. rev. 191. phil. mag. 1824. p. 62.) plant densely tufted; leaves semi-terete, scabrous from papulae, terminating in many radiating hairs, rather ciliated at the base, greenish; peduncles very hairy as well as the calyx, which is 6-cleft. § D. G. Native of the Cape of Good Hope.—Dill. elth. f. 226. without a flower. Sims. bot. mag. t. 1220. Old stem thick, branched, very short. Flowers expanding in the heat of the sun, purple, larger than those of _M. stelligerum_.

_Dense Fig-margarid._ Fl. May, Aug. Clt. 1732. Sh. ½ ft.

§ 41. _Echinata_ (from echiinatus, set with prickles; leaves). _Salm-Dyck._ obs. 27. _Haw._ rev. 189.—_Hipsofilla, Haw._ syn. 275. Stems suffruticosum, much branched. Leaves nearly terete, distinct, more or less hispid all over, as well as the branches. Lobes of calyx 5, leaf-formed. Corolla white or pale yellow. Stigmas 5.

233 M. _ECHINATUM_ (Ait. hort. kew. 2. p. 194.) stem erect, branched; leaves oblong-ovate, filled, rather triquetrous, gibbous, ramentaceous-echinatcd; lobes of calyx leaf-formed, unequal. § D. G. Native of the Cape of Good Hope.


Var. β, album (Haw. l. c.) flowers white.

Hedge-hog Fig-marigold. Fl. Jul. Oct. Clt. 1774. Sh. ½ to ¾ ft. 234 M. strumosum (Haw. rev. 190.) stems decumbent, branched; leaves crowded, depressely cylindrical, hispid all over; lobes of calyx nearly equal; root at length tuberous. γ. D. G. Native of the Cape of Good Hope. Corolla pale straw-coloured or white.


235 M. calyci'tum (Haw. rev. 187.) branches effuse; leaves cylindrical, rather filiform, obtuse, papillose; two of the calycine lobes are foliaceous, much exceeding the other three in length; stamens longer than the stigmas. γ. D. G. Native of the Cape of Good Hope. Flowers white.

Long-cylindrical Fig-marigold. Fl. Jul. Aug. Clt. 1819. Sh. 2 ft. 236 M. tuberculatum (D. C. in Pers. ench. 2. p. 44.) stems decumbent, much branched; branches ascending; leaves terete, acute, papillose, soft; branches, peduncles, and calyces hispid; calyx campanulate at the base; stamens hardly exceeding the stigmas. γ. D. G. Native of the Cape of Good Hope. M. hispidulum, Haw. suppl. 94. rev. 189. Petals rose-coloured, but purplish above, with a deeper-coloured middle line. There is also a variety of this with white flowers.

Tubercled Fig-marigold. Fl. Oct. Clt. 1818. Shrub dec. 237 M. attenuatum (Haw. rev. 188.) plant slender; branches decumbent, filiform; leaves semi-cylindrical, filiform, obtuse, or nearly terete, papillose; peduncles elongated; calyxes hairy at the base. γ. D. G. Native of the Cape of Good Hope. Petals at first white, or with a rose-coloured middle line, whence there is a rose-coloured circle in the flower.


238 M. striatum (Haw. obs. 280. misc. 188.) stem erect; leaves semi-cylindrical, subulate, papillose; calyx woolly; stamens collected, length of stigmas. γ. D. G. Native of the Cape of Good Hope. Capsule angular at the apex, with a spermatophorous tube.

Var. α, ruscum (Haw. rev. 188.) petals pale rose-coloured, with a deeper-coloured line in the middle.—Dill. clth. f. 281. Var. β, pallens (Haw. l. c.) petals white, each with a red line at the base. D. C. pl. grass. t. 132.


239 M. floribundum (Haw. misc. p. 100. syn. 274. rev. 157.) branches spreading, very numerous; leaves almost cylindrical, somewhat incurved, papillose, obtuse; calyxes hemispherical, beset with papillose pill; stamens not equalling the stigmas in length. γ. D. G. Native of the Cape of Good Hope. M. hispidum β, pallidium, Haw. obs. 373. Flowers numerous, pale red; with the petals white at the base.

Var. β, torquatum (Haw. rev. 187.) flowers fewer, larger and more remote; stamens exceeding the stigmas. According to Salub-Dyck this is not distinct from M. floribundum, which are both perhaps referrible to M. striatum, var. β.


Var. α, glauceosum (Salm-Dyck. in litt.) leaves glaucosecent. M. candens, var. α, minus, Haw. in phil. mag. dec. 1831. p. 422.

Var. β, viridescens (Salm-Dyck. in litt.) leaves greener; branches less elongated. M. candens β, viridescens, Haw. l. c.

Glittering Fig-marigold. Clt. 1820. Shrub pr. 241 M. hirtellum (Haw. obs. 284. exclusive of the synonyms, misc. 102. syn. 274. rev. 186.) stem erect, bushy; leaves crowded, cylindrical, very blunt, beset with glazing papule; calyx turbinated, beset with papillose pill; stamens equal in length to the stigmas. γ. D. G. Native of the Cape of Good Hope. Flowers larger than those of any other species of this section, showy; petals pale red, white at the base.


Var. β, minus (Haw. l. c.) plant not half the size of the species.


243 M. turfedulum (Haw. in phil. mag. Dec. 1851. p. 421.) shrub bushy; branches crowded, straightish, stiff, furfuraceous; leaves cylindrical, very blunt, and are, as well as the calyx, beset with obsolete crystalline papule; flowers small, numerous.

γ. D. G. Native of the Cape of Good Hope. Flowers terminating the branches, usually solitary, very pale red.

Furfuraceous Fig-marigold. Clt. 1826. Shrub 1 foot.

244 M. m'is'dium (Lin. spec. 691.) stem erect, bushy; leaves cylindrical, very blunt, green, glabrous, and covered with glazing papule, as well as the calyx, which is conical; stamens exceeding the stigmas. γ. D. G. Native of the Cape of Good Hope.—Dill. clth. f. 278. D. C. pl. grass. t. 66. M. hispidum α, Haw. obs. 277. M. hispidus, Haw. syn. 273. rev. 186. Flowers deep purple.

Hispid Fig-marigold. Fl. May, Oct. Clt. 1704. Sh. ½ to 1 ft. 245 M. subbispidum (Haw. in phil. mag. Dec. 1831. p. 421.) stem erect; branches and peduncles usually without hairs; leaves cylindrical, very blunt, and are, as well as the obconical calyx, glabrous, greenish, and covered with glazing papule. γ. D. G. Native of the Cape of Good Hope. M. hispidum β, platypetalum, Haw. rev. 186. Petals pale purple, whitish at the base, emarginate at the apex. Very like M. hispidum, but taller, less branched; but the branches are longer, more erect, and straight, and the flowers paler.


§ 46. Aspericalluma (from asper, rough, and caulis, a stem; stems rough). Haw. misc. 97. rev 182. Salm-Dyck. obs. 26. Stems shrubby, hardly a foot and a half high; branches filiform, scabrous. Leaves distinct, remote, nearly terete, glazing from papule. Flowers expanding before meridium; reddish or copper-coloured. Calyx 5-leaf. Stigmas 5, but in one of the species the calyx is 6-leaf, and the stigmas are 6.

* Flowers reddish.

246 M. pulvulcre'stum (Haw. obs. 265. misc. 89. syn. 272. rev. 185. but not of Willld.) stem erect; branches crowded; leaves cylindrically triquetrous, obtuse, dotted with white, powdery, scabrous; calyx 6-leaf. γ. D. G. Native of the Cape
papulose. ๑ D. G. Native of the Cape of Good Hope. Haw. obs. 25, misc. 58. (exclusive of the synonyme of Thunb.) syn. 234. rev. 178. but not of D. C. Flowers yellow.

Armed Fig-marigold. Fl. June, Aug. 1774. Sh. 1½ foot.

§ 48. Spinuliferum (from spinula, a little thorn, and fera, to bear; leaves, Virgating like little thorns, when old). Haw. rev. 176. Salm-Dyck, obs. 26. Stems suffruticose, usually stramose at the base; branches rather fleshy, papulose, when old they appear as if they were spiny from the permanent remains of the dried leaves. Leaves cylindriciform, papulose, opposite, somewhat channelled. Flowers expanding before meridian, fulvous or greenish red. Calyx 3-leaf. Stigmas 5.

263 M. Spinuliferum (Haw. obs. 266. and 443. misc. 57. syn. 232. rev. 176.) caudex and branches erect and thickened; leaves crowded, semi-terete, channelled, papulose; peduncles terminal, subumbellate. ๑ D. G. Native of the Cape of Good Hope. Corolla an inch in diameter, straw-coloured.

Spin-bearing Fig-marigold. Fl. Ju. Oct. Clt. 1794. Sh. 1 ft. 264 M. Longistylum (Haw. in phil. mag. Dec. 1824. p. 436.) branches few, procumbent, nodosely stramose at the base; leaves linear, channelled, and are, as well as the branches, papulose; old leaves permanent, long, hard, and spine-like; flowers usually solitary; peduncles strong, subclavate. ๑ D. G. Native of the Cape of Good Hope. Petals pale yellow or straw-coloured. Stigmas 5, erect.


265 M. Salmonium (Haw. rev. p. 176.) stems rather filiform, weak, elongated, prostrate; leaves linear, furrowed, longer than the internodes, beset with sordid papule; roots at length stramose above. ๑ D. G. Native of the Cape of Good Hope. Flowers trichotomous, small, at first, of a salmon colour, but afterwards becoming white inside. Stigmas 5, erect.


266 M. Canaliculatum (Haw. obs. 218. misc. 57. syn. 253. rev. 177.) stems procumbently prostrate, filiform; leaves linear-semiterete, covered with shining papule. ๑ D. G. Native of the Cape of Good Hope. Corolla pale rose-coloured. Old stems half a foot high.


Coarse Fig-marigold. Fl. Aug. Oct. Clt. 1774. Shrub 1 ft. 269 M. Telluriflorum (Jacq. fragm. t. 32. f. 3.) stems diffuse, weak, cinctuous; leaves semiterete, obtuse, channelled, spreading, beset with crystalline papule; flowers 1-2, terminal, on short peduncles. ๑ D. G. Native of the Cape of Good Hope. Petals linear-filiform, of a dirty red-colour.


270 M. Miitideum (Haw. obs. 412. misc. 57. syn. 243. rev. 177.) stem erect; branches slender, effuse, knotted; leaves semiterete, beset with glistering papule; flowers terminal, usually by threes. ๑ D. G. Native of the Cape of Good Hope. Flowers yellow. Salm-Dyck ex Spreng. nov. prov. 27. M. brachiatum, D. C. pl. grass. t. 129. M. pruiniosum, Thunbl. fl. cap. 425. ex Salm-Dyck and Spreng, but according to Haworth this species differs in the stem being decumbent, and in the branches being bent.


§ 49. Noctiflora (from noz, the night, and flos, a flower; flowers expanding at night). Haw. syn. 239. rev. 179. Salm-Dyck, obs. 25. Slender subshrubs, almost without leaves at the base, at length becoming thickened at the roots; with elongated branches. Leaves distinct, cylindriciform, glaucous, remote, doless, soon falling off. Flowers usually by threes, terminal, white, rose-coloured or straw-coloured on the outside, expanding in the evening. Calyx turbinate, 4-leaf. Stigmas 4.

271 M. Noctiflorum (Lin. spec. 688.) stems suffrutedicose; branches erect, with white bark; leaves rather remote, obsolescently cylindriciform, glaucous; peduncles alternately cymose. ๑ D. G. Native of the Cape of Good Hope. Haw. rev. 179. Lodd. bot. cab. 245.


Var. b. striatum (Haw. rev. 179.) but not of Wind. flowers white inside, and straw-coloured on the outside.—Dill. elth. f. 263.

Var. y. elatum (Haw. rev. 180.) leaves longer, semi-erect, from branches brownish-grey; leaves remote, nearly cylindriciform, glaucescent, exactly half erect; flowers by threes. ๑ D. G. Native of the Cape of Good Hope. M. striatun, Haw. obs. 252. (exclusive of the synonyme of Dillenius) misc. 63. syn. 261, but not of Wind. Flowers fulvous, but white on the inside. Ovarium top-formed. Perhaps distinct from the preceding species, according to the Prince de Salm-Dyck in lett.

Fulvous-flowered Fig-marigold. Fl. June, Aug. Clt. 1820. Shrub 1 to 2 feet.

272 M. Fulvum (Haw. rev. p. 180.) stem suffrutedicose; bark of branches brownish-grey; leaves remote, nearly cylindriciform, glaucescent, exactly half erect; flowers by threes. ๑ D. G. Native of the Cape of Good Hope. M. striatun, Haw. obs. 252. (exclusive of the synonyme of Dillenius) misc. 63. syn. 261, but not of Wind. Flowers fulvous, but white on the inside. Ovarium top-formed. Perhaps distinct from the preceding species, according to the Prince de Salm-Dyck in lett.

Fulvous-flowered Fig-marigold. Fl. June, Aug. Clt. 1820. Shrub 1 to 2 feet.

273 M. Clara (Jacq. hort. schenbr. t. 108.) stem erect, sparingly branched; leaves nearly terete, remote, horizontal; peduncles clavate, aggregate, cymose. ๑ D. G. Native of the Cape of Good Hope. M. deflatum, Haw. misc. 83. rev. 181. Flowers white.


Clavate-peduncled Fig-marigold. Fl. June, Aug. Clt. 1795. Shrub 1 to 2 feet.

§ 50. Geniculiflora (from geniculum, a little knee, and flos, a flower; from the flowers rising in the knees or forks of the branches). D. C. prod. 3. p. 445. Stems fusicose, erect. Leaves opposite, distinct, papulose, semi-terete. Flowers sessile in the forks of the branches, solitary, yellowish, exuding in the day time.

274 M. Geniculiflorum (Lin. spec. 688.) stem fusicose, erect; leaves distinct, semi-terete, papulose; flowers sessile and


§ 51. **Splendens** (from splendens, shining; in reference to the leaves, which are covered with glittering papule, which shine in the sun). D. C. prod. 3. p. 445.—Digitiflora and Crassuloides, Haw. rev. 170. and 172.—Tetraphis albidiflora, Salm-Dyck, obs. p. 23. Stems suffruticoso, branched, erect. Leaves opposite, distinct, somewhat cylindrical, when young furrowed above, beset with papillae more or less, which glitter in the sun. Flowers middle-sized, solitary, rarely by threes, white, expanding before meridian. Calyx generally 5-lobed, rarely 4 or 6-lobed, usually leaf-formed. Stigmas as many as there are calyx lobes. 275 M. **crassuloides** (D. C. prod. 3. p. 445) stem suffruticoso, branched, bushy; leaves crowded, rather ciliate; leaves crowded, thick, linear-lanceolate, channelled, almost without papule, green; flowers solitary; 3 of the segments of calyx membranous at the base, and 2 larger than the rest. \( \gamma \), D. G. Native of the Cape of Good Hope. M. crassuloides, Haw. rev. 170. Flowers expanding before meridian; petals 4 long, white, but at length becoming pale rose-coloured. Stigmas 5, which after anemization are very conspicuous above the anthers. **Crassula-like Fig-margoloid.** Fl. July, Aug. Clt. 1819. Sh. decumbent. 276 M. **incopitum** (Haw. suppl. 96. rev. 171) stem suffruticoso, branched, bushy; leaves crowded, rather papulose, erectly imbricating, semi-terete, firm, almost subulate; flowers by threes; peduncles clavate; lobes of calyx finger-shaped, acute. \( \gamma \), D. G. Native of the Cape of Good Hope. Plant half a foot high, pale green. Corolla snow white. Stigmas 5, ramotaceous, equal in length to the anthers. **Unadecked Fig-margoloid.** Fl. July, Aug. Clt. 1819. Sh. ½ ft. 277 M. **splendens** (Lin. spec. 689) stem shrubby, erect, much branched; leaves distinct, crowded, semi-terete, obtuse, spreading, somewhat recurved, dotted, rather papulose; flowers solitary; lobes of calyx finger-shaped. \( \gamma \), D. G. Native of the Cape of Good Hope.—Dill. elth. f. 260. D. C. pl. grass. t. 32. Haw. obs. 200. misc. 61. syn. 257. rev. 172. Flowers middle-sized, white, shining. Calyx 5-cleft. Stigmas 5, thick, but subulate at the apex. **Shining Fig-margoloid.** Fl. July, Aug. Clt. 1716. Sh. 1½ ft. 278 M. **sulcatum** (Haw. rev. p. 173) stem shrubby, erect; leaves crowded, linear-subulate, semi-terete, channelled, pale-green, adult ones expanded, semi-terete; lobes of calyx leaf-formed, acute. \( \gamma \), D. G. Native of the Cape of Good Hope. Flowers white. Stigmas 5, erect, not exceeding the stamens. Perhaps only a variety of M. **splendens**. **Furrowed Fig-margoloid.** Fl. Aug. Sept. Clt. 1819. Shrub 2 to 3 feet. 279 M. **acuminatum** (Haw. in phil. mag. 1824. vol. 64. p. 496) stem and branches erect; leaves crowded, semi-terete, acuminated, green; lobes of calyx 5, 2 of which are much more prolonged than the other 3. \( \gamma \), D. G. Native of the Cape of Good Hope. Allied to M. sulcatum, but differs from all the species of this section in the lobes of the calyx being very unequal. Corolla white, expanding before meridian. **Acuminated-leaved Fig-margoloid.** Fl. Aug. Sept. Clt. 1820. Shrub 1 to 2 feet. 280 M. **aldicauale** (Haw. in phil. mag. Nov. 1826. p. 331) stem and branches erect, slender, and whitish; leaves subulate, green, semi-terete, a little recurved, and mucronulated at the apex. \( \gamma \), D. G. Native of the Cape of Good Hope. Flowers white. Like M. acuminatum in habit, but three times smaller. **White-stemmed Fig-margoloid.** Fl. Aug. Sept. Clt. 1824. Shrub 1 foot. 281 M. **flexuosum** (Haw. misc. p. 61. syn. 257. rev. 172) stem suffruticoso, and is, as well as the branches, flexuoso, slender, and shining; leaves crowded, flexuously incurved, very green, semi-terete; lobes of calyx finger-shaped. \( \gamma \), D. G. Native of the Cape of Good Hope. Flowers white, reddish on the outside. Stigmas 4-5. **Flexuous-branched Fig-margoloid.** Fl. July, Aug. Clt. 1795. Shrub ½ ft.

§ 52. **Juncus** (from juncus, like, a bull-bush, slender; stems). Haw. rev. p. 175.—Articulata, Salm-Dyck, obs. p. 24. Stems suffruticoso or herbaceus, rather erect; branches slender, green. Leaves opposite, distinct, small, linear-subulate, slender, deciduous when dry, whence the stems appear to be articulated from the cicatrizes of the fallen leaves. Flowers small, pedunculate, white or reddish. Calyx 4-cleft. Stigmas 4. 283 M. **juncus** (Haw. misc. 175. syn. 255. rev. 59) stem shrubby, much branched; branches articulated, filiform; leaves subulate, semi-terete, acute, remote; flowers terminal, dichotomous; lobes of calyx 4, very unequal. \( \gamma \), D. G. Native of the Cape of Good Hope. Corolla small; petals reddish, but whitish at the base. Stigmas 4, erect, a little longer than the filaments. M. aphylum, Hort. M. articulatum, Thumb. fl. cap. 415. 7. **Rusby Fig-margoloid.** Fl. Aug. Oct. Clt. 1800. Sh. 1 ft. 286 M. **granulicauale** (Haw. in phil. mag. 1824. vol. 64. p. 424) stem very slender, suffruticoso; branches terete, dotted from numerous grains; leaves very narrow, obtuse, glaucous, semi-terete, longer than the internodes. \( \gamma \), D. G. Native of the Cape of Good Hope. Flowers unknown.
Granular-stemmed Fig-marigold. Clt. 1820. Shrub 1½ foot.

287 M. micranthuim (Haw. syn. 257. rev. 174.) stem suffruticose, slender, much branched; leaves linear, keeled, dotted, distinct; peduncles 1-flowered; calyx 4-cleft, having 2 of the lobes very long, and 2 very short. G. D. Native of the Cape of Good Hope. M. parviflorum, Jacq. hort. schenckbr. 3. t. 278. but not of Haw. Corolla small, snow-white, shorter than the calyx. Stigmas 4, spreading.

Small-flowered Fig-marigold. Fl. June, July. Clt. 1804.

288 M. teu'me (Haw. rev. p. 175.) stem suffruticose; branches effuse, very slender, rather second, articulated; leaves linear, ciliolled, erect, very slender. G. D. Native of the Cape of Good Hope. Leaves hardly half an inch long. Flowers unknown. Perhaps different from M. micranthum.

Weak Fig-marigold. Clt. 1819. Shrub 1 foot.

289 M. rapa'cum (Jacq. fragm. 43. t. 52. f. 1.) root tuberous; stem herbaceous; branches terete, and somewhat articulated; leaves distinct, terete, obtuse, dotted, spreading much; peduncles 1-flowered; lobes of calyx filiform; stigmas 5, spreading. G. D. Native of the Cape of Good Hope. Flowers snow white, 9-10 lines in diameter. Lobes of calyx nearly equal, or very unequal.

Turnip-like-rooted Fig-marigold. Pl. 1 foot.

§ 33. Nodiflora (from nodus, a knot, and flos, a flower; flowers rising from the knots of the stem, or axils of the leaves). D. C. prod. 3. p. 446.—Cylindracea, Haw. rev. 163. Salm-Deyck, obs. 15. Roots annual. Stems herbaceous, branched. Leaves nearly terete or linear, thick, opposite, rarely alternate, papulose. Flowers axillary, nearly sessile. Calyx 5-lobed, exceeding the petals, which are small and white. Stigmas 4-5.

290 M. sordi'torum (Lin. spec. 687.) stem erectish; leaves opposite and alternate, nearly terete, obtuse, ciliated at the base; flowers axillary, nearly sessile; lobes of calyx very unequal, exceeding the petals, which are small. G. D. Native of Egypt, Barbary, Corsica, and Naples, in sandy places by the sea side. D. C. pl. grass. t. 88. Smith, pl. grce. t. 480.—Moris. hist. sect. 5. t. 37. f. 7.—Haw. rev. 166.—Column. cephr. 2, t. 73. This species is often confused with the two following. Perhaps the calyx is 4-cleft, as mentioned by Haworth, but in some plants which have been examined it has been found to be 5-cleft.


291 M. Coticu'm (Lin. spec. 688.) stem nearly erect; leaves distinct, semi-terete, papulose; flowers sessile in the forks of the branches; calyx 5-cleft, exceeding the petals, which are small.


Coptic Fig-marigold. Pl. 1 foot.


Apetal us Fig-marigold. Fl. July, Aug. Clt. 1774. Sh. pr. 293 M. caud'u'm (Ait. hort. kew. 2. p. 179.) leaves semi-terete, filiform, distinct, best with ovate papule; flowers lateral, sessile, terminal, girded by a pair of leaves. G. D. Native of the Cape of Good Hope. The rest unknown.

300 M. crystallinum (Lin. spec. 688.) plant diffusely procumbent, herbaceous, covered with large glittering papule on every part, which makes the plant appear as if covered with ice; leaves ovate, alternate, stem-clasping, undulated; flowers axillary, almost sessile. O. H. Native of the Cape of Good Hope, Canary Islands; and of Greece, about Athens, in the sand by the sea side. Smith, fl. gracc. t. 481.—Dill. clth. f. 22. Bradd. succ. t. 48. D. C. pl. grass. t. 128. Haw. misc. 43. Flowers white. There are two varieties of this plant; one a biennial, which is said to be the true M. crystallinum; and the other an annual, which is the common ice-plant of the gardens, which is called by Haw. M. glaciate. The whole plant is covered with glittering white papule, that shine in the sun, whence it is called ice-plant; others name it the diamond-plant.

Crystalline Fig-marigold or Ice-plant. Fl. May, Aug. Crit. 1775. Pl. procumbent.

301 M. calycinum (Haw. misc. 44. rev. 157.) leaves alternate, ovate, petiolate, undulated; petals minute. O. H. Native of the Cape of Good Hope.—Petiv. gaz. t. 88. f. 5. M. crispatum, Haw. obs. 470. Flowers reddish. This species is hardly known.

Carved-leaved Fig-marigold. Pl. pr.

302 M. pinnatifidum (Lin. fl. suppl. 260.) stems diffuse; leaves opposite, oblong, bluntly pinnatifid, papule; petals shorter than the calyx. O. H. Native of the Cape of Good Hope, and also said to be a native of Chili. Curt. bot. mag. t. 67. D. C. pl. grass. t. 142. Haw. obs. 112. misc. 44. syn. 244. rev. 157. Stems reddish, papule. Petals small, yellow in one series. Stigmas 5, ascending. Flowers small in the forks of the branches, pedunculate.


303 M. sessiliflorum (Ait. Hort. kew. 2. p. 193.) branches divaricate; leaves flat, spatulate, and are, as well as the stems, beset with papule; flowers sessile. O. H. Native of the Cape of Good Hope. Flowers yellow. Haw. syn. p. 247. Var. β, album (Haw. rev. 158.) flowers white; leaves ovate, petiolate; upper ones alternate; flowers paniced, small. D. G. Perhaps a proper species, but is not sufficiently known. Sessile-flowered Fig-marigold. Fl. July. Crit. 1774. Pl. pr.


Var. β, rosæm (Haw. rev. 159.) flowers reddish; leaves lanceolate-spatulate.


Lance-leaved Fig-marigold. Pl. ½ foot.

306 M. papuliferum (D. C. prod. 3. p. 418.) stem very short; branches almost radical, somewhat fastigate, gradually thickened, and are as well as the leaves and calyces beset with papule; leaves connate, ovate; flowers terminal, sessile, 1-3 together; calyx 5-cleft. O. H. Native of the Cape of Good Hope, on hills in very dry places. M. fastigiatam, Thunb. fl. cap. 413. but not of Haw. Flowers white. Lobes of calyx purple. This species differs from M. réctum of Haw. in being annual, not shrubby.

Papule-bearing Fig-marigold. Pl. ½ to ¾ foot.

307 M. papulosum (Lin. fl. suppl. 259. exclusive of the synonymes) branches decumbent, terete; leaves opposite, spatulately oblong, papule; flowers pedunculate, rising from the forks of the stem; lobes of calyx linear. O. H. Native of the Cape of Good Hope. Haw. misc. 48. rev. 158. Corolla yellow, hardly longer than the calyx.

Papule Fig-marigold. Pl. dec.

308 M. clandestinum (Haw. in phyl. mag. aug. 1829. p. 128.) branches procumbent, papule; leaves acutely ovate, petiolate; flowers usually terminal, solitary or by threes, on a terete, elevate peduncle; petals very small. D. G. Native of the Cape of Good Hope,


309 M. pubèrulorum (Haw. in phyl. mag. sept. 1831. p. 419.) stems branches, procumbent, papule; floriflorous branches and margins of leaves pubescent; leaves opposite or alternate, obovate-spatulate, channelled, keeled; peduncles subbyindrical. O. D. G. Native of the Cape of Good Hope. Very like M. papulosum. Flowers white.


310 M. angulatæum (Thunb. fl. cap. 426.) stem herbaceous, decumbent, angular, branched; leaves opposite, obovate, sessile, papulo; calyx 5-cleft, angular. O. H. Native of the Cape of Good Hope. Flowers yellow, as in M. papulosum, but the stems are angular, not terete. The stems are angular, however, in M. Altonis, but the flowers are pale red, not yellow.

Angular-stemmed Fig-marigold. Pl. pr.

311 M. Altonis (Jacq. hort. vind. t. 7.) branches decumbent, angular; leaves opposite or alternate, ovate-spatulate, papule; pedicels short; calyxes angular. D. G. Native of the Cape of Good Hope. Haw. misc. 48. rev. 158. Flowers expanding in the evening, pale reddish, about the size of those of M. cordifólium. Lobes of calyx very unequal. Stigmas 5, erect, recurved at the apex.

Aiton's Fig-marigold. Fl. June, Crit. 1774. Pl. pr.


314 M. Varians (Haw. misc. p. 51. syn. 249. rev. 168.) branches prostrate; leaves opposite, lanceolate, acuminate, keeled, hence they are bluntly trinerved and channelled; peduncles very thick. \( \text{r. D. G.} \) Native of the Cape of Good Hope.—Pet. gaz. t. 78. t. 10. The whole plant is beset with papillose. Calyx 4-6-cleft. Corolla white on the outside and yellow on the inside; but according to Haworth it is white, and according to Petiver yellowish. Stignas 5, short.


316 M. concavum (Haw. rev. 168.) stem procumbent; leaves concave, ovate-lanceolate, acute; thick: flowers terminal, solitary. \( \text{r. D. G.} \) Native of the Cape of Good Hope.—Burm. sfr. dec. 3. t. 26. f. 1. Flowers yellowish. This is a very doubtful species.

Concave-leaved Fig-marigold. Shrub pr.

317 M. pallens (Ait. hort. kew. 2. p. 182.) stems diffuse; leaves stem-clasping, distinct, glaucous, oblong-lanceolate; in- flexedly concave, bluntly keeled, beset with minute papillose; lobes of calyx 5, ovate-oblong. \( \text{r. D. G.} \) Native of the Cape of Good Hope, Haw. obs. 197. misc. 52. syn. 250. rev. 168. M. expansum, D. C. pl. grass. t. 47. M. articulatum, Thumb. fl. cap. 411.7. Corolla white, rather longer than the calyx (ex D. C.), but according to Haworth shorter than the calyx.

Pale Fig-marigold. Fl. July, Aug. Cl. 1774. Sh. diffuse.

318 M. loratum (Haw. rev. 168.) stems diffuse; leaves lorate, cuneiformly-inflexed, obtuse, very glaucous, convex beneath; lobes of calyx oblong, attenuated, obtuse. \( \text{r. D. G.} \) Native of the Cape of Good Hope. Flowers white. Perhaps only a variety of \( \text{M. pallens.} \)


319 M. crassicaule (Haw. in phil. mag. 1824. p. 425.) canden very short and thick; branches expanded; leaves crowded, flat, lorate, acuminate, green, glabrous, a little incurved; peduncles furnished with 4-5 bracteas; lobes of calyx 5, one of which is smaller than the rest. \( \text{r. D. G.} \) Native of the Cape of Good Hope. Flowers pale yellow, expanding before meridian. Stignas very short.

Thick-stemmed Fig-marigold. Fl. May, July. Cl. 1815. Pl. 1/4 foot.

320 M. relaxatnm (Willd. enum. suppl. p. 36.) stems decumbent; terete, flexuose; leaves linear-lanceolate, obtuse, of a vivid glaucous colour, channelled, dotted from papillose, costately keeled; lobes of calyx 5, foliaceous, one of which is very small. \( \text{r. D. G.} \) Native of the Cape of Good Hope. Spreng. nov. prov. 28. Haw. rev. 169. Flowers purple (ex Willd.), rose-coloured (ex Spreng.), reddish or nearly scarlet (ex Haw.).

Relaxed Fig-marigold. Fl. July, Aug. Cl. 1815. Sh. dec.

321 M. anatonicum (Haw. misc. 50. syn. 249. rev. 168.) stems filiform, procumbent; leaves opposite, lanceolate-elliptic, full of crystalline papillose, when dead the nerve alone remains permanent. \( \text{r. D. G.} \) Native of the Cape of Good Hope.

Var. \( \beta. \) frangile (Haw. rev. 169.) leaves large, concave, greener than the species.

Var. \( \gamma. \) emeridium (D. C. prod. 3. p. 450.) stems erectish. M. emeridium, Thumb. fl. cap. 415. Perhaps a proper species.


322 M. ovatum (Thumb. fl. cap. 417.) stem decumbent, rather angular, papillose; leaves ovate, flat, obtuse, spreading; flowers terminal. \( \text{r. D. G.} \) Native of the Cape of Good Hope. Haw. rev. 170. Flowers white.

Ovate-leaved Fig-marigold. Shrub dec.

323 M. humifusum (Ait. hort. kew. 2. p. 179.) stems suffruticose, trailing; leaves stem-clasping, spatulate, keeled, scarious from conical papillose; petals very minute. \( \text{r. D. G.} \) Native of the Cape of Good Hope. Corolla white. The rest unknown.


324 M. tripolium (Lin. spec. 659.) stems herbaceous, loose, simple; radical leaves flat, crowded, rameal ones alternate; lanceolate, dotless, almost destitute of papillose; flowers pedunculate; calyx pentagonal, 5-cleft. \( \text{r. D. G.} \) Native of the Cape of Good Hope.—Dill. elth. f. 220.—Pluk. mant. 329. f. 4. Haw. obs. 152. misc. 49. syn. 247. rev. 167. Flowers middle-sized, white. There is no ally to this species, according to Haworth.


Var. \( \beta. \) glabrum (Haw. rev. p. 160.) plant more glabrous and naked; upper leaves a little ciliated; petals longer than the calyx. \( \text{r. D. G.} \) Andr. bot. rep. t. 57. Haw. misc. 44. but not of \( \text{Ait.} \) Perhaps a proper species.


326 M. helianthoides (Ait. hort. kew. 2. p. 198.) leaves flat, spatulate, smooth; peduncles very long; calyces flat and angular at the base; stigmas usually 10, connate at the base. \( \text{r. D. G.} \) Native of the Cape of Good Hope. Haw. rev. 161. Flowers yellow.


327 M. calendulaceum (Haw. rev. 161. but not of his misc.) leaves linear-lanceolate, hardly spatulate, ciliated; peduncles scarious; petals about equal in length to the lorately-linear, thick, ciliated, calyctic lobes; ovarium sparingly pubescent. \( \text{r. D. G.} \) Native of the Cape of Good Hope. Stem much branched. Hairs on the ovarium or tube of the calyx white and short. Flowers yellow. The rest unknown.


328 M. flaccidum (Jacq. hort. vind. t. 475.) leaves lanceolate, acute, flat, glabrous, quite entire; peduncles 1-flowered, erectish, glabrous, very long. \( \text{r. D. G.} \) Native of the Cape of Good Hope.
of Good Hope. Petals linear, acute at both ends, yellowish. Styles 5. Root biennial (ex Salan-Dyck. in litt.).

**Ficoidae. I. Mesembryanthemum. II. Tetragonia.**

151. Sterile petals.


331. M. glabrum (Ait. hort. kew. 2. p. 198.) leaves petiole, spatulate-lanceolate, dilated at the base, and are as well as the branches glabrous; base of calyx hemispherical, with linear, unequal lobes; stigmas usually 12, united into a tube at the base. G. D. G. Native of the Cape of Good Hope. Hymenogynia glabra, Haw. rev. 192. Corolla straw-coloured; petals rufescent at the base; sterile filaments copper-coloured. Habit almost of M. Candollii. Seeds winged.


† Species not sufficiently known.

332. M. Humile (Haw. misc. 80. rev. 192.) stems prostrate; leaves triquetrous, subulate; calyx 4-cleft. G. D. G. Native of the Cape of Good Hope. Leaves opposite, or probably ternate.

Var. a. räbrum (Haw. l. c.) flowers red.—Petiv. gaz. t. 83. f. 8. Haw. obs. 471.

Var. ß. luteum (Haw. l. c.) flowers yellow.—Petiv. gaz. t. 88. f. 8. Humble Fig-marigold. Pl. prostrate.


Tree-formed Fig-marigold. Shrub 1 to 2 feet.


Field Fig-marigold. Shrub 1½ foot.

335. M. luteifolium (Haw. obs. 470. misc. 49. rev. 157.) root fusiform; stem very flexuous; leaves opposite, cuneately obovate. G. D. G. Native of the Cape of Good Hope.—Petiv. gaz. 83. f. 4. Anthers and petals purple. Perhaps a species of Othôna.

Laurel-leaved Fig-marigold. Pl. 1 foot?

336. M. ciliatum (Ait. hort. kew. 2. p. 170.) leaves opposite, connate, semi-terete; stipulas membranous, reflexed, jagged, in the form of cilia. G. D. G. Native of the Cape of Good Hope. Corolla white. The rest unknown. Stipulas in all other species of Mesembryanthemum are wanting; it is then probably a species of Arctemia.

Ciliated-stipuled Fig-marigold. Clt. 1774. Pl. ¼ foot.

337. M. coriaceum (Burch. cat. geogr. 2487. ex trav. 1. p. 242.). G. D. S. Native of the Cape of Good Hope, where it is used in tanning leather. Said to be allied to M. unciniatum.

Hide Fig-marigold. Shrub

338. M. villosum (Lin. spec. 695.) stem shrubby, thickened at the base; branches prostrate; leaves connate, linear, semi-terete, channelled, pubescent; peduncles trichotomous; flowers apetalous. G. D. G. Native of the Cape of Good Hope. Haw. obs. 222. and 441. misc. 58. syn. 254. rev. 125. Calyx 5-cleft, purplish inside. Capsule fleshy, 5-6-celled. Perhaps a species of *Aizoon, Tetragonia*, or *Sesitrium*, but the description is not sufficient to decide this point.

Villous Fig-marigold. Shrub prostrate.

339. M. graminifórmis (Haw. misc. 82. syn. 263. rev. 149.) stems expanded, short, suffruticose; leaves distinct, rather triquetrous, ovate grain-formed; stamens collected. G. D. G. Native of the Cape of Good Hope. Bradl. succ. t. 20. Stems 3 inches high. Leaves 3 lines long. Flowers yellow, expanding in the evening. This species is entirely unknown at the present day, having been only known to Bradley. According to Haworth's opinion, it comes in section *Cyanoflorum*.


**Cult.** This is a vast genus of what are called succulent plants, that is, fleshy-leaved plants. The shrubby kinds should be grown in pots, in a very sandy or gravelly soil; they should be kept almost quite dry, while in a dormant state, but when growing freely and in the flowering season, they require a considerable supply of water. The poorer the soil is, the more dwarf the plants will grow, and bear flowers more abundantly. The shelves in a greenhouse are a good place to preserve them through the winter, however, a good dry frame will answer the purpose equally well, if not better, with a covering of mats in frosty weather. Cuttings of all of them strike root readily, if planted in pots of the same kind of earth recommended for the plants, and kept dry till they begin to wither, when they may have a little water given to them; and under this treatment they will root very soon. There are also several annual and biennial kinds, most of them handsome and curious. The seeds of these should be sown in pots early in spring, and raised in a frame, hot-bed, or greenhouse; and when the plants are of sufficient size, plant them singly in small pots, and set them in the greenhouse, until the warm weather commences, when they may be set out of doors along with the shrubby kinds, where they will flower and seed freely, if the summer proves fine. The same soil and treatment recommended for the shrubby kinds will also suit these well. The ice-plant, *M. crystalllum*, and also *M. pinnafloridum* do well if planted out on rockwork or among stones, where they will make a very curious appearance.

II. **TETRAGOНИA** (from *τετρα, tetra*, four, and *γώνια, gonia*, an angle; fruit of some of the species). Lam. gen. no. 627. Germ. fruct. 2. t. 127. and 179. Lam. ill. 437. D. C. prod. 3. p. 451.—Tetragonocarpus, Commel.

**Lin. syst.** *Iosindria*. *Tri-Otography*. Calyx 4-cleft, rarely 3-cleft, with the tube adhering to the ovarium, and 4-5-horned; lobes coloured on the inside. Petals wanting. Stamens variable in number. Ovarium 3-8-celled. Styles 3-5, very short. Nut bony, winged, or horned, indehiscent, 3-8-celled inside. Seeds solitary in the cells.—Herbs or sub-shrubs. Leaves alternate, flat, fleshy, undivided, usually quite entire. Flowers axillary, pedicellate, or sessile.

**Sect. 1.** **Tetragonoïdes** (altered from *Tetragonia*). D. C. prod. 3. p. 452. Stamens in fascicles, or solitary in the recesses of the calyx. Nuts usually horned.—Annual or biennial herbs. Flowers sessile or on short pedicels. Horns of calyx sometimes bearing acaceous flowers.

I. **EXPÁNSA** (Ait. hort. kew. 2. p. 178.) herbaceous leaves petiole, ovate-rhomboid; flowers sessile; fruit 4-horned, 6-8-seeded. G. D. II. Native of New Zealand and Japan, also of
Chili, about Conception, and Valparaiso. Murr. comm. goetz. 1783. t. 5. Sower inst. t. 14. D. C. pl. grass. t. 114. T. cornuta, Gearing. fruit. p. 179. f. 3. T. Japonica, Thumb. jap. 208. T. halimifolia, Forst. prod. p. 223. Roth. abb. t. 8. Demidovia tetragonoids, Pall. horl. dem. t. 1. Stamens 4-5 in each fascicle, 1 fascicle in every recess of the calyx. From all the species this differs in the cells of the pericarp being double the number of calycine lobes, not equal to them in number, as in the rest of the species. The New Zealand spinach is a spreading, rather prostrate plant, with yellow flowers, and leaves an inch and a half long. The whole plant is studded with very minute crystalline dots. It is a native of New Zealand, by the sides of woods, in musky sandy places, and though not used by the inhabitants, yet, being considered by the naturalist who accompanied Cook, as of the same nature as the Chenopodium, it was served to the sailors boiled every day at breakfast and dinner. It was introduced to this country by Sir Joseph Banks in 1772, and treated as a greenhouse plant; but it has been found to grow in the open garden as freely as the kidney-bean or nasturtium, and has been used as a spinach plant. In the Earl of Essex's family, at Cashmore, no other spinach was used during the whole summer of 1821, and it is now commonly cultivated for that purpose. It grows so fast that a few plants will suffice for a large family. There are three varieties of this species found in Chili: 1. with leaves smooth on both surfaces; 2. with leaves hoary beneath; and 3. a small gramineous variety. 

Expanded Tetragonia, or New Zealand Spinach. Fl. Aug. Sept. Cl. 1773. Pl. pr. 2. T. cristallina (Liber. stipr. nov. p. 81. t. 39.) plant herbaceous, pruinose; leaves ovate, sessile; flowers almost sessile; fruit tetragonal, incurved, 4-seeded. C. or ¥. F. Native of Peru and Chile, about Valparaiso and Coquimbo. D. C. pl. grass. t. 34. Calyx 3-4-lobe. Stamens 3-4 in each fascicle, 1 fascicle in each recess of the calyx. 

Crystalline Tetragonia. Fl. June. Cl. 1788. Pl. ½ foot. 3 T. echinata (Ait. hort. kew. p. 177.) plant herbaceous; leaves petiolate, ovate-throndoid; flowers on short pedicels; fruit echinatated, 3-4-seeded. C. or C. F. Native of the Cape Good Hope. D. C. pl. grass. t. 115. Calyx 3-4-lobe. Stamens 3-4, 1 in each recess of the calyx. Calyx beset with crystalline papule.


Sec. II. Tetragonoxa. Tetragonia, or (from tetra, tetra, four, gemina, an angle, and coccus, karpes, a fruit; in reference to the fruit being usually furnished with 4 wings). Comm. ex D. C. prod. 3. p. 432. Stamens disposed in 1 series at the base of the calycine lobes. Fruit usually winged.—Herbaceous, perennials, or suffruticosae plants. Flowers on long pedicels. 

4 T. urucuata (Linn. fl. suppl. 258.) plant herbaceous, decumbent; leaves ovate, villous, sessile; flowers 3 together, on short pedicels; fruit tetragonal, with a wing on each angle, 4-seeded. ¥. D. G. Native of the Cape of Good Hope. Thumb. fl. cap. 408. Stamens numerous, inserted in the middle of the calyx by bundles, as described by Thunberg. Perhaps not distinct from T. villosa, Poir. drit. 7. p. 604. 

Hairy Tetragonia. Pl. decumbent. 

5 T. specia (Linn. fl. suppl. 258.) plant herbaceous, erect; leaves petiolate, glabrous; lower ones ovate; upper ones lanceolate; flowers pedicellate, branched. ¥. D. G. Native of the Cape of Good Hope. Thumb. fl. cap. 409. Where it is called T. racemosa. Pedicels numerous, aggregate. 


6 T. headracea (Linn. spec. 487.) plant somewhat herbaceous, rather decumbent, smooth; leaves ovate, petiolate; flowers on long pedicels; fruit 4-winged, 4-6-seeded; root strumose. ¥. D. G. Native of the Cape of Good Hope. Thumb. fl. cap. 409. 


Decumbent Tetragonia. Fl. Jul. Sept. Cl. 1758. Sch. dec. 8 T. fructicosa (Linn. spec. 687.) shrubby, erect; leaves oblong, on very short pedicels; flowers 1 or 3 together, on short pedicels; fruit bluntly 5-angled, each angle furnished with a wing. ¥. D. G. Native of the Cape of Good Hope. —Comm. hort. amst. 2. t. 102.—Séba, thes. 2. t. 11. f. 8. Hav. misc. p. 120.—Mill. fig. t. 2263. f. 2. Calyx green without and yellow within. 


Four-winged-ruited Tetragonia. Fl. July, Sept. Cl. 1794. Shrub to 1 ½ feet. 10 T. linearis (Hav. rev. p. 75.) plant shrubby and diffusely decumbent; leaves linear, rather revolute at the sides, engraved above by a dorsal line; flowers terminal, racemose. ¥. D. G. Native of the Cape of Good Hope. Leaves greenish. 

Linear-leaved Tetragonia. Fl. Sept. Cl. 1819. Sch. dec. 11 T. obovata (Hav. rev. p. 75.) plant suffruticosae, decumbent, pruinose; leaves obovate or ovate; petals winged, stamens clasping, somewhat decurrent. ¥. D. G. Native of the Cape of Good Hope. Flowers unknown. Very like T. decumbens, but half larger leaves. 

Obovate-leaved Tetragonia. Cl. 1821. Shrub dec. 

Cult. The same culture, propagation, and treatment as that recommended for Mesembryanthemum will suit the species of Tetragonia. The T. expansa, when wanted for spinach, may be planted out in the open ground, about April or May. 


Linn. syst. Icosandra, Tri-Pentagynta. Calyx 5-parted, permanent; lobes coloured on the inside. Petals wanting. Stamens 15-30, inserted at the top of the calyce tube, which is short. Ovarium distinct, sessile. Style wanting. Stigmas 3-5. Capsule 3, rarely 4-5-celled, circumsised, having the plicate axis permanent. Seeds numerous. Embryo hooked. Smooth fleshy herbs, inhabitants of the sea-side; with opposite, quite entire, veinless leaves; and axillary, solitary, alternate flowers, which are either sessile or on short pedicels. Calyx purplish inside. 

1 S. portulacastrum (Linn. spec. 446. exclusive of the syn. of Rumphii) leaves linear or lanceolate-oblong, flat; flowers pedicellate. ¥. D. G. Native of the West Indies, Mexico, and Senegal, by the sea-side.—Plum. ed. Burm. t. 223. f. 2. —Jacq. amer. t. 95. Aizeon Camaricè, Andr. bot. rep. 201. Calyx green outside, and reddish within. Stamens 25-30. 

Var. a. pedunculatum; flowers pedicellate. S. pedunculatum, Pers. ench. 2. p. 39. Lam. ill. t. 139. f. 1. 

Var. b. sessile; flowers nearly sessile. S. sessile, Pers. ench.
long and bristly; leaves opposite, linear-lanceolate, glabrous, sessile; flowers sessile in the forks of the branches.

2. D. G. Native of the Cape of Good Hope. Thunb. f. cap. 410. Calyx hetise with white hairs on the outside, and coloured on the inside; when dry rather rose-coloured. Limb of leaves about equal in length to the pericarps.


**Leaves opposite.**

3 A. Hispáni cum (Lin. spec. 700.) stem herbaceous, erect, branched; branches spreading and erect, rather papulose at the apex; leaves opposite, linear, lanceolate, glabrous, sessile; flowers sessile in the forks of the stem. 

4 A. Tomentósum (Lin. dec. 3. p. 418.) stem suffruticosum, tormentosum, branched; leaves opposite, tormentosum, linear-lanceolate, narrowed at the base, rather spatulate at the apex; flowers sessile in the forks of the stem. 

5 A. Stellátum (Lin. dec. 3. p. 418.) stem suffruticosum, branched, hispid at the apex; leaves opposite, linear-spataulate, hairy; flowers paniculato; pedicels and calyces hairy. 

6 A. Perfoliátum (Lin. fil. suppl. p. 261.) stem suffruticosum, erect, tormentosum, branched; leaves opposite, comatum, obovato-oblong, full of crystalline dots; flowers axillar, pedunculato, solitary. 


8 A. Sarmentósum (Lin. fil. suppl. 264.) stem suffruticosum, erect, tormentosum, hispid, glaucescent; leaves opposite, linear; leaves sessile, racemose; clustered; leaves nearly sessile on trichotomous peduncles. 

9 A. Glinus (Lin. fil. suppl. 261.) stem suffruticosum, erect, branched; branches hoary; leaves ovato, acute, covered with glaucous tormentum; flowers sessile, alternate, succum, remote. 

† Species not sufficiently known.
whether the leaves are alternate or opposite. The leaves are said to be ovate in the diagnosis, and in the description obovate.

Stiff Aizoon. Shrub decumbent.

10. A. fruticosum (Lin. fil. suppl. 1. c.) stem shrubby, erect, glabrous, stiff; leaves lanceolate, glaucous, attenuated at the base; flowers sessile. $\varphi$. D. G. Native of the Cape of Good Hope. Thumb. fl. cap. 410. The description does not mention whether the leaves are alternate or opposite.

Shrubby Aizoon. Shrub 1 foot.

11. A. sectundum (Lin. fil. suppl. 1. c.) stem herbaceous, hairy, decumbent; leaves ovate, acute, rather petiolate, with silky villi; flowers sessile. $\varphi$. D. G. Native of the Cape of Good Hope. Thumb. fl. cap. 409. Leaves a line long; in the diagnosis they are said to be ovate, but in the description obovate.

Second-flowered Aizoon. Pl. decumbent.

Cult. This genus of succulent plants is not worth growing except in botanical gardens. The culture, treatment, and propagation recommended for the genus Mesembryanthemum will answer well for the species of Aizoon also.


Lin. syst. Icosandria, Pentagyinia. Calyx 5-parted, permanent, spreading, coloured. Petals wanting. Stamens 12, inserted in the bottom of the calyx; anthers standing. Ovarium roundish. Style wanting; stigmas 5, linear. Capsules 5, connate, each containing one seed.—A prosstrate shrub, with oblong, opposite, crowded leaves; and crowded lateral flowers. This genus differs from Glinus in the petals being absent in the spreading calyx, and the capsules being 1-seeded.

VI. GLINUS (a name given by Theophrastus to the maple). Lin. gen. no. 610. Juss. gen. 316. Lam. ill. 413. D. C. prod. 3. p. 455.—Rolofa, Adans. fam. 2. p. 256.

Lin. syst. Dodceandria, Pentagyinia. Calyx 5-parted, connivent, permanent, coloured inside, with 3 of the sepals exterior, and the other 2 interior. Petals strap-formed, 2-4-cleft at the apex, from 5 to 20 in number, shorter than the calyx. Stamens about 15. Ovarium distinct. Style very short or wanting; stigmas 5. Capsule covered by the calyx, 5-valved, 5-celled. Seeds numerous, minute, hanging by a very long involute funicle each. Embryo spiral.—Branched procumbent tormentose herbs, with alternate leaves or in unequal pairs. Flowers axillary, almost sessile. The plants have the habit of Aizoon, but the embryo is that of Caryophyllaceae.


VI. GLINUS. VII. ORYgia. NITRARIAE.CE.

2. G. dictamnoides (Lin. mant. 243.) plant clothed with white tomentum, prostrate, suffruticose; leaves orbicular, flat, on very short petioles; flowers axillary, nearly sessile. $\varphi$. G. Native of the East Indies. Vahl. symb. 3. p. 64.—Phuk. amalth. t. 306. f. 6. Petals yellow.

Dictamnus-like Glinus. Shrub prostrate.

Cult. These plants will grow well in a mixture of sand, peat, and loam; and young cuttings of the shrubby kinds will strike root readily in the same kind of soil. The seeds of the annual species had better be reared on the hot-bed, and when the plants are of a sufficient size, they should be planted out into a warm damp situation.


Decumbent Orygia. Pl. decumbent.

Cult. A gravelly or sandy soil will suit this plant, and cuttings will root readily in the same kind of soil.

Order CXV. NITRARIAE.CE (this order only contains the genus Nitraria). Lindl, introd. nat. syst. p. 163. Calyx inferior, 5-toothed, fleshy. Corolla of 5 petals, which arise from the calyx, inflexed, valvular in stivation. Stamens 3 times the number of the petals, perigynous; anthers innate, with 2 oblique, longitudinal lines of dehiscence. Ovarium superior, 3 or more celled, with a continuous fleshy style, at the apex of which are as many stigmatic lines as there are cells in the fruit; ovula pendulous, by means of a long funicle. Fruit drupaceous, opening by 3 or 6 valves. Seeds solitary, without albumen. Embryo straight, with the radicle next the hyalum.—Shrubs with deciduous, succulent, alternate leaves, which are
sometimes in fascicles. Flowers in cymes, or solitary. The affinity of *Nitraria* with *Ficoideae* is undoubtedly great, especially with *Tetragonia*; but its very different embryo, and the peculiar vexilation of the petals, which is much more like that of *Rhanneceae* remove it from that order.

**I. NITRARIA** (so named by Schreber, who first found it in Siberia, near the nitre works, with other marine plants). Lin. gen. no. 632. Lam. ill. t. 403. Gærtn. fruct. t. 1. t. 58. D. C. prod. 3. p. 436.

**Lin. syst. Dodecandria, Monogynia.** Character the same as that of the order.

1 N. Schöberli (Lin. spec. 638.) leaves cuneate, obtuse, mucronate, quite entire. $\gamma$. H. Native of Siberia, about the nitre works; and of the Soongarian desert, in salt fields everywhere, and about Lokoiskw, as well as on the borders of the Caspian Sea. Pall. fl. ros. I. t. 50. f. a and b. Lam. ill. t. 403. f. 1. Flowers white, disposed in panicked cymes. The Siberian and Caspian varieties are not different, unless in the more luxuriant growth of the Caspian kind, which is owing to its growing in a more humid situation than that of the Siberian variety.


**Tridentate-leaved Nitraria.** Clt. 1820. Shrub 1½ foot. 3 N. Senegalensis (Lam. ill. t. 403. f. 2. dict. 4. p. 493.) leaves obovate, obtuse, quite entire; drupes trigonal. $\gamma$. S. Native of Senegal. Flowers white, in panicked cymes. This species is easily distinguished from the rest by its pyramidal trigonal drupe.

**Senegal Nitraria.** Shrub 1 to 2 feet.

† A doubtful species.

4 N. Billardieri (D. C. prod. 3. p. 456.) leaves linear, attenuated at the base, acutish, quite entire; drupes ovate, acuminate. $\gamma$. G. Native of New Holland. Very nearly allied to N. Schobéri, Labill. ms.; but very different from it in the fruit being ovate conical, as well as from growing in a different part of the world.

La Billardier’s Nitraria. Shrub 1 to 2 feet.

**Cult.** This is a genus of singular shrubs: they thrive best in a sandy or gravelly soil, and should be occasionally refreshed with salted water, or they will not flourish; they may be increased by layers; or cuttings planted in sand, with a hand-glass over them, strike root readily. The *N. Senegalensis*, being a stoe plant, and *N. Billardieri* should be grown in pots, in order that they may be placed in their respective situations.


Calyx 5-parted (f. 31. a.), surrounded externally by imbricating bracteas. Petals 5 (f. 31. b.), hypogynous. Stamens definite or indefinite (f. 31.), hypogynous, with or without a hypogynous disk; anthers peltate (f. 31. d.). Ovarium superior. Styles several (f. 31. f.), filiform or subulate. Fruit capsular (f. 31. e.), with 2 or 5 valves, and as many cells, opening in the middle of the cells. Seeds definite, villous. Embryo straight, surrounded by a small quantity of mealy albumen, with the radicle next the hymen. Shrubs. Leaves fleshy, scale-like or small, and alternate, without stipulas. Flowers solitary. Dr. Ehrenberg suggests (ann. sc. 1. c.) that *Reaumuria* and Holobôcha, both of which have according to him hypogynous stamens, may constitute a little group to be called *Reaumuriœceae*. The order appears to be more nearly related to *Hyperiœceae* than to either *Ficoideae* or *Nitrariœceae*, and ought perhaps to have followed that order among the Thalamifôrœ in vol. I. From the former it chiefly differs in its succulent habit, and definite villous seeds, agreeing with *Reaumuria*, at least even in the obliquity of the veins of the petals, and in the leaves being dotted. From *Ficoideae* its hypogynous stamens and seeds distinguish it; from *Tamariscinceae*, its plurilocular ovary and distinct styles; from *Nitrariœceae*, its erect villous seeds, distinct styles, and hypogynous stamens. Saline matter is present in these plants in great abundance.

**Synopsis of the genera.**

1 **Reaumuria.** Calyx 5-parted (f. 31. a.), involucrated by crowded leaves on the outside. Filaments indefinite (f. 38.), joined at the base into 5 bundles.

2 **Hololancha.** Calyx 4-5-parted. Stamens 8-10, monadelphous.


**Lin. syst. Polyandria, Pentagynia.** Calyx 5-parted (f. 31. a.), involucrated by leaves on the outside. Petals 5 (f. 31. b.), furnished with a ciliated appendage on each side at the base. Ovarium distinct. Stigmas 5-6, filiform (f. 31. f.). Capsule 5-celled, 5-valved; dissepiments easily separated from the valves. Seeds 2 in each cell, very villous.—Oriental shrubs, with fleshy, alternate, glaucous, dotted leaves, exuding globules of a saline alkali. Flowers solitary at the tops of the branches.

1 R. vermiculata (Lin. spec. 754.) leaves subulate, semi-terete, imbricated, crowded on the branches. $\gamma$. F. Native of Sicily, Barbary, and Egypt, on the sea shore. Lam. ill. 489. f. 1. Desf. atl. I. p. 481.—Lob. icon. 380. Flowers white or pale red. Habit of *Chenopodium Fruticosum*. Hairs on the seeds rufous, and very stiff.


x 2

**FIG. 31.**
Cult. Elegant little shrubs of easy culture; they thrive best in a mixture of sandy loam and peat; and young cuttings readily strike root under a hand-glass.

II. **HOLOLA** CHNA. This genus having already been described under the order *Tanaracaceae*, it is only necessary here to refer to vol. II. p. 728, where all the details of the genus will be found.


Calyx composed of many sepals, usually indefinite in number, and conjoined with the petals, united and adnate a great length to the ovary; with the tube smooth in the genera *Mammillaria*, *Melocactus*, and *Rhizalis*; or with the lobes of the sepals crowning the fruit, and having the tube scaly as in the genera *Cereus*, *Opuntia*, and *Pereskia*. Petals disposed in two or more series, hardly distinguishable from the inner sepals, and somewhat united to them; sometimes irregular, and disposed in a long tube at the base, but distinct at the apex, as in the genera *Mammillaria*, *Melocactus*, and *Cereus*; sometimes equal and distinct to the very base, forming a rotate corolla, as in the genera *Opuntia*, *Pereskia*, and *Rhizalis*. Stamens indefinite, disposed in many series, more or less cohering with the petals or inner sepals; filaments slender, filiform: in the genus *Opuntia* they are irritable to the touch; anthers ovate, versatile, 2-celled. Ovary ovate, fleshy, 1-celled: with numerous ovula, arranged upon parietal placenta, which are equal in number to the lobes of the stigmas. Style filiform, sometimes full and sometimes fistular; stigmas numerous, either spreading or collected into a cluster. Fruit fleshy, 1-celled, many-seeded, either smooth and crowned by the calyx, or covered with scales, scars, or tubercles, and umbilicate at the apex. Seeds, when young parietal, but when mature imbedded in the pulp with which the cells are filled, oval or obovate, without albumen. Embryo either straight, curved, or spiral; with a short, thick, obtuse radicle; cotyledons flat, thick, foliaceous in *Opuntia* and other leaf-bearing genera, very small in *Melocactus*, and perhaps almost obsolete in *Mammillaria* and other leafless genera.

This order contains fleshy or succulent shrubs, very variable in habit. Steins usually angular, winged, or regularly beset with tubercles, rarely terete, usually jointed; joints compressed. Leaves usually wanting, but when present small, caducous, and terete, sometimes like those of *Sedum*, rarely flat and expanded, sometimes alternate and disposed in a spiral order, always glabrous and fleshy. Prickles or bristles disposed in fascicles, rising from the axils of the leaves; in the leafless genera the fascicles of spines are disposed on the angles of the stem, rising from tubercles. Flowers very variable, showy, or minute, usually solitary, sessile, rarely in fascicles, ephemeral, expanding by night or by day.

It has already been remarked, on more than one occasion in this work, that the state of that remarkable distention or increase of cellular tissue of vegetables, from which the name of succulent is derived, is no indication of natural affinity, but rather to be considered a modification of structure, which may be common to all tribes. Hence the immediate relationship of *Cactus* is neither with *Euphorbiaceae*, nor *Lawrencea*, nor any other tribe of succulent plants, but with *Grossulariaceae*, in which no tendency whatever to an increase of cellular tissue exists. Through *Rhipsalis*, which is said to have a central placenta, *Cactus* are connected with *Portulacaceae*, to which also the curved embryo of the section of *Opuntiaceae* probably indicates an approach. De Candolle further traces an affinity between these plants and *Piccióideæ*. For an elaborate account of this order, see his Memoir above quoted.

The fruit is very similar in properties to those of *Grossularia*, some being refreshing and agreeable to the taste, others muscilliginous and insipid; they are all, however, destitute of the excessive acidity of some gooseberries and currants. The fruit of *Cactus Opuntia*, has the property of staining red the urine of those who eat it. The juice of *Mammillaria vulgaris* is remarkable for being slightly milky, and at the same time sweet and insipid.

**Summary of the genera.**

**Tribe I.**

**Opuntiaceae.** Ovula, and therefore the seeds, fixed to the parietes of the fruit.

1 *Mammillaria*. Tube of calyx adhering to the ovarium; lobes 5-6, coloured, crowning the young fruit. Petals 5-6, hardly distinguishable from the calyx. Stamens disposed in many series. Stigma 5-7-cleft. Berry smooth.

2 *Melocactus*. Tube of calyx adhering to the ovarium; lobes 5-6, petaloid, crowning the young fruit. Petals 5-6, united into a long tube with the sepals. Stamens disposed in many series. Stigma 5-rayed. Fruit smooth.

3 *Echinocactus*. Sepals numerous, imbricate, adhering to the ovarium: outer ones in the form of an involucrem; inner ones petal-formed. Stamens numerous. Style multifid at the apex. Berry scaly from the remains of the sepals.

4 *Cereus*. Sepals very numerous, imbricate, adnate to the base of the ovarium, united into an elongated tube: outer ones shorter and like a calyx: middle ones longer and coloured, innermost ones petal-formed. Style multifid at the apex. Berry areolate, tubercular or scaly from the remains of the sepals.

5 *Ephiphyllum*. Tube of calyx very long, furnished with remote scales; limb of corolla multifid, roseaceous or ringent. Branches flat.

6 *Opuntia*. Sepals numerous, leaf-formed, adnate to the ovarium: upper ones flat and short: inner ones petal-formed, obovate and expanded, with no tube above the ovarium. Stamens numerous, shorter than the petals. Stigmas numerous,
erect, thick. Berry oval, umbilicate at the apex, either tubercled or spiny.

7 Pereskia. Sepals leaf-formed, numerous, adnate to the ovarium, and usually permanent above the fruit. Corolla rotate, almost as in Opuntia. Stamens numerous, much shorter than the petals. Stigmas aggregate, in a spiral manner. Berry globose or ovoid.

**Tribe II.**

*Rhipsalidaceae.* *Ovula,* and therefore the seeds fixed to the central axis of the fruit.

8 Rhipsalis. Tube of calyx smooth, adhering to the ovarium; limb superior, 3-6-parted, short. Petals 6, oblong, inserted in the calyx. Stamens 12-18, fixed to the petals. Stigmas 3-6, spreading. Berry roundish, pellucid, crowned by the dead calyx.

**Tribe I.**

*Opuntiaee.* (plants agreeing with *Opuntia* in important characters). D. C. prod. 3, p. 458. *Ovula,* and therefore the seeds fixed to the pericarya of the berry.

1. **Mammillaria** (from mamma, the nipple; the plants are covered with mammiform tubercles, spirally disposed, the mamme bearing radiating spines at the apex and deciduous tomentum). Haw. syn. 177. D. C. prod. 3, p. 458.—Cactus and Mammillaria, D. C. cat. hort. monsp. p. 83.—Echinocactus, Willd. enum. suppl. 30. exclusive of some species.—Cactus, sect. A. Link. enum. 2, p. 21.

*Link. syst. Iconotheca, Monogynia.* Tube of calyx adhering to the ovary; lobes 5-6, coloured, crowning the young fruit. Petals 5-6, hardly distinguishable from the calyx, and longer than it, united into a tube with the sepals. Stamens filiform, disposed in many series. Style filiform. Stigmas 5-7, radiating. Berry smooth. Seeds imbedded in the pulp. Corylons obsolete (ex Nutt.). Fleshy, succulent, shrubby plants, of a roundish or subcylindrical form, destitute of a woody axis (perhaps in all?), lacteose, leafless; bearing rather conical, mammiform, crowded tubercles, which are disposed in a spiral manner, terminating in radiating spines and deciduous tomentum. Flowers sessile at the base of the mamme, usually disposed in a transverse zone around the plant. Berries obovate, eatable, crowned by the mamecarystis calyx, which at length becomes deciduous. Tubercles of the stem very similar to the leaves of *Mesembryanthemum barbatum*.

1 M. magnifica (Haw. in phill. mag. vol. 63, p. 41.) plant nearly globose, depressed; tubercles or mammæ large, hard, and very green, when young woolly at the apex, but when old quite smooth, each terminated by 4 very stiff, radiating, recurved, yellow spines: the upper one of which is very minute, and the lower one much elongated. b. D. S. Native of Mexico. This is a very pretty species. The tubercles are large, tetragonal, and cylindrical, very broad at the base, and much depressed; the spines very strong and very stiff, broadish, recurved, furred longitudinally, when young pale brown and black at the apex, but when old wholly black, and with wool at the base; wool at the base of the spines vanishing.

**Large-tented Mammillaria.** Clt. 1823. Shrub ½ to ½ foot.

2 M. coronata (Haw. rev. p. 69.) plant simple, cylindrical, when young clavate; tubercles or mammæ large, ovoid, woolly, and spiny at the apex; spines stiff, rising from white tomentum, exterior ones white; interior ones brown. b. D. G. Native of Mexico. Cactus coronatus, Willd. enum. suppl. 30. Cactus cylindricus, Ort. dec. p. 128, t. 16, but not of Lam. This is a very beautiful species, and the tallest of all the genus; it is about 5 feet high, and half a foot in diameter. Flowers scarlet. Tubercles or mammæ at the top of the stem are the longest, and as if they were forming in a crown.

**Crown Mammillaria.** Fl. June, Aug. Clt. 1817. Sh. 5 feet. 3 M. discolor (Haw. syn. 177. D. C. diss. t. 2. f. 2.) plant globose, somewhat depressed, almost simple, with glabrous axes; tubercles or mammæ ovoid, hardly woolly at the tips, but bearing spines: outer spines setaceous and white, spreading and stiffish; inner ones fewer and brown, straight and more rigid. b. D. S. Native of South America. Colla, hort. ripul. append. 3, t. 11. Cactus depressus, D. C. cat. hort. monsp. p. 84. Cactus pseudomammillaria, Salm-Dyck. mss. C. Spanii, Colla antol. 6, p. 501. Plant 3-4 inches high. There are 13-15 series of tubercles, winding to the right. Flowers longer than the tubercles, more spreading at the apex than in *M. simplex,* white inside, but of a dirty reddish color on the outside.


4 M. lanigera (Haw. in phill. mag. vol. 63. p. 41. D. C. diss. t. 4.) plant simple, terete, obovate, clothed with woolly tomentum all over; tubercles or mammæ bearing 20 or more radiating, straight, spreading spines at the apex; outer spines smaller and white: inner ones strong and fulvous. b. D. S. Native of Mexico. Cactus canescens, Mec. et Sesse, fl. mex. icon. ned. Plant 3-4 inches high. Flowers red, longer than the tubercles (ex fl. mex.).

**Wood-bearing Mammillaria.** Clt. 1823. Shrub ½ foot.

5 M. flavescens (D. C. prod. 3, p. 459.) plant obovate, rather proliferous at the top; axils woolly; tubercles or mammæ ovoid, woolly at the apex, and bearing spines; spines stiff, long, straight, yellowish. b. D. S. Native of South America. Cactus flavescens, D. C. cat. hort. monsp. p. 83. M. straminea, Haw. ex Salm-Dyck. in litt. Cactus flavescens and C. straminea, Spreng. syst. 2, p. 494. Plant 4-5 inches high. The tubercles are disposed in 13-14 series, which wind to the right.


6 M. fulvescens (Haw. in phil. mag. oct. 1829. p. 106.) plant roundish; tubercles or mammæ bearing about 15 spines each at the apex, about 4 of which are a little longer than the rest; inner ones brownish. b. D. S. Native of Brazil. Flowers large, red, nearly like those of *M. rhodanthera* (Otto), but probably larger, and the spines are longer; lower spines 3 lines long, white, almost covering the whole plant; and the 4 upper ones spreading, and 2 or 3 times longer than the rest of a fulvous colour.


7 M. prolifera (Haw. syn. 177. suppl. 71.) plant obovate, proliferous at the base; axils woolly; spines long, straight, of a whitish straw-colour. b. D. S. Native of South America. Cactus mammillaris prolifera, Ait. hort. kew. ed. 2, vol. 3, p. 175. OFFSETs rising from the plant at the very base, from which it is easily known from *M. flavescens* (ex Salm-Dyck.).


8 M. densa (Link. et Otto, pl. rar. hort. berol. t. 35.) plant cylindrically, glance and brown; tubercles or mammæ conical, dense; spines numerous, yellowish, 1 of which in each fascicle is larger than the others. b. D. S. Native of Mexico, on the mountains.

**Dense Mammillaria.** Clt.? Shrub ½ foot.

9 M. nicolor (Lchm. in pl. nov. hort. hamb. ex bot. zeist. 1821, p. 132.) plant obovate, proliferous at top; axils woolly: mammæ twisted spirally, ovoid, pyramidal, woolly at the apex.
and bearing spines; spines setaceous, divaricate, white, 2 of which are erect in each fascicle, and much longer than the rest, spaced out at the apex. \( \text{ft.} \) D. S. Native of Mexico, on the mountains.

**Two-coloured Mammillaria.** Chl. ? Shrub \( \frac{1}{2} \) feet.

10 M. **simplex** (Haw. syn. 177-) plant simple, obovate; axes glabrous; tubercles or mammee ovate, bearing stiff, straight, radiating spines at the apex. \( \text{ft.} \) D. S. Native of South America, and the islands. Cactus mammillaris, Lin. spec. 666. D. C. pl. bristles-fascicles. 3. Cat. hort. musp. 83. Plant 6-8 inches long. There are about 18 or 20 series of tubercles, widening to the left. Spines shortish and red. Tomentum short, deciduous. Axes, when young, rather tomentose. Flowers white, berry red.

**Simple Mammillaria.** Fl. Ju. Aug. Chl. 1688. Sh. \( \frac{1}{2} \) to \( \frac{3}{4} \) ft.

11 M. **parkinsonii** (Haw. suppl. 72.) plant nearly globose, proliferous at the top; tubercles or mammee numerous, small, clothed with white tomentum at the apex, each terminating in 10 or 12 rather stiff, dark purple spines. \( \text{ft.} \) D. S. Native of South America. Cactus microtome, Spreng. syst. 2. p. 494. The character is from Salm-Dyck; in litt.

**Small-tubed Mammillaria.** Chl. 1817. Pl. \( \frac{1}{2} \) to \( \frac{1}{4} \) foot.

12 M. **elongata** (D. C. mem. cat. in mem. mus. vol. 17. p. 109.) plant usually multiple at the base, cylindrical, elongated, a little branched, with the axes broad and naked; mammee or tubercles very short, broad at the base, obtuse at the apex, with the areole of the younger ones rather tomentose; prickles bristle-formed, 16-18 in each fascicle, radiating, yellow, much longer than the mammee, without any central ones. \( \text{ft.} \) D. S. Native of Mexico, where it was discovered and sent to Europe by Dr. Coulter, as well as all the following species.

**Elongated Mammillaria.** Chl. 1830. Pl. \( \frac{1}{4} \) foot.

13 M. **echinaria** (D. C. l. c. p. 110.) plant usually multiple at the base, cylindrical, elongated, with the axes broad and naked; mammee or tubercles very short, broad at the base, and obtuse at the apex, with the areole of the younger ones rather tomentose; prickles bristle-formed, 16-18 in a fascicle, radiating, spreading recurved, yellow, much longer than the mammee, with the 2 central ones stiffer and brownish. \( \text{ft.} \) D. S. Native of Mexico. Flowers bearded at the base, sessile in the axils, small and pale.

**Hedgehog Mammillaria.** Chl. 1830. Pl. \( \frac{1}{4} \) foot.

14 M. **scrunquea** (D. C. l. c.) plant usually multiple at the base, cylindrical, with narrow, rather woolly axes; mammee ovate, short, with the areole of the younger ones rather tomentose; prickles bristle-formed, 16-18 in a fascicle, radiating, yellow, longer than the mammee, but when old becoming copper-coloured, without any central ones. \( \text{ft.} \) D. S. Native of Mexico. Coulter, no. 36. Flowers small, sessile, solitary in the axils of the mammee, forming a circle round the top of the plant. Style permanent; stigma many-cleft. Berry ovate, about the size of a pea, crowned by the floral remains. Plant 2-3 inches high, and 9-11 lines in diameter, with 12-15 mammee in each series, which series bend to the left.

**Subcrocea-spined Mammillaria.** Chl. 1830. Pl. \( \frac{1}{2} \) foot.

15 M. **tenue** (D. C. l. c.) plant multiple at the base, cylindrical, with narrow, naked axes; mammee ovate, with the areole of the young ones rather woolly; prickles bristle-formed, 20-25 in a fascicle, yellow, radiating, a little longer than the mammee, in any the central ones. \( \text{ft.} \) D. S. Native of Mexico. Coulter, no. 34. Plant 3-4 inches high, and 5 lines in diameter.

**Var. \( \beta \), minia** (D. C. l. c.) stem thicker; central prickles wanting or solitary. \( \text{ft.} \) D. S. Native of Mexico. Plant 10-12 lines in diameter. Perhaps a proper species, or perhaps \( M. \) extremiosa, Hort. berol. according to Salm-Dyck.

**Slender Mammillaria.** Chl. 1830. Pl. \( \frac{1}{2} \) foot.

16 M. **interrete** (D. C. l. c.) plant multiple at the base cylindric, with narrow axes; mammee ovate, much crowded hidden by the congeries of prickles, with the areole smoothish; prickles 20-25 in a fascicle, stiff, yellow, radiating, interwoven from the mammee being so close together. \( \text{ft.} \) D. S. Native of Mexico. Coulter, no. 57. Plant 4 inches high, and 1 inch in diameter. Prickles 3-4 inches long, sometimes somewhat elongated. According to a letter received from Dr. Coulter to De Candolle, this and the 4 preceding species will form, as he conceives, only one species; the appearance of these plants have a striking likeness to each other, but these differences appear to De Candolle real, and permanent, and he considers them as forming a small group of the genus, remarkable for the elongation of their stems, and for their yellow appearance.

**Interwoven-spined Mammillaria.** Chl. 1830. Pl. \( \frac{1}{2} \) foot.

17 M. **cylindrica** (D. C. l. c. p. 111.) plant simple, cylindric, with a few bristles in the axes; mammee ovate, with smoothish areole; prickles 20-25, in a fascicle, radiating, white, shorter than the mammee: the 2 central prickles stiff and diverging, twice the length of the surrounding prickles. \( \text{ft.} \) D. S. Native of Mexico (Coulter). This plant is easily distinguished from all the preceding, in the colour of the mammee being deep green, not yellow. Plant 5 inches high, and 1 inch in diameter. Prickles 1-2 lines long, and the central prickles 3-4 lines long.

**Cylindric Mammillaria.** Pl. \( \frac{1}{2} \) foot.

18 M. **legans** (D. C. l. c.) plant simple, obovate, somewhat umbilicate at the apex, with naked axes; mammee ovate, having the areole of the young ones rather tomentose; prickles 25-30 in each fascicle, white, radiating, stiltish, and with 1-3 stiff, erect prickles, which are a little longer than the bristles that surround them. \( \text{ft.} \) D. S. Native of Mexico. Coulter, no. 48. Plant 2 inches high and 2 inches in diameter.

**Var. \( \beta \), minor** (D. C. l. c.) plant exactly obovate, one half smaller than the species, but it is probably a young plant of the same.

**Var. \( \gamma \), globosa** (D. C. l. c.) plant larger, globose, with the upper axes bearded. Perhaps the same, but an old plant.

**Elegant Mammillaria.** Pl. \( \frac{1}{2} \) foot.

19 M. **radicans** (D. C. l. c.) plant simple, nearly globose, with naked axes; mammee ovate, large, with the areole smoothish; prickles 16-18 in a fascicle, radiating, white, stiff, when young rather tomentose, without any central ones. \( \text{ft.} \) D. S. Native of Mexico. Coulter, no. 35. There are varieties of this plant either with an obtuse or a depressed apex, and the spines either white or yellowish. Plant about 3 inches high, and the same in diameter. Prickles 0-6 lines long.

**Radiating-prickled Mammillaria.** Pl. \( \frac{1}{4} \) foot.

20 M. **irregularis** (D. C. l. c.) plant multiple, and rather tuberous at the base, with ovate offsets, and naked axes; mammee oblong, with smoothish areole; prickles 20-25 in each fascicle, white, little reflexed, without any central prickles. \( \text{ft.} \) D. S. Native of Mexico. Coulter, no. 31. Plant 2 inches high, with offsets an inch in diameter. Bristles 2 lines long.

**Irregular Mammillaria.** Pl. \( \frac{1}{2} \) foot.

21 M. **crebripinna** (D. C. l. c.) plant multiple at the base; offsets ovate; axes naked; mammee ovate, short, crowded, with the areole smoothish; prickles straight, outer 16-17 radiating and white, central 3 brown and erect. \( \text{ft.} \) D. S. Native of Mexico. Coulter, no. 14. Plant 2 inches high and \( \frac{1}{2} \) inch in diameter. The prickles, from the mammee being close, nearly hide the stem.

**Thick-spined Mammillaria.** Pl. 2 inches.

22 M. **cosoidea** (D. C. l. c. p. 112.) plant simple, ovate-conical, with the axes woolly in the young state; mammee ovate, crowded, with the areole rather tomentose while young; prickles straight, stiff, the outer 15-16 radiating, but the central 3-5 are erectly diverging, brown, and rather longer than the ray ones.
D. S. Native of Mexico. Coulter, no. 22. Allied to *M. crebrispina*, and is perhaps *M. cönus*, Haw. Flowers of a reddish-violet colour, few in number, rising near the top of the stem.

**Cowoid Mammillaria.** Pl. ½ foot. 23 M. *compressa* (D. C. l. c.) plant simple, cylindrically-clavate; axes when young woolly and bristly; mammæ ovate, short, angular at the base, and if they were compressed beneath, with the areole rather tomentose; prickles 5-5 in each fascicle, unequal, white, lower one the longest. D. S. Native of Mexico. Coulter. Plant 5 inches high, an inch broad at the base, and 1½ inch in diameter at the top.

**Compressed Mammillaria.** Pl. ½ foot. 24 M. *cornifera* (D. C. l. c.) plant simple, globose, with naked axes; mammæ ovate, thick, crowded, with the areole smoothish; outer prickles 16-17, radiating grey, with a strong, longer, erect, rather incurved one in the middle of each fascicle. Native of Mexico. Coulter. Plant 3 inches in diameter, 2¾ broad. Ray prickles 5-6 lines long, and the central one 7-8 lines long.

**Horn-bearing Mammillaria.** Pl. ½ foot. 25 M. *crisíșta* (D. C. l. c.) plant globose, depressed, multiple at the base; axes naked; mammæ ovate, thick, with the areole smoothish; bristles 15-20 in each fascicle, white, elongated, rather radiating; central prickles yellow, stiff, hooked at the apex, length of the bristles that surround them. D. S. Native of Mexico. Coulter, no. 28. Plant 1 inch high, 1½ inch in diameter. Bristles 8-9 lines long. *Var. β, paucisétæ* (D. C. l. c.) axes woolly; bristles 8-10 in a fascicle. Sometimes the bristles are nearly all deciduous. Coulter, no. 29.

**Hairy Mammillaria.** Pl. 1 inch. 26 M. *crusíæta* (D. C. l. c.) plant multiple at the base, tufted, aggregate, globose; axes naked; mammæ few, ovate, with the areole smoothish; bristles 15-20 in each fascicle, white, elongated, rather radiating; central prickles yellow, stiff, hooked at the apex, length of the bristles that surround them. D. S. Native of Mexico. Coulter. Plant 1 inch high, 1½ inch in diameter. Bristles 8-9 lines long.

**Tufted Mammillaria.** Pl. ½ foot. 27 M. *subangularis* (D. C. l. c.) plant simple or multiple at the base, nearly globose, depressed; axes for the most part woolly; mammæ ovate, thick, short, angularly tetragonal from pressing so close against each other, with the areole of the young ones tomentose; prickles 5-8 in each fascicle, erectly diverging, uncial, of a pale grey colour. D. S. Native of Mexico. Coulter. Plant nearly 3 inches high and 1½ broad. Prickles 5-10 lines long.

**Subangular-teated Mammillaria.** Clt. 1830. Pl. ½ foot. 28 M. *macracántɔ* (D. C. l. c. p. 113.) plant simple, globose, depressed, with some of the axes naked, and some of them bearded with wool; mammæ ovate, rather tetragonal, with the areole of the young ones rather tomentose; prickles 1-2, very long, pungent, white, or brownish. D. S. Native of Mexico. Coulter, no. 44. Perhaps the same as *M. magnumnema*, Haw.? Prickles 2 inches long. Plant 1½-2 inches high, and 3-6 inches in diameter. Prickles rather angular.

**Long-spined Mammillaria.** Pl. ½ foot. 29 M. *longoma'ima* (D. C. l. c.) plant simple, or rather multiple at the base, ovate, or nearly cylindrical; axes woolly; mammæ ovate-oblong, dense, with the areole tomentose; prickles 9-10 in each fascicle, pungent, of a greenish brown colour. D. S. Native of Mexico. Coulter, no. 30. Plant 3-4 inches high, and 2 inches broad. Prickles 6-9 lines long.

**Long-teated Mammillaria.** Pl. ½ foot. 30 M. *octacántɔ* (D. C. l. c.) plant simple, ovate-oblong, nearly cylindrical; axes naked; mammæ oblong, rather tetragonal, with the areole of the young ones rather tomentose; prickles stiff, the outer 7 in each fascicle radiating and white, with a central one, which is stiffer, longer, and of a fuscescent colour. D. S. Native of Mexico. Coulter, no. 39. Plant 3 inches high, 2 inches broad. Outer prickles 3-4 lines long; central one 6 lines long.

**Eight-spined Mammillaria.** Pl. ½ foot. 31 M. *leucacántɔ* (D. C. l. c.) plant multiple at the base, ovate; axes naked; mammæ few, ovate-tetragonal, with the areole of the young ones glabrous; prickles 6-7 in each fascicle, stiff, white, sometimes all radiating, and sometimes the one in the centre is erect. D. S. Native of Mexico, Coulter. Plant an inch and a half high, and hardly an inch broad. Prickles 4 lines long.

**White-spined Mammillaria.** Pl. ½ foot. 32 M. *divergens* (D. C. l. c.) plant multiple at the base, nearly globose, depressed; axes woolly and bristly; mammæ ovate, crowded, with the areole of the young ones woolly; prickles 5-6 in each fascicle, unequal, pungent, white, but brownish at the apex, diverging, and somewhat tetragonal. D. S. Native of Mexico, Coulter. Perhaps only a variety of *M. macracántɔ*. Tufts 6-7 inches broad, and 2 inches high.

**Diverging-spined Mammillaria.** Pl. ½ foot. 33 M. *triacaántɔ* (D. C. l. c.) plant simple, obovate, nearly cylindrical, bluntly truncate; axes hardly woolly, but with a few bristles; mammæ ovate, much crowded, with the areole of the young ones tomentose; prickles 3 in each fascicle, erect, white, lower one the longest, tending downwards, 2 lateral ones very short. D. S. Native of Mexico, Coulter, no. 46. Plant 3 inches high, and 1½ inch broad. Sometimes there is a fourth prickle in each bundle, but when this is present it is very short.

**Three-spined Mammillaria.** Pl. ½ foot. 34 M. *sémpervivé* (D. C. l. c. p. 114.) plant simple, attenuated at the base, depressed at the apex, disk-formed; axes woolly; mammæ erect, ovate-tetragonal, with the areole smoothish; bristles 3-4 in each fascicle, stiff, short, and white, and 2 thick, short, diverging prickles. D. S. Native of Mexico. Coulter, no. 57. Plant 2½ inches broad, and 1½ high. *Var. β, tetraçañáthia* (D. C. l. c.) plant densely bearded in the axes; bristles none; prickles 4, short, diverging. D. S. Native of Mexico.

**Semprevivum-like Mammillaria.** Pl. ½ foot. 35 M. *discipór'úmys* (D. C. l. c.) plant simple, depressed, disk-formed; axes naked; mammæ crowded, short, depressed, tetragonal, with the areole of the young ones rather tomentose, and of the adult ones somewhat unarm'd; prickles 5, in each central mamma, stiff, white, erect. D. S. Native of Mexico. Coulter, no. 50. Plant 3 inches broad, and hardly an inch high.

**Disk-formed Mammillaria.** Pl. 1 inch. 36 M. *latima'ima* (D. C. l. c.) plant simple, depressed, somewhat discoid: with the younger axes woolly; mammæ short, broadly ovate, at length depressed, transversely oblong, with the areole of the young ones woolly; prickles 16-17 in each fascicle, stiff, yellowish, rather fuscescent at the apex, diverging, unequal. D. S. Native of Mexico. Coulter, no. 54. Plant 5 and a half inches in diameter, and hardly an inch and a half high.

**Brick-teated Mammillaria.** Pl. 1 inch. 37 M. *gemiñipína* (Haw. in phil. mag. 63. p. 42. D. C. diss. t. 3.) plant simple, cylindrically columnar; axes very woolly; tubercles or mammæ small, very numerous; spines small, white, interwoven, 2 of which in each fascicle are much longer than the rest. D. S. Native of Mexico. *Cáctus columnáris*, Moc. et Sesse, fl. mex. icon. ined. Plant half a foot high. Flowers.
red, a little longer than the tubercles. Haworth’s plant appears
to be different from that of De Candolle.


38 _M. vivipara_ (Haw. suppl. p. 72.) plant multiple; offsets
globoso; tubercels or mammae cylindrically ovate, bearded,
covered by a profuse furrow above; flowers central, large,
exserted. — D. F. Native of Louisiana, on hills about the
flower or tuft of the plant in its native place of growth is 2 or 3 feet
in diameter. Flowers deep red, almost like those of _Cereus flagelliflorus_. Outer lobes of calyx ciliated. Berries about the size
of grapes, fusiform, greenish.


39 _M. glomerata_ (D. C. prod. 3. p. 459.) plant tufted;
tubercels or mammae clavate, glaucous, tomentose, furnished with
a stellate bunch of spines at each apex. — D. S. Native of
exclusive of the synonyme of Haworth. Flowers red.

_Glomerate_ Mammillaria. Shrub ½ foot.

40 _M. psulilis_ (D. C. diss. t. 2. f. 1.) plant multiple, round-
roundish, with a little beard; tubercels or mammae ovate, bearing
radiating spines at the apex, outer spines hair-framed and white,
inferior ones stiff and pale yellow, pubescent when examined under
a lens. — D. S. Native of South America. Mill. dict. no. 6.
Cactus psulilis, D. C. cat. hort. montp. p. 185.—Platt. phyt.
29. f. 27. Plant very small, rather glaucous, hardly 2 inches
high. The tubercels or mammae are disposed in 5 or 7 series,
which wind to the left. Flowers large, white or pale red, with
the backs of the petals reddish.


41 _M. stellata_ (Haw. in phil. mag. Feb. 1830.) plant irregularly tufted,
beet with radiating fascicles of white pubescent spines;
the lower ones of which are hair-framed, with a few of
the upper ones much stronger and more horizontal, and straw-
coloured at the apex. — D. S. Native of South America.
p. 72. Lodd. not. exhib. 79. but not _M. psulilis_, D. C.


42 _M. missouriensis_ (Sweet, hort. brit. p. 171.) mammae
or tubercels ovate, terete, bearded; flowers hardly exerted; berries
scarlet, about equal with the mammae. — D. F. Native of
Louisiana, on the high mountains about the Missouri. _Cactus mammillaris_, Nutt. gen. amer. 1. p. 295. Flowers white. Berries
scarlet. This is a much smaller plant than _M. simplex_, to
which it is nearly allied.

½ to 1½ foot.

† _Species not sufficiently known._

43 _M. helicteres_ (D. C. diss. t. 5.) plant simple, ovate, glabrous;
tubercels or mammae disposed in numerous, nearly vertical,
regularly spiral series, bearing spreading, straight,
spines at the apex. — D. S. Native of Mexico. _Cactus helicteres_, Moc. et Sesce, fl. mex. icon. ined. Plant 3-4
inches high. Flowers rose-coloured, a little longer than the
mammae.

_Screw_ Mammillaria. Pl. 6 to 1½ foot.

44 _M. nudis_ (D. C. prod. 3. p. 460.) plant simple, cylindrical,
circular, ascending, glabrous; tubercels or mammae unarmed. — D. S. Native of Mexico. _Cactus nudis_, Moc. et Sesce, fl. mex.
icon. ined. Flowers rose-coloured.

_Naked_ Mammillaria. Pl. 6 to 1½ foot.

† The following species are hardly known unless by name;

some of these names may, however, be referrible to those described
above.

1 _M. miliis_, Mill. dict. 2 _M. cénica_, Haw. suppl. 3 _M.
cespitosa_, Hort. berol. 4 _M. canascens_, Hort. berol. 5 _M.
angulalris_, Hort. berol. 6 _M. chrysanth&, Hort. berol. 7 _M.
aurita_, Hort. berol. 8 _M. fuscit&_, Hort. berol. 9 _M. atrat&,
Hort. berol.

‡ The following species were raised in the gardens in 1827
from seeds brought from Chili by Dr. Giles, but have not yet
been described. The species we have referred to this genus only
from their seedling state, without any knowledge of them when full
grown. The names are under the genus Cactus in Gillies’s

1 _M. spinosa_, Gill. 2 _M. quadrat&, Gill. 3 _M. caudat&,
Gill. 4 _M. cocincina_, Gill. 5 _M. solitaria_, Gill.

_Cult._ Mammillaria is a genus of small singular grotesque
succulent plants. A mixture of sand, loam, and peat, or loam
mixed with brick rubbish, is a good soil for them. The pots in
which the species are grown should be as small as the plants will
allow, and they should be well drained with sherds; they
require very little water. The pots should be placed on shelves
erected for the purpose in a stove, should there be no house for the
purpose of growing succulent plants, called a dry stove.
The plants are increased by offsets.

II. _MELOCACTUS_ (from _μέλος_, melon, a melon, and _κάκτος_,
cactus, a name applied to a spiny plant by Theophrastus;
the plants are in the form of a melon, and the angles are beset
Link et Otto, diss. 1827. p. 8. _D_. C. prod. 3. p. 460.— _Cactus,
Haw. syn. 172. exclusive of some species. _Cactus_, sect. B,
Link, enun. 2. p. 21.

_Lin. syst._ Icosidendria, Monogynia. Tube of calyx adhering
to the ovarium; lobes 5-6, petaloid, crowning the young fruit.
Petals 5-6, united into a long cylindrical tube with the sepals.
Stamens filiform, disposed in many series. Style filiform; stig-
mas 5, radiating. Berry smooth, crowned by the dry lobes of
the corolla and calyx. Seeds imbedded in the pulp. Cotyle-
dons small. Plumule large, nearly globose ( _D_. C. Organo-
graf. 14. f. 3.) Flabby globose simple roundish shrubs, with
deep furrows, alternating with vertical ribs, which are orna-
mented with confluent tubercels, each tubercle furnished with
a starry fascicle of prickles or spines. Spadix or flowering head
terminal, cylindrical, composed of mammillae, much crowed
between tomentose or setiferous tubercles. Flowers immersed in the
wool of the head under its apex.

1 _M. communis_ (Link et Otto, l. c. diss. p. 8. t. 11. _D_. C.
diss. t. 6.) plant ovate-roundish, deep green, with 11 or 15
ribs straight; spines strong, pale brown, unequal, 9 in each
fascicle: lower one the longest: middle one crept. — D. S.
Native of the West India Islands, in salt marshy
places near the sea; and probably on the main land of South
grass. t. 112. _Cactus Melocacte_, and _C_. coronat&., Lam. dict.
t. 1. p. 537.—Bradt. succ. t. 32. Ribs 12-18. Flowers tubular,
red. Fruit red, nearly like those of _Mammillaria_, but larger,
oblong, and deciduous, protruding from the wool on the head.
Snackbar. _oblongus_ (Link et Otto, l. c.) plant smaller; prickles
weaker, and more red. Stem 6 inches high, and 3½ thick.
_I. ar. _macrocystaphus_ (Link et Otto, l. c.) plant thicker, 14
inches high, and 9 inches broad.

1688. Shrub 1 foot.

2 _M_. _Lamarckii_; plant ovate, flatish at the base, with
14-20 angles at the top, which are rather oblique and bluntish
on the back; spines red, stiff, rather incurved, disposed in approximate fascicles, which are very woolly towards the tops of the angles; cap roundish, furnished with a few red sessile spines; flowers red. 

**Lamarck's Melon-thistle.** Pl. 1; foot. 

3. **M. macracanthus** (Link et Otto, diss. p. 9. t. 12.) plant roundish, light green, with 14 angles; ribs straight; spines in fascicles, very thick, whitish, but of a brownish red-colour at the apex; outer 12 radiating, central, 4 large and straight. 

**Lam.** D. S. Native of South America. Cactus Lamáreckii, Coll. hort. ripul. append. 3. t. 7. 

4. **M. pyramidalis** (Link et Otto, diss. t. 10. t. 25.) plant conical or pyramidal, with 17 angles; ribs rather oblique, crested; spines very long, in fascicles, of a brownish red colour; outer 14 radiating in 2 series, with 2 or 3 straight and very long. 

**Link.** D. S. Native of Curassova. Cactus pyramidalis, Link et Otto, obs. 1820. p. 1. Haw. rev. p. 69. Flowers unknown, but the spadix or woolly head is depressed at the top. 

**Long-spined** Melon-thistle. Clt. 1820. Shrub 1 foot. 

5. **M. placentaformis** (D. C. prod. 3. p. 460.) plant hemispherical, depressed, green, with 12 or 14 angles; ribs very blunt; prickles 8-12 in a fascicle, unequal, recurved, strong. 

**Link.** D. S. Native of Brazil. Cactus Melocactus, Besl. hort. eyest. 4. ord. f. 1. but not of Lin. C. placentaformis, Lehnn. ind. sem. hort. lamb. (1826). Melocactus Besleri, Link et Otto, diss. (1827), p. 11. t. 21. Lehman's name being older than Link's has been here adopted, as being more apt; but Link's figure and description are far better. Spadix or woolly head nearly globose, impressed in the vertex. Flowers reddish. Prickles blackish.

**Placenta-form Melon-thistle.** Shrub 1 foot. 

6. **M. Langsdorfi** (D. C. prod. 3. p. 461.) plant oblong, with 17 angles; spines slender, stiff, spreading; top of plant floriferous, very villous and very spiny. 

**Link.** D. S. Native of Brazil? Cactus Langsdorfi, Lehnn. in sem. hort. lamb. (1826). Flowers yellow. Stamens purple. The rest unknown. 

**Langsdorf's Melon-thistle.** Shrub 1 foot. 

† **Species not sufficiently known.**

7. **M. sellowii** (D. C. prod. 3. p. 461.) plant globose, depressed, glaucous, woolly and flat in the vertex, with 10 arched ribs; prickles 7 in each fascicle, recurved: the central 5 much the largest. 

**Link.** D. S. Native of Montevideo. Echinocactus Sellowii, Link et Otto, diss. p. 16. t. 22. Melocactus species secundum Salm-Dyck, who confirms that the plant is woolly at the top, and is analogous to **M. placentaformis.** Plant 2 inches high, and 4½ inches thick. Prickles 8-10 lines long, fuscosecent. Flowers unknown. 

**Selló's Melon-thistle.** Pl. 1; foot. 

8. **M. polyacanthus** (D. C. prod. 3. p. 461.) plant oval, glaucous, with a flat woolly apex, and with 21 blunt vertical ribs; prickles 8 in each fascicle: the upper 2 of these smaller than the others. 

**Link.** D. S. Native of Brazil in the province of Rio Grande. Echinocactus polyacanthus, Link et Otto, diss. p. 13. t. 16. f. 1. Stem 4 inches high, and 3 inches thick, attenuated at the base, with narrow funnels; prickles cuneous, Flowers unknown. 

**Many-spined Melon-thistle.** Shrub 1 foot. 

9. **M.? melocactoides** (D. C. prod. 3. p. 461.) plant globose, with 10 angles, having the tops of the angles beset with a series of woolly tubercles; prickles 7 or 8 in a fascicle, rather recurved, pale, but becoming gradually brownish towards the apex. 

D. S. Native of Brazil. Cactus melocactoides, Hoffis. verz. 2. (1826) 3. p. 24. Habit of **M. communis.** 

**Melocactoides-like Melon-thistle.** Pl. 1; foot. 

**Cult.** A grotesque and singular genus like the last, but larger of growth, and beset with stronger spines, without teats. The culture, propagation, and treatment of the species are the same as that recommended for the last genus. 

**III. ECHINOCACTUS** (from cactus, echinocactus, a name given by Theophrastus to the spiny plant; plants beset with spines like the hedgehog). 

**Link.** D. S. Native of Brazil. Cactus specie of Haw. 

**Lin. syst. Leucandra, Monagynia.** Sepals numerous, imbricate, adnate to the base of the ovary, united into a short tube at the base: outer ones in the form of an involucre: inner ones petal-formed. Stamens numerous. Style filiform, multifil at the apex. Berry scaly from the permanent remains of the sepals. Cotyledons wanting?—Simple, grotesque, fleshy, ovate or globose, ribbed, leafless shrubs, with the habit of **Melocactus;** ribs as if they were formed from confluent tubercles, bearing on their back fascicles of prickles. The woolly head or spadix, which is present in **Melocactus** is wanting in this genus. Flowers rising from the fascicles of spines at the tops of the ribs very like those of the genus **Cereus,** but the tube is almost wanting. 

1. **E. gibbosus** (D. C. prod. 3. p. 461.) plant ovate or nearly oblong, obtuse; ribs interrupted by tubercles; some of the tubercles rather tumescent at the apex, and tipped with fascicles of stiff straight needle-formed prickles; others in the outer series naked, elongated, and mammiform, and a little compressed. 

**Link.** D. S. Native of Jamaica. Cactus gibbous, Haw. syn. p. 173. bot. reg. 137. Plant nearly like that of **Mammillaria tuberculosa,** but not lacetaceous. Flowers 2, larger than any other of the genus, quite at the apex of the plant, which is depressed. The tube of the flower is greenish, and the sepals distal, with a white expanded limb: lobes obovate, rather mucronate, disposed in 4 series. Genitalis yellow. 


2. **E. subgibbosus** (Haw. in phil. mag. Oct. 1831. p. 418.) plant roundish-oblong, very spiny, with the spines interwoven; with 10 ribs about 1½ inches thick, and are, as well as the r compound, and acute; fascicles of spines distant. 

**Link.** D. S. Native near Valparaiso. Plant 5 inches high, and 3 inches broad, woolly at the base of the fascicles of spines. Spines straight, 12-15 in each fascicle: the lower ones of these are whitish or pale, bristle-formed, nearly half an inch long, horizontal: the 6 upper ones prickly-formed, much larger, nearly an inch long, bulbous, and yellowish at the base, and rufescent at the apex; the middle spine of the ultimate fascicles compared with the rest is straight. 

**Sub-gibbous Hedgehog-thistle.** Clt. 1830. Pl. 1; foot. 


**Noble Hedgehog-thistle.** Clt. 1796. Shrub 3 feet. 

4. **E. cornigerus** (D. C. diss. t. 7.) plant subglobose, very obtuse; ribs almost vertical, interrupted by tubercles, somewhat depressed: all prickly at the top; prickles unequal, straight, and needle-shaped: the lower one broad, thick, and a little recurved at the apex. 

**N.** D. S. Native of Mexico. 

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**Horn-bearing Hedgehog-thistle.** Ctr. 1825. Pl. ½ foot.

5. E. crispatus (D. C. diss. t. 8.) plant obvate, retuse at the apex, and rather umbilicate; ribs numerous, from 20 to 60, nearly vertical, undulately curved, and tubercular; prickles in fascicles, unequal, straightish. τ. D. S. Native of Mexico. Cactus crispatus, Moc. et Sessé, fl. mex. icon. ined. Flowers smaller than any other of the genus, at the top of the plant, purple; sepals densely imbricated along the tube, oblong-linear, acute, disposed in 2 series in the limb.

**Far. β. hérédus (D. C. mem. cact. in mem. mus. 17. p. 115.)** fascicled of spines approximate; prickles stronger, more erect and longer, of a greyish brown-colour.

**Cylindrical Hedgerow-thistle.** Pl. ¼ foot.

6. E. oryza (D. C. mem. cact. in mem. mus. vol. 17. p. 114.) plant nearly glabrous; with 3 deep compressed vertical ribs, ornamented with transverse rows of fleshy down, with 3 fascicles on each rib; prickles 7 in a fascicle, straight, yellow, and one central. τ. D. S. Native of Mexico. Coulter, no. 40. Plant 5 inches in diameter. Prickles 8-10 lines long.

**Ornamented Hedgehog-thistle.** Pl. ¼ foot.

7. E. tuberculatus (Link et Otto, diss. t. 26.) plant nearly globose, with 5 nearly vertical ribs, and with the recesses narrow; crests very obtuse, tubercled at the fascicles, of which there are 8 or 10 on each rib; areoles when young rather velutinous; prickles 12-13 in each fascicle, grey, with one central straight strong one, the rest radiating. τ. D. S. Native of Mexico. Coulter. Intervals on the ribs between the fascicles of spines 8-9 lines. Prickles an inch long.

**Far. β. spiralis (D. C. l. c.)** ribs twisted spirally to the right. τ. D. S. Native of Mexico. Coulter. Perhaps merely an older state of the species.

**Tubercled Hedgehog-thistle.** Pl. ½ foot.

8. E. ? ceresiformis (D. C. l. c. p. 115.) plant nearly cylindrical, green, with about 13 compressed ribs, with the recesses acute, and the crests blunt; prickles 7 radiating, and one central, in each fascicle, greyish, stiff, slender, with 3 fascicles on each rib. τ. D. S. Native of Mexico. Coulter. Perhaps a species of Cereus.

**Cereus-furred Hedgehog-thistle.** Pl. ¼ foot.

9. E. glaucascens (D. C. l. c.) plant nearly globose, depressed, glaucascens, with 11-13 vertical compressed obtuse ribs, with 6 fascicles on each rib; areoles oval-oblong, when young velutinous; prickles yellow, straight, with 6-7 radiating ones, and one central one in each fascicle. τ. D. S. Native of Mexico. Coulter. Flowers solitary on the top of each rib, rising in the front of a fascicle. Scales of calyx imbricated, smooth, oval, acuminate, with membranous ciliated margins. Plant 3 inches high, and 3 inches in diameter. Intervals between the fascicles on the ribs half an inch. Prickles an inch long.

**Glaucusacens Hedgehog-thistle.** Pl. ¼ foot.

10. E. coultori (Link et Otto) plant nearly globose, depressed, green, with 13-15 vertical ribs, with both the recesses and ribs acute; fascicles 3 on each rib; areoles oval, when young velutinous; prickles yellow, stiff, with 7-8 radiating ones, and one erect central one, which is nearly twice the length of the others, in each fascicle. τ. D. S. Native of Mexico. Coulter, no. 43. E. hystrich, D. C. l. c. but not of Haw. Plant 5-8 inches in diameter, and 3-4 inches high. Prickles an inch long, central ones 2 inches long. Intervals between the fascicles on the ribs 12-18 lines in length.

**Coulter's Hedgehog-thistle.** Pl. ½ foot.

11. E. ovata (D. C. diss. t. 9.) plant obovate-ovo-globose, depressed and umbilicate at the apex; ribs numerous, vertical; prickles in fascicles, unequal, divaricate, long; flower solitary at the top of the plant, surrounded by spines. τ. D. S. Native of Mexico. Cactus ovatulus, Moc. et Sessé, fl. mex. icon. ined.—Tepexencomitl, Horn. mex. p. 410, with a figure. Spines whitish, needle-shaped, diverging, intricate. Flower erect, purple, with the margins of the lobes of the limb white.

**Environment-flowered Hedgehog-thistle.** Pl. ½ foot.

12. E. tenuspinosus (Link et Otto, diss. p. 12. t. 19. f. 1.) plant nearly globose, umbilicate retuse at the apex; ribs 12, blunter; prickles in fascicles, slender, recurved, 3 or 4 of which are a little larger than the rest; flowers girdled by wool. τ. D. S. Native of Brazil, in the province of Rio Grande. Plant green, 2 or 3 inches in diameter. Sides of ribs rather impressed. Flowers beyond 2 inches long, yellow; sepals lanceolate, acute; petals dilated, obtuse, each macrorinated by a red bristle. Style 12-15 parted.

**Far. β. minor (Link et Otto, l. c. f. 2.)** plant smaller; spines longer and slenderer, and more bent.

**Selerche-spiced Hedgehog-thistle.** Pl. ¼ foot.

13. E. melacactiformis (D. C. diss. t. 10.) plant roundish-ovate, obtuse; ribs vertical, about 30 in number; prickles in fascicles, diverging, unequal; flowers numerous, in a kind of whorl beneath the apex of the plant. τ. D. S. Native of Mexico. Cactus multangularis, Moc. et Sessé, fl. mex. icon. ined. but not of Wild. Spines brownish. Flowers whitish. Sepals numerous, purplish on the outside, imbricated, and addressed to the tube; limb expanded; lobes oblong, acute, disposed in 2 or 3 series. Stigma long, 8-12, exserted above the stamens.

**Melon-thistle-shaped Hedgehog-thistle.** Pl. ¼ foot.


**Langsdorf's Hedgehog-thistle.** Shrub ½ foot.

† The flowers of the following species being unknown, some of them are probably referrible to the genus Melocactus.

15. E. terpbractanthus (Link et Otto, diss. p. 13. t. 14. f. 2.) plant globose, glaucascen, impressed on the top, not tubercled; ribs 15, acute; prickles 10 in each fascicle, spreading; the 4 central ones the largest. τ. D. S. Native of Brazil, in the province of Rio Grande. The plant is hardly an inch high, and hardly the same in thickness. Prickles canescent, hardly an inch long. Flowers unknown.

**Ash-coloured-spined Hedgehog-thistle.** Ctr. 1825. Pl. ½ to ¼ foot.


**Recurved-spined Hedgehog-thistle.** Ctr. 1796. Pl. 1 foot.

Var. β, purpureus (D. C. prod. 3. p. 462.) Melocactus purpureus, strict in spirem contortis, Plum. spec. 19. mag. miss. vol. 5. t. 8. Cactus nobilis. Lam. dict. 1. p. 537. Native of St. Domingo. The whole plant is purple, with white prickles. Perhaps a proper species, or a true species of Melocactus, ex Salm-Dyke in litt.


Salm-Dyke’s Hedgehog-thistle. Pl. ½ foot.

19 E. nystric (Haw. in phil. mag. Feb. 1839. p. 115.) plant roundish, usually with 12 angles; spines straight, an inch and a half long, fulvous, much longer than the wool from which they rise. ɔ. D. Native of the West Indies. Cactus hystrix, Haw. suppl. p. 73. Cereus hystrix, Sweet. Flowers unknown. Like E. Salmia’nus, but differs in the plant being more oblong, and in the spines being much fewer.


20 E. tuberculatus (Link et Otto, diss. p. 16. t. 26.) plant nearly globose, green, depressed at the top; ribs 8, bluntish; fascicles with 3 central straight prickles, and 7 spreading, rather recurved ray ones, which become gradually smaller from the centre. ɔ. D. Native of Mexico. Plant 4 inches high, and 3½ inches thick, with the furrows narrow. Central prickles of the fascicle an inch long, the ray ones gradually decreasing in length. Flowers unknown.

Tuberculated Hedgehog-thistle. Pl. ¾ to 3 foot.

21 E. clavatus (Link et Otto, diss. p. 17. t. 17.) plant oval-oblong, glaucenct, depressed at the apex; ribs 14-22, bluntish; prickles 10 in each fascicle, 3 central ones the largest, flattened, and elongated: middle one of the 3 erect; ray ones spreading much. ɔ. D. Native of Mexico. Plant 5 inches high, and 4 inches thick. Prickles canescent, crowded at the top, larger ones 2 inches long. Flowers unknown.


22 E. subl‘liferus (Link et Otto, diss. p. 16. t. 27.) plant subgloboso, green, not depressed at the apex; ribs 8-10, blunt, tubercled; central prickles large, erectish, recurved, and 4-5 spreading, and the 4-6 outer ones, divaricate, and slender, in each fascicle. ɔ. D. Native of Mexico. Plant 2½ inches high, and 2 inches thick, with the ribs evidently composed of conflated tubercles. Prickles hoary brown; the larger ones 2 inches long, and the smaller ones about 4 lines long. Flowers unknown.

Aurl-bearing Hedgehog-thistle. Pl. ½ to ¾ foot.

23 E. depressus (D. C. prod. 3. p. 463.) plant nearly globose, depressed at the apex; ribs vertical, about 20 in number, opaque, and somewhat tubercled; fascicles of prickles crowded; prickles rising from fascicles of white tomentum, stiff, very pale brown: central ones in each fascicle 3-4, and 10-12 ray ones: the lower one of these very strong. ɔ. D. Native of South America. Melocactus? depressus, Salm-Dyke in litt. Cactus depressus, Haw. syn. 1783.


24 E. orthanthus (Link et Otto, diss. p. 18. t. 18.) top of plant depressed; ribs 18, bluntish; prickles 7 in each fascicle: the central one of these strong, larger, and straight: the rest spreading. ɔ. D. Native of Monte Video. Plant 2½ inches in diameter, with narrow furrows. Prickles canescent; the larger ones 9 lines long, and the rest about 5 lines long. Flowers unknown.

Straight-spined Hedgehog-thistle. Pl. ½ to ¾ foot.

25 E. acrus (Link et Otto, diss. p. 15. t. 23.) plant subgloboso, glaucenct, not depressed at the apex; ribs 29, arched; prickles 7 in each fascicle, spreading, and recurved. ɔ. D. Native of Monte Video. Plant 3 inches high, and 2½ thick, with broad furrows. Sides of ribs not impressed. Prickles of a hoary fuscous colour, 4-6 lines long. Flowers unknown.

Arched-ribbed Hedgehog-thistle. Pl. ½ foot.

26 E. parvispinus (D. C. prod. 3. p. 463. Haw. in phil. mag. Feb. 1830. p. 114.) plant nearly globose, umbilicate at the apex; ribs 13, compressed; prickles small, white, fulvous at the apex, rising from white tomentum, 7-9 in each fascicle: the central one of these straight, and the ray ones 6-8 in number, and a little recurved. ɔ. D. Native of South America. Melocactus parvispinus, Haw. suppl. 73. Salm-Dyke in litt. Flowers unknown. Very like E. meaouacanthus, Link et Otto.

Small-spined Hedgehog-thistle. Pl. ½ foot.

27 E. intricatus (Link et Otto, diss. p. 19. t. 24.) plant oval, green, with a depressed tuberced top; ribs 20, bluntish; fascicles of prickles crowded, 18-20 in each fascicle: the 4 central ones of these larger and erect, the rest spreading, outermost ones divaricate. ɔ. D. Native of Monte Video. Plant 4 inches high, and 3½ thick. Sides of ribs depressed. Prickles of a hoary-fuscous colour: the larger ones 8 lines long. Flowers unknown.

Intricate Hedgehog-thistle. Pl. ½ foot.

28 E. meaouacanthus (Link et Otto, diss. p. 19. t. 15.) plant oblong, glaucenct, with the top depressed; ribs 14, arched; prickles 9 in each fascicle, short and straight, and one central. ɔ. D. Native of Jamaica. Plant 6½ inches high, and 4½ broad; ribs usually bent. Prickles yellowish, rising from short wool, 4 lines long. The form of the plant is elongated, and like that of a creeping Cereus. Flowers unknown.

Less-spined Hedgehog-thistle. Pl. ½ foot.

29 E. denua’tus (Link et Otto, pl. rar. hort. berol. t. 9.) plant subgloboso, green; with 6-8 bluntish ribs; spines 5-8 in each fascicle, all spreading; involucrum with few leaves. ɔ. D. Native of Brazil.

Naked Hedgehog-thistle. Pl.

30 E. tortusus (Link et Otto, pl. rar. hort. berol. t. 15.) plant nearly globose, depressed at the top, green, with 4 arched ribs; the 4-6 middle spines in each fascicle a little larger and thicker than the rest, which are numerous, but all are nearly equally spreading, and twisted. ɔ. D. Native of Brazil.

Twisted-spined Hedgehog-thistle. Pl.

31 E. erina’ceus (Haw. in phil. mag. Feb. 1830. p. 114.) plant globulos, usually with 14 angles; spines inclining, 9 lines long, numerous, somewhat recurvedly divaricate, fulvous, shorter than the wool from which they originate; fascicles of spines approximate. ɔ. D. Native of South America. Cactus erina’ceus, Haw. suppl. p. 74. Very like Melocactus polyacanthus, Link et Otto, in form, but differs from it in the number of the angles, and in the absence of the woolly flowering top; but the fascicles of spines are nearly similar.


† The two following species from their habit in a seedling state appear to belong to the present genus, but are not described; they are in the gardens of Edinburgh and Glasgow under the name of Cactus, and have been brought from Chili.

1 E. corrugata, Gill. mss. 2. E. foliata, Gill. mss. Cult. See Mammillaria, p. 160. for culture and propagation. Grotesque plants, with the habit of the last genus.

Lan. syst. Iconostralia, Monogr.ica. Seals very numerous, imbricated, adnate to the base of the ovary, united into an elongated tube; outer sepals the shortest, forming the calyx, milder in length and colored, innermost ones petal-formed. Stamens very numerous, united with the tube. Style filiform, multial at the apex. Berry arbores, tabular or scaly, either from the remains of the sepals, or from their eicacites when they have fallen off. Cotyledons wanting?—Fleshy grotesque shrubs, with a woody axis, and medulliferous inside; angles vertical, bearing fascicles of spines, regularly furrowed. Angles or wings either numerous or very few. Flowers large, rising from the fascicles of spines or indentures on the angles.

§ 1. Cerastri (an alteration from the generic name). Plants standing without support, never throwing out roots. Stems upright.

** Stems with many angles.

1. C. multangularis (Haw. suppl. 75.) stem erect, with 18-20 angles; angles very close, blunt; prickles setaceous, yellow, longer than the wood from which they rise. F. D. S. Native country and flowers unknown. Cactus multangularis, Willd. enum. suppl. 33. Perhaps the same as Cactus Kageneki, Gmel. ex Salm-Dyck in litt.

Many-angled Torch-thistle. Ch. 1815. Shrub 1 foot.

2. C. scopata (Salm-Dyck in litt. ex D. C. prod. 3. p. 464.) plant erect, stem with 50 vertical tubercled angles; fascicles of prickles crowded, rising from tufts of white tomentum; ray prickles setaceous, very numerous and white; central ones 3-4, dark-purple. F. D. S. Native of Brazil. Cactus scopata, Link, enum. 2. p. 21. Spreng, syst. 2. p. 494. Plant clothed with short, stiffish, setaceous prickles.

Broom Torch-thistle. Shrub 1 foot.


This is a very singular plant, covered all over with dense hair-like bristles; it is of an oblong shape, about 3 inches high, of a greyish-colour, bent, and hanging, like the grey head of an old man, hence the specific name.


4. C. lamactus (H. B. et Kunth, nov. gen. amer. 6. p. 68.) stems erect, branched, with many angles, and clothed with white wood; angles membranous, tubercled, and beset with stellate fascicles of prickles; central prickles 8-times longer than the rest. F. D. S. Native of Quito, near the rivers Arana and Guancabamba. Stem 10-15 feet high. Central prickles of each fascicle 1 or 1½ inch long. Flowers rising from lateral and longitudinal fissures of the stem, involved in wood. Fruit obovate, red, with a whitish green-coloured pulp.


5. C. micractus (D. C. membractus, D. C. membracti, in mem. mus. 17. p. 115.) plant dividing into many stems at the base, ovate-oblong, greenish, obtuse, with 13 vertical bluntish ribs, with the recesses broad, but hardly acute; fascicles of spines approximating, with tomentose areole; prickles 3 in each fascicle, short, setaceous, diverging. F. D. S. Native of Mexico. Coulter, no. 56. Perhaps a species of Echinocactus. Plant hardly an inch high and the same in thickness.

Small-spined Torch-thistle. Pl. 1 inch.

IV. Cereus.

6. C. polydorius (D. C. l. c.) plant quite simple, erect, green, cylindrical, with 15-18 vertical ribs, and with the furrows acute; crests rather repand; fascicles of prickles approximating, with the young areole convex and tomentose; prickles 8-9 in each fascicle, yellow, straight, diverging, but the central one is long and erect. F. D. S. Native of Mexico. Coulter, no. 15. Plant 30-40 feet in height, without any branch, according to Coulter.

Many-crested Torch-thistle. Shrub 30 to 40 feet.

7. C. Linki (Lehm. ind. sem. lort. hamb. 1827. p. 16.) plant oval, green, with 15 angles; ribs obtuse, bearing flowers at the top from the axis of the fascicles of spines; 3 central spines in each fascicle erectly spreading, and the 10 ray ones slenderer, much more spreading; stigmas 8. F. D. S. Native of Mexico. Calyx half an inch long, beset with greenish yellow scales, which are furnished with purple bristles and white cobwebs. Petals numerous, truncate at the apex, yellow, with purple bases. Styles yellow. Stigmas purple.


8. C. Le'cumii (Coll. hort. ripul. append. 5. t. 2. under Cactus) plant oval, tapering to the apex, with numerous blunt angles; fascicles of spines approximating, woolly at the base; spines white; ray ones spreading; central one long and straight. F. D. S. Native of South America.

Lecche's Cereus. Ch.? Shrub 1 foot.

** Stems with 6-12 angles.

9. C. hexagonus (Willd. enum. suppl. 32.) plant simple, erect, large, usually with 6 strong ribs; fascicles of spines middle-sized; prickles short, brown. F. D. S. Native of South America. Cactus hexagonus, Lin. spec. 1. p. 607. Andr. bot. rep. t. 913. Cactus Peruvianus, D. C. pl. grass. t. 58.—Brall. succ. 1. p. 1. t. 1. The plant is about 40 feet high, usually without any branches, varying with 5-6-7 angles. Flowers solitary, 6 inches long; having the sepals along the tube greenish and irregularly imbricated; limb a little expanded, reddish outside and white inside. Stamens greenish. Fruit dark purple, according to Plummer.

Var. b. abnormis (Willd. enum. suppl. 31.) stem simple, oblong, irregularly furrowed, and tubercled; tubercles oblong, compressed, unequal, bearing prickles at the apex, and rather woolly. F. D. S. Native of South America. C. Peruvianus b. monstrosus, D. C. cat. hort. monsp. diss. t. 11. Flowers twin, nearly as in C. hexagonus, but more expanded and larger, with the outer sepals reddish, but the inner ones are pure white and serrated; tube striated with green on the outside. Stigmas 9-13, greenish.


10. C. Ortus (Lehm. ind. sem. lort. hamb. 1827. p. 16.) plant oval, green, attenuated at the base, with 10 angles; ribs obtuse, bearing the flowers above from the fascicles of spines; 4 central spines in each fascicle, and 10-14 slender, spreading ray ones; stigmas 14. F. D. S. Native of Mexico. Calyx tubular; scales acute, greenish yellow, furnished with a fascicle of purple hairs, and white, cobwebbed wool. Petals numerous, closely serrated at the apex, rather diaphanous, yellow. Style yellow. Stigmas purple.


11. C. Peruvianus (Haw. syn. 171.) plant large, erect, with usually 8 angles or ribs; angles blunt, smooth, glaucous; spines whitish, rising from white tomentum, the lower one very small, and the central one very strong. F. D. S. Native of Peru and Curassao. Cactus Peruvianus, Lin. spec. 607. Willd. enum. suppl. 32. Cereus Echinocerus, Salm-Dyck, in cat. hort. Dyck. 1832. Cactus Coquinambus, Molin. chil. ed. gall. p. 140, ex
Bertol. virid. bon. 1824. p. 4.—Bradh. succ. t. 12.—Lob. icon. 2. p. 25.—Mor. oxon. sect. 17. t. 37. Like C. hexagónus, but differs in being clothed with glaucous bloom.

**Var. β, monstrósus** (Salim-Dyck, l. c.) ribs nearly obliterated; fascicles of prickles spirally confluent.


**Great-angled Torch-thistle**. Shrub large. 14 C. SEVERÁLIÓS (Haw. l. c.) plant 8-angled; bristles half an inch long; petals 5-times shorter than the tube; fruit rather conical, large, scaly, unarmored. ½. D. S. Native of St. Domingo.—Plum. amer. t. 195. f. 1. Large, bluntly angled. Bristles about 20 in each fascicle; fascicles remote. Petals narrow, lanceolate, serrulate, hardly an inch long, but the tube is ¾ inches long, and scaly. Very like *C. hexagónus*, but the spines are more numerous, longer, and slenderer.

**Scrubbed-petalled Torch-thistle**. Shrub large. 15 C. SOXOCTÓS (D. C. prod. 3. p. 404.) plant tall, erect, with 8 angles; angles blunt, compressed; spines stellate, nearly equal; petals emarginate at the apex. ½. D. S. Native of the Caribbe Islands.—Plum. ed. Birm. t. 191. exclusive of the synonyms. Plumier has himself made his plant the same as *C. Perúvius*, but by Linnaeus it has been referred to *C. hexágōnus*, but it differs from both these species, in the petals being bluntly emarginate at the apex, and nearly obovate. Limb of flower spreading. Style exserted; stigma 5-cleft. The name is derived from muque, mono, alone, and elxotoc, klono, a noise; but the application is not evident to us.

**Confused Torch-thistle**. Shrub 20 feet.

16 C. FIMBRÍATUS (Lam. dict. 1. p. 539. under *Cáctus*) plant tall, erect, bluntly 8-angled; prickles setaceous, white; flowers with a short tube; petals fringed. ½. D. S. Native of St. Domingo, in arid woods.—Plum. ed. Birm. t. 195. f. 1. Stem the thickness of a man's leg, and about 18-25 feet high. Flowers rose-coloured, campánulate, with few petals. Stamens very numerous; stigmas multiform. Fruit globose, red, size of an orange, beset with prickly tubercles; flesh red.

**Fringed-petalled Torch-thistle**. Shrub 18 to 25 feet.

17 C. HYSTRÍX (Salm-Dyck in litt. ex D. C. prod. 3. p. 404.) plant erect, green, shining, 9-angled; ribs rather compressed; prickles rising from grey tomentum, with 9 radiating ones, 2 small upper ones, and 3-4 strong, central ones, which are painted with white and brown. ½. D. S. Native of South America? Cáctus hístríx, Salm-Dyck. obs. bot. 1822. Old prickles grey, blackish at the apex. This is different from *Cáctus lec'tus* of H. B. et Kunth, and from C. hístríx, Haw.

**Porcine Torche-thistle**. Shrub.

18 C. R'æóx (Haw. in phil. mag. 1820. feb. p. 107.) plant oblong, nearly terete; with usually 8 ribs; spines divaricate, brown, dense. ½. D. S. Native of Brazil. Plant firm, green, thickly beset with horned spines, and of these there are usually 6 outer radiating ones, 4-5 middle ones, and 1 long central one in each fascicle.

**Fierce Torch-thistle**. Clt. 1827. Shrub 1 foot.

19 C. gáises (Haw. syn. 182.) plant erect, longish, usually 8-angled, deeply furrowed, branched at the base; prickles when old half an inch long, white, but tipped with black. ½. D. S. Native of South America. The rest unknown.

**Grey-petalled Torch-thistle**. Clt. 1809. Shrub 3 to 4 feet. 20 C. CRENNULÁTUS (Salm-Dyck, obs. bot. 1822.) plant erect, greyish-green, with 8-9 angles; ribs blunt, crenulated; prickles white, rising from grey tomentum, blackish at the apex, 9 in each fascicle, radiating and equal, and 1 long central one. ½. D. S. Native of South America. C. Royénii, Wildl. suppl. enum. p. 32. Stem rather woolly at the apex; wool grey, at length falling off.

**Var. β; plant rather slenderer than the species; and the prickles are shorter. Salm-Dyck, in litt.**

**Crenulated Torch-thistle**. Clt. 1728. Shrub 2 to 3 feet.

21 C. CINERA SCENES (D. C. mem. cact. in mem. mens. 17. p. 116.) plant simple, erect, greyish green; with 8 blunt tubercular ribs, and narrow recesses; areole while young convex and velvety; prickles 14 in each fascicle, white, setaceous, stiff, outer 10 radiating, central 4 erectly diverging, and longer than the ray ones. ½. D. S. Native of Mexico. Coulter, no. 23. Stem 6 inches high, and 2 inches in diameter. Outer prickles 6-9 lines long; central ones 12 lines long; in fascicles, which are 5-6 lines distant from each other.

**Var. β, crassior (D. C. l. c.) stem thicker; fascicles of spines more distant.**

**Var. γ, teniōris (D. C. l. c.) stems slenderer; ribs more approximate.** Very like *C. pentadíaphus*, but differs in being 5-angled, not 5-angled.

**Greysih Torch-thistle**. Clt. 1830. Shrub ¾ foot.

22 C. CALESCENS (D. C. l. c.) plant simple, or a little branched at the apex, erect, green, oblate, and rather unambiguously at the apex, with 7-8 vertical, obtuse ribs, and acute furrows; areole, while young, convex and tomentose, but at length becoming nearly glabrous; prickles 8-9 in each fascicle, brown, stiff, diverging; the central ones hardly to be distinguished from the outer ones. ½. D. S. Native of Mexico. Coulter. Very like *C. Peruviáns*. Fascicles of spines 6-9 lines distant from each other.

**Callcuescent Torch-thistle**. Shrub 8 to 10 feet.

23 C. MARGÍNÀTUS (D. C. l. c.) plant simple, or a little branched at the apex, erect, green, obtuse at the tip; with 7 vertical ribs, and acute recesses; crests obtuse, woolly their whole length from white tomentum, in consequence of the oval areole being confluent; prickles 7-9 in a fascicle, stiff, grey, short; with the central ones hardly to be distinguished from the ray ones. ½. D. S. Native of Mexico. Coulter, no. 13. Stem 2½ and 3 inches in diameter. Prickles 1⅔ lines long. A very distinct species.

**Margined Torch-thistle**. Shrub.

24 C. ALBÍSPÉNTE (Salm-Dyck, obs. bot. 1822.) plant erect, greyish green, with 9 or 10 angles; ribs obtuse, very prickly; prickles grey, tipped with yellow, rising from grey tomentum, 11 radiating ones and 1 central in each fascicle. ½. D. S. Native of South America. Very like *C. crenulátus*, but more slender and more woolly. Old plant only woolly at the apex, but the young plant all over; the wool grey. Salm-Dyck, in litt.

**White-petalled Torch-thistle**. Shrub 2 to 3 feet.

25 C. REGULÁTUS (Haw. suppl. p. 75.) plant erect, 9-angled, furrowed; spines fulvous, elongated, when young about equal in length to the wool. ½. D. S. Native of South America. Fascicles of spines much crowded.

**Rough Torch-thistle**. Clt. 1809. Shrub 10 feet.

26 C. VISTÈUS (Wildl. enum. suppl. p. 32. under *Cáctus*) plant erect, green, shining, 7-9-angled; ribs rather compressed repect; prickles brown, rising from brown tomentum; each fascicle composed of 8 radiating ones, a small superior one, and 3 central ones, which are much longer than the rest. ½. D. S. Native of South America. There is hardly any wool at the top of the stem; the rest unknown. Salm-Dyck, in litt.
27 C. HAWORTHII (Spreng. syst. 2. p. 495. under Cactus) plant erect, large, 5-angled, with profound furrows; spines numerous, usually an inch long, brown. b. D. S. Native of the West Indies. C. nobilis. Haw. syn. 179. This species is more formidable than the rest in the prickles being very large and numerous. The rest unknown. The Cactus nobilis, Lin. Haw. and Lam. are very different from each other, and constitute 3 distinct species.

Haworth's Torch-thistle. 1811. Shrub 3 to 4 feet.
28 C. AVREUS (Salm-Dyck. in litt. ex D. C. prod. 3. p. 465.) plant erect, green, 7-8-angled; ribs compressed, very prickly; prickles yellow, rising from straw-coloured tumour, with 8 radiating ones in each fascicle, and some central longer ones. b. D. S. Native country and flowers unknown. Differs from C. Haworthii, in the prickles being yellow, and in their fascicles being more closely crowded.

29 C. NIGER (Salm-Dyck. hort. dyck. cat. 1822.) plant erect, blackish, 7-angled; ribs rather compressed; prickles slender, fulvous, rising from white tumentum: with 7 radiating ones in each fascicle, the $\frac{3}{4}$ lowest of these longer than the rest, and 2 or 3 central ones, the lowest one very short. b. D. S. Native of South America. Cactus niger, Spreng. syst. 2. p. 495. Cereus niger. Haw. rev. 70. Said to be allied to C. repandus. Top rather woolly; wool grey.

30 C. FULVISPINOSUS (Haw. syn. 183.) plant erect, tall, usually 9-angled, simple or branched; prickles strong, yellowish, when full grown nearly an inch long. b. D. S. Native of South America. Cactus Royeni, Mill. dict. ed. 8.

31 C. FLAVISPINUS (Salm-Dyck. obs. bot. 1822.) plant erect, pale green, 8-10-angled; ribs rather compressed; prickles slender, yellowish, rising from white tumentum: with 8 radiating ones in each fascicle, the upper ones of these very small, and 3-4 central ones, the upper one of these erect and very long. b. D. S. Native of South America. Perhaps the same as C. flavispinus of Colla, hort. rip. p. 21. Stem hardly woolly at the apex; wool grey. There is a variety of this species with 6-angled stems and longer prickles. Salm-Dyck. in litt.

Yellow-spined Torch-thistle. Clt. 1796. Shrub 2 to 3 feet.
32 C. CHLOE'NIS (Colla, pl. rar. hort. ripul. app. 2. p. 342.) plant ovate, erect, 10-angled; angles blunt; prickles pale, pubescent, middle of one each fascicle the strongest; wool very short. b. D. S. Native of Chili. C. Coquimbanaus, Hort. but not of Moill. 279. D. C. pl. gras. t. 143. C. lanuginosus, Mill. dict. no. 7. Floral tube greenish. Calycine lobes red. Inner or corolline ones the longest, acuminate, and white. Stigmas 12. Fruit red, according to Herm.

33 C. LAGUNOSUS (Haw. syn. 182.) plant erect, bluntly 8-angled; spines shorter than the wool from which they issue. b. D. S. Native of the West Indies. Herm. lglg. bat. par. t. 115. without a flower. C. repandus, Mill. dict. ed. 8. Cactus laguninosus, Lin. spec. 667. The fruit, according to Herm., is red, not spiny.

36 C. REPANDUS (Haw. syn. 183. D. C. diss. t. 13.) plant long, erect, with 8-9 blunt angles; angles rather undulated; spines longer than the wool from which they issue; floral tube, and consequently the fruit, is unarmed: outer lobes of calyx narrow and much acuminate, almost exceeding the inner ones in length. b. D. S. Native of the Caribbean Islands. Cactus repandus, Lin. spec. 667. Ker. bot. reg. t. 336. Cereus gracilis, Mill. dict. ed. 8. no. 8. - Trew. direc. t. 14. Tube of flower green; inner calycine or coralline lobes white. Stigmas 8-10. Fruit yellow, white inside.

37 C. SUBREPANDUS (Haw. suppl, 78.) plant erect, with 8 angles; angles compressed, repand; prickles strong, of a pale colour; wool very short. b. D. S. Native of the West Indies. Very distinct from C. crenatus.

38 C. A. TURUS (Haw. in phill. mag. feb. 1830. p. 108.) plant erect, blunting 8-angled; angles short; fascicles of spines very black, as well as the short central wool. b. D. S. Native of Brazil. Very like C. repandus, but much more dwarf and simple, and very green; with about 12 spines in each fascicle. This is a singular plant, from its black spines and black bearded terminal brush.

39 C. POLYGOSUS (Lam. dict. 1. p. 539. under Cactus) plant erect, branched, with 11 blunt angles, woolly at the apex; prickles setaceous, grey; flowers short, with the limb hardly spreading. b. D. S. Native of St. Domingo.—Plum. ed. Burm. t. 196. Flowers white. Fruit reddish brown, tubercled; flesh reddish. Stem 10 feet high, and 6-7 inches in diameter. This species is allied to C. repandus, according to Lamarek, but Spreng. has joined it with C. grievus.

Many-angled Torch-thistle. Shrub 10 feet.
40 C. MAGNUS (Haw. in phil. mag. feb. 1830.) plant very strong, simple, with usually 12 deep furrows, and as many ridges; spines unequal, very stiff, dull. b. D. G. Native of St. Domingo. Spines about 12 in each fascicle; fascicles rather distant. Flowers large, white.

Large Torch-thistle. Clt. 1829. Shrub 3 to 4 feet.
41 C. DIVARICATUS (Lam. dict. 1. p. 540. under Cactus) plant erect, branched, very spiny, and bluntly 10-angled; branches spreading. b. D. S. Native of St. Domingo.—Plum. ed. Burm. t. 193. Flowers lateral, hardly known. Fruit globose, yellow, wartyed by large points, or unarumed; pulp white and sweet.

Dewarivce Torch-thistle. Shrub.
42 C. CHLOROCAPITUS (H. B. et Kunth, nov. gen. amer. 6. p. 68.) plant erect, branched; branches festigate, 10-12-angled; angles tubercled; tubercles beset with starry prickles; central prickle in each fascicle 4 times longer than the rest. b. D. S. Native of South America.

Green-fruited Torch-thistle. Shrub 10 feet.
43 C. LE'TUS (H. B. et Kunth, l. c.) plant erect, pale green, jointed; joints 7-angled; angles tubercled, each tubercle furnished with a fascicle of spines. b. D. S. Native of Quito, near Sondorillo. The rest unknown.

Fruitful Torch-thistle. Shrub.

** ** Stems with 3-4 or 5 angles, very rarely with 6 angles.

44 C. VIRNES (D. C. mem. caet. in mem. mus. 17. p. 116.) plant simple, erect, pale green, with 5 vertical, obtuse ribs; fascicles of spines remote, having the areola velvety when young;
prickles 8 in each fascicle, 4 of which are stiff, conical, and greyish, or blackish, 3 very short and diverging, and 1 large and horizontal. \( \gamma \). D. S. Native of Mexico. Coulter. Largest prickles in each fascicle 8-10 lines long, smaller ones hardly 2 lines long.

**Green Torch-thistle.** Shrub. 52 C. obelusus (Haw. rev. v. 70.) plant erect, pale green, triangular; ribs blunt; fascicles of prickles very remote; prickles tawny, rising from brown tomentum; with 4 radiating ones in each fascicle, and a central, elongated erect one. \( \gamma \). D. S. Native country and flowers unknown.

**Blunt-angled Torch-thistle.** Clt. 1820. Shrub 4 to 6 feet. 53 C. Jamaçaru (D. C. prod. \( \gamma \). 467.) plant erect; branches 3-4-angled; prickles in fascicles, straight; flowers cylindrical, with an erect limb; genitils inclosed. \( \beta \). D. S. Native of Brazil. Jamaçaru, Pison, hist. nat. bras. p. 100. F. 1. Trunk triangular, beset with spines. Flowers white, scentless. Fruit red, size of a goose’s egg. Perhaps Jamaçaru quarta species. Maregr. hist. nat. bras. p. 127. \( \gamma \). 3. is the same or a distinct species.

**Jamaçaru Torch-thistle.** Shrub. 54 C. valérus (Haw. in phil. mag. sept. 1831. p. 418.) plant tetragonal, firm, glaucous at the apex, with the sides nearly flat, or rather convex at first, with the angles very blunt and spiny in the middle. \( \beta \). D. S. Native of South America. Spines brownish.

**Strong Torch-thistle.** Shrub.

§ 2. Serpentini (from serp, to creep); stems creeping and rooting. D. C. prod. 3. p. 467. Stems jointed, prostrate, rooting or twining.

* Stems with many angles.

55 C. serpens (Lag. anal. sec. nat. 1801. p. 261.) plant creeping, flexuous, and somewhat climbing, with 11-12 very blunt angles; bristles in fascicles, much longer than the wool from which they issue, but which at length falls off; floral tube very bristly at the base. \( \gamma \). D. S. Native of South America. Wildld. cunn. suppl. 31. Link, et Otto, abbild. t. 91. D. C. diss. t. 12. Flowers large, beautiful; lobes blunted; outer ones greenish; middle ones purplish; inner ones white. Stigmas 7. This plant appears to hold a kind of middle station between the erect and creeping species of the genus, and rarely throws out roots from its stems. Bristles 7-8 lines long, purplish, also crowded at the base of the floral tube.

**Serpentine Torch-thistle.** Clt. ? Shrub 3 to 4 feet. 56 C. tunica (Lehm. ind. sem. hort. lamb. 1827. p. 16.) plant erectish, articulate branching; joints attenuated at the base, tubercular; tubercles impressed at the apex, woolly and bearing spines; spines coated by a somewhat diaphanous, moveable membrane. \( \beta \). D. S. Native of Brazil. Joints terete when young, 1½ inch long, furnished with fleshy, subulate leaves, which become at length deciduous.

**Coctel-spired Torch-thistle.** Clt. ? Shrub ½ to 1 foot. 57 C. ambiguest (Bompl. nat. t. 36. under Cactus) plant erect, with 9-12 blunt angles; bristles spinescent, longer than the wool from which they issue; floral tube bearing bristles at the base. \( \beta \). D. S. Native country unknown. Flowers very like those of C. serpens, of which it is probably only a variety, differing only in the stem being more erect, and in the bristles being shorter.

**Ambiguous Torch-thistle.** Shrub 2 to 3 feet. 58 C. flagelliforms (Mill. dict. ed. 8. no. 12. Haw. syn. 158.) stems prostrate, with about 10 angles; tubercles crowded, bearing bristles; style rather shorter than the petals. \( \gamma \). D. S. Native of South America, and is now to be found in the Arabian deserts, but has been probably introduced there. Cactus flagelliformis, Lin. spec. 688. Curt. bot. mag. t. 17. D. C. pl. grass. 127. This species is very common in gardens, and has trailing stems, unless supported, which are therefore easily trained to any kind of trellising. The flowers are so beautiful, and are produced in such profusion, that the plant is worth being conveyed.
into the house whilst in flower, to adorn any of the rooms; they are red or pink.


59 C. exserta (H. C. mem. cact. in mem. mus. 17, p. 117.) plant creeping, a little, cylindrical, with 7-8 very blunt, rather repand ribs; areole velvety, but convex in the adult state; prickles 12-18 in each fascicle, stiffish, yellow, radiating, having the 2 or 3 central ones erectish. \(\hat{\epsilon}\). D. S. Native of Mexico. Coulter, no. 32. Habit of *C. flagelliformis*, but 3 times slenderer.

Slender Torch-thistle or Creeping Cereus. Clt. 1830. Fl. pr.

60 C. Humboldttii (H. B. et Kunth, nov. gen. amer. 6, p. 66. under *Cactus*) stems procumbent, with 10 or 12 ribs, glabrous; angles tubercled; tubercles bearing stiff bristles; style much exceeding the corolla. \(\hat{\epsilon}\). D. S. Native about Quito, in fields between Quito and San Felipe. Said to be very like *C. flagelliformis*. Flowers red.

Humboldt's Torch-thistle or Creeping Cereus. Shrub pr.

61 C. rossoinii (H. B. et Kunth, l. c.) stems procumbent, simple, usually with 20 angles; angles bearing fascicles of bristles; style length of petals, 8-eleft at the apex. \(\hat{\epsilon}\). D. S. Native of Quito, in dry places near Nabo. According to the authors, this plant is sufficiently distinct from the foregoing. Flowers white.

Twenty-angled Torch-thistle. Shrub proc.

62 C. sehirum (H. B. et Kunth, l. c.) stem erect, with 1) angles; angles bearing fascicles of prickles; stamens and style about equal in length, but exceeding the corolla a little; stigma 8-parted. \(\hat{\epsilon}\). D. S. Native of Quito, in sandy places, near Riobamba, at the foot of Mt Chimbaborzo, where it is called Pitahaya by the natives. According to the authors this species is sufficiently distinct from *C. Humboldttii*. Flowers rose-coloured. Fruit red.

Hedge Torch-thistle. Shrub 6 ft.

63 C. Cardifinis (H. B. et Kunth, l. c.) stems in fascicles, elongated, creeping, branched, somewhat tetragonal; angles tubercled; each tubercle bearing a fascicle of stellate bristles. \(\hat{\epsilon}\). D. S. Native of New Andalusia, near Caripe, growing on rotten wood. Very like *C. flagelliformis* in habit, but both the flowers and fruit are unknown, and therefore the place which it should occupy in this genus is doubtful.

Caripe Torch-thistle. Shrub creeping.

** Stems with 5 or 6 angles.

64 C. grandiflorus (Mill. dict. ed. 8, no. 11. Haw. syn. 181.) stems rooting, diffuse, climbing, 5-6-angled; bristles 5-8 in each fascicle, hardly longer than the down from which they proceed. \(\hat{\epsilon}\). D. S. Native of the West India Islands, and in many parts of the main land of South America. *Cactus grandiflorus*, Lin. spec. p. 668. D. C. pl. grass. t. 52. Andr. bot. rep. t. 508.—Mill. fig. t. 90.—Trew. chrest. t. 31, 32.—Volk. hscp. 1. t. 234. This species, when of sufficient strength, will produce many exceeding large, beautiful, sweet-scented flowers, like those of most of the species of very short duration, hardly continuing 6 hours full blown, nor do the flowers ever open again when once closed. They begin to open between 7 and 8 o'clock, in the evening, are fully blown by 11 o'clock, and by 3 or 4 o'clock in the morning they fade, and hang down quite decayed; but during their short continuance there is hardly any flower of greater beauty, or that makes a more magnificent appearance; for the calyx of the flower, when open, is near a foot in diameter, the inside of which being of a splendid yellow colour, appears like the rays of a bright star, the outside is of a dark brown; the petals being of a pure white add to the lustre; the vast number of recurved stamens in the centre of the flower, make a fine appearance: add to all this, the fine scent, whichperfumes the air to a considerable distance; there is scarcely any plant whose flowers, when placed in the hot-house so much as this, especially as it may be trained against the wall, where it will not take up any room. The flowers make a most magnificent appearance by candle-light, sometimes there may be 6 or 8 flowers open upon one plant at the same time; and there will be a succession of them for several nights together, provided the plant is large and healthy.


65 C. spinulosus (D. C. mem. cact. in mem. mus. 17. p. 117.) plant a little branched, creeping, and climbing somewhat, nearly terete, with 5-6 hardly exerted, acutish ribs, and with broad, bluntish furrows; areole when young, velvety; prickles 8 in each fascicle, very short, stiff, when young yellowish, but afterwards becoming brownish, the lateral ones radiating. \(\hat{\epsilon}\). D. S. Native of Mexico. Coulter, no. 27. Habit of the stems like those of *C. grawillei*, but the prickles are very different.

Spinulose Torch-thistle. Shrub cl.


67 C. radicans (D. C. prod. 3. p. 468.) plant prostrate, jointed, pale green, with 5-5 angles; prickles stiff, slender, rufous, naked at the base, with 6-9 radiating ones in each fascicle, and 1 central one, which is rather elongated. \(\hat{\epsilon}\). D. S. Native of South America. *Cactus réptans*, Salm-Dyck. in litt. not Wild. It differs from *C. pentagonus* in the stems being prostrate and rooting, not erect.

Rooting Torch-thistle. Shrub creeping.

68 C. numillis (D. C. prod. 3. p. 468.) plant jointed, divaricate, rooting, green, with 4 or 5 angles; ribs much compressed and repand; fascicles of prickly crowded prickles about equal in length to the whiteomentum from which they arise; 8-10 radiating white bristle-formed ones in each fascicle and 3 stiffish straw-coloured, central ones. \(\hat{\epsilon}\). D. S. Native country and flowers unknown. *C. gricalis*, Salm-Dyck. in litt. but not of Haw. Plant humble, with the joints a little elongated and divaricating, deeply furrowed.

Humble Torch-thistle. Shrub.

69 C. armistródis (Haw. rev. 77.) plant creeping, green, with 5 angles; prickles bristle-formed, white, stellately expanded, shorter than the rufous wool from which they arise. \(\hat{\epsilon}\). D. S. Native of St. Domingo. The rest unknown.


** Stems with 3-4 angles.

70 C. quadrangulairis (Haw. syn. p. 181.) plant creeping, 3-4-angled; angles hardly channelled; spines 5-7 in each fascicle, hardly stellate. \(\hat{\epsilon}\). D. S. Native of the West Indies.—Plun. ed. Burm. t. 199. f. 1. Flowers white, opening at night, beautiful, and sweet-scented.


71 C. triternis (Salm-Dyck. in litt. ex D. C. prod. 3. p. 468.) plant jointed, erectish, rooting, green, 3-4-angled; ribs much compressed, rather repand; fascicles of spines crowded, with 8 radiating ones in each fascicle, and 3 stiffish central ones. \(\hat{\epsilon}\). D. S. Native country unknown. It differs from *C. gricalis*,
to which it is nearly allied, in the stems being for the most part 3-angled, rarely 4-angled, and never 5-angled, in being more erect, and in the joints being longer and broader, as if they were winged, and also in the prickles being longer.

**Three-winged Torch-thistle.** Clt. 72. 72 C. speciosissimus (Desf. mem. mus. 3. p. 190. t. 9. under Cactus) plant erect, 3-angled; spikes subulate, straight, rising from white tomentum; limb of flower expanded; genitils declinate. 7 C. D. S. Native of Mexico. Cactus speciosiss. Cav. hort. madr. Wildd. enunt. suppl. p. 31. Colla, hort. rip. t. 10. but not of Bonpl. Cactus speciosissimus, Ker. bot. reg. 486. herb. amat. t. 391. Flowers large, of a beautiful scarlet colour, somewhat violaceous inside. Genitils white. This is a most splendid plant when in flower, and is now very common in the gardens.

**Var. f. bifrons** (Haw. suppl. p. 76.) plant dwarfer, more decumbent, and throwing out more roots.


**Var. f. major** (D. C. prod. 8. p. 468.) Native of St. Helena.


74 C. undatus (Haw. in phil. mag. nov. 1829. p. 109.) plant large, climbing, triangularly furrowed; joints large, rather lobately crenated, sometimes like a chain. 7 C. D. S. Native of China. Very like C. triangularis, but much larger; and the branches are greener and more radicant. Fascicles of spines small.

**Waved Torch-thistle.** Clt. 1828. Shrub cl.

75 C. sectiger (Haw. in phil. mag. nov. 1829. p. 108.) plant erectish; branches few, quadrangular; fascicles containing about 20 spines each, 3 or 4 of which are linear, radiating, and nearly equal in length. 7 C. D. S. Native of Brazil. The habit of the plant is referrible to Stappèa aterius, but taller and the angles more concave; wool at base of spines short.

**Bristle-bearing Torch-thistle.** Clt. 1828. Shrub.

76 C. triangularis (Haw. syn. 181.) plant jointed, erectish, rooting, green, triangular; spines reCOMP, with the fascicles of prickles remote; prickles rising from fuscous tomentum, ray ones seactaceous and deciduous, central 3-4, stiff, short, and fulvous. 7 C. D. S. Native of South America. C. prismáticoicus, Desf. hort. par. Prickles dirty yellow, 2-3 lines long, rising from short tomentum. Stem 5-6 feet high, branched. Flowers unknown.

**Triquetrous-stemmed Torch-thistle.** Clt. 1794. Shrub 5 to 6 feet.

77 C. tenenfusus (Haw. in phil. mag. feb. 1827. p. 125.) plant weak, branched, somewhat articulated, climbing and rooting; branches very slender and triangular; bristles very slender, bent, wool-formed. 7 C. D. S. Native country unknown, but probably in some part of South America. Bristles in crowded interwoven fascicles along the angles of the stems, which they hide. Perhaps the same as C. Myosinus.

**Slender-spined Torch-thistle.** Clt. 1826. Shrub 1 foot.

78 C. trigonus (Haw. syn. 181.) plant creeping, triquetrous; angles hardly channelled; prickles 5-7 in a fascicle, stellate. 7 C. D. S. Native of the West India Islands. Cactus triqueter

**IV. CEREUS.**

β, Haw. misc. nat. 199.—Plum. ed. Burm. t. 200. f. 2. Cactus triangularis foliosus, Jacq. amer. 152. ex Lam. dict. 1. p. 541. Flowers white (ex Plum.) and the fruit of a violaceous scarlet colour; but the fruit, according to Jacquin, is of a shining scarlet colour; there are therefore probably two species confused under this name.

**Trigonial-stemmed Torch-thistle.** Clt. 1809. Shrub cl.

79 C. prismáticoicus (Salm-Dyck. in litt. but not of Wildl. ex D. C. prod. 3. p. 469.) plant articulated, erectish, rooting, green, triangular; ribs expanded; spines of prickles crowded; prickles nearly equal, fulvous, rising from fuscous tomentum, 7 radiating ones and 2 or 3 central ones in each fascicle. 7 C. D. S. Native country unknown. Plant slenderer and more humble than C. trigonum; prickles smaller and more numerous; and the fascicles are more crowded.

**Prismatic Torch-thistle.** Clt. 1818. Shrub cl.

80 C. coecileus (Salm-Dyck. in litt. ex D. C. prod. 3. p. 469.) plant with long joints, rooting, deep green, triangular; ribs compressed, repand; prickles rising from fulvous tomentum; radiating ones few, pilose, white, and 4 rather recurved, stiff, fulvous, central ones in each fascicle. 7 C. D. S. Native of Brazil, among rocks on the mountains. Flowers said to be numerous, large, and scarlet.

**Scarlet-flowered Torch-thistle.** Clt. ? Shrub cl.

81 C. extensus (Salm-Dyck. in litt. ex D. C. l. c.) plant with long joints, rooting, green, triangular; ribs much compressed, repandly crenated, furnished with an ovate acutus scale, and numerous white hairs in the crenatures. 7 C. D. S. Native of Brazil. This is a very singular plant, with the sides of the joints 2 inches broad, and 4-toothed at the angles, and for the most part margined with red; teeth as in Stappèa, furnished each with a marcescent scale or leaf. Flowers small, solitary, when dried permanent, yellow; petals 6-8, acute. Style filiform, 8-scept at the apex. Fruit unknown.

**Extended Torch-thistle.** Clt. ? Shrub 1 to 2 feet.

82 C. squamulosus (Salm-Dyck. in litt. ex D. C. l. c.) plant erect, jointed, rooting a little, green, triangular; ribs much compressed, repand, furnished with an ovate acutus scale, and numerous white hairs in the crenatures. 7 C. D. S. Native of Brazil. This is a very singular plant, with the sides of the joints 2 inches broad, and 4-toothed at the angles, and for the most part margined with red; teeth as in Stappèa, furnished each with a marcescent scale or leaf. Flowers small, solitary, when dried permanent, yellow; petals 6-8, acute. Style filiform, 8-scept at the apex. Fruit unknown.

**Scaly Torch-thistle.** Clt. ? Shrub 1 to 2 feet.

83 C. setacatus (Salm-Dyck. in litt. ex D. C. l. c.) plant jointed, erect, rooting a little, deep green, triangular; ribs rather compressed, somewhat repand; hairs rising from white tomentum, with 7-9 radiating ones in each fascicle, and in the middle of each fascicle is a central soft prickle. 7 C. D. S. Native of Brazil.

**Bristly Torch-thistle.** Clt. ? Shrub 1 to 2 feet.

84 C. mounshus (Salm-Dyck. in litt. ex D. C. l. c.) plant rather articulated, erect, rooting a little, slender, margined with red, 3-4-angled; ribs crenulated, furnished with pencil-like fascicles of white hairs at the crenatures. 7 C. D. S. Native of Brazil. Sides of stem hardly 3 lines broad. Pili long, erect, especially on the young branches. The rest unknown.

**Mouse-tail Torch-thistle.** Shrub.

85 C. tenenfusus (D. C. prod. 3. p. 469.) plant low, climbing, acutely trigonal, with some roots issuing from the sides; hairs in fascicles along the angles, elongated, soft and adpressed; flowers sessile, usually with 5 sepals and 5 petals. 7 C. D. S. Native of Brazil. Cactus tenuiss, Sott. ined. Flowers small, rose-coloured, hardly open, rising from among the fascicles of hairs; tube very short.

**Slender Torch-thistle.** Clt. ? Shrub cl.
§ 3. Opuntiaceae (plants having the habit of Opúntia). D. C. prod. 3. p. 470. Stems composed of globose joints, horrific from diverging prickles. Flowers tubular. Style much exerted, multifid at the apex. Perhaps a proper genus, intermediate between Cereus and Opúntia?


Necklace-formed Torch-thistle. Shrub procumbent.

87 C. sephexes (H. B. et Kunth, nov. gen. amer. 6. p. 68. under Cactus) plant creeping, branched, rather angular; areoles 6-angled, prickly at the apex; flowers tubular. H. D. S. Native of Quito, on dry hills on the banks of the river Guanacamba, near Sondorillo. Flowers flesh-coloured; petals 8-12, aente; stigmas 5, approximate. Perhaps a species of Opúntia.

Creeping Torch-thistle. Shrub ex. 88 C. nausus (H. B. et Kunth, l. c. under Cactus) plant creeping and jointed; joints terete, rather compressed, areolate, prickly, a little branched. H. D. S. Native of Quito, near Sondorillo, on the banks of the Guanacamba. The rest unknown.

Dwarf Torch-thistle. Shrub proc. 2 to 3 inches.

99 C. graecilis (Haw. in phil. mag. feb. 1827. p. 136.) plant erectish, nearly terete; old spines solitary, straight, an inch long, but at first twin or more, white. H. D. S. Native of South America. Plant with the habit of Euphorbia hústrix, but less spiny and the spines shorter. It appears to be more nearly allied to C. nausus than to any other species.

Weak Torch-thistle. Clt.? Shrub.

† The following species are in the gardens, but nothing is known of them but the names.

1 C. rosácus, Hort. berol. 2 C. Déppii, Hort. berol. 3 C. inerustátius, Hort. berol. 4 C. exsérven, Hort. berol. 5 C. affínis, Hort. berol. 6 C. protésidórum, Hort. par. 7 C. Col-villi, Sweet. 8 C. ovátus, Gil. (under Cactus). 9 C. pólymórphus, Gil. (under Cactus).

Cult. The same kind of soil recommended for Mammillária, p. 160. will answer the species of this genus; and they are easily propagated by cuttings, which if left to lie a few days after being separated from the mother plant, strike root readily. In order to have several species on one tree, insert them in a plant of Pereskía.


Linn. syst. Ieocandria, Monogynia. Tube of corolla very long, middle-sized, or very short, furnished with remote, unarmed scales, rising from the crenatures of the branches, among small innocuous spines. Limb of corolla fugacious, deeply multifid, and as if it were polypetalous, rosaceous or more or less of a ringent form. Branched, slender, hardly climbing substrubs, natives of South America, growing among rocks or on the trunks of old trees; branches much compressed, 2-edged, thin but fleshy, lobately crenated, green, smooth; with a slender, woody, central axis. Flowers solitary, usually large and showy, white, rose-coloured, or scarlet, rarely sweet-scented. The branches towards the roots are rather angular. The rest as in Cereus, of which perhaps it is merely a section.

Sect. I. Nocturna (from nocturnus, nightly, or in the night; in reference to the time at which the flowers expand). Haw. in phil. mag. aug. 1829. p. 107. Corollas fugacious, sweet-scented, white, expanding alone at night; tube very long.

1 E. phyllánthus (Haw. syn. 197.) corolla small, much shorter than the tube, which is nearly a foot in length; stigmas 10. H. D. S. Native of South America, in Brazil, Guiana, Surinam, Guadaloupe, &c. Cactus phyllanthus, Lin. spec. 670. D. C. pl. grass. t. 145. Opúntia phyllanthus, Mill. dict. no. 9. Cereus phyllanthus, D. C. prod. 3. p. 499.—Dill. et clin. t. 64. f. 74. Flowers white, 9-12 inches long, expanding at night, sweet-scented.


2 E. Hookeri (Haw. l. c.) corolla middle-sized, much shorter than the tube, which is about half a foot long; stigmas usually 13. H. D. S. Native of South America. Flowers white, sweet-scented. Cactus phyllanthus, Hook. bot. mag. 2692. Flowers white, sweet-scented.

Hooker's Epiphyllum. Fl. June, July. Clt.? Sh. 2 feet.

Sect. II. Duírna (from Diurnus, belonging to the day-time; in allusion to the time of the blossoms expanding). Haw. in phil. mag. aug. 1829. Corollas scentless, open day and night; tube middle-sized or very short.


4 E. Vandesii (Hortul.) branches flat or triquetrous, with no spines in the notches, except when young, when there are a few small ones at the base; branches rather convex. H. D. S. A hybrid raised in the garden of the Count de Vandes at Bayswater, from the seed of E. phyllántoides, impregnated by the pollen of Cereus speciosissimus. The flowers are large, and of a deep red colour, and, upon the whole, it may be considered the most splendid of the genus.


5 E. Jenkínsé (Hortul.) branches round or triquetrous at the base, but always flat at the apex, with the notches more prominent and spiny than in any other species of the genus; the branches are likewise more convex and firm. H. D. S. A hybrid, raised from the seeds of Cereus speciosissimus, impregnated by the pollen of Epiphyllum speciosum. Cactus Jenkínsé, Hortul. The flowers of this hybrid are large, and of a deep scarlet-colour, and are said even to outvie in splendour those of E. Vandesii. There are several other hybrids now in various gardens, raised from the same parents as the present plant, which may prove even superior in splendour to any of the genus, but they have not yet flowered.


6 E. oxyptálum (Haw. l. c.) tube of flower length of the accumulated lobes; flowers sessile; fruit nervved longitudinally.
1. D. S. Native of Mexico

Cereus oxypetalus, D. C. prod. 3. p. 470. Flowers 4 inches long, reddish brown on the outside, and white inside. Berry red, oblong, ribbed, attenuated at both ends. Branches like those of E. phyllanthoides.

Sharp-petalled Epiphyllum. Shrub 2 to 3 feet.


8. E. akermanii (Haw. in phil. mag. Aug. 1829. p. 108.) corolla large, rather ringent, assurgent before expansion, and acute at the apex, nearly 4 times longer than the tube; stigmata 7. D. S. Native of Mexico, from whence it was brought by a Mr. Akerman. Cactus Akermanii, Hortul. Flowers large, scarlet. Petals keeled, a little recurved at the apex. Branches flat, thin, seldom with any spines in the notches except when young.


Cult. The species of Epiphyllum are extremely showy when in flower. Their culture and propagation are the same as that recommended for the last genus. They are known at first from all the other genera of this order by their flat elongated branches.


Lin. syst. icosandria, Monogyma. Sepals numerous, leaf-form, adnate to the ovaryum: upper ones flat and short: inner ones petal-formed, obovate, rosaceous, expanded: without any tube above the ovaryum. Stamens numerous, shorter than the petals. Style cylindrical, constricted at the base; stigmata many, thick, erect. Berry ovate, umbilicate at the apex, tubercled, and usually bearing spines. Embryo rather spiral, nearly terete. Cotyledons semi-terete (ex Geertm. fruct. 2. t. 138.), after germination becoming foliaceous, flat, and thickish. (see Dill. elth. f. 381.) Plumule small.—Shrubs, with the trunk at length becoming terete, but having the young branches very rarely cylindrical, but usually more or less compressed, and jointed: joints ovate or oblong, bearing fascicles of spines or bristles, which are disposed in a quincuncial or spiral order. Leaves nearly the form of those of some species of Stelum, but fall off very soon, one under each fascicle of spines or bristles on the branches when young. Flowers rising from the fascicles of spines or bristles, or from the edges of the joints, either yellow or reddish. Stamens rather irritable to the touch.

Sect. I. Cylindraceae (from cylindraceus, like a roller; in allusion to the cylindrical branches). D. C. prod. 3. p. 471. Stems cylindrical, neither jointed, nor furrowed, but bearing areolate convex tubercles, and fascicles of prickles. The species of this section are not sufficiently known, or probably they would have constituted an intermediate genus between Cereus and Opuntia.

1 O. rosea (D. C. diss. t. 15.) plant erect, rose-coloured; stems and branches tubercular; tuberules oblong, depressed, disposed in spiral series, bearing each at the apex a caducous leaf, and a fascicle of straight white prickles; flowers nearly round, usually by fours at the tops of the branches. D. S. Native of Mexico. Cactus subquadriflorus, Moz. et Ses. Pl. Mex. icon. ind. This is an anomalous species, as from the stems it agrees with Cereus tuberculatus, and from the rotate flowers it agrees with Opuntia. Flowers flesh-coloured. Fruit white. Leaves terete, acute, soon falling off.

Rose-coloured Indian-fig. Shrub 2 to 3 feet.


Cylindrical-branched Indian-fig. Cilt. 1793. Sh. 2 to 3 feet.

3 O. inermicata (D. C. prod. 3. p. 471.) plant erect, terete, not furrowed, but superficially ribbed, and rather lobe-formed, somewhat inerimbrately tesselated in various ways. D. S. Native country and flowers unknown. Cereus inermicatus, Haw. rev. 70. Allied to O. cylindrica, but more robust according to Haworth, but according to the Prince de Salm-Dyck it is slenderer.

Inericate-tesselated Indian-fig. Cilt. 1820. Shrub 2 to 3 feet.

4 O. statele (D. C. mem. cact. in mem. mus. 17. p. 117.) plant branched, irregularly tufted, deep green; joints ovate or oblong; areole small, tomentose in the axils of the tuberules; prickles 5-6 in a fascicle, stiff, straw-coloured, setaceous, when old the epidermis or coat separates from them. D. S. Native of Mexico. Coulter, no. 38. Stem hardly an inch high. Habit almost of Staphelis cespitosa, but which is without prickles.

Stapella-like Indian-fig. Cilt. 1830. Shrub 1 to 2 inches.

5 O. exuvia (D. C. l. c. p. 118.) plant branched, erect, nearly terete; branches furnished with compressed tuberules, and irregular crests, so as to make them nearly pentagonal; areole orbicular, velvety at the axils of the tuberules; prickles 5-6 in a fascicle, stiff, straight, when old the epidermis separates from them. D. S. Native of Mexico. Coulter, no. 18. Cactus tunicatus, Hort. berol. ex Salm-Dyck. Trunk a foot high, and 18 inches thick.

Far. P. angustior (D. C. l. c.) trunk slenderer; prickles fewer; areoles narrower. Coulter, no. 17.

Far. r. spinosior (D. C. l. c.) stem dwarf; prickles longer and more numerous, and more spine-like.

Striped Indian-fig. Cilt. 1830. Shrub 1 foot.

6 O. decripiens (D. C. l. c.) plant erect, branched, green; branches cylindrical, attenuated at the base; tuberules few, spirally disposed; areole small; prickles of two forms, the lower one large and spreadingly deflexed; the rest, 3-4 in number, bristle-formed and radiating. D. S. Native of Mexico. Coulter, no. 26. Leaves small, ovate-oblong, deciduous. Large prickles an inch long, where the epidermis separates from it. The rest 1-2 lines long. Compare it with O. cylindrica.

15 O. CURASSAICA (Mill. Dict. no. 7; Haw. syn. 190.) plant erect; joints brittle, cylindrically ventricose, compressed, very much divaricated, deep green; prickles 1-4 in each fascicle, whitish. ½. D. S. Native of Curassoa. Bradl. succ. t. 4. Cactus Curassavicus, Lin. spec. 670. Flowers yellow, an inch and a half in diameter. Stigmas 3-5.

Var. β. longa (Haw. rev. p. 71.) branches more firm, and twice the length of those of the species. ½. D. S. Native of Brazil. Perhaps a proper species. There are several other varieties mentioned by Haworth, but they appear to have sprung more from the state of the plants, and the manner of culture.


16 O. fra'elis (Nutt. gen. amer. 1. p. 296. under Cactus) joints short, oblong, nearly terete, fragile, doubly spinose; fruit dry and prickly. ½. H. Native of North America, in sterile places about the river Missouri. Flowers small, yellow, solitary on the tops of the branches. Truly distinct from all the rest, and will perhaps form a distinct section along with two other unpublished species, which are now growing in the garden of the Prince de Salm-Dyck.

Brittle Indian-fig. Clt. 1814. Shrub ½ to 1 foot.

17 O. pusilla (Salm-Dyck, obs. bot. 1822. et in litt. 1827.) plant prostrate, divaricate, of a dirty-green colour; joints cylindric, cucumber-formed; fascicles of prickles crowded; prickles setaceous, white, rising from white tomentum, 1 or 2 in each fascicle are more elongated than the rest. ½. D. S. Native of South America. Joints rather attenuated at the apex.

Small Indian-fig. Clt. 1817. Shrub prostrate.

Sect. III. Grandispinosæ (from grandis, great, and spinosus, full of spines; in reference to the prickles being large and numerous). Haw. syn. 195. Joints compressed, ovate or obovate. Prickles variable, the smaller ones setaceous, and the larger ones much longer and stronger.

18 O. Missouríensis (D. C. prod. 3. p. 472.) joints broad, nearly orbicular, very prickly; prickles of 2 forms, larger ones radiating and permanent; flowers numerous; fruit dry and prickly. ½. H. Native of North America, in arid places about the Missouri, plentiful. Cactus ñerox, Nutt. gen. amer. 1. p. 296. but not of Wild. O. polycántica, Haw. rev. p. 82. Larger than O. vulgarís. Flowers pale yellow or sulphur-coloured. Stigmas 8-10, greenish. Prickles white.

Missouri Indian-fig. Fl. June, July. Clt. 1814. Sh. 1 ft. 19 O. ñerox (Haw. suppl. p. 82.) joints oblong, elongated; prickles strong and setaceous, numerous, whitish, in fascicles, longer than the wool from which they issue, one of which in each fascicle is longer than the rest. ½. D. S. Native of South America. Cactus ñerox, Wildl. enum. suppl. p. 35. but not of Nutt. The rest unknown.

Fierce Indian-fig. Clt. 1817. Shrub 2 to 3 feet.

Perhaps Cactus humilis, Lag. nov. spec. is different from this. The plant often occurs in the gardens under the name of O. Tuna.

Horrid Indian-fig. Fl. July. Clt. 1795. Shrub 1 to 3 feet. 22 O. Dilleanii (Haw. suppl. p. 79.) plant erect; joints roundish-ovate, undulated, glaucous; prickles strong, divaricated, yellow, but the bush-like branches by which they are surrounded are much shorter. 2. D. S. Native of South America. —Dill. eth. f. 382. Cactus Dilleanii, Ker, bot. reg. 253. Flowers large, pale yellow. Ovarium shorter than the corolla, furnished at the summit by fascicles of bristles.

Dillenius's Indian-fig. Fl. Oct. Clt. 1810. Sh. 3 to 5 feet. 23 O. Tuna (Mill. dict. no. 3. Haw. l.c.) plant erect; joints broadly ovate-oblung; prickles subulate, long, yellow; wool at the base of the spines short. 2. D. S. Native of South America. Cactus Bonplandii, H. B. et Kuch, nov. gener. amer. 6. p. 69.—Dill. eth. 296. t. 295. f. 386. Flowers of an orange-colour, or iron grey-colour, or dirty red. Stigmas 8-10-cleft. This kind of Indian-fig makes strong fences. When the Island of St. Christopher was to be divided between the English and the French, three rows of the Tuna were planted by common consent between the boundary lines. Sloane. Sir James Smith, in his paper upon the irritability of vegetables, informs us that the long and slender stamens of the flower are very irritable; and that if a quill or feather is thrust through them, in the space of 2 or 3 seconds they begin to lie down gently on one side, and in a short time become recumbent at the bottom of the flower. According to Humboldt and Bonpland the fine kind of cochineal is nourished by this plant.

Tuna Indian-fig. Fl. July, Aug. Clt. 1731. Sh. 3 to 6 ft. 24 O. Polyanthia (Haw. syn. p. 190.) plant erect; joints oblong and ovate; prickles very different in form, yellow, larger ones setaceous, erectly spreading; flowers numerous at the tops of the branches. 2. D. S. Native of South America. Cactus Polyanthia, D. C. pl. grass. no. 138. with a figure. Cactus polyanthys, Sims, bot. mag. t. 2691. Flowers yellow. Style full, not fistular as in the other species. Stigmas 6.


One-spined Indian-fig. Clt. 1816. Shrub 6 to 8 feet. 26 O. Elatio'n (Mill. dict. no. 4. Haw. syn. 187.) plant erect; joints broadly oblong-ovate; prickles subulate, very long, blackish, with the wool from which they rise nearly obsolete. 2. D. S. Native of South America. Cactus Tuna 6, Willd. spec. 2. p. 94.—Dill. eth. t. 294. f. 376. Flowers yellow, varying to purple. Stigma 5-cleft. Adult stem nearly terete ex juv.


Blackish Indian-fig. Fl. Aug. Clt. 1795. Sh. 2 to 3 feet. 28 O. Maxima (Mill. dict. ed. 8. no. 5.) plant erect; joints ovate-oblung, very thick; spines unequal. 2. D. S. Native of South America. Perhaps the same as O. Angichea.

Greatest Indian-fig. Shrub 6 to 8 feet. 29 O. Triaca'mtha (Willd. enum. suppl. under Cactus,) joints ovate-oblung; prickles whitish, usually 3 together, strong, longer than the wool from which they issue. 2. D. S. Native of South America. Very nearly allied to O. polyanthia ex Salm-Dyck in litt. but the joints are a little larger, and the prickles are white. Flowers unknown.

Three-spined Indian-fig. Shrub 2 to 3 feet.

Sect. IV. Parvispinosa (from parvus, small, and spinosa, full of spines: in reference to the spines being small, equal, and numerous). D. C. prod. 3. p. 175. Prickles uniform, hair-like, short or nearly wanting.

30 O. Decembera (Haw. rev. 71.) joints ovate-oblung; prickles deciduous, length of the wool from which they issue. 2. D. S. Native of South America. Cactus decumans, Willd. enum. suppl. 34. O. maxim'a, Mill. dict. ed. 2. no. 5. Cactus elongatus, Willd. enum. suppl. 34. There are varieties of this plant with either ovate or lanceolate-oblung joints, almost unarmed or furnished with some short white prickles. Flowers yellow. The cochineal bug thrives almost as well on this species as on the next.

Huge Indian-fig. Clt. 1768. Shrub 5 to 10 feet. 31 O. Cochinillifera (Mill. dict. ed. 8. no. 6. Haw. syn. 192.) plant erect; joints obovate, nearly unarmed; petals crimson; stamens and style exserted. 2. D. S. Native of South America. Cactus cochinillifera, Lin. sp. 670. Hook, in bot. mag. 2741. and 2742.—Dill. eth. t. 297. f. 382. Joints while young oblong, aracelate, at length obovate-oblung. Flowers blood-coloured ex Dill. eth., small, spreading a little. Spines slender, blackish. The ripe fruit is said to check fluxes by its mild restringency. Flowers red. Perhaps Nopal de Castille Thierr-Menonville, voy. Guax. 2. p. 278. is the same as this plant.

Of the particular species of Opuntia which nourishes the cochineal insect much doubt has existed. There is some reason to believe that the Opuntia cochinillifera, Haw. Cactus, Lin. is not the plant which produces the best Mexican cochineal. Tillot, on the authority of well informed travellers, states that the cochineal Cactus has no spines, and a fruit imbued with deep red pulp. Clavigero, however, says, "In Misteca, where I was for five years, I always saw the insect upon prickly Nopals. M. de Raynal imagines that the colour of the cochineal is to be ascribed to the red fig on which it lives; but that author has been misinformed, for neither does the cochineal feed upon the fruit, but only upon the green part of the plant; nor does that species of Nopal bear red, but white figs. Clavigero adds, "it may be reared upon the species with red fruit, but that is not the proper plant of the cochineal." M. Thierry de Menonville, who procured the cochineal insect, and the Opuntia on which it feeds from Guaxaca in Mexico, and transported them to St. Domingo, and who unquestionably had the best means of determining the kinds of Cacti cultivated for the insect, describes particularly 3 sorts on which it may be reared, and cultivated to advantage. The first is the Cactier Nop'al, upon which alone the cochineal is reared in Mexico, both the fine and the common sorts, although there are throughout the country many other kinds of Opuntia. The two following, therefore, it is presumed are employed in St. Domingo. 2. The Cactier splendide, which may be used to equal advantage with the former; and 3. The Cactier de Campeche. Of these the first, as far as can be determined by description, is the Cactus Tuna of Lin. which is the Opuntia Tuna of Mill. The second appears to be very similar to the former, but larger in its joints, and very glaucous. The third is without doubt the Cactus cochinillifera, Lin. and which he says of it from his own experience, that it may be usefully employed for rearing the Coccinile sylvestre, and may even support a small quantity of the fine kind. Humboldt also, although
he allows that it is the plant upon which the cochineal has often been sent to Europe, asserts that our Opuntia cochiliifera is not the individual of the Mexican Nopaleries, which he makes a new species under the name of O. Bonplandii, and he quotes under it a mark of doubt the Cactus Tuna of Lin. At Rio Janeiro, when that place was visited by the Chinese embassy under Lord Macartney, there were considerable plantations of Cactus Tuna, now Opuntia Tuna, for rearing the cochineal, which had sometime previously been introduced to Brazil. In St. Vincent the Rev. L. Guilding has a considerable nursery of the Opuntia cochiliifera inhabited by thousands of the true cochineal; and he is in expectation of sending to the Society of Arts a large quantity of the dried insects. From all that has been said we think it may be inferred with safety that in Mexico and Brazil the Opuntia Tuna or Bonplandii is the favourite food of the cochineal; and that in the West Indian Islands, where O. Tuna is perhaps less frequent, the O. cochiliifera is employed by the natives, and answers the purpose sufficiently well.

Like all the species of Opuntia, the plants propagate readily by having the joints stuck into the ground, and the plants love dry and barren spots. If cultivated for the purpose of rearing the cochineal, it must be defended, at least in the rainy Island of St. Vincent, from storms and winds, by sheds placed to windward.

The cochineal insect, which feeds upon the kinds of Opuntia just mentioned, is too well known to need a particular description here; as are also its valuable properties in producing the dye which bears its name, and carmine. It is the Coccus cacti of Linnaeus, a small insect of the order Hymenopreta, having a general appearance not very dissimilar to that of the mealy-bug of our gardens, and equally covered with a white powder substance. The male is winged. It is originally a native of Mexico, and was cultivated for its precious dye long before the conquest of that country; and these plantations, called Nopaleries, are most extensive in the Mistsca and Oaxaca; the latter district alone has exported, according to Humboldt, upon the average 32,000 arobas annually, estimated at 2,400,000 piastres, above 500,000l. sterling.

In S. loue's Jamaica, vol. i. t. 9, a representation of a Mexican Nopalerie is given from a drawing made at Guayaaca, by an Indian. In these small plantations or enclosures they cultivated either the fine sort (Grana fina of the Spaniards), or the common kind (Grana sylvestre), which differ by the first having a finer quality and more powdery covering; whilst the latter, less valuable in its produce, has a cottony covering; but whether these two insects be specifically distinct has not yet been determined. The placing of the females, when big with young, is called sowing. The proprietor of a Nopalerie buys in April or May the branches of joints of the Tunas de Castilla (Opuntia Tuna), which are sold in the market of Oaxaca at about 3 francs a hundred, loaded with young cochineals (semlia). These are kept in cellars for 20 days, when they are exposed to the air, suspended under a shed. So rapid then is the growth of the insect, that by August or September the females are big with young, and ready for sowing, which is done in small nests, made of the fibrous parts of the foliage of a Tiliacastria called Paxtie. In four months from the time of sowing the harvest commences. The insects are brushed off with a sparrow's or deer's tail by women, who sit during this operation, for whole hours at one Nopal plant; so that it was not for the extreme cheapness of labour in that country, Humboldt says, that the rearing of the cochineal would prove an unprofitable employment. After being gathered, the insects are killed by boiling water, or by exposing them in heaps to the sun, or by means of the vapour baths of the Mexicans (tenaselli), when dry and of commerce. From the latter method, the powdery substance is preserved, which increases the value of the insects in commerce. Dr. Bancroft has estimated the annual consumption of cochineal in Great Britain only at about 750 bags or 150,000 lbs., worth 275,000l. "A vast amount," as the authors of the introduction to Entomology observe, "for so small a creature, and well calculated to show us the absurdity of despising any animals, on account of their minuteness." According to the same writers, the only kind of cochineal that has been conveyed to the East Indies is the sylvestre or wild cochineal from Brazil, and the Court of Directors of the East India Company have offered a reward of 6,000l. to any person who should introduce the more valuable sort. The insects were introduced to the royal gardens at Kew in 1814 from Martinico, by M. Castelneau d'Auros, late superintendent of the botanic garden on that island. In 1820, the fine cochineal was introduced to the Apothecaries' botanic garden at Chelsea by W. Priness of Calcutta, from some of the Nopaleries of Mexico.


32 O. ficus-indica (Haw. syn. p. 191.) joints ovate-oblong, obtuse at both ends; prickles setaceous, length of the wool from which they rise. f. D. S. Native of South America. Cactus Ficus Indica, Lin. spec. 670. Wild. enum. suppl. 34. Joints a foot long. Prickles all setaceous, and very short. Flowers sulphur-coloured. Fruit large, edible, deep purple. This is the most common kind of Indian-figs in Jamaica, and upon the fruit of it a wild kind of cochineal feeds. The plant is to be found in many parts of Asia, but has perhaps been transplanted thither.

Common Indian-fig. Fl. June, July. Ct. 1731. Shrub 2 to 3 feet.

33 O. pseudotuna (Salm-Dyck, obs. bot. 1822. et in litt. 1827.) plant erect, branched, light green; joints obovate, compressed, large, thick; fascicles of prickles distant; prickles yellow, setaceous, collected into brush-like heaps; lower one of each heap strong, and subulate. f. D. S. Native of South America. Allied to O. Ficus-Indica, but more shining. This species occurs often in gardens under the name of O. Tuna.

False-Tuna. Shrub 2 to 3 feet.


35 O. lanceolata (Haw. syn. 192.) plant erectis; joints lanceolate; spines uniform, very short. f. D. S. Native of South America. Cactus lanceolatus, Haw. misc. p. 188. Leaves larger in this species than any of its allies, generally they are more than 3 lines long. Flowers 4 inches in diameter, of a shining yellow-colour. Stigmas 5, sulphur-coloured. Lanceolate-lobed Indian-fig. Fl. July. Ct. 1796. Shrub 2 to 3 feet.

36 O. tuberculata (Willd. enumm. suppl. p. 34. under Cáctus,) joints ovate-oblong, attenuated at both ends; tubercles spinose; prickles setaceous, about equal in length to the wool from which they rise. f. D. S. Native of tropical America. Haw. rev. p. 80. The rest unknown.

Warted Indian-fig. Ct. 1818. Shrub 1 to 2 feet.

37 O. inermis (D. C. prod. 3. p. 473.) plant strictly erect; joints fleshy, ovate-elliptic; spines uniform, very short, hairiform, very numerous. f. D. S. Native of South America. Cactus Opuntia, D. C. pl. grass. no. 138. with a figure. Cactus strictius, Haw. misc. 188. but not of Willd. O. stricta, Haw. syn. 191. Flowers yellow on both sides, spreading.

Amyclea Indian-fg. Shrubs 2 to 4 feet. 39 O. REBE'CA (Salm-Dyck in litt. 1827. ex D. C. prod. 3. p. 474.) plant erect; joints elongated, compressed, reddish green, somewhat tuberculately aruncate, unarm'd; leaves small, reddish, at the base of the white tomentum.  b. D. Native of Brazil. This plant is very showy when young, being of a reddish-colour, and the stem flat and elongated, nearly as in Opuntia, but absolutely without spines.

Reddish Indian-fg. Shrubs 1 to 2 feet. 40 O. CRASSA (Haw. suppl. p. 81.) plant erect; joints ovate or oblong, very thick, full of a fleshy substance; fascicles of bristles minute, unarmed, yellowish.  b. D. Native of Mexico.


Hernandezii's Indian-fg. Clt. 1827. Shrubs 1 foot.


Per. bras. p. 100. f. 2. Flowers yellow.


† The following species are only known by name, but having been described.

1 O. leucantha, Hort. berol. 2 O. alata, Hort. berol. 3 O. myriacantha, Hort. berol. 4 O. subinermis, Link. 5 O. sulpharica, Gill. (under Cactus). 6 O. siccva, Gill. (under Cactus).

Cult. The species of Indian-fg are of very easy culture: the soil recommended for Mammillaria will suit them; and in order to propagate them, the branches should be separated at the joints, and allowed to lie a few days to dry after being so separated, and when stuck into the earth they will soon strike root.


Lin. syn. Leosistrum, Monosynia. Sepals numerous, adnate to the ovarium, and often remaining on the fruit, leaf-formed. Corolla rotate, nearly as in Opuntia. Stamens numerous, much shorter than the petals. Style filiform; stigmas collected, in a spiral manner. Berry globose or ovate. Seeds imbedded in the pulp.—Shrubs or trees. Branches terminate. Prickles solitary at the axis of the leaves, and in fascicles on the stem. Leaves distinct, flat, larger than those of any other genus in the present order. Flowers somewhat panicked, solitary, terminating the branches, or rather lateral.—Pereskia, Thierry Mennov. voy. guax. 2. p. 275. is probably a species of Opuntia.

1 P. aculeata (Mill. dict. Haw. syn. 198.) leaves elliptic; prickles solitary, in the axis of the leaves, but becoming at length in fascicles on the stems; flowers rather panicked; fruit globose, bearing the foliaceous sepals.  b. D. Native of the Western Indies, where it is called American or Barbadoes Gooseberry by the inhabitants, and by the Dutch Blood-apple. Plumm. gen. t. 26.—Dill. hort. clt. t. 227. f. 294. Cactus Pereskia, Lin. spec. 671. Prickles half an inch long. Buds rather woolly. Flowers white. Fruit yellowish, edible.


2 P. longispina (Haw. syn. 178.) leaves elliptic; prickles twin, an inch and a half long, very woolly.  b. D. Native of South America. P. aculeata b, longispina, D. C. prod. 3. p. 474.

Long-spined Barbadoes-gooseberry. Shrubs 6 to 6 feet. 3 P. BLEO (H. b. et Kunt. nov. gen. amer. 6. p. 69.) leaves oblong, acuminate; prickles axillary, 5-6 in a fascicle; flowers 2-4 together at the tops of the branches, each on a short peduncle; petals obovate, retuse.  b. D. Native of New Granada, on the banks of the river Magdalen, near Badilla, where it is called Bleo by the inhabitants. Lindl. bot. reg. 1173. Flowers pale red. Stamens also red, but white at the base. Stigma 5-7-cleft.


4 P. OBSCURA (H. b. et Kunt, l. p. 70.) leaves oblong, acute at both ends; spines 1-3 together, subulate, in the woolly axis of the leaves; flowers 2-3 together, axillary, pedunculate, rising above the spines.  b. D. Native of South America, in the province of Jaen de Baracamaros, on the banks of the Amazon. Flowers small, red. Stigma 3-4-cleft.

Horrid Barbadoes-goosberry. Shrubs or tree.

5 P. portulacefolia (Haw. syn. 199. in a note) leaves obovate-cuneate; prickles solitary, under the leaves, but at length coming in fascicles on the stem; flowers solitary; petals emarginate; fruit globose, retuse, naked.  b. D. Native of the West Indies.—Pluml. ed. Burnt. 197. f. 1. Cactus portulacéfalus, Lin. spec. 671. Lin. hort. jaim. 2. p. 255. About the size of an apple-tree. Prickles blackish, Flowers terminal, purple; petals roundish. Fruit umbilicate, greenish, with white flesh, and numerous black seeds.

Purslane-leaved Barbadoes-goosberry. Clt. 1820. Tree 20 to 30 feet.

6 P. ZINNIFLORÁ (D. C. dict. t. 17.) leaves ovate, acute, undulated; prickles axillary, twin; but at length somewhat fasciculate on the stem, about the cicatrices occasioned by the falling of the leaves; flowers solitary, terminal; petals obcordate; ovarium bearing the sepals.  b. D. Native of Mexico. Cactus zinnifloras, Moc. et Sesse. fl. mex. icon. ined. Flowers of a deep reddish-violet colour, greenish on the
outside, about an inch in diameter. Very like the preceding species.

_Zinnia-flowered_ Barbados-goosberry. Tree 10 feet. 
7 P. _lychnidiflora_ (D. C. diss. t. 18.) leaves ovate, acute; petals white, in axils of the leaves, but in flessicles on the stems; flowers solitary, terminal; petals cuneate, fringed at the apex; ovary bearing the sepals. _L. S_. Native of Mexico. Cactus fimbriatus, Moc. et Sesse, fl. mex. icon. ined. Flowers of a coppery pea colour, about 2 inches in diameter, similar to those of _Lychnis coronatus_.

_Lychnis-flowered_ Barbados-goosberry. Shrub. 
8 P. _opuntiiflora_ (D. C. diss. t. 15.) leaves oblong, mucronate, usually 2 together; petals white, solitary, very long, but perhaps disposed in flessicles on the stem; flowers usually terminal, or nearly so, solitary; petals white, ovate, ovary bearing flesicules of hairs. _L. S_. Native of Mexico. Cactus opuntiiflorus, Moc. et Sesse, fl. mex. icon. ined. Flowers of a dirty scarlet colour, an inch in diameter; petals disposed in 2 series.

_Indian-fig-flowered_ Barbados-goosberry. Shrub. 
9 P. _rotundiflora_ (D. C. diss. t. 20.) leaves roundish, mucronate; petals white, solitary, but perhaps disposed in flessicles on the stem; flowers solitary, lateral; petals broad, roundish, mucronate; ovary bearing the sepals; fruit oblong, 2 round, full of cacticules. _L. S_. Native of Brazil. Cactus rotundiflorus, Moc. et Sesse, fl. mex. icon. ined. Flowers yellow, variegated a little with scarlet, 3 1/2 inches in diameter. Berry red, oblong.

_Round-leaved_ Barbados-goosberry. Shrub. 

_Great-leaved_ Barbados-goosberry. Cilt. 1818. Sh. 6 feet. 
_Cult._ The species of this genus are very different in habit from the rest of the genera of the present order, from the branches being woolly and furnished with proper leaves; but the flowers resemble the other genera of the order. They are of easy culture, growing freely in any light earth, and cuttings of them are readily rooted in mould or sand, under a band- glass, in heat. A large plant of any of the species has a very grotesque and ornamental appearance, when several species of _Cereus_ and _Epiphyllum_ has been grafted or inserted on it.

** Tribe II. **

** RHIOPSALEÆ.** (this tribe only contains the genus _Rhipsalis_.) D. C. prod. 3, p. 475. Ovula, and therefore the seeds are fixed to the central axis of the berry.


**Linn. syst._** _Iovandria, Monogynia._ Tube of calyx adhering to the ovarium, smooth; limb superior, 3-6-parted, short; teeth acuminate, membranous. Petals 6, oblong, spreading, inserted in the calyx. Stamens 12-18, fixed to the base of the petals. _Style_ filiform, crowned by 5-6 stigmata. Berry pellicled, roundish, crowned by the marcescent calyx. Seeds imbedded in the pulp, without albumen; radicle of the embryo thick; cotyledons 2, short, obtuse.—Small shrubs, growing upon trees in the West Indies, usually pendulous, branched, leafless, and terete, naked or bearing rather falcate small bristles; flesicules of bristles, when present, disposed in a quincuncial spiral order. Flowers lateral, sessile, small, white. Berries pellucid and white, nearly like that of _Viscum_ or _Missilicote._

1 R. _Cassyttha_ (Gaertn. l. c. Haw. l. c.) plant pendulous; branches verticillate, naked, glabrous; calyx 6-parted; petals white, petaloid, fringed at the apex; ovary bearing the sepals. _L. S_. Native of the Mauritius, on the rock called Lapoquc. Cactus pendulus, Sieb. fl. macr. 2, no. 259. Perhaps this plant has been introduced to the Mauritius from the Brazils, as all the other species of this genus are natives of America. _Flowers white._ Berries white.


3 _Rhipsaloides_; plant pendulous; branches verticillate, naked, glabrous; calyx 3-lobe; petals broad at the base, and acuminate at the apex; petals 6. _L. S._ Native of Mexico. Flowers white. Berries white, about the size of red currants. _Cactus rhipsaloides_, Moc. et Sesse, fl. mex. icon. ined. _R. Cassyttha γ_, _Mociniana_, D. C. prod. 3, p. 476. _Cilt. 21._

_Cassyttha-like_ Rhipsalis. Shrub 1 foot.


_Dichotomous_ Rhipsalis. Shrub 1 foot.


6 _R. fasciculata_ (Haw. suppl. p. 83.) pendulous; branches terete, in flesicules; flesicules of hairs disposed in a spiral quincuncial order along the younger branches. _L. S._ Native of the West Indies Islands. _Christy_, in bot. mag. 3073. _R. parasitica_, Haw. syn. p. 187. _Cactus parasiticus_, Lam. dict. 1, p. 541. D. C. pl. grass. t. 59. _Cactus fasciculatus_, Willd. enum. suppl. p. 32. _Flowers greenish-white, few, and confined to the main branches._ Berry similar to _R. Cassyttha._


7 _R. salicornioides_ (Haw. suppl. p. 83.) plant erect, branched, prolific at the joints; joints short, oblate, terete, and angular, with flesicules of very minute hairs, floriferous at the apex; flowers solitary. _L. S._ Native of South America. _Otto et Link._ abbl. t. 49. Petals 7-10, acute, yellow, longer than the stamens and style.


8 _R. mesemeryxanthoides_ (Haw. rev. p. 71.) plant glomerately branched; branches erect, terete, straight, bearing joints;
joints lateral, crowded, terete, attenuated at both ends, clumped, bearing the flowers in the middle; fascicles of capillaceous bristles white or pale, but when old and faded black; flowers solitary.

R. D. S. Native of South America. Christy, in bot. mag. 3878. C. salicornoides β, Haw. suppl. p. 88. Joints at the sides of the branches numerous, crowded, and nearly erect. Flowers solitary, rising from the middle, not from the tops of the joints, white. Fruit a white berry, smaller than those of R. CassiaTha.

Fig-marigold-like Rhipsalis. Fl. Ju. Jul. Clt. 1817. Sd. ⅔ f. 9 R. parasitica (D. C. prod. 3. p. 476.) plant pendulous, branched, glabrous; branches striated, or undulate repand. R. D. S. Native of the West India Islands.—Plum. ed. Burm. t. 197. f. 2. Flowers like those of R. dichotoma. This species is hardly known, but distinct from the others in the stem being repand in an undulating manner.

Parasitic Rhipsalis. Shrub 1 foot.

10 R.? Micro' yeti (H. B. et Kunth, nov. gen. amer. 6. p. 65, under Cactus) plant glabrous, pendulous, branched; branches with 3-4 angles, or compressedly 2-edged; flowers rising from the angles. R. D. S. Native of Quito, in groves, near Oleros. Flowers white, minute.

Small-flowered Rhipsalis. Shrub ⅔ foot.

Cult. This is a genus of singular plants, but without much beauty. Being parasitic, on trees, they grow best in vegetable mould, mixed with a little brick rubbish; and they are easily increased by cuttings.


Calyx superior (f. 32. d. f. 33. b.); limb 4-5-parted (f. 33. b. f. 32. a.), regular, coloured. Petals 5, inserted in the throat of the calyx (f. 33. c.), and alternating with its segments, equal. Stamens 4-5 (f. 33. c.), very rarely 6, very short, inserted alternately with the petals, equal; filaments conical or cylindrical, distinct; anthers 2-3-celled, opening lengthwise on the inside; but in the varieties of R. rubrum they burst laterally and transversely. Ovarium 1-celled, with 2 opposite parietal placenta; ovula numerous. Style one, (d. f. 32. c. f. 33. e.) 3 or 4-cleft. Fruit succulent (f. 32. e.), nearly globose, umbilicate at the apex from the permanent calyx (f. 32. d.), 1-celled, many-seeded. Seeds arillate, suspended by a long filiform podsperm; outer integument gelatinous or juicy, and membranous: under one a very thin membrane, adhering closely to the albumen; bluntest at the extremity opposite the hynum. Albumen horny, conforming to the seed, white. Embryo minute, placed at the sharpest end of the seed, excentric, with a blunt radicle, which is placed next the hilum.—Unarmed or spinous shrubs. Leaves alternate, lobed or cut, plated while in the bud. There is one bracteae at the base of each pedicel, which is cut more or less, and two much smaller ones called bracteoles under each ovary. Flowers greenish, white, yellow or red, very rarely unisexual.

This order was formerly confounded with Cacteae: notwithstanding the dissimilarity of their appearance they are most closely related; the principal differences between the two orders are, that in Cacteae the stamens are indefinite, the seeds without albumen, and the calyx and corolla indistinguishable; while in Grossularia the stamens are definite, the seeds albuminous, and the calyx and corolla distinct. There are spines in both orders, and some of the Cacteae have distinct leaves.

The properties of the gooseberry and currant are those of the generality of the order, except that in other species a mawkish or extremely acid taste is substituted for the refreshing and agreeable flavour of the former. Some are emetic. The black currant, which is tonic and stimulant, has fragrant glands upon its leaves and flowers; these reservoirs are also found upon some other species. Male acid exists in currants and gooseberries. Turner, 634.

I. RIBES (the name of an acid plant mentioned by the Arabian physicians, which has been discovered to be the Ribes Ribes). Lin. gen. 281. Berlandier, mem. soc. phys. gen. 3. pt. 2. p. 43. t. 1-3. and D. C. prod. 3. p. 477.—Grossularia, Tourne., Gartn.

LIN. syst. Pentándria, Monogynia. Character the same as the order.

SECT. 1. GROSSULARIA (a dim. of grossus, thick; meaning a gooseberry bush; the species contained in this section all bear gooseberries). Ach. Rich. l. c. Berlandier, l. c. t. 1. Stems usually prickly (f. 32.). Peduncles 1-2-3-flowered. Calyx more or less campanulate (f. 32. a.). Leaves plicate.

* Flowers greenish.

1 R. oxyacantho'ides (Lin. spec. 291.) plant prickly and bristly, naked; spines 1 or 3, joined at the base; leaves cordate, 5-lobed, serrated, often pubescent beneath, and on the petioles; peduncles very short, usually 2-flowered; tube of calyx glabrous, hairy inside, with a spreading limb, which is longer than the obovate petals; gers and pedicels naked. 2. H. Native of North America throughout Canada, and as far as the Saskatchewan, and of Newfoundland. Berlandier, l. c. t. 1. f. 1. The shrub varies much in the aculei and spines, in their number and colour, and in the more or less dense ramifications, and pubescence. Mr. Drummond says, the fruit of this species is much like the common gooseberry, and is equally agreeable, either of a red or green colour.

Hawthorn-like Gooseberry. Fl. May, June. Sh. 3 to 4 ft.

2 R. se 'theta (Lin. ill. bot. reg. t. 1237. Hook, fl. bor. amer. 1. p. 293.) branches beset with dense bristles; prickles unequal, subulate; leaves roundish, cordate at the base, pubescent, 5-3-lobed, deeply crenated; peduncles 2-flowered, rather bracteate; calyx tubularly campanulate, with the segments linear, obtuse, and spreading, twice the length of the petals, which are entire; berries hispid. 3. H. Native of North America, on the banks of the Saskatchewan.


3 R. triflorum (Willd. hort. berol. t. 61.) prickles wanting; spines usually solitary; leaves cordate, 3-lobed, serrated, glabrous; peduncles elongated, 2-3-flowered; tube of calyx narrow, cylindrical, glabrous, with a spreading limb, which afterwards becomes reflexed; stamens exserted; ovarium naked. 3. H. Native of North America, in mountainous situations to the west of the Rocky Mountains; and of Pennsylvania. Berlandier, l. c. t. 1. f. 4. R. stamineum, Horn. hort. lafni. p. 237. Berry reddish, glabrous. The species seems to be easily distinguished from R. Cynosbati by the constantly smooth fruit, very narrow flowers, and exserted stamens.

A n.
Three-flowered Gooseberry. Fl. April, May. Chl. 1812. Sh. 3 to 4 feet.

4. R. Cyno'sbari (Lin. spec. 292.) stem unarmed, rarely prickly; spines usually two; leaves cordate, 5-lobed, serrated, more or less pubescent underneath, and on the petals; peduncles elongated, 2-3-flowered; pedicels divaricate; tube of calyx ovate-cylindrical; limb spreading, with the segments exceeding the petals, which are obovate; stamens hardly exserted; ovary broadly. 3. H. Native of Canada (Michx.). Japan (Thunb.). Bernoull. l.c. t. 1. f. 5. Jacq. vind. 2. t. 133. Berries briskly or prickly. It hardly differs from R. divaricatum, except in the broader tube of the corolla, and the shorter stamens.


7. branches prickly; peduncles shorter; flowers pubescent, purplish; fruit prickly. 3. H. Native about Lake Huron.

Dog-branched Gooseberry. Fl. Apr. Chl. 1759. Sh. 3 to 4 ft. 5. R. divaricatum (Dougl. in bot. reg. 539.) branches divaricate, bristly, at length naked; spines 1-3 together, axillary, deflexed, large; leaves roundish, 3-lobed, deeply toothed, nerved, glabrous; peduncles 3-flowered, drooping; calyx funnel-shaped; with the segments at length spreading, and twice the length of the tube; style and stamens exserted; berries glabrous. 3. H. Native of the north-west coast of America, a common bush on the banks of streams near Indian villages. This species comes nearest to R. triflorum. Berries black, smooth, and spherical, pleasant to the taste. Petals white.

Divaricatum Gooseberry. Fl. April. Chl. 1826. Sh. 5 to 7 ft. 6. R. irreg. (Dougl. in Hort. trans. 7. p. 516. Hook. fl. bor. amer. 1. p. 231.) prickles axillary, tern; leaves cordate, somewhat 5-lobed, toothed, ciliated, pilose on both surfaces, nerved; peduncles 3-flowered, beset with glandular pili; calyx campanulate; segments linear, about equal in length to the tube; berries glabrous. 3. H. Native of the north-west coast of America, on moist mountain rooks near springs and streams, on the Blue Mountains, and on the banks of the Spokane river. Berries spherical, half an inch in diameter, smooth, juicy, and well-flavoured. Apparently closely allied to R. triflorum.

Well-watered Gooseberry. Shrub 3 to 4 feet.

7. R. saxatile (Hook. fl. bor. amer. 1. p. 231.) stem unarmed, rarely prickly; spines wanting, solitary or twin; leaves cordate, 5-lobed, serrated, smoothish; peduncles very short, deflexed, 1-2-flowered; calyx glabrous, with a campanulate tube; segments spreading, but at length reflexed, twice the length of the corolla, and about equal in length to the stamens; ovary naked. 3. H. Native of the north-west coast of America, common on the undulating grounds of the interior among stones; and about Lake Huron, and on the banks of the Sacramento; also near Boston. R. saxitile, Dougl. misc. R. triflorum, Bigel. fl. boist. ed. 2. p. 90. Fruit resembling a common gooseberry.

Stone Gooseberry. Shrub 3 to 4 feet.

8. R. nitre'lli (Michx. fl. bor. amer. 1. p. 479.) spinules nearly axillary; branches beset with a few short bristly hairs; leaves small, semi-trifid; lobes few-toothed; peduncles 1-flowered; berry glabrous, red. 3. H. Native of North America, in Canada, in stony places by the river Signey; and on the mountains of Virginia.


9. R. lacust'ri (Poir. encyl. suppl. 2. p. 856. Pursh. fl. amer. sept. 1. p. 161.) stem very prickly; spines many-parted, slender; leaves cordate, deeply 3-5-lobed, cut; racemes 3-5-flowered, loose; calyx rotate; germs and pedicels hispid, and glaucular. 3. H. Native throughout Canada to Fort Franklin and Bear Lake, near the Arctic circle; mouth of the Columbia; mountains of the Columbia, and of North California; also of Virginia, &c. R. oxyacanthoides, Michx. fl. bor. amer. 1. p. 111. R. echinatum, Dougl. misc. This has the flowers of the currant, and the prickly stems of the gooseberry. The fruit is about the size of black currants, in pendulous racemes, purplish black, shining, clothed with hairs, unpleasant to the taste.

Lake Gooseberry. Fl. April, May. Chl. 1812. Sh. 4 to 5 ft.

10. R. rotundifolia (Michx. fl. bor. amer. 1. p. 110.) spinules nearly axillary, solitary; leaves nearly orbicular, clothed with very minute down, a little lobed; lobes roundish, obtuse; peduncles 1-flowered; limb of calyx tubular. 3. H. Native on the high mountains of Carolina. Berries glabrous.

Round-leaved Gooseberry. Shrub 3 to 4 feet.

11. R. gracile (Michx. fl. bor. amer. 1. p. 111.) spinules nearly axillary, very short, solitary; leaves on slender petioles, lobed; lobes acute, cut; peduncles capillary, erect, usually 2-flowered; calyx glabrous, tubularly campanulate. 3. H. Native of North America, on the mountains of Tennessee; and in mountain meadows from New York to Virginia. Berry glabrous, purple or blue, with a very pleasant taste. Leaves pubescent.

Slender Gooseberry. Fl. April, May. Chl. 1812. Shrub 3 to 4 feet.

12. R. caucaca'm (Adams, in reliq. Willd. ex Rom. et Schultes, cast. 5. p. 507.) prickles stipular, tern; peduncles 1-flowered, erect; leaves 5-lobed, deeply toothed. 3. H. Native of Caucasian. Perhaps only a variety of R. Uva-crispa.


13. R. microphyllum (H. B. et Kunth, nov. gen. amer. 6. p. 62.) prickles usually solitary; leaves nearly reniform, small; peduncles very short, 2-flowered; calyx campanulate; segments oblong, obtuse; petals sparsely obovate, retuse at the apex. 3. H. Native of Mexico, in mountainous places near El Guada, between Guchi and the city of Mexico, at the elevation of 4200 feet. Ovarian rather turbinate. Flowers red.

Small-leaved Gooseberry. Shrub 4 to 6 feet.

14. R. cuneifolium (Rouz et Pav. fl. per. 3. p. 233. f. unc.) unarméd; leaves cuneiform, cut, trifid; peduncles not half the length of the leaves; peduncles solitary, axillary, 2-3-flowered, length of the petals; bracteas 2, at the base of each flower. 3. G. Native of Peru; on the Andes. Berry pale red. Habit of R. Uva-crispa. Perhaps belonging to a separate section.

Wedge-leaved Gooseberry. Shrub 3 to 4 feet.

15. R. cucullatum (Hook. et Arn. in bot. misc. 3. p. 250.) unarmed; branches glabrous; leaves glabrous, somewhat 5-lobed, roundish-reniform, cuneulate at the base, and cuneated: the lobes lying over each other, acutely and deeply lobed; petals a little shorter than the leaves; racemes hardly puberulous, axillary, short, few-flowered; flowers nearly sessile, hardly exceeding the bracteas, which are roundish. 3. G. Native of the Cordillera of Chili. Nearly allied to R. cuneifolium, but apparently quite distinct.

Hooded-leaved Gooseberry. Shrub 4 to 5 feet.

16. R. aculeare (Smith in Rees' cyclo.) very prickly; prickles stipular, 3-8-parted; leaves rather pubescent, nearly orbicular, 3-5-lobed; lobes bluish, deeply serrated; peduncles usually 1-flowered, bracteolate in the middle; calyx campanulate, smoothish; berries bractless, and are, as well as the styles, quite glabrous. 3. H. Native of Siberia, in stony rocky mountainous places. Led. fl. vos. alt. ill. t. 230. R. Uva-crispa, Sievers in Pall. nord. beitr. 7. p. 274. Pall. fl. ros. 2. p. 37. Stem erect or procumbent. Petals white. Berries glabrous, yellowish or purplish, sweet, with a grateful taste.
Acicular-spined Gooseberry. Shrub.

17. R. grossularia (Lin. spec. p. 331) prickle 2 or 3 under each bud; branches otherwise smooth, and spreading or erect; pedicels 1-2-flowered; leaves 3-5-lobed, rather villous; bracteas close together; calyx campanulate, with reflexed segments, which are shorter than the tube; petals rounded at the apex, glabrous, but barded in the throat; style always beset with long down.

h. II. Native of Europe and Nipaul, in woods and hedges; plentiful in some parts of Britain, in hedges, thickets, and waste ground, as the woods and hedges about Darlington; apparently wild in Hamilton wood, Scotland.


Var. 3. Uva-crispa (Smith, engl. fl. p. 333) plant beset with spines all over; leaves small, rather villous; berries smaller, glabrous.


Var. γ. spinosissimum (Berl. ms.) plant spinny all over; prickle scattered, reflexed. Native of Europe in stony places.


Var. 3. subebrum (Berl. ms.) plant nearly glabrous; bark smooth, brown; prickles axillary; flowers and leaves small. Native about Geneva. Perhaps a variety of R. reclinatum.

Var. ι. macrocarpon (D. C. prod. 3. p. 478) stigmas often longer than the petals; flowers and berries large.

Var. θ. brevicaule (Berl. ms.) berries clothed with 2-4-5 straight coloured, nearly opposite, bracteas and bristles, emululating sepalas, which fall off before the berry arrives at maturity.

The gooseberry is called Grossile à moqeur, in French; Uva-spono in Italian; Stackelbeerastrich, in German; in Scotland it is called Grosser; in Piedmont, where the gooseberry is found wild, and where the Italian botanists state the berries to be eatable, but astringent and neglected, it is called Griselle. Some derive our own gooseberry from gorzeberry, from the resemblance of the bush to gorze; others, as Professor Martyn, from its being used as sauce with young or green geese. Gerarde says it is called feaberry (fleberry) in Cheshire; and it has the same name in Lancashire and Yorkshire. In Norfolk this term is shortened to scables, or, as they pronounce it, fapes. Carberry is another British name for this fruit.

The gooseberry is a low, branching, prickly shrub, bearing pendulous, hairy, or smooth berries, of various colours; it is a native of several parts of Europe, and abounds in the Vallais, in copsewoods, where it produces a small, green, hairy, high-flavoured fruit. In England it is naturalized in various places, as on old walls, ruins, and in the woods and hedges about Darlington. It is cultivated in greater perfection in Lancashire than in any other part of Britain; and next to Lancashire the climate and treatment of the Lothians seem to suit this fruit. In Spain and Italy the fruit is scarcely known. In France it is neglected and little esteemed. In some parts of Germany and Holland the moderate temperature and humidity of the climate seem to suit the fruit; but in no country is its size and beauty to be compared with that produced in Lancashire, or from the Lancashire varieties, cultivated with care, in the more temperate and humid districts of Britain. Neill observes, that when foreigners witness our Lancashire gooseberries, they are ready to consider them as forming quite a different kind of fruit. Happily this wholesome and useful fruit, to be found in almost every cottage-garden in Britain; and it ought to be considered a part of every gardener's duty to encourage the introduction of its most useful varieties in their humble enclosures. In Lancashire, and some parts of the adjoining counties, almost every cottage, who has a garden, cultivates the gooseberry, with a view to prizes, given at what are called Gooseberry-prize Meetings, of which there is annually published an account, with the names and weight of the successful sorts, in what is called the Manchester Gooseberry Book. The prizes vary from 1l. to 3l. or 10l. The second, third, to the sixth and tenth degree of merit, receiving often proportionate prizes. These are meetings held in spring, to "make up," as the term is, the sorts, the persons, and the conditions of exhibition; and in August to weigh and taste the fruit, and determine the prizes.

Use.—The fruit was formerly in little esteem; but it has received so much improvement, that it is now considered very valuable for tarts, pies, sauces, and creams, before being ripe, and when at maturity, it forms a rich dessert fruit for three months; and is preserved in sugar for the same purpose, and in water for the kitchen. Unripe gooseberries can be preserved in bottles of water against winter; the bottles are filled with berries, close corked, and well sealed: they are then placed in a cool cellar till wanted. By plugging the bottles, after being corked, into boiling water, for a few minutes (heating them gradually to prevent cracking), the berries are said to keep better.

—Neill.

Varieties.—The gooseberry is mentioned by Turner, in 1573. Parkinson enumerates 8 varieties; the small, great, and long common, 3 reds, 1 blue, and 1 green. Ray mentions only the pearl gooseberry, but Rea has the blue, several sorts of yellow, the white Holland, and the green. Miller only says, there are several varieties obtained from seed, most of them named from the persons who raised them; but as there are frequently new ones obtained, it is needless to enumerate them. The present list of the London nurserymen contains from 80 to 100 names, but those of some of the Lancashire growers exceeds 300. Forsyth, in 1800, mentions 10 sorts as common; and adds a list of 43 new sorts, grown at Manchester. The following may be considered established varieties, and such as merit cultivation.

List of gooseberries.—Those marked with a star may be considered the best; the rest only second rate.

1. Fruit green.

§ 1. Branches spreading or pendulous.

* Berries smooth, green.

1 Berkeley's green champagne. Fruit roundish, middle-sized.
2 Perrin's cr. green. Fruit large, oblong.
3 Fame. Fruit large, oblate. Branches pendulous.
5 Glory of Kingston. Fruit roundish, middle-sized.
6 Allen's glory of Ratcliffe. Fruit oblong, middle-sized.*
7 Horsfield's green gage. Fruit large, roundish.
8 Green globe. Fruit round, middle-sized.
9 Nixon's green myrtle. Fruit large, oblong. Branches pendulous.
10 Berry's greenhouse. Fruit large, oblong. Branches pendulous.
11 Massy's heart of oak. Fruit large, oblong. Branches pendulous.*
12 Grundy's high sheriff of Lancashire. Fruit obovate, middle-sized. Branches pendulous.
16 Northern hero. Fruit large, obovate. Branches pendulous.
17 Reformer. Fruit large, oblong. Branches pendulous.*
19 Large smooth green. Fruit large, obovate.*
20 Green Walnut, Belmont's, smooth green, nonpareil. Fruit middle-sized, obovate.*

* Berries green, hairy, or downy.
21 Colonel Axson's. Fruit large, oblong, hairy. Branches pendulous.
22 Holt's beauty. Fruit large, oblong, hairy. Branches pendulous.
23 Early green hairy, early green, green Gascoigne. Fruit small, round.*
26 Green globe. Fruit small, round, hairy. Branches pendulous.*
27 Green scolding. Fruit small, oblong, hairy. Branches pendulous.*
29 Lovely Anne. Fruit large, oval, downy. Branches pendulous.
30 Gregory's perfection. Fruit large, roundish, downy, late. Branches pendulous.*
31 Prophet's profit. Fruit large, oblong, downy. Branches pendulous.*
33 Ryder's triumph. Fruit small, obovate, hairy. Branches pendulous.
34 Moore's trouble. Fruit large, roundish-oblong, hairy. Branches pendulous.*
35 Unicorn. Fruit large, oval, downy. Branches pendulous.*

§ 2. Branches erect.

* Fruit green, smooth.
36 Pitmaston green-gage. Fruit small, obovate.*
37 Briggs's independent. Fruit large, obovate.
38 Merry fast. Fruit middle-sized, obovate.
39 Midsummer. Fruit small, roundish.
40 Royal George. Fruit middle-sized, oval.

** Fruit green, hairy, or downy.
41 Monck's Charles Fox. Fruit small, ovate, hairy.
42 Green oak. Fruit large, roundish, hairy.
43 Greensmith. Fruit middle-sized, roundish, hairy.
44 Heburn's prodigy. Fruit middle-sized, roundish, hairy.*
45 Colter's jelly angler, Lay's jelly angler, Collins's jelly angler. Fruit large, oblong, downy.*
46 Mills's Langley green. Fruit large, roundish, hairy.
47 Late green. Fruit small, obovate, downy.
48 Parkinson's laurel, green laurel, green willow. Fruit large, obovate, pale green, nearly white.*
49 Hopley's Lord Crew. Fruit large, oblong, hairy.*
50 Megaronette. Fruit small, roundish, hairy.
51 Lovat's Moses. Fruit large, obovate, hairy.
52 Green Rumbollion. Fruit small, round, hairy. Branches pendulous.
53 Small green. Fruit small, globular, downy.
54 Small hairy green. Fruit small, round, hairy.
55 Bratherston's Wistaston hero. Fruit large, oblong.

II. Fruit yellow.

§ 1. Branches spreading or pendulous.

* Fruit yellow, smooth.
1 Amber, amber yellow, smooth amber. Fruit small, roundish.
2 Diggles's Donny Roger. Fruit large, obovate.
3 Copper's Banker's Hill. Fruit large, roundish.
4 Hopley's Cheshire cheese. Fruit large, oblong.
5 Forbes's golden chain. Fruit large, oblong. Branches pendulous.
6 Bamford's golden Purse. Fruit large, obovate. Branches pendulous.
7 Beamont's smiling beauty. Fruit large, oblong. Branches pendulous.*
8 Beardell's smuggler. Fruit large, roundish, oblong. Branches pendulous.*
10 Mather's victory. Fruit large, obovate. Branches pendulous.
11 Forester's Lord Combermere. Fruit large, obovate.
12 Saunter's Napoleon. Fruit large, obovate.
13 Costerdale's Champion Goliath. Fruit large, oblong, smooth, golden yellow. Branches pendulous.
14 Large yellow. Fruit obovate, middle-sized, golden yellow, smooth. Branches pendulous.
16 Long yellow. Fruit large, oblong, golden yellow.

** Fruit yellow, hairy, or downy.
17 Capper's bottom Sawyer. Fruit large, obovate, downy.
18 Lister's Britannia. Fruit large, obovate, downy.
19 Hopley's globe. Fruit large, round, hairy. Branches pendulous.
22 Jackson's golden orange. Fruit large, oblong. Branches pendulous.
23 Bratherston's golden sovereign. Fruit large, roundish, hairy.
24 Hill's golden gourd. Fruit large, oblong, hairy. Branches pendulous.
28 Sparklet. Fruit small, obovate, downy.
29 Hollow's Trafford. Fruit large, oblong, hairy. Branches pendulous.
31 Weedham's delight. Fruit large, oblong, hairy.

§ 2. Branches erect.

* Fruit yellow, smooth.
32 Yellow ball. Fruit middle-sized, roundish.*
33 Blithfield. Fruit small, round, late.
34 Clegg's Tim Bobbin. Fruit middle-sized, oblong.
35 Old dark yellow. Fruit small, roundish.
36 White walnut. Fruit middle-sized, obovate, whitish yellow.
** Fruit yellow, hairy, or downy.

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37 Hebberd's yellow aston. Fruit small, roundish, hairy.*
38 Yellow champagne. Fruit small, roundish, hairy.*
39 Catlow's conquering hero. Fruit large, oblong, coarse, hairy.
40 Heap's conquering girl. Fruit large, oblong, hairy.
41 Golden drop. Golden lemon.
42 Pot's golden fleeces. Fruit large, oval, hairy.
43 Sulphur. Fruit small, roundish, hairy.*
45 Foster's husbandman. Fruit large, oblate, downy.
46 Heywood's invincible. Fruit large, roundish-oblong, downy.
47 Hardcastle's jolly gunner, royal gunner. Fruit large, oblong, hairy.
48 Prophet's regulator. Fruit large, roundish, hairy.
49 Rumhullion. Yellow globe, round yellow. Fruit small, roundish, downy.
50 Smooth yellow. Fruit small, roundish, downy.*
51 Williamson's yellow hornet. Fruit small, ovate, downy.
52 Yellowsmith. Fruit small, roundish-oblong, hairy.*
53 Kelk's yellow. Fruit middle-sized, oblong, downy.

III. Fruit white, or greenish white.

§ 1. Branches erect.

* Fruit smooth, white.
1 Cranshaw's ambush. Fruit large, oblate, white.
2 White Damson. Fruit small, roundish.*
3 Honey white. Fruit middle-sized, roundish-oblong.
4 Hosam's smiling yellow. Fruit large, roundish-oblong.
5 Cook's white eagle. Fruit large, oblate.
6 Lovat's Queen Caroline. Fruit middle-sized, oblate.

** Fruit greenish white, hairy, or downy.

7 Large early white. Fruit large, oblate, downy.*
8 Sampson's Queen Anne. Fruit large, oval, downy.
9 Peers's Queen Charlotte. Fruit middle-sized, oblong, hairy.*
10 Morris's Queen Mary. Fruit middle-sized, ovate, downy.
11 Trumian. Fruit large, oblate, hairy.

** Fruit white, hairy, or downy.

12 Danny landlady, noble landlady. Fruit large, oblong.
13 Hopkyn's lady of the manor. Fruit large, roundish-oblong, hairy.
14 White lion. Fruit large, oblate, hairy.
15 Stringer's maid of the mill. Fruit middle-sized, oblate, downy.
16 Marchioness of Downshire. Fruit middle-sized, oblong, hairy.
17 Early rough white. Fruit large, oval, hairy.
18 Saunders's royal rock getter, Andrews's royal rock getter. Fruit large, oblate, downy.
19 White royal. Fruit small, round, hairy.
20 Compton's Sheba Queen. Fruit large, oblate, downy.*
21 Wellington's glory. Fruit large, roundish-oblong, downy.*
22 Moore's white bear. Fruit large, oblate, hairy.*
23 Nixon's white heart. Fruit middle-sized, heart-shaped, hairy.
24 White lily. Fruit middle-sized, oblate, downy.
26 Taylor's bright Venus. Fruit middle-sized, oblate, hairy.*
27 White champagne. Fruit small, roundish-oblong, hairy.*

28 Saunders's Cheshire lass. Fruit large, oblong, downy.
29 Hedgehog. Fruit middle-sized, roundish, hairy.*

§ 2. Branches spreading or pendulous.

* Fruit smooth, white.
30 Crystal. Fruit small, roundish.*
31 White fig. Fruit small, ovate.
32 Parkinson's first rate. Fruit large, oval.
34 Great Britain. Fruit large, oblong, greenish white.
35 White rasp. Fruit small, round.
36 Brundrett's white rock. Fruit large, oblate, Branches pendulous.
37 Diggles's wanton. Fruit middle-sized, roundish, greenish white.
38 Denny's Victoria. Fruit large, oblate, greenish white.

** Fruit greenish white, smooth.
40 Great Britain. Fruit large, oblong. Branches pendulous.
41 Denny's Vittoria. Fruit large, oblate, Branches pendulous.

*** Fruit white, hairy, or downy.

42 Copper's bony lass. Fruit large, oblong, hairy.
43 White crystal. Fruit small, roundish, hairy or downy.*
44 Early white. Fruit middle-sized, roundish, hairy.*
45 Grundy's fowler. Fruit middle-sized, oblate, downy.
46 Large white. Fruit roundish-oblong, oval, downy.
47 Smith's radical. Fruit large, roundish-oblong, hairy. Branches pendulous.
48 Irish white raspberry. Fruit small, round, hairy.
49 Cleworth's white box. Fruit large, oblate, downy. Branches pendulous.*

**** Fruit greenish white, hairy or downy.

50 Counsellor Bringham. Fruit large, oblong, downy.
51 Bratherton's generosity. Fruit large, roundish-oblong, hairy.
52 Princess royal. Fruit large, oblate, hairy. Branches pendulous.*
54 Taylor's speedwell. Fruit large, oblong, hairy. Branches pendulous.

IV. Fruit red.

§ 1. Branches spreading or pendulous.

* Fruit hairy or downy.
1 Alexander. Fruit large, oblate, hairy.
2 Hamlet's beauty of England. Fruit large, oblong, hairy.
3 Warwick's black bullfinch. Fruit middle-sized, dark red, downy.
4 Shipley's black prince. Fruit middle-sized, roundish, downy, deep red.
5 Boardman's British crown. Fruit large, roundish, hairy.
6 Williams's conqueror. Fruit large, oblate, hairy.
7 Mealing's crown bob. Fruit large, oblong, hairy.*
8 Worthington's defiance. Fruit large, oblate, hairy. Branches pendulous.
10 Early black. Fruit middle-sized, oblong, dark red. Branches pendulous.
12 Berry's former's glory. Fruit large, obvate, downy. Branches pendulous. *
13 Smith's favourite. Fruit middle-sized, roundish-oblong, hairy.
15 Knight's Marquis of Stafford. Fruit large, roundish-oblong, hairy. *
16 Wright's matchless. Fruit middle-sized, oblong, dark red, hairy. Miss Bold, pigeon's egg. Fruit middle-sized, roundish, downy, dark red, early. *
17 Branthorpe's over-all. Fruit large, oblong, hairy. Branches pendulous. Branches pendulous. *
19 Red Mogul. Fruit small, roundish, hairy. *
20 Red rose. Fruit large, oblong, downy. Branches pendulous. *
22 Rough red, little red hairy, old Scotch red, thick skinned red. Fruit small, round, hairy. *
23 Small dark rough red, small rough red. Fruit small, round, hairy. *
24 Royal oak. Fruit middle-sized, roundish, hairy. *
25 Small red. Fruit small, round, hairy. *
26 Copper's top sawyer. Fruit large, roundish, hairy, pale red. Branches pendulous. *
27 Denny's triumphant. Fruit large, obvate, hairy. Branches pendulous. *
28 Lomax's victory. Fruit large, roundish, hairy. Branches pendulous. *
29 Red nutnut, Murrey, Eckerley's double bearing, Ashton red. Fruit middle-sized, obvate, downy, early. Warrington red, Aston, volunteer. Fruit large, roundish-oblong, hairy. Branches pendulous. This is one of the best, and hangs late. *
30 Knight's warrior. Fruit large, ovate, downy, pale red. Branches pendulous. *
31 Wilmot's late superb. Branches large, roundish-oblong, hairy. ** Fruit smooth, red. *
33 River's emperor Napoleon. Fruit large, obvate. Branches pendulous.
35 Red Turkey, smooth red. Fruit small, obvate. *
38 Farron's roaring lion, great chance. Fruit very large, oblong. Branches pendulous. 
39 Saint John. Fruit middle-sized, obvate. *
40 Rider's scented lemon. Fruit large, obvate. *
41 Great Smolensko. Fruit large, obvate. Branches pendulous. 
42 Chadwick's sportsman. Fruit large, obvate, dark red. Bratherton’s whisper-in. Fruit large, oblong, dark red. Branches pendulous. *
43 Wilnott's early red. Fruit large, roundish-oblong, dark red. Branches pendulous. *

§ 2. Branches erect.

* Fruit smooth, red. ** Fruit red, hairy or downy.

62 Small red globe, smooth Scotch. Fruit small, roundish. ** Fruit red, hairy or downy. *

63 Brandreth's atlas, Brundit's atlas. Fruit large, oblong, hairy. *

64 Barton's red. Fruit middle-sized, roundish, hairy. 
65 Red Champagne, red Turkey, countess of Errol, Ironmonger of many. Fruit small, roundish-oblong, hairy. A fruit of unqualified richness. *

70 Daline's black. Fruit middle-sized, oblong, dark red. A bad bearer. 
71 Large red globe. Fruit large, roundish, hairy. 
72 Barton's hairy red. Fruit small, roundish, hairy. A good bearer. 
73 Bratherton's huntsman, Speechley's rough red. Fruit large, roundish, hairy. A good bearer. 
74 Irish plum. Fruit middle-sized, roundish, hairy. 
75 Hopley's jubilee. Fruit large, roundish, hairy, dark red. 
76 Allcock's king. Fruit large, roundish, hairy, dark red. 
77 Lad Hartshorne's Lancashire. Fruit large, roundish, hairy, dark red. A good bearer. 
78 Little John. Fruit small, oblong, hairy, dark red. 
79 Beaumont's red. Fruit middle-sized, roundish, hairy. *
81 Rob Roy. Fruit middle-sized, obvate, hairy. 
82 Scarlet transparent. Fruit small, roundish, hairy. A bad bearer. 
83 Scotch best jam, dumpling. Fruit small, hairy, roundish. *
84 Denny's Shakespeare. Fruit large, roundish, hairy. 
85 Mellor's Sir Francis Burdett. Fruit large, obvate, pale red. 
86 Thompson's Tantarara. Fruit middle-sized, obvate, downy. *

87 Speechley's Yarkey hero. Fruit large, obvate, hairy. *
Selection of sorts.—"It must be admitted," Neill observes, "that although large gooseberries make a fine appearance on the table, they are often deficient in flavour when compared with some of smaller size. Many of them have very thick strong skins, and are not eatable unless thoroughly ripened. Some of the large sorts, however, are of very good quality, such as the red Champagne and the green walnut, &c. For culinary use in the month of May, Wilmot's early red is larger and better than most others, the skin not being tough, and the whole berry melting to a fine consistence." Forsyth very judiciously recommends cultivating the early and late sorts, in order to prolong the season of this fruit. But the best way of selecting sorts for any particular purpose is from the list given above, where those that are of particular excellence are marked by an asterisk.

Propagation.—The gooseberry may be propagated by all the modes applicable to trees or shrubs, even by pieces of the roots; but the mode by cuttings is usually adopted for continuing varieties, and that by seeds for procuring them.

By seeds.—The scientific mode of propagating one variety with another has, we believe, not been applied to this fruit. In general the seed of some choice variety, thoroughly ripe, is taken and sown in autumn or early in spring, in beds or pots of rich light mellow earth; when the plants are a year old, they are planted out in nursery rows, to be cultivated and trained there a year or two; in general they will bear the third year. By preparing for the best of these seedlings a very rich soil, and by watering, shading, and thinning the fruit, the largest sorts have been obtained. Not content with watering at the roots and over the top, the Lancashire connoisseur, when he is growing for exhibition, places a small saucer of water immediately under each gooseberry, only 3 or 4 of which he leaves on the tree. This is technically called suckling. He also pinches off a great part of the young wood, so as to throw all the strength he can into the fruit.

By cuttings.—Miller says, the best season for planting gooseberry cuttings is in autumn, just before their leaves begin to fall. The cuttings should be taken from bearing shoots, rather than from those that issue from the main stem. Cut them to such a length as the strength and ripeness of the wood will bear, and cut off all the buds, excepting three, or at most four at top, and train the plants with a single stem of 9 inches or a foot high, from the top of which the branches should radiate upwards at an angle of 45°, or better if 45°. Haynes advises taking off cuttings in July; when the fruit is on the bush, in order to make sure of the sorts. He says, by immediate planting, watering, and shading, as good plants are produced as from ripe wooded cuttings. Treat. of the gooseberry, &c. p. 29.

Soil and site.—Any good garden soil, on a dry bottom, and well manured, will suit the gooseberry. That which is soft and moist produces the largest fruit. The situation should not be under the drip of trees, over much shaded or confined, otherwise the fruit will be small, ill flavoured, and the plants apt to mildew. Forsyth says, gooseberries should be dunged every year, or at least have a good coat of dung once in two years. Haynes recommends a mixture of peat and loam well manured, and a shaded situation. The last he proposes to effect by planting among his quarters of gooseberries, rows of Jerusalem artichokes in the direction of east and west.

Final planting.—"The season for planting gooseberries is any time during open weather, from October till March. When trees are procured from the public nurseries, choose such as are in some advanced state, about 3 years' growth, with pretty full heads, for immediate plentiful bearers. Let the general supply be in standard bushes, and plant principally in the kitchen garden, in single rows along the boundary edges of the main quarters or outward borders, from 6 to 8 feet apart, or some may be planted in cross rows, to subdivide extensive quarters. When the object is to raise large quantities of fruit, plantations are made in continued parallel rows, 8 or 10 feet asunder, by 6 feet in the row. It would be eligible to plant a few choice sorts against south and other sunny walls or paling, for earlier and larger fruit; and on north walls to ripen late in succession." Abercrombie. Forsyth says, "The market gardeners about London plant them in rows, from 8 to 10 feet apart from row to row, and 6 feet from plant to plant in the rows. In small gardens I would recommend planting them in quarters by themselves, at the distance of 6 feet between the rows, and 4 feet from plant to plant; or you may plant them round the edges of the quarters about 8 feet from the path; you will then have the ground clear for cropping, and a man, by setting one foot on the border, can gather the gooseberries without injuring the crop." Neill says, "In some places gooseberry bushes on the sides of the borders, are trained to a single tall stem, which is tied to a stake; this, though 6 or 8 feet high, occasions scarcely any shade on the border, and it does not occupy much room, nor exclude air; while, at the same time, the stem becomes close hung with berries, and makes a pleasant appearance in that state." Edib. encycl. art. hort. § 161. Maher observes (Hort. trans. 2, p. 146.) "that as the crop of ripe fruit is often injured by having the largest and earliest berries prematurely gathered, whilst green, for tarts, a sufficient number of trees of such varieties as are earliest should be planted in a separate quarter of the garden, and devoted exclusively to the use of the kitchen, for tarts and scones."

Mode of bearing.—"The gooseberry produces its fruit not only on the shoots of last summer, and on shoots 2 or 3 years old, but also on spurs or snags arising from the older branches along the sides; but the former afford the largest fruit. The shoots retained for bearers should therefore be left at full length or nearly so." Abercrombie.

Pruning.—"The bushes will require a regular pruning twice in the year.

Summer pruning.—"Where any bushes are crowded with cross and water shoots of the same year, shading the fruit from the sun, and preventing the access of air, thin the heart of the plant and other tufted parts moderately, pinching off or cutting out close what spray is removed; but do not touch the summer shoots in general. Maher says, it will greatly contribute to the production of the fruit, if the very small berries are taken away, with a pair of scissors about the middle or end of May; and these small berries will be found quite as good for sauce or gooseberry cream as the larger."

Winter pruning.—"You may proceed to the winter pruning any time from November until the end of February, or until the buds are so swelled, that further delay would endanger their being rubbed off in the operation. Cut out the cross-shoots and water-shoots of the preceding summer, and the superfluous among crowded branches. Prune long ramblers and low stragglers to some well placed lateral or eye; or if any under straggler spring very low, cut it away. Of last year's shoots retain a sufficiency of the best well-placed laterals and terminals in vacant parts, to form succession bearers, and to supply the places of unfruitful and decayed old-wood, which, as you proceed, should be removed. Mostly retain a leading shoot at the end of the principal branch, leaving it either naturally terminal, or, where the branch would thus be too extended, pruning in some competent lateral within bounds. The superfluous young laterals on the good main branches, instead of being taken off clean, may be cut into little stubs of one or two eyes; which will send out fruit-buds and spurs. Of the supply reserved for new bearers, a small number will probably require shortening, where too extended, or curved incommmodiously; leave these from 8 to
12 inches in length, according to strength and situation; those of moderate extent and regular growth will require very little shortening, and many none at all. Observe, too close cutting or general shortening, occasions a great superfluity of wood in summer; for the multiplied laterals thus forced from the eyes of the shortened branches, increase to a thicket, so as to retard the growth, and prevent the full ripening of the fruit; on which account it is an important part of pruning to keep the middle of the head open and clear, and to let the occasional shortening of the shoot be sparing and moderate. Between the bearing branches keep a regular distance of at least 6 inches at the extremities, which will render them fertile bearers of good fruit.

Some persons, not pruning the gooseberry bush on right principles, are apt to leave the shoots excessively close and tufted, while they shorten the whole promiscuously; others sometimes clip them with garden shears to close round heads; in consequence of being pruned in these methods, the bushes shoot crowdely, full of young wood in summer, from which the fruit is always very small, and does not ripen freely with full flavour." Forsyth says, "Many of the Lancashire sorts are apt to grow horizontally, and the branches frequently trail on the ground, which renders them liable to be broken by high winds, especially when they are loaded with berries. In such instances I would recommend pruning in February, or March, to be put round them, to which the branches may be tied to support them, and prevent their being broken by the wind." S. Jeeves has tried training gooseberries on an arched trellis in the manner of a berceau or arbour-walk. For this purpose he plants in rows, 51 feet apart, and the plants 3 feet distant in the row. He chooses the strongest growing kinds, and trains 4 branches at 9 inches distance from each plant, till they meet at the top. The advantages of this plan are beauty of appearance, fruit not splashed by rain, easily gathered, and the ground more readily cultivated.

Insects and diseases, &c.—The caterpillars of saw-flies (Tenthredinidae, Lecid.), of butterflies (Papila, Lin.), and of moths (Phalena, Lin.), are well known as serious enemies to gooseberries. The larvae of the Tenthredinidae have from 16 to 20 feet, a round head, when touched they will roll themselves together. They feed on the leaves of the gooseberry, apple, and most fruit trees, as well as on roses, and other shrubs and plants. When full grown they make, sometimes in the earth, and sometimes between the leaves of the plants on which they feed, a net-work case, which, when complete, is strong and gummy, and in that change to the pupa incomplete, which for the most part remains during the winter in the earth. The perfect fly emerges early in the ensuing spring; its serrated sting is used by the female in the manner of a saw, to make incisions in the twigs or strans of plants, where it deposits its eggs. The Caledonian Horticultural Society having requested information respecting the best method of preventing or destroying the caterpillar on gooseberries, received various communications on the subject, and the following are extracts from such as they deemed fit for publication.

J. Gibb describes the large black, the green, and the white caterpillar, with his methods of destroying them:—

"During the winter months the large black kind may be observed lying in clusters on the under parts, and in the crevices of the bushes; and even at this season (Feb.) I find them in that state. In the course of 8 or 10 days, however, if the weather be favourable, they will creep up in the day time, feed on the buds, and return to their nest during the night. Whenever leaves appear upon the bushes they feed upon them till they arrive at maturity, which is generally in the month of June; after which they creep down upon the under sides of the branches, where they lodge till the crust or shell is formed over them. In July they become moths, and lay their eggs on the under side of the leaves and bark. The produce of these eggs, coming into life during the month of September, feed on the leaves so long as they are green, and afterwards gather together in clusters on the under side of the branches, and in the crevices of the bark, where they remain all the winter, as already said. Winter is the most proper time for attacking this sort with success, as their destruction is most effectually accomplished by the simple operation of pouring a quantity of boiling-hot water upon them from a watering-pan, while no injury is thereby done to the bushes.

"The green sort are at present (February) in the shelly state, lying about an inch under ground. In April they come out small flies, and immediately lay their eggs on the veins and under sides of the leaves. These eggs produce young caterpillars in May, which feed on the leaves till June or July, when they cast a blackish kind of skin, and afterwards crawl down from the bushes into the earth, where a crust or shell grows over them, and in that state they continue till the following April. The only method which I have hitherto found effectual for destroying these is, 1st, to dig the ground around the bushes very deep during the winter season, by which means the greater part of them are destroyed, or buried too deep ever to penetrate to the surface. 2ndly, when the flies make their appearance, to pick off all the leaves on which any eggs are observable; this is a tedious operation, but may be done by children. If any of the enemy should escape both these operations, they will be discernible as soon as they come into life, by their eating holes through the leaves, and may then easily be destroyed, without the least injury to the bushes or fruit.

"The white kind, otherwise called borers, are not so numerous as the other kinds, though very destructive; they bore the berry, and cause it to drop off; they preserve themselves during the winter season in the chrysalis state, about an inch under ground, and become flies nearly at the same time with the last mentioned kind; they lay their eggs on the blossoms, and these eggs produce young caterpillars in May, which feed on the berries till they are full grown, and then creep down into the earth, where they remain for the winter in the shelly state." Caled. mem. vol. 1.

Macmurray, in autumn, pours a little cow urine around the stem of each bush, as much as suffices merely to moisten the ground. The bushes which were treated in this manner remained free of caterpillars for two years; while those that were neglected or intentionally passed over, in the same compartment, were totally destroyed by the depredations of the insects. A layer of sea-weed laid on in autumn, and dug in in the spring had the same effect for one year. Caled. mem. vol. 1. p. 95.

R. Elliot says, "take 6 pounds of black currant leaves, and as many of elder leaves, and boil them in 12 gallons of soft water; then take 14 pounds of hot lime, and put it in 12 gallons of water; mix them altogether; then wash the infested bushes with the hand engine; after that is done, take a little hot lime, and lay it at the root of each bush that has been washed, which completes the operation. By these means you completely destroy the caterpillars, without hurting the foliage. A dull day is to be preferred to any other for washing. When the foliage is all off the bushes, wash them over with the hand engine to clean them of decayed leaves; for this purpose any sort of water will do; then stir up the surface of the earth all round the roots of the bushes, and lay a little hot lime about them to destroy the eggs. This I have never found to fail of success since the first trial, 6 years ago. The above mentioned proportion of leaves, lime, and water, will serve for 2 acres of ground or more, covered with bushes or trees in the ordinary manner, and will cost very little money indeed. The same proportion is
to be observed in making a wash for the rest of the trees or bushes.

J. Machray procured some tobacco and soft or black soap, and boiled a quarter of a pound of tobacco with the one pound of soft soap in about 18 scotch pints of water; and kept stirring the liquid while boiling with a whisk, in order to dissolve the soap; this liquor, when milk-warm, or so cool as not to hurt the foliage, he applied to the bushes with a hand-squirt, in the evening, and in the morning found all the ground under the bushes covered with dead caterpillars. This practice he continued for six years, always when he saw any symptoms of the approach of caterpillars.

J. Tweedie, in the course of any of the winter months, pares all the earth from under the bushes to the depth of about 3 inches, into a flat ridge betwixt the rows; and on the first dry day following, either treads, beats, or rolls these ridges, and trenches the whole down 1 ½ or 2 spades deep, observing to tread the foul earth into the bottom of the trench.

Forestry's method is as follows: "Take some sifted quick-lime, and lay it under the bushes, but do not at first let any of it touch the branches or leaves; then shake each bush suddenly and smartly, and the caterpillars will fall into the lime; if the bush be not shaken suddenly, the caterpillars, on being a little disturbed, will take so firm a hold as not easily to be shaken off. After this is done, sift some of the lime over the bushes; this will drive down those which may have lodged on the branches. The caterpillars ought to be swept up next day, and the bushes well washed with clear lime-water mixed with urine; this will destroy any caterpillars that may still remain, and also the aphides, if there are any on the bushes."

Of all the methods of destroying caterpillars mentioned above, Gibb's appears to us the only plan on which any reliance can be placed.

Taking the crop.—"From gooseberries being useful for different purposes, both in a green and in a mature state, and from the compass of time afforded by early and late sorts, they are in season in great request 4 or 5 months in summer, from April till September. The early sorts on south walls come in for gathering in small green berries for tarts, &c. in April or early in May, and attain maturity in June. From common standard bushes an abundant supply is yielded in May and June of gooseberries in a green state; and in proportion as part is reserved to ripen, a succession, in full size and maturity, is obtained in June, July, and August. Some late kinds, either planted in shady situations, or shielded with mats from the sun in their ripening state, continue good on the bush till September."

Prolonging the crop.—In addition to planting late sorts in shady situations, the bushes, whether standards or trained, may be natted over when the fruit is ripe, and in this way some of the reds, as the Warrington, and the thick-skinned yellow sorts, as the Mogul, will keep on the trees till Christmas.

Forcing.—The gooseberry may be forced in pots or boxes placed in pits, or in the peach-house or vinery. The plants in pots or boxes, are placed in pits, or in the peach-house in January, and has ripe fruit in the end of April, which is sent to table growing on the bush.


* Flowers red.

18 R. speciosum (Pursh. fl. amer. sept. 2, append. 731.) shrub, bristly and prickly; spines tripartite; leaves roundish-ovate, 3-5-lobed, obtuse; peduncles few-flowered; bracteas broadly ovate; calyx cylindrical, 4-parted, with erect glandular segments; germens and pedicels beset with glandular bristles. H. Native of North California and Monterey, and Mexico. Sweet, fl. gard. second ser. t. 149. Lindl, bot. reg. vol. 18, with a figure. R. vol. III.
Flowers greenish or greenish-yellow.

23 R. alpinum (Linn. spec. 291.) leaves 3-5-lobed, obtuse, shining beneath, pilose above; racemes erect, rather crowded; bracteas lanceolate, ventricose, bearing a few glads, usually longer than the flowers; petals minute, almost abortive; anthers more or less nearly sessile; styles joined. H. Native of Europe and Siberia, on the Alps; in Britain, in woods, in and north of England; near Bradford, Yorkshire; near Ripon and in Durham; also of Scotland, but rare. Smith, engl. bot. 704. Fl. d. t. 698. Fl. exce. 1. t. 47. Flowers greenish-yellow. Berries red, elliptic, mucilaginous and insipid.

Var. a, stérile (Wallr. sched. p. 108.) flowers flat, destitute of the germ, fugacious; racemes dense, many-flowered; anthers nearly sessile, bearing pollen, acute. R. dioicium, Muench. meth. p. 583.

Var. β, bacciferum (Wallr. l. c.) flowers somewhat hypocreteriform; racemes few-flowered; anthers distinctly pedicellate, but imperfect; style hardly seminibid; germ large. Cultivated in gardens.

Var. γ, piumulum (Lindl. in hort. trans. 7. p. 244.) in every respect the same as the species, but not one-third the size, never exceeding 3 feet.

Alpine Currant. Fl. April, May. Britain. Shrub 3 to 6 ft.

24 R. kerriscom (Pursh, fl. amer. sept. 1. p. 163.) all parts of the shrub are full of resinous glands; leaves 3-5-lobed, roundish; racemes erect; calyx flatish; petals bluntly rhomboid; bracteas linear, longer than the pedicels. H. Native of North America, on the mountains. Sims, bot. mag. 1583. Berl. l. c. t. 2. f. 10. Flowers greenish yellow. Berry hairy, red? Perhaps the flowers are dioecious. Very like R. alpinum.

Resinous Currant. Fl. April, May. Clt. 1800. Sh. 3 to 5 ft.

25 R. Ciliatum (Weitl. miss. ex Reem. et Schultes, syst. 5. p. 500.) plant beset with glands; leaves 5-lobed, deeply corollate, doubly crenate-serrate, ciliated, glabrous above, but hairy on the nerves and veins beneath; lobes acute; petioles beset with glandular hairs; racemes solitary. H. Native of Mexico, on the burning moun Mount Jorollos, at the elevation of 1500 feet. R. Jorollese, H. B. et Kunth, nov. gen. amer. 6. p. 61. Nearly allied to R. macrobotrys.

Ciliated Currant. Shrub 3 to 4 feet.

26 R. macrobotrys (Ruiz et Pav. fl. per. 3. p. 12. t. 202. f. a.) leaves cordate, lobed, deeply serrated; petioles ciliated at the base; racemes very long, pendulous, hairy; bracteas linear-subulate, pilose, nearly the length of the pedicels; calyxes reflexed; petals small, red. H. Native of Peru, on the Andes, in groves. Berl. l. c. t. 2. f. 17. Berries greenish, hairy.

Long-racemed Currant. Shrub 4 to 5 feet.

27 R. Albidifolium (Ruiz et Pav. fl. per. 3. p. 12. t. 132. f. 6.) leaves rather cordate, deeply serrated; racemes twice the length of the leaves, pendulous; bracteas spatulate, ciliated, length of pedicels; petals roundish, pubescent; anthers nearly sessile. H. Native of Peru, in groves about Munna. Berl. l. c. t. 2. f. 18. Berries globose, rather hairy. Allied to R. macrobotrys.

White-leaved Currant. Shrub 4 to 5 feet.

28 R. Bracteatum (Doug. miss. ex Hook. fl. bor. amer. 1. p. 232.) leaves on long petioles, cordate, deeply 3-5-lobed; lobes acuminate, cut, doubly serrated, hispid above, but full of resinous dots beneath; racemes often terminal, at length exuding the spatulate bracts; calyx rotate, glabrous; petals minute, roundish; germinces and berries full of resinous dots. H. Native of the north-west coast of America, at the confluence of the Columbia with the ocean. This is a very remarkable and elegant shrub, with leaves nearly as large as, and resembling, those of the Sycamore; these, as well as the fructified racemes, have a very strong resemblance to R. macrobotrys; but the flowers are widely different. Flowers purplish-yellow. Berries about the size of those of R. rubrum.

Bracteate Currant. Shrub 3 to 5 feet.

29 R. hirtum (Humb. et Bonpl. in Willd. herb. ex Reem. et Schultes, syst. 5. p. 501.) leaves ovate, rather cordate, 3-lobed, reticulate beneath from hairy nerves and veins, and pale, but blackish green above; flowers deeply serrated, middle one the largest; petals pilose, glanduliferous, and somewhat tomentose; racemes reflexed; bracteas dentately ciliated; petals roundish-obovate; styles fimbriate. H. G. Native of South America, in cold places on Mount Antisana, at the elevation of 300 feet. Berl. l. c. t. 2. f. 13. R. frigidum, H. B. et Kunth, nov. gen. amer. 6. p. 62. Flowers flesh-coloured. Berries hispid.

Hairy Currant. Shrub 4 to 5 feet.

30 R. fraerians (Pall. nov. act. pet. 5. p. 377. t. 9.) leaves glabrous, on long petioles, 3-5-lobed, greener above than below; racemes erect, stylif; flowers campanulate, white, sweet-scented; bracteas deciduous; petals lanceolate, acute, spreading. H. Native of Siberia, on the higher mountains. Berries red, of a very sweet taste. From the under surface of the leaves, exudes a very fragrant little yellow drop, a very fragrant balsamic resin, having a strong smell of the black currant.

Fragrant Currant. Shrub 1 to 2 feet.

31 R. procerus (Pall. fl. Ross. 2. p. 35. t, 65.) leaves bluntly lobed; lobes serrated: lateral ones a little cut; racemes erect; peduncles long, sessile; segments of the limb of the flower pubescent, acute, of a vivid purplish colour; anthers hardly rising from the calyx. H. Native of Siberia, in moist shady places. Flowers flatish. Berries very grateful to the taste, rafuse when ripe. Ait. hort. kw. 2. p. 41. R. polycarpum, Gmel. syst. veg. p. 419.


32 R. prostratum (Lerit. str. l. p. 3. t. 2.) leaves deeply corollate, 5-7-lobed, glabrous; lobes acute, cut, doubly serrated, naked on both surfaces; racemes erect, loose, slender; bracteas small, obtuse, much shorter than the pedicels, which are beset with glandular bristles; calyx rotate; germinces and berries beset with glandular bristles. H. Native of Newfoundland; throughout Canada; and in woods on the Rocky Mountains. Berl. l. c. t. 2. f. 12. R. glandulosum, Ait. hort. kw. ed. 1. p. 279. R. rigens, Bigel. fl. bost. ed. 2. p. 9. R. glandulosum, Richards, in Frankl. 1st. journ. ed. 2. append. p. 7. R. laxiflorum, Richards, in Frankl. 1st. journ. ed. 2. append. p. 7. Berries large, reddish. This is a very distinct species.


33 R. trifolium (Mich. fl. bor. amer. 1. p. 110.) leaves smoothish, moderately lobed; racemes loosely many-flowered, pubescent; flowers small; calyxes segments rather trifid; berries hairy, red. H. Native of North America, near Quebec, and at Hudson’s Bay. Lobes of leaves acutish. Racemes weak, nearly like those of R. rubrum, but the flowers smaller. Petals purplish, spatulate, rounded at the apex. Perhaps this is the same as R. prostratum.


34 R. Takahe (D. Don, prod. fl. nep. p. 208.) leaves corollate, 3-lobed, acuminate, doubly serrated, pubescent on both surfaces, as well as on the branches. H. Native of Nipal, in Sirinagar. Leaves as large as those of the Sycamore. Flowers unknown. The bush is called Takare by the Nipaluse.

Takahre Currant. Shrub.
35 *R. multiflorum* (Kit. in Rom. et Schultes, syst. 5. p. 493. but not of H. B. et Kunkl) leaves 5-lobed, cordate, tomentose beneath; racemes very long, pendulous, drooping; bracteas shorter than the flowers; pedioles length of leaves; petals wedge-shaped; styles bident, and sometimes distinctly trifid.  

36 *H. petaloides* (Robb. in Lin. trans. 3. p. 249. t. 21.) leaves roundish-cordate, 3-5-lobed, covered with soft pili above, and tomentum beneath; racemes erect; flowers more or less pedicellate; bracteas obtuse, tomentose, much shorter than the pedicels; sepals roundish-cuneate; petals oblong; styles bident.  

37 *H. pedicela* var. rotundifolia (Robb. in Lin. trans. 3. p. 249. t. 21.) leaves 3-5-lobed, covered with soft pili above, and tomentum beneath; racemes erect; flowers more or less pedicellate; bracteas obtuse, tomentose, much shorter than the pedicels; sepals roundish-cuneate; petals oblong; styles bident.  

38 *H. petaloides* var. rotundifolia (Robb. in Lin. trans. 3. p. 249. t. 21.) leaves 3-5-lobed, rather cordate, deeply serrated, on long petioles, pilose above; racemes erect, crowded, rather pubescent; bracteas shorter than the pedicels; sepals obtuse; petals obcordate.  

39 *H. petaloides* var. rotundifolia (Robb. in Lin. trans. 3. p. 249. t. 21.) leaves 3-5-lobed, rather cordate, deeply serrated, on long petioles, pilose above; racemes erect, crowded, rather pubescent; bracteas shorter than the pedicels; sepals obtuse; petals obcordate.  

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43 *R. multiflorum* (Meyer, in acad. Moroz. vol. 7.) unarmed; hairs glabrous, at length deciduous; adult leaves cordate, 5-lobed, pubescent beneath; racemes somewhat spicate, terminal, drooping; calyx tubular, pubescent, exceeding the bracteas; petals nearly orbicular.  

44 *H. petaloides* var. rotundifolia (Robb. in Lin. trans. 3. p. 249. t. 21.) leaves 3-5-lobed, rather cordate, deeply serrated, on long petioles, pilose above; racemes erect, crowded, rather pubescent; bracteas shorter than the pedicels; sepals obtuse; petals obcordate.  

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Grossularië. 

Var. \( \alpha \), angustior (D. C. fl. fr. 4. p. 406.) leaves and berries smaller; lobes of leaves short.

Var. \( \beta \), hortâce (D. C. l. e.) leaves larger, sometimes variegated; berries sweeter and larger than in var. \( \alpha \). Cultivated in gardens. R. rubrum, Lois. nov. dict. 3.

Var. \( \gamma \), càrcenum (Berl. mss. ex D. C. prod. 3. p. 69.) leaves rather tomentose beneath; sepals red; cells of anthers distant; berries pale red. R. rubrum domesticum \( \beta \), bacés càrneis, Wallr. sched. p. 106.

Var. \( \epsilon \), variegâtum (D. C. prod. 3. p. 69.) berries variegated. Wallr. l. e.


The red currant is called Grosselle ordinaire à grappes, or d'outre mer, in French; Johannisbeere, in German; and Uvetta, in Italian. It is a low shrub, with smooth branches, downy leaves, yellowish green flowers, disposed in pendulous racemes, which appear in May, and the fruit ripens in June and July. The berries of this shrub, in its wild state, are red; but cultivation has produced white and pale red berries. Professor Martyn observes, that "the currant does not seem to have been known to the ancient Greeks and Romans, as the southern nations of Europe have not even an appropriate name to it at this day. The old French name, grosselles d'outre mer, and the Dutch, besk_ins weerzeer, proclaim their having been strangers imported. Our English name of currant is evidently from the similitude of the fruit to that of the Cornith grape, the small grape of Zante, or the common grocers' Corinths or currants. The red currant has been long cultivated in Britain, and very much improved in the size of the bunch and berry."

Use.—The fruit is acceptable at the dessert, being of an agreeable acid taste. It is much used for jellies, jams, and wines. Forsyth says it is the most useful of all the small fruit, either for the table and kitchen, or for preserving, making wine, &c., and continues longer in succession than any other. According to Withering, the juice forms an agreeable acid to punch; and Professor Martyn says it was a common beverage in Paris in 1763. Its medicinal qualities are similar to those of other sub-acerb fruits, allaying thirst, lessening an increased secretion of the bile, and correcting a putrid and scorbatic state of the fluids.

Varieties.—There are as follow:

* Red currants.

1. Common red, grosseliers rouge à petit fruit, grosseliers ordinaire à fruit rouge.

2. Red Dutch, large red Dutch, New red Dutch, large red, large bunched red, Morgan's red, red grape, grosseliers rouge à gros fruit. This is the best of the red currants for all purposes.

3. Knight's large red.

4. Knight's sweet red currant.

5. Knight's early currant.

6. Champagne, grosseliers à fruit couleur de chair.

7. Striped-leaved currant, and variegated-leaved currant.

8. Large pale red Dutch.

* * White currants.

1. Common white currant, grosseliers à fruit blanc.

2. White Dutch currant, new white Dutch, Morgan's white, white crystal, leghorn, pearl white. This is one of the very best of the white currants.

3. Pearl white, blanc perle.

4. Speary's white.

Propagation and nursery culture.—The same as in the gooseberry. With a view to obtaining new improved varieties from seed, Mr. Knight procured cuttings, in the year 1810, of the finest varieties of the red and white currants, which he planted in pots of very rich mould, and placed under a south wall, to which the trees were subsequently trained. At the end of 3 years, within which period the pots had been as often changed, the trees were first suffered to produce blossoms. These were, with the exception of a very small number, removed from the white currant bushes, as soon as their buds showed; and the shoots which remained were deprived of their stamens while immature, and subsequently fertilized by the pollen of the red variety. The seeds thus obtained were sown in pots, as soon as the fruit had become perfectly mature, and were subjected early in the following spring to the artificial heat of a forcing-house; by which means, and by proper subsequent attention, the plants grew more than a foot in height the first season. At 2 years old, in the year 1816, several of the plants, and in 1817, the greater part of them, produced fruit of great variety of character and merits; but of about 200 varieties, only 3 red and 2 white appeared to possess greater merits than their parents.

Soil and site.—All the sorts are very hardy, will grow freely and bear plentifully almost any where, alike in open or shady situations, by which the fruit may be the more useful; but they are not hardy enough for the northern counties in winter. The exposure must be rather rather south than north, and slight, and protected from the wind. A light soil, with a prod. of straw, and abundance of manure is very suitable to the currant. The currants are preserved for the table, either by forcing,toa forcing-house; by which means, and by proper subsequent attention, the plants grew more than a foot in height the first season. At 2 years old, in the year 1816, several of the plants, and in 1817, the greater part of them, produced fruit of great variety of character and merits; but of about 200 varieties, only 3 red and 2 white appeared to possess greater merits than their parents.

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Pruning.—The chief part of the future culture is seasonal pruning. After the plants are furnished with full heads, they produce many superfluous and disorderly shoots every summer, crowding the general bearers, so as to require retrenchment and regulation, both in the young growth of the year and older wood. The season for the capital pruning is winter; but a preparatory part is performed in summer, to thin the superfluous shoots of the year where too crowded, excluding the sun and air from the fruit. First as to standards:—

Summer pruning.—In May or June cut out close the most irregular shoots, rising in the centre of the bush with all the cross and water shoots, to admit more freely the essential influence of the air and sun, and promote the growth of the fruit and improve its flavour. Also twist off all root suckers as they appear.

Winter pruning.—This extends both to the old and young wood; the time for it is when the plant is at rest. Of the shoots of the preceding summer, cut out the cross-places and the otherwise irregular, with those which are not wanted for vacancies; but superfluous good lateral shoots are to be cut down to short stubs or artificial spurs, about half an inch long, so as to leave an eye or two, in order that they may send out fruit-shoots and spurs. With regard to the old bearers, take away those which are nacked, or getting unfruitful, or of which the fruit is declining in size; reduce any of excessive length, pruning in to some well-placed lateral young shoot, to preserve the head within some regular compass; cut out also any decayed or cankered parts; retain a competency of the finest best-placed new shoots above and below vacant parts, to come in for successional bearers, or to supply the places of defective old wood; and preserve a leading shoot to the principal branches, where within orderly limits, shortening such terminal shoots as are of greatest length to 10, 12, or 15 inches, according to their strength and the situation of the branches, and leaving those of small extent mostly entire. Take care of the small lateral fruit-spurs, and occasionally select short lateral shoots of 1, 2, or 3 inches, for bearing fruit; or similar small shoots may be cut to short snags of an inch or two long, also for fruiting. Thin out spurs of the old branches where very thick. As the old fruit branches decline bearing, or decay, cut them away, taking care to provide young ones in succession; and thus keep the bushes always furnished with full-bearing branches, and advancing young bearers, in a regular open expansion, 6, 8, or 10 inches asunder at the extremities, circumscripting the general head within the height of 3 or 4 feet, possibly 5 at most.

“Currants of the finest quality,” Mr. Neill observes, “are raised by Macdonald, at Dalkeith House. A good deal depends upon the way in which he manages the bushes, especially during the ripening of the fruit. He prunes the bushes at the usual season of mid-winter, shortening the last year’s shoots down to an inch or an inch and a half. Next summer the plants show plenty of fruit, and at the same time throw out plenty of strong shoots. As soon as the berries begin to colour, he cuts off the summer shoots to within 5 or 6 inches before the fruit. This is commonly done with the garden shears, with which a man may go over half an acre of bushes in a day. Sun and air thus get more free access, and more of the vigour of the plant is directed to the fruit; the berries are found not only to be of higher flavour, but larger than usual.”—Neill, Cal. mem. vol. II.

To wall-bushes, espaliers, and fan-standards, without support, the same course of summer and winter pruning is applicable, with the obvious variations required by their figure. In training wall-trees, 2 branches are led in an horizontal direction along the bottom of the wall or trellis, perhaps half a foot from the surface of the earth, and the growths from these of all upright shoots, which will admit of being arranged at the distance of 5 or 6 inches from each other, is encouraged. Fan standards are sometimes trained in a manner nearly similar, and sometimes with the branches radiating from the crown of the stem.

Insects, &c.—The red currant is occasionally attacked by the catterpillar, and very frequently by the aphis ribes, Lin, which changes the colour of the leaves to red, pits and puckers them, and causes the fruit to be shrivelled and flavourless. Forsyth says, “As currants are very liable to be devoured by earwigs, which take shelter under their leaves and branches, bundles of bean-stalks should be hung up some time before the bushes are covered with mats or nets. If proper attention be not paid to this, the fruit will generally suffer very much from these insects. After the bushes are covered, take the mats off once in 3 or 4 days, and kill the earwigs that have got into the bean-stalks, which it will be necessary still to keep hung up. As there is a sweetness in the inside of bean-stalks which attracts the earwigs, they very regularly take shelter in them from rain.”

Taking the crop and preserving.—The ripening fruit comes in for small gatherings in June, advances to maturity in July, and continues in perfection till the end of August; or if trees in a full exposure are timely defended from birds and the full sun, with garden mats, or protected with nets where they grow against walls, the fruit may be continued good till September or October. Gather in a dry state, as in rainy weather they lose their flavour.

Forcing.—To obtain early currants by forcing, let some good bearing trees, in pots, be placed early in January or February, in any common forcing department; they will produce ripe fruit in April or May.


51 R. campanulatum (Humb. et Bonpl. in Willd. herb. ex Rom. et Schultes. 2. p. 500.) leaves somewhat 5-lobed, doubly crenated, cordate, hairy beneath; lobes obtuse; petioles ciliated with glandular hairs; racemes pendulous; calyx campylia; petals oblong-spatulate; styles bifid. η. H. Native of Mexico, near Moran, at the height of 3000 feet. R. affine, H. B. et Kunth, nov. gen. et spec. amer. 6. p. 60. Flowers white. Hardly distinct from the following species.

Campanula-calyced Currant. Shrub 4 to 6 feet.

52 R. kunthii (Berl. miss. ex D. C. prod. 3. p. 482.) leaves somewhat 5-lobed, doubly serrated, rather cordate at the base, pubescent; racemes solitary or numerous, crowded, erect; calyx campylia; petals spatulate, reflexed; stamens 5-6, hardly shorter than the petals; styles 3-4-cleft; stigma capitulate. η. H. Native of Mexico, along with the preceding. R. multi-florum, H. B. et Kunth, l. c. but not of Kit.

Kunth's Currant. Shrub 4 to 6 feet.

53 R. triste (Pall. nov. act. petro. 10. p. 378.) leaves 5-lobed; branches simple, twiggy, bearing leaves and racemes of flowers at the apex; racemes pendulous, both when in flower and in fruit; corollas flattish, reddish on the outside, and yellowish inside; petals revolute. η. H. Native of Siberia, on the Mongol Mountains. Berries small, black, insipid. Root creeping.


54 R. glacialae (Wall. cat. no. 6833.) branches smooth; leaves glabrous above, but with a few scattered briskly hairs beneath, corotate at the base, 3-5-lobed at the apex; lobes acute, serrated; petioles long, serrated at the base; racemes droop-
GROSSULARIE. I. RIBES.


Bieberstein’s Currant. Shrub 4 to 6 feet.

57. R. Hudsoni (Richards in Frankl. first. journ. ed. 2. append. p. 6.) branches erect; leaves 3-lobed, quite glabrous above, full of resinous dots beneath, and are, as well as the petals, villous; germens dotted; berries glabrous, glabrous, black; racemes erect, pubescent; bracteas short; segments of the calyx, which is campanulate, spreading. \( \pi \). H. Native of North America, from Hudson’s Bay to the Rocky Mountains, in the west, and as far north as lat. 57°. Flowers small; petals white. The fruit, and peculiar odour of the plant, are that of R. nigrum.

Var. \( \beta \); racemes longer; calyx smoothish. \( \pi \). H. Native of the north-west coast of America, on the mountains of the Columbia, about the Kettle Falls. R. petiolare, Doug. in hort. trans. 7. p. 514.

Hudson’s Bay Currant. Shrub 3 to 4 feet.

58. R. floridum (Lher. stip. 1. p. 4.) leaves full of resinous glands, 3 or 5-lobed, cordate, doubly-serrate; racemes pendulous, pubescent; bracteas linear, longer than the pedicles; calyx tubularly campanulate, glabrous: with the segments obtuse, and at length reflexed; germens and black berries oval-globose, glabrous. \( \pi \). H. Native throughout Canada; and of Pennsylvania. Berl. l. c. t. 2. f. 22. R. nigrum \( \beta \), Lin. spec. 291. R. Pennsylvanicum, Lam. dict. 3. p. 49. R. recurvatum, Michx. fl. bor. amer. 1. p. 109. according to Torrey.—Ribesium nigrum, &c. Dill. chb. 2. t. 244. f. 315. This is in many respects allied to R. nigrum, but its more copious, denser flowers, and especially the long bracteas, and more tubular calyx, will always distinguish it; the solitary pedicle too at the base of the flowers is wanting in this species. Petals oblong, rather crose at the apex.

Flowering Currant. Fl. April, May. Clt. 1729. Sh. 4 to 6 ft.

59. R. impunctatum (Lindl. in bott. reg. 1471.) leaves reddish, deeply 3-5-lobed, and deeply toothed, truncate at the base, glandular on both surfaces; pedicels pubescent; peduncles 3-5-flowered, pendulous; flowers aggregate; calyx tubular, glandular, with the segments recurved. \( \pi \). H. Native of North America. Calyx greenish white, with the tube 4 lines long. Leaves smilling like those of R. floridum. The species was received from Mr. Floy of New York, under the name of intoxicating currant, but without any account of its quality. The berries probably possess some narcotic quality.


60. R. cercum (Doug. in hort. trans. 7. p. 512. bot. reg. 1265.) leaves small, cordate, lobed, serrate, clothed with glandular pubescence, glabrous, glaucous, full of white glands above; racemes pendulous, rather capitate; bracteas ovate, adpressed to the germs, which are glabrous; flowers nearly sessile, cylindrical, rather angular; calyce segments small, reflexed. \( \pi \). H. Native of North-west America, on the banks of the Columbia, and its southern tributary streams, from the Great Falls to the Rocky Mountains, in gravelly or sandy soil. In the small foliage, and few-flowered racemes, this species resembles the gooseberry tribe, but without any thorns. The flowers are rather large and white, with a slight tinge of green, rather downy. White waxy dots like scales cover the upper surface of the leaf, whence the specific name.

61. **R. viscosissimum** (Pursh. fl. amer. sept. 1. p. 153.) leaves cordate, obtuse, 3-5-lobed, deeply crenated, viscid from glandular pubescence; glands on both surfaces; racemes erect, corymbose; bracteas linear-obovate, rather shorter than the pedicels, which are clothed with glandular hairs; calyx tubularly campanulate, with erectly spreading obusate segments; germen and fruit ovate-oblong, clothed with viscid hairs. *H.* Native of North America, on the Rocky Mountains, and in dry plains in partially shaded places towards the sources of the Columbia; also on the summits of the hills near the Spokan and Kettle Falls, at an elevation of 8000 feet above the sea. Hook. fl. bor. amer. 1. p. 234. t. 74. Berries oblong-ovate, black. Flowers large, pale yellowish green. This is a very fine and remarkable species.


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62. **R. atropurpureum** (Meyer in Led. fl. ross. alt. ill. t. 231. fl. alt. 1. p. 268.) stem erect; leaves pubescent, nearly orbicular, cordate, 3-5-lobed; lobes acute, serrated; racemes drooping; pedicels exceeding the bracteas; calyces campanulate, eiliated; berries glabrous, bractless. *H.* Native of Altaiu, on mountains and subalpine places at the river Ursal, also at the river Tscharysch. Berries dark purple, size of those of the common currant.

*Var. a*; flowers deep purple; leaves rather pubescent beneath, but smooth and glabrous above, as well as the branches. *Var. b*; leaves rather pubescent beneath, but hispid from bristles above, as well as the petioles and stems. Near the river Volkshi, Ulegumen.

*Var. γ*; flowers paler; leaves pubescent above, but most so below; branches smooth.


63. **R. sanguineum** (Pursh. fl. amer. sept. 1. p. 164.) leaves cordate, somewhat 5-lobed, serrated, veiny, smoothish above, but clothed with villous tomentum beneath; racemes drooping, pubescent, twice the length of the leaves; calyx tubularly campanulate, with oblong obtuse spreading segments, exceeding the petals, which are red, and quite entire; bracteas obovate-spatulate; berries turbinate, hairy. *H.* Native of the north-west coast of America, in abundance from lat. 38° to 52°, usually growing in rocky situations by the sides of streams. Doug. in hort. trans. 7. t. 12. bot. reg. 1349. Sweet, fl. gard. n. s. t. 199. R. malva-cum, Smith in Rees’ cyc. This is perhaps the most ornamental species of the genus, bearing a profusion of large racemes of deep rose-coloured flowers, and is therefore well adapted for ornamenting shrubberies and pleasure grounds. The berries are brownish black and bitter, completely destitute of the pulpy substance common to most of the species of the tribe.


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**FIG. 33.**


64. **R. aureum** (Pursh. fl. amer. sept. 1. p. 161.) quite glabrous; leaves 3-lobed; lobes divaricate, with a few deep teeth, shorter than the petals, which are ciliated at the base; calyx tubular, longer than the pedicels: tube slender: segments oblong, obtuse; petals linear, much shorter than the calyceine segments; bracteas linear, length of the pedicels; style entire; berries glabrous. *H.* Native of North-west America, in light gravelly soils, from the Great Falls of the Columbia River to the mountains, and on the southern branches. Berl. l. c. t. 2. f. 23. Flowers golden yellow. Fruit yellow, seldom black, and of an exquisite flavour.

*Var. a. preëcox* (Lindl. in hort. trans. 7. p. 242.) flowers earlier; leaves eiliated at the base, pubescent beneath; lobes deeply serrated; berries copious, earlier, turbinate; racemes bracteate. *H.* Native of North America.


*Var. γ. scorpiïnun* (Lindl. l. c.) flowers late; leaves of various forms, smoothish beneath; lobes deeply serrated; berries few, late, round; racemes naked. *H.* Native of North America.


65. **R. tenueflorum** (Lindl. in hort. trans. 7. p. 242. bot. reg. 1374.) unarmed, quite glabrous; leaves roundish, 3-lobed, mealy; lobes bluntly toothed at the apex; racemes pendulous, many-flowered; calyx tubular, glabrous, longer than the pedicels, coloured; petals quite entire, linear, one-half shorter than the segments of the calyx, which are oblong and obtuse; bracteas linear, length of the pedicels; berries glabrous. *H.* Native of North America, common on the rocky tracts of the Columbia, near the head waters of the Missouri. *R. aureum*, Colla, hort. rip. append. 3. t. 1. f. A. *R. flavum*, Berl. in D. C. prod. 3. p. 483. *R. Missourienis*, Hort. In habit this species is more erect than *R. aureum*, and has the young wood very thinly clothed with leaves; its whole appearance is also paler during the early part of the season. The flowers are not more than half the size of those of *R. aureum*, and have entire, not notched petals. The fruit is the size of a red currant, of an agreeable flavour, but possessing little acidity.

*Var. a. fructo-nigrum*; berries changing from yellow to red, and finally acquiring a deep blackish purple-colour.

*Var. β. fructo-bœlo*; fruit yellow, always retaining the same colour.


*Yellow-flowered Currant.* Fl. April, May. Clt. 1812. Shrub to 8 feet.

*Cult.* All the species of *Ribes* grow well in any kind of soil, and all root freely from cuttings planted in autumn, or early in spring. Those species, natives of Chili, Peru, Mexico, and other parts of South America, require shelter in severe weather. Some of the species are well adapted for ornamenting shrubberies and pleasure grounds. But the most ornamental and
most worthy of cultivation are \textit{R. speciosum}, \textit{R. Menziei}, \textit{R. sanguineum}, \textit{R. atropurpureum}, and \textit{R. aureum}.


Calyx superior, 5-toothed (f. 34. b. f. 35. a.). Corolla of 5 petals (f. 34. c. f. 35. b.), alternating with the calycine segments, from within which they rise, forming by their cohesion a tube (f. 34. c.), but finally separating from each other (f. 35. b.), imbricate in activation. Stamens arising from the calyx (f. 35. b.), alternating with the petals (f. 35. b.); anthers bursting lengthwise. Disk conical, epigynous (f. 34. c.), plaited, surrounding the base of the style (f. 34. c.). Ovarium inferior (f. 34. a.), 2-celled, with 2 large polynymous placentas (f. 34. f.) in the axis. Style simple (f. 34. d.). Stigma 2-lobed. Fruit capsular, 2-celled, crowned by the style and calyx (f. 34. a. b. c. d.), which are permanent, splitting by the separation of the cells at their base. Seeds numerous, minute, with a transparent membraneous integument. Embryo minute, in the apex of an oily albumen, having the radicle pointing to the extremity opposite the hilum.—Shrubs or trees. Leaves alternate, exstipulate, simple, full of resinous glands. Flowers axillary, conspicuous, white, rarely reddish.

This order is distinguished from \textit{Grossulariaceae} by the cohering petals, and by the radicle being at the extremity of the seed, opposite the hynum; the albumen is also oily, not horny, and the placentas are not parietal; from \textit{Philadelphaceae} they are known by their glandular leaves and minute embryo; from \textit{Vacciniaceae}, by the final separation of the petals, and by the anthers.

**Synopsis of the genera.**

1 \textit{Escallonia}. Limb of calyx 5-toothed or 5-lobed (f. 34. b.). Stigma peltate, 2-lobed (f. 34. d.). Capsule baccate (f. 34. f.), somewhat 2-celled, opening by pores at the base. Seeds sericulate.


3 \textit{Forsturna}. Limb of calyx 5-parted. Style finally divisible into 2 parts; stigma 2-lobed. Capsule 2-celled, dehiscing between the parts of the style.

4 \textit{Anacperus}. Calyx 6-lobed (f. 35. a.). Petals and stamens 6 (f. 35. b.). Stigma bifid (f. 35. c.). Capsule 1-celled, 2-valved (f. 35. d.). Seeds compressed, furnished with a wing at the top.

5 \textit{Itea}. Calyx 5-cleft. Stigma capitiate. Style finally divisible into 2 parts. Capsule compressed, 2-celled, separable into 2 parts.


\textbf{Lin. syst. \textit{Pentandra}, Monogynia.} Tube of calyx semi-globose, adnate to the ovarium (f. 34. a.); limb 5-toothed or 5-lobed (f. 34. b.). Petals 5, arising from the calyx. Stamens 5; anthers ovate-oblong. Style filiform, permanent. Stigma peltate (f. 34. d.), somewhat 2-lobed by a furrow. Capsule baccate (f. 34. f.), crowned by the calycine lobes and the style (f. 34. b. c. d.), somewhat 2-celled, dehiscing irregularly by pores at the base; deisipment incomplete at the top, and therefore placentiferous. Seeds very numerous, sericulate.—Trees and shrubs, natives of South America, especially Chili, usually full of resinous glands. Leaves scattered, serrated, or entire. Flowers terminal, bracteate, variously disposed, white or red. In many of the species the genus is present a conical perispermic urceolus, girding the base of the style; for this reason the species of the genus may hereafter be formed into sections.

* Pedicels solitary, 1-flowered.

1 \textit{E. serrata} (Smith, icon. med. 2. p. 31.) shrub glabrous, erectish; leaves obovate, obtuse, serrated, veinless beneath (except the middle nerve); flowers terminal, solitary; petals oblong, tongue-shaped. \textit{G. F.} Native of the Strains of Magellan, at Terra del Fuego. Rœm. et Schultes, syst. 1. p. 326. Stereoxylon serratum, Poir. dict. 7. p. 435. Flowers white.

\textit{Serrate}ed Escallonia. Shrub 3 to 6 feet.

2 \textit{E. myrtilloides} (Lin. fil. suppl. p. 156.) shrub glabrous; branches spreading much; leaves obovate-oblong, acute, crenately serrated, veiny; flowers terminal, solitary; petals spatulate. \textit{G. F.} Native of New Granada, every where on the Andes, in cold places. Smith, icon. med. 2. t. 30. H. B. et Kunth, nov. gen. amer. 3. p. 294. Stereoxylon pâtes, Ruiz. et Pav. fl. per. 3. t. 294. f. 6. but the leaves and flowers are larger.

\textit{Myrtle-like} Escallonia. Shrub 6 to 10 feet.

3 \textit{E. alpina} (Poep. pl. excis. no. 820.) branches glabrous; leaves obovate, narrowed into short petioles, serrated at the apex, densely clothed with fine down beneath, and with scattered down above; flowers axillary, solitary, on short pedicels; tube of calyx puberulous, with subulate teeth; petals oblong-tongue-shaped. \textit{G. F.} Native of Chili, on the higher mountains. Flowers white.

\textit{Alpine} Escallonia. Shrub 3 to 4 feet.

4 \textit{E. tortuosa} (H. B. et Kunth, nov. gen. amer. 3. p. 295.) shrub glabrous; branches spreading, twisted; leaves obovate, acute, reticulately veined, glandularly erenated, rather shining; flowers nearly terminal, solitary; lobes of calyx quite entire. \textit{G. F.} Native in very rough mountainous places, on the Andes about Quito. Flowers white. Allied to \textit{E. myrtilloides} and \textit{E. corymbosa}. Fruit almost the size of that of \textit{Vaccinium myrtillus}.

\textbf{Twisted} Escallonia. Shrub 3 to 6 feet.

5 \textit{E. berberifolia} (H. B. et Kunth, nov. gen. amer. 3. p. 296.) shrub glabrous; branches spreading; leaves obovate, bluntesti, crenulately denticulated, reticulately veined; flowers terminal, solitary; lobes of calyx quite entire; petals rather spatulate. \textit{G. F.} Native on the Andes, about Quito. Flowers white. Perhaps only a variety of \textit{E. tortuosa}, according to the authors.

\textbf{Barberry-leaved} Escallonia. Shrub 3 to 4 feet.

6 \textit{E. corymbosa} (Pers. ench. 1. p. 234.) shrub glabrous; branches erectish; leaves obovate, acute, serrulately; flowers terminal, solitary; lobes of calyx denticulated; petals oblong. \textit{G. F.} Native of Peru, in cold humid places, on high hills, where it is called \textit{Siaba} by the natives. Stereoxylon corymbosum, Ruiz. et Pav. fl. per. 3. p. 14. t. 234. f. a. Peduncles
straight, bearing 1 leaf each, just under the calyx. Petals white, spreading reflexed. Stigma peltate.

 Corymbose-flowered Escallonia. Shrub 6 to 10 feet.

 E. variegata (Pers. ench. 1. p. 233.) shrub glabrous; branches erect; leaves obovate, acute, serrulate, veinless; peduncles nearly terminal, 1-flowered; lobes of calyx denticulated; petals obovate. \( \text{F.} \) Native of South America, on mountains, and in humid woods in the province of Rere, near Nacimento. Stereòxylon virgatum, Ruiz et Pav. fl. per. 3. p. 14. t. 235. f. 6. Stem much branched; branches cinctures, grey, rather spinose. Flowers white.

 Twiggly Escallonia. Shrub 5 to 10 feet.

 8 E. punctata (D. C. prod. 4. p. 3.) shrub smoothish; branches erectish; leaves obovate obtuse, or lanceolate acuminate, serrated, full of resinous dots beneath; pedicels 1-flowered, arising from the axis of the upper leaves, each bearing 2 linear bracteoles; lobes of calyx long, denticulated. \( \text{F.} \) Native of South America. Allied to E. variegata, but differs in the leaves being dotted beneath, to E. rubra, but the flowers are on axillary, solitary, 1-flowered pedicels. In this and in E. rubra the urceolus is conical and pervious at the apex, 10-angled, and 10-toothed, girding the style at the base.

 Dotted-leaved Escallonia. Shrub 5 to 8 feet.

 9 E. floridiana (Poepp. exliss. no. 843. ex D. C. prod. 3. p. 666.) shrub glabrous; leaves linear-lanceolate, acuminate at both ends, with a few serratures, crowded; flowers on short pedicels, arising from the axis of the upper leaves, solitary, collected into an ovate raceme; limb of calyx 3-cleft, with obtuse recesses and acute lobes; petals obovate, on short claws. \( \text{F.} \) Native of Chili, probably on the mountains. Leaves 8-9 lines long, and \( \frac{1}{2} \) line broad. Petals with obscure veins, which are pinnately disposed.

 Florid Escallonia. Shrub 4 to 6 feet.

 * * * Flowers disposed in terminal racemes or panicules.

 10 E. rubra (Pers. ench. 2. p. 233.) shrub smoothish; branches erect, when young clothed with glandular villi; leaves obovate-oblong, acuminate, serrated, full of resinous dots beneath; peduncles 2-flowered, bracteate; lobes of calyx denticulate; petals spatulate. \( \text{F.} \) Native of Chili, on the mountains at Colocolo, in the fissures of rocks, and about Valparaiso. Hook. bot. mag. 2890. Stereoxylon rubrum, Ruiz et Pav. fl. per. 3. t. 236. f. b. Petals red, conniving, but spreading a little at the apex. (f. 34. c.)

 Var. a, glabrescens (Hook. et Arn. in bot. misc. 3. p. 252.) branches glandular, hardly pubescent; leaves glabrous; flowers red. \( \text{F.} \) Native of Chili, near La Guardia, on the Andes of Chili, and about Valparaiso.

 Var. \( \beta \), albiflora (Hook. et Arn. l. c.) flowers white. \( \text{F.} \) E. glabrescens, Lodd. bot. cab. t. 1291. Native of Chili; and the province of Maule.

 Var. \( \gamma \), pubescens (Hook. et Arn. l. c.) branches hardly glandular, but clothed with villous pubescence; leaves pubescent on both surfaces, but more so beneath; flowers red. \( \text{F.} \) Native of the Andes of Chili. The leaves of all the varieties are spotted beneath with resinous dots.


 11 E. Peppigiana (D. C. prod. 4. p. 3.) shrub smoothish; leaves pubescent, rather clanny; leaves oval, acute, tapering into the petiole, serrated, full of resinous dots beneath, rather clanny above; pedicels 1-flowered, disposed in a few-flowered, terminal raceme; calyx glabrous, with the tube drawn out beyond the ovaryium; teeth subulate; petals erect, oblong. \( \text{F.} \) Native of Chili. E. rubra, Poepp. exliss. no. 81. Flowers red. Like E. rubra, but differs in the peduncles being 1-flowered, in the teeth of the calyx being subulate, in the urceolus not being prominent, and in the style being equal in length to the petals. There is a long-leaved variety of this, or a species, which was collected on the mountains in Chili, where it is called by the natives Ripa.

 Peppig's Escallonia. Shrub 4 to 6 feet.

 12 E. Macra'atha (Hook. et Arn. in bot. misc. 3. p. 251.) branches pubescent, glandular; leaves ovate-obtuse, blunthish, acuminate at the base, glabrous, full of resinous dots beneath, bluntly crenate-serrate; lower peduncles simple, axillary: upper ones racemose; bracteoles wanting, or very minute; calycine teeth subulate. \( \text{F.} \) Native of Chili. Petals convivine. The flowers are larger and the leaves broader than in E. rubra.

 Large-flowered Escallonia. Shrub.

 13 E. myriotoea (Bert. in litt. ex D. C. prod. 4. p. 666.) shrub glabrous; leaves lanceolate, serrated, attenuated at the base; racemes terminal, nearly simple, hardly longer than the leaves; limb of calyx campanulate, 5-cleft; lobes subulate, reflexed; petals obovate, on long claws. \( \text{F.} \) Native of Chili, at the river Cachapual near Rancagua, where it is commonly called Luma. The calyx agrees with that of E. recurvata, but differs in the whole plant being smooth, and in many other points.

 Myrtle-like Escallonia. Shrub 3 to 6 feet.

 14 E. illinajtta (Presl, in relg. Henk. 2. p. 49. t. 59.) quite glabrous; branches spreading, annointed with resin; leaves petiolate, obovate or oblong, obtuse, crenulate, attenuated at the base, beset with glandular dots above, and clanny; panicle terminal, many-flowered, leafy; calycine segments acuminate, quite entire; petals on long claws; capsule turbinate, 5-nerved; style furnished with a 10-toothed, 10-angled, pervious, cylindrical urceolus at the base, as in most of the species. \( \text{F.} \) Native of the Cordillera of Chili.

 Var. a; leaves beset with shining resinous dots on both surfaces especially beneath. \( \text{F.} \) Native of Chili, in El Arroyo de los Lances, Valle del Rio Tinguiririca, where it is called by the natives Luma.

 Var. \( \beta \); leaves bearing minute glands beneath. \( \text{F.} \) Native of Chili, in La Siente Vieja, and La Cuesta de Cha cabuco, and La Laguna near Valparaiso, where it is called by the natives Araca or Arayin. This variety is perhaps a distinct species; the glands beneath sometimes pass into a kind of pubescence.

 Anointed Escallonia. Shrub 3 to 6 feet.

 15 E. arguta (Presl, relg. Henk. 2. p. 48. t. 58.) quite glabrous; branches erect; leaves obovate or oblong-lanceolate, mucronate, sharply serrated, attenuated into the petiole, discobered beneath; panicle terminal, many flowered; rachis pubescent with calyx, obtusely acute, quite entire; petals spatulate, on long claws; capsule turbinate, 10-nerved. \( \text{F.} \) Native of Chili, at San Gabriel, La Guardia, and La Cuesta del Ingaa; Andes of Chili, and Valle del Rio Claro. Luma is its vernacular name. E. microcarpa, Gill. ms. E. reflexa, Gill. ms. E. myriotoea, Gill. ms. hardly of Bertero. The raceme is very compact, and the flowers nearly sessile. Perhaps afterwards it may prove a mere state of M. rubra.

 C c
ESCALLONIÆ.

Sharp-serrate-leaved Escallonia. Shrub 3 to 6 feet.
16 E. resinosa (Pers. ex. Hook. & Arn. in bot. misc. p. 253.) shrub glabrous; branches erect; leaves lanceolate, tapering into the petiole at the base, serrated, full of resinous dots beneath; leaves many-flowered, terminal; teeth of calyx short, quite entire; petals spatulate. †. F. Native of Brazil. E. resinosa var. dodo-nivifolia, Cham. in Linn. Soc. Reg. 1. p. 555. Very like E. resinosa. Style hardly longer than the fruit. Flowers white. Var. β. spirifolia (D. C. prodr. l. e.) leaves obovate, obtuse, tapering into the petiole at the base. †. S. Native of Brazil. E. resinosa spirifolia, Cham. in litt.

Selio's Escallonia. Tree 10 to 20 feet.
19 E. Callcottii (Hook. & Arn. in bot. misc. 3. p. 252.) branches smooth, glabrous; leaves ovate, oblong, oval or roundish, acute at both ends, petiolate, glabrous, glabrescent, with sharp adpressed serratures; flowers panicled; petals erect, on long claws; teeth of calyx subulate. †. F. Native of Juan Fernandez, where it was collected by Mrs. Callcott, late Mrs. Maria Graham. The lower peduncles of the raceme are branched, thus forming a panicle. The toothed urceolus at the base of the style is not so conspicuous in this as in other species of the genus.

Callcott's Escallonia. Shrub.
20 E. Monteviδμες (D. C. l. e. p. 4.) shrub glabrous; branches erect; leaves oblong, cuneated at the base, acutish, finely serrated, full of resinous dots beneath; panicle terminal, many-flowered, crowded, intermixed with foliaceous bracteas; lobes of calyx acute, rather denticulated; petals obovate-oblong. †. F. Native of Brazil, in many places, but especially on the sandy banks and shores of the Uruguayan. E. floribunda var. β. Monteviδμες, Schlecht. in Linn. Soc. Reg. 1467. E. bibida, Link et Otto, abbild. t. 25. Flowers white, very like those of the lathorn. Style permanent, double the length of the fruit after flowering.

21 E. floribunda (H. B. et Kunth, nov. gen. am. 3. p. 297.) shrub glabrous; branches covered with clammy resin; leaves oblong, obtuse, finely crenulated or quite entire, membranous; coriaceous terminal, rather panicked, much branched, leafy; teeth of calyx acute; petals obovate-spatulate. †. F. Native of New Granada, on the Andes. Style length of the stamens. Leaves when young clammy and shining above. Flowers white. This species is said to come near F. cuneifolia.

Brande-flowered Escallonia. Tree 10 to 20 feet.
22 E. Caracasana (H. B. et Kunth, nov. gen. am. 3. p. 297.) shrub glabrous; branchlets scattered, somewhat trigonal; leaves oblong, acute, cuneated at the base, petiolate, finely crenulated, membranous; petiole terminal, many-flowered, leafy; teeth of calyx acute; petals obovately spatulate. †. G. Native of South America, in temperate places near Caracas. Flowers white. Style shorter than the stamens. Very like E. floribunda.

Caracas Escallonia. Tree 12 to 20 feet.
23 E. spectabilis (Hort. monac. ex D. C. prod. 4. p. 4.) branchlets pubescent; leaves oblong or elliptic, somewhat cuneated at the base, obtuse at the apex, serrated, glabrous; panicle short, thyrsoid; bracteoles and lobes of calyx acute, somewhat serrated by black glands; petals obovate-spatulate. †. F. Native country unknown. Flowers red. Style length of the stamens. E. glandulosa, Lodd. bot. cab. 1291.

24 E. paniculata (Roxm. et Schultes, syst. 5. p. 328.) shrub glabrous; branches angular, rather clamy; leaves lanceolate-oblong, obsolescetly serrated; peduncles racemose; petals of calyx very short; petals obvate. †. F. Native of Peru, in the groves of Pillao. Stereoxylon paniculatum, Ruiz et Pav. fl. per. 3. p. 16. t. 238. f. 5. Flowers white. Style very short. Calyx nearly entire.

Panicled-flowered Escallonia. Shrub 5 to 8 feet.
25 E. angustifolia (Presl, in reliq. Henk. 2. p. 47.) glabrous; branches spreading; leaves glandular; flowers long, linear-lanceolate, obtuse, dotted with glands, and glandularly serrulated, narrowed at the base; panicle terminal, many-flowered; segments of the calyx entire; style exceeding the capsule. †. F. Native of Peru. Style naked at the base, not furnished with an urceolus, as in those formerly named Stereoxylon.

Narrow-leaved Escallonia. Shrub.
26 E. multiflora (Presl, in Henk. reliq. 2. p. 48. t. 57.) glabrous; branches spreading; leaves glandular and glutinous; leaves nearly sessile, obovate, mucronate, glandularly serrulated, pale beneath, and glandularly ciliated at the base; pedicles terminal, many-flowered; teeth of calyx obtuse, quite entire; petals obvate; style equal in length to the ovariun, which is pubescent. †. F. Native of Chili and Peru. Style naked at the base, as in most species.

Many-flowered Escallonia. Shrub.
27 E. leave′scens (Presl, in reliq. Henk. 2. p. 48.) quite glabrous; branches erect; leaves obvate, recurvedly acuminate, glandularly serrulated, and pinnately veined, attenuated at the base; flowers terminal and axillary, sessile; teeth of calyx acuminate, glandular; capsule tubinate, 10-nerved. †. F. Native of the Cordillera of Chili. Style furnished with a urceolus at the base.

Yellowish Escallonia. Shrub.
28 E. cuneifolia (Roxm. et Schultes, syst. 5. p. 328.) branches spreading; leaves oblong-wedge-shaped, serrulated, nearly sessile, whitish beneath; petals terminal, rather corymbose, hairy; teeth of calyx small; petals obvate, obsolescently crenulated. †. F. Native of Peru, in woods on the Andes, at Chacna. Stereoxylon cuneifolium, Ruiz et Pav. fl. per. 3. p. 16. t. 238. f. 5.

Wedge-leaved Escallonia. Shrub 5 to 8 feet.
29 E. d′icolor (Vent. choix. t. 54.) branchlets rather pubescent; leaves cuneiformly lanceolate, somewhat crenulated, or quite entire, of a different colour beneath, having the middle nerve hairy; petals terminal, many-flowered; calyx puberulous; petals obvate. †. F. Native of New Granada, on the Andes. Stereoxylon discolor, Poir. dict. 5. p. 246. E. Tubis-Latus ex Humb. tabl. nat. 1. p. 113. Kunth, nov. gen. am. 3. p. 299. Flowers white. Style length of the petals, shorter than in any other species, rather conical at the base, striated.
ESCALLONEÆ. 1. ESCALLONIA. II. QUINTINIA. III. FORGESIA. IV. ANOPTERUS.

**Discoloured-leaved Escallonia.** Ch. 1820. Shrub 6 to 8 ft.

30 E. revoluto (Pers. ench. 1. p. 235.) shrub hairy in every part; branches erect, rather clamy, smooth; leaves oblong, cuneate, obtuse, on short petioles; racemes terminal, cymose, much shorter than the fruit.

Reedulate-leaved Escallonia. Tree 10 to 20 feet.

31 E. fulvulex (Pers. ench. 1. p. 235.) shrub hairy in every part; branches rather erect, somewhat lignified; leaves elliptical, obtuse, on short petioles, serrated, rather clamy above when young; racemes terminal, spike-formed, erect; teeth of calyx spreading; petals obvate.

**Powdered Escallonia.** Shrub 6 to 10 feet.

32 E. berteroi (D. C. prod. 4. p. 666.) shrub glabrous, clamy, short hairs from resin; leaves elliptical, petiolate, serrated, shining above; racemes spike-like, terminal, simple, twice the length of the leaves; calyxes shining and clamy, 5-cleft; petals elliptic-oblong, sessile. F. Native of Chili, on the banks of rivers near Santiago, Valparaiso, and Quillota.

33 E. chilophylla (Cham. et Schlecht. in Linn.1. p. 542.) shrub glabrous, branches rather angular; leaves obovate-cuneate, mucronate, quite entire, of a greyish white colour; racemes terminal, clothed with powdery down; bractlets about equal in length to the peduncles; petals obvate-spatulate. F. Native of Brazil. Flowers white.

Green-leaved Escallonia. Shrub.

34 E. pendula (Pers. ench. 1. p. 235.) branches erectly spreading; rather clamy when young; leaves oblong-lanceolate, acute, finely crenulated, hairy beneath, but especially on the nerves; racemes terminal, spike-formed, pendulous; calyx hairy, with the teeth acute; petals linear-spatulate. F. Native of Peru, in groves; and on the Andes about Loxa, near Guayaquil.

**Pendulous-racemed Escallonia.** Tree 10 to 14 feet.

35 E. hirta (Willd. in Rüm. et Schultes, syst. 3. p. 329.) leaves obovate-oblong, almost quite entire, glabrous; panicle terminal; peduncles hairy. F. Native of South America, where it is said to have been gathered by Humboldt and Bonpland, but it is not mentioned in the nov. gen. amer.

**Hairy Escallonia.** Shrub.

**Cult.** All the species of Escallonia are very fine ever-green shrubs; they grow best in a mixture of peat, sand, and loam; and cuttings strike readily in mould or sand under a hand glass.

Most of the species will probably be found sufficiently hardy to stand in the open air in our climate, provided they are planted in a warm sheltered situation, particularly against a south wall or hot-house; and in winter they may be protected by throwing a mat over them.


**Lin. syst. Pentandria, Monogynia.** Tube of calyx adhering to the ovary, marked by 10 nerves; limb 5-toothed, permanent. Petals 5, obvate. Stamens 5. Style columnar, filiform; stigma peltately capitate, 4-5-lobed. Capsule crowned by the style and calytic teeth, 3-celled, with the disseminations hardly complete; cells many-seeded. Seeds small, ovate, compressed. Shrub smooth. Leaves alternate, petiolate, oval, acuminate at the apex, attenuated at the base, quite entire, coriaceous. Panicles terminal, composed of spreading racemose branches. Pedicels spreading, shorter than the fruit.

1 Q. Sieberi (Alph. D. C. 1. c.) F. Native of New Holland.—Sieb. pl. exsic. nov. holl. no. 261.

**Sieber's Quintinia.** Shrub.

**Cult.** See Escallonia above for culture and propagation.

III. FORGESIA (in honour of M. Desforges, Governor of the Isle of Bourbon, when Commerson investigated the vegetation of that country). Comm. in Juss. gen. p. 164. D. C. prod. 4. p. 5.—Deforgia, Lam. ill. t. 125.

**Lin. syst. Pentandria, Monogynia.** Tube of calyx turbinate, adnate to the ovary; limb 5-parted: lobes lanceolate. Petals 1, inserted in the calyx, linear-lanceolate, approximate at the very base, hardly longer than the calyx, somewhat valvate in animation. Stamens 5, erect; anthers ovate. Style filiform, finally separable into 2 parts; stigma 2-lobed. Capsule half adnate, crowned by the erect separated style, 2-celled, many-seeded, opening between the styles. —Tree small, quite glabrous. Leaves alternate, coriaceous, lanceolate, attenuated at both ends, on short petioles, serrated. Racemes terminal, few-flowered, bracteate at the base of the pedicels.


**Cult.** For culture and propagation see Escallonia above.

IV. ANOPTERUS (from ano, ano, upwards, and πετερον, a wing; in reference to the seeds, which are winged at the apex). Labill. nov. holl. 1. p. 86. t. 112. R. Br. in Frankl. narr. journ. 756. vern. schrift. 1. p. 545.

**Lin. syst. Hexandria, Digynia.** Tube of calyx turbinate (f. 35. a.), adnate to the ovary at the base; lobes 6, short, acute, permanent. Petals 6 (f. 35. b.), alternating with the calyxine lobes, and inserted in the calyx. Stamens 6 (f. 35. b.), inserted with the petals, shorter, and alternating with them. Style short; stigma bifid (f. 35. c.). Capsule oblong, 1-celled, 2-valved (f. 35. d.); valves opening from the apex to the base, with the placentas at the margins (f. 35. c.). Seed ovate, compressed, furnished with a wing at the top.—Tree, quite glabrous. Leaves alternate, rarely nearly opposite, ovate-oblong, attenuated at both ends, nearly sessile, coriaceous, crumulously toothed. Racemes simple, terminal. Flowers sometimes 7-cleft.

1 A. glandulosa (Labill. 1. c.) F. Native of Van Diemen's Land. Flowers white. (f. 35.)

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**FIG. 35.**
ESCALLONE. E.  V. ITEA. CUNONIAEE.


LIN. SYST. PENTANDRIA, MONOCAEIA. Calyx regular, permanent, campyliate, 5-cleft, with the recesses obtuse, and the teeth subulate. Petals 5, lanceolate-linear, inserted in the upper part of the tube of the calyx, and alternating with its lobes, valvate in aestivation. Stamens 5, alternating with the petals, and shorter than them; anthers oblong, rather bifid at the base, 2-celled, bursting lengthwise. Ovarium oblong, free. Style 1, but at length separating into 2 parts: stigma capitulate, usually divisible in the furrow. Carpels 2, joined into a 2-celled compressed bispiculate capsule, which separate at length from each other from the base to the apex. Seeds numerous, disposed in 2 rows along the inflexed margins of the carpels. — Shrubs, with alternate simple exstipulate leaves. Flowers racemose, as in Weiglandia, but pentandrous, and as it were single styled. The character of the genus is alone taken from I. Virginica. 

1 I. Virginica (Lin. spec. 289.) leaves lanceolate, acutely toothed; racemes simple, terminal. H. Native of North America, from Pennsylvania to Carolina. Lam. ill. 1. t. 147. f. 1. Lher. strirp. 1. p. 138. Lois. in Duham. abr. ed. 2. vol. 6. t. 9. Sims, bot. mag. 2409. — Trew. chfrt. t. 98. When this shrub is in vigour it is entirely covered with racemes of white flowers in July and August, and then makes a fine appearance. 

Virginia itea. Fl. June, Aug. Clt. 1744. Sh. 6 to 7 feet.

† Asiatic shrubs related to Itea, and referred to the genus by the authors, but will probably constitute 2 or 4 different genera when the parts of fruits and the flower are properly examined. 

* Leaves alternate.

2 1. ? Umella (Roxb. fl. ind. 2. p. 419.) leaves alternate, broadly lanceolate, entire, smooth; panicles axillary and terminal, composed of simple umbels, on long peduncles. H. S. Native of the Malay Islands. Capsule 1-celled, 2-valved, with 2 partial placentas on each side. Flowers white. 

Umella-flowered Itea. Shrub 6 to 8 feet.

3 1. ? Macrophylla (Wall. in Roxb. fl. ind. 2. p. 419.) leaves alternate, elliptic-ovate, acuminate, callously serrated; racemes axillary, fasciculate, erect, equal in length to leaves. H. G. Native of the East Indies, on the Khasse mountains bordering on the province of Silhet. Flowers yellow, fragrant, when young conical, and valvate in aestivation. Ovarium half adhering to the calyx, 2-celled. Style columnar. 

Long-leaved Itea. Tree 20 feet.

** Leaves opposite.

4 1. ? Fragrans (Wall. in Roxb. fl. ind. 2. p. 420.) leaves opposite, cuneate-lanceolate, entire; racemes terminal; flowers in sessile fascicles, tetrandrous, and pentandrous. H. G. Native of the East Indies, in the Island of Singapore. Flowers yellow, fragrant. Calyx cup-shaped, 4-5-toothed. Petals 4-5, linear, valvate in aestivation, longer than the stamens. Ovarium adnate to the calyx, 2-celled. Style columnar. This species, with the preceding, will perhaps form a new genus nearly allied to Escallonie.

Fragrant-flowered Itea. Shrub 5 to 6 feet. 

5 I. ? Rosmarinus (Roxb. et Schultes, syst. 5. p. 408.) leaves opposite, liliform, glabrous, hardish; peduncles axillary, 1-flowered. H. F. Native of the north of Cochim-china, in sandy places, and in China about Macao. Cedrela Rosmarinus, Lour. coff. p. 166. Calyx somewhat campylate, 5-toothed, with the base permanent, and the teeth deciduous. Petals 5, obtuse. Stamens 5, equal in length to the petals. Style 1. Capsule 3-celled, 3-valved, debiseful at the apex, many-seeded. Leaves odoriferous, from containing a quantity of essential cephalic oil. This plant hardly belongs to the order. 

Rosmary-like Itea. Shrub 5 to 6 feet.

Cult. Itea Virginica is a very pretty hardy shrub, well adapted for decorating the front of a shrubbery. It is increased by layers put down in the autumn. The rest of the species should be grown in pots, in order that they may be protected by a frame in winter, or to be grown against a south wall, where they may be easily preserved from the frost by masts; a light soil is best suited for them, and they may be either increased by layers put down in the autumn, or by cuttings.


Calyx of many divisions (f. 36. a. f. 37. a. f. 38. a. f. 39. a.), valvate in aestivation. Petals equal in number to the divisions of the calyx (f. 36. b. f. 38. b. f. 39. c.), and alternating with them, imbricate in aestivation, sometimes wanting. Stamens inserted in a perigynous disk, definite (f. 37. b.), rarely indefinite; anthers peltate, 2-celled (f. 38. c. f. 39. d.); bursting lengthwise by a double fissure. Ovarium 2-celled: ovula usually indefinite; styles 2 (f. 36. e. f. 37. d. f. 38. e. f. 39. b.); rarely connate: stigmas 2, simple, obtuse, pruinose. Capsule composed of 2 conflated follicles, which are applied to each other, rarely confluent, 2-celled, 2-valved; for the most part furnished with 2 beaks, and many-seeded; disseminations double, from the inflexed edges of the valves. Placenta central, composed of fascicles of umbilical vessels. Seeds pendulous, sometimes winged; testa crustaceous or membraneous. Albinum copious, fleshy. Embryo slender, straight, with the radicle turned towards the umbilicus, usually rather long. — Trees or shrubs, for the most part natives of the southern hemisphere. Leaves usually opposite, but sometimes verticillate, simple or compound. Stipulas interpetiolar, rarely wanting. Flowers usually disposed in spicate racemes or panicles.

The Cunoniacceæ were first proposed by Dr. R. Brown as a separate family from Saxifragaceæ, to which they had been referred by Jussieu, and to which they are intimately related, being chiefly distinguished by habit alone. M. Kunth considers them merely as a section of Saxifragaceæ, but it appears preferable to regard them as a distinct family; for the advantages arising from dividing extensive families and genera are, that the individuals composing these become better understood, and their characters more accurately investigated. The Saxifragaceae are almost exclusively confined to the northern, as Cunoniaceæ are to the southern hemisphere. Some pass beyond these limits, but their number is very small. Both families agree in having entire
and divided petals, and a superior and inferior ovarium. In the
series of natural affinities the Philadelphaceae clearly follow the
Cunoniaceae, with which they correspond in habit; and in Bau-
era and Belangiera the stamens are indefinite, and the seeds of
Caldesia have a striking analogy to those of Philadelphus.
The styles both in Saxifragaceae and Cunoniaceae are often 3,
and in Cornia of the Flora Peruviana that number is always
constant.

A species of Weinmannia is used in Peru for tanning leather,
and its astringent bark is employed to adulterate the Peruvian
bark. The Indian Weinmannias appear to possess similar
astringent qualities.

**Synopsis of the genera.**

**Tribe I.**

**Cunoniaceæ.** *Stamens definite. Ovarium distinct.*
1 Weinmannia. Calyx 4-parted, permanent (f. 36. a.).
Petals 4 (f. 36. b.). Stamens 8. Hypogynous disk urceolate
(f. 36. d.). Styles 2. Capsule opening at the apex of the dis-
sepalum; cells many seeded. Seeds reniform, hairy. Leaves
simple or compound, with 3-5 leaflets.
Stamens 8. Hypogynous disk flat, entire. Styles 2. Capsule
opening in the manner of Weinmannia; cells many-seeded.
Seeds smooth. Leaves simple.
3 Caldesia. Calyx membranous, 4-parted, deciduous.
Styles 2. Capsule opening in the manner of Weinmannia; cells
5-10-seeded. Seeds fusiform; with the testa membranous, and
larger than the nucleus. Leaves simple.
4 Platylophus. Calyx 4-cleft, sometimes 5-cleft, perma-
nent. Petals 4, rarely 5, trifid. Stamens 8 or 10. Hypogyn-
ous disk urceolate, entire. Styles 2. Capsule membranous,
2-celled at the base, and ending in a flat bifid wing at the apex;
cells 1-seeded. Seeds large, arched. Leaves compound, with 3
leaflets.
5 Cunonia. Calyx 5-cleft; segments deciduous. Petals 5.
opening like that of Weinmannia; cells many seeded. Seeds
oblong, compressed, smooth, winged on one side. Leaves im-
pari-pinnate.
6 Arnoelia. Calyx 4-parted. Petals 4. Stamens 8. Hy-
Carpels 2, connate at the base, solitary from abortion, beaked
by the styles, opening on the inside, 1-seeded. Leaves im-
pari-pinnate.
7 Pterophylla. Calyx 4-cleft, deciduous. Petals 4. Sta-
mens 8. Styles 2, very short. Ovarium 2-celled. Capsule un-
known. Leaves impari-pinnate.
8 Calycosmis. Calyx 5-parted, permanent. Petals 5.
Stamens 10. Hypogynous disk small. Styles 2, setaceous. Cap-
sule globose, 2-celled, opening at the apex; cells many seeded.
Seeds minute, smooth. Leaves simple.
9 Callicoma. Calyx 4-parted, rarely 5-parted (f. 37. a.),
permanent. Petals wanting. Stamens 8, rarely 10 (f. 37. b.).

**Tribe II.**

**Codieæ.** *Stamens definite. Ovarium inferior.*
12 Codia. Limb of calyx 4-5-parted, permanent.
Petals 4-5. Stamens 8-10. Styles pubescent. Capsule closed at
the apex, usually 1-seeded from abortion. Seeds roundish, smooth.
Leaves simple.

**Tribe III.**

**Baueræ.** *Stamens indefinite. Ovarium free.*
13 Belangera. Calyx deeply 6-parted; segments deci-
Capsule superior, 2-celled, 2-heaked, opening at the dis-
sepalum; cells many-seeded. Seeds compressed, winged at the apex.
Leaves compound, with 3-5 leaflets.
14 Baurà. Calyx 6-10 parted (f. 39. a.). Petals 6-10
(f. 39. c.). Styles 2 (f. 39. b.), glabrous. Capsule superior,
2-celled, 2-valved at the apex, opening by a transverse chink;
cells few-seeded. Seeds scabrous from resinous dots. Leaves
in whorls.

**Tribe IV.**

**Symphyogyneæ.** *Stamens definite. Ovarium free. Styles
connate.*
15 Geissos. Calyx 4-parted, deciduous. Petals wanting.
Stamens 8. Style 1; stigma 2. Capsule compressed, 2-celled, 2-
valved; cells many seeded. Seeds compressed, winged.
Leaves compound, with 5 leaflets.

**Tribe I.**

**Cunoniæ.** (plants agreeing with Cunonia in having de-
finite stamens). Stamens definite. Ovarium distinct from the
calyx.

I. **Weinmannia.** (in honour of John William Weinmann,
apothecary at Ratisbon, author of Phytothoza Iconographica,
308. H. B. et Kunth, 6. p. 42. D. Don, in edinb. phil. April,
Lin. syst. Octandria, Digynia. Calyx permanent, 4-parted
(f. 36. a.). Petals 4 (f. 36. d.). Stamens 8. Disk hypogyn-
ous, urceolate (f. 36. d.). Capsule opening at the dissepiments
from the apex; cells many seeded. Seeds roundish-reniform.
—Trees, natives of South America and the Mauritius. Leaves
compound or simple; petioles articulated. Stipulas undivided,
caducous.
Flowers hermaphrodite, racemose, usually white; pedicels in fascicles.

* Leaves simple.

1. **W. ovata** (Cav. icon. 6. p. 45. t. 566.) leaves elliptic-oblong, bluntish, crenated, glabrous on both surfaces, as well as the branches, acute at the base. p. S. Native of Peru, at the town of San Buenaventura. Leaves 2-3 inches long, and an inch or an inch and a half broad. Racemes 3 inches long, loose. Hypogynous disk with 5 glands (f. 36. d.).

*Ovate-leaved Weinmannia.* Fl. May, June. Clt 1824. Tree. 12 to 20 feet.

2. **W. Kunthiana** (D. Don in edinb. phil. journ. April, 1830.) leaves elliptic, crenated, cunctated at the base, membranous, glabrous; racemes elongated; fascicles many flowered. p. S. Native of New Granada, near Santa Fe de Bogota. W. ovata, H. B. et Kunth, 6. p. 52. exclusive of the synonyme of Cav. Leaves with the nerves and veins beneath, rather pilose, 3-4 inches long, and an inch or a half or 2 inches broad. Racemes a span long; fascicles 3-10-flowered.

*Kunth's Weinmannia.* Tree 10 to 15 feet.


*Balbis's Weinmannia.* Tree or shrub.

4. **W. laurina** (H. B. et Kunth, l. c. 6. p. 51.) leaves oblong, acute, crenated, glabrous, attenuated at the base; fascicles of racemes many flowered. p. S. Native of South America. Leaves 3 inches long or more, puberulous on the veins beneath. Racemes 2 inches long.

*Laurin-leaved Weinmannia.* Tree.

5. **W. Macrophylla** (H. B. et Kunth, l. c. p. 52. t. 521.) leaves nearly sessile, ovate, acuminate, serrated, glabrous on both surfaces, as well as on the branches, rounded at the base; fascicles of racemes many flowered. p. S. Native of Quito, in the Andes of Quito, between Loxa and Nabon. Leaves 2-3 inches long, and 2-3 inches broad, shining above, Racemes rather loose. Capsule terete, oblong, glabrous.

*Long-leaved Weinmannia.* Tree or shrub.

6. **W. latifolia** (Presl, in Huenke, reliq. 2. p. 51.) leaves ovate-elliptic, obtuse, acute at the base, crenately serrated, coriaceous, quite glabrous above, hairy beneath; racemes longer than the leaves; stipular oblong, obtuse, silky outside; areoles entire. F. G. Native of Peru, in mountain woods.

*Broad-leaved Weinmannia.* Tree.

7. **W. elliptica** (H. B. et Kunth, l. c. p. 50.) leaves petiolate, elliptic, obtuse, crenated, glabrous on both surfaces, acute at the base; racemes loose. p. S. Native of Quito, near Loxa. Leaves an inch or an inch and a half long, coriaceous. Racemes 1½ or 2 inches long. Capsule ovate, glabrous. Flowers purplish.


8. **W. ovatis** (Ruiz et Pav. fl. per. 4. t. 333. f. a. ined.) leaves petiolate, oval, crenated, quite glabrous on both surfaces, as well as the branches, shining, acute at the base; fascicles of racemes many flowered. p. S. Native of Peru, on the Andes, in groves at Pillao. Leaves coriaceous, 2 or 3 inches long. Racemes loose, a hand long. Capsule ovate, quite smooth.

*Ovate-leaved Weinmannia.* Tree.

9. **W. crassifolia** (Ruiz et Pav. fl. per. 4. t. 331. f. a. ined.) leaves nearly sessile, oval, coarsely crenated, rather pilose as well as the branches, rounded at the base; fascicles of racemes many flowered. p. S. Native of Peru. Leaves 2 inches long, coriaceous, thick, pilose on the rib and veins beneath. Racemes 2-3 inches long. Capsule ovate-oblong, smooth.

*Thick-leaved Weinmannia.* Tree.

10. **W. subcordata** (Moricand, herb. ex D. C. prod. 3. p. 8.) leaves oval, obtuse, somewhat cordate at the base, dentately crenated, coriaceous, glabrous, shining above; racemes when in flower exceeding the leaves a little. p. S. Native of Peru. Flowers on very short pedicels. Leaves 24-30 lines long, and 16-18 lines broad.

*Subcordate-leaved Weinmannia.* Tree.

* **Leaves simple and ternate.

11. **W. heterophylla** (H. B. et Kunth, nov. gen. amer. 6. p. 52. t. 522.) leaves simple and ternate, ovate-oblong, acutely and coarsely serrated, rather pilose beneath; fascicles of racemes many flowered. p. S. Native of New Granada, near Santa Fe de Bogota. Leaves for the most part simple, glabrous above, pilose beneath, particularly at the ribs, 3-5 inches long, and 1½ or 2 inches broad. Petioles half an inch long. Racemes loose, 4 inches long. Capsule ovate, smooth.

*Variable-leaved Weinmannia.* Tree.

12. **W. cordata** (D. Don in edinb. phil. journ. April, 1830.) leaves nearly sessile, cordate-ovate, bluntish, coarsely serrated, rather pilose beneath, and on the branches; fascicles of racemes many flowered. p. S. Native of Peru. W. heterophylla, Ruiz et Pav. fl. per. 4. t. 331. f. b. Leaves simple or ternate, 2 inches long. Racemes loose, 3 inches long.

*Cordate-leaved Weinmannia.* Tree.

13. **W. auriculata** (D. Don, in edinb. phil. journ. April, 1830.) leaves elliptic, with revolute, serrated margins, rounded at the base, hairy beneath and on the branches; fascicles of racemes crowded. p. S. Native of Peru, in groves at Pillao. W. ovata, Ruiz et Pav. fl. per. 4. t. 333. f. b. ined. W. dryasifolia, D. C. prod. 4. p. 9. Leaves shining and glabrous above, but densely clothed with fuscous hairs beneath, an inch or an inch and a half long, 1-obed at the base, and sometimes trifoliate. Racemes dense, spicate, 2-3 inches long. Capsule roundish-ovate, and are as well as the styles rather hairy.

*Auriculate-leaved Weinmannia.* Tree.

14. **W. Australis** (Cunning, in Field's new south wales, p. 533.) leaves trifoliate; leaflets ovate-lanceolate, deeply and equally serrated, sessile; flowers terminal. p. G. Native of New Holland, on moist shady rocks, at Springwood.

*Southern Weinmannia.* Shrub.

*** **Leaves ternate and quinata.

15. **W. pentaphylla** (Ruiz et Pav. fl. per. 4. t. 330. f. a.) leaves ternate and quinata; leaflets 3-5, ovate-lanceolate, acute, serrated, glabrous on both surfaces; racemes loose. p. S. Native of Peru. Branchlets pubescent. Leaflets coriaceous, shining above, 2-3 inches long; lateral ones unequal-sided at the base. Racemes loose, a hand long; pedicels longish. Capsule ovate, smooth. Styles sometimes 3, when this is the case the capsule is 3-celled.

*Fieue-leaved Weinmannia.* Tree.

16. **W. cresata** (Presl, in reliq. Huenke. 2. p. 51.) leaves of the branch with 2 pairs of leaflets and an odd one, those of the branchlets ternate; leaflets oblong, obtuse, broadly crenated, quite glabrous, coriaceous, terminal one oblong-lanceolate, attenuated at the base; wings of the rachis and petiole semi-obovate; racemes longer than the leaves, and are as well as the branchlets pubescent; flowers glomerate; segments of the calyx
Native.; urceolus, crenated. 7. G. Native of Peru, in mountain woods.

**Cavanillesia**. Tree.

17 W. Mauritian (D. Don, in edinb. phil. journ. April 1830.) leaves ternate and quinate; leaflets 3-5, obovate, or elliptic, obtuse, crenated, smoothish; racemes loose. 7. S. Native of the Mauritius, where it is called *La Lou*. W. trifoliata, Lam. dict. 7. p. 579. ill. t. 313. f. 2. exclusive of the synonyme. *Smith*, in Rees' cyclo. exclusive of the synonymes of Lin. Thunb. and Willd. W. Madagascariensis, D. C. prod. 4. p. 9. Leaflets coriaceous, pubescent beneath, 1/2 or 1 inch long. Racemes loose, 2 inches long; fascicles few-flowered.

**Mauritian Weimannia**. Tree.

18 W. Maringa (Moricand, mss. ex D. C. prod. 4. p. 10.) leaves with 3-5 leaflets; leaflets ovato-lanceolate, acute, serrated, attenuated at both ends: extreme one the largest; petiole marginal; capsule glabrous. 7. S. Native of Peru. Branchlets villous, by thorns at the tops of the branches. Racemes exceeding the leaves. Leaflets 2-3 inches long, and 8-14 lines broad.

**Marginate-petioled Weimannia**. Tree.

19 W. Microphylla (H. B. et Kunth, nov. gen. amer. 6. p. 54. t. 523.) leaves ternate and quinate; leaflets 3-5, obovate, crenated, glabrous; racemes very short, somewhat corymbose. 7. S. Native of Quito, near Loja. Leaves with sometimes only 2 leaflets; leaflets small, cuneate-ovoblate, crenated, quite glabrous, shining, 3 lines long. Capsule ovate, glabrous.

**Small-leaved Weimannia**. Shrub.

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**Glabrous Weimannia**. Fl. May, June. Cl. 1815. Sh. 6 ft.

20 W. glabra (Lin. fil. suppl. p. 228.) leaves with many pairs of leaflets; leaflets oblong or obovate, crenated, rather pilose beneath; rachis with rhomboid joints; racemes loose. 7. S. Native of the Islands of Santa Cruz and Martinique; and of Mexico, near San Salvador and Chiquiqueria. Willd. spec. 2. p. 436. exclusive of the synonyme of Lam. W. pininata, Lam. spec. l. 515. exclusive of the synonyme of Browne, jam. Flowers numerous, white.

**Hair-seeded Weimannia**. Shrub.

21 W. hirta (Swartz, prod. p. 65. fl. ind. occid. 2. p. 691.) leaves with 3 pairs of leaflets; leaflets elliptic, serrated, hairy beneath as well as the branches; joints of rachis cuneated. 7. S. Native of Jamaica, St. Domingo, and Brazil. Windmanna fruticosa, &c. Browne, journ. p. 212. Leaflets hairy, at length smoothish above, coriaceous. Racemes loose, very copious, 2 inches long.

**Ilong Weimannia**. Fl. May, July. Cl. 1829. Tr. 10 to 20 ft.

22 W. nitida (D. Don, in edinb. phil. journ. April, 1830.) leaves with usually 3 pairs of leaflets; leaflets oblong, obtuse, coriaceous, toothed towards the apex, hairy on the middle nerve beneath: terminal leaflet oblong-lanceolate, acute at both ends; wings of racis semi-ovoblate; racemes spicate, longer than the leaves, and are as well as the branchlets and petals very hairy; joints of rachis cuneate; fascicles smoothish; urceolus entire. 7. G. Native of Peru, on the mountains.

**Glabrous-flowered Weimannia**. Tree.

23 W. tinctoria (Smith, in Rees' cyclo.) leaves with many pairs of leaflets; leaflets oblong, serrated, smoothish; joints of rachis spicate; fascicles of racemes many-flowered. 7. S. Native of the Island of Bourbon. W. glabra, Lam. dict. 7. p. 578. ill. t. 313. f. 1. W. macrostachya, D. C. prod. 4. p. 10. The tree is called *Tan rouge* by the inhabitants of Bourbon, where it is used for dying red.

**Dyers' Weimannia**. Tree.

24 W. folagoides (H. B. et Kunth, nov. gen. amer. 6. p. 54. t. 524.) leaves with many pairs of leaflets; leaflets obovate or elliptic, crenated, glabrous on both surfaces, shining above; joints of rachis obcordate. 7. S. Native of Peru, at Pillao, and at Loja. Branchlets with annular chinks, pubescent. Leaflets from 5-15, coriaceous, pilose on the joints beneath, 3 lines long. Racemes 2 inches long; fascicles many-flowered. Capsule ovate-oblong, glabrous.

**Togara-like Weimannia**. Tree.

25 W. parvifolia (Ruiz, mss. ex D. Don, in edinb. phil. journ. April, 1830.) leaves with many pairs of leaflets; leaflets oblong, serrated, pilose beneath; joints of rachis oboblate; racemes short. 7. S. Native of Peru, at Pillao, and in New Granada. W. microphylla, Ruiz et Pav. fl. per. 4. t. 334. f. a. Branchlets densely pilose. Leaflets from 9-15, contiguous, naked and opaque above; 3-5 lines long. Racemes dense, cylindrical, hardly an inch long; fascicles many-flowered, crowded. Capsule roundish, ovate, glabrous.

**Small-leaved Weimannia**. Tree.

26 W. reticulata (Ruiz et Pav. fl. per. 4. t. 332.) leaves with many pairs of leaflets; leaflets elliptic, crenated, clothed with rusty tormentum beneath; joints of rachis obovate-oblong; fascicles of racemes crowded. 7. S. Native of Peru, at Pillao and Aconay. W. pubescens, Ruiz, mss. Branchlets densely clothed with rusty tormentum, usually with annular chinks. Leaflets 9-17, pilose above and shining, reticulately veined, half an inch long. Racemes dense, cylindrical, 2 or 3 inches long; fascicles many-flowered, very pilose. Styles rather pilose at the base. Capsule ovate, smooth.

**Reticulated-leaved Weimannia**. Tree.

27 W. leptocalyx (Presl, in reliq. Henck. 2. p. 52.) leaves with 3-5 pairs of leaflets; leaflets oblong, obtuse, toothed, coriaceous, hairy on the nerves, racemes, and petioles: terminal one oblong-lanceolate, acuminate at both ends; wings of petiole and rachis semi-ovoblate; flowers on long pedicels; segments of the calyx ciliated; urceolus angular and crenated. 7. G. Native of Peru, on the mountains.

**Lentiscal-leaved Weimannia**. Tree.

30 W. tomentosa (Lin. fil. suppl. p. 277.) leaves with many pairs of leaflets; leaflets oval, with revolute margins, quite entire, clothed with hoary tormentum beneath; spikes cylindrical, much crowded. 7. S. Native of New Granada. H. B. et Kunth, nov. gen. amer. 6. p. 55. t. 525. Leaflets size of those of box leaves, 9-15, approximate, very blunt, convex and pubescent above; at length green. Joints of rachis obovate, with revolute margins. Spikes cylindrical, obtuse, an inch long; fascicles many-flowered, much crowded; peduncles short, densely clothed with tormentum.

**Tomentose Weimannia**. Tree.

31 W. cinerea (Ruiz et Pav. fl. per. 4. t. 332. f. b.) leaves with usually 3 pairs of leaflets; leaflets elliptic, serrated, reticulated, smoothish; joints of rachis cuneate-oblong; racemes
leaves with 6-7 whorls of leaflets, leaflets small, ovate, coarsely
lobed, acute to acuminate at the base, pointed to acuminate at the
apex, margin entire, base cuneate, petioles long, leaflets usually
4-5 mm long, 3-4 mm wide, ovate to elliptic, with dark green
margins and white, waxy midribs, leaves alternate, petioles long.

segments linear, acute, sometimes uniseminate. Stamens 8 or 10.
Disk hypogynous, urceolate, entire; cells of ovarium biolulate.
Styles very short. Capsule membranous, reticulately, flattened
into a bifid wing at the apex, ventricose at the base, 2-celled; cells 1-seeded. Seed large, arched, with a smooth coriaceous
testa.—An elegant tree, native of the Cape of Good Hope.
Leaves petiolate, ternate; leaflets sessile, lanceolate, acuminate,
sharply serrated, coriaceous, glabrous, reticulately with many
veins. Flowers terminal, panicked.
1 P. trifoliata (D. Don, l. c.) G. Native of the Cape
of Good Hope, where the tree is called white ash by the
Thunb. prod. p. 77, exclusive of the synonyme of Lamark.
Cult. For culture and propagation see Weinmannia, below.

V. CUNONIA (dedicated by Linnaeus to John Christian
Cuno, of Amsterdam, who described his own garden in verse in
April.—Ostfeldyka, Burm. afr. 239. t. 96.
Lin. syst. Decandria, Digitiana. Calyx 5-cleft; segments
deciduous. Petals 5, entire. Stamens 10. Disk hypogynous,
small. Capsule opening from the base at the dissepiments;
cells many seeded. Seeds oblong, compressed, smooth, winged,
with a rather loose membranous testa. Cotyledons somewhat
folaceous.—Smooth trees, with imparti-pinnae leaves, serrated
coriaceous leaflets, large caducous interpetiolar stipulas, and
with the flowers disposed in axillary racemes or panicles.
1 C. Capeensis (Lin. spec. p. 569.) shrubby; leaflets 5-7,
lanceolate, coriaceous, serrated; racemes spicate, opposite; pe-
dicels numerous, in fascicles. G. Native of the Cape of
Good Hope. Lam. ill. t. 371. Lodde. bot. cab. t. 836. Flowers
white.
2 C. pinnata (Blum. bijdr. p. 867.) shrubby; leaves somewhat
ternately pinnae; leaflets ovate-oblong, acuminate, ob-
liquely suberect at the base, doubly serrated; panicles axil-
ary, clothed with rusty tomentum. G. Native of Java, in
woods on the higher mountains.
Indian Cunonia. Shrub 6 to 8 feet.
3 C. Ceylonica (Blum. l. c.) arboreous; leaflets ovate-oblong,
acuminate, serrated; lateral ones oblique at the base; panicles
corymbosous, axillary. G. Native of the Ceylons, on the
beaches.
Celebes Cunonia. Tree 20 to 30 feet.
Cult. See Callicoma for culture and propagation.

VI. ARNO'DIA (named in memory of Joseph Arnold, M.D.
who accompanied Sir Stamford Raffles to the East Indies,
where he collected many plants; and the discoverer of the
gigantic flower Rafflesia Arnoldi in the Island of Sumatra). Blum.
Stamens 8, interposed by glands. Ovarium didymous, biolulate.
Styles 2, incurved; stigma simple. Carpels 2, connate at the
base, solitary from abortion, beaked by the styles, 1-
seeded, opening lengthwise on the inside.—Indian shrubs, with
opposite branches and leaves. Leaves imparti-pinnae, glabrous.
Stipulas interpetiolar, orbicular, deciduous. Racemes axillary
and terminal, twin or tern.
1 A. Pinna'ata (Blum. 1. c.) leaves with 4-5 pairs of lanceo-
late, bluntly serrated coriaceous leaflets; stipulas deciduous;
racemes usually twin. G. Native of Java, in mountain
woods, where it is called Kiringit. Spir'a pinnata, Blume, cat.
hort. buit. p. 76.

Pinnate-leaved Arnoldia. Shrub.
2 A. heterophylla (Blum. l. c.) lower leaves with two pairs
of leaflets, and an odd one: upper ones ternate or simple; leaf-
lets lanceolate, distantly serrulately; racemes twin or tern.
G. Native of Java, in mountain woods in the province of
Bantam.
Variable-leaved Arnoldia. Shrub.
Cult. For culture and propagation see Weinmannia, p. 200.

VII. PTEROPHYLLA (from πτερόν, pteron, a wing, and
φύλλον, phyllon, a leaf; so called in reference to the large folia-
ces stipulatus). D. Don, in edinb. phil. journ. April, 1830.
Lin. syst. Octandria, Digitiana. Calyx 4-cleft, deciduous.
2-celled. Capsule?—A tree, native of the Moluccas. Leaves
imparti-pinnae; leaflets lanceolate, bluntly acuminate, crenated,
glabrous, glaucous beneath, oblique at the base, 3 inches long;
the odd or terminal one on a longer petiole than the others.
Stipulas large, foliaaceous, reflexorium, quite entire, deciduous.
Flowers minute, polygalaceous, in spicate racemes. Racemes erect,
terminal, aggregate, rather panicked, a hand long. Ovarium
densely clothed with wool.
1 G. fra'xinae (D. Don, l. c.) G. Native of the Island
of Honimao, one of the Moluccas. Weinmannia fra'xinae.
Smith, herb.
Ash-like Pterophylla. Tree.
Cult. See Weinmannia, p. 200. for culture and propagation.

VIII. CALYCOMIS (from καλός, kalos, beautiful, and κοῦς,
konu, hair; in allusion to the tufts of flowers). R. Br. in gen.
rem. p. 17. D. Don in edinb. phil. journ April, 1830.
Lin. syst. Decandria, Digitiana. Calyx 5-parted, permanent.
Petals 5. Stamens 10. Disk hypogynous, very small. Styles
tacteous. Capsule globose, 2-celled, opening at the apex;
cells many seeded. Seeds minute, smooth.—An Australian,
crest, evergreen, branched shrub. Leaves simple, nearly sessile,
2- to 3-inch, oblong, obtuse, or nearly cuneate, coriaceous,
glabrous, glaucous beneath. Stipulas pleaeaceous, per-
manent. Flowers small, white, cymose, in whorls, pedicellate.
Capsule membranous, gaping at the apex nearly as in Heuchera.
1 C. verticillata (D. Don, l. c.) G. Native of New
Holland, among the mountains on moist rocks.
Whorl-flowered Calymcomis. Shrub.
Cult. For culture and propagation see Callicoma.

IX. CALLICOMA (from καλός, kalos, beautiful, and κοῦς,
konu, hair; appearance of tufted heads of flowers). Andr. bot.
rep. t. 566.
Lin. syst. Octo-Decandria, Digitiana. Calyx 4-parted, rarely
5-parted (f. 37 a.), permanent. Petals wanting. Stamens 8,
rarely 10 (f. 37 b.). Disk hypogynous, small. Ovarium dist-
tinct; cells many-ovulate. Styles 2, setaceous (f. 37 d.). Cap-
sule inclosed in the calyx, which is permanent, dehiscent at the
dissoments; cells ventricose, 1-2-seeded from abortion. Seeds
ovate, scabrous from minute papilhae on every side, like those of
Streptocarpa; with a crasptaceous testa.—Trees, natives of Au-
stralia. Leaves simple, petiolate, serrated; petioles jointless.
Stipulas membranous, bidentate, caducous. Flowers capitulate;
heads terminating the tops of the branches, pedunculate, glo-
bose.
1 C. serratifolia (Andr. l. c.) leaves lanceolate, acumi-
nated, hoary beneath, attenuated at the base. G. Native of New
Holland, where the tree is called black wattle by the
English colonists. Deaum, herb. amat. t. 299. Sim, bot. mag.
D d

Vol. III.

CUNONACE.E. V. CUNONIA. VI. ARNO'DIA. VII. PTEROPHYLLA. VIII. CALYCOMIS. IX. CALICOMA. 201
Flowers yellow. The twigs are used for making baskets in New Holland. Perhaps the flowers are dioecious. (f. 37.)

**Fig. 37.**

2. C. ferruginea (D. Don, in edinb. phil. journ. April, 1830.) leaves oblong-acute, cuneate at the base, clothed with rusty tomentum beneath, and on the branchlets. G. Native of New Holland, on the banks of rivers.

*Rusty Callicoma.* Shrub.

Cult. A genus of very pretty shrubs; they will thrive well in a mixture of loam and peat; and ripened cuttings root readily in sand under a hand-glass.

**X. CERATOPETALUM** (from *xeropétalos*; keratos, a horn, and *πτερον* petalon, a petal; the petals are jagged so as to resemble a stag’s horn). Smith, nov. holl. 1. p. 9. t. 3.

Lin. syst. Decandria, Digynia. Calyx with a 5-parted permanent limb (f. 38. a). Petals 5 (f. 38. b.), linear, multifid, stiff, permanent, or wanting. Stamens 10; anthers cordate, terminated by a beak-formed process (f. 38. c). Ovarium half inferior, 2-celled, few-ovulate. Capsule 1-seeded from abortion, dehiscing at the apex. Seed round, with a thick crustaceous testa.—Trees, natives of New Holland, with ternate or simple serrated glabrous leaves, standing on petioles, which are jointed at the apex. Stipulas undivided, rather foliaceous, caduceous. Flowers terminal, panicked.

* Leaves ternate; flowers with petals.

1. C. gumiferum (Smith, nov. holl. t. 3.) G. Native of New Holland, where it is called red gum-tree by the English colonists. (f. 38.)

Gum-bearing Ceratopetalum. Ckt. 1826. Tree 50 feet.

* Leaves simple; flowers apetalous.

2. C. apektalum (D. Don, in edinb. phil. journ. April, 1830.) leaves lanceolate. G. Native of New Holland. Ceratopetalum monopetolatum, Caley, mss. Perhaps the flowers are sometimes furnished with one petal only.

Apetalous Ceratopetalum. Tree.

Cult. For culture and propagation see *Callicoma* above.

**XI. SCHIZOMERIA** (from *σξιζομερής*; schizo, to cut, and *μέρος* meros, a part; in reference to the cut petals). D. Don, in edinb. phil. journ. April, 1830.


Cult. For culture and propagation see *Callicoma* above.

**Tribe II.**

**CODIEÆ.** Stamens definite. Ovarium inferior.

XII. CODIA (from *κόδια*, kódia, a little ball, in reference to the flowers, which grow in little round heads). Forst. gen. p. 29, t. 50. Labill. sert. calad. p. 45. t. 46.

Lin. syst. Octo-decandria, Digynia. Calyx permanent, with a 4-5-parted limb. Petals 4-5. Stamens 8-10. Ovarium 2-celled? adhering to the tube of the calyx. Styles densely pubescent. Capsule closed at the apex, usually 1-seeded from abortion. Seed roundish, smooth, with a bony testa; albumen very sparing; cotyledons rather foliaceous; radicle very short.—A shrub, with simple, elliptic, obtuse, quite entire, glabrous, coriaceous leaves; jointless petioles; caduceous stipulas; and small, white, capitate flowers. Heads of flowers globose, pedunculate, axillary. Ovarium densely woolly. Stigmas simple, obtuse.

1. C. montana (Forst. gen. l. c. icon. med. t. 35. Labill. sert. l. c.) G. Native of New Caledonia. Flowers yellow? *Mountain Codiae.* Shrub 6 to 8 feet?

Cult. For culture and propagation see *Callicoma* above.

**Tribe III.**

**BAUERÆÆ.** (plants agreeing with Bauera in having indefinite stamens). Stamens indefinite. Ovarium distinct.

XIII. BELANGERA (in honour of — Belanger, Director of the Royal Garden at Pondicherry, who has travelled in many parts of Perâ and India, where he collected a copious herbarium). Cambess. in St. Hil. fl. bras. 2. p. 203.—Polystémon, D. Don, in edinb. phil. journ. April, 1830.

Lin. syst. Icosandria, Digynia. Calyx deeply 6-parted; segments reflexed, deciduous, valvate in aestivation. Petals wanting. Stamens indefinite, disposed in many series; filaments subulate, glabrous; anthers 2-celled, bursting lengthwise. Disk girding the base of the ovarium. Ovarium 2-celled; cells many-ovulate; ovula flattened, fixed to the middle of the dispersion in 2 rows. Capsule superior, 2-celled, 2-valved, 2-beaked; valves at length bifid; cells many-seeded. Seeds compressed, ending in a wing at the apex.—Small, Brazilian trees, with opposite branches, and opposite stalked leaves. Leaves with 3 or 5 leaflets. Stipulas interpetiolar, foliaceous, deciduous. Flowers racemose; racemes simple, axillary. Ovarium densely tomentose. Capsule coriaceous. Stamens erect in the bud.

1. B. glabra (Cambess, in St. Hil. fl. bras. 2. p. 204. t. 115.) leaves trifoliate; leaflets oblong, narrow at the base, serrated, glabrous; capsule smooth; G. Native of Brazil, on Serra Negra, in the province of Minas Geraes. *Glabrous Belangera.* Tree.

2. B. cunelata (Cambess. l. c. p. 204.) leaves trifoliate; leaflets oblong-cuneate, sharply serrated, puberulous beneath; capsule clothed with hairyomentum; hairs russeted. G. Native of Brazil, in the province of Minas Geraes.
CUNONIACEÆ. XIII. BELANGERA. XIV. BAUERA. XV. GESISSS. GALACINÆ. 203

Native and oblong, to the inner stigmas outer petals. Stamens flowers B. 11G.) S. and bot. ann.


Habit of Vcinmdnnia, D. Bauera. of Brazil, is like

Native of Holland. Bauera. of Brazil, in that part of

Native of Holland. Flowers 8-10-petalled, bursting


Calys 4-5-parted, permanent. Petals 4-5, hypogynous, caduous, alternating with the calycine segments; stamens 8-10-16, hypogynous, joined into a tube, which is toothed at the apex, or distinct; filaments or alternate teeth antheriferous. Ovarium composed of 3 or 4 follicles, which are joined, therefore 3-4-celled; ovula indefinite; stigma composed of 3-4 joined ones, undivided or 4-lobed. Capsule 3-4-celled, 3-4-valved; valves bearing the dissepiments in the middle. Central placenta none. Seeds numerous, minute, scabiform, inserted in the inner angle of the cells; outer testa loose, membranous, cellular; inner one very thin, closely adhering to the allamen. Albumen copious, fleshy. Embryo erect, terete, with short cotyledons, and a long cylindrical centripetal radicle.—Perennial American herbs. Leaves radical, simple, lyrate, pinnatifid or serrated; the teeth tipped each by a gland. Flowers terminal, copious, disposed in spicate racemes; pedicels 1-flowered, propped each by a permanent bracteole.

This order differs from Saxifragacae by the presence of sterile stamens, alternating with the fertile ones; in the absence of a central placenta; and in the frequent quaternary arrangement, in the parts of the calyx and corolla.

Synopsis of the genera.

1 GALAX. Calys 4-5-parted. Petals 5. Stamens joined into a tube, which is 10-toothed: the alternate teeth antheriferous; anthers 1-celled. Stigma entire. Capsule 3-celled.

2 FRANÇOÈ. Calys 4-parted. Petals 4. Stamens distinct, p d 2
16, 8 of which are fertile; anthers 2-celled. Stigma 4-lobed. Capsule tetragonal, 4-celled.


I. GALAX (from gala, gala, milk; in reference to the whiteness of the flowers). Lin. gen. 276. Juss. gen. 420.—Blandfordia, Andr. bot. rep. t. 343.—Viticella, Mitch. gen. 24. Lin. syst. Pentandria, Monogyne. Calyx 5-parted. Petals 5. Stamens joined into a tube, which is 10-toothed at the apex: the alternate teeth bearing anthers; anthers 1-celled: cell transverse. Ovary villous. Capsule 3-celled, destitute of any central column. Seeds mucronate at both ends, as in Actisopia of De Candolle.—A small herbaceous plant; with radical rosette stiff crenated leaves; and naked scapes (f. 40 c.), bearing a loose, spicate raceme of small white flowers at the apex.

GALACE. I. Galax. II. Francoa. III. Tetilla. SAXIFRAGACEE.


Lin. syst. Octandria, Tetragyne. Calyx 4-parted. Petals 4, spatulate, with their nerves pannate and branched towards the apex. Stamens 16, only 8 of which are antheriferous, these are subulate or setaceous, and tapering at the apex; the 8 sterile ones are flattened, obtuse, shorter and broader; anthers cordate, 2-celled, 2-lobed at the base: cells confluent at the apex. Ovary bluntly 4-sided, 4-celled, with 4 furrows, which are opposite the dissipemts. Style very short, or wanting; stigma 4-lobed: lobes dilated, obtuse, and pruinose. Capsule tetragonal, having the angles drawn out a little at the apex into 4 tubercles, 4-celled, 4-valved; cells prominent, dehiscent by a longitudinal suture, many-seeded; dissipements formed from a double lamina. Seeds ovate-oblong, fuscosecent, smooth, mucil. —Perennial herbs, natives of Chili, beset with simple, deciduous hairs. Leaves lyrate, nearly like those of the turnip, reticulately veined; lobes roundish, toothed: terminal one large, cordate, obtuse, sinuate toothed, teeth terminated each by a gland. Flowers red, terminal, copious, in spicate racemes, which are disposed in a panicle; pedicels 1-flowered.

1 F. appendiculata (Cav. in ann. sc. nat. matr. 4. p. 273. Icon. 4. p. 76. t. 596.) stenless; leaves petiolate; racemes loose, second; calyx segments lanceolate, acute; lobes of stigma cuneate, emarginate. 2. F. Native of the island of San Carlos de Chile. D. Don, in Sweet, fl. gard. new ser. t. 151.—Herb hairy. Leaves petiolate, lyrate. Scape nearly simple. Petals pale red, marked each by a deeper spot in the middle. Fertile filaments 3 times longer than the sterile ones.


3 F. Ramosa (D. Don, in edinb. phil. journ. Oct. 1826.) plant caulescent; leaves petiolate; racemes spicate, erect; calyx segments lanceolate, obtuse, nerveless; lobes of stigma cuneate. 2 F. Native of Chili, near Santiago. Herb erect, branched, hairy. Stem furnished with small, petiolate, simple, deeply-toothed leaves. Radical leaves not seen, but they are probably lyrate. Flowers smaller and more numerous than in the rest of the species, neither are they secund, but disposed on every side of the racemes, erect; petals obvolute, obtuse. Fertile filaments 4 times longer than the flattened, obtuse, sterile ones. Style distinct, but very short; stigma 4-lobed; lobes cuneated, emarginate, or 2-lobed, thick, with revolute margins.


Obs.—The Pankectinctoria of Molina belongs to a very distinct genus from Francoa.

Cult. The species of Francoa are beautiful plants when in flower, and deserve a place in every garden. A mixture of peat and sand is the best soil for them; they should be grown in pots, well drained with sherds, to prevent their rotting. The protection of a frame is sufficient for them in winter; or they may be planted out in the open ground, in a warm sheltered situation, where they will probably survive the winter by a little protection. They are only to be increased by seeds.


Lin. syst. Octandria, Digynia. Calyx 4-parted; lobes ovate, equal. Petals 4, the 2 superior ones roundish-ovate, large; the 2 inferior ones small, oblong. Stamens 8. Ovary ovate, clothed with glandular pubescence. Styles 2, very short, smoothish, slender. Capsule 2-celled, dehiscing at the apex at the dissipements, many-seeded. —A smoothish slender herb. Radical leaves on long petioles, orbicular, profusely cordate, with the recess closed, palmately 3-nerved, sinuate toothed; recesses broad, obtuse, mucronulate. Scape erect, naked, simple. Racemes elongated; pedicels short, 1-flowered, longer than the bracteas; larger petals cream-coloured, red at the base, smaller ones red.

1 T. Hydrocotylefolla (D. C. 1. c.). 2 F. Native of Chili, at Concon, in the mountains of Leone, where it is called Tetilla by the natives.

Hydrocotyle-leaved Tetilla. Pl. 1 to 2 feet.

Cult. This is a curious and beautiful plant. Its culture and propagation are the same as that recommended for the species of the genus Francoa.

Calyx either superior or inferior, of 4 or 5 sepals (f. 42. a. f. 43. a.), which cohere more or less at their base. Petals 5 (f. 42. b. f. 45. d.) or wanting, inserted between the lobes of the calyx. Stamens 5-10, inserted either into the calyx or beneath the ovary; therefore they are either perigynous or hypogynous; anthers 2-celled, bursting lengthwise. Disk either hypogynous or perigynous, sometimes obsolete, sometimes annular and notched, rarely consisting of 5 scales. Ovary inferior, or nearly superior, usually consisting of 2 or 5 carpels (f. 42. d. f. 46. e. f. 48. e.) or follicles, cohering more or less on the inner side, but distinct at the apex; sometimes 2-celled, with a central placenta; sometimes 1-celled, with parietal placentas, rarely 4-5-celled. Styles none; stigmas sessile on the tips of the lobes of the ovary (f. 42. e. f. 52. e.). Fruit generally a membranous 1-2-celled capsule, with 2 bracteas, rarely a 4-5-celled 4-5-valved capsule, and sometimes a 4-celled berry. Seeds numerous, very minute, usually with long hexagonal reticulations on the side of a transparent testa. Embryo terebra, in the axis of a fleshy albumen, with the radicle next the huylum.—Shrubs or herbs, variable in habit. Leaves simple, either divided or entire, alternate, without stipulas. Flower-stems simple, often naked.

The plants of this order agree in some respects with the herbaceous part of Rosaceae, with which they agree in habit, and from which they differ in their polyserpous partially concrete carpella, albuminous seeds, and want of stipulas. From Cunoniiaceae they are divided by their habit, and by the want of stipulas. To Caryophyllaceae their habit allies them; but they differ in the insertion of their stamens, the situation of the embryo, and otherwise. Grossulariaceae agree very much in the structure of the flowers, but differ from them in the capsular fruit, usually 2-celled ovum, in the seeds being without aril, furnished with a short podosperm, not gelatinous on the outside, and in the more fleshy albumen and habit. From Grossulariaceae they differ in the fewer carpella, which are joined together, and usually with the calyx; and in having no glands on the inner side of the carpella. From Umbelliferae they are easily distinguished in the carpella or cells of the ovary being disheiscent and many seeded, not indehiscent and single seeded, in the form of the petals, in the absence of petals, and in habit. From Fibarneae, to which the tribe Hydrangeae comes very near, in the fruit being capsular, not baccate, and in the styles being exserted, not wanting, &c. From Vacciniaceae, Campanulaceae, Ericaceae, Gentianaceae, in the corolla being polypetalous, not gamopetalous. The genus Drummundia has the stamens equal in number to the petals, and opposite them; thus indicating some analogy to the monopetalous Primulaceae.

According to De Candolle the whole order is more or less astringent. The root of Heuchera Americana is a powerful astringent, whence it is called in North America alum-root, Barton, 2. p. 162. Otherwise they possess no known properties; for the old idea of their being lithotritic appears to have been derived from their name, rather than their virtues.

Synopsis of the genera.

Tribe I.


§ 1. Stamen twice the number of the petals or sepals.

1 Saxifraga. Calyx 5-parted (f. 41. a. f. 42. a.). Petals 5 (f. 41. b. f. 42. b. f. 46. c.), on short claws, entire. Stamens 10 (f. 42. c. f. 46. d.), Capsule adnate to the calyx or free, composed of 2 carpella (f. 42. d.), which are usually joined even to the style, many seeded (f. 42. f.).

2 Erogyria. Calyx 5-cleft. Petals 5, hardly unguiculate. Stamens 20, monadelphous at the base. Ovaries 4-6, free, connected together by dense wool. Carpels distinct, 4-6, free from the calyx, many seeded.

3 Leptarrhëna. Calyx 5-parted (f. 47. a.). Petals 5 (f. 47. b.), entire, on short claws. Stamens 10; anthers (f. 47. c.), 1-celled, 2-valved. Capsule composed of 2 carpels (f. 47. e.), which are joined at the base, many seeded.

4 Chrysospermiurn. Tube of calyx adhering to the ovary; limb 4-5-lobed. Petals wanting. Stamens 8-10. Styles 2, Capsule 2-valved and 2-beaked, at length 1-celled and many seeded.


6 Telëllia. Free part of the calyx inflated, 5-toothed (f. 49. b.), the adhering part conical. Petals 5 (f. 49. c.), jagged. Stamens 10 (f. 49. a.). Styles 2-3, distinct. Capsule (f. 49. f.), 1-celled, 2-valved at the apex.


§ 2. Stamens equal in number to the petals, or fewer, and alternating with them.


**Tribe II.**

**Hydrangeæ.** (plants agreeing with *Hydrangea* in being shrubby). *D. C. prod.* 4. p. 13.


17 Cianitis. Limb of calyx 5-toothed. Petals 5, rather fleshy. Stamens 10. Styles 3-5; stigmas obtuse. Berry crowned by the teeth of the calyx, somewhat 3-5-celled, many seeded.


19 Broussaisia. Calyx 5-parted, hemispherical, free from the ovarium. Petals 5, oblong, acuminate, with the acumen reflexed as in umbelliferous plants. Stamens 10, hypogynous. Ovarium roundish, crowned by the short style and truncate stigma, 5-celled; cells many seeded.

**Tribe I.**


§ 1. Stamens twice the number of the petals and sepals.


**LIN. SYST. Deciduæ, Digiïa.** Calyx 5-cleft (f. 41. a. f. 42. a. f. 16. a.). Petals 5 (f. 42. b. f. 36. c.), entire, unguiculat. Stamens 10 (f. 42. c. f. 16. d.); anthers 2-celled. Styles 2 (f. 42. c.) permanent. Capsule (f. 42. d.) 2-celled, 2-valved, 2-beaked, opening within the beak by an orbicular hole, many seeded. Seeds minute, smooth.


1 S. crassifólia (*Lin. spec.* 573.) leaves oval or obovate, very blunt, glabrous, serrulat; petals elliptic-oblong. 2. H. Native of Siberia, on the Alps. *Curt. bot. mag.* 196. *Gmel.* fig. 4. p. 166. t. 56. Megásæa crassifólia, Hw. ennum. sax. p. 6. Flowers large, red. The root is stiptic or astringent when chewed.

**Var. b.** Hworrhitha (Ser. in *D. C. prod.* 4. p. 86.) leaves somewhat orbicularly cordate, flat, hardly crenated. 2. H. Native of Siberia. Megásæa médin, Hw. ennum. sax. 7.


**Var. b. minor** (Wall. mas.) leaves much smaller; flowers more loose, and distant.


Petals white or pale red, furnished at the base with red and yellow spots. 


Far. γ, crenata (Haw. l. c.) hairy; leaves reniform, round, bluntly crenated. Υ. II. Robertsonia crenata, Haw. l. c. S. crenata, Loud. hort. brit. p. 53.

Far. χ, polita (Haw. l. c.) hairy; leaves reniform, roundish, sharply toothed, with the surface naked and smooth. Υ. II. Native on the mountains of Ireland. Robertsonia polita, Haw. l. c. S. polita, Loud. hort. brit. p. 176.

Genus Saxifraga. Fl. May, July. Ireland, Pl. 1 foot.


Far. β; leaves roundish, cordate, glabrous on both surfaces.

Far. χ, sphyroideæ (Haw. enum. sax. p. 54.) leaves broadly oval, somewhat cordate, bluntly crenated, with the surface naked. Υ. II. Native of the Pyrenees. Robertsonia sphyroideæ, Haw. syn. 322. S. sphyroideæ, Loud. hort. brit. 176.

Haery Saxifrage. Fl. May, June. Ireland. Pl. ½ to 1 ft.

6 S. umbrosa (Lin. spec. p. 574.) leaves obovate, retuse, cartilaginously crenated, quite glabrous, crowded and spreading in the adult state; petals short, compressedly dilated; pedicels few-flowered. Υ. II. Native of the Pyrenées and Ireland, in the clefts of rocks and on the mountains. In several parts of Ireland; plentiful on a mountain called the Mangeston, county of Kerry; on the mountains of Sligo; on Crough Patrick, near the Lake of Killarney, in great abundance; in Thorp Arch woods, near Wetherby, Yorkshire; betwixt Arncliffe and Horton, in Craven. Mill. fig. 141. f. 2. Lapeyr. pyr. sax. p. 44. t. 22. Smith, engl. bot. 635. Sternb. sax. p. 14. Robertsonia phyllobosa, Frév. et Léon. Sax. sax. p. 55. S. spatulæris, Bro. fl. his. 2. p. 172. Petals oval, of a reddish white colour, full of scarlet and yellow dots, with 3 conspicuous branched nerves. The plant is very variable in habit.


8 S. pacificès (Sternb. rev. sax. suppl. 1. p. 6. t. 4. f. 2.) root tufted; leaves roundish or ovate-roundish, toothed, cuneated at the base, running down the petiole, which is short; petals ovate, unguiculate, longer than the calyx. Υ. II. Native of Siberia and Kamtschatka. Petals spotted.

Few-flowered Saxifrage. Pl. ¼ foot.

9 S. speciætæ (D. Don, in Lin. trans. 13. p. 355.) leaves on long petioles, orbicularly cordate, sharply serrated, veiny, pilose; petals dilated at the base; raceme elongated, spike-formed; calyce segments very short. Υ. II. Native of Sledge Island, on the west coast of America. S. génum, Pursh, fl. amer. sept. 1. p. 511. but not of Lin. Plant tufted. Petals elliptic-oblong, dotted, 3-nerved, with the nerves branched.

Spike-flowered Saxifrage. Pl. 1 foot.


Nelson's Saxifrage. Pl. ½ to 1 foot.

11 S. arctæa (D. Don, in Lin. trans. 13. p. 356.) leaves roundish-reniform, deeply serrated, glabrous; petals filiform; scape slender, smooth; calyce segments oblong, acute. Υ. II. Native of the western coast of America. Flowers white, size of those of S. stellaris.

Sharp-cut-leaved Saxifrage. Pl. ¼ foot.


Far. β, élata (D. Don, in Lin. trans. 13. p. 357.) scapes numerous, a foot high. Υ. II. Native of Siberia.

Far. γ, angulifolia (D. Don, l. c.) leaves narrower and longer, with few teeth at the apex. Υ. II. Native of Siberia. Far. ß, Schleicheri (D. Don, l. c.) leaves obovate, repandely crenated; scapes humble, flexuous. Υ. II. Native of Switzerland, on the Alps. S. stellaris, Schleich. in litt.

Far. æ, Bellardii (D. Don, l. c.) plant stemless; leaves roundish, repand; flowers sessile. Υ. II. Native of the Alps of Piedmont. S. Bellardii, Allion. pedem. no. 1536. f. 1.
SAXIFRAGE. 1. Saxifraga.

Var. 2, dissimilis; leaves with deep broad teeth. 2. H. Native of Scotland, on the western Highlands. S. dissimilis, G. Don, in Loid, hort. brit. p. 176.

Var. η, uniflorum (D. C. fl. fr. 4. p. 370. var. α.) plant very minute; scape 1-flowered. 2. H. Native of Switzerland, on the Alps. S. stellarius, piuma, Gaudin, fl. helv. 3. p. 106.


13 S. rotundifolia (R. Br. in Parry's 1st voy. app. p. 275.) radical leaves cuneated, a little toothed; scape divided; branches 1 flower at the apex, covered below by a fascicle of small leaves; calyx inferior, obovate; segments of the petals-cordate- lanceolate. 2. H. Native of Lapland, Melville Island, and other Arctic islands. S. stellarius, Lin. fl. lapp. ed Smith, p. 144. t. 2. f. 3. S. stellarius, comosa, Wild. spec. 2. p. 641.

Leafy Saxifrage. Pl. 1/2 foot.


15 S. melaleuca (Fisch. in Sternb. rev. sax. suppl. 3. t. 3.) leaves roundish ovate, acerish, somewhat dentilicate, tapering into the petiole, glabrous; scape few-flowered, also glabrous; flowers disposed in a somewhat panicle-corymb; calyx segments ovate, acute; petals unguiculate. 2. H. Native of Altaia, on the Alps at the river Tschlysychm, and at Lake Teletskoe Ozero. S. elongata, Gläbra, Sternb. rev. sax. p. 9. Petals obovate, pale sulphur coloured, suffused with violet on the outside; filaments of a pale violet colour. Leaves greenish yellow; upper part of plant of a deep violet colour.

Black and white Saxifrage. Pl. 1/2 to 3/4 foot.

16 S. strigosa (Wall. cat. no. 448.) lower leaves sessile, somewhat rosetulate, oblong-lanceolate, few-toothed, mucronate at the apex, clothed with strigose hairs; calyces lanceolate-linear, acute, entire, much smaller than the lower ones; stem simple, few-flowered, and is as well as the pedicels beset with numerous capitular hairs; sepals lanceolate, acute; petals 3-nerved, obtuse; styles very short; stigmas thickish. 2. H. Native of Nipan, on the Emoli mountains at Gosainthom, and at Kannou. Leaves almost the same and form of those of Arabis alpina. Filaments flat.

Strigose Saxifrage. Pl. 1/2 foot.

17 S. sarmentosa (Linn. fl. suppl. p. 210.) stolons or runners creeping; leaves orbicular-linear, labiate, crenated, pilose, red beneath; petals unguiculate, the 2 outer ones large and flaccid. 2. F. Native of China and Japan, in moist places on mountains, among stones. Schrchr. mon. pion. 16. t. 2. f. 3. Curt. bot. mag. 92. S. stolonifera, Jacq. icon. rar. 1. t. 80. Ligularia sarmentosa, Duval, pl. sec. p. 11. ex Haw. num. sax. p. 50. Diptera sarmentosa, Borkh. in Rem. mag. 1. p. 29. S. ligulata, Murr. comm. 1781. p. 26. t. 1. S. Chinensis, Lour. coch. p. 281. Petals white: 3 inner ones cordate; of these the 3 lateral ones are marked by a yellow spot at the base; and the central one by 2 scarlet spots at the base: but the 2 outer petals are large, flaccid, and 3-nerved.

Var. β, cuscuteformis (Ser. in D. C. prod. 4. p. 43.) plant much smaller; stem usually 3-flowered; leaves ovate-rounded, coarsely and simply toothed; flowers less irregular; petals more acute. 2. F. Native of China. S. cuscuteformis, Lodd, bot. cab. t. 186. Ligularia minor, Haw. num. sax. p. 151. The stolons or runners resemble dodder very much.


Var. β; leaves hairy.


Naked-leaved Saxifrage. Fl. May, Ju. Clt. 2. Pl. 1/2 to 1 ft.

Sect. III. LEIOGYNE (from lēios, leios, smooth; and γυμεν, γυνη, a female; in reference to the stigmas being beardless). D. Don, in Lin. trans. 13. p. 344. Calyx deeply 3-leafed (f. 41. a.). Petals (f. 41. b.) sessile in most of the species. Staminates inserted in the throat of the calyx (f. 41. c.); filaments subulate. Styles straight; stigmas orbicular, flatish, beardless. Capsule free from the calyx (f. 41. d.). Seeds roundish. —Humble herbs, rarely subshrubs. Roots fibrous, but in many of the species they are granular. Stems flexuous, usually many-flowered and many-leaved. Leaves in all reniform and lobed. Flowers white or yellow.


21 S. hybrida (Sternb. sax. p. 17. t. 8. f. 3.) radical leaves petiolate, roundish-cuneated, created; calyces one minute, entire; stem panicled. 2. H. Native of the Pyrenees. Very like S. rotundifolia, but differs in the smaller stature and slenderer habit; in the leaves being acute at the base, not cordate, and in the calyces being minute, entire, and nearly sessile.

Hybrid Saxifrage. Pl. 1 foot.

22 S. diversifolia (Wall. cat. no. 452.) leaves thickish, more or less pilose, of many forms; lower ones cordate, petiolate; calyces one petiolate, or sessile and stem-clasping, entire, of a different form; sepals broad, reticulately veined, marked above by small depressed dots; flowers in panicle-corymb; bractens and calyxes more or less ciliated with short, capitulate

**Var. a. lanceolata** (Ser. in D. C. prod. 4. p. 44.) leaves lanceolate; lower ones not seen; but the middle ones are attenuated at the base, and acutish; calyxie lobes oblong, beset with glandular hairs. 2. F. S. diversiflora, Wall.  

**Var. b. parnasifolia** (Ser. 1. c.) radical leaves cordate, obtuse, on long petioles: calyxie lobes acute, stem-clasping, obtuse; calyxie lobes oblong, beset with glandular pub. 2. F. S. parnasifolia, Wall. cat. no. 451.  

**Var. c. Moerocretia** (Ser. 1. c.) lower leaves elliptic; calyxie ones stem-clasping, ovate-oblong, numerous; flowers larger; calyxie lobes more eiliated with glands. 2. F. S. Moerocretia, Wall. cat. no. 453.  

**Diverse-leaved Saxifrage.** Pl. 1 foot.  

23 S. Farvulosa ( Riv. stirp. rar. fasc. 4. p. 1. t. 3.) stem branched at the base, or simple; leaves reniform, 5-lobed: superior oones 3-lobed: uppermost ones entire, lanceolate; peduncle spreading, opposite the leaves; petals oblate, longer than the calyx. 2. F. Native of Sicily, in the mountains, on mossy rocks.—Cup. panph. 3. t. 36. Flowers white, almost like those of *Stellaria media.* Styles very short, diverging; stigmas spathulate, papillate. Capsule bladdery, slender.  

**Var. a. ramosa** (Ser. in D. C. prod. 4. p. 44.) stem branched at the base, few-flowered; lower leaves 5-lobed, crenated: superior ones 3-lobed. 2. F. Native among rocks, on Mount Maronis, near the monastery of St. Martin in Decalis. Bernardi, l. c. t. 3.  

**Var. b. Boccioni** (Ser. 1. c.) stem purple, erect, 2-flowered: lower leaves 3-lobed, or lanceolate, entire. 2. F. Native on the mountains, about Palermo. (ex Guss. Bocc. cent. 2. p. 4. t. 45. f. 2.)  

**Small-flowered Saxifrage.** Pl. ½ foot.  

24 S. Cymbalaria (Linn. spec. 579.) lower leaves reniform, on long petioles, very bluntly 5-lobed: upper ones 3-lobed or undivided; calyxie segments oblong, obtuse; petals ovate, acute, with branched nerves. 2. H. Native of the Levant, on Parnassus and other Greek mountains. Smith, fl. gracc. 378. S. hederaee, Bieb. fl. taur. 1. p. 317. exclusive of the synonyms. Lobaria cymbalaria, Haw. enum. sax. p. 18. —Duxb. cent. 2. p. 40. t. 45. f. 2.—Val. Itin. ed. gall. t. 305. Flowers small, golden yellow. Stems numerous, leafy, slender, flaccid, creeping at the base.  

**Cymbalaria-like Saxifrage.** Pl. cr.  

25 S. Hederaee (Linn. spec. 579.) lower leaves acutely 5-lobed: upper ones ovate, entire; calyxie segments ovate, acute; petals roundish, unguiculate. 2. H. Native of Canidia and Cyprus, among humid shaded rocks. Smith, fl. gracc. t. 379. Lobaria hederaee, Haw. enum. sax. 18. Plant small; stems numerous, filiform. Flowers small, white.  


26 S. Orientalis (Jacq. obs. 2. p. 9. t. 34.) radical leaves roundish: calyxie ones cuncated, acutely and coarsely toothed; calyxie segments ovate, acute; petals ovate, with simple nerves. 2. H. Native of the Levant; and of Caucasus, on the higher mountains of Turkey near springs and on the banks of rivulets. S. reticulata, Sternb. sax. p. 21. t. 18. S. paradoxa, Sternb. l. c. p. 22. t. 14.? Lobaria orientalis, paradoxa, and reticulata, Haw. enum. sax. pp. 18. and 20. Stems erectish, branched, decumbent at the base. Petals golden yellow, size of those of *S. hederaee.*  

**Oriental Saxifrage.** Pl. dec.  

27 S. Rutes (Presl, del. prag. p. 140.) radical leaves petiolate, distinctly crenated, coriace at the base, somewhat 5-lobed: cauline ones sessile: lower ones 3-lobed, middle lobe the longest; uppermost leaves lanceolate, entire; sepals ovate; petals lanceolate, 3-nerved, twice the length of the calyx. 2. H. Native of Sicily, on rocks and among stones, about Giuliana. Plant 2-3 inches high, beset with short glandular hairs. Flowers white.  

**Russo's Saxifrage.** Pl. ½ foot.  

28 S. Jamesii (Torrey, in ann. lyc. New York 2. p. 204.) plant beset with glandular pubescence; lower leaves on long petioles, reniform, crenately lobed; upper leaves tapering into the petiole, cuneate, nearly sessile; lobes of calyx triangularly ovate, acute; petals spatulate, acute, on long claws; racemes seced; bracteae lanceolate; pedicels of calyces glandular. 2. H. Native of North America, among the Rocky Mountains. Hook. fl. bor. amer. 1. p. 247. t. 74. Flowers about the size and colour of those of *S. oppositifolium* (fig. 41).  

**James's Saxifrage.** Pl. ½ foot.  

29 S. Richardsoni (Hook. fl. bor. amer. 1. p. 247.) stem glandular, leafy, pubescent above; leaves on long petioles, orbicularly cordate, crenately lobed, veiny, with the margins and veins glandular beneath; glands pedicellate; racemes rather compound; bracteae lanceolate, and are as well as the pedicels glandular; petals obvate-elliptic, on short claws, very acute, nerved, about twice the length of the calyce segments, which are acuminate; at base, 2. H. Native of the Arctic Sea shore, between the Mackenzie and Coppermine rivers; and of Kotzebue's Sound. S. Nelsoniana, Hook. et Arn. in bot. Beech. p. 134. t. 29. but not of D. Don. This and the preceding are very elegant plants.  

**Richardson's Saxifrage.** Pl. ½ foot.  

30 S. Nudicaulis (D. Don, in Linn. trans. 13. p. 366.) leaves reniform, palmate, glabrous: lobes ovate, mucraten; stem erect, naked, terete; flowers panicked; lobes of calyx triangularly ovate, acute; petals obvate, a little longer than the calyx. 2. H. Native of the north-west coast of America, Behring's Straits; very gracile. Sternb. rev. sax. suppl. p. 7. t. 5. f. 1? Flowers panicked, white, size of those of *S. rivularia.*  

**Naked-stemmed Saxifrage.** Pl. ½ foot.  

31 S. Helvetica (Hook. fl. bor. amer. 1. p. 252. t. 78. β.) plant rather pubescent; radical leaves on long petioles, reniformly cordate, membranous, veiny, many-lobed: lobes short, somewhat tridentate: teeth acute, mucate; sepa naked; flowers panicked, usually abortive; some of the filaments clavate, and others petal-formed; ovarium free; calyces reflexed; branches of panicle sometimes bearing bulws below. 2. H. Native of North America, common on moist rocks of the Columbia, from its source to its confluence with the sea. The leaves resemble those of *S. rotundifolia,* but they are furnished with a long, membranous, sheathing base, and altogether radical.  

**Variable-flowered Saxifrage.** Pl. ½ foot.  

32 S. Granulata (Linn. spec. p. 576.) plant hairy; radical leaves reniform, crenately lobed: calyxie ones petiolate; calyxie segments lanceolate, obtuse; petals spatulate; root granular. 2. H. Native of the north and middle of Europe, in dry fields and the borders of woods; plentiful in some parts of Britain. Fl. dan. t. 514. Lam. ill. t. 273. f. 1. Smith, engl. bot. t. 500. Stem leafy, many-flowered; pedicela elongated, Ee
1-flowered, and are as well as the calyxes clothed with clammy down. Flowers snow-white; nerves of petals branched.

Var. \( \beta \), plena; flowers double. Common in gardens.

Var. \( \gamma \), multicaulis (Lapeyr. fl. pyr. t. 27.) stems numerous, short; lower leaves lobed, broadly crenated; upper ones obovate, acuminate, entire, rarely 1-2-toothed; peduncles many-flowered. 2. H. Native of the Pyrenees. S. granulata \( \gamma \), ramosissima, Ser. in D.C. prod. 4. p. 36.

Var. \( \varepsilon \), Cerasina (Ser. in Duby, bot. gall. I. p. 211.) plant very small; stem 1-4-flowered; leaves small, crenately lobed; flowers hardly smaller than those of the species. 2. H. Native of Corsica. S. rivularis, Phl. exsic.

Var. \( \alpha \), penduliflora (Ser. in Duby, bot. gall. I. p. 211.) leaves reniform, broadly crenated; flowers somewhat umbellate, pendulous; peduncles 1-flowered, weak. 2. H. Native of Auvergne. S. penduliflora, Bast. in journ. bot. 1814. p. 17. and D. C. fl. ser. 5. p. 519.

Var. \( \eta \), sessiliflora (Ser. in D.C. prod. 4. p. 36.) stems quite simple; leaves reniform; crenated; flowers sessile, subcapitate. 2. H. In dry places.

Var. \( \zeta \), bulbiliferis (Ser. exsic.) stem more or less branched; flowers numerous, sessile, abortive, transformed into little bulbs, which rise from the axils of the leaves. 2. H. Native of Sicily. S. granulata geminifera, Ham. exn. sax. p. 23.


33 S. GONTHOPHYLLA (Wall. cat. no. 454.) leaves reniform, bluntly lobed, rather pubescent; stem few-flowered, many-flowered, and as well as the pedicels and calyxes clothed with glandular pubescence; petals obvate, unguiculate; stigmas diverging, capitate. 2. H. Native of Nipaul, in Kamaon. Roots woody, fibrous. Flowers white. Pedicels 1-flowered. Very like S. granulata.

Tooth-leaved Saxifrage. Pl. 1/2 to 2 ft.

34 S. BULBIFERA (Lin. spec. 577.) radical leaves reniform, petiolate, crenated: cauleine ones sessile, deeply lobed: calyce segments trinervously ovate, acute; stem branched, many-flowered. 2. H. Native of the south of Europe, as in Spain, in stony meadows and shady places; also of Switzerland, on dry hills. Sternb. sax. p. 15. t. 12. f. 1.—Mor. hist. 3. p. 474. sect. 12. t. 9. f. 24.—Column. ceph. l. p. 318. t. 317. S. vivipara, Vest. in flora. 1820. p. 405. Flowers white, smaller than those of S. granulata. Peduncles elongated, 1-flowered, clothed with gluttonous down as well as the calyxes. Stem beset with viscid hairs. Leaves pilose.

Var. \( \beta \), Veronesefoia (Sternb. rev. sax. 16. t. 12. f. 1. and in Sturm, deutschl. fl. 55., with a figure). 2. H. Haw. exn. sax. 23. S. veronesefoia, Bertol. amm. p. 361. There is also a variety of this with a 1-flowered stem, under the name of S. bulbifera acutea, Haw. exn. sax. p. 247.


55 S. CERNA (Lin. spec. 577.) leaves glabrous, petiolate; radical ones reniform, deeply lobed: cauleine ones palmate; calyce segments ovate, obtuse; petals spathulate, emarginate; stem quite simple, generally 1-flowered. 2. H. Native of Lapland, Pyrenees, Switzerland, and Scotland, about alpine rills on the loftiest mountains. In North America, on the arctic shore and islands, and in Kotzebue's Sound; also of Siberia, on alpine rocks, at the rivers Ursal and Tschuha. In Scotland, on Ben Lawers and on Craigallachie. Fl. dan. t. 22. Gunn. fl. norw. no. 528. t. 9. f. 2. Sternb. sax. p. 19. t. 12. f. 2. Lobaria cernea, Haw. exn. sax. p. 20.—Lin. fl. lap. p. 172. t. 27. f. 4. Bulbs scaly; scales fleshy, rising from the base of the petioles of the primordial leaves. Stem simple, 1-flowered, leafy, with small aggregate bulbs rising from the upper leaves. Flowers solitary, large, campion-like, drooping, white; nerves of petals branched. The species from the Rocky Mountains of North America are more leafy, especially on the stem amongst the bulbs, which are very numerous.

Var. \( \beta \), ramosa (Ser. in D.C. prod. 4. p. 36.) stem a little branched, few-flowered; flowers nearly all transformed into bulbs. 2. H. Native of the Alps of Lapland and Norway.

Var. \( \gamma \), Ledebourii; stem branched; branches elongated, 1-flowered; leaves crenated: lobes acute. 2. H. Native of Altaia, on alpine rocks, at the rivers Tschuha and Ursal.

Var. \( \varepsilon \), multiforma (Hook. et Arn. in Beech. voy. pt. bot.) plant branched; each branch bearing a large flower, and no bulbs. 2. H. Native of Kotzebue's Sound. Perhaps S. Stephaniana, Sternb. sax. suppl. p. 8. t. 6. f. 2. may be correctly referred to this variety.


36 S. STEPHANICA (Lin. spec. 577.) root granular; leaves hairy, petiolate: radical ones reniform, palmitately lobed: cauleine ones digitate; pedicels elongated, remote, capillary; petals obvate, with simple nerves; stem much branched, bilobed. 2. H. Native of Siberia, Altaia, and the Alps of Caucasus, among rather humid shaded rocks, or among stones; also of Labrador and Newfoundland. Sternb. sax. p. 25. t. 25. f. 1.—Gmel. moll. 4. p. 162. no. 74. S. granulata \( \beta \), Steven de sax. caue. in mus. mont. no. 3. S. grandis; Sternb. sax. t. 19. 4. f. 2. S. cyanobalbaria, Bleich. fl. tur. 3. p. 292. no. 750. Lobaria Siberica, Haw. exn. sax. 21. Lobes of calyx ovate-linear. Petals white. Stem beset with viscid hairs.


37 S. BRACETA (D. Don, in Lin. trans. 13. p. 367.) radical leaves as well as cauleine leaves on long petioles, reniform; and deeply lobed; flowers in crowded corymbs, bracteate; stem leafy, flexuose, branched, ascending, clothed with viscid villi. 2. H. Native of Eastern Siberia. Flowers white, like those of S. cernea, but a little larger; calyce segments broadly ovate, obtuse. Petals obvate, a little longer than the calyce segments.

Briquetted-flowered Saxifrage. Pl. 1/2 foot.

38 S. RIVULARIS (Lin. spec. 577.) stem weak, quite simple; leaves reniform, on long petioles, glabrous; flowers usually by threes, sessile, bracteate. 2. H. Native of the higher Alps of Europe, as in Lapland, Norway, as well as of Siberia. It is also found in North America, as in Labrador, Arctic Sea shore and Islands, Kotzebue's Sound, and in elevated places among the Rocky Mountains. In Scotland about Alpine rivulets, and in wet fissures of rocks, as on Ben Nevis, near the lake in the ascent; also on Ben Lawers, and at Loch Rannoch. Lin. fl. hopp. no. 174. t. 2. f. 7. Fl. dan. t. 118. Smith, engl. bot. 2275. Sternb. sax. p. 19. t. 12. f. 3. Plant annual. Stem weak, ascending, few-flowered, furnished with viscid hairs above. Leaves 5-6-lobbed; lobes obtuse. Flowers small, white, bracteate. Calyce segments ovate, very blunt, obtuse, conning. Petals oval, obtuse, triple nerved.


39 S. HYPERBOREA (R. Br. in Parry's first voy. append. p. 274.) stem woolly, 2-flowered; leaves glabrous: radical ones palmate, on long petioles; petals 1-nerved. 2. H. Native of Ireland, and Arctic America. S. rivularis \( \beta \), Hook. fl. bor. amer. 1. p. 246. Flowers white. Perhaps only a variety of S. rivularis.

Northern Saxifrage. Pl. 2 inches.

40 S. XUTANS (D. Don, in Lin. trans. 13. p. 268.) stem rather pubescent, decumbent at the base, jointed in the middle, and furnished with one leaf at the joint; raceme drooping, few-flowered: radical leaves on long petioles, reniform, deeply and coarsely toothed, with a few scattered stiff hairs on both sur-
faces: cauline one petiole; petioles hairy. 2. H. Native of the west coast of North America, in the Island of Unalaska. Flowers white, size of those of S. bulbifera; calycine segments lanceolate, acute; petals obovate, with branched flexuous nerves. Pedicels and calyces beset with crowded glandular hairs.

**Nodding-flowered Saxifrage.** Pl. ½ foot.

41 S. ranunculifolia (Hook, fl. bor. amer. 1. p. 246. t. 82.) plant clothed with glandular pubescence, slender: lower leaves on very long petioles, reniform, 3-parted: segments broadly cuneate, deeply lobed; cauli leaves few; flowers corymbose, pentandrous; petals obovate, twice the length of the calyx; calyx beset with glandular hairs: segments acute. 2. H. Native of North America; common on the high grounds around the Kettle Falls of the Columbia, and on the Rocky Mountains. Flowers white, size of those of S. stellaris. Petals obovate, unguiculate.

**Cren-foot-leaved Saxifrage.** Pl. ¾ foot.

42 S. ovata (Steph. in Sternb. sax. suppl. p. 8. t. 3. f. 1.) root tufted: radicles capillary; radical leaves palmately 5-lobed, petiolate: cauline ones linear, entire; petals obovate-oblong, much longer than the 5-cleft calyx. 2. H. Native of Siberia, and probably of Kotzebue's Sound. Stem weak, 2-flowered. Flowers white.

**Slender Saxifrage.** Pl. ¼ foot.

43 S. laevigata (Elwin, Sax. suppl. 1. p. 8. t. 6. f. 2.) plant with many stems; radical leaves on long petioles, reniform, 5-7-lobed, crenated, reticulately veined lengthwise, glabrous; stems and pedicels ornamented with long intricate hairs; flowers few, somewhat capitate, involucred by 3-4 crenately lobed bracteas; lobes of calyx ovate, obtuse, shorter than the petals; petals 5-nerved towards the middle. 2. H. Native of the Island of St. Lawrence in Behring's Straits. S. Chamissosii, Sternb. med. but not S. Chamissosii, Sternb. Flowers white.

**St. Lawrence Saxifrage.** Pl. ½ foot.

44 S. stephaniana (Stern. suppl. sax. 1. p. 8. t. 6. f. 2.) plant tufted; stem usually 4-flowered, pilose: radical, as well as the cauline leaves, petiolate, and palmately many-lobed, pilose; bracteas nearly linear; sepals linear, obtuse; petals obovate, many nerved. 2. H. Native of Siberia, Steph. S. palmata, Steph. in litt. ex Sternb. l. c. Flowers white.

**Stephens Saxifrage.** Pl. ½ foot.

45 S. altiflora (Haw. enum. sax. p. 24.) leaves deeply and palmately 5-parted: segments profoundly 5-5-cleft: pedicels subracemose, divaricate. 2. H. Native country unknown. S. adscendens, Haw. exclusive of the synonyms. Very nearly allied to S. granulata, but truly distinct, and differs in the fissures of the leaves, and in the more decumbent stems. Flowers white.

**Deep-cleft-leaved Saxifrage.** Fl. May, June. Pl. ½ foot.

46 S. hirculus (Linn. spec. 576.) leaves lanceolate, obtuse, not ciliolate; calycine segments lanceolate, obtuse, usually ciliolate; petals obovate, many nerved; styles almost wanting; stigmas spatulate, when young delicately, afterwards divaricate. 2. H. Native of Sweden, Switzerland, Lapland, Siberia, Caucasus, Germany, and in England, in boggy places. It is also found in North America, from the Saskatchewan to the Arctic sea shore and Islands, where it seems most abundant; Behring's Straits, Cape of Good Hope, Kotzebue's Sound, &c. In England, in a turfy morass about the centre of Knauford moor, Cheshire; and on Cotherestone Fell, near the junction of the Black Heath with the river Balder, Yorkshire. Fl. dan. t. 500. Smith, engl. bot. 1009. S. flava, Lam. fl. fr. 3. p. 529. S. propinqua, R. Br. in Ross' voy. ed. 2. vol. 2. p. 192. Hirculus ranunculoides, Haw. enum. sax. p. 60.—Gmel. sib. 4. p. 165. t. 65. f. 3. Plant pale green, with numerous procumbent stolons. Stem from 4 inches to 1 foot high. Peduncles long, 1-flowered, covered with clammy fuscous villi. Flowers large, showy golden yellow; sepals obtuse.

**Var. b. flava; stem a foot high, many flowered; peduncles very villous.** 2. H. Native of Eastern Siberia.

**Var. tripliata (Serr. in D. C. prod. 4. p. 45.) segments of calyx acute; styles rather elongated.**—Hall. hist. no. 972. t. 11.

**Var. c. Altaiace; stem usually 1-flowered, pubescent; pedicels clothed with rufous villi.** 2. H. Native of Altai, in humid subalpine places at the rivers Ursul and Tschaja. S. Hirculus, Ledeb. fl. alt. 2. p. 121.


47 S. myosotifolia (D. Don, in Linn. trans. 13. p. 373.) plant tufted, without any stolons or flagellae; leaves ovate, acute, mucil, bristly; pedicels elongated, and are as well as the calyces beset with glandular pili; stem nearly naked, usually 3-flowered; calycine segments broadly ovate, acute; petals roundish, unguiculate, 5-nerved. 2. H. Native of Siberia. Surculy very short, erect, crowded. Stem 2-3-flowered, beset with stiff hairs. Leaves ciliated with hairs on the margins, and on both surfaces. Flowers cream-coloured; filaments compressed, yellowish. Styles short, thick.

**Mouse-car-leaved Saxifrage.** Pl. 2 inches.

48 S. flagellaris (Sternb. sax. p. 25. t. 6.) stolons or flagellae fliform; stems erect, simple, 1-5-flowered, and are as well as the calyces clothed with glandular pubescence; radical leaves as well as lower cauline ones obovately spatulate; superior ones rather villous; petals permanent, longer than the capsule, which is semi-superior. 2. H. Native of the Alps of Caucasus; and of north-west America, at Cape Newham, in Melville Island, Baillf's Bay, Behring's Straits, Arctic Islands, summits of the Rocky Mountains, Kotzebue's Sound, &c. Hook. fl. bor. amer. 1. p. 253. t. 77. S. setigera, Pursh. fl. amer. sept. 1. p. 312. S. aspera, Biebr. fl. taur. 1. p. 314. exclusive of the synonyms. Hirculus flagellaris, Haw. enum. sax. p. 41. Stem leafy, 1-5-flowered. Radical leaves crowded, all ciliated on the margins, with ciliate spindles: calyx and pedicels clothed with glutinous down. Flowers yellow, size of those of S. Hirculus (f. 42.).


**Var. b ; stem 1-flowered; ovary adhering to the calyx at e & c 2.**
SAXIFRAGACEAE.

53 S. brochialis (Lin. spec. 572.) suffrutescent; leaves crowded, linear-subulate, triquetrous, mucronate, ciliated with stiff spinules; calyce segments ovate; petals oblong; stems few-leaved and many flowered. 2. H. Native of Siberia; north-west coast of America, Behring's Straits, Kotzebue's Sound, height of land at the portage of the Columbia river, on the west side of the Rocky Mountains. Ciliaria bronchialis, Hav. rev. sax. 43.—Gmel. sib. 4. p. 164. t. 65. f. 2. Surculi numerous, erect, branched. Panicle terminal, few or many flowered. Flowers small, cream-coloured; petals obovate-oblong, 3-nerved, with numerous minute copper-coloured dots; anthers copper-coloured. This is very nearly allied to S. tricuspidata, but differs in the want of the lateral points to the leaves.

Var. β, Levadinsis (D. Don, in Lin. trans. 13. p. 377.) surculi shorter; leaves longer, spreading; panicle larger, spreading, fastigate. 2. H. Native of Siberia, at the river Lena.


54 S. tenella (Wulf. in Jacc. coll. 3. p. 144. t. 17.) plant tufted; leaves crowded, linear-subulate, flat, pungent, ciliated; stems slender, few-leaved, few-flowered; calyces linear-lanceolate; petals obovate. 2. H. Native of Carinthia, on the Alps. S. nitida, Wulf. in Jacc. coll. 3. t. 10. f. 4. Surculi numerous. Stems numerous, erect. Leaves imbricated, keeled below, glabrous. Peduncles three, long, capillary, 1-flowered, beet with glandular hairs, as well as the calyxes. Flowers white, spotless; anthers yellow.


55 S. silicatus (Wall. cat. no. 445.) stems filiform, much branched, beet with capitate hairs; branches filiform, 1-flowered; leaves linear, sessile, full of pellucid dots, nerveless, ciliated by capitate bristles; sepals lanceolate-oblong, bluish; petals obovate, obtuse, 3-nerved; styles much elongated; stigmas thickish, arched. 2. F. Native of Nipal. Branches dense. Flowers golden yellow. Perhaps distinct from S. brachypoda.

Thread-stemmed Saxifrage. Pl. 1/2 foot.

56 S. kruschiana (Fisch. in litt. ex D. C. prod. 4. p. 46.) plant tufted; leaves dense, imbricate, ovate, ciliated, nerveless; flowers by threes; sepals lanceolate, obtuse; petals elliptic, much less than the style, with minute nerves; capsule somewhat hemispherical; styles arching. 2. H. Native of Siberia, near Ijiga, where it was found by Krush, according to Fischer. This species is very distinct from S. aspera, in the leaves being oval, not linear-ovate, in being nerveless, not 3-nerved, and in the petals being feathered, &c. S. glandulosa, Wild. herb. ex Stev. in litt. 1821.

Krush's Saxifrage. Pl. 1/2 foot.

57 S. stelleraiana (Merk ex Fisch. in litt. ex D. C. prod. 4. p. 46.) plant tufted; leaves of the surculi or sterile branches small, numerous, oblong, ciliated and mucronate, hardly petiolate; ciliate ones distant: uppermost ones acute, not ciliated; stems branched, 5-7-flowered; flowers distinct; pedicels and calyxes glabrous; calyx lobes oblong, acute; petals oblong, 3-nerved, exceeding the calyx; ovary conical; styles hardly diverging, length of the petals. 2. H. Native of Eastern Siberia.

Steller's Saxifrage. Pl. 1/2 foot.

58 S. multiforma (L. decb. dec. pl. in men. acad. des. scient. peteb. 5. p. 532. no. 18. fl. ross. alt. ill. t. 335.) leaves lanceolate-linear, scattered, cuspidate, remotely and setaciously ciliated, and covered with cobwebbed villi; coryns terminal, many flowered; calyce segments ovate, obtuse; petals elliptic, bluish, 1-nerved, more than thrice the length of the calyx; stamina exceeding the corolla. 2. H. Native of Altai. It differs from S. aspera and S. bronchialis, and all the nearly
allied species, in the many flowered corymbs, in the surfaces of the leaves and margins, &c.

Many-flowered Saxifrage. Pl. ¼ foot.

59 S. Aspera (Lin. spec. 575.) leaves flat, lanceolate-linear, scattered, pungent, remotely ciliated with spines, glabrous; stem branched, few-flowered; calyces segments ovate, cuspidate; peduncles broadly elliptic, rounded at the apex, 5-7-nerved, twice the length of the calyx, and a little longer than the stamens. ¼. H. Native of Switzerland and the Pyrenees; also of Siberia. Jacq. austral. appendix 31. Sternb. sax. 29. t. 3. f. 1.—Scheuch. t. 2. p. 13. t. 19. f. 3.—Ges. fass. 22. t. 6. f. 27. S.aspera var. elongata, Gaudin, fl. helv. 3. p. 108. S. intermedia, Heg. fl. helv. 5. p. 285. Ciliaria aspera, Haw. enum. sax. p. 52.—Moris. hist. 3. p. 479. sect. 2. t. 7. f. 35. Plant grey; surculi elongated, decumbent, villous. Stems branched, reddish, brittle, hispid from short hairs. Peduncles longish, stiff, 1-flowered, furnished with glabelliform hairs, as well as on the calyces. Nerves of peduncels branched. Flowers large, cream-coloured.


61 S. cherlerioides (D. Don, in Lin. trans. 13. p. 383.) tufts of leaves on the tops of the surculi globose; leaves densely imbricated, spatulate, mucronate, ciliated; calyces segments semi-ovate, obtuse; petals obvate, 3-nerved; stems filiform, many-flowered. ¼. H. Native of Kamtschatka. S. bryoides, Pall. mss. Plant tufted. Stems ascending, 4-5-flowered, with a few small adpressed leaves. Flowers corystose, cream-coloured, much smaller than those of S. bryoides. Pedicels 1-flowered, furnished with a few scattered glands, as well as the calyces.

Cherleria-like Saxifrage. Pl. ¼ foot.

62 S. eriopeta (D. Don, in Lin. trans. 13. p. 380.) plant tufted, and hispid; stems filiform; leaves ovate, mucronate, bristly, with one tooth on each side; flower terminal, nearly sessile; calyces bristly, petals nearly orbiculate, triple-nerved: nerves simple, straight. ¼. H. Native of Napaul, on the Alps. Flowers yellow, on short pedicels, drooping in the bud. Styles incurved at the apex.

Rather-hispid Saxifrage. Pl. ¼ foot.

63 S. evolvuloides (Wall. cat. no. 447.) stems very simple, 1-flowered, ornamented by long capitulate spreading hairs; leaves ovate-lanceolate, acute, furnished with 1 or 2 teeth, nerveless, sessile, covered with striate pilis; sepals ovate, mucronate by a bristle, and bearing strigose hairs; petals roundish-ovoblate, opaque, hardly longer than the calyx. ¼. F. Native of Napaul, at Gosangthan and Kamaon. Perhaps distinct from S. hispidula. Leaves small, superior ones broadest. Pedicels filiform, nearly twice the length of the flowers. Flowers yellow.

Evolvuloides-like Saxifrage. Pl. ½ foot.

64 S. Levis (Bieb. fl. taur. 1. p. 314. suppl. 291. but not of Haw.) stems decline, few-flowered; calyces leaves oblong, acutish, crowded, naked, unarmed, glaucenceous; flowers terminal, sessile; petals obovate-oblong, longer than the calyx. ¼. H. Native of the Alps of Caucasus. Flowers yellow. Very nearly allied to S. aizoides, but differs in the flowers being smaller and sessile.

Smooth Saxifrage. Pl. ¼ to ½ foot.

65 S. spinulosa (Adams, in mem. soc. mosc. 5. ex Spreng. neue, entd. 3. p. 225.) stems nearly naked, many flowered; leaves imbricate, undivided, erect, linear-lanceolate, flat, ciliated, spinis. ¼. H. Native country unknown.

Spinulose Saxifrage. Pl. ¼ foot.

66 S. Chamissoi (Stern. rev. sax. suppl. 1. p. 13. t. 10. f. 1.) plant tufted; stem generally 4-flowered; lower leaves cuneated, cuspisiply tripped, ciliated; calyces leaves linear-lanceolate, quite entire; sepals small, obtuse; petals oblong, minute, hardly longer than the sepals. ¼. H. Native of the Island of Unalaschka; and the subalpine regions of Mount Hood. S. tricuspidata β. Hook. fl. bor. americ. 1. p. 254. Flowers minute, white. 

Chamisson's Saxifrage. Pl. ¼ to ½ foot.

67 S. tricuspidata (Retz. prot. fl. scand. ed. 2. no. 527.) stems straight, thick; lower leaves dense, coriaceous, cuneiform, tricuspidate, with the margins finely ciliated; flowers somewhat corystose; peduncles short and stiff; calyces segments ovate; petals oblong or lanceolate, 3 times longer than the calyx; capsule conical, ending in diverging styles; stigmas subcapitate. ¼. H. Native of Greeneland, and of North America; from Lake Winepeg in lat. 50° to the Arctic sea and islands; and from Hudson's Bay to the Rocky Mountains; Kotzebue's Sound, Newfoundland, &c. Rotb. in act. hafn. 10. p. 446. t. 6. Pl. dan. t. 976. Leptacta tricuspidata, Haw. enum. sax. p. 40. Plant densely tufted, glabrous; surculi very short. Stems ascending, many flowered. Superior leaves undivided. Pedicels elongated, glabellular, as well as the calyces. Flowers yellow, size of those of S. Hirculus. Pedals spotted, triple-nerved; nerves simple.


68 S. junipéra (Bieb. fl. taur. 1. p. 314. suppl. 291.) stems suffruticosus, proliferus; leaves crowded at intervals, subulate, triquetrous, stiff, pungent; flowers disposed in spikes; petals obovate, triple-nerved. ¼. H. Native of the Alps of Caucasus, at the foot of the Kaischaur Alps frequent, and nearly throughout the whole of Caucasus. Sternb. sax. p. 31. t. 10. Chondrosea juniperina, Haw. enum. sax. p. 15. Stems numerous, crowded with leaves, proliferously branched at the apex. Leaves flatish on the keel beneath, biaulate above, furnished with an acicular spine at the apex, and finely serrated at the base. Spike 6-10-flowered; pedicles short, beset with clammy down. Bractes linear, obtuse, ciliated with glands. Flowers yellow, size of those of S. aspera.

Var. a, Steveniinthis (Ser. in D. C. prod. 4. p. 23.) flowers disposed into a capitate corymb, emulating that of Lýchnis alpina, Sternb. sax. p. 31. t. 10. a middle figure.

Juniper-like Saxifrage. Pl. ¼ to ½ foot.

Sect. V. Porphyro’s (from porphuros, porphyros, purple; colour of flowers). Tacche, hort. canal. fass. f. 1. D. C. prod. 4. p. 17.—Antiphrilla species. Haw. enum. sax. p. 43.—Calliphyllum, Gaudin, fl. helv. 3. p. 94. Calyx 3-cleft, with a long, erect, permanent tube (f. 43. a), joined to the ovarium or free from it. Pedals sessile, perigynous. Stamens perigynous (f. 43. b. c); filaments flat, gradually attenuated. Stigmas
spreading, flat, spatulate, bearded with short down (f. 43. c.). Capsule covered by the calyx. Seeds angular, smooth or wrinkled.—Tufted evergreen herbs, with small opposite coriaceous or thick, permanent leaves. Flowers red or violaceous.

Elegant little plants.

69. S. oppositifolia (Lin. spec. 575.) stems 1-flowered; leaves imbricated, ovate or obovate, flat, obtuse, ciliate; segments of the calyx broadly ovate, obtuse; petals obovate, 5-nerved; genitils shorter than the corolla. 2. H. Native of Lapland, Switzerland, Spitzbergen, Pyrenees, Scotland, and England, on alpine rocks and precipices; also of North America, as in Newfoundland and Labrador; Antecosti, in the Bay of St. Lawrence; Rocky Mountains, near the highest summits, between lat. 52° and 56°; Arctic sea shore and islands; Bay of Eschheoltz, &c. In England on the west side of Ingleborough Hill, Yorkshire; on Snowdon plentifully; and on Ben Lomond and other Scottish mountains. Lin. fl. lapp. p. 179. t. 2. f. 1. Fl. dan. t. 34. All. pedem. 1532. t. 21. f. 3. Lapey. pyr. sax. p. 36. t. 16. Smith, engl. bot. t. 9. Hohenwart in Reiner. itin. i. p. 133. t. 3. S. coriacea, Pers. ench. 1. p. 488. Antiphylla coriacea, Haw. exann. sax. p. 49. Plant forming a broad flat tuft; sessile short, procumbent, reddish. Leaves usually perforated at the apex by 1 or 2 pores. Flowers large, of a beautiful lilac colour.

Jar, β, distant (Ser. in D. C. prod. 4. p. 18.) leaves of the sterile branches loose and distant. 2. H. Native of the Alps of Switzerland and the Pyrenees.


Two-flowered Saxifrage. Fl. April, June. Clt. 1826. Pl. 1 to 2 inches.

72. S. Escscholtzii (Sternb. rev. sax. suppl. p. 9. t. 10. f. 2.) plant small, densely tufted; leaves closely imbricated, ob-


Cotyledon or Pyramidal Saxifrage. Fl. May, July. Clt. 1596. Pl. 1 to 2 feet.

74. S. Lingulata (Bell in act. taur. 5. p. 226.) leaves linear-lanceolate, channelled, tubercularly crenated; calyx densely beset with glands: with semi-ovate obtuse segments; petals oblong-acute. 2. H. Native of the tops of the Alps of Switzerland; and the Pyrenees, on the Alps by the sea side, and other alpine places about Montrecel. C. Cotyledon, Mill. dict. no. 2. S. longifolia, Lapey. pyr. sax. p. 36. t. 11. Chondrosea longifolia, Haw. exann. sax. p. 11. Plant tufted. Stem erect, flexuous, branched in a pyramidal form, leafy, beset with glandular hairs. Leaves glaucous, ciliate at the base, recurved at the apex. Panicle nodding. Peduncles many flowered, and are, as well as the calyces, beset with rusty glandular down. Flowers flat, white, with numerous rose-coloured dots; petals conspicuously triple-nerved.

Jar, β, media (Sternb. sax. p. 1. t. 1. a. and in Sturm, deutsch fl. 53. f. a.) leaves shorter; stem panicked above; panicles erect, pyramidal. 2. H. Native of the Alps of Carinthia. Chondrosea intermédia, Haw. exann. sax. p. 11.—Hort. eyst. ord. 5. pl. 10. f. 1.—Pluk. phyt. t. 229. f. 1. Perhaps a distinct species.

Var. £, subminna; flabelliform; stem simple. Lapeyr. l. c. 2. H. Native on the tops of the Pyrenees.


Var. \( \beta \), retusa (D. Don, in Liu. trans. 15. p. 293.) one-half smaller than the species; leaves shorter and lower. 2 H. Native of the Pyrenees. S. Aizoon \( \beta \) minor brevitilia, Sternb. 401. l. c. t. 3. f. \( \beta \). S. rosulatis, Schlach. cat. 1824. p. 64. Chondrosea Aizoon \( \gamma \) parviflora and C. rosulatis, Haw. enum. sax. 12. Chondrosea Aizoon minor, Haw. l. c. p. 11. S. rosulata, Ehrh. pl. sel. no. 51. There is another variety of this with still smaller leaves, in Sternb. l. c. t. 56. f. 2. S. Aizoon minima, Ser. anz. 1828. p. 73. S. Aizoon \( \epsilon \) rufescens, Gaudin, fl. helv. 5. p. 88.

Var. \( \gamma \), recta (Ser. in D. C. prod. 4. p. 19.) stems erect, many flowered; peduncles elongated, 3–4-flowered. 2 H. Native of the Alps of Switzerland and the Pyrenees. S. recta, Lapeyr. fl. pyrr. p. 35. t. 15. D. C. fl. fr. 4. p. 661. \( \beta \). S. Aizoon \( \gamma \), Gaudin. Petals without any dots. Gaudin, fl. 5. p. 88.

Var. \( \delta \), nigræcta (Ser. in D. C. l. c.) tufts of leaves glabrose; raceme simple, few-flowered, somewhat cylindrical; petals rose-coloured, dotted with purple. 2 H. Native of Italy.—Sedum Barcel. icon. 1310. ex Tenore. S. nigricula, Tenore, append. prod. fl. neap. p. 19. S. Aizoon and S. recta, Tenore, fl. neap. prod. p. 25. There is a variety of this with a sessile corimb of flowers in the tufts of leaves; peduncles and calyx are quite glabrous, and the stem 1-flowered.


77 S. Intacta (Moric, fl. ven. 1. p. 431.) plants quite glabrous; stem angular; leaves of the tufts oblong-spathulate, ciliate at the base, with crassulous margins; cauline leaves oblong, somewhat denticulate, acute; panicle branched, many-flowered; petals ovate, oblate, much longer than the calyx; styles straight, ascending. 2 H. Native of Virgin Mount, near Naples. S. Aizoon, Guss, in litt. S. pyramidalis, Tenore, fl. neap. prod. 1. p. 25. Petals yellow, as seen in a dried state. Flowers very like those of S. Cotyledon, and the leaves like those of S. Aizoon.

Southern Saxifrage. Pl. 1 foot.

78 S. cartilaginae (Willd. ill. ex Sternb. sax. p. 6. t. 3. c.) leaves of the tufts and stems lanceolate, acute, cartilaginously serrated; flowers panicked, somewhat corymbose; lobes of calyx ovate, about equal in length to the campanulate tube; calyx and peduncles beset with glandular pili; petals ovate, contiguous at the base, spotless; styles diverging. 2 H. Native of Caucasus. S. Cotyledon, Bieb. fl. taur. 1. p. 313. 3. p. 290. Chondrosea carilaginosa, Haw. enum. sax. 12. Flowers cream-coloured, dotted. Perhaps only a variety of S. Aizoon.

Cartilaginous-edged Saxifrage. Pl. 1 foot.

79 S. Marginata (Sternb. rev. sax. suppl. 1. p. 1. t. 1. f. 1.) radical leaves lingulate, ciliate at the base, having pitted dots within the edge; flowers somewhat corymbose; petals ovate, twice the size of the calyx. 2 H. Native of Naples. S. Cotyledon, Tenore, cat. hort. neap. append. alter. p. 86. and S. Aizoon, longifolia, and recta, Tenore, fl. neap. prod. p. 25. ex Moretti, tent. sax. p. 35.

Marginate-leaved Saxifrage. Pl. 1 foot.

80 S. floribunda (Moretti, tent. sax. p. 9.) radical leaves tufted, lanceolate, mucronate, ciliate: cauline ones linear; stem fistular, bearing flowers from the base to the apex; flowers disposed in a racemose thysse, white, or cream-coloured. 2 H. Native on the mountains about Nice.

Bundle-flowered Saxifrage. Pl. 1 foot.


Var. \( \beta \), macroptila (Ser. in D. C. prod. 4. p. 20.) petals ovate-oblong, spotted. 2 H. Native of Switzerland. Hall. hist. no. 979. t. 16. f. 2.


§ 2. Leaves lingulately-spatulate, apiculated, with quite entire cartilaginous margins.

radical ones rosulate, glabrous; cauline leaves cuneate, clothed with glandular hairs. Pedicels 1-flowered, and are as well as the calyxes clothed with viscid hairs. Petals obovate, dark purple. Genitals inclosed in the calyx.

Middle Saxifrage. Pl. $\frac{3}{4}$ to $\frac{3}{4}$ foot.


La Peyrrouse’s Saxifrage. Pl. $\frac{3}{4}$ to $\frac{3}{4}$ foot.

84 S. arcticoides (Lapéry. pyr. sax. p. 28. t. 13.) leaves aggregate, linear-lingulate, upright, mucronulate, keeled, glau- cous, with cartilaginous margins; stem clad with clammy tomentum; petals linear-spatulate, crenulated at the apex. 2. H. Native of the Pyrenees, on calcareous rocks. Chondrösæ arcticoides, Haw. enum. sax. p. 14. Plant densely tufted. Leaves imbricate, ciliately toothed at the base, with a few perforated dots near the margin. Flowers by threes, g‘den yellow. Pe- dicels and calyces clothed with clanny down. Calyceine segments ovate, acute. Very like the two preceding species, but the plant is much smaller.


§ 3. Leaves triquetrous, obtuse.

85 S. diapensioïdes (Bellardi, in act. acad. taur. 5. p. 237.) stems, peduncles, and calyces glandular; leaves linear, erect, keeled, aggregate, imbricated, crenately glaucous; stem many-leaved, few-flowered; calyceine segments elliptic-oblung. 2. H. Native of the Alps of Piedmont and Switzerland. Lapéry. append. fl. pedem. p. 21. t. 3. Sternb. sax. p. 35. t. 9. Chondròsa diapensioïdes, Haw. enum. sax. p. 13. S. ceásia β, Lam. dict. l. p. 676. Plant densely tufted. Leaves with cartilaginous margins, ciliated at the base, and with 1 or 2 perforated dots at the apex, which is obtuse. Flowers 3 or 5, cam- panulate, white, disposed in a terminal head. Petals narrow at the base, with an orbicular, 5-nerved limb.


86 S. squarrosa (Sieb. in fl. 1821. p. 99. and fl. austr. excis. no. 133.) stem pubescent below, usually 3-flowered; leaves linear-elliptic, rather retuse, stiff, squarrosely imbricated, permanent, when young poddry; branches diffuse, flaccid; ped- uncles and stems glabrous. 2. H. Native of the Alps of Tyrol. Flowers white, larger than those of S. ceásia. Lobes of calyx broader than in S. ceásia and S. diapensioïdes. Squarrosa-leaved Saxifrage. Pl. $\frac{3}{4}$ fl.

87 S. ramulosa (Wall. cat. no. 446.) plant densely tufted; stems 1-flowered, very short; leaves of the barren stems or surculi acute and flabellate at the apex, lined with rugose dots; the upper surface of the leaves have a regular marginal, double line of dots; margins of leaves thin and cartilaginous; lobes of calyx acute; styles nearly parallel, longer than the calyx; stigmas thickish, capitate. 2. F. Native of Nepa, at Bhundrınath. Very nearly allied to C. ceásia, but perfectly distinct.

Branched Saxifrage. Pl. 1 inch.


Tar. (a) patens (Ser. in D. C. prod. 4. p. 22.) leaves loosely rosetulate, not recurved at the apex, with a few crenate spots; stems short, usually 2-flowered. 2. H. Native of Vaillaïs, on Mount Fouly. S. patens, Gaudin. in Meissner, anz. 1818. p. 65. fl. helv. 3. p. 92, but not of Sternb. rev. sax. suppl. 1. t. 1. f. 2. Chondrösæ patens, Haw. enum. sax. p. 14. There is a variety of this without any stem and with 1 sessile flower in the middle of the leaves, which is a native of Upper Styria, and is described by Vest, in flora. 1820. no. 26. p. 397.

Grey Saxifrage. Fl. May, June. Clt. 1752. Pl. $\frac{3}{4}$ to $\frac{3}{4}$ fl.

89 S. rocheliana (Sternb. suppl. sax. 2. ex Host. fl. austr. 1. p. 501.) flowers corymbose; sepals ovate; petals lanceolate-ovate, twice the length of the calyx; lower leaves lingulate, glabrous, ciliated at the base, disposed in tufts; cauline ones clothed with clammy villi, pale green. 2. H. Native of Austria, in the fissures of rocks. Leaves white at the edges, and with distinct impressed dots. Flowers white. Perhaps a variety of S. ceásia or S. valdénia.

Rochel’s Saxifrage. Pl. $\frac{3}{4}$ to $\frac{3}{4}$ foot.

90 S. valdénia (D. C. fl. fr. 5. p. 517.) peduncles and calyces very clammy, and beset with glandular hairs; leaves of the surculi and stems flat at the base, but more or less triquetrous at the apex, with the upper surface marked with dots, which are disposed without order. 2. H. Native of the Alps of Lyons, on the hill called Lacroix, near Abries and Pignerol; and on Mount Cenis. S. rutpérstris, Thomas, exsic. S. ceásia, var. Wild. spec. 2. p. 642. in a note. S. ceásia γ, Moretti. tent. sax. p. 12. Flowers white, corymbose; peduncles short. Leaves dense, short. Leaves dense, short.

Tar. (a) laxifólia (Ser. in D. C. prod. 4. p. 22.) leaves loose, elongated; flowers very numerous, loose, disposed in panicked corymbs. 2. H. Native of Portugal and Italy. S. laxifólia, var. ex alpinus Italicus, Linn. mant. p. 581. but not of his spec. S. ceásia β, major, D. Don, in Linn. trans. 13. p. 403. S. com- pàcta, Sternb. suppl. 1. p. 9. t. 1. f. 3. under the name of S. patens.

Lyons Saxifrage, Fl. May, June. Clt. 1825. Pl. $\frac{1}{2}$ foot.

91 S. serpellehólia (Pursh, fl. amer. sept. 1. p. 310.) surculi creeping; leaves rosulate, imbricately reflexed, oblong, obtuse, tapering into the petiole, coriaceous, quite glabrous; stem filiform, few-leaved, best with glandular pubescence, 1- to 2-flowered; calyceine segments obtuse, not adhering to the ovum; petals broadly obovate, somewhat 3-nerved. 2. H. Native of the north-west coast of America, at Cape Newhan, Behring’s Straits, and Unalaska. S. Fischèr., Ser. in D. C. prod. 4. p. 22. S. Eschelholtzii, Cham. in litt. S. planifólia, Cham. in herb. Hook. S. diapensioïdes, Fisch. in litt. but not of Bellardi. Plant green, tufted. Flowers large for the plant, apparently yellow, solitary, on slender, few-leaved, glandular stalks. Calyx wholly inferior.

Wild-thyme-leaved Saxifrage. Pl. $\frac{1}{3}$ foot.

§ 4. Leaves triquetrous, mucronately pungent.

92 S. nitida (Schreb. in litt. ex Sternb. rev. sax. p. 32. t. 10.}
b. f. 4.) stems nearly naked, few-flowered; leaves densely imbricated, lanceolate, spinosely mucronate, and ciliate, shining beneath; flowers usually by threes, panicled; calyx pilose; with ovate lobes, which end in a little spine each; petals obtuse, hardly longer than the calyx. 2. H. Native country unknown. Chondrosea nitida, Haw. enum. sax. p. 16. Very nearly allied to S. tentella. Flowers yellowish.


93. S. Tene'lla (Wulf. in Jacq. coll. 3. p. 144. t. 17.) leaves crowded, linear-subulate, flat, pungent, ciliate; stems slender, few-leaved, many-flowered; calycine segments linear-lanceolate; petals obovate. 2. H. Native of the Alps of Carinthia, Carniola, and of the Carpathian mountains; also about Prague. Chondrosea tentella, Haw. enum. sax. p. 15. Plant tufted; surculi decumbent. Leaves crowded, imbricate, deep green, keeled beneath. Flowers panicked, white. Calyx beset with glandular hairs.


Sand-wort-like Saxifrage. Pl. 1/4 foot.

95. S. Berseriana (Lin. spec. 572.) stem beset with glandular hairs; leaves aggregate, subulate, pungent, smooth, glaucous; stems usually 1-flowered; segments of the calyx ovate; petals roundish, with curled edges, and branched nerves. 2. H. Native of the Alps of Carinthia and Carniola; and in Upper Italy, on the mountains. Wulf. in Jacq. misc. 1. p. 153. t. 17. f. 3. Sternb. sax. p. 33. t. 10. f. 1-2. and in Sturm, deutschl. fäse. 33. no. 10. f. a. b. c. d. —Segner, pl. rar. 3. p. 291. t. 5. f. 2. Chondrosea Berseriana, Haw. enum. sax. p. 15. Plant densely tufted. Surculi short, erect. Leaves rosulate, tricorifrons. Flowers large, beautiful, milk-coloured, lined with branched, yellowish, flexuous nerves.

Var. β, subfíffera (Sternb. l. c. t. 10. β.) stems usually 2-flowered.


Vandelli's Saxifrage. Pl. 1/4 foot.

obate, rather membranous, nerved, deeply crenate-toothed, tapering into the broad petiole; ovate naked; flowers in panicked corymbs; calyces segments crenate, obtuse; petals oblong, oblate, more than twice the length of the calyx. 2. H. Native of Canada, and to the mountains of the Columbia, and from Fort Vancouver to the Kettle Falls. S. Virginica, Torrey, fl. unit. stat. p. 444. Flowers small, white, forming an imperfect corymb or thyrse. This species differs from S. Virginica in the disposition of the flowers.


Spring Saxifrage. Fl. May, June. Ch. 7. Pl. 3 foot.

102 S. Reflexa (Hook, fl. bor. amer. 1. p. 249. t. 85.) plant clothed with woody down; leaves ovate, rather coriaceous, opaque, deeply serrated, tapering into the petiole; scape naked; panicle quite glabrous, compact, corymbose; petals obtuse, bi-maculate; calyx reflexed. 2. H. Native of North America, on the shores of the Arctic Sea, between the Mackenzie and Coppermine rivers. Together with the harsh and rigid foliage of S. nivalis, the present species has a panicle more resembling that of S. verrucosa; but the petals have two orange spots, similar to those of S. leucanthemifolia. The pubescence gives a whitish or hoary appearance to the whole plant, the panicle exception; but as the pubescence is very variable in all the species of the present section, it cannot be depended upon. (f. 43.)

Reflexed-calyxed Saxifrage. Pl. 3 foot.

103 S. Integrifolia (Hook. fl. bor. amer. 1. p. 249. t. 86.) the whole plant clothed with pinnate pubescence; leaves radical, ovate, rather membranous, very blunt, quite entire, or minutely crenated, reticulately veined; scape elongated, naked, panicked, at the apex; panicle loose, broad or contracted, bracteate; petals obvate, twice the length of the calyx, which is at first spreading, but at length reflexed; stamens short; styles diverging. 2. H. Native of the north-west coast of America, near the mouth of the Columbia. The leaves are short, in proportion to the height of the plant.

Entire-lobed Saxifrage. Pl. ½ to 1 foot.

104 S. nivalis (Linn. spec. p. 573.) leaves ovate or obvate, coriaceous, unduly crenated, tapering into the broad petiole; scape naked, simple; flowers in crowded heads; calyces segments erect, obtuse; petals obvate, permanent, hardly one half longer than the calyx. 2. H. Native of Scotland, north of England, Lapland, on the loftiest mountains; in North America, on the Arctic Sea-shore and islands, abundant; Labrador, Canada, Spitzbergen, and the Rocky Mountains. In Britain, upon Snowdon, and on the summits of several hills about Snowdon; on Ben Lawers, Clova, and other Highland mountains of Scotland; and near the top of Ben Lomond. Lightly fl. scot. with a figure. Smith, engl. bot. t. 410. Sternb. in Sturm, deutsch. fl. with a figure. S. congesta, Haw. Dermasea nivalis, Haw. syn. sax. p. 9.—Lin. succ. p. 176. t. 2. f. 5. 6.—Ray. angl. 3. p. 354. t. 16. f. 1.—Oed. fl. dan. t. 25. Leaves glabrous above, villous beneath. Scape clothed with viscid hairs. Flowers disposed in crowded bracteate heads; bracteas ciliate. Pedicels and calyces clothed with viscid down. Petals white, but becoming reddish as they fade, triple-nerved; nerves simple. The American specimens of this plant are very variable in habit, and in many instances so closely approach the varieties of some of the preceding species, as hardly to be distinguished. It is therefore most easily to be recognised by its stiff and rigid habit, by the broad permanent petals, which remaining amongst the deep purple capsules form a singular contrast with them.


105 S. Longiscapa (D. Don, in Lin. trans. 13. p. 388.) leaves ovate, serrated, on long petioles; thyrse of flowers ovate; segments of the calyx ovate, acute; petals ovate, hardly longer than the calyx. 2. H. Native of Siberia. Leaves hairy. Scape filiform, beset with glandular hairs. Pedicels and calyces downy. Flowers white. This plant scarcely differs from S. nivalis var. γ, tenus.

Long-scaled Saxifrage. Pl. ¼ foot.

106 S. Palla (Waller. cat. no. 450.) plant quite glabrous; leaves lanceolate, obtuse, obscurely crenated, petiolate; bracteas linear; flowers few, disposed in a loose panicle; pedicels filiform, longer than the fruit; petals ovate, longer than the calyx; calyces lobes lanceolate, length of tube, each terminated by a sessile gland; filaments clavate? capsule rather bladderly, nerved, marked by minute elevated dots; stigma sessile, thickish. 2. F. Native of Nipal, at Gosasingth, Emodi, and Kamaon.

Pale Saxifrage. Pl. ¾ foot.

107 S. Dahurica (Willd. spec. 3. p. 465.) plant quite glabrous; leaves cuneiform, on long petioles, attenuated at the base, coarsely and deeply serrated at the apex; flowers in loose panicles; calyces segments ovate, acute; petals elliptic, acute. 2. H. Native of Dahuria, on the tops of the Alps, near the limits of perpetual snow. In North America, at Behring's Straits; alpine rivulets of the Rocky Mountains, Kotzebue's.

Leaves said to be pubescent; the scape beset with glandular hairs, and the pedicels and calyces clothed with clanny downy. Petals white, marked with 2 yellow spots at the base. The broadly cuneate, or rather flabelliform leaves are very remarkable.

Dakurian Saxifrage. Pl. ¼ foot.

Sect. VIII. Saxifraga-veR-E (this section contains what are considered the true species of the genus.) D. Don, in Lin. trans. 13. p. 315.—Daetyloides, Tausch, hor. canai. fasa. 1. D. C. prod. 4. p. 23.—Muscariaria and Saxifraga, Haw. enum. sax. p. 22-29.—Triplinervium, Gaudin, fl. helv. 3. p. 116. Calyx 5-cleft (f. 46. a.), erect, permanent, with the tube adhering to and involving the ovary (f. 46. b.). Petals sessile, perigonous (f. 46. c.). Stamens perigonous (f. 46. d.); filaments flat, gradually attenuated. Stigmas spreading (f. 46. e.), flat, spatulate, bearded with short down. Capsule covered by the calyx (f. 46. b.), and closely adhering to it. Seeds obovate.—Perennial rarely annual, humble, densely tufted herbs, for the most part bearing surculi. Leaves alternate, variously parted, rarely simple, usually green; with the margins neither cartilaginous nor doted. Stems leafy, few, or many-flowered. Flowers white or yellow, rarely red.

§ 1. Perennial. Surculi numeros. Leaves undivided, rarely trichotomous at the apex.

108 S. Farnasifolia (D. Don, in Lin. trans. 13. p. 405.) stem erect, leafy, 3-4-flowered; leaves cordate, stem-clasping,
glabrous; calyceine segments ovate, mucronate; petals obvate, 5-nerved. 2. F. Native of Nipaul, on the Alps. Habitat of plant referable to Parannis palustris. Stems numerous. Leaves ciliolate with glandular hairs. Pedicels 1-flowered, and as well as the calyces glandular. Flowers milk-coloured. This is evidently only a small specimen of S. diecrosifolia var. β, parnasifolia, p. 209.

Parannis-leafed Saxifrage. Pl. ½ foot.


Var. β, tridentata (Gaun. syn. sax. in Meisner, an. 1818. p. 67. fl. helv. 3. p. 115.) leaves cuneiform, more or less, 3-5-toothed. 2. H. Native of the Alps, but rare. Sternb. rev. sax. t. 11. a. f. 4. and in Sturm, deutschfl. p. 33. no. 15. S. androsacea trifida, Hall. comm. sax. p. 55. S. Pyrennea, Seop. fl. curr. no. 498. t. 16. S. androsacea triflora, Sternb. rev. sax. suppl. p. 11. t. 7. f. 5. S. tridens, Jan. in litt.


Spatulate-leaved Saxifrage. Pl. ¾ foot.


112 S. tenëra (Sut. fl. helv. 1. p. 245.) surculi short, very leafy; leaves linear-oblong, obtuse, and are as well as the stems best with glandular hairs; calyceine segments oblong-ovate; petals obvate, retuse, exceeding the calyx. 2. H. Native of the Alps of Switzerland, Piedmont, Pyrenees; and on Mount Cenis. Sternb. sax. p. 28. t. 9. f. 4. S. planifolia, Lapeyr. fl. pyr. sax. p. 31. Sternb. sax. p. 28. t. 7. f. 3. S. mucroideae. All fl. pedem. no. 1528. t. 61. f. 2. exclusive of the synonyms. S. planifolia citrina, Gaun. syn. in Meisner, an. 1818. p. 66. fl. helv. 5. p. 113. a. β. Plant densely tufted. Stems 1-3-flowered. Flowers cremn-coloured, twice the size of those of S. sedoides. Easily distinguished from S. sedoides in the stems and leaves being densely beset with glandular hairs, and in the petals being obvate, retuse, and twice the length of the calyx.

Var. β, trifida (Gaun. in Meisner, an. 66. fl. helv. 3. p. 114.) some of the leaves trifid. 2. H. Native of Valtellins, in the valley called Bagnes.


113 S. depressa (Sternb. rev. sax. 42. t. 11. a. f. 5.) stem roughish, few-flowered, furnished with 2 leaves, one of which is a little stem-clasping: leaves spatulate, entire, and cuneately tridentate at the apex, running into the petiole at the base, rather searish beneath; petals hardly exceeding the calyx, which is campanulate; calyceine lobes triangular, broad. 2. H. Native of Italy, on Mount Alto. Haw. comm. sax. p. 31. It differs from S. androsacea, to which it is nearly allied, in the leaves running into the petiole at the base, and in the lower surface of the leaves being roughish from short stiffish hairs, not pilose. Perhaps the same as S. androsacea β, tridentata.


114 S. Mečkin (Fisch. in Sternb. rev. sax. 1. p. 1. f. 3.) stems tufted, usually 3-flowered; calyceine segments ovate; petals obvate-rounded, longer than the calyx; capsule rather bladdery; styles parallel; radial leaves rosalate, ovate or spatulate, entire, ciliolate, glabrous; cauline ones smaller, few. 2. H. Native of Siberia, in humid plains on Mount Jabloni. Habit nearly of S. androsacea, but differs in the capsule being bladdery, much longer than the calyx. Flowers white.

Merk's Saxifrage. Pl. ¼ foot.

115 S. crocea (Gaun. syn. sax. in Meisner, an. 1818. p. 70. fl. helv. 3. p. 130.) stems tufted, 3-5-flowered, covered with short pubescence; terminal pedicle sessile; lateral ones very long; leaves linear-oblong, obtuse, or tridentate; calyceine segments oblong-rounded, bluntish, clothed with clanny pubescence, longer than the tube; petals elliptic, bluish, hardly equal in length to the calyx. 2. H. Native of Savoy, in the southern Alps. Muscaria crocea, Haw. comm. sax. p. 38. Flowers copper-coloured.

Copper-coloured-flowered Saxifrage. Pl. ¾ foot.


117 S. geranoides (Lin. spec. 578.) leaves reniform, 3-5-lobed, pubescent, on long petioles: segments cuneated, deeply toothed; panicle coaractate, many-flowered; calyceine segments linear-lanceolate, obtuse, reflexed; peduncles oblong, flat. 2. H. Native of the Pyrenees. Lapeyr. pyr. sax. p. 66. t. 45. S. paniculata, Schleich. cat. 1821. S. quinqueflora, Lam. fl. fr. 3.
SAXIFRAGACEÆ. I. SAXIFRAGA.


*Var. β. obtusiflora* (Ser. in D. C. prod. 4, p. 30.) plant hardly pilose; lobes and lobules of leaves hardly toothed; flowers subumbellate; bracteas linear. 2. H. Native of Switzerland. S. geranioides, Schlech. cat. 1822. p. 62.


*Pedatifid-leaved Saxifrage.* Fl. May, June. Scotland. Pl. ½ to 1 foot. 121 S. viscosa (Haw. in misc. nat. 164. enum. sax. p. 26.) stems hairy; radical leaves pedatifid; of the surculi, which are erect, 5-5-cleft; cauline ones trifid and lanceolate, 3-nerved. 2. H. Native country unknown. Allied to S. geranioides and *S. pedatifida,* but much smaller and more clammy. Flowers white.

*Clammy Saxifrage.* Fl. May, June. Pl. ½ to 3 foot. 122 S. ceratophylla (Dryander, in hort. kew. 3. p. 70.) surculi woody; leaves 2-3-parted, petiolate, stiff, glabrous; segments subulate, with hairy mucrones; stems clammy; calyx brownish, glabrous; with ovate segments, which are furnished each with a recurved mucrone at the apex; petals oblong. 2. H. Native of Spain. Sims. bot. mag. 1815. S. trifurcata, Schrad. hort. goetz. fasc. 1. p. 13, t. 7. S. petraeae, Pavon. herb. Plant densely tufted, quite glabrous. Stems reddish at the base, covered with viscid juice. Petioles naked, channelled above. Flowers snow white, disposed in a loose branched panicle. Pedicels and calyces covered with clammy juice.


*Blunt-cleft-leaved Saxifrage.* Pl. ½ foot. 124 S. ajugiformia (Lin. amoen. acad. 4. p. 271.) surculi procumbent; leaves 5-parted: segments lanceolate, mucronate; bases slender; calyces segments ovate, mucronate; petals flat, oblong. 2. H. Native of Provence, on the mountains, and of the Pyrenees. Lapeyr. pyr. sax. p. 66. t. 31. Sternb. sax. p. 46. Plant green, furnished with a few viscid hairs, which are more dense on the petioles: densely tufted at the time of flowering, but growing in a loose manner afterwards. Surculi long, reddish, as well as the base of the stems. Leaves glabrous, but ciliated: cauline ones undivided, lanceolate. Flowers large, campanulate, white. Calyx base with glandular hairs. Petals triple-nerved: nerves simple.


*Capitate-flowered Saxifrage.* Fl. May, June. Pl. ½ foot. 127 S. pentadactylis (Lapeyr. fl. pyr. sax. p. 64. t. 40.) surculi short, erect; leaves long on petioles, glabrous, 5-parted:
segments linear, obtuse, ribbed beneath; calycine segments lanceolate, acute; petals obovate, with branched nerves. \( \text{fl.} \). Native of the Pyreness. Herb glabrous, pale green, densely tufted. Stems branched, terete, glabrous, flexuous. Petioles long, compressed, glabrous. Flowers white, disposed in loose panicles.

\( \text{fl.} \), corymbosa (Ser. in D. C. prod. 4. p. 30.) flowers numerous, in dense corymb; peduncles more rigid and shorter.

\( \text{var.} \), capitellata (Ser. 1. c.) flowers somewhat capitate; peduncles very short.

**Five-fingered-leaved Saxifrage.** Fl. May, June. Chit. 1815. Pl. 4 to \( \frac{1}{4} \) foot.

128 S. LATIFOLIA (D. Don, in Lin. trans. 13. p. 420.) succulii erect, short; radical and cauline leaves broadly cuneate, glabrous; 3-5-lobed; lobes broadly ovate; calyx glabrous, with ovate-lanceolate mucronulate segments; petals spatulate, with simple nerves. \( \text{fl.} \). Native of Spain. S. ascendscens, Pavon, herb. Plant quite glabrous, pale green, tufted. Stems many leaved, many flowered. Lower cauline leaves like the radical ones, but more profusely lobed: lobes lanceolate; upper cauline leaves undivided. Peduncles elongated, 2-flowered. Flowers white.

**Broad-cleft-leaved Saxifrage.** Pl. 1/4 foot.


**Deceiving Saxifrage.** Fl. May, June. Wales. Pl. \( \frac{1}{4} \) foot.

130 S. hiçta (Dunn, cant. ed. 5. p. 107.) plant very villous; radical leaves 5-cleft: succulii ones trifid: segments ovate-lanceolate, acute; calycine segments triangularly ovate, acute; petals obovate. \( \text{fl.} \). Native of Ireland, among alpine rocks, western highlands of Scotland, and Wales; as on the Galty mountains, Tipperary; in the west part of Scotland; near Twil du in Cwfl Idwell, also on the walls of Dolwyddelan castle, between Capel Cory and Llandew, North Wales. Smith, engl. bot. 2291. Plant canescent, densely tufted before flowering, but afterwards loose, with the succulii decumbent and flexuous. Stems many leaved, few-flowered, clothed with villous hairs. Petioles dilated. Lower cauline leaves 3-parted, with linear segments: upper ones undivided. Flowers white, smaller than those of S. decipiens. Pedicels and calyces clothed with glandular hairs. Petals triple-nerved: nerves simple.

**Hairy Saxifrage.** Fl. May, June. Ireland. Pl. \( \frac{1}{2} \) to \( \frac{1}{4} \) foot.

131 S. platipe⁠tal⁠tale (Smith, in Lin. trans. 10. p. 391.) plant villous; succulii elongated, prostrate; leaves 5-5-parted: segments linear, acute, and awned; calycine segments ovate, mucronate; petals orbicular. \( \text{fl.} \). Native of the Alps of Scotland and Wales; as upon Snowdon in Wales; and the Clow mountains in Angus-shire, Scotland. Smith, engl. bot. 2276. S. recúra, Schleich. chit. 1821. S. hypnoides rhodopétála, Haw. enum. sax. p. 32. Plant densely tufted before flowering, but afterwards loose. Stems leafy, many flowered. Upper cauline leaves undivided. Flowers rather large, milk-coloured. Peduncles and calyces clothed with glandular down. Petals red at the apex when in the bud, triple-nerved: lateral nerves incurved, a little branched, middle one straight and simple.

**Broad-petalled Saxifrage.** Fl. June. Britain. Pl. \( \frac{3}{4} \) foot.


**Incurved-leaved Saxifrage.** Fl. May, June. Ireland. Pl. \( \frac{1}{4} \) foot.


**Naked Saxifrage.** Fl. May, June. Scotland. Pl. \( \frac{1}{4} \) foot.


**Sternberg's Saxifrage.** Fl. May, June. Pl. \( \frac{1}{4} \) foot.


**Neat Saxifrage.** Fl. May, June. Chit. 1818. Pl. \( \frac{1}{4} \) foot.

136 S. tridentáta (D. Don, in Lin. trans. 13. p. 429.) plant glabrous; radical leaves 5-cleft, succulii ones on long petioles, acutely tridentate; calycine segments triangularly ovate, mucronate; petals spatulate. \( \text{fl.} \). Native country unknown. Herb densely tufted, quite glabrous before flowering, but fur-

Tridentate-leaved Saxifrage. Fl. May, June. Pl. ½ foot.


Audes Saxifrage. Pl. ¾ foot.


139 S. uniflora (R. Br, in Parry's first voy. append. p. 275. but not of Sernb.) radical leaves aggregate, trifid: cauline ones linear, undivided, distant; stem one-flowered, and is, as well as the inferior ovary, viscid; down glandular, very short; calyce segments obtuse, petals obovate-oblong. 2. H. Native of the Arctic Islands. S. cespitosa, R. Br in Ross voy. ed. 2. vol. 2. p. 192. S. cespitosa ß uniflora, Hook. fl. bor. amer. 1. p. 244. S. venioz, Haw. enum. sax. p. 28. Flowers milk-coloured.

One-flowered Saxifrage. Pl. ½ foot.


Stellate Saxifrage. Pl. 1 inch.


Var. ß, Hewnkei; leaves densely glandular, 3-5 lobed: lobes ovate; surculi nearly globose; corymb 6-10-flowered. 2. F. Native in valleys on the Cordillera of Peru. S. Cordilleriana var. ß Hewnkei, Presl, in Hcenk. relig. 2. p. 55. Var. ß, ßaxa; stems elongated; leaves densely glandular, 3-5 lobed, loosely imbricated: lobes ovate; surculi cylindrical, loose; corymb many flowered. 2. F. Native of the Cordiller of Peru, in valleys. Petals white. S. Cordilleriana ß ßaxa, Presl, in Hcenk. relig. 2. p. 55.

Bolpland's Saxifrage. Pl. 1 inch.


Var. a, integrifolia (Ser. in D. C. prod. 4. p. 21.) leaves spatulate, usually entire; upper ones puberulous: lower ones glabrous.

Var. ß, triloba (Ser. l. c.) leaves all cuneate, 3 lobed at the apex, chammy. 2. F. S. Magellánica, Sternb. rev. sax. p. 39. t. 11. f. 1.

Magellan Saxifrage. Pl. ½ foot.

143 S. lanceolata (Haw. syn. succ. p. 324. enum. sax. p. 240.) leaves glabrous, eliased; those of the surculi palmately 7-cleft: those of the stolons, which are very short and erect, 3-5 cleft; caluene leaves lanceolate; petals rounded, obturate. 2. H. Native of the Alps of Europe. Flowers white.

Var. ß, minor (Haw. enum. sax. p. 24.) leaves trifid and entire: lower caluene ones lanceolate-spatulate; petals oblong-cuneiform, distinct. 2. H. Two or three times smaller than the species, and the leaves and petioles are very different.

Haw. l. c.

Var. ß, obtusa (Haw. l. c. p. 24.) leaves cuneiform at the base or obturate: those of the roseleaf deeply 1-5-toothed, and brownish; those of the stolons usually abortive: lower caluene leaves elliptic: petals orbicularly obturate. 2. H.


144 S. MÉNÜTOMA (Willd. in Sternb. sax. rev. p. 51.) radical leaves rexiniformly cordate, palmately parted: segments linear; caluene leaves nearly sessile, cuneate, 3-5 parted; flowers in dichotomous panicles; peduncles and calyces plicate: calyce lobes lanceolate, acute, length of the tube. 2. H. Native of Spain. Haw. enum. sax. p. 27. Flowers white.

Dichotomous Saxifrage. Pl. 1 to ¾ foot.

145 S. Exarata (Vill. dauph. 4. p. 674. t. 45.) plant pubescent; radical leaves 5 or 3 parted: those of the surculi 3 parted: segments linear, very blunt, engraved above: stem many flowered; calyce segments ovate-oblong, obturate: petals obovate, with simple nerves. 2. H. Native of the Alps of Dauphiny, Savoy, Piedmont, and the higher Pyrenees; also in North America: frequent on the Rocky Mountains between lat. 52° and 56°. S. nervosa, Lapeyr. pyr. sax. p. 63. t. 39. S. hypnoides, All. pedem. no. 1538. t. 21. f. 4. S. intermédia, Gaudin, fl. hclv. 3. p. 122. S. striata, Hall. fil. in herb. Gaudin, l. c. p. 129. Plant densely tufted before flowering, afterwards
loose and succulent, densely clothed with glandular down. S. chordiiforme, cauline leaves with linear, flat, oblanceolate, 1-flowered, furnished each with a tripartite bract at the base. Flowers in few-flowered; filaments yellow.


Var. γ, intricata (D. Don, l. c.) radical leaves crowded, spreading, cuneate, 3-cleft; peduncles divaricate. 3. H. Native of the Pyrenees. S. intricata, Lapeyr. sax. pyr. p. 58. t. 33.


146 S. Payoni (D. Don, in Lin. trans. 13. p. 434.) plant pubescent; leaves 3-parted; segments linear, acute, nerved; petioles linear, dilated, ribbed beneath; calypine segments linear-lanceolate, acute; petals obovate, with simple nerves. 2. H. Native of the Andes of Peru, in very cold places. Herb growing in dense flat tufts. Surculi short. Stems few-flowered, 3-5-flowered, covered with short glandular hairs. Upper cauline leaves simple, linear, all the rest tripartite. Petioles linear, dilated. Peduncles and calyces densely clothed with short glandular down. Flowers milk-coloured, fading to a yellowish colour.

Paton's Saxifrage. Pl. 4 lip to ½ foot.


Piedmont Saxifrage. Fl. May, June. Pl. ½ lip to ½ foot.

148 S. quinquedens (Haw. syn. succ. p. 325. and enam. sax. p. 30.) naked; leaves of the twigg surculi 3-5-cleft, remote, length of the internodes; lobes subulate, awaded, equal in length to the petioles, which are ciliated; petals orbicular. 3. H. Native country unknown.

Five-toothed-leaved Saxifrage. Fl. May, June. Pl. ¼ lip to ½ ft.

149 S. Paniculata (Hort. madr. ex Horn. horn. hahn. 1. p. 402.) leaves glabrous, 3-parted: lobes trifid, linear; cauline leaves tripartite, with entire lobes; stems ascending. 2. H. Native of Spain.

Pancicled Saxifrage. Pl. ½ foot.

150 S. Moschata (Wulf. in Jacq. misc. 2. p. 128. t. 21. f. 2.) plant pubescent; radical leaves trifid: succulene ones trifid or undivided, nerved; segments linear, acute; stems filiform, somewhat racemose; petals narrow-oval, hardly exceeding the calyx.


Musk Saxifrage. Fl. May, June. Pl. ½ foot.


Var. β, cassinifolia (Gudin, syn. sax. and in fl. helv. 3. p. 31.) leaves nearly sessile, flaccid, for the most part undivided; stems rather paniculate. 2. H. Native of the Alps of Savoy. S. muscoides γ, D. C. prod. 4. p. 26.


152 S. pygmea (Haw. misc. nat. p. 168.) plant quite glabrous; succulene very short, rostrate; leaves lanceolate, nerverless, glabrous, blunt, and rather cut at the apex; calypine segments broadly ovate; petals oval, hardly longer than the calyx. 2. H. Native of the Pyrenees. S. muscoides γ hemispherica, Lapeyr. pyr. sax. p. 60. t. 36. S. moschata, Smith, engl.
culi short, rostrate, very leafy. Stems filiform, slender, few-
leafed, 3-4-flowered, beset with glands. Flowers the smallest
of all the section, of a yellowish colour. Calyx and pedicels

Pygmy Saxifrage. Fl. May, June. Scotland. Pl. 1 to 2
inches.
153 S. Terete'k'ssisa (Bunge, in Ledeb. fl. ros. alt. ill. t. 398. fl. alt. 3. p. 125.) plant small, tufted; radical leaves much
crowded, cuneate, trilobate; segments oblong-linear, obtuse;
cladini  with a few glands; calume leaves few, trilobed or entire;
stem few-flowered, glandular; petals oblong, twice the length of
the calyx. 2. 1. Native of Altaiia, in rough stony places on
tops of mountains, between the rivers Ural and Koksun.
Flowers pale yellow. Allied to S. moschata, but differs in
the flowers twice the size, and in the petals being obovate-

Terekb Saxifrage. Pl. 1/2 foot.
154 S. Sec'un'da (Moretti, tent. sax. p. 20.) plant very vil-
rudous; radical leaves aggre gate, cuneiform, 3-5-clerit: lobes ob-
tuse; stems few-leaved, rather cor ymbosely; flowers secund;
lobes of calyx ovate, obtuse; petals obvate, longer than the
calyx. 2. 2. Native of Italy? S. carpitida, Biroli, fl. acm.
Second-flowered Saxifrage. Pl. 1/2 foot.
155 S. victoria (Haw. ennum. sax. p. 28.) plant almost stems-
less; leaves simple and trifid, nerved; sepals 1-flowered, fur-
nished with linear entire leaves. 2. 2. Native of Melville
Island. Perhaps only a variety of S. muscoidea, uniflora, or
carpitida.

Viey-leaved Saxifrage. Pl. 1 to 2 inches.
156 S. Glare'illa (Bertol. virid. born. 1824. p. 80.) surculi
densely leafy; stems few-flowered, glabrous; leaves all un-
divided, linear or spathulate, glabrous; peduncles and calyces

Petioles
thickened, cili-ated, sometimes larger. Petioles simple,
acutish, many-flowered, 5-lobed, yellowish, crowded, with
the calyx, nearly exceeding the leaves. 2. 2. Native of
Spain, on the mountains near Castelltort. S. cuneifolia, Cav.
icon. 3. p. 25. t. 248. but not of Lin. Lobaria cuneifolia, Haw.
ennum. sax. p. 19. Stems many, ascending. Lobes of leaves
acute. Flowers panicled, white. Peduncles elongated, 1-
flowered, smoothish.

Cuneate-leaved Saxifrage. Pl. 1/2 to 1/2 foot.
161 S. Globuli'ter (Desf. t. 2. p. 96. f. 1.) plant gen erous;
surculi 5-cleft to trifid, and sometimes simple, lanceolate, acutish,
and awned; flowers panicled; calyces segments oval-oblong, obtuse; petals
broad. 2. 2. Native on the top of Mount Atlas. Plant
tufted. Stems erect, filiform, glabrous, furnished with a few
leaves. Segments of divided leaves lanceolate. Petioles cili-
ated. Axils of leaves furnished with globalar buds, which are
pedunculate, and formed of simple, ciliated, imbricated leaves;
these buds shoot out into surculi for the following year. Flowers
white, one half smaller than those of S. hypnoides, 5-7, dis-
posed in a raceme. Pedicels and calyces clothed with cili-
margin. Nerves of petals simple.
Var. B, Gibraltarians (Ser. in D. C. prod. 4. p. 31.) leaves
much smaller; lobes short, ovate, acutish; buds in the axils
of the leaves smaller, oblong, acutish; stems few-flowered.
2. 2. Native of Gibraltar. Styles not exceeding the calyx
at maturity.

Globular-bearing Saxifrage. Pl. 1/2 foot.
162 S. Hypnoides (Lin. spec. p. 575.) plant gen miferous;
surculi very long, procumbent; radical leaves 5 or 3-parted;
surculine leaves simple, linear, stiff, ciliated, m cruncelately
awned; calyces segments triangularly ovate, awned; petals roundish-

Saxifragaceae. I. Saxifraga.

Plant densely tufted, spreading close on the ground. Sur-
culi short, rostrate, very leafy. Stems filiform, slender, few-
leafed, 3-4-flowered, beset with glands. Flowers the smallest
of all the section, of a yellowish colour. Calyx and pedicels
SAXIFRAGACEÆ. 1. SAXIFRAGA.

pyc. sax. p. 57. t. 32. Smith. engl. bot. t. 454. S. elongella, platipetal, densa, curvata, densifolia, Schleih. cat. 1821. Herb densely tufted before flowering, quite glabrous, but afterwards becoming loose, surculose, and villous. Surculi reddish as well as stems, which are erect, shining, brittle, and 2-4-flowered. Surculine leaves furnished with ovate, acute buds in the axils. Cauline leaves few, linear-lanceolate, undivided. Peduncles elongated. 1-flowered, clothed with viscid down as well as the calyxes. Petals white, triple-nerved, rose-coloured on the outside at the apex; nerves simple.


Var. ß, angustifolia (D. Don, l. c.) surculi ascending; leaves longer. ATAL. H. Native of the Alps of Scotland. S. angustifolia, Hortul. S. hypnoides Aitômi, Haw. enum. sax. p. 328. S. Sponihemica, Gmel. fl. bad. 2. p. 224. ATAL. ß, muscosa (D. Don, l. c.) plant one half smaller and slenderer; segments of leaves smaller; flowers smaller. ATAL. H. Native of the Alps of Scotland.

Var. ß, puleghella (D. Don, l. c.) plant more robust; surculi thicker and stiffer, and more crowded; surculine leaves broader, with a furrow on the upper surface. ATAL. H. Native of the Alps of Scotland.


Condensed Saxifrage. Fl. May, in Scotland. Pl. 1 foot. 164 S. elongella (Smith, in Lin. soc. trans. 10. p. 340. engl. bot. 2277. exclusive of the synonyme of Donn, cant.) surculi short; erect; radical leaves 5-leaflet or trifid; surculine leaves for the most part tridentate; teeth mucronate; calyceine segments ovate, awned; petals obovate. ATAL. H. Native of Scotland, on humid rocks near Linrathen, in Angussia. S. hypnoides a, elongella, Ser. in D. C. prod. 4. p. 30. Herb quite glabrous, and densely tufted before flowering, but afterwards becoming loose and rather villous. Stems erect, nearly naked, 2-3-flowered, smoothish. Petioles slender, dilated. Peduncles very long, 1-flowered, best with glandular-hairs. Petals white, triple-nerved; lateral nerves curved, branched; middle one simple, straight.

Longish-stalked Saxifrage. Fl. Apr. May. Scot. Pl. ½ ft. 165 S. leptophylla (Pers. syn. 1. p. 490.) surculi procumbent, very long, slender; radical leaves 5-parted; surculine ones 3-parted or undivided; segments linear-lanceolate, very acute, divaricate; calyceine segments oblong-ovate; petals stipulate, quite entire. ATAL. H. Native of the Alps of Switzerland, and on the mountains of Wales. S. retròfléxâ, Hortul. Plant quite glabrous, and densely tufted before flowering, but afterwards loose, diffuse, and surculose, and beset with viscid villi. Stems numerous, flexuous, smoothish, shining, many-flowered. Leaves without any buds in the axils. Segments of leaves awned. Flowers drooping, white. Peduncles elongated, and are as well as the calyces beset with glandular pili. Calyceine segments ending in a reflexed mucron each. Petals triple-nerved, with the nerves simple.

Var. ß, angustifida (D. Don, in Lin. trans. 13. p. 450.) plant slenderer; segments of leaves narrower. ATAL. H. Native of Wales, on the mountains.

Slesnder-leaved Saxifrage. Fl. May, Ju. Wales. Pl. ½ ft. 166 S. letevires (D. Don, in Lin. trans. 13. p. 451.) surculi procumbent, elongated; leaves 3 or 3-parted; segments linear, acute; calyceine segments lanceolate, mucronate; petals stipulate, emarginate. ATAL. H. Native of the Alps of Scotland, on the loftiest rocks, in moist situations, in Angussia and Aberdeenshire, and on the hills to the north of Loch Lomond. Herb pale green, densely tufted before flowering, and quite glabrous, but afterwards becoming loose, diffuse, and surculose, and beset with long scattered villi. Surculis destitute of buds in the axils of the leaves. Stems erect, few-leaved, usually 3-flowered, rarely 1-flowered. Radical leaves 5-parted: surculine ones 3-parted: lower calyceal ones 5-parted: upper calyceal ones undivided, lanceolate, and acuminate. Flowers campanulate, white, drooping while in the bud. Petals triple-nerved; nerves simple, green.


§ 3. Annual or biennial plants, without surculi. Roots fibrous. Petals usually emarginate.

167 S. arachnoidea (Sternh. rev. sax. p. 23. t. 15. and in Surm, deutschl. fl. 35. no. 7, with a figure) stems weak, diffuse, much branched, very pilose; leaves very thin, somewhat cuneate, obovate, 3-5-nerved; flowers on long peduncles: peduncles divericate: lobes of calyx ovate-lanceolate, shorter than the tube, which is rather villous; petals ovate, entire, hardly exceeding the calyx; styles much shorter than the calyx, parallel. ATAL. (Sternbh.) ß. (Ser.) H. Native of Tyrol, in shady rocky places. Moretti, sax. p. 28. Lobátarea arachnoidea, Haw. enum. sax. p. 20. Flowers white.


Gg

FIG. 46.
SAXIFRACEAE.  I. Saxifraga.

diffusely branched, furnished with glandulariferous hairs. Stems erect, branched at the base; branches elongated, fastigate. Radical leaves on long petioles, somewhat reniform at the base; lobes obtuse; cauline leaves all petiolate; upper cauline leaves undivided, acute at both ends: lower cauline ones tripartite; lobes acute. Peduncles and calyces clothed with viscid down. Flowers white, much larger than those of S. tridactylites. Petals triple nerves; nerved simple.

Rock Saxifrage. Fl. April, May. Clt. 1752. Pl. \( \frac{1}{4} \) to \( \frac{1}{2} \) ft. 159 S. tridactylites (Lin. spec. 578.) primordial leaves entire, and spatulate: cauline ones quinquefid or trifid; calyx urn-formed; with very short, obtuse segments; petals obovate, truncate at the apex. O. H. Native of Europe, in dry sandy places, and on walls and roofs of houses; plentiful in Britain. Curt. Lond. fasc. 2. t. 28. Smith, engl. bot. t. 591. Sternb. sax. p. 44. t. 17. and in Sturm, deutschl. fl. 33. no. 15. S. amnua, Lapeyr. pyr. sax. p. 53. Tridactylites amnua, Haw. enum. sax. p. 21. — Moris. hist. 3. p. 478. sect. 12. t. 9. f. 31. Stems erect, branched, flexuous, many-flowered, furnished with short glandulariferous hairs. Radical leaves crowded. Peduncles ciliated with glands. Peduncles and calyces clothed with viscid down. Flowers smaller, white; petals with 3 nerves.

S. prostrata (Caudin, fl. helv. 3. p. 116.) leaves all oblong-spatulate; stem simple, few-flowered. O. H. Native of Switzerland, Italy, France, &c. S. esilis, Poll. veron. 2. p. 31.

Three-fingered-leaved or Wall Saxifrage. Fl. April, May. Britain. Pl. \( \frac{1}{4} \) to \( \frac{1}{2} \) ft. 170 S. contraversa (Sternb. sax. p. 43. t. 16.) plant beset with glandulariferous viscid hairs; radical leaves crowded, 3-5-toothed, or sometimes nearly entire; calyceal lobes ovate, shorter than the tube at maturity; petals obcordate, larger than the calyx; styles much divaricate, longer than the calyx. O. H. Native of the Alps of Lapland, Norway, Savoy, Carinthia, Piedmont, Dauphiny, Carpathian Mountains, and the Pyrenees. S. tridactylites var. oov. — Lin. spec. ed. 1. p. 104. S. adscendens, Lin. spec. p. 570. mut. p. 884. All. pedem. p. 1537. t. 22. f. 3. Wulf. in Jacq. coll. 1. p. 197. t. 11-12. f. 1-2. S. petrae'a, Gunn. norv. p. 427. t. 9. f. 1-3. exclusive of the syn. and description of Lin. Fl. dan. t. 680. D. C. fil. fr. 4. p. 370. S. hypnoides, Scop. carn. 499. t. 16. Gaudin, fl. helv. 3. p. 117. S. Scopoli, Vill. daphn. 4. p. 673. S. petrae'a integroflora, Gaudin, in Meisn. anz. 1818. p. 67. fl. helv. 3. p. 117. var. \( \beta \). S. contraversa \( \alpha \) and \( \beta \), Ser. in D. C. prod. 4. p. 34. S. tridactylites \( \beta \), alpicola, D. Don, in Lin. trans. 13. p. 441. Tridactylites petrae'a, Haw. enum. sax. p. 22. Flowers corymbose, white, twice the size of those of S. tridactylites. The plant is much larger than S. tridactylites; the radical leaves more crowded; the cauline ones more numerous, and for the most part 5-toothed.

Var. \( \beta \), littoralis (Ser. in D. C. prod. 4. p. 34.) plant small, very leafy; leaves usually quinquefid; petets entire. O. H. In humid places on the banks of Lake Leman, S. petrae'a littoralis \( \epsilon \), Gaudin, fl. helv. 3. p. 117.


Contrary-turned Saxifrage. Fl. May, Ju. Clt. 1800. Pl. \( \frac{1}{4} \) ft. Cult. Saxifraga is a most extensive genus of pretty alpine plants, the greater part of which are well adapted for rockwork, or to be grown on the sides of naked banks to hide the surface. Many of the more rare and tender kinds require to be grown in pots, in light sandy soil, and placed among other alpine plants, so that they may be protected by a frame in winter. The species belonging to sections Micranthes and Hirculus grow best in a peat soil, which should be kept rather moist. The species belonging to the section Porphyroculas are so very pretty little plants as to be worth growing in pots for ornament, being clothed with elegant little red flowers early in spring: a mixture of peat and sand suits them well. S. sarmentosa does best in a greenhouse. All the species are easily increased by dividing. S. ligulata, cordifolia, and erastisoli are strong growing plants, well fitted for ornamenting flower-borders.

II. ERIOGYNA. III. LEPTARRHENEA.

ERIOGYNA (from \( \epsilon \) rao, erian, wool, and \( \gamma \) ryn, gyne, a female; in reference to the ovaries being woolly). Hook. in fl. bor. amer. 1. p. 255. t. 88.

LIN. Syst. Icosandra, Tetra-Hexagynia. Calyx turbinate, 5-cleft. Petals 5, hardly unguiculate. Stamens 20, inserted in the mouth of the tube, monadelphous at the base; anthers 2-celled, roundish. Ovaries 4-6, distinct from the calyx, and from each other, but connected by dense wool. Styles elongated, deciduous, filiform. Carpels 4-6, distinct, oblong, acute, recurved at the apex, opening lengthwise inside. Seeds dust-formed, pendulous, inserted towards the tops of the valves at the margins. Albumen wanting.—A perennial herb, native of North America, with the habit almost of Saxifraga cero-phylla; stoloniferous. Leaves very stiff, coriaceous, 1-nerved, quite glabrous, trifid; segments trifid or quadridif: lobules linear. Flowers white, disposed in racemes, for the most part bracteate; pedicels 1-flowered.

I. E. pectinata (Hook. l. c.). 2. H. Native of Behring's Straits; height of land upon the Rocky Mountains, on the west side, near the sources of the Columbia. Saxifraga pectinati, Pursh, fl. bor. sept. 1. p. 312. Sterile stems tufted, decumbent, stiff, stoloniferous. Lower leaves rosetulate, with 3 trifid segments: lower cauline ones with 3 bifid segments: upper cauline ones or bracteas trifid.

Pectinated-leaved Eriogyna. Pl. \( \frac{1}{4} \) foot.

Cult. This is a beautiful alpine plant. It should be grown in pots, in a mixture of peat and sand; and will be easily increased by dividing, or by cuttings.

III. LEPTARRHENA (from \( \alpha \) ptoev, lepto, slender, and \( \alpha \) ryn, archev, strong; plant strong and slender). R. Br. in chlarn. melv. p. 15. append. to Parry's 1st voy. p. 273. D. C. prod. 4. p. 48. Hook. fl. bor. amer. 1. p. 256. t. 89.

LIN. Syst. Decandria, Digynia. Calyx campanulate, short, 5-cleft (f. 47. a.), with a broad tube. Stamens 10, inserted in the throat of the tube; anthers 1-celled (f. 47. c.), 2-valved. Petals 5 (f. 47. b.), linear. Ovaries 2 (f. 47. c.), free, tapering into the styles, which are permanent. Stigmas obtuse. Carpella 2, opening lengthwise on the inside (f. 47. d.). Seeds sebiform, erect, inserted in the margins of the valves.—Herbs with a habit between Pyrola and those species of Saxifraga belonging to section Micranthes; inhabitants of cold places of North America. Scapes naked. Flowers disposed in racemose panicles. Leaves coriaceous, permanent, entire, coarsely serrated; petioles broad and sheathing.

I. L. pyrolifolia (R. Br. in Parry's 1st voy. append. p. 273. Hook. l. c.). 2. H. Native of the Island of Unalaska, Behring's Straits, height of land on the west side of the Rocky Mountains, in lat. 52°. L. amplexi-

Pyrolo-leaved Leptarrhena. Pl. ½ to 1 foot. Cult. See Erigynia above for culture and propagation.

IV. CHRYSOSPLENIUM (from chrysos, gold, and stenos, spleen, the spleen; in reference to the golden colour of the flowers, and the supposed virtue of the plant in diseases of the spleen). Tourn. inst. t. 60. Lin. gen. 558. Gárt. fruct. 1. p. 208. t. 44. f. 7. D. C. prod. 4. p. 48.

LIN. SYST. Octo-Decandra, Dígynia. Tube of calyx adhering to the ovary; limb 4-5-lobed (f. 48. a.): lobes obtuse. Stamens 8-10, alternating with the sepals, and opposite them. Styles 2. Capsule bissectile (f. 48. c. d.), 2-valved, at length 1-celled, many-seeded. Seeds very smooth, inserted towards the bottom of the capsule.—Perennial herbs. Leaves thickish, simple, petiole, toothed. Flowers somewhat corymbose, yellow.

1. C. alternifólium (Lin. spec. 560.) leaves alternate, reniformy cordate, crenately lobed; flowers corymbose, dichotomous. 2. H. Native of Europe, in moist shady places, and by the borders of shady rivulets, in Siberia and North America; in the woody and principally the barren country of British North America; to the extreme Arctic Islands, and on the Rocky Mountains; also in Kotzebue’s Sound. In many parts of the north of England, but not so common as C. oppositifólium, as in Yorkshire, Portland Heath, near Norwich, in Worcestershire; and in lowlands of Scotland. Smith, engl. bot. t. 54. Fl. dan. t. 366.—Moris. hist. p. 477. sect. 12. t. 8. f. 8. Stems usually 3-cornered. Flowers yellow. Roots having offsets, but not creeping.

Var. g, Silicícum (Ser. in D. C. prod. 4. p. 48.) stems and leaves smaller. 2. H. Native of Siberia, about the Baical, and of Dahuria. C. Silbíicum, Steph.? ex Fisch. in litt.


2 C. ovalifólium (Bieb. herb. ex Led. fl. ross. alt. ill. t. 404. fl. alt. 2. p. 115.) stems with many scattered leaves; leaves ovate-elliptic or elliptic, tapering into the petiole, crenately serrated or entire; corymb dichotomous, loose. 2. H. Native of the Altai region. Root creeping. Stem pilose below. Flowers yellow, solitary in the forks of the corymb.

3 C. oppositifólium (Lin. spec. p. 569.) floriferous stems erect; leaves opposite, reniformly sub-cuneate, crenated; flowers corymbose. 2. H. Native of Europe and America, in moist shady places, and by the sides of rivulets. In Britain, in many places, in like situations. Curt. Lond. 2. t. 27. Smith, engl. bot. 490. Gárt. fruct. 1. t. 44. f. 7. Oed. fl. dan. t. 365. Root creeping. Stems quadrangular. Flowers yellow.

Var. /, Scouleri (Hook. fl. bor. amer. 1. p. 242.) leaves profoundly crenately serrated. 2. H. Native of the north-west coast of America, on the banks of the Columbia river.


6 C. Nipale'nse (D. Don, prod. fl. nep. p. 210.) leaves opposite, orbicularly subcordate, crenately serrated, glabrous. 2. H. Native of the Alps of Nepal. Very nearly allied to C. oppositifólium, but differs in the leaves being more reniform, less manifestly crenated, and in the seeds being opaque, not shining. Leaves like those of Létula nana, but membranous. Flowers yellow.


7 C. nud'vèlète (Bunge, in Led. fl. ross. alt. ill. t. 405.) cauline leaves wanting: radical ones reniformy orbicular, and are as well as the floral ones, which are reniform, petiolate, and deeply lobed; flowers densely glomerate. 2. H. Native of Altaia, near springs at the foot of the Alps, about Chasian, near Tschetcheluchila, at the river Tscharsch. Root creeping, furnished with thick brown fibres. Plant quite glabrous, except sometimes on the under side of the leaves. Flowers greenish, much larger than those of C. alternifólium.

Naked-stemmed Golden Saxifrage. Pl. ½ to ¾ foot.

8 C. Kant'shat'chum (Fisch. in litt. ex D. C. prod. 4. p. 48.) stems erect, nearly naked, 2-leaved, the rest crowded near the flowers, cuneate, obtuse, somewhat crenated, glabrous. 2. H. Native of Kamtschatka.

Kant'shat'cha Golden Saxifrage. Pl. ½ foot.

Cult. A moist shaded situation is the best for the species of Chrysospleniun, as under the shade of trees or bushes, or behind a north wall; and they thrive best in peat soil. Easily propagated by dividing.

V. MITE'LLA (a diminutive of mitra, a mitre; the form of the fruit being somewhat like a mitre). Tourn. inst. 126. Lin. gen. 561. Gárt. fruct. 1. p. 208. t. 44. f. 6. Lam. ill. t. 373. D. C. prod. 4. p. 49.

LIN. SYST. Decándria, Digynia. Calyx campanulate, 5-lobed, rather adnate to the base of the ovary. Petals 5, inserted in the calyx, jagged or toothed, longer than the calyx. Stamens 10. Styles 2, short, joined together in one; stigmas hardly distinct. Capsule 1-celled, 2-valved, adhering to the base of the calyx a little way. Seeds numerous, erect, in the bottom of the capsule.—Perennial herbs. Leaves petiolate, cordate, mostly radical. Flowers on short pedicles, disposed in loose terminal racemes, white or red.

1 M. Dip'ylla (Lin. spec. p. 580.) radical leaves cordate, somewhat 3 or 5-lobed, dentately serrated, on long petioles; cauleine leaves 2, opposite, smaller, and nearly sessile; capsule joined with the calyx only at the base; petals pinnatifidly fringed.

2 H. Native of North America, in the United States; and Canada, about Quebec, Lake Huron, &c. Lam. ill. t. 373. f. 1. Gárt. fruct. 1. t. 44. f. 6. Schkühr, handb. t. 120. Ker. bot. reg. t. 166.—Menz. pug. t. 10. Flowers white.
Two-leaved Mitella. Fl. Apr. May. Cl. 1731. Pl. ½ to ¾ ft. 2 M. su'da (Linn. spec. 580.) plant usually stoloniferous; radical leaves reniformly cordate, thin, bluntly lobed, crenated, and somewhat ciliate; scapes slender, leafless; calyx spreading; petals pectinately jagged; ovarium joined to the calyx only at the very base. 2. H. Native of Canada, from Lake Huron to the Arctic Sea; and from Hudson's Bay to the Rocky Mountains; and of Siberia, at the river Lena. M. reniformis, Lam. ill. t. 573. f. 2. M. cordifolia, Lam. det. 4. p. 196. ill. t. 573. f. 3. Michx. fl. bor. amer. 1. p. 270. M. prostrata. Michx. fl. bor. amer. 1. p. 270.—Gmel. sil. 4. t. 68. f. 2. Flowers white. The plant here characterized is the acknowledged M. cordifolia of all American botanists. A comparison of it with the figure of Gmelin will show that it is the same with his species, and consequently the M. nuda, Lin., and among the numerous specimens gathered by travellers in North America, many throw out runners, which again bearing leaves and capsules, the plant becomes the M. prostrata of Michx.

Naked-stemmed Mitella. Fl. Apr. Ju. Cl. 1738. Pl. ½ to ¾ ft. 3 M. tri'nda (Graham, in edibn. phil. journ. June, 1829. Hook. fl. bor. amer. 1. p. 241. t. 82.) radical leaves cordate, bluntly lobed, crenated; scapes leafless; flowers pentandrous; calyx campanulate, with a spreading limb; petals trifid; ovary adhering to the calyx only at the base. 2. H. Native of North America, in alpine rivulets north of the Smoking River, on the east side of the Rocky Mountains, in lat. 56°, but rare. Plentiful in woody situations, on the low ridge of the Blue Mountains of Lewis and Clark's River, west of the Rocky Mountains, in lat. 46°. M. parviflora, Doug. mss. Flowers white. This species has the petals similar to those of Tellíma parviflora. Differs from the rest of the species in the petals being trifid, and in the stamens being only 5 instead of 10, opposite the lobes of the calyx. Perhaps a species of Drum'mondia.

Trifid-petalled Mitella. Fl. May. Cl. 1829. Pl. ½ to 1 ft. Cult. The species of Mitella are pretty plants, well suited for the front of flower Borders, or to grow on rockwork. They are readily increased by dividing. Any light soil suits them, although they grow most luxuriant in a peat soil.

VI. TELLÍMA (an anagram of Mitella; separated from it). R. Br. in Frankl. narr. journ. p. 766. verm. schrift. 1. p. 545. Doug. in bot. reg. 1178. Hook. fl. bor. amer. 1. p. 239. D. C. prod. 4. p. 49. LIN. SYS'T. Deca'dría, Digí'nia. Calyx adnate to the ovary at the very base, having the free part inrolled, ovate, and 5-toothed (f. 49. b.), and the adhering part conical. Petals 5 (f. 49. c.), inserted in the calyx, jagged. Stamens 10 (f. 49. a.). Styles 2-3, distinct from the base; stigmas subcapitate, angular. Capsule adnate to the calyx at the base: the other half superior and furnished with the permanent flower, 1-celled, 2-valved at the apex; placenta parietal, many seeded (f. 49. f.). This is an intermediate genus between Heuchera and Viá'lia. It differs from Mitella in the styles being distinct, and the different habitat. Perennial herbs. Leaves all radical, roundish, cordate, bluntly lobed, in T. parviflora compound, toothed, and hispid. Flowers of a dirty red colour, rather large, disposed in racemose spikes.

1 T. grandiflóra (Dougl. in bot. reg. t. 1178.) leaves cordate, lobed, dentately serrated; racemes elongated; petals obtuse, long-linear, pinnatifidly jagged; styles 2. 2. H. Native of the north-west coast of America, in shaly pine woods, near springs along the shore. Mitella grandiflora, Pursh. fl. amer. sept. 1. p. 314. This is a fine plant, with leaves as large as those of Mátia rotundifólia. Flowers reddish. Stem and pedioles generally thickly clothed with fulvous hairs.

Great-flowered Tellíma. Fl. April, May. Cl. 1826. Pl. 1 ft. 2 T. parviflóra (Hook. fl. bor. amer. 1. p. 239. t. 78. A.) plant scabrous from hairs; leaves terete; leaflets deeply pinnatifid; racemes short; petals unguiculate, trifid; styles 3. 2. H. Native of North Carolina. Abundant in light gravelly soils, under the shade of sapling pines. North Carolina; plentiful in low hills at the grand raptis of the Columbia; and also at Spoonican river. Root small, rather fusiform, more or less fibrous, and bearing tubers; tubers granular. Racemes terminal, curved. Flowers middle-sized, red. This is a curious and distinct plant, with something of the habit of slender specimens of Saxifraga granulata.


VII. DRUMMON'DIA (named after Thomas Drummond, who accompanied Capt. Franklin and Dr. Richardson in their last journey in North America). D. C. prod. 4. p. 49.—Mitella species, Graham.

LIN. SYS'T. Pentá'ndria, Digí'nia. Calyx with an obconical tube (f. 50. b.), adhering to the capsule a considerable way: limb 5-cleft: lobes triangular, valvate in aestivation (f. 50. a.), and at length reflexed. Petals 5, pectinately pinnatifid (f. 50. e.), alternating with the calycine lobes. Stamens 5, in front of the claws of the petals, nearly sessile. Stigmas 2, spreading, 2-lobed. Capsule 1-celled, 2-valved at the apex, bursting long before the seeds are mature (f. 50. d.). Seeds numerous, disposed along 2 opposite placenta.—An herb, with a habit between Mitella and Heuchéra. It differs from Mitella in the capsule adhering a greater length to the calyx, in the stamens being 5, not 10, and in the stigmas being spreading, not erect, and 2-lobed, not entire; and from Heuchéra in the calycine lobes being valvate, not imbricate in aestivation.


VIII. TIARELLA (a diminutive of tia'ra, a Persian diadem; in reference to the shape of the capsules). Lin. gen. no. 763. Juss. gen. p. 309. Lam. ill. t. 373. D. C. prod. 4. p. 50. LIN. SYS'T. Deca'dría, Digí'nia. Calyx 5-parted, permanent, adhering at the base to the ovarium: lobes obtuse. Petals 5, unguiculate, entire, inserted in the calyx, and alternating with the calycine lobes. Stamens 10. Styles 2, distinct. Ovarium 2-celled. Capsule 1-celled, adnate to the calyx at the base, mem-
branious, 2-valved; valves unequal, opening between the styles (one of the valves or carpels usually abortive). Seeds fixed to the bottom of the capsule, along the margins of the carpels or valves.—Perennial herbs, with the habit of Mitella. Stems erect, naked, or few-leaved. Leaves for the most part radical, petiolate. Rachemes terminal, simple; flowers distant, pedicellate; pedicels incurved pendulous when bearing the fruit. A very heterogenous genus, which may probably be hereafter divided.

§ 1. Leaves simple.

1 T. cordifolia (Lin. spec. p. 580.) stems leafless; stolons creeping; leaves cordate, acute, deeply lobed, serrated: teeth mucronate; rachemes simple. 2. H. Native of Canada, about Montreal; and also of the north of Asia. Sims. bot. mag. 1589. Lam. ill. t. 373. f. 1. Flowers white. Habit of Mitella diphylla.

Cordate-leaved Tiarella. Fl. April, May. Clt. 1731. Pl. ½ ft. 2 T. unifoliata (Hook. fl. bor. amer. 1. p. 238. t. 81.) plant smoothish; stems furnished with one leaf; leaves all petiolate, triangularly cordate, bluntly toothed: teeth mucronate; panicle loose; flowers drooping; calyx campanulate; petals abortive. 2. H. Native of North America, on the height of land on the Rocky Mountains, near the source of the Columbia, and at Portage river. Stems rather pubescent above. Leaves 3-5-lobed; lobes acutely toothed. This species has much the habit of Heuchéra glabrā, and is probably a decadrous species of that genus. The petals, if any exist, must be very fugacious, as none has been seen.

One-leaved Tiarella. Pl. 1 foot.

3 T. Menzie'sii (Pursh, fl. amer. sept. 1. p. 313.) leaves oval-cordate, acute, toothed: cauline ones alternate, distant; racemes filiform, somewhat spicate; calyx tubular. 2. H. Native of the north west coast of America.


4 T. alternifollya (Fisch. in litt. ex D. C. prod. 4. p. 59.) stem leafy; lower leaves cordate; upper ones truncate at the base, all having 3-7 short lobes, and these lobes are lobed again, sharply and coarsely toothed; lobes of calyx oblong, erect. 2. H. Native of the north of Asia, in the island of Sitka. Radical leaves on long, upper ones on short petioles. Flowers twice the size of those of T. polyphylla.

Alternate-leaved Tiarella. Pl. 1 foot.

5 T. polyphylla (D. Don, fl. nep. p. 210.) stem furnished with 3 leaves, beset with glandular hairs; leaves cordate, 3-5-lobed, sharply serrated, pilose on both surfaces; lobes of calyx lanceolate, mucronate, pressed to the fruit; racemes loose. 2. F. Native of Nipaul. Habit of T. cordifolia or Mitella diphylla. Racemes many flowered. Fruit pendulous.

Many-leaved Tiarella. Fl. April, May. Clt. 1820. Pl. ½ to 1 foot.

§ 2. Leaves compound.—Blondia, Neck. clm. 2. p. 115.

6 T. trifoliata (Lin. amoen. acad. 2. p. 355. spec. p. 580.) stem furnished with 1 or 2 leaves, rarely naked; leaves all trifoliat: leaflets rhomboid-ovate, deeply toothed: teeth mucronate; panicle loose; flowers drooping; calyx small, campanulate; petals obovate, lanceolate. 2. H. Native of the north of Asia, and the north-west coast of America; common on the coast, and on the Rocky Mountains, on the west side of the ridge. The specimens from the Rocky Mountains are glabrous, and many of those from the coast, while others are more or less pubescent. Two panielles are often produced on the same stem.

Trifoliate Tiarella. Pl. 1 foot.

7 T. laciniata (Hook. fl. bor. amer. 1. p. 239. t. 77.) plant rough and hairy; stems usually furnished with 3 leaves; leaves trifoliat: middle leaflet trifid; lateral ones bifid, all broadly lanceolate, and pinnatifidly jagged; panicle loose; flowers drooping; calyx short, campanulate; petals wanting? 2. H. Native of the north-west coast of America. Roots rather horizontal. The petals, if any, must be very fugacious, as none have been seen.

Jagged-leaved Tiarella. Pl. ½ to 1 foot.

8 T. stenophylla (Presl, in reliq. Hænk. 2. p. 45.) stems 1-leaved, and are, as well as the branches, clothed with glandular pubescence; radical leaves unknown: cauline one trifoliat: leaflets glabrous, deeply lobed, mucronately toothed, acute: lateral leaflets oblong, oblong-ovate, middle one acute at the base; petals subulate, very narrow; capsules erect, dotted. 2. H. Native of North Sound. Panicle many flowered. Narrow-panicated Tiarella. Pl. 1 foot.

Cult. For culture and propagation see Mitella, p. 228.


Lin. syst. Octo-Decandra, Bigynia. Calyx deeply 4-5-parted, coloured; segments oval, obtuse, concave. Petals wanting. Stamens 8-10, opposite the calyceous lobes; filaments subulate; anthers spherical, 2-celled. Styles 2; stigmas 2, truncate, pruinose. Capsule superior, biorstrate, many-seeded. Petals in robust pilose herbs, with the appearance of Spirea Ariaœus, inhabiting the banks of rivulets. Leaves large, binate; leaflets coarsely serrated; petals much dilated at the base. Flowers small, of a greenish yellow-colour, in spicate racemes, which are disposed in panicles.

1 A. rivulær (Hamilt. l. c.) flowers 4-cleft, octandrous; leaves binate; leaflets ovate, doubly serrated, villous beneath, and on the petiole. 2. H. Native of Nipaul, at Narrainhetti. Bracteas usually jagged at the apex.

Rivulet Astilbe. Pl. 3 feet.

2 A. deca'ndra (D. Don, prod. fl. nep. p. 211.) flowers 5-cleft, deciduous; leaves binate; leaflets cordate, deeply lobed and serrated, beset with glandular pilis beneath, and on the petiole. 2. H. Native of North America. Tiarella biterà, Vent. malm. t. 51. The petals are said to be 5, and linear, in this plant, not as in the first species wanting. Leaflets ovate, broadly and bluntly serrated.


§ 2. Stamens equal in number to the petals, or sometimes fewer, alternating with the petals.


1 H. America'na (Lin. spec. 328.) plant clothed with clammy pubescence, scapes and leaves roughish; leaves on long petioles, somewhat 3-5-lobed, toothed; thryse elongated, panicked; caly- cines lobes short, obtuse; petals lanceolate, length of the calyx:
SAXIFRAGACEae.

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2 H. caulescens (Pursh, fl. amer. sept. 1. p. 188.) plant suffrutescent at the base; lower part of scape and petals pilose; leaves glabrous above, but pilose at the nerves beneath, acutely lobed, ciliated, toothed; teeth acute, mucronate; calyx short, the length of the calyx; petals exserted.

2 H. Native of Carolina, on the mountains, and of Kentschata. Petals white.


9 H. Barbarossa (Prel, in reliq. Haenk. 2. p. 56.) plant suffrutescent at the base; floriferous stems clothed with rufous villi; petals very villous from rufous hairs; leaves roundish-cordate, bluntly lobed, mucronately toothed, ciliated, puberulous; panicle loose, many flowered; petals linear-oblong, longer than the calyx; stamens exserted.

2 H. Native of Nootka Sound. Plant small.

Barbarossa Heuchera. Pl. 1 foot.

10 H. cylindrica (Doug. fl. Hook. fl. amer. 1. p. 184.) scape naked, and are, as well as the petals, hairy; leaves cordate, obtuse, and roundly lobed, ciliated, truncate at the base, smoothish above, but very pilose at the veins beneath; teeth piliferous; panicule compact, cylindric, rather spicate; flowers rather large, apetalous; stamens inclosed.

2 H. Native of North America, on the declivities of low hills, and on the steep banks of streams on the west side of the Rocky Mountains. Like H. Richardsonii, but differs from it in the truncate base of the leaves, and in the spicate panicle, by having less oblique calyces, very short stamens, and by the absence of petals.

Cylindric-spiked Heuchera. Pl. 1 to 1 1/2 foot.

11 H. Richardsonii (R. Br. in Franklin, 1st journ. ed. 1. append. p. 766. t. 29.) scape naked, and are, as well as the petals, rather pilose; leaves cordate, with a deep recess, bluntly lobed, ciliated, crested, rather pilose on both surfaces: teeth piliferous; panicule loose, thyrsoid; flowers large; mouth of calyx oblique; petals obvolutely cuneated, hardly longer than the calyx; stamens a little exserted.

2 H. Native of North America, on the dry banks of rivers from lat. 54° to 64°.


12 H. Menziesii (Hook. fl. bor. amer. 1. p. 257. t. 80.) plant hispid from pili; stems leafy, leaves cordate, acutely lobed, deeply serrated; flowers racemose, apetalous; calyx cylindrically funicel-shaped; stamens exserted; ovary free. 2 H. Native of the north-west coast of America; at Banks's Isles, and from the coast of Columbia to Puget's Sound. Tiarella Menziesii? Pursh. fl. amer. sept. 1. p. 313. Racemes terminal, elongated, solitary, many flowered. Stamin 3, exserted. Petals 5, linear, reflexed. (f. 51.)

FIG. 51.

Far. 1; plant less hairy. 2 H. Native along with the species, in shady woods. H. triumf, Dong. ex Hook. 1. c. Monticola, Heuchera. Pl. 1 to 2 feet.

13 H. braezelanae (Ser. in D. C. prod. 4. p. 52.) plant pubescent; scape racemose; leaves orbicularly cordate, serrately cut: teeth mucronate; flowers bracteate; petals narrow, hardly

stamens much exserted.


There is a variety of this species having 2 of the petals longer than the rest. Flowers reddish. Perhaps H. reniformis and H. glauces, Rafin. med. fl. 1. p. 244. are not distinct from this.

Tar. 1, glabriuscula (Schultes, syst. 6. p. 216.) leaves smoothish; panicle rather crowded.

Far. 2, foliosa (Moricand, ms.) scapes furnished with a few long distant leaves. Native of Peru.


2 H. Divaricata (Fisch. in litt. ex D. C. prod. 4. p. 51.) scapes naked, glabrous; leaves glabrous, somewhat 5-lobed; lobes toothed: teeth mucronate; branches of panicle divaricate; teeth of calyx bluntish; petals lanceolate, acute. 2 H. Native of the north of Asia, in the islands of Kadiak and Sitka; also in Kentschata.

Divaricate Heuchera. Pl. 1 1/2 foot.

3 H. Pumisca (Pursh, fl. amer. sept. 1. p. 187.) plant covered with powder down; lower part of scape and under side of leaves glabrous; leaves somewhat acutely lobed, toothed; teeth rounded, mucronate; branches of panicle short, crowded with flowers; calyx broad, campanulate; petals spatulate, longer than the calyx; stamens exserted.

2 H. Native from Pennsylvania to Virginia, on the Blue Mountains. H. pulvulenta, Rafin. med. bot. 1. p. 213. Petals pale red, variegated with yellow. Flowers larger than in many other species.


4 H. Nuda (Pursh, fl. amer. sept. 1. p. 188.) plant hispid and sebaceous; scapes, petioles, and under side of leaves glabrous; leaves acutely lobed, toothed, hispid from vili above: teeth short, rather retuse, mucronate; branches of panicle few-flowered; calyx middle-sized, with acutish lobes; petals spatulate, length of calyx; stamens exserted.

2 H. Native of Virginia and Carolina, on high mountains. Flowers reddish.

Hispid Heuchera. Fl. May, June. C1. 1826. Pl. 2 to 3 ft.

5 H. microstachia (Doug. fl. in bot. reg. 1302.) lower part of scape and petioles beset with long fulvous hairs; leaves roundish-cordate, nearly naked, bluntly lobed, crenate: leaves mucronate; lower bracteae foliaceous, cut: upper ones setaceous; panicle loose; petioles linear, one-half shorter than the long exserted stamens.

2 H. Native of the north-west coast of America; on the steep rocky banks of the Columbia, near the Grand Rapids. Flowers greenish-yellow.


6 H. Villosa (Michx. fl. bor. amer. 1. p. 172.) lower part of scape and petioles beset with deflexed soft hairs; leaves cordate, acutely lobed, mucronately serrated, a little cut, nearly naked above, but very villous on the nerves beneath; panicle loose; peduncles caipillary, dichotomous; bracteae linear, ciliated; flowers small; petioles very long, narrow-spatulate, and are, as well as the stamens, much exserted.

2 H. Native of Upper Canada, and on the higher mountains of Virginia and Carolina. The leaves are very different from those of H. Americana, the flowers are smaller, and the petals regularly long and narrow, with few.


7 H. Glabra (Willk. in Schultes, syst. 6. p. 216.) scape leafy; leaves cordate, acutely lobed, glabrous, mucronate and acutely toothed; lower stem ones or bracteas toothed; panicle loose; flowers small; calyx pubescent; petals linear; stamens exserted.

2 H. Native of the north-west coast of America; Nootka, in the vicinity of the Columbia river; Rocky Mountains, at Providence and Portage rivers. Hook. fl. bor. amer.
longer than the calyx; stamens not exerted. 2. H. Native of North America, on the Rocky Mountains. **Siadella** bracteata, Torrey, in Ann. Lyc. 2. p. 204. Habit of a species of *Saxifraga*.

**Bracteolate-flowered Heuchera.** Pl. 1 foot.

14 H. LONGIFOLIA (Moc. pl. nooth. med. with a figure, ex D. C. prod. 4. p. 52.) scape pubescent; panicle secedum; petals linear, revolute at the apex, longer than the calyx.  2. H. Native of the north-west coast of America. Lobes of leaves broad, rather distinct, acutely toothed. Petals and styles white.

**Long-petalled Heuchera.** Pl. 1 foot.

15 H. ACERIFOLIA (Rafin. med. fl. 1, p. 211. t. 49.) petioles hairy; leaves smooth, glaucous beneath, acutely 5-lobed, unequally toothed; teeth mucronate; scapes smooth; panicle elongated, loose; petals short; stamens exerted.  2. H. Native of North America, on hills and in the fissures of rocks, in Kentucky, Tennessee; and west of Virginia, Maryland, and Ohio, &c.

**Maple-leaved Heuchera.** Pl. 1 foot.

16 H. squamosa (Rafin. med. fl. p. 244.) petioles pilose; leaves rather hairy, ciliated, cordate, acutely 7-lobed, dentilcated, glaucous beneath; scape pilose, furnished with distant ovate scales; panicle short, oval, crowded, scaly; pedicels short; lobes of calyx obtuse; stamens exerted.  2. H. Native on the mountains of Maryland, Virginia, and Kentucky. Perhaps the same as H. bracteata.

**Scaly Heuchera.** Pl. 1 foot.

**Cult.** The species of *Heuchera* thrive in any light garden soil, and are readily increased by dividing at the roots. None of the species are showy.


**Lin. syst. Triandra, Trigynia.** Tube of calyx turbinate, adnate to the ovary; limb truncate, with 2 triangular acuminate nearly opposite teeth. Bracteoles linear, adnate to the tube of the calyx. Petals 5 (f. 52. c.), (8-10 ex Forst.) linear-oblong. Stamens 3 (f. 52. f.), short, alternating with the petals. Styles 3 (f. 52. b.) -5, filiform. Ovarium 2-5-celled. Ovula numerous, fixed to the top of the cells. Fruit capsular.-A nearly stemless herb, with the habit of *Saxifraga caespitosa*. Stems tufted. Leaves alternate, linear, oblong, permanent, imbricated, thick, glabrous, woolly in the axils. Flowers terminal, sessile, solitary, white. Perhaps the petals are 6, and the stamens 6, 3 of them antheriferous, and the other 3 converted into petals. 1 D. MAGELLANICA (Forst. t. 1. c.)  2. H. Native of the Straits of Magellan, on humid rocks. Lam. ill. t. 51. Polycarpum Magellanicum, Lin. fil. suppl. 115.

**Magellan Donatia.** Pl. ½ fl. **Cult.** This plant will require to be grown in a small pot, well drained, in a mixture of sand, peat and loam; and placed among other alpine plants. It will be easily increased by dividing.

XII. LEPUROPETALUM (from λεπυρων, lepiron, a little scale, and petalos, petalon, a petal; in reference to the small scale-formed petals). Elliot, sketch 1. p. 370. D. C. prod. 4. p. 53.


1 L. SPATULA.TUM (Ell. t. c.)  2. F. Native of North America, in Georgia, in shady places. Pyxidanthéra spatulata, Muhl. cat.

**Spatulate-leaved Lepuropetalum.** Pl. ½ foot.

**Cult.** See Donatia above for culture and propagation.


**Lin. syst. Pentándria, Digynia.** Tube of calyx adhering to the ovum: limb 5-parted, permanent, valvate in aestivation. Petals 5, spreading, undivided, shorter than the calyx. Stamens 5: anthers versatile. Styles 2, capitate at the apex. Capsule 1-celled, 2-valved, truncate at the apex, 5-furrowed, crowned by the limb of the calyx, many seeded; placenta loose, hanging from the top of the cavity of the seed. Seeds convex on the outside, and concave on the inside.—Rather villous somewhat dichotomous herbs. Leaves opposite, exstipulate, linear or lanceolate. Flowers white, axillary, pedicellate; pedicels twining, 1-flowered, short.

* African species.

1 V. CAPEensis (Thumb. fl. cap. p. 246.) leaves linear or narrow-lanceolate; branches velvety at the top; pedicels twining, 1-flowered; styles exerted; capsules oblong.  2. G. Native of the Cape of Good Hope. Russel Capensis, Lin. fil. suppl. p. 175. Plant almost without a habit of a *Silene*, from ¼ to ½ foot high. Flowers white.

**Cape Vahila.** Pl. ¾ to 1 foot.

2 V. WELDENS (Reich, hort. bot. t. 91.) leaves ovate, acute; pedicels twining, 1-flowered; capsule globose.  0. H. Native of Upper Egypt, of Nubia near Dongolab; and of Senegal. Bistella ginniwolera, Caill. and Delil. pl. afr. p. 97. t. 63. f. 2. A much branched herb, beset with glandular hairs. Flowers white.

**Welden's Vahila.** Pl. ½ to ¾ foot.

3 V. RAMOSISSIMA (Alph. D. C. diss. med. ex D. C. prod. 4. p. 54.) stem much branched, hairy: hairs bearing viscid glands at the apex; leaves linear, pubescent; peduncles 2-flowered, shorter than the leaves; capsule ovate.  0. H. Native of Senegal. Flowers white. Habit of a *Silene* or *Arvensia*.

**Much-branched Vahila.** Pl. ½ to ¾ foot.

4 V. SILENOIDES (Alph. D. C. diss. med. ex D. C. prod. 4. p. 54.) stem branched, clothed with soft hairs; leaves linear, pubescent; peduncles 2-flowered, shorter than the leaves; capsule globose.  0. H. Native of the Cape Verd Islands. Flowers white.

**Catchfly-like Vahila.** Pl. ½ foot.

5 V. TOMETOSA (Alph. D. C. diss. med. ex D. C. prod. 4. p. 54.) stem branched, tomentose; leaves linear-lanceolate, rather hairy; peduncles 2-flowered, shorter than the leaves: flowers on short pedicels; capsule nearly globose.  0. H. Native of the north of Africa, in the kingdom of Cayor. Flowers white.
Tomentose Vahlia. Pl. ½ to ¾ foot.

** Asian species.**

6 V. Oldenlandiæ (D.C. prod. 4, p. 54.) stem erect; leaves linear, pubescent; peduncles axillary, 2-colored, shorter than the leaves. Ø. F. Native of Tranquebar. Oldenlandia pentándra, Retz, obs. 4. p. 22. Heuchéra dichotoma, Murr. comm. goett. 1772. p. 64. f. 1. Oldenlandia dichotoma, Spreng, pag. 2. p. 36. Flowers white. Perhaps Oldenlandia biloba, Roth, nov. spec. 97, but not of Linn. is sufficiently distinct from this; there are varieties of it with 4-5-parted flowers.

Oldenlandia Vahlia. Pl. 3 foot.

7 V. sessileflora (D.C. prod. 4, p. 54.) stems decumbent; leaves lanceolate; flowers axillary, sessile. Ø. H. Native of Tranquebar. Oldenlandia digyna, Retz, obs. p. 23. Oldenlandia sessileflora, Smith in Rees' cycl. vol. 25, no. 2. Flowers pentapetalous, dignous, white.

Sessile-flowered Vahlia. Pl. decumbent.

Obs. The Oldenlandia depressa of Willd. and Smith will probably make an eighth species to this genus when properly examined.

Cult. The seeds of all the species should be reared on a hot-bed; and in the month of May, when the plants will have obtained a considerable size, they may be planted out in the open border, in a warm sheltered situation. The F. Capensis, as being a herbaceous perennial shrub, will require the treatment of other green-house plants.

XIV. Cryptopetalum (from cryptos, hidden, and πεταλον, petals, a petal; petals minute, inclosed in the calyx). Hook. et Arn. in bot. misc. 3. p. 254.

Lin. syst. Penádustria, Trigynia. Calyx turbinate, 5-lobed, green: segments ovate, acute, spreading. Petals 5, inserted in the tube of the calyx, and alternating with its segments, inclosed, minute, spatulate. Stamens 5, inserted in the tube of the calyx, small, and almost inclosed, alternating with the petals; filaments filiform; anthers minute, roundish, orange-coloured, 2-celled. Ovarium subglobose, with the lower part adhering to the calyx: upper part free, 1-celled; placenta free, parietal, linear, divaricately bilamellate, many ovulate; ovula very slender, membranous. Styles 3, short, hardly united at the base; stigmas minutely papillose. Capsule globose, inclosed in the permanent calyx, 1-celled, opening at the cells, and 3-valved in the free part; each of the valves terminated by a permanent style. Seeds numerous, pale, oval, obtuse at both ends, dotted; albumen thin, fleshy. Embryo straight, central.—A small annual smooth herb, about half an inch high. Stems erect, dichotomous, branched; branches divaricate. Leaves alternate, spatulate, quite entire, fleshy, hardly nervèd. Flowers terminal, large for the size of the plant, emulating those of Chrysopélinum.

1 C. penillum (Hook. et Arn. l. c.) Ø. H. Native of Chili, at Quinanco. This curious plant is placed at the end of Saxifragaceae, because it seems more nearly allied to that order than to any other; it agrees with Chrysopélinum in many particulars.

Small Cryptopetalum. Pl. ½ inch.

Cult. Sow the seed in a small pot filled with a mixture of peat and sand.

Tribe II.

HYDRA'NGEA (plants agreeing with Hydrangea in being shrubby). D.C. prod. 4, p. 13. Shrubs, with opposite simple exstipulate leaves. Flowers disposed in corymbs, having 5 petals, 10 stamens, and 2-3 styles; outer ones, and sometimes all, are often sterile; these sterile ones are more ample and dilated than the fertile ones.

XV. HYDRA'NGEA (from υδρος, hydor, water, and αγγειον, aggéion, a vessel; some of the species grow in water, and the capsule has been compared to a cup). Lin. gen. 557. Geert. fruct. 1. p. 150. t. 50. f. 7. Lam. ill. t. 370. D.C. prod. 4. p. 13.—Hydrangea and Hortensia, Juss.

Lin. syst. Decondria, Bi-trigynia. Flowers usually different (f. 53, a. b.), but some of them are fertile and hermaphrodite (f. 53, b.). Tube of calyx hemispherical, 10-ribbed, rather truncate, adnate to the ovary; limb permanent, 5-toothed (f. 53, b.). Petals 5, regular. Stamens 10. Styles 2 (f. 53, c.), distinct. Capsule 2-celled, with introflexed valves, crowned by the teeth of the calyx and styles (f. 53, b. c.), flatish at the top, opening by a hole between the styles. Seeds reticulated, numerous.—Shrubs, with opposite leaves. Flowers corymbose, red or yellow, but usually white: the marginal ones sterile, and large, in consequence of the teeth of the calyx being dilated into broad petal-like coloured segments, the rest of the flower having the other parts abortive.

* Species natives of America.

1 H. arbo'rescens (Lin. spec. p. 568.) leaves ovate, rather cordate: superior ones lanceolate, coarsely toothed, pale and puberulous beneath; corymbs flatish; flowers nearly all fertile; alabastra obtuse. Ø. H. Native from Pennsylvania to Virginia. Flowers white, small, having an agreeable odour.


Var. b, discolor (Ser. l. c.) leaves almost white beneath from tomentum.


2 H. corda'ta (Parsh, fl. amer. sept. 1. p. 399. of the synonyme of Michx.) leaves broadly ovate, acuminated, rather cordate at the base, coarsely toothed, glabrous beneath; flowers all fertile. Ø. H. Native of Carolina, on the mountains, and on the banks of the Missouri above St. Louis. Wats. destr. brit. t. 42. Flowers small, white, sweet-scented. According to Torrey, this is merely a variety of H. arboréscens.


3 H. Pervu'nia (Moric. mss. with a figure, ex D.C. prod. 4, p. 14.) leaves oval, loosely serrated, coriaceous, reticulately veined, glabrous, rustily beneath, at the nerves, and on the petals; young branches and peduncles clothed with purplish tomentum; outer flowers of the corymb large and sterile; inner ones hermaphrodite and petandrous. Ø. G. Native of Peru, near Huayaqapi. Perhaps a species of Cornúdia, and probably C. Pervu'nia.

Pervu'nia Hydrangea. Shrub 4 to 6 feet.

4 H. nivea (Michx. fl. bor. amer. 1. p. 268.) leaves cordate, oval, acuminated, sharply toothed, clothed with white tomentum beneath, or pubescence; corymbs flatish; scapals of sterile flowers entire; alabastra depressed. Ø. H. Native of North America, about the Savannah river. Wats. destr. brit. t. 43. Lam. ill. t. 307. f. 2. H. radiata, Walt. fl. car. 251. ex Michx. but not of Smith. Flowers white, rather large.

Var. b, glabèlla (Ser. in D.C. prod. 4. p. 14.) leaves nearly glabrous beneath; flowers all fertile. Ø. H. This variety has probably originated from culture.

5 H. querchiifolia (Bartlam, trav. ed. germ. p. 336. t. 7. ex Willd. spec. 2. t. 634.) leaves large, ovate, sinuate lobed, and toothed, pilose beneath; coryms rather panicled, flat-topped; sepals of sterile flowers entire; alabastra depressed. F. H. Native of Florida. Sims, bot. mag. t. 975. H. radiata, Smith, icon. pict. p. 12. but not of Walt. Flowers white; sterile or outer ones of the coryms large.

* * * Species natives of Asia.

6 H. altissima (Wall. tent. fl. nep. 2. t. 50.) leaves ovate-lanceolate, acuminate, sharply serrated, almost glabrous above, but clothed with white tomentum beneath, as well as on the branches; coryms flatish, large; peduncles villous; sterile flowers few, glabrous; alabastra of fertile flowers nearly globose. F. H. Native of Nipaul, on the mountains. Flowers white; sepals of sterile flowers obovate, very blunt, quite entire. Styles 2, thick, diverging.

** Tallest Hydrangea. Shrub 4 to 6 feet.

7 H. vestita (Wall. tent. fl. nep. 2. t. 49.) leaves ovate-lanceolate, acuminate, sharply serrated, almost glabrous above, but clothed with white tomentum beneath, as well as on the branches; coryms flatish, large; peduncles villous; sterile flowers few, glabrous; alabastra of fertile flowers nearly globose. F. H. Native of Nipaul, on the mountains. Flowers white, rather large. Sepals of sterile flowers serrated. (f. 53.)


Var. b. fimbriata (Wall. 1. c.) sepals of sterile flowers obovate, acuminate, serrated. F. H. Native of Nipaul, on the higher mountains.

** Clothed Hydrangea. Shrub 4 to 6 feet.

8 H. aspera (Hamilt. ex D. Don, prod. fl. nep. p. 211.) leaves lanceolate, acuminate, sharply serrated, pubescent above, but densely clothed beneath with hoary tomentum, as well as on the branches; coryms paniculate, diffuse; peduncles villous; rays or sepals of sterile flowers obovate, mucronate, sharply serrated, pubescent; alabastra of fertile flowers globose. F. H. Native of Nipaul, in watery places at Narainhetty. Horténisias aspera, Hamilt. Leaves a hand long, and 2½ inches broad. Sterile flowers not near so large as those of the preceding species, white.


9 H. oblincoglossa (Bhum. bijdr. p. 920.) leaves oblong, acuminated, doubly toothed, glabrous above, but clothed with white tomentum beneath, as well as on the branches; coryms divaricate; sepals of sterile flowers oval, glabrous, serrated; fertile flowers containing 3-4 styles. F. G. Native of the western parts of Java, in woods on the higher mountains. Very like the two preceding species, but differs in the teeth of the leaves being unequal, and not so sharp.

** Oblong-leaved Hydrangea. Shrub 4 to 6 feet.


11 H. anomala (D. Don, prod. fl. nep. p. 211.) leaves ovate, acuminated, nearly naked, sinuate-crenated; pedicels and nerves pilose; cymes terminal, hairy; flowers uniform; rays or sepals of sterile flowers wanting. F. H. Native of Nipaul. Leaves 4 inches long, rounded at the base; pedicels an inch long. Flowers small. Styles very short, thick, recurved.

** Anomala Hydrangea. Shrub 3 to 6 feet.

12 H. Horténisias (Shld. in act. bom. 14. p. 688.) leaves ovate, acuminated, sinuate-crenated, acuminated; flowers disposed in ample corymbs or cymes, all diffused, with 4-5 segments; segments obovate-roundish, quite entire; fertile flowers very few, containing 2-3 styles. F. H. Native of China and Japan, but now cultivated almost every where in gardens for the sake of its beauty. Horténisias opuloides, Lam. dict. 3. p. 136. Dum. Cours. bot. cult. ed. 2. vol. 4. p. 345. Duham, ed. nov. 3. p. 97. t. 214. Hydrangea horténisias, Smith, icon. pict. 1. t. 12. Curt. bot. mag. 458. Horténisias speciosa, Pers. Primula mutabilis, Lour. eoh. p. 104. Viburnum serratum, Thumb. fl. jap. p. 124. ex Ramm. et Schultes, or Viburnum tomentosum, Thumb. ex Curt. but the descriptions of neither of these two plants agree with the present. The plant is called Tsuberdemi, i.e. globe-flowers, by the Japanese; and Fun-Dan Kwa by the Chinese. Flowers varying from rose-coloured to blue according to the soil in which the plant is grown; the sterile flowers are nearly always 4-cleft; but the fertile flowers are small and perfect. The plant is much valued on account of the great profusion of its very elegant flowers, which are monstrous, in the same manner as the Snow-ball Guelder Rose. It was introduced by Sir Joseph Banks in 1790. The plant was first called Peaulita by Commerson, in honour of Dr Hortence Lapeau.


13 H. Azisai (Shld. in act. bom. 14. p. 689.) leaves ovate, acuminated, attenuated at the base, crenately serrated; flowers disposed in cymes, diffused; corolline segments 4; F. H. Native of Japan, along with the preceding species. The cymes of flowers are very ample. Flowers for the most part greenish, rarely white. The plant is called Azisai by the Japanese, and Zu-kats-sen by the Chinese. There is a variety of it with variegated leaves, called Furi-Azisai by the Chinese.

** Azisai Hydrangea. Shrub 2 to 3 feet.

14 H. Jaráonka (Shld. 1. c. p. 689.) leaves ovate-oblong, acuminated, finely and glandularly serrated, quite glabrous on both surfaces; cymes crowded; flowers diffused; corolline segments 6-10, unequal, ovate-rhomboid. F. H. Native of Japan, where it is called Kakosuz. An elegant shrub, cultivated by the Japanese, about the size of the last.

Var. a. flowers red. Benkaku.

Var. b. flowers grey. Kombou.

** Japan Hydrangea. Shrub 2 to 3 feet.

15 H. Thunbergii (Shld. 1. c. p. 690.) leaves oblong, serrated, entire at the base, pale beneath; cymes crowded; flowers diffused; corolline segments 4-8, broadly obcordate, constantly of a greynish lilac-colour. F. H. Native of Japan, on the highest mountains. Viburnum serratum, Thumb. jap. p. 124. H. serrata, D. C. prod. p. 4. p. 115. Shrub climbing. The plant grows in the mountains of Aiva and Sonaki, where the natives use the dried leaves instead of tea, and is called by them Annatsja, i. e. sweet tea; and Do-Nioo-San by the Chinese. According to the Japanese, there is a variety with bitter leaves, which they call Rakosoo.
SAXIFRAGACEÆ. XV. HYDRANGEA. XVI. CORNYDIA. XVII. CIANITIS.

Thunberg's Hydrangea. Shrub cl.


Green Hydrangea.

17 H. paniculata (Sbdh. l. c. p. 609.) leaves elliptic, acuminate, glabrously toothed, scabrous, torn on the floricorous branches; panicule branched, rather secund; flowers discolored, very numerous; corolline segments 3-4, ovate, white. F. Native of Japan. Shrub climbing, 5 feet high. The plant is called Tsuridemonari by the Japanese, and Tse-sinkijine by the Chinese.

There is a variety with very pale red flowers, cultivated near the town of Posaka, very like the species, but does not climb, called Jamudomai by the Japanese. Perhaps Viburnum plicatissimum, Thum. is only a variety of H. paniculata.

Panicled-flowered Hydrangea. Shrub 5 feet.

18 H. involucratia (Sbdh. l. c. p. 609.) leaves ovate, acuminate, glabrously serrated, rufecently veined, hispid on both surfaces, crowded before flowering (involucrum caducous, 2-3-leaved), crowded; flowers discolored; corolline segments 8, nearly orbicular. F. Native of Japan. Plant suffruticose, hardly a foot high.

Var. a; corolla lilac. Kinbassoo of the Japanese; cultivated near the town of Oosaka.

Var. b; corolla yellow. Kinbassoo of the Japanese; cultivated near the town of Oosaka.

Involucrated Hydrangea. Shrub 1 foot.

19 H. alternifolia (Sbdh. l. c. p. 609.) leaves alternate; flowers cymose, polyandrous, discolored; corolline segments 2-6, 3 of which are constantly ovate and acute. F. Native of Japan, where it is called the natives Kasamisots-Ke.

Alternate-leaved Hydrangea. Shrub 1 foot.

20 H. Sisitan (Sbdh. l. c. p. 609.) leaves ovate, acuminate, acutely serrated, with the veins pubescent beneath; flowers cymose, discolored, double; corolline segments elliptic, of a fine rose-colour. F. Native of Japan. Shrub 2 feet high. Cultivated about the town of Mliko, where it is called Sisitan by the natives. Perhaps only a double flowering variety of H. Hortensia.

Sisitan Hydrangea. Shrub 2 to 4 feet.

† Species natives of Japan, but hardly known.

21 H. macropyllea (D. C. prod. 4. p. 15.) branchlets rather pilose; leaves ovate, acuminate, sharply serrated, rather pilose on both surfaces; umbels terminal, compound, radiating. F. Native of Japan. Viburnum macropylleum, Thumb. fl. jap. 125.

Long-leaved Hydrangea. Shrub.

22 H. hirita (Sbdh. ex flora, 1829. nov. 21.) leaves ovate, serrated, villous; petioles and peduncles hairy; umbels terminal, not radiating; stigma 2-lobed. F. Native of Japan. Viburnum hirtum, Thum. fl. jap. 124.

Hairless Hydrangea. Shrub.

Cult. The hardy species, or those natives of North America, are dwarf shrubs, and therefore proper for the front of shrubberies.

H. quercifolia does best against a south wall. Those species natives of Asia will require protection in winter, either by placing them in a frame or greenhouse. Cuttings of all the species root readily if plated under a glass-house. H. Hortensia is in general cultivation for the sake of its showy flowers; the blue-flowered variety is in greatest request, which may be obtained by planting out the common pink variety in a bed of peat soil, and letting it remain there 2 or 3 years; for the longer it remains the deeper blue the flowers will become: the plants may then be potted before the buds begin to burst, and they will then flower in perfection, and the flowers will be of a beautiful blue colour.

XVI. CORNYDIA (in honour of Joseph Cornide, a Spanish naturalist). Ruiz et Pav. fl. per. 1. p. 45.—Sarcostyles, Pers. in reliq. Hemk. 2. p. 55. t. 6; D. C. prod. 4. p. 15. L. syst. Octádria. Native in Japan, the mountains. Calyx superior, 4-toothed, equal, deciduous. Stamens 8; filaments linear; anthers ovate, 2-celled, dehiscing longitudinally inside. Ovarium inferior, nearly globose, 3-celled, rarely 4-celled, many ovulate. Styles 3, rarely 4, thick, fleshy, at length divaricate; stigmas obtuse, oblique. Capsule nearly globose, crowned by the permanent calyx and styles, dehiscing between the styles, 3-celled, rarely 4-celled, many seeded; disseminations entire, plectereous. Seeds cylindrical.—Shrubs, with glabrous opposite serrated leaves, and involucrated cymes or corymbes of white flowers, with the habit of Hydrangea.

1 C. Peruviana (Ruiz et Pav. fl. per. l. c.) leaves oval or oblong, acuminate or obtuse, coriaceous, serrated at the apex; corymb terminal, many rayed, involucrated by 4 large deciduous bracteas. F. Native of Peru, on the mountains. Sarcostyles Peruviana, Pers. in Hemk. reliq. 2. p. 54. t. 60. Peruvian Cornidia. Shrub.

2 C. integmakima (Hook. et Arn. in bot. misc. 3. p. 254.) leaves roundish-elliptic, glabrous, hardly acute at the base and apex; corymb numerous, disposed in a terminal raceme, which much exceeds the leaves. F. Native of Chili, about Valparaíso, and near Bustamente. Hydrangea scandinops, Poep. ex D. C. prod. 4. p. 666. Entire-leaved Cornidia. Shrub cl.?

3 C. serratifolia (Hook. et Arn. l. c.) leaves oblong-oblong, acute, obtuse at the base, serrated upwards; floral ones or ramal ones smaller, ovate, with a few denticulations; corymb numerous, disposed in a terminal raceme, which hardly exceeds the leaves. F. Native of Chile. Closely allied to the last species, but apparently distinct. Both, but especially the present, have several decussate, patent, concave, stiff bracteas, along the stalks of the corymb.

Serr-leafed Cornidia. Shrub.

Cult. The culture and propagation of the species of Cornidia are the same as that recommended for the species of Hydrangea. They require to be protected in winter by placing them in a frame or greenhouse.

XVII. CIANITIS (from cyanos, kyaneos, blue; colour of berries). Reinw. in Blume, bijdr. p. 321. D. C. prod. 4. p. 16. L. syst. Decandria, Tri-Petagynia. Tube of calyx adhering to the ovary: limb 5-toothed. Petals 5, rather fleshy, inserted in an epigynous disk. Stamens 10; anthers oblong, erect, dehiscing at the sides. Styles 3-5, spreading; stigmas ob- tum, adnate. Berry crowned by the teeth of the calyx, half 3-5-celled, many seeded; disseminations incomplete, infixed, fleshy, seminferous.—A shrub, with opposite, petiolate, obo- long-lancolate, smoothish leaves, which are serrated from the middle to the apex; and panicled terminal cymes of flowers, with trifid branches.

1 C. stylactica (Reinw. l. c.) cymes nearly undivided, on short peduncles, disposed in a coricate panicle. F. S. Native of Java, on the mountains, where it is called the natives Tivereg-gil-gil. Flowers probably white.

Var. b. paniculata (Blum. misc.) cymes branched, on long peduncles, disposed in an elongated panicle. F. S. Native of Java. Perhaps distinct from the species.
Var. γ. corymbosa (Blcm. mss.) cymes branched, on long peduncles, disposed in somewhat fastigate corymbs. [b.] S. Native of Java. Perhaps a proper species.

Wood Ceanitis. Shrub 2 to 3 feet.

Cult. A mixture of loam, peat, and sand will suit these plants; and cuttings will root readily in the same kind of soil, under a hand-glass.

XVIII. ADAMIA (in honour of John Adam, some time Governor-General of India; a promoter of natural history). Wall. tent. fl. nep. p. 46. t. 36. D. C. prod. 4. p. 16.

Lin. syst. Decândria, Pentângnia. Tube of calyx adnate to the ovary; limb with 5 short teeth, having the recesses between the teeth broad and obuste. Petals 5, alternating with the teeth of the calyx, surrounding the top of the ovary. Stamens 10. Styles 5, ending in rather clavate, somewhat 2-lobed stigmas. Berry crowned by the limb of the calyx, somewhat 5-celled, many seeded. Embryo terete, straight, in a fleshy albumen, with the radicle turned towards the hilum.—A smooth branched shrub. Leaves opposite, exstipulate, petiolate, oblong-lanceolate, serrated. Panicle corymbose, terminal, many flowered. Flowers bluish. Berries blue. Perhaps not distinct from Ceanitis.

1 A. cyanea (Wall. l. c.) [b.] G. Native of Nipaul, in rocky places, on mountains near the Great Valley, where it is called Bansook by the natives. Hook. bot. mag. t. 3046. Wall. pl. rar. asiat. 3. t. 213.


Cult. See Ceanitis above for culture and propagation.

XIX. BROUGHSAISIA (in honour of the celebrated M. Broughsais, M.D. author of physiological medicine). Gaud. in Freyce. voy. t. 69. D. C. prod. 4. p. 17.

Lin. syst. Decândria, Monogyânia. Calyx 5-parted, hemispherical, distinct from the ovary: lobes ovate-deltoid, bluntish, equal. Petals oblong, acuminate, with a reflected point (nearly as in umbelliferous plants) twice the length of the calyx, valvate in activation. Stamens 10, hypogynous, surrounding the base of the ovary; filaments subulate, distinct; anthers ovate. Ovarium roundish, crowned by the short style and truncate stigma, 5-celled; cells many seeded.—A shrub, with opposite oval petiole sharply serrated leaves, and corymbs of fertile flowers. The shrub has the habit of Hydrangea, but differs in the ovary being distinct from the calyx, in the style being short and solitary, not 2-3, and in the fruit being 5-celled.

1 B. arguata (Gaud. l. c.) [b.] G. Native of the Sandwich Islands, at the altitude of from 1200 to 1500 feet above the level of the sea. A middle-sized tree.

Sharp-serrate-leaved Broughsaisia. Tree.

Cult. See Ceanitis above for culture and propagation.


Calyx with the tube adhering to the ovary (f. 55. F. h. f. 55. C. c.), limb 5-toothed (f. 55. F. c.), or entire (f. 55. G. f.); lobes or teeth deciduous or permanent. Petals 5 (f. 57. c.). f. 59. g.), inserted in the top of the tube of the calyx, and alternating with its lobes, either entire (f. 57. c.), emarginate (f. 61. b.), or 2-lobed, sometimes plain at the apex, but usually drawn out into a replicate or involute point (f. 61. f. f. 63. c. f. 55. C. i.), somewhat imbricate in activation, rarely valvate; the outer flowers of the umbel or ray of the umbel sometimes larger than the rest, the rest equal among themselves, rarely abortive. Stamens 5 (f. 55. C. b. &c.), alternating with the petals, and inserted along with them, and therefore opposite the calycine teeth or lobes, always distinct, replicate in activation (f. 59. g. &c.); anthers ovate, 2-celled, somewhat dillymus, opening by a double longitudinal chink. Ovarium inferior, 2-celled (f. 55. E. c. f. 55. D. d. &c.), (very rarely, and probably from abortion, 1-celled), adnate to the calyx; styles 2, distinct (f. 55. F. i. f. 55. G. i. f. 59. c. &c.), when young erect, but at length thickened at the base into stylopodium (f. 64. a.), which covers the whole disk, forming a sort of crown to the fruit, diverging more or less, usually permanent, the outer one directed to the outside of the umbel, and the inner one tending to the centre. Fruit (called Diachesã, Polachedã, and Cremocharp by many botanists) consisting of 2 carpella (called mericarps because (f. 55. D. d. f. 56. C. h. &c.) they adhere to the calyx the half of their length, and therefore cannot be carpella or achenia in the strict sense of those terms), separable from a common axis (called a caraphore), to which (f. 56. G. a. f. 56. C. a. b. &c.) they adhere by their face (called the compressor); the fruit or crenocarp traversed by 10 elevated primary ridges, of which the 5 that represent the middle of the sepalis are called carinal, because they are drawn out into calycine teeth at the apex; the other 5, alternating with the first-named ones are called sutable, because they indicate the sutures where the divisions of the calyx are joined, and therefore tend to the recesses between the calycine teeth; besides these there are others which are apparent in some called secondary, because they alternate with the 10 primary nerves, and therefore indicate the sides of the divisions of the calyx; all the sutable, carinal, and secondary ribs are either filiform, winged, or crested; these ridges or nerves are separated by channels or furrows called vallecula, below which, but usually in the channels, are placed in the substance of the pericarp, certain linear receptacles of coloured oily matter, called vitae, which are directed from the apex to the base; they are solitary, twin, or numerous, rarely wanting, and sometimes they are inclosed in a proper membrane, which is probably a true pericarp. Seeds solitary in each carpel, hanging from the top of the axis or carphophore, inclosed in a proper membrane, the spermederm, which is but rarely separable from the pericarp. Albumen large, fleshy; or rather horny, more or less convex on the out.
UMBELLIFERÆ.

side. Embryo minute, hanging from the top of the carpophore, and therefore the radicle is superior; cotyledons 2, oblong, changing into seminal leaves through germination.—Herbs or subshrubs. Roots various, but often fusiform. Stems cylindrical or angular, simple or branched, annual or perennial, with the bark or skin usually full of aromatic resinous gum; medulla in some, as in Fērula, large, with medullary fibres in its substance, similar to the stems of monocotyledonous plants. Leaves alternate, very rarely opposite, except the seminal ones, usually divided into various segments; petioles usually sheathing at the base; in some, as in the genus Euplētum, the petioles are changed into phyllidia, as in the section of Actīcia called Phylldiaceæ. Flowers umbellate, white, yellow, pink, or blue, often with either the styles or stamens abortive, monoecious, dioecious, or polygamous, and some of them sterile. Umbels usually perfect, both general and partial, in both the rays are numerous, the general umbel usually surrounded by an involucrem, and the partial ones by an involucel.

FIG. 54.

UMBELLIFERÆ hardly differs from Araliæceæ, the next order. With Saxifragæceæ it agrees in habit, if Hydrocotylæ is compared with Chrysosplenium, and if the sheathing and divided leaves of the two orders are considered. To Geraniæceæ, De Candolle remarks, that they are allied in consequence of the cohesion of the carpella around a woody axis, and of the umbellate flowers, which grow opposite the leaves, and also because the affinity of Geraniæceæ to Vitis, and of the latter to Araliæceæ, is not to be doubted. The arrangement of this order has only within a few years arrived at any very definite state; the characters upon which genera and tribes could be formed, were for a long while unsettled; it is, however, now generally admitted, that the number and development of the ribs of the fruit, the presence or absence of the reservoirs called vitte, and the form of the alburnum, are the leading peculiarities, which require to be attended to. The plants are chiefly extra-tropical, inhabiting groves, thickets, plains, marshes, and waste places.

The properties of this order require to be considered under two points of view; firstly, those of the vegetation; and secondly those of the fructification. The character of the former generally is suspicious, and often poisonous in a high degree; as in the case of hemlock, fool’s-parsley, water-hemlock, and others, which are deadly poison. Nevertheless, the blanched petioles and stems of celery, the leaves of parsley and sausphere, the roots of skirret, the carrot, the parsaip, the arracacha, and the tubers of Ænäthe pimpinellöides, and Bānium balβocastanum, are wholesome articles of food. The fruit, vulgarly called the seeds, is in no case dangerous, and is usually a warm and agreeable aromatic, as caraway, coriander, dill, anise, &c. From the stem, when wounded, sometimes flows a stimulant, tonic, aromatic, gum-resinous concretion, of much use in medicine; as opōpōnax, which is produced from Opōpōnax Chirōntium in the Levant, and assafoetida from the Fērula of that name in Persia. Gum annōmoniæ is obtained from Dorēnca Ammoniācæ. It is a gum resin of a pale yellow colour, having a faint, but not unpleasant, smell, with a bitter nauseous taste. Internally applied, it is a valuable deobstruent, and expectorant. It is said by Dr. Paris to be, in combination with rhubarb, a useful medicine in mesenteric affections, by correctising viscid secretions. (Ainslie i. p. 160.) The substance called galbanum is produced by Galbanum officinale, a plant of this order. It is a stimulant of the intestinal canal and uterus, and is found to allay that nervous irritability, which often accompanies hysteria. (Ainslie i. p. 143.) Eηθάηa cυφηημιον has been found by Professor Ficinus, of Dresden, to contain a peculiar alkali, which he calls Cynapηη. (Turner, p. 654.) The fruit of Ligistīcum Ajwainī of Rosh, the Pηήγηηrhis Ajwunī of D. C. is prescribed in India in diseases of horses and cows. (Ainslie i. p. 38.) The Prūngos pabulāriā is a valuable fodder-plant in Tibet.

Synopsis of the genera.

Suborder I. Orthospermæ. Albumen flat or flattish inside, neither involute nor convolute.

§ 1. Umbels simple or imperfect. Fruit destinate of vitte.

Tribe I.

HYDROCOTYLEE. Fruit contracted from the sides; mericarps convex or acute on the back; with the 5 primary ribs at length obsolete: lateral ones marginaing or in the commissure, which is flat; intermediate usually more than carinal. Petals entire.

1 HYDROCOTYLE. Margin of calyx obsolete; and the tube rather compressed. Petals ovate, with a straight point. Fruit bicaceous. Mericarps with 5 filiform ribs: carinal and lateral ones often obsolete: the 2 intermediate ones joined.—Involucrum few-leaved.

2 CRANTZIA. Tube of calyx subglobose; limb very short, hardly any. Petals roundish, obtuse. Fruit roundish. Mericarp unequal, with 3-5 filiform ribs. Vitte 1 in each furrow and 2 in the commissure.—Involucrum 5-6-leaved.

3 DIMEΤΩRIA. Teeth of calyx obsolete. Petals oval-oblong. Styles short. Fruit didymous. Mericarps somewhat contracted at the commissure, unequal, one muricated with tuberces, and the other echinate with conical prickles.—Involucrum of 5 linear leaves.

4 DIGEΘENIA. Margin of calyx obsolete. Petals equal, obovate. Styles long. Fruit oval, laterally compressed. Mericarps gibbously convex, marked by 3 stripes. Commisurus narrow, flat.—Umbels imperfect. True involucrum none, but in place of it there is a multifid leaf. Involucels of a few unequil leaflets.
5 Micropleur'ra. Margin of calyx obsolete. Petals equal, acute. Fruit deeply 2-lobed at the base, and emarginate at the apex; mericarps obliquely ovate, 7-ribbed; ribs curvilinear, ventricose at the base, marginal 2 straight. Commisur e narrow.

6 Diod'c's. Margin of calyx obsolete. Petals oval, bluntish, imbricate in aestivation (f. 57. c.). Fruit didymous, emarginate at the base. Mericarps rough from pilose stripe, 5-ribbed: 2 middle ribs approximating the commissure.—Involucre of many leaves which are concrete at the base (f. 57. a.).

7 Thracymene. Margin of calyx 5-toothed. Petals elliptic, acutish, somewhat valvate in aestivation. Fruit didymous. Mericarps gibbously convex, 5-ribbed: the 3 dorsal ribs and the furrows between them muricate; and the 2 lateral ones marginalig.—Umbels compound. Involucrum of many leaves.

8 Aströtrich'a. Margin of calyx hardly 5-toothed. Petals oval, acutish, permanent (f. 58. b.), velvety on the outside from stellate down. Styles thickened at the base (f. 58. c.). Mericarps contracted at the commissure, having 3 primary dorsal ribs, and 2 acute nearly obsolete marginaling ones, and 4 secondary ones. Commisur e furnished with 2 vitice, which are covered by a spongy pellicle, but none in the furrows.—Involucrum of a few linear leaves.

9 Xantho'sia. Margin of calyx 5-lobed. Petals stipitate, oval, cuspidate and replicate at the apex. Styles filiform, rising from the base of the stylopodium on the inside. Fruit compressed. Mericarps contracted at the commissure, with 7-9 filiform ribs: 2 lateral ribs marginalig.

10 Bowke'sia. Margin of calyx 5-toothed; tube compressedly somewhat tetragonal. Petals elliptic, entire, acute. Fruit ovate, much contracted at the raphis, turgid, somewhat tetragonal, flattish on both sides at the back. Mericarps marked with an oval impression on the back, having 5 obsolete ribs: 2 lateral ribs flat, seated in the commissure.

11 Fragra'sia. Margin of calyx 5-toothed, permanent. Petals oval. Fruit didymous. Mericarps somewhat compressed from the back, and contracted at the commissure, having filiform ribs.—Involucrum equal in length to the pedicels.

12 Azore'lla. Margin of calyx 5-toothed, permanent. Petals oval. Fruit ovate, contracted at the raphis, and rather compressed from the back. Mericarps semi-ovate, having the ribs hardly evident.—Involucrum about equal in length to the pedicels.

13 Pecto'phy'tum. Margin of calyx entire. Petals unequal, with an acute inflexed point. Fruit ovate-elliptic; mericarps rather convex on the back, semi-oval, having 5 filiform ribs; com missure flattish.—Flowers in crowded fascicles at the tops of the branches, solitary in the axils of the bracteas.

Tribe II.

Muline'se. Mericarps contracted at the commissure, flat or flattish on the back, without vitice, hence the fruit is square or parallelly bisulate. Petals entire.

14 Böla'x. Margin of calyx entire. Petals oval. Fruit tetragonal; mericarps with 5 nerve-formed ribs, 1 dorsal, and the 2 middle ones form the corners of the angles of the fruit, and the 2 inner ones are filiform; commissure very narrow.—Involucre of 4 leaves, equal in length to the pedicels.

15 Mulinum. Margin of calyx 5-toothed, permanent. Petals oval-oblong, acute. Fruit 1-winged; mericarps furnished with 5 ribs: middle one dorsal: 2 lateral ones nerve-formed: 2 intermediate ones expanded into lateral ample wings.—Involucre of many leaves, shorter than the pedicels.

16 Lare'tia. Margin of calyx 5-toothed. Petals ovate, entire. Fruit elliptic, square, flatly compressed from the back; mericarps lenticular, with dorsal ribs and 2 lateral marginal ones, destitute of vitice. Seed flat.

17 Dru'sa. Margin of calyx entire. Petals oval. Mericarps furnished with 5 ribs: the dorsal one and the 2 inner ones linear and hardly prominent: but the 2 intermediate ones are drawn out into marginal wings, which are repandly sinuated, having the angles expanding in a stellate tuft of uncinate spines.—Involucrum wanting.

18 Huana'ca. Margin of calyx hardly 5-toothed. Petals lanceolate. Fruit ovate, acutish; mericarps flat and furrowed on the inside, but convex on the back, and furnished with 3 elevated lines. Carpophore bifid.—Involucrum of many leaves.

19 Dipö'sta. Margin of calyx bluntly 5-toothed. Petals oval. Fruit orbicular, constituting 2 parallel disks (f. 55. a. b.); commissure narrow; mericarps having 5 ribs: dorsal one filiform: 2 lateral ones hidden: and the 2 middle ones girding the disk; furrows broad and flat.—Umbels compound.

20 Span'anth'e. Margin of calyx 5-toothed. Petals elliptic, acutish, with a straight point. Fruit ovate, much compressed at the raphis; mericarps having 5 slender equal ribs: 3 intermediate ones dorsal: and the 2 lateral ones seated in the flat commissure.—Umbels rather compound. Involucrum of many leaves.

21 Homalo'car'pus. Margin of calyx 5-toothed; teeth subulate. Petals ovate, concave. Fruit roundish-ovate; mericarps having 5 filiform ribs, hidden in the substance of the pericarp, 1 dorsal: 2 lateral ones near the raphis: 2 middle ones forming the angles.

22 Poz'a'a. Margin of calyx 5-toothed, permanent. Fruit prismatic, tetragonal, 5-ribbed, emarginate at the apex; mericarps concave and channelled on the back; ribs lateral, dense, straight.—Involucrum erenately lobed, obsolescetly toothed.

23 Aster'scium. Calyx 5-toothed, permanent; teeth ovate. Petals emarginate, with an inflexed point and a callous recess. Fruit compressed, tetragonally prismatic; mericarps with 5 ribs: the 2 intermediate ones expanded into wings; the carinal one and the 2 placed near the raphis stripe-formed; commissure very narrow.—Involucrum of many leaves.

Tribe III.

Sanie'lee. Fruit ovate-globose. Mericarps destitute of vitice, with 5 primary ribs; secondary ribs wanting or obliterated by being covered with scales. Petals erect, emarginate, from being bent back from the middle by a point.
UMBELLIFERÆ.

24 ACTINOUS. Tube of calyx contracted at the apex; limb 5-lobed; lobes oval-oblong. Petals wanting. Styles thickened and villous at the base. Fruit ovate, crowned by the lobes of the calyx, villous, 5-striped.—Involucrum of many radiating leaves, which are longer than the flowers.

25 PETAGNIA. Flowers dioecious, having the calyxes different in the distinct sexes. Styles filiform. Fruit ovate, compressed, 8-nerved, vacant inside, 1-seeded.—Umbelules 3-flowered: central flower hermaphrodite, sessile; lateral ones male, pedicellate; pedicels rather concrete at the base, with the calyx of the female flower.

26 SANICULA. Tube of calyx echiuated; lobes foliaceous (f. 59. c.), permanent. Petals connivent, obovate, emarginate, with an inflexed point (f. 59. g.). Fruit nearly globose, echiuated; carpophore not distinct.—Umbels compound. Leaves of involucrum few, divided; of the involucel numerous, linear.

27 HACQUE'TIA. Tube of calyx 10-ribbed; lobes foliaceous, permanent. Petals obovate, emarginate, with a bent in point. Fruit contracted from the sides; mericarps gibbously convex; ribs 5, filiform, with a deep channel on the inside.—Involucrum of 5-6 obovate toothed leaves, which are longer than the umbel.

28 ASTRA'N'THA. Tube of calyx 10-ribbed, tuberculate plicate; lobes 5, foliaceous. Petals erect, connivent, oblong-obovate, with an inflected point. Fruit rather compressed from the back; mericarps with 5 elevated, obtuse, plicately toothed, inflated ribs, inclosing in the cavity a smaller fistular rib. Carpophore not distinct.—Involucrum variable: involucrel of many leaflets.

29 ALEPIDEA. Tube of calyx minutely tubercular. Petals inflexed. Mericarps without ribs, and without vittae. Carpophore adnate the whole length of the seeds.—Habit of Erýgium, but the umbels are like those of Astra'n'tha.

30 HORSPLE'DIA. Margin of calyx quite entire. Petals ovate, cuspidate, flat. Fruit compressed, villous; mericarps 3-ribbed on the back.—A prickly shrub. Umbels capitate, sessile; receptacle chaffy. Involucrum of many leaves.

31 ERYN'GUM. Tube of calyx rough from scales or vesicles; lobes foliaceous. Petals erect, connivent, oblong-obovate, emarginate, with an inflected point. Fruit obovate, scaly, or tubercular; mericarps semi-terete, without ribs, and without vittae; carpophore adnate its whole length to the seeds.—Flowers crowded into dense heads; the lower bracteas forming an involucrum to them.

32 ACTINA'NSTHÉS. Flowers monoeocious: female ones capitulate: male ones in capitule umbels, with the receptacle destitute of calyx. Teeth of calyx permanent. Petals oblong, complicated at the apex, and rather cirrhose. Fruit compressed from the sides; mericarps with 5 alternate, stronger, sutural ribs; vittae 1 in each furrow, and 2 in the commissure. Carpophore adnate.—Involucrel wanting; involucels of many leaves.

§ 2. Umbels compound or perfect. Vittae on the fruit variable, rarely wanting.

* Fruit having only primary ribs present.

Tribe IV.

AMM'NEE. Fruit compressed from the sides or didymous; mericarps with 5 filiform ribs, which at length become a little winged: lateral ones marginating, all equal. Seeds terec or gibbously convex, flatish in front.

33 RU'MIA. Margin of calyx 5-toothed. Petals ovate, entire, with a short, coarctate, incurved point. Fruit roundish or ovate, plicately wrinkled; mericarps solid, with 5 thick, very obscure, twisted plicate ribs, covering the furrows, which are ornamented with plicate tubercules, and furnished with 1 vitta each. Carpophore bipartite.—Involucrum wanting or few-leaved; involucels of 3-8 leaves. Flowers yellow.

34 CIC'UTA. Margin of calyx 5-toothed, foliaceous. Petals ordinate, with an inflexed point. Fruit roundish, contracted from the sides; mericarps with 5 flattish ribs, having the furrows between the ribs furnished with 1 vitta each, and the commissure 2 vittae; vittae filling the furrows, a little more elevated than the ribs, all concealed under a loose membrane. Carpophore bipartite.—Involucrum wanting, or few-leaved; involucels of many leaves.

35 ZITIA. Margin of calyx obsolete, or with 5 very short teeth. Petals elliptic, tapering into a long inflexed acumen. Fruit contracted from the sides, roundish or oval; ribs filiform, rather prominent; furrows furnished with 1 vitta each, and the commissure with 2; carpophore bipartite.—Involucrum wanting; involucels of few leaves, variable. Flowers yellow, rarely white or dark purple.

36 PENTACRY'THA. Calyx unknown. Petals equal, lanceolate, with an inflexed point. Fruit oblong-elliptic; the 3 dorsal ribs elevated, acute; furrows furnished with 1 vitta each. Albumen with 5 roundish angles. Flowers polygamous, dark purple.

37 A'TUM. Margin of calyx obsolete. Petals roundish, entire. Stylopodium depressed. Fruit roundish, contracted from the sides; ribs filiform; furrows furnished with 1 vitta; outer ones with 2-3 vittae. Carpophore undivided.—Involucrum and involucrel wanting. Flowers greenish white.

38 PETROSÉLI'NUM. Margin of calyx obsolete. Petals roundish, incurved, hardly emarginate, with an inflexed point at the apex. Stylopodium short, conical, suberectulate. Styles diverging. Fruit ovate, contracted from the sides; ribs filiform; furrows furnished with 1 vitta each, and the commissure with 2. Carpophore bipartite.—Involucrum few-leaved, and the involucels of many leaves. Flowers white or greenish.

39 WEYDE'RIA. Margin of calyx obsolete (f. 60. a.). Petals ovate-lanceolate, entire, with an incurved point (f. 60. c.). Fruit ovate, crowned by the short stylopodium and reflexed styles (f. 60. b.). Mericarps somewhat semi-terete, with contracted margins; ribs filiform, blundish; furrows broad, furnished with 1 vitta each, and the commissure with 2.—Involucrum wanting, or of 1 leaf; involucels of many leaves. Flowers white.

40 TRISIA. Margin of calyx obsolete. Flowers usually dioecious from abortion. Petals of the male flowers lanceolate,
ending in an involute point; of the hermaphrodite flowers ovate, with a short inflexed point. Fruit ovate; ribs filiform, rather prominent; furrows without vitta, or furnished with 1 vitta each. Carpophore flat, bipartite from the base. — Umbels disposed in a panicule or thyrsus, without any involucre; involucels usually wanting.

41 Helosciadium. Margin of calyx 5-toothed, or obsolete. Petals ovate, entire, with a straight or inflexed point. Styles short. Fruit ovate or oblong; ribs filiform, rather prominent; furrows furnished with 1 vitta each. Carpophore entire. Involucre variable in the different sections.

42 Discipleura. Teeth of calyx 5, subulate, permanent (f. 61. c). Petals ovate, emarginate (f. 61. b), with a replicate point (f. 61. f). Fruit ovate (f. 61. c). Three dorsal ribs filiform, exserted, and acutish: 2 lateral ones somewhat concretes with the thick accessory margin, forming a disk on both sides of the fruit; furrows furnished with 1 vitta each. Carpophore biform. — Involucels of a few linear setaceous leaves (f. 61. g.).

43 Leptocaulis. Margin of calyx obsolete (f. 62. a.). Petals elliptic, entire. Styles permanent. Fruit ovate (f. 62. a); ribs hardly prominent; furrows furnished with 1 vitta. Carpophore biform at the very apex. — Involucre wanting; involucels short, few-leaved.

44 Ptychoitites. Margin of calyx 5-toothed. Petals ovobovate, biformly emarginate, furnished by a transverse plait in the middle, which emits a little segment. Fruit ovate or oblong; ribs filiform; furrows furnished with 1 vitta each. Carpophore biform. — Involucrem variable; involucels of many leaves.

45 Falcaria. Margin of calyx 3-toothed; tube wanting in the sterile flowers, but cylindrical in the fertile ones. Petals ovocorovate, curved, having a broad emarginate recess, with a reflected point. Styles divaricate. Fruit oblong; ribs filiform; carpophore distinct, bifid; furrows furnished with 1 filiform vitta each. — Involucrem of many leaves. Involute somewhat dilated from the inner leaflets being small on one side.

46 Sinon. Margin of calyx obsolete. Petals roundish, curved, deeply emarginate, with an inflexed point. Styles very short. Fruit ovate; ribs filiform; vitta 1 in each furrow, short, rather club-shaped; carpophore bipartite. — Involucre and involucels of few leaves.

47 Schultzia. Margin of calyx obsolete. Petals elliptic, with a short inflexed point. Stylododium conical. Styles erect, somewhat capitate at the apex, permanent. Fruit cylindrically prismatic; ribs filiform; vitta 1 in each furrow. Carpophore undivided. — Involucre and involucels of many multifid leaves.

48 Aml. Margin of calyx obsolete. Petals ovobovate, with an inflexed point, emarginately 2-lobed; lobes unequal, irregular; those on the outside of the umbels the largest. Fruit ovobovate-oblong; ribs filiform; vitta 1 in each furrow. Carpophore distinct, 2-parted. — Involucre of many trifid or pinnafid leaves; involucels of many leaves.

49 Lagerodium. Margin of calyx obsolete. Petals ovobovate, emarginate, with an inflexed point. Stylododium distinct, conical, terminated by the long deflexed styles. Fruit ovate; ribs filiform; furrows without vitta; carpophore setaceous, forked at the apex. — Involucre and involucels wanting.

50 Carum. Margin of calyx obsolete. Petals regular, ovate, emarginate, with an inflexed point. Stylododium depressed; styles deflexed. Fruit ovate or oblong, contracted from the sides; ribs filiform; vitta 1 in each furrow, and 2 in the commissure, which is flat; carpophore distinct, forked at the apex. — Involucre and involucels variable in the different species.

51 Chamaesidaeum. Margin of calyx toothed a little. Petals ovate-lanceolate, quite entire, with an oblique or inflexed point. Stylododium depressed; styles at length deflexed. Fruit ovate-oblong; mericarps solid; ribs filiform; vitta 3-4 in each furrow, and 4-6 in the commissure; carpophore adnate, bifid at the apex. — Involucre and involucels of many leaves.

52 Bunium. Margin of calyx obsolete. Petals ovobovate, emarginate, with an inflexed point. Fruit linear-oblong; ribs filiform, obtuse; vitta 2-3 in each furrow, and 4 in the commissure, all superficial. Carpophore distinct, bifid. — Involucre variable in the different species; involucels of few leaves.

53 Cryptotaenia. Margin of calyx obsolete. Petals ovate, nearly entire, narrowed into an inflexed point. Fruit contracted from the sides, linear-oblong, crowned by the short stylododium and straight styles; ribs filiform, obtuse: 2 lateral ones placed in front of the margins; vitta numerous in the furrows, covered by a corky pericarp, and are not visible, unless when the pericarps are cut transversely. — Involucre wanting; involucels few-leaved.

54 Pimpiellula. Margin of calyx obsolete. Petals ovobovate, emarginate, with an inflexed point. Fruit ovate, contracted from the sides, crowned by the cushion-like stylododium and styles, which are reflexed and somewhat capitate at the apex; ribs filiform; vitta numerous on the furrows; carpophore distinct, bifid. — Involucre and involucels wanting.

55 Stium. Margin of calyx 5-toothed, but at length obsolete. Petals ovobovate, emarginate, with an inflexed point. Stylododium pulvinate, with a depressed margin. Styles divergingly reflexed, somewhat capitate at the apex. Fruit compressed or contracted from the sides, crowned by the stylododium and styles; ribs filiform, bluntish; vitta many, both in the furrows and commissure. Carpophore bipartite, having the mericarps adhering to its parts. — Involucre of many leaves, rarely of 1 leaf; involucels of many leaves.

56 Bupleurum. Margin of calyx obsolete. Petals roundish, entire, closely involute, ending in a broad retuse segment. Fruit crowned by the depressed stylododium; ribs winged, acute, filiform, or obsolete; furrows either with or without vitta, smooth or granular. — Involucre variable in the different species. Flowers white, yellow, and greenish.

57 Heteromorpha. Margin of calyx 5-toothed. Petals roundish, entire, closely involute, ending in a broad retuse point. Fruit ovobovate pear-shaped, 3 winged; mericarps of 2 forms: outer one 2-winged; inner one 3-winged; the wings running from the teeth of the calyx; vitta 1 in each furrow, and 2 in
the commissure. — A shrub with yellow flowers and ternate leaves. Involutua and involucels of many short leaves.

Tribe V.

*Sebelsae*.* Fruit terete, or nearly so, with a transverse section; or the mericarps are rather compressed on the back, with 5 filiform or winged ribs: the lateral ones margination, equal to the others, or broader. Seeds tertely convex on the back. Raphe marginal or submarginal.

58 *Lichtensteinia*. Margin of calyx acutely 5-toothed. Petals elliptic, with a long, inflexed point. Fruit nearly terete, crowned by the conical stylopodium and short styles; ribs filiform, equal; vitte large solitary under the ribs, but none in the furrows nor commissure. — Involucra and involucels of many short leaves. Flowers yellow.


60 *Eenanthae*. Margin of calyx 5-toothed, permanent. Petals obovate, emarginate, with an inflexed point. Stylopodium conical. Fruit cylindrically ovate, crowned by the long erect styles; ribs rather convex, obtuse, margination ones rather the broadest; vitte 1 in each furrow; carpophore indistinct. — Involucra variable in the different species, sometimes wanting; involucels of many leaves.

61 *Anseroidea*. Margin of calyx 5-toothed, permanent. Petals elliptic, with an inflexed point. Fruit prismatically quadrangular, crowned by the calyx and reflexed styles; mericarps of 2 ribs, one 3-winged, and the other 4-winged from the ribs; vitre 1 in each furrow and 2 in the commissure. Carpophore bipartite. — Involucra and involucels of many leaves.

62 *Scleroschium*. Calycine teeth 5, conical, permanent (f. 55, F. h.). Petals obcordate, with an inflexed point (f. 56, F. b.), which is bi or tridentate at the apex. Stylopodium conical; styles filiform (f. 56, F. c.). Fruit ovate-globose, solid (f. 56, F. g. h.); ribs much elevated, bluntish, equal; vitte 1 in each furrow and 2 in the commissure; carpophore distinct, undivided (f. 56, F. k.). — Involucra almost wanting; involucels of 5-7 leaves.

63 *Dasylopa*. Margin of calyx obsolete. Petals unknown. Stylopodium depressed; styles short. Fruit ovate; mericarps not separating at maturity; ribs corky, cellular: 3 dorsal ones small; 2 lateral ones large and obtuse; furrows narrow, and furnished with 1 vitte each, but the commissure is flat, and furnished with 2; carpophore indistinct. — Involucra and involucels wanting.

64 *Cynoschium*. Calycine teeth 5 (f. 63, c.), subulate, permanent. Petals obovate, or nearly elliptic, entire, with an inflexed point (f. 63, c.). Stylopodium conical; styles short, reflexed (f. 62, d). Fruit oval-oblong or ovate (f. 63, b.), tapering at the apex; ribs thick, corky; vitre 1 in each furrow, and 2 in the commissure. — Involucra and involucels of many leaves (f. 63, f, g.).

65 *Letuana*. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point; outer petals radiating. Fruit ovate-globose; ribs elevated, thick, acutely keeled: lateral ones rather the broadest; vitte 1 in each furrow, and 2 arched ones in the commissure; carpophore bipartite. — Involucrum wanting or of 1 leaf; involucels of 1-3-5 leaflets, on one side of the umbellule.

66 *Femculum*. Margin of calyx tumid, obsolete. Petals roundish, entire, involute, with a rather quadrate retuse point; ribs rather prominent, bluntly keeled: lateral ones rather the broadest; vitre 1 in each furrow, and 2 in the commissure. — Involucra and involucels wanting, or nearly so. Flowers yellow.

67 *Kunhmannia*. Margin of calyx 5-toothed. Petals roundish, entire, involute, with a broad retuse point. Stylopodium conical. Fruit terete, 10-furrowed; mericarps with 5 filiform, obtuse, equal ribs; vitte many, both in the furrows and commissure; carpophore undivided. — Involucra and involucels of many filiform reflexed leaves.

68 *Devrekra*. Margin of calyx obsolete. Petals ovate, with an inflexed acumen. Styles short. Fruit ovate or roundish, hispid from scales or hairs; mericarps semi-terete, with obsolete ribs; vitte 1 in each furrow, and 2 in the commissure. Carpophore bipartite. — An aromatic almost leafless shrub. — Involucra of 4-6 leaves; involucels of 4-6 ovate-lanceolate leaves.

69 *Soranthus*. Margin of calyx obsolete toothed. Petals broadly ovate, acuminate, permanent, with an inflexed point. Fruit a little compressed from the back: crowned by the divaricate styles; mericarps with 5, hardly prominent ribs; vitte 1 each furrow, and 4 in the commissure. Carpophore bipartite. — Involucra nearly wanting; involucels of 5-7 spreading reflexed leaves.

70 *Selell*. Margin of calyx 5-toothed; teeth short, thickish. Petals obovate, emarginate or nearly entire, with an inflexed point (f. 55, E, i.). Fruit (f. 55, E, d. f. 55, D, a, b.) oval or oblong, crowned by the reflexed styles (f. 55, E, b.); ribs filiform or ovate, rather prominent, thick, corky: lateral ones a little broader than the rest; vitte 1 in each furrow, sometimes 2 in the outer furrows, but always 2 or 4 in the commissure. — Involucra almost wanting; involucels of many leaves.

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**FIG. 55.**

The diagram illustrates various morphological features of the plant species described in the text, including the structure of the calyx, petals, involucra, and involucels. It highlights the diversity in the shape and arrangement of these components across different species within the Umbelliferae family.
71 Libanotis. This genus agrees in every respect with Sâseli, but differs in the lobes of the calyx being slender, subulate, elongated (f. 55. F. c.), and coloured, deciduous.—Involucra and involucels of many leaves.

72 Cenolophium. Margin of calyx obsolete. Petals obovate, emarginate (f. 55. G. b. f.), with an inflexed point (f. 55. G. L.); ribs equal, sharp, a little winged, hollow inside; vittae 1 in each furrow, and 2 in the commissure.—Involuca wanting, or of 1 leaf; involucels of many leaves (f. 55. G. a.).

73 Cnidium. Differs from Cenolophium in the ribs of the fruit being furnished with membranous wings.—Involucra variable in the different species; involucels of many leaves.

74 Petúria. This genus differs from Sâseli and Libanotis by the margin of the calyx being entire; and from Cnidium in the petals not being emarginate, and in the ribs of the fruit not being winged.

75 Endrèmissa. This genus differs from all the rest in the present tribe, in the fruit being compressed from the sides, in the ribs being obtuse and filiform, not winged; vittae 6 in the commissure, and 3 or 4 in the furrows.

76 Tha'sium. Margin of calyx 5-toothed. Petals elliptic, with a long inflexed acumen. Fruit nearly elliptic; ribs winged; vittae 1 in each furrow, and 2 in the commissure.—Involucra wanting; involucels of 3 leaves on one side.

77 Trochanèthes. Margin of calyx 5-toothed. Petals long claws, spatulate-obovate, with a triangular inflexed segment; ribs sharp, rather winged, equal; vittae 3-4 in each furrow, and 8 in the commissure. Carnophore bipartite.—Involucra wanting, or of 1 leaf; involucels of 2-5 leaves.

78 Athamantha. Margin of calyx 5-toothed. Petals obovate or entire; with a very short, inflexed, unguiculated point; fruit attenuated into a neck; ribs filiform, wingless, equal; vittae 2-3 in each furrow.—Involucra few-leaved; involucels of many leaves.

79 Lioustricium. Margin of calyx 5-toothed or obsolete. Petals obovate, acute, emarginate, with an inflexed point; ribs short, rather winged, equal; vittae many, both in the furrows and commissure.—Involucra variable; involucels many-leaved.

80 Silicas. Margin of calyx obsolete. Petals obovate-oblong, entire, or rather emarginate, with an inflexed point; ribs sharp, rather winged, equal; vittae many in each furrow, and so close together as to appear one; commissure furnished with 4-6 vittae.—Involucra wanting or of few leaves; involucels of many leaves. Flowers cream-coloured or greenish.

81 Wâlrokthia. Calycine teeth 5, ovate-lanceolate, acute (f. 56. A. b.). Petals elliptic, entire, acute at both ends (f. 56. A. d.). Mericarps with rather prominent, equal ribs; vittae numerous in the furrows.—Involuca of 1-3 unequal leaves; involucels of 5-8 unequal leaves.

82 Me'um. Margin of calyx obsolete. Petals entire, elliptic, acute at both ends. Mericarps with rather prominent, equal, keeled ribs; vittae many in each furrow, and 6-8 in the commissure.—Involucra wanting; involucels of many leaves.

83 Gáya. Margin of calyx obsolete. Petals obovate, more or less emarginate, with a broad inflexed point. Fruit oval, a little compressed; ribs elongated, wing-formed, contiguous at the base, at equal distances, obscure; vittae none. Carnophore bipartite.—Involuca few-leaved.

84 Conioselinum. Margin of calyx obsolete. Petals obcordate or obovate, with an inflexed point. Styles at length reflexed. Fruit compressed or convex from the back; ribs winged; lateral ones twice the breadth of the rest; vittae 3 in each furrow, but in the dorsal furrows sometimes only 2: and 4-8 unequal ones in the commissure; carnophore bipartite.—Involucra wanting, or of few leaves; involucels of 5-7 linear-sabulate leaves.

85 Chithem. Margin of calyx obsolete. Petals roundish, entire, involute, with an obvate point. Mericarps with 5 elevated, sharp, somewhat winged ribs; the lateral ribs a little broader than the rest; pericarp spongy from large cells.—Involucra and involucels of many leaves. Seed semi-terete, constituting a distinct nucleus, covered with copious vittae.

Tribe VI.

Angelíceæ. Fruit compressed from the back, girded by 2 wings on each side, from the raphe being central, or nearly so; mericarps furnished with 5 ribs: the 3 dorsal ribs filiform or winged: and the 2 lateral ones always expanded into wings, and broader than the dorsal ones. Seed rather convex on the back, and flatish in front.

86 Levísticum. Margin of calyx entire. Petals incurved, roundish, entire, with a short point. Mericarps with 5 wings; wings of the lateral ribs the broadest; vittae 1 in each furrow, and 2-4 in the commissure. Carnophore bipartite.—Involucra and involucels of many leaves.

87 Sélium. Margin of calyx obsolete. Petals obovate-emarginate. Mericarps with 5 membranous wings; the wings of the lateral ribs twice the breadth of the rest; vittae 1 in each furrow, but in the outer ones usually 2, and always 2 in the commissure. Carnophore bipartite.—Involucrum of few leaves; involucels of many leaves.

88 Ostérícum. Calyx 5-toothed; teeth broad. Petals unguiculate, obovate, emarginate, with an inflexed point. Mericarps with 5 ribs: the 3 dorsal ones elevated and filiform: the 2 lateral ones dilated into wings, much broader than the rest; vittae 1 in each furrow. Carnophore bipartite.—Involuca of few leaves; involucels of many leaves.

89 Angélíca. Margin of calyx obsolete. Petals lanceolate, entire, with a straight or incurved point. Mericarps with 5 ribs: the 3 dorsal ones filiform and elevated: and the 2 lateral ones dilated into membranous wings, which are broader than the rest: vittae 1 in each furrow. Carnophore bipartite.—Involucrum wanting, or of few leaves; involucels of many leaves.

90 Archangelíca. Margin of calyx with 5 short teeth. Petals elliptic, entire, with an incurved point. Mericarps with 5 thickish, keeled ribs: the 3 dorsal ones elevated: and the 2 lateral ones dilated into wings. Seed not adhering to its covering, but constituting a free nucleus, covered all over with copious vittae. Carnophore bipartite.—Involuca nearly wanting; involucels of many leaves, unilateral.

Tribe VII.

Pucèda'nee. Fruit compressed from the back, or lenticularly I
compressed, girded by a smooth, winged, flattened, or rather convex, dilated, entire margin. Mericarps with 5 filiform ribs, rarely winged; lateral ribs contiguous to the dilated margin, or lost in it. Raphe marginal, hence the fruit is only furnished with 1 wing on each side, not with 2 wings, as in the last tribe, where the raphe is central. Seed flattened, or rather convex on the back.

91 Op'panax. Margin of calyx obsolete. Petals roundish, entire, involute, with an acutish point. Stylopodium broad, thick; styles very short; mericarps with 3 dorsal filiform, very slender ribs: the 2 lateral ones wanting, or not distinct from the margin; vitæ 3 in each furrow, and 6-10 in the commissure. Seed flat.

—Involuca and involucels of many leaves. Flowers yellow.

92 Fe'kula. Margin of calyx with 5 short teeth. Petals ovate, entire, with an ascending or incurved point. Fruit girded by a dilated flat margin; mericarps with 3 dorsal filiform ribs: the 2 lateral ones very obsolete, or not distinct from the dilated margin; vitæ 3 or more in the dorsal furrows, and 4 or more in the commissure. Seed flat. Carphophore bipartite.

—Involuca and involucels variable. Flowers yellow.

93 Do'rema. The large, cup-shaped, epigenous disk, and the solitary vitæ in the furrows of the fruit, distinguish this genus from Fěkula and Op'panax. The flowers being completely sessile is also a remarkable character.

94 Eros'yia'phi. Calyx bluntly 5-toothed. Petals ovate, entire, with a short, incurved point (f. 56, E. f.). Fruit compressed (f. 56. E. k.) from the back, girded by a thickish margin; the 3 dorsal ribs filiform; and the 2 lateral ones running into the thickish margin, which is spongy inside; furrows broad, 2-3-striped, bearing 2-3 vitæ in each; and the commissure is without vitæ, but marked with a middle nerve and 2 marginal ones, rather hollow and tomentose between the nerves. Seed flattish.—Involuca and involucels wanting. Flowers yellow.

95 Pa'limia. Margin of calyx obsolete. Petals elliptic, with an acute inflexed point. Fruit oblong or oval. Mericarps compressed from the back: with 5 filiform, bluntish ribs: 2 marginal ones a little broader than the rest; vitæ 3 in each furrow, and 2 broad ones in the commissure. Seed oblong, free, striped.

—Involuca few-leaved or wanting. Flowers cream-coloured.

96 Pecess'danum. Margin of calyx 5-toothed. Petals oblong, emarginate, or entire, with an inflexed point. Fruit girded by a flat margin; the 3 dorsal ribs filiform; and the 2 lateral ones more obsolete, contiguous to the dilated margin; vitæ in each furrow usually 1, and in the commissure 2. Carphophore bipartite. Seed flat in front.—Involuca variable in the different species; involucels of many leaves.

97 Imperatôria. All as in Pecess'danum, but the margin of the calyx is obsolete.—Involuca wanting; involucels of few leaves.

98 Callis'aie. "Margin of calyx rather 5-toothed, or nearly obsolete. Petals oval, with an incurved point. Fruit nearly orbicular, emarginate at the base, with a winged margin; the 3 dorsal ribs obtuse and nerve-formed: the 2 lateral ones expanded into wings, which lie over the whole surface: vitæ 1 in each furrow, and 1 on each side of the commissure. Forks of carphophore adhering to the mericarps.—Involuca wanting, or of few leaves; involucels of many scanty leaves.

99 Bu'don. Margin of calyx obsolete. Petals obovate, entire, with an acute involute point. Fruit girded by a flattened, dilated margin; the 3 intermediate ribs filiform, and the 2 lateral ones going into the margins; vitæ covering the whole seed, 4 dorsal and 2 in the commissure. Carphophore bipartite. Seed flat in front and convex on the back.—Cape shrubs. Involuca and involucels of many leaves. Flowers greenish yellow.

100 An'éthum. Margin of calyx obsolete. Petals roundish, entire, with a rather square retuse point. Fruit girded by a flat margin; the 3 intermediate ribs acutely keeled, and the 2 lateral ones more obsolete, and running into the margin; vitæ broad, solitary in the furrows, and filling them, and twin in the commissure. Seed rather convex on the back.—Involuca and involucels wanting. Flowers yellow.

101 Co'ntia. Teeth of calyx elongated, acute. Petals lanceolate, acuminate, entire. Stylopodium conical; styles diverging. Fruit elliptic, rather retuse at both ends; ribs winged: lateral one the broadest; vitæ 1 in each furrow, and 2 in the commissure, which is flat. Seed flattish.—Involuca of 2-5 multifoil leaves; involucels of 5 linear, entire, or 2-3-cleft leaves.

102 Carnoph'ilium. Margin of calyx obsolete. Petals oblong, rather emarginate, tapering into an inflexed acumen. Fruit girded by a flat, dilated margin; the 3 intermediate ribs thickish, keeled, rather flexuous, tubercular: the 2 lateral ones going into the dilated margin; vitæ 1 in each furrow, and 2 in the commissure. Seed rather convex on the back.—Involuca and involucels of 3-6 leaves.

103 Tiedem'ania. Margin of calyx 5-toothed (f. 64. a.). Petals acuminate, reflexed. Fruit nearly ovate (f. 64. c.); mericarps with 5 filiform, subcarinated, approximate ribs: lateral ones dilated into a membranous margin, which is nearly the breadth of the fruit; vitæ solitary in the furrows, and filling them, and twin in the commissure. Carphophore bipartite. Seed flat.—Involuca and involucels of 4-5 subulate leaves.

104 Archem'ora. Margin of calyx 5-toothed. Petals obcordate, with an inflexed point. Fruit compressed from the back, oval or obovate; mericarps with 5 filiform, rather keeled, approximate ribs: lateral ribs dilated into a broad membrane; vitæ solitary in the furrows, and filling them, and twin in the commissure. Carphophore bipartite. Seed flattened.—Involuca wanting or few-leaved; involucels of many leaves.

105 Pastina'ca. Margin of calyx obsolete, or minutely dentilicate. Petals roundish, entire, involute, with a broad retuse point. Fruit compressed from the back, girded by a flat dilated margin; the 3 intermediate ribs filiform, equidistant: lateral ones contiguous to the dilated margin; vitæ linear, acute, hardly shorter than the ribs, solitary in the furrows, and twin or more in the commissure. Carphophore bipartite. Seed flattened.—Involuca and involucels wanting or few-leaved. Flowers yellow.

106 Re'stelus. Teeth of calyx obsolete. Petals roundish, entire, involute, with a broad retuse segment. Fruit compressed, with a thickened dilated smooth margin; the 3 intermediate ribs approximate, and the 2 lateral ones marginal and remote; vitæ 1 in each furrow, filiform, distant in the commissure. Involuca wanting; involucels of a few very fine leaves.
UMBELLIFERÆ.

107 Astydamia. Margin of calyx 5-toothed (f. 56. D. a. d. f.). Petals obovate, entire, with an inrolled point. Stylopodium thick; styles very short (f. 56. D. g. r.). Fruit compressed from the back (f. 56. D. k.), girded by a thick dilated margin; the 3 dorsal ribs crested, approximate: the 2 lateral ones running into the margin; dorsal vittæ very few, the commissural ones wanting or covered.—Involucra and involucels of many leaves. Flowers yellow.

108 Symphytum. Margin of calyx obsolete. Petals equal, emarginate, with an inrolled point. Stylopodium without a margin; styles reflexed. Fruit elliptic, compressed from the back; mericarps closely conate by their margins; with 5 filiform ribs: 3 dorsal ribs equidistant: lateral ones more remote, marginating; vittæ wanting or obsolete. Seed flattened. Carpophore none. Flowers red.

109 Heracleum. Calyx 5-toothed. Petals obovate, emarginate, with an inrolled point: exterior petals usually radiating and bifid. Fruit compressed from the back, girded by a flat, dilated margin; mericarps with very fine ribs: 3 dorsal ones equidistant: 2 lateral ones remote, contiguous to the dilated margin; vittæ 4 on the back, solitary in the furrows, but usually with 2 in the commissure, all shorter than the fruit, and usually club-shaped; carpophore bipartite. Seed flat.—Involucra caducous, usually of few leaves; involucels of many leaves.

110 Zoënia. Calyx 5-toothed. Petals obovate, emarginate, with an inrolled point. Fruit compressed from the back, rather convex in the middle, hairy, girded by a smooth, thickened, dilated margin; ribs very thin: dorsal ones at equal distances: 2 lateral ones more remote, contiguous to the dilated margin; vittæ covering the whole seed, solitary in the furrows, and twin in the commissure. Carpophore bipartite. Seed flat.—Involucra and involucels of many leaves.

111 Polytrichum. Calyx 5-toothed. Petals oval, emarginate, with an inrolled point. Fruit oval, compressed on the back, convex in the middle, glabrous; with a smooth tumid margin, and a depressed furrow on the back; ribs very slender, hardly distinct; vittæ twin between the ribs, but 6 in the commissure; carpophore indistinct. Seed flat.—Involucra none; involucels setaceous.

112 Johnënia. Teeth of calyx obsolete, very blunt. Petals unknown. Stylopodium short, conical, furrowed a little. Styles short, diverging. Fruit oval, lenticularly compressed on the back (f. 56. C. b.), quite glabrous; with a smooth tumid margin, and a flat, dorsal, coloured furrow; mericarps with 3 dorsals, filiform ribs, which probably contain vittæ: 2 lateral ones running into the dilated margin, hardly distinct, usually rufous, and the form of vittæ; commissure spongy, furnished with 2 lines, but without vittæ. Carpophore 2-parted (f. 56. C. b. a.). Seed flat.—Involucrum wanting, or of 1 leaf; involucels of 4-5 linear, setaceous leaves.

Tribe VIII.

Tordylëœæ. Fruit lenticularly or flatty compressed from the back, girded by a thickened, nodulose, or pleated, dilated margin. Mericarps with 5 very fine or obsolete ribs: lateral ones contiguous to the dilated margin, or forming the same. Seeds flattened. This tribe differs from Peucedanum in the margin of the fruit being plaited or nodulose, not smooth and entire.

113 Hasselquistia. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inrolled point; outer petals radiating and bifid. The outer fruit of the umbel are compressed, girded by an accessory, winged, thickened margin, which is hardly wrinkled; those of the disk dissimilar: one of the mericarps contracted into an hemispherical urceolus around the other, which is abortive; ribs very slender: the 3 dorsal ones equidistant: and the 2 lateral ones contiguous to the thickened margin, or hidden by it; vittæ 1 in each furrow, and 2 in the commissure. Carpophore bipartite. Seed flat.—Involucra of many leaves.

114 Tordylium. All as in Hasselquistia, except that the vittæ are either solitary or numerous in the furrows, and either 2 or more in the commissure; and in the fruit being equal, and girded by a tubercularly wrinkled, accessory, thickened margin.—Involucra of many leaves.

115 Tordylides. Margin of calyx 5-toothed; teeth acute: outer teeth the largest, dilated at the base, and cuspidate at the apex. Outer petals of umbels larger, and obcordately 2-lobed: the rest smaller, ovate, and cuspidate, usually entire, rarely somewhat 2-lobed. Stylopodium conical. Styles erect, elongated. Fruit hairy.—Involucra and involucels of 3-6 lanceolate-linear leaves.

** Fruit furnished with both primary and secondary ribs.

Tribe IX.

Silberœœæ. Fruit lenticularly compressed from the back. Mericarps with 5 primary ribs: the lateral ones marginating; and usually with 4 secondary, less prominent ones; all filiform and wingless. Seeds flatish in the front.

116 Kruberœæ. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inrolled point. Mericarps with 5 plicately crenated, thick ribs: the 3 intermediate elevated, obtuse, and keeled: 2 lateral marginating and roundish, keeled near the raphe; vittæ none. Carpophore bifid.—Involucra 2-5-leaved; involucels 4-5-leaved.

117 Pachypleœrum. Margin of calyx obsolete, or minutely denticulated. Petals permanent; those of the inner flowers obovate-oblong, emarginate, with an acute, inrolled point; those of the ray flowers of 2 forms: the 3 inner, ovate, hardly emarginate, with an acute inrolled point: 2 outer nearly orbicular, and profoundly marginate, also with an inrolled point. Mericarps with elevated, thick, and corky ribs: the lateral ones marginating, and a little broader than the others; vittæ none.—Involucra and involucels of many leaves.

118 Agasëllis. Margin of calyx obsolete. Petals lanceolate, incurved. Fruit oval. Mericarps with 5 primary ribs: the 2 lateral ones placed in front of the accessory margin; the secondary ribs hardly visible. Seeds furnished with 8-10 dorsal vittæ, and 5-6 commissural ones.—Involucra wanting; involucels of many setaceous leaves.

119 Stenocoeæum. Margin of calyx 5-toothed. Petals obovately orbicular, somewhat emarginate, with an inrolled
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point. Mericarps with 5 rounded, thick, equal ribs; vittæ 1 in each furrow.—Involucra and involucels of many leaves.

120 *SILER.* Margin of calyx 5-toothed. Petals obvate, emarginate, with an inflexed point. ribs filiform, elevated, obtuse: primary ones 5: lateral ones of these marginating: secondary ones 4, less prominent; vittæ 1 in each furrow, under the secondary ribs.—Involucra none, or few-leaved, caducous.

121 *GALLENIUM.* This genus differs from *Siler* in the absence of dorsal vittæ to the fruit, and the commissure being furnished with only 2.

**Tribe X.**

*CUMINUM.* Fruit contracted from the sides; mericarps with 5 filiform, primary ribs: the lateral ones of these marginating; and 4 secondary more prominent ones; all wingless. Seed straight, flattened in front.

122 *CUMINUM.* Calyx with 5 lanceolate, unequal, permanent teeth. Petals oblong, emarginate, with an inflexed point. Primary ribs minutely mucronated: secondary one pricky: vittæ 1 in each furrow under the secondary ribs. Carpophore bipartite. Seed concave in front, and convex on the back.—Involucral of 2-4 simple or divided leaves; the involucels dimidiate, of 2-4 reflexed leaves.

123 *TREPONÆUS.* Calyx with 5 subulate teeth, which fall off at length. Petals obcordate, emarginate, obtuse. Fruit pyramidal angular, nearly terete; mericarps convex on the back; primary ribs margined with a fuscous, vitæ-like formed line on each side; secondary ones furnished with 1 vitta on their inner side; commissure thick, furrowed in the middle, and furnished with vitæ inside. Seed straight, rather compressed on the back.—Involucra 1-3-leaved; involucels dimidiate, of 4-5 linear, unequal leaves.

**Tribe XI.**

*THAPSÆA.* Fruit compressed from the back; mericarps with 5 filiform primary ribs, which are now and then bristly: lateral ones seated in the flat commissure; secondary 4: inner ones of these filiform, and the outer ones or all are winged; wings undivided, hence the fruit is either 8-winged, or furnished with 2 wings on each side. Seed flattened, or tetralobed, convex, flat in front.

124 *THAPSIA.* Margin of calyx 5-toothed. Petals elliptic, entire, with an inflexed or involute point; 2 lateral secondary ribs winged, hence the fruit is 2-winged on each side; furrows under the secondary ribs furnished with 1 vitta each. Carpophore bipartite. Seed flattened.—Involucra and involucels wanting, or of few leaves. Flowers yellow.

125 *CYPÆTERUS.* Calyx minutely 5-toothed. Petals roundish-oval, inflexed at the apex. Fruit nearly elliptic, compressed, 7-8-winged, from all the secondary ribs being winged; wings undulated; furrows flat, 1-nerved; commissure naked, 3-striped. Carpophore not separable from the mericarps.—Involucra wanting; involucels dimidiate, 5-7-parted.

126 *LAPÆÆTUM.* Margin of calyx 5-toothed (f. 55. C. f.). Petals obvate, emarginate (f. 55. C. a.), with an inflexed point (f. 55. C. i.). Fruit compressed from the back (f. 55. C. g.), or nearly terete, 8-winged, in consequence of the 8 secondary nerves being winged; vittæ 1 in each furrow, under the secondary ribs. Carpophore free, bipartite (f. 55. C. b.).—Involucra and involucels of many leaves.

127 *LOPHOSCHÆTA.* Margin of calyx 5-toothed. Petals elliptic, entire, acuminate, involute at the apex (f. 55. B. d.). Fruit compressed (f. 55. B. e.) on the back; the 2 lateral secondary ribs expanded into a subcontrary wing each: the 2 dorsal ones expanded into an interrupted wing each, at first sight appearing like a retrograde scale (f. 55. B. e.). Involucræ of 5-7 ovate-lanceolate leaves (f. 55. B. a.); involucels of 5-7 narrower leaves (f. 55. B. b.). Flowers yellow.

128 *MELANOSILINUM.* Margin of calyx 5-toothed. Petals obvate, emarginate, with a reflexed point. Fruit compressed from the back; the 2 inner secondary ribs filiform and very slender: the 2 outer ones expanded into a membranous serrated wing each; with 2 oleiferous canals under all the ribs. Carpophore bipartite. Seed flat.—A shrub. Involucra and involucels of many leaves, the first composed of cut leaves, and the second of entire leaves.

**Tribe XII.**

*Daucynæ.* Fruit lenticularly compressed from the back; mericarps with 5 bristly, filiform primary ribs; lateral ones of these seated in the flat commissure, as in *Thapsia*: and with 4 secondary ones, which are more prominent and prickly; the prickles free, or joined into a wing. Seeds flattened, or subsemicircular, or convex on the back; and flattened in front.

129 *ARTEDIA.* Margin of calyx obsolete. Petals obvate, emarginate, with an inflexed point: those on the outer part of the umbel radiating and bipartite. Secondary ribs 4: the inner ones filiform: the outer ones expanded into a sinuate lobed wing each; vittæ none. Carpophore bipartite. Seed flat.—Leaves of involucra and involucels divided into linear lobes.

130 *ORLAYA.* Margin of calyx 5-toothed. Petals obvate, emarginate, with an inflexed point: those in the ray of the umbel profusely bident. Secondary ribs of fruit furnished with 2 or 3 rows of prickles, outer ones more prominent, or a little winged; prickles hooked or rayed at the apex; vittæ 1 in each furrow under the secondary ribs. Carpophore bifid or undivided? Seed convex on the back.—Involucra variable; involucels of many leaves.

131 *DAUCUS.* Margin of calyx 5-toothed. Petals obvate, emarginate, with an inflexed point: outer ones usually radiating, and profusely bident. Fruit oval or oblong; the 4 secondary ribs more prominent and winged, divided into a simple series of prickles; vittæ 1 in each furrow, under the secondary ribs. Seed flattened in front.—Involucra of many trifid or pinnatifid leaves; involucels of many entire or trifid leaves.

**Suborder II. CAMPYLOSPERMAE.** Albunæ involute, or marked by a longitudinal furrow or channel on the inner side.

§ 1. Mericarps furnished with both primary and secondary ribs.

**Tribe XIII.**

*ELIÓSENIÆ.* Fruit cylindrical, more compressed from the
back than from the sides; mericarps with 5 primary filiform ribs; and 4 secondary ones: the 2 dorsal ones of these last nerve-formed, but the 2 lateral ones are expanded into a wing each; with the margins nerve or rib-formed. Seeds involute, semi-lunate.

132 Eleoese linum. Margin of calyx hardly 5-toothed. Petals obvolute, emarginate, with an inflexed point. Fruit nearly terete, 4-winged; the 2 lateral primary ribs seated between the wings and the nerve-formed margins; vittae under all the ribs abounding in oil, those under the primary ribs narrower and slenderer: in the commissure there are 4.—Involucra and involucles of many cispidate, linear leaves. Flowers yellow.

**Tribe XIV.**

Caucalineae. Fruit contracted from the sides, or nearly terete. Mericarps with 5 filiform, briskly, or prickly, primary ribs: lateral ones of these seated in the commissure, which is flat; the secondary 4 more prominent and very prickly. Seeds involute, or inflexed on the margin.

133 Caucalis. Teeth of calyx 5, ovate-lanceolate. Petals obvolute, emarginate, with an inflexed point: outer ray ones profoundly bifid. Fruit rather compressed from the sides; secondary ribs deeply cleft into a simple series of prickles; vittae solitary in each furrow, under the secondary ribs, and 2 in the commissure. Carpophore stiff, cleft at the apex.—Involucra none, or of 1-2 leaves; involucels of 3-8 lanceolate leaves.

134 Turgenia. Teeth of calyx 5, setaceous. Petals obvolute, emarginate, with an inflexed point: outer ones radiating and bifid. Fruit subbilobidum; lateral primary ribs with a simple series of warts or prickles, all the rest furnished with 2 or 3 rows of equal prickles; furrows furnished with 1 vittae each under the secondary ribs. Carpophore setaceous, bifid.—Involucra and involucels of 3-5 ovate, concave, equal leaves.

135 Torilis. Teeth of calyx 5, triangularly lanceolate, acute, permanent. Petals obvolute, emarginate, with an inflexed point: outer ones larger and bifid. Secondary ribs having abundance of prickles occupying the whole furrows, which are furnished with 1 vittae each under the prickles. Carpophore setaceous, bifid. Involucra of 1-5 leaves; involucels of 5-6 lanceolate ciliated leaves.

§ 2. Mericarps only furnished with primary ribs.

**Tribe XV.**

Scandicaeae. Fruit evidently compressed, or contracted from the sides, usually beaked; mericarps with 5 filiform ribs, which are at length winged: lateral ribs margining, all equal, but sometimes all obliterated at the base, and only conspicuous at the apex. Seeds tetradely convex, having a deep furrow in front, or somewhat involute on the margin.

136 Scandix. Margin of calyx obsolete, or somewhat 5-toothed. Petals obvolute, truncate, or emarginate, usually furnished with an inflexed point. Fruit compressed from the sides, with a very long beak; vittae wanting, or nearly obsolete. Carpophore undivided, forked at the apex.—Involucra wanting, or of 1 leaf; involucels of 5-7 leaves.

137 Anthriscus. Margin of calyx obsolete. Petals obvolute, truncate, or emarginate, with a very short inflexed point. Fruit contracted from the sides: having a beak, which is shorter than the seed; mericarps nearly terete, destitute of ribs, the beak alone being furnished with 5 ribs. Carpophore bifid at the apex.—Involucra wanting; involucels of many leaves.

138 Cerophyllum. Margin of calyx obsolete. Petals obvolute, emarginate, with an inflexed point. Fruit compressed from the sides, without any beak; commissure deep; vittae 1 in each furrow. Carpophore bifid.—Involucra wanting, or of few leaves; involucels of many leaves.

139 Caldasia. Margin of calyx obsolete. Petals ovate, with an entire somewhat involute point. Fruit ovate-oblong, rather compressed from the sides, crowned by the short diverging styles; furrows between the ribs broad, flat, striated, and furnished with 1 vittae each; commissure furrowed in the middle. Carpophore bipartite. Seed rather cuneolate at the commissure.—Umbels simple, surrounded by a 20-leaved involucre.

140 Sphalerocharpus. Teeth of calyx 5, subulate. Petals obvolute-cuneated, emarginate, with an inflexed point (f. 56. L. b.): the outer ones of the umbel radiating. Stylodium rather urceolate, toothed; styles short. Fruit elliptic-oblong (f. 56. L. d.), contracted from the sides, without a beak; furrows between the ribs convex, furnished with 2-3 vittae each, and the commissure with 4-6. Carpophore bipartite (f. 56. L. h.).—Involucra wanting; involucels of 5-6 lanceolate leaves (f. 56. L. a.).

141 Molopospermum. Calyx 5-toothed, foliaceous. Petals lanceolate, entire, ending in a long ascending point. Fruit contracted from the sides. Mericarps with 5 winged ribs. Seed bluntly tetragonal or angular; channels empty between the seed and the commissure of the pericarp; furrows having 1 broad brown vittae each, but the commissure is very narrow, and without any vittae. Carpophore bipartite.—Involucre of many elongated, membranous leaves, which are sometimes multifid; involucels of many leaves.

142 Velaea. Margin of calyx obliterated. Petals unknown. Stylodium conically depressed, short (f. 56. G. b.); styles erect, filiform. Fruit ovate (f. 56. G. e. b.), without a beak; mericarps rather compressed from the sides, with 5 ribs: the 2 lateral ones filiform, and the 3 dorsal ones winged; vittae 3, and sometimes 2 in each furrow, and 4 in the commissure. Carpophore bipartite (f. 56. G. h.) from the base.—Involucra and involucels none.

143 Myrrhis. Margin of calyx obsolete. Petals obvolute, emarginate, with an inflexed point. Fruit compressed from the sides. Seeds involute, covered by a double membrane: outer membrane furnished with 5 acutely keeled, sharp, equal ribs, hollow inside: inner one adnate to the seed; vittae none. Carpophore cleft at the apex.—Involucra none; involucels of many lanceolate ciliated leaves.

144 Osmorniza. Margin of calyx obsolete. Petals obvolute, hardly emarginate, with a short inflexed point. Fruit elong-
gated, tapering into a tail at the base, solid, acutely angular; mericarps with hispid, rather furrowed angles; ribs 5, acute; commissures furrowed; furrows flat, without vitre. Carpopore semi-bifid.—Involucra of 2-3 lanceolate, ciliate leaves; involucels of 5 lanceolate, ciliate leaves.

145 Grammoscadium. Teeth of calyx stiff (f. 56. H. g.), permanent. Petals obcordate, with an inflexed point. Styles short, conical (f. 56. H. b.), diverging. Fruit cylindrical (f. 56. H. a. b.), without a beak; mericarps with 5 primary, flattish white ribs; furrows flat, furnished with 1 vitta each, and the commissure with 2.—Involucra of 5-7 multifid leaves; involucels of linear-subulate, rarely cut leaves (f. 56. H. c.).

Tribe XVI.

 Smyræe. Fruit turgid, usually compressed, or contracted from the sides; mericarps with 5 ribs: lateral ones marginating, or situated in front of the margin; the ribs sometimes almost obliterated. Seed involute, or with a furrow on the inside, or outer, or ciliate or compliate.

146 Lagercia. Calycine lobes large, pectinated. Petals obcordately bifid, shorter than the calyx; lobes awned. Ovarium 2-celled, with 1 of the cells abortive. The fruit is therefore ovate, crowned by the calyx, subessent: marked by a furrow on one side, indicating the place of the abortive seed.—Involucra of 8-10 pectinated leaves; and the involucel of 4.

147 Oliveæa. Margin of calyx 5-toothed. Petals profoundly obcordate; lobes involute on the margin of the base, and excavated at the sides, undulated and reflexed at the apex. Fruit obovate, hairy; mericarps nearly terete; with 5 blunt ribs. Carpophore bifid at the apex.—Involucra of 3-4 trifid leaves, with the lobes usually tridentate; involucels of many cuneiform, trifid leaves.

148 Anisoscadium. Calycine lobes of the outer flowers of the umbel, large, ovate, and foliaceous: of the outer central ones stiff and hooked: of the other inner ones wanting or tooth-formed. Petals very unequal: outer ones obcordately bifid: inner ones small. Fruit rather downy, oblong-cylindrical, crowned by the calyx, and stiff conical style; mericarps with 5 blunt ribs; vittæ brown, 1 in each furrow, but none in the commissure.—Involucra of 4-5 oblong, acute, unequal leaves; involucels of 4-5 leaves.

149 Echinosphora. Margin of calyx 5-toothed. Petals emarginate, with an inflexed point: outer ones larger and bifid. Styles of the female flowers elongated, filiform (f. 65. b.). Fruit ovate (f. 65. c.), nearly terete, inclosed in a hollow receptacle: with a short, emersed beak; mericarps with 5 undulated, equal depressed ribs; vittæ covered with a cobwebbed membrane, 1 in each furrow.—Involucra and involucels of many leaves (f. 65. a.).

150 Exacanthæ. Flowers polygamous: central ones fertile, the rest sterile. Calyx in the sterile flowers obsolete. Petals obcordate, equal, inflexed. Young fruit of the sterile flowers obovate, striated; of the central flowers much more ovate, somewhat papilllose, and crowned by 15 elongated stiff bristles.—Involucra of 10-12 large, channelled, spinose leaves; involucels of 7-11 spinose, very unequal leaves on one side.

151 Acroæus. Flowers polygamous. Margin of calyx 5-toothed. Petals lanceolate, with an incurved acute entire point. Fruit ovate, beaked, crowned by the calyx, conterrinated from the base to the middle with the involucrum, depressed in front, and marked by a furrow, not separable into 2 parts, but bilateral, 1 of the cells abortive.—Involucra of 4-5 concrete leaves.

152 Caëræys. Margin of calyx 5-toothed, rarely obsolete. Petals ovate, entire, involute at the apex or inflexed. Stylopodium depressed, hardly distinct in the mature fruit. Mericarps with 5 thick ribs, variable in the different sections of the genus; commissure almost the breadth of the mericarps. Seed constituting a free nucleus covered with abundance of vitte.—Involucra and involucels of many leaves. Flowers yellow.

153 Prænos. Margin of calyx 5-toothed. Petals ovate, entire, involute at the apex. Stylopodium depressed, hardly prominent in the fruit. Commisurage broad. Mericarps compressed from the back, with 5 smooth ribs, which are thick at the base, and ending in vertical membranous wings on the back. Seed girdled by an abundance of vitte.—Involucra and involucels of many undivided leaves.

155 Leöræa. Margin of calyx with 5 short teeth. Petals ovate, with an inflexed point. Stylopodia 2, distinct. Styles subulate. Fruit ovate, didymous, with a narrow commissure; mericarps semi-terete, with 5 obtuse, spongy ribs, which are beset with prickles on all sides. Seeds girdled by copious vitte. Involucels of 5-8 subulate leaves.

156 Magnýæris. Margin of calyx obsolete. Petals obcordate, with an inflexed point. Fruit ovate (f. 56. I. b.), tomentose; mericarps with 5 thick, blunt ribs, and narrow furrows. Seeds clothed on every side with very slender vitte, convex on the outside, and involute with a deep furrow on the inside.—Involucra and involucels present, of many undivided leaves.

157 He'ræmas. Margin of calyx 5-parted, foliaceous, permanent. Petals oval-oblong, acute, keeled, entire, equal. Fruit ovate; mericarps rather inflated, compressed from the back, 5 ribbed: the dorsal rib exerted: the 2 middle ones larger: and the 2 marginal ones small, under the commissure; vitte many in the furrows between the ribs, which are broad. Seed not adnate to its covering, rather hollow inside.—Involucra of many leaves; involucels of 3 leaves.

158 Cönæum. Margin of calyx obsolete. Petals obcordate, rather emarginate, with a short inflexed point. Fruit compressed from the sides, ovate; mericarps with 5, rather prominent, equal ribs, which are undulately crenulated; having the furrows between the ribs, furnished with many stripes, but without any vitte. Carpophore bifid at the apex. Seed with a
deep narrow furrow inside.—Involucra of 3-5 leaves; involucels of 3-5 leaves, dimidiate.

159 Vicaria. Margin of calyx obsolete. Petals unknown. Styles short. Fruit ovate-oblong; mericarps nearly semi-terete, with 5 filiform, hardly prominent ribs; vittae small, many in the furrows, which are broad and flat; commissure narrow. Carpophore thick, somewhat bifid at the apex. Alburnum furnished with a furrow at the commissure, convex outside.—Involucra, and generally the involucels, are wanting.

160 Arraca'cha. Margin of calyx obsolete. Petals lanceolate or ovate, entire: with an inflexed point, which is curved above the middle nerve. Fruit ovate-oblong, somewhat compressed from the sides; mericarps with 5 equal ribs; vittae many in the furrows. Alburnum nearly semi-terete, furnished with a furrow at the commissure.—Involucra wanting, or of 1 leaf; involucels of 3 leaves. Flowers polygamous.

161 Pleurosper'mum. Margin of calyx 5-toothed. Petals obvolute, entire, flat, or attenuated and inflexed at the apex. Fruit ovate, somewhat compressed from the sides; mericarps furnished with a double membrane: outer one furnished with 5 winged hollow ribs: the inner one adnate to the seed, and furnished with 5 elevated ribs under those of the outer membrane; furrows of the inner membrane furnished with 1-2 vittae each, and the commissure with 2. Carpophore filiform, binate.—Involucra and involucels of many leaves.

162 Hymenole'xa. Margin of calyx obsolete. Petals obovate, entire, flat, or attenuated and inflexed at the apex. Fruit ovate or oblong; mericarps with 5 exerted, nearly equal wings; commissure flat, furnished with 2 vittae, and the furrows with 1. Seed with a furrow in front, convex on the outside. Carpophore binate.—Involucra and involucels of many leaves.

163 Physosper'mum. Margin of calyx 5-toothed. Petals obvolute, somewhat emarginate, with an inflexed point. Fruit contracted from the sides; mericarps reniformly globose, didymous, with 5 filiform equal slender ribs: the lateral ribs placed before the margins; vittae broad, 1 each furrow. Seed semi-lunar.—Involucra and involucels of many leaves.

164 Smy'rinum. Margin of calyx obsolete. Petals lanceolate or elliptic, entire, with an inflexed point. Fruit contracted from the sides; mericarps reniformly globose, didymous: with 3 dorsal, rather prominent ribs, and 2 lateral, margining, nearly obliterated ones; vittae many in each furrow; carpophore binate. Seed involute.—Involucra and involucels variable in the different species.

165 Eu'ropus. Margin of calyx 5-toothed (f. 56. K. b.). Petals unknown. Fruit a little contracted from the sides (f. 56. K. a.); mericarps ovate, rather didymous, with 5 hardly prominent ribs; furrows having 3 convex stripes, more prominent than the ribs, which are hollow inside and filled with oil; commissure furnished with 4 similar vittae. Seed semi-lunar. Carpophore binate.—Involucra and involucels of many linear leaves (f. 56. K. c.).

166 Scaligé'ria. Margin of calyx entire. Petals obcordate, with a short inflexed obtuse point. Stylopodia thick (f. 56. B. h.), parallel. Styles filiform, bent outwards. Fruit rather didymous; mericarps ovate, contracted at the raphe, hardly compressed from the sides, with 5 filiform ribs; vittæ 2-3 in the furrows, which are rather convex, and 4-6 in the commissure, which is flatish. Alburnum furnished with a furrow on the inside.—Involucra wanting; involucels of a few small linear leaves.

FIG. 56.

Suborder III. Cori'sper'mae. Alburnum involutely curved from the base to the apex.

Tribe XVII.

Cora'ndeae. Fruit globose, or of 2 subglobose mericarps. Mericarps furnished with 5 primary, depressed, and flexuous ribs: lateral ribs placed before the accessory margin; and 4 more prominent secondary ones; all wingless.

167 Bifora. Margin of calyx obsolete. Petals obvolute, emarginate, with an inflexed point: outer ones nearly equal or radiating and bifid. Fruit didymous; mericarps ventricosely subglobose, granularly wrinkled: marked with 5 impressed, obsolete stripes: the 2 lateral stripes semicircular, placed in front of the accessory margin; vittæ wanting; commissure having 2 holes. Carpophore binate, adnate on both sides.—Involucra and involucels wanting, or of 1 leaf.

168 As'toma. All as in Bifora, but the fruit is evidently didymous; and the commissure is narrow, not perforated, nor dilated at the apex; styles rather diverging.—Involucra of 5-6 lanceolate leaves; involucels of 4-5 leaves.

169 Atre'ma. Teeth of calyx 5, acute, small, permanent. Petals obvolute, emarginate, with an inflexed point. Fruit rather didymous; mericarps nearly globose, ventricose, marked with 5 rather prominent ribs, without any vittæ; commissure narrow, closed.—Involucra and involucels of many leaves.

170 Coria'ndrum. Teeth of calyx 5, acute, unequal, permanent. Petals obvolute, emarginate, with an inflexed point: outer ones radiating, bifid. Fruit globose, 10-ribbed, hardly divisible; the 4 secondary ribs on each mericarp are more prominent than the primary ones, and keeled; vittæ 1 in each furrow, and 2 in the commissure; carpophore free in the middle, but adnate at the base and apex. Seed hollow in front, covered by a loose membrane.—Involucra none; involucels usually of 3 leaves, dimidiate.

171 Cymboca'rum. Margin of calyx obsolete. Petals equal, obcordate, with an inflexed point. Stylopodium depressed; styles...
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reflexed. Fruit nearly globose; mericarps solid, hemispherical: with 5 primary, filiform, usually obliterated ribs, without any secondary ribs or vitice. Carpophore bipartite, free in the middle, but adnate at the base and apex. Seed hollowed in front.—Involucra and involucels composed of linear leaves.

Suborder 1. ORTHOSPERMÆ (from ὄρθος, orthos, straight, and σπέρμα, sperma, a seed). D. C. prod. 4. p. 58. Albumen flat on the inner side, neither involute, nor convolute.

§ 1. Umbels simple or imperfect. Fruit destitute of vitice.

Tribe 1.

HYDROCOTYLEÆ (plants agreeing with Hydrocotyle in important characters), or Orthospermae. Imperfecte, Umbellata, Compressæ, D. C. prod. 4. p. 58.—Hydrocotyleae, Spreng. in Schultes, syst. 6. p. 52. Koch, umb. p. 141. exclusive of many genera. Fruit contracted from the side; back of carpellæ or mericarps convex, rarely acute; the 5 primary ribs or nerves becoming immediately obsolete: lateral ribs marginating, or thrown back into the flat commissure: secondary ones permanent and filiform, sometimes absent or nearly so. Albumen flattish in front. Petals spreading, entire, acute, straight, or rather in- flexed at the point. This tribe represents the forms of nearly all in the different genera; it is distinguished from nearly all the suborder Orthospermae, in the umbels of flowers being imperfect; from Sambuceæ in the lateral compression of the fruit, and from Malvaæ in the commissure not being gradually contracted.


Lin. syst. Pentádtia, Décúdia. Tube of calyx rather compressed: limb with an obsolete margin. Petals ovate, entire, acute, with a straight apex. Fruit flatly compressed from the sides, bicarpellate. Mericarps or carpellæ without vitice: having the 5 ribs or nerves nearly filiform: the carinal and lateral ones usually obsolete, and the 2 intermediate ones joined. Seed carinately compressed.—Usually slender bog herbs, rarely subshrub. Umbel simple, surrounded by a few-leaved involu- crum. Flowers sessile or pedicellate, white. This genus is composed of a heterogeneous mass of species, and is therefore probably divisible into several genera.

Sect. 1. Euhydrocotyle (this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 59. Hydro- cotyle, Lin. gen. no. 325. Stems herbaceous, of nearly all the species, creeping. Fruit compressed; mericarps furnished with 1-2 ribs on each side.

§ 1. Leaves peltate.


I. HYDROCOTYLE.


2. H. vulgàris (Lin. spec. p. 328.) leaves peltate, orbicular, doubly crenated, 9-nerved; petioles pilose at the apex; umbels capitulate, usually 5-flowered; fruit somewhat emarginate at the base, of one colour. 3. H. Native nearly throughout the whole of Europe, in marshy boggy places, and on the margins of clear rivulets, particularly on a peat soil: plentiful in some parts of Britain; also of North America, in Canada. Fl. dan. t. 90. Smith, engl. bot. t. 751. Curt. lond. 6. t. 19. Schkuhr, handb. t. 59. Rich. hydr. no. 1. t. 50. f. 1. and t. 52. f. 1. exclusive of the variety. Stems creeping, rooting at the nodi. Peduncles of the umbels or scapes much shorter than the petioles. Flowers reddish white or rose-coloured. There is a variety, but it is rather rare, with smooth petioles, and with the limbs emarginate at the base or nearly entire, and with the scapes drawn out beyond the umbels of flowers, and bearing 2 umbels each. Gerarde calls this plant water penny-wort, sheep-killing penny-grass; in the north of England it is called white-root, to distinguish it from red-root; in Norfolk Fluck-wort, from its being supposed to occa- sion the fluxes in the liver of rotten sheep; and by the husband- man sheep's-bane, "because it killeth sheep that do eat thereof." This, however, is a vulgar error; for the root in sheep is owing to their feeding in wet grounds, and perhaps to an insect (the Fasciolâ hepática), which from its shape is called a fluke or flounder, and abounds in such situations, adhering to stones and plants, as well as to the liver and biliary ducts of sheep af- fected with the root. This, together with Astrâca or Sândem, and Pinguicula or Butter-wort, are common in marshy places, and therefore the root in sheep has been ascribed to these; but it is pretty certain that neither sheep nor any other quadruped feed on these plants.


3. H. pusílla (Rich. hydros. p. 27. t. 53. f. 2.) plant rather hairy; leaves orbicular, not emarginate at the base, obsolescently crenated, 7-nerved; flowers umbellate; umbels hardly contain- ing so many as 12 flowers; scapes equal in length to the petioles. 3. F. Native about Monte Video, in arid places; and on shady rocks at Rio Pauquaper, in the province of Rio Janeiro; also of Buenos Ayres. Cham. et Schlecht. in Linnaea. 1. p. 53. Perhaps one of the smallest. Postulated with Astrâca or Sândem, if they were minutely stipulate (Rich.). Fruit smooth; mericarps marked with a single elevated line on each side. The Buenos Ayrenian plant differs from the Brazilian one in being perfectly glabrous.

Small Penny-wort. Pl. creeping.

4. H. modoëtá (Cham. et Schlecht. l. c. p. 358.) leaves on long petioles, orbicularly reniform, glabrous, 9-nerved; petioles pilose at the apex, as well as the young branches; umbels on short peduncles, many rayed; fruit small, emarginate at both ends. 3. F. B. F. Native of Brazil, in the province of Monte Video; and of Chili about Valparaíso. Petioles 9-12 inches long. Peduncles an inch long, rarely more, and sometimes only 3 lines. Fruit smaller than in any other species; mericarps marked with a hardly elevated line on the sides.

Medest Pennywort. Pl. cr.

5. H. barraro'ssa (Cham. et Schlecht. l. c. p. 360.) leaves on long petioles, peltate, orbicular, 8-nerved, 8-lobed, and cre- ated, and are, as well as the petioles, clothed with rufous hairs; umbels on long peduncles, many (50-60) rayed; fruit nearly globose, ovoid, rather emarginate, acutely ribbed. 3. F. Native of Brazil, in shady woods near New Friburg. Petioles 4-8
inches long, but rather shorter than the peduncles; pedicels 3-6 lines long.

Bonariæsia Penny-wort. Pl. cr.

H. umbellata (Lam., spec. p. 324.) plant glabrous; leaves petaloid, orbicular, emarginate at the base, doubly crenated, usually 11-12 nerves; ultimate pinnules with 20-30-flowered; flowers distinctly pedicellate. 2. B. F. Native of the Western Indies, Peru, and at Tampico in the Bay of Mexico, as well as of Cuba and North America. Spreng. umb. l. t. 1. f. 1. Rich. hydr. p. 28. t. 52. f. 3. Umbels prolificus in the species received from Tampico, but simple in those from Cuba. Corolla white.—Acaciea, Piso, bras. p. 9.—Côtyledon aquatica, Sloane, jan. p. 212.


Pl. cr.

7 H. Bonariæsis (Lam. dict. 3. p. 147.) plant glabrous; leaves petaloid, orbicular, 15-20-nerved, doubly crenated; scapes hardly longer, but often shorter than the petioles, umbellate at the apex, and umbellately branched; flowers disposed in interrupted whorles along the branchlets. 2. B. F. Native of South America, in marshy places not far from the sea, where it assumes various forms. Cham. et Schlecht. in Linnaea. 1. p. 337. H. umbellatula ß, Bonariësis, Ramm. et Schult. syst. 6. p. 345.

Var. ß, multiflora (Ruiz et Pav. fl. per. 3. p. 24. t. 216. f. a.) rays of umbel 6-10; whorles consisting of 15-20 flowers each. 2. B. G. Native of Brazil, Peru, Bucnos Ayres. H. Bonariësis, Rich. Cav. ion. 5. t. 488.

Var. ß, tribarilys (Ruiz et Pav. l. c. f. b.) rays of umbel 3; whorles 3-6-flowered. 2. B. Native of Peru and Brazil. H. polystachia ß, Rich. hydr. p. 31.


8 H. petiolalis (D. C. prod. 4. p. 60.) plant quite glabrous; leaves petaloid, orbicular, 10-12-nerved, simply and broadly crenated, on long petioles; scapes equal in length to the petioles, umbellate at the apex, and umbellately branched; branches 2-5, interruptedly verticillate. 2. B. F. Native of the Mauritius. H. vulgàris, Bory, voy. ex Rich. H. quinquerviála, Pet. Th. miss. ex Rich. H. polystachia ß, Rich. hydr. p. 31. Nearly allied are the Petiolaris seen in the leaves of the plant being simply crenated, in the petioles and scapes being nearly a foot high. Fruit nearly orbicular, emarginate at the base; mericarps furnished with one rib on each side.

Petiolar Water Penny-wort. Pl. 1. f. cr.

9 H. Langedorffii (D. C. prod. 4. p. 60.) plant glabrous or rather pilose on the leaves while young; leaves petaloid, nearly orbicular, with 5-7 short lobes, crenated, 5-7-nerved; peduncles much longer than the petioles; umbel simple, containing 15-20 pedicellate flowers, surrounded by an 8-10-leaved reflexed involucrum. 2. E. F. Native of Brazil, in the Island of St. Catharine. Stems long, creeping, slender. Peduncles 5-8 inches high. Adult leaves glabrous on both surfaces; lobes either acute or obtuse. Pedicels 3 times the length of the involucrum.

Langedorffii's Penny-wort. Pl. cr.

10 H. grâcicula (Ruiz et Pav. fl. per. 3. p. 26. t. 247. f. 6.) leaves petaloid, orbicular, 7-angled, 7-nerved, glabrous, crenated; pedicels and scapes hairy; scapes shorter than the pedicels; umbels 5-7-flowered. 2. B. F. Native of Peru, in stagnant watery places, and on the edges of rivulets. Rich. hydr. p. 32. Stems creeping. This species differs from all others in the present section in the leaves being acutely angled.

Slender Penny-wort. Pl. cr.

11 H. Humboldtii (Rich. hydr. p. 53. t. 53. f. 6.) leaves petaloid, 5-6-lobed, hairy on both surfaces; lobes short, ovate, acute, doubly serrated; pedicels, stems, and pedicelles glabrous; umbels 20-flowered, 20-petalled, nearly without ribs. 2. B. F. Native of the kingdom of Quito. B. et Kunth, nov. gen. amer. 5. p. 32. But H. Humboldtii, Wild. herb. is distinct from this, but is referable to H. Bonplandii.

Humboldti's Penny-wort. Pl. cr.

12 H. Asterias (Cham. et Schlecht. in Linnaea. 1. p. 381.) stems decumbent, at length glabrous; leaves petaloid, petiolate, 3-5-nerved, at length glabrous; lobes lanceolate, unequally serrated; pedicels longer than the petioles; umbels simple, 14-18-flowered; fruit tuberculate, emarginate at the base, with conspicuous ribs. 2. B. S. Native of Brazil, within the tropics. Lobes of leaves usually 4, of various breadths. H. varians, Pohl, in litt.

Starry Penny-wort. Pl. decumbent.

13 H. acontifolia (Rich. hydr. p. 35. t. 53. f. 5.) leaves petaloid, orbicular, hairy on both surfaces, 7-flowered, 7-nerved: lobes lanceolate, acute, doubly serrated; pedicels, peduncles, and stems glabrous; umbels simple, 20-30-flowered; fruit orbicular, nearly without ribs. 2. B. G. Native of New Granada, in shady places. H. B. et Kunth, nov. gen. amer. 5. p. 23.

Monk's-hood-leaved Penny-wort. Pl. cr.

14 H. macropodis (Pohl, in litt. 1828.) plant creeping; leaves petaloid, 7-cleft, 7-nerved, rather hispid above, especially along the nerves, glabrous beneath; lobes lanceolate, doubly serrated; pedicels and pedicelles very long, glabrous; umbels simple, 40-50-flowered; fruit ribbed, emarginate at both ends. 2. B. F. Native of Brazil. Leaves 6 inches in diameter. Hairs crowded at the tops of the petals at the insertion of the leaves.

Large-leaved Penny-wort. Pl. cr.

15 H. quinqueloba (Ruiz et Pav. fl. per. 3. p. 25. t. 248. f. b.) plant hairy; leaves petaloid, 5-nerved, palmately 5-cleft; lobes acute, doubly serrated; the terminal or middle lobe longer than the rest; pedicels equal in length to the petioles; umbels simple, many flowered, globose. 2. B. F. Native of Peru, in woods at Pillao; and of Brazil near Corvo-Sico. Rich. hydr. p. 54. Cham. et Schlecht. in Linnaea. 1. p. 360. The whole plant is rufous from pili. Pedicels 40-50 in each umbel, and when bearing the fruit they are about 3 inches long. Fruit emarginate at the base; mericarps acutely 3-ribbed on the back.

Fire-lobed-leaved Penny-wort. Pl. cr.

16 H. Stella (Pohl, in litt. 1828. ex D. C. prod. 4. p. 61.) stems decumbent, villous; leaves on long petioles, petalate, 5-nerved, 5-cleft, villous on both surfaces: lobes broad-lanceolate, doubly serrated, rather unequal; umbels on long peduncles, many rayed; fruit pilose, ribbed, emarginate at the base. 2. B. F. Native of Brazil. Perhaps sufficiently distinct from the preceding species.

Star-leaved Penny-wort. Pl. decumbent.

17 H. batrachioidea (D. C. prod. 4. p. 667.) plant glabrous; stems rooting at the nodi; leaves on long petioles, somewhat petalate, 3-5-parted: lobes cuneate, obtuse at the apex, entire or 2-3-cleft; pedicels much shorter than the petioles; umbels 5-7-flowered. 2. B. F. Native of Chili, in inundated places near Rancagua, and in ditches. H. ranuncoloidea, Berttero, herb.; but not of Lin. Habit almost of Ranunculus aquatilis or R. tripartita.

Batrachium-like Penny-wort. Pl. cr.

18 H. Poppertii (D. C. l. c.) plant furnished with a few scattered hairs; stems weak, elongated, not rooting at the nodi; petioles long, hairy at the apex; leaves orbicular, cordinate with the recesso open, 9-nerved, bluntly 9-lobed, toothed; pedicelles axillary, and opposite the leaves, shorter than the pedicels; Kk
flowers 15-20 in an umbel, on long pedicels. 2 B. F. Native of Chili. Habit of *H. Zeylanica*, but the flowers are not capitulate. The inflorescence is that of *H. geranioides* or *H. achillemitoides*, but the stems are not radiate.

*Poepigg's* Penny-wort. Pl. trailing.

§ 2. *Leaves more or less cordate at the base.*

*Flowers umbellate, distinctly pedicellate.*

19 H. *acutifolia* (Ruiz et Pav. fl. per. 3. p. 25. t. 248. f. 8.) plant rather villous; leaves cordate, acute, situated at the base, unequally crenate-toothed on all sides; peduncles a little longer than the petioles; umbels many flowered, simple, globose; pedicels of flowers distinct; fruit almost didymous, bicusitate on both sides. 2 B. F. Native of Peru, at Pilako. Suananche simiata, Spreng, syst. 1. p. 878. Allied to *H. ginquefolia*, but differs in the leaves not being peltate.

*Acute-leaved* Penny-wort. Pl. cr.

20 H. *geranioides* (Rich. hyd. no. 32. f. 21.) plant hairy; leaves orbicular-reniform, 9-nerved, bluntly 9-lobed, crenated; petioles pubescent, rather higher than the peduncles; umbels 20-flowered; flowers pedicellate. 2 B. F. Native of Peru. Petioles a finger in length. Pedicels 3-4 lines long. Involucrum many leaved: leaflets ovate, acute, small. Fruit nearly orbicular, didymous.

*Geranioid-like* Penny-wort. Pl. cr.

21 H. *Achillemitoides* (Rich. hyd. no. 28. f. 31.) plant beset with spreading hairs; leaves orbicular-reniform, 9-nerved, a little lobed, doubly crenated, cleft at the base into a narrow cleft; petioles elongated, pilose; pedicels slender, shorter than the petioles; umbels 10-15-flowered; flowers distinctly pedicellate; mericarps of fruit 3-ribbed. 2 B. F. Native of Peru, in shady humid places; and of New Andalusia, on Mount Cocollar. H. B. et Kunt, nov. gen. amer. 5. p. 24. Petioles 6-8 inches long. Pedicels 4-5 inches long.

*Alchemilla-like* Penny-wort. Pl. cr.

22 H. *Laniflora* (D. C. prod. 4. p. 61.) plant villous; leaves orbicular, cordate, 9-nerved, 9-lobed; lobes obtuse, denticulated; peduncles opposite the cauline leaves, above twice the length of the petioles; umbels 10-35-flowered; flowers and fruit glabrous. 2 B. F. Native of New Holland. Pedicels about 3 lines long; the rest of the plant very like *H. densiflora*.

*Loose-flowered* Penny-wort. Pl. cr.


24 H. *Chilensis* (Cham. et Schlecht. in Linnaea. 1. p. 283.) umbels more dense; pedicels very short; leaves 7-lobed, 7-nerved; petioles an inch and a half long. 2 B. F. Native of Chili, near Talaguanos.

*Bowland's* Penny-wort. Pl. cr.

25 H. *Mexican* (Cham. et Schlecht. in Linnaea. vol. 5. p. 208.) stems creeping; branches erect; leaves reniform, usually 9-nerved, deeply lobed, hairy; umbels on long peduncles, many flowered, loose, globose; hairs on the pediuncle and pedicels reversed; styles spreading. 2 H. Native of Mexico, near Jalapa in shaly woods. Said to be allied to *H. Lecocëphala* and *H. Boumplantii*.

*Mexican* Penny-wort. Pl. cr.

26 H. *Humifusa* (Pollh. in litt. 1828. ex D. C. prod. 4. p. 62.) plant creeping, glabrous; leaves on long petioles, reniform, nearly orbicular, broadly crenated, 9-nerved; peduncles length of the petioles; umbels 20-flowered; flowers distinctly pedicellate; fruit ribbed, emarginate at both ends. 2 B. G. Native of Brazil. Leaves nearly like those of *H. Americana*, but differs in the flowers being umbellate, not capitulate. Perhaps *Hydrocotyle*, Loeft. itin. p. 231, is referrible to this species.

*Trailing* Penny-wort. Pl. tr.

27 H. *Leucocëphala* (Cham. et Schlecht. in Linnaea. 1. p. 364.) plant creeping; leaves orbicular-reniform, usually 9-nerved, doubly toothed or crenated, beset with a few scattered hairs on both surfaces, as well as on the peduncles and petioles; umbels 20-30-flowered, nearly globose; flowers distinctly pedicellate; mericarps of fruit smooth, at first cream-coloured, and acutely 3-ribbed. 2 F. Native throughout the whole of Brazil. Link et Otto, abbild. t. 21. Petioles 2-4 inches long. Pedicels of the umbel, which is milk-coloured, a line and a half long.

*White-headed* Penny-wort. Pl. cr.

27 H. *Natans* (Cyr. pl. rar. neap. 1. t. 6. f. 3.) plant creeping, glabrous; leaves orbicular, with a narrow crenate recess, reniform, bluntly and unequally 9-11-lobed, and 9-11-nerved, crenated; peduncles much shorter than the petioles; umbels capitate, 5-6-flowered; flowers on short pedicels. 2 B. H. Native of the kingdom of Naples, in bogs, ditches, and rivers; and in the river Anapo near Syracuse, and elsewhere in Sicily; Doubey gathered the same plant in Peru, and Chamisco at St. Francisco in North California.—Column. cephr. p. 316. with a figure. Rich. hyd. no. 23. f. 20. Cham. et Schlecht. in Linnaea. 1. p. 373. Petioles 3-10 inches long. Peduncles hardly an inch long. Stems having numerous roots, issuing from the joints. Fruit cordate, wrinkled a little.


28 H. *Multifida* (Rich. hyd. no. 44. f. 34.) plant glabrous; leaves palmately cut; segments 5, somewhat 3-lobed; middle segment the longest; peduncles glabrous, longer than the petioles, which are pilose; umbels 5-6-flowered; flowers distinctly pedicellate; fruit didymous, furnished with 2 ribs on both sides. 2 B. F. Native of New Granada, on the Andes, in humid shady places near Almaguer. H. B. et Kunt, nov. gen. amer. 6. p. 25. Wildld, in Schultes, syst. 6. p. 650.

*Multifid-leaved* Hydrocotyle. Pl. cr.

** Umbels capitate, 5-6-flowered, sometimes the lower ones are only 1-flowered.**

29 H. *Asiaëtica* (Linn. spec. p. 234.) plant rather villous; leaves orbicular-reniform, equally crenated, 7-nerved; petioles and peduncles in fascicles, pubescent; umbels capitate, on short peduncles, 3-4-flowered; fruit orbicular, furnished with 4 ribs on both sides. 2 B. F. Native nearly throughout the southern hemisphere, as well as within the tropics, in humid water places. Rich. hyd. no. 13. f. 11. Spreng. in Schultes, syst. 6. p. 348. Cham. in Schlecht. Linnaea. 1. p. 365. This species assumes many forms, especially in Manilla, Radacca, Chili (where it becomes *H. triloba*, Ruiz et Pav. fl. per. 3. p. 24. t. 245. f. 6.), Brazil, and the Cape of Good Hope (which is *H. Thunbergiana*, Spreng. nee endl. 1. p. 283, exclusive of the synonyme *H. natans*, Thunb, which is not obvious).


30 H. *Rephanda* (Pers, enc. 1. p. 502.) plant villous; leaves cordate, reniform, on long petioles, 9-nerved, rather toothed; pedicels villous, much exceeding the peduncles; umbels capitate, 3-flowered; fruit orbicular, furnished with 4 ribs on each side. 2 B. H. Native of Louisiana, Carolina, Georgina, Chili, and the West India Islands, in humid and inundated places. Rich. hyd. no. 13. f. 14. exclusive of the synonyme of Ruiz et Pav.
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Ficaria-like Penny-wort. Pl. cr.

32. H. diauntha (D. C. prod. 4. p. 63.) plant glabrous; leaves distant, on short petioles, reniform, 7-9-toothed, nearly veinless; umbels opposite the leaves, on short peduncles, 2-flowered; fruit flatly compressed, orbicularly cordate, with the mericarps having 2 ribs on both sides. 2. B. F. Native of New Holland, and King George's Sound. Stems weak, dichotomous, climbing a little. Leaves hardly twice the size of the fruit. Pedicels of the fruit longer than the peduncles of the umbel.

Two-flowered Penny-wort. Pl. trailing or climbing.

33. H. aberrantata (Rich. hydr. no. 17. f. 19.) leaves reniform, with a broad recess, shorter than broad, with 9-11 crenatures, 7-nerved, glabrous; petioles pubescent, longer than the limbs; peduncles longer than the petioles; fruit rather turgid, furnished with 4 ribs on each side, reticulated. 2. B. F. Native of Madagascar and Cochinhina, in humid places. Trisâmtus Cochinchinensis, Lour. cooh. p. 176. Stems tufted, creeping. Petioles 7-8 lines long; limbs of leaves 6 lines broad, and 2 lines long. Pedicels an inch long. Involucrum 2-leaved. Very nearly allied to H. dentatum, but differs in the leaves being much shorter.

Short-leaved Penny-wort. Pl. cr.

34. H. sumulatoanalis (Rich. hydr. no. 11. f. 9.) leaves cordately reniform, 5-nerved, completely crenated, with a narrow recess; petioles pubescent, longer than the limbs; umbels capitate, 5-flowered, on short peduncles; fruit orbicularly subglobose, striated. 2. B. S. Native of the Island of Bourbon, creeping along river banks. H. Asiatica var. Cham. et Schlecht. l. e. Leaves 4-5 lines in diameter. Petioles 8-12 lines long. Peduncules 2-3 lines long. The central flower in each umbel is fertile, and the 2 lateral ones sterile.

Money-wort-like Penny-wort. Pl. cr.

35. H. hebecarpa (D. C. prod. 4. p. 63.) leaves orbicularly reniform, toothed at the base, 7-9-nerved, crenated at the apex, glabrous, on long petioles; surculi sarmentose, prostrate; peduncles axillary, villous, much shorter than the petioles; umbels capitate, few-flowered; fruit villous, reticulated; mericarps furnished with 2-3 ribs on each side. 2. B. F. Native of the Island of Timor. Petoioles of radical leaves 4 inches long; limbs of leaves 2 inches broad. Three of the fruit in each umbel coming to perfection, rather large.

Hairy-fruited Penny-wort. Pl. prostrate.

36. H. isequirpes (D. C. prod. 4. p. 62.) leaves when young, rather villous, but glabrous in the adult state: radical ones on long petioles, with a reniform crenated 9-nerved limb, and a broad recess; umbels radical, on very short incurved, rather villous peduncles; leaflets of involucrum 2, ovate; fruit glabrous; mericarps furnished with 4 stripes on each side. 2. B. S. Native of Rio Janeiro. Petioles of radical leaves nearly a foot long. Pedicules half an inch long. Stems short, rather sarmentose, bearing leaves, which stand on short petioles.

Unequal-petioled Penny-wort. Pl. 1 foot.

37. H. pallida (D. C. prod. 4. p. 63.) leaves reniform, glabrous, broadly and shortly crenate-toothed; petioles rather dilated at the base, longer than the peduncles; leaves of involucrum 2, ovate, oblong-obovate, glabrous; umbels 3-flowered. 2. B. F. Native of the Cape of Good Hope. Burch. cat. geogr. no. 1907.

Cystocostus coriaceus, (D. C. prod. 4. p. 63.) leaves nearly entire, broadly reniform; peduncles rather villous, shorter. 2. B. F. Native of the Cape of Good Hope.

Pale Penny-wort. Pl. prostrate.

38. H. brevipes (D. C. prod. 4. p. 63.) stems elongated, prostrate, rooting at the nodi; leaves on long petioles, reniform, with broad large obtuse, loke-like teeth, pilose above, and on the petioles, smooth and beneath; peduncules axillary, very short; umbels few-flowered, capitulate, villous. 2. B. S. Native of Jamaica. H. leptostachys ex Jamaica, Spreng. syst. 1. p. 876. Allied to H. eriântus, but differs in being prostrate, as well as to H. macradus, but differs in the teeth of the calyx being blunt; also to H. leptostachys, but the inflorescence is truly distinct.

Short-pedunculated Penny-wort. Pl. prostrate.

39. H. erecteata (D. C. prod. 4. p. 668.) leaves reminantly coriaceous, bluntly crenated, on long petioles; nerves, petioles, and peduncles rather hairy; peduncles much shorter than the petioles; umbels capitulate, 2-3-flowered; leaves of involucrum 2, permanent, ovate, rather villous on the outside; mericarps very much compressed, reticulated 3-5-nerved, having the back hairy at the apex. 2. B. S. Native of Africa, at Cape Verd, in marshes at Khami. Allied to H. eriântus and H. yaldia.

Braacted Penny-wort. Pl. cr.


Hairy-flowered Penny-wort. Pl. sarmentose.

41. H. macrodus (Spreng. syst. 1. p. 877. exclusive of the synonymes) the whole plant covered with spreading hairs; leaves cordately reniform, coarsely 3-5-toothed; teeth or lobules acute, equal, quite entire; peduncles shorter than the petioles; umbels capitulate, few-flowered; leaves of involucrum 2, large, ovate, acuminate, pilose; fruit ovate, with many ribs, wrinkled. 2. G. Native of the Cape of Good Hope, on the Table Mountain. Cham. et Schlecht. in Linnæa. 1. p. 372. H. muschata, Spreng. in Schultes, syst. 6. p. 351. but not of Thumb.

Long-toothed-calyx Penny-wort. Pl. cr.

42. H. callidus (Cham. et Schlecht. in Linnæa. 1. p. 371.) leaves reniformly orbicular, 5-nerved, coarsely and unequally toothed, glabrous; peduncules more or less pubescent, capillary, in fascicles, almost longer than the petioles; leaves of involucrum smooth, one-half shorter than the fruit, which is obovate and many ribbed. 2. G. Native of the Cape of Good Hope. Allied to H. eriântus, but easily distinguished from it by its smoothness, by the teeth of the calyx being acute, and by the nerves of the leaves being 5, not 7, &c.

Beautiful-toothed-leaved Penny-wort. Pl. prostrate.

43. H. azteca (Lin. spec. 234.) plant quite glabrous; leaves orbicularly reniform, a little lobed, doubly crenated, 9-nerved; umbels capitulate, 5-flowered; upper ones nearly sessile; lower ones on short peduncles. 2. B. H. Native of North America, in boggys or swampy places, from Canada to k k 2
UMBELLIFER.E.

Carolina; and probably of South America, if the synonyme of Leafling, inam. p. 281. is referrible to the species. Lam. dict. 3. p. 192. Rich. hydr. no. 19. f. 10. Spreng. umb. no. 3. t. 2. f. 3.

Var. a. flexicaulis (Michx. fl. bor. amerc. 1. p. 162.) stems more firm, shorter, and as if they were flexuous.

Var. b. gracilis (Michx. l. c.) leaves more slender, filiform, not flexuous; leaves smaller.

American Penny-wort. Fl. May, Aug. Clt. 1790. Pl. cr. 44 H. mutica (Pohl. in lit. 1838. ex. D. C. prod. 4. p. 64.) plant creeping; leaves on long petioles, glabrous, reniformly orbicular, 8-nerved, and somewhat 9-lobed: each lobe with 3 crenatures; pedicels shorter than the peduncles, both bearded with pili at the apex; umbels capitate, 15-20-flowered; fruit glabrous, ribbed, emarginate at both ends. 2. B. S. Native of Brazil. Leaves and inflorescence like those of H. Americana.

Many-stemmed Penny-wort. Pl. cr.

45 H. cotyledonia (Roxb. hort. beng. 21.) plant tufted and creeping; leaves petiolate, reniformly orbicular, 7-nerved, bluntly 7-lobed, dentately crenated, hispid beneath, glabrous above; umbels opposite the leaves, nearly sessile, 7-9-flowered; fruit glabrous, acutely 3-ribbed. 2. B. F. Native of the east of Bengal, in Sinhet. Petioles twice the length of the limbs of the leaves, and arc as well as the stems glabrous.

Round-leaved Penny-wort. Pl. cr.

46 H. tenella (D. Don, prod. fl. nep. p. 183.) plant tufted and creeping; leaves reniform, somewhat 7-lobed, crenated, quite glabrous, shining; umbels capitate, sessile, few-flowered. 2. B. S. Native of Nipaul. Allied to H. nitidula, but differs in the leaves being less lobed, in the petioles being shorter, and in the umbels being sessile.

Plant Penny-wort. Pl. cr.

47 H. alta (Rich. hydr. no. 50. f. 28.) plant quite glabrous; stems erect, winged, compressed; leaves cordate, bluntly hastate, on short petioles; peduncles longer than the petioles; umbels 4-6-flowered; pedicels quite distinct; fruit lenticular, compressed, furnished with 10 ribs on both sides. 2. B. F. Native of New Holland. H. pusilla, R. Br. incd. but not of Rich.

Winged Penny-wort. Pl. 1/2 to 1 foot.

48 H. muscosa (R. Br. in Rich. hydr. no. 45. f. 27.) plant rather airy; leaves palmate; segments 3-5, narrow, cuneated, truncate at the apex; peduncles shorter than the petioles; umbels somewhat capitate, 6-8-flowered; fruit orbicular, rather compressed, having 3 ribs on both sides. 2. F. Native of New Holland. Petioles nearly an inch long, glabrous.

Massy Penny-wort. Pl. cr.

49 H. tripartita (R. Br. in Rich. hydr. no. 46. f. 25.) plant rather pilose; leaves palmate; segments 3, cuneated, deeply toothed; lateral ones usually bicolat; pedicules much shorter than the peduncles; umbels rather capitate, 6-10-flowered; fruit orbicular, didymous, furnished with 2 ribs on both sides. 2. F. Native of New Holland. Sieb. pl. exsic. nov. holl. no. 628. Flowers nearly sessile in the umbel, but after the flowers have decayed the pedicels lengthen a little.

Tripartite-leaved Penny-wort. Pl. cr.

*** Umbels capitate, many-flowered, especially with from 8 to 30 nearly sessile flowers.

50 H. plebeia (R. Br. in Rich. hydr. no. 20. f. 23.) plant glabrous; leaves reniform, doubly crenated, 7-9-nerved; peduncles shorter than the petioles; umbels capitate, globose, 12-16-flowered; fruit furnished with 2 ribs on each side. 2. B. F. Native of New Holland. Heads of flowers small; leaves of involucre ovate, acute. Stems trailing. Petioles 1-2 inches long.

I. HYDROCYTLE.

Plebeian Penny-wort. Fl. May, Aug. Clt. 1825. Pl. tr. 51 H. polyrhiza (D. C. prod. 4. p. 65.) plant trailing, rooting at the joints; leaves orbicular, cordate, with a narrow recess, crenated, 9-11-nerved, glabrous on both surfaces, as well as on the pedioles; peduncles villous at the apex; umbels 20-flowered, densely capitate; pedicels elongated after flowering, the fruit is therefore pedicellate; fruit orbicular, minutely dotted; mericarps furnished with one rib on each side. 2. B. S. Native of Brazil, in the neighbourhood of Rio Janeiro. Peduncles shorter than the petioles, rarely longer. The disposition of the flowers is intermediate between the first and second division of the genus.

Many-rooted Penny-wort. Pl. cr.

52 H. incrassata (Ruiz et Pav. fl. per. 3. p. 26. but not of Rafin.) plant glabrous; leaves reniform, 7-9-lobed, crenated serrated; serratures thickened, whitish; pedicels long; umbels many-flowered, globose. 2. G. Native of Peru, in shady places at Tarma. Rich. hydr. no. 47.

Thickened Penny-wort. Pl. cr.

53 H. Nepaliensis (Hook. exot. fl. 1. t. 30.) the whole plant scabrous from short scattered hairs; leaves orbicularly reniform, 7-lobed, crenately toothed; flowers monoeocious; umbels globose, many-flowered, dense; fruit turgitid, without ribs. 2. B. H. Native of Nipaul, in wet places. Some of the umbels apparently contain only male flowers, while others contain only female ones; these flowers are on short pedicels while young, but afterwards these pedicels gradually lengthen out. It comes very near to H. capitata, and according to Sprengel is probably not distinct from it.

Var. a. brevipes (D. C. prod. 4. p. 65.) pediciles on their greatest length shorter than the petioles.

Var. b. longipes (D. C. l. c.) pediciles when bearing the fruit longer than the petioles. H. hispida, D. Don, fl. nep. p. 183.


54 H. capitata (Petr. Th. fl. trist. d'ac. p. 43. t. 12. but not of Wild. nor Banks.) the whole plant hispid from long bristles; leaves orbicularly reniform, bluntly and obscurely 7-lobed, unequally crenated; flowers monoeocious; umbels globose, many-flowered, dense, on short peduncles; fruit rather turgitid, dotted, almost without ribs. 2. B. F. Native of the Island of Tristan da Cunha. Rich. hydr. no. 22. t. 62. f. 29. Carm. fl. no. 15. H. crinita, Petr. Th. in herb. Juss.

Capitate-flowered Penny-wort. Pl. cr.

55 H. clavata (Ruiz et Pav. fl. per. 3. p. 25. t. 247. f. a.) plant hairy from short down; leaves roundish-reniform, 13-lobed, rather lobulate, crenated; pediciles a little shorter than the peduncles; umbels globose, many-flowered. 2. B. F. Native of Peru, in humid places in woods by stagnant water, near Muna. Nerves of leaves and fruit fuyous. Leaves of involucre numerous, linear, and short. Flowers in each umbel about 200.

Globeflowered Penny-wort. Pl. cr.

56 H. citrinodora (Ruiz et Pav. fl. per. 4. p. 26.) leaves reniform, 7-9-lobed, crenated, and are, as well as the petioles, hairy, but pubescent beneath, as well as on the branches; peduncles densely villous, length of the petioles; umbels small, many-flowered, globose. 2. B. F. Native of Chili, in shady humid places about Concepcion; and of Peru, in the tract of Huancaro, as well as of Brazil according to Pohl.

Citron-scented Penny-wort. Pl. cr.

57 H. ranunculoidea (Lin. fl. suppl. p. 177.) plant glabrous; leaves orbicularly reniform, 5-nerved, and somewhat 5-lobed; lobes obtuse, somewhat crenated; middle lobe more prolonged than the rest; peduncles shorter than the pedioles; umbels 5-12-flowered; flowers pedicellate. 2. B. H. Native of North America, in Pennsylvania and Mexico; and of South


Sibthorpsia-like Penny-wort. Pl. May, July. Chl. 1806. Pl. creeping. 60 H. G'LEGANS (Rich. hydr. no. 33. f. 32.) plant glabrous; leaves semi-5-cleft; lobes tridentate at the apex; peduncles 3 times shorter than the pedicels; umbels capitati, 6-8-flowered; fruit didymous, furnished with 2 ribs on each side. 2. B. F. Native of New Holland. Leaves 4 lines in diameter; petals nearly an inch long.

Elegant Penny-wort. Pl. cr. 61 H. PULCHELLA (R. Br. in Rich. hydr. no. 34.) plant glabrous; leaves reniform, rather peltate, 5-nerved, 5-lobed; lobes bluntly tridentate; peduncles equal in length to the pedicels; umbels capitati, 10-flowered; fruit didymous, furnished with 2 ribs on each side. G. F. Native of New Holland. near Port Jackson. Petioles an inch long. Heads of flowers small.

Neat Penny-wort. Pl. cr. 62 H. KITT'DULA (Rich. hydr. no. 35. f. 33.) plant quite glabrous; leaves orbiculariy reniform, 5-7-lobed; lobes tridentate; pedicels 2 or 3 times longer than the peduncles; umbels capitati, 6-10-flowered. 2. B. S. Native of Java. Hook. exot. fl. 1. t. 29. Alluded to H. pulchella. Perhaps the same as H. rannunculoides var. incisa, Blum. bijdr. p. 884.

Small-shining Penny-wort. Pl. cr. 63 H. IREXRA (D. C. prod. 4. p. 66.) stems creeping; leaves on short petioles, orbicular, cordate, with a narrow recess, crenated, 7-nerved, pilose above, and on the upper part of the pedicels; peduncles rather peltate, 3 times longer than the pedicels; umbels 8-10-flowered, rather capitati; fruit small, roundish. 2. B. F. Native of Brazil. Petioles 2 lines long. Limb 2-3 lines in diameter. There is a variety with glabrous leaves according to Pohl.

Minute Penny-wort. Pl. cr. 64 H. INDEKTA (D. C. prod. 4. p. 668.) stems creeping, smoothish; petioles hairy, 5 longer than the limbs of the leaves, which are orbiculariy cordate, 3 lobed, toothed, and rather peltate; peduncles hairy, a little shorter than the pedicels; fruit small, ovate, glabrous, densely aggregate into a globose head, 30-flowered, furnished with one rib on each side. 2. B. F. Native of Chili. Poehl. exsic. no. 99. Habit of H. sibthorpsiae or H. minuta.

Undecked Penny-wort. Pl. cr. 65 H. HETEROMIA (Rich. hydr. no. 36.) plant glabrous; leaves reniform, 7-nerved, 7-lobed; lobes obtuse, crenated; peduncles much shorter than the pedicels, which are falcate; umbels 6-8-flowered, capitati; fruit smooth on one side, and tuber-
cular on the other, wrinkled and discoulered, furnished with one rib on both sides. 2. B. H. Native of New Zealand. H. flaccida. R. Br. miss. Petioles 2-4 inches long.

Variable-period Penny-wort. Pl. cr. 66 H. COMPACTA (Rich. hydr. no. 37.) plant villous; leaves orbiculariy reniform, small, 7-nerved, deeply toothed; peduncles very short, in fascicles; umbels 15-20-flowered, densely capitati; fruit rather didymous, furnished with 2 ribs on each side. G. B. Native of New Zealand. H. capitata, Banks and Sol. miss. but not of Pct. Th.

Compact-headed Penny-wort. Pl. cr. 67 H. PEDUNCULAIRIS (R. Br. in Rich. hydr. no. 38. f. 26.) leaves small, orbiculariy reniform, deeply toothed, rather 5-cleft, glabrous above, hairy beneath; peduncles equal in length to the pedicels; umbels capitati, 6-8-flowered; fruit lenticular, with 2 nearly obsolete ribs on both sides. G. B. F. Native of New Holland. Perhaps the same as H. pedunculairis, Sieb. nov. holl. exsic. no. 114. which is said to be glabrous; or it is perhaps referrible to H. pulchella.

Peduncular Penny-wort. Pl. May, Aug. Chl. 1822. Pl. cr. 68 H. INTERESTE'TA (R. Br. in Rich. hydr. no. 39.) plant glabrous; leaves irregularly 3-5-lobed, 3-5-nerved; lobes denticulated; middle lobe more prolonged than the rest; petioles and peduncles equal among themselves; umbels densely capitati, 12-15-flowered; fruit scabrous from wrinkles, furnished with 2 ribs on both sides; carpophore permanent, undivided. 2. F. F. Native of New Holland.

Interwoven Penny-wort. Pl. cr. 69 H. HIRTA (R. Br. in Rich. hydr. no. 40.) leaves orbiculariy reniform, hairy on both surfaces, 7-nerved, obliquely 7-lobed, crenated; petioles hairy; peduncles one-half shorter than the pedicels; umbels densely capitati, 20-flowered; fruit rather didymous, furnished with 2 ribs on each side. 2. B. F. Native of New Holland. Leaves distant. Petioles hardly an inch long. Stipulas membranous, permanent.

Hairy Penny-wort. Pl. cr. 70 H. NOYEE-ZELLECI'NE (D. C. prod. 4. p. 67.) leaves orbiculariy reniform, hairy on both surfaces, as well as on the pedicels, 7-nerved, obliquely 7-lobed, acutely and irregularly toothed; peduncles glabrous, 4 times shorter than the pedicels; umbels densely capitati, 10-12-flowered; fruit rather didymous, furnished with one rib on each side. G. F. Native of New Zealand. Petioles 12-13 lines long. Stipulas as in H. hirta.

New-Zealand Penny-wort. Pl. cr. 71 H. RUMIC'TA (D. C. prod. 4. p. 66.) plant hairy; leaves orbicular, cordate at the base, 7-9-nerved, 7-9-lobed; lobes broad, hardly acute, a little toothed; peduncles opposite the leaves, about equal in length to the pedicels; umbels densely capitati, 30-40-flowered; fruit rather didymous, and are as well as the pedicels glabrous; mericarpis furnished with one rib on both sides. G. F. Native of New Holland. Nearly allied to H. hirta, but differs from it in the pedicels being the length of the pedicels, not very short, and in the leaves being cordate, not reniform.

Dense-flowered Penny-wort. Pl. cr. 72 H. HIRTA (Blum. bijdr. p. 884. but not of Swartz nor Spreng.) stems creeping; leaves orbicular, cordate, somewhat 5-lobed, crenated, villous; umbels capitati, 7-11-flowered, pedunculate, usually solitary; mericarpis furnished with 3 ribs; G. S. Native of Batavia, in grassy places by the sea side. It differs in the inflorenscence from H. hirsuta of Swartz, which is the H. speciosa of Lam. H. hirsuta of Spreng, is a congeries of species very different from each other.

Hairy Penny-wort. Pl. cr. 73 H. GLOBA'TA (Blum. bijdr. p. 883.) stems creeping; leaves roundish-cordate, angular, and are, as well as the peduncles,
UMBELLIFERÆ. I. HYDROCOTYLE.

**HYDROCOTYLE**

**UMBELLIFERÆ. I. HYDROCOTYLE.**

**Flowers disposed in verticillate interrupted spikes.**

81 H. spicata (Lam. dict. 3. p. 153.) leaves reniformly cor- date, roundish, 7-nerved, crenated, rather hairy on both surfaces from scattered hairs; pedicels and peduncles hairy, peduncles 3 times longer than the pedioles; flowers in glomerate whorles, disposed in interrupted spikes; fruit didymous, without ribs. S. B. S. Native of St. Domingo and Porto Rico, &c. in humid parts of mountain woods. Rich. [hyd. no. 25. f. 15. Spreng, in Schultes, syst. 6. p. 351. H. hisruta, Swartz, f. ind. occ. 2. p. 560. but not of Spreng. nor Blum.]

**Spic-flowered Penny-wort.** Pl. July. Aug. Clt. 1810. Pl. cr. 82 H. BRACHYSTACHYIA (D. C. prod. 4. p. 68.) stems filiform, low, smoothish; leaves reniform-roundish, 7-nerved, crenated, pilose on both surfaces; pedicels shorter than the leaves, hairy; pedicelles twice the length of the pedioles, hairy; spikes oblong, continuous; fruit didymous, without ribs. 2. S. Native of St. Domingo.

**Short-spiked Penny-wort.** Pl. cr. 83 H. LEFTOSTACHYI (Rich. hyd. no. 26. t. 16. exclusive of the variety) leaves uniform, 7-nerved, crenated, rather pilose above, glabrous beneath; pedicels nearly 3 times longer than the limbs, and are, as well as the pedicels, pilose; flowers disposed in interrupted spikes, with the whorles of flowers very remote; fruit orbicular, didymous, without ribs. 2. B. S. Native of Cuba, in humid places near the Caribbean. H. et Kunth, nov. gen. amer. 5. p. 23. Spreng. syst. 1. p. 875. exclusive of the variety from Jamaica. Very like H. spicata, but differs in the leaves being glabrous beneath, in the whorles being remote, and containing few flowers; and in the pedicelles not exceeding the leaves.

**Slender-spiked Penny-wort.** Pl. cr.

**SCIENT. II. CENTELLA** (meaning unknown to us). Lin. gen. 1051. Log. obs. aparas. 26. D. C. prod. 4. p. 68. Stems shrubby, erectish. Leaves cuneated at the base, with the exception of only one species, neither peltate nor cordate, as in the first section. Fruit less compressed, with many ribs.—This section will perhaps form a distinct genus when the fruit of the species is better known.

*Petals villous.*

84 H. villosa (Lin. fil. suppl. p. 175.) the whole plant more or less villous; leaves cordate, acute, nearly entire, 3-nerved; stem crenated, branched; pedicels shorter than the pedioles; umbels 3-flowered, capitulate. S. G. Native of the Cape of Good Hope. Thunb. diss. 2. p. 413. Cham. et Schlecht. 1. c. p. 275. Mercurialis Astra, Lin. mant. p. 298. Centella villosa, Lin. syst. veg. 15. p. 763. There is a larger variety with leaves an inch long, and a smaller variety with leaves hardly 3-4 lines long. Leaves nearly entire, obtuse, with a little point. Pedicels 1-flowered, some of them shorter than the pedicels, but usually longer.


85 H. tridentata (Lin. fil. suppl. 176. Thuin. prod. p. 49. diss. 2. p. 415. t. 3.) the whole plant clothed with tomentum; leaves oblong-cuneiform, narrow, 5-5-toothed at the apex; stem crenated; pedicelles rising in fascicles, very short; fruit elliptic, compressed, furnished with 4 ribs on each side. S. G. Native of the Cape of Good Hope. Rich. hyd. no. 51. f. 57. Spreng, in Schultes, syst. 6. p. 334. B. B. S. Native of the Cape of Good Hope. Spreng. umb. prod. p. 34. Allied to H. villosa from the villous petals, and to H. SOLANDRA in the form of the leaves.

**Tridentate-leaved Penny-wort.** Pl. ¾ foot.

*Petals glabrous.*

86 H. TELIOBA (Thunb. diss. 2. p. 416. t. 3.) plant glabrous; leaves broadly wedge-shaped, 3-5-nerved, 3-5-toothed at the apex; teeth broad, acute; pedicules shorter than the
petioles; umbels capitate, 3-flowered; fruit compressed, somewhat dilateous, furnished with 2 ribs on each side. G. Native of the Cape of Good Hope. Rich. hydr. no. 35. Lam. in Schlecht. Linn. 1826. p. 284. Rétzel tubérisé. Spreng. umb. prod. p. 34. Allied to H. tridentata, but differs in the smoothness of all parts of the plant. Bracteas longer than the flowers. Middle flower in each umbel fertile: lateral 2 sterile.


87 H. SOLANDRA (Linn. fil. suppl. 176.) the whole plant clothed with hoary tomentum, the petals only excepted; leaves petiolate, obovately cuneiform, bluntly 7-toothed at the apex; umbels pedunculate, 3-5-flowered; flowers on short pedicels; leaves of involucrum ovate-lanceolate, glabrous inside. G. Native of the Cape of Good Hope, on hills. Lam. dict. 3. p. 153. Rich. hydr. no. 55. H. tomotenua, Thunb. obscr. 2. p. 416. Spreng. in Schultes, syst. 6. p. 593. Solandra Capensis, Lam. spec. 1407. exclusive of the synonyms. Perhaps numerous species here are confused.

Var. a, longipes (D. C. prod. 4. p. 69.) peduncles exceeding the leaves in length.

Var. b, communis (D. C. l. c.) peduncles length of the leaves.

—Lam. ill. t. 188. f. 5. Sibb. cap. excis. no. 140.

Var. γ, longifolia (D. C. l. c.) peduncles much shorter than the leaves; leaves cuneate, elongated. Native of the Cape of Good Hope. Burchell. Perhaps a proper species.

Solander's Penny-wort. Pl. 3/4 foot.

88 H. CENTELLA (Cham. et Schlecht. in Linnaea. 1. p. 375.) plant shrubby; leaves oblong, cuneate or lanceolate, 3-nerved, quite entire; umbels pedunculate, 3-5-flowered, with usually only one male flower; leaves of involucrum ovate-lanceolate; petals glabrous. G. Native of the Cape of Good Hope, where the plant varies much in form and habit.


Var. b, latiséllis (D. C. l. c.) leaves glabrous, cuneiformly oval. H. luteurifolia, Rich. hydr. no. 55. f. 39.


Var. e, plantaginea (D. C. l. c.) leaves canescent from hairs, oblong.—H. plantaginea, Spreng. neuve entd. 1. p. 284. grundz. t. 8. f. 5-7.

Centella Penny-wort. Pl. 3/4 foot.

89 H. MONTANA (Cham. et Schlecht. in Linnaea. 1. p. 374.) plant shrubby, when young villous, at length glabrous; leaves lanceolate, quite entire or somewhat tridentate, 3-nerved; petioles villous; umbels 3-flowered, on short pedicels; leaves of involucrum 2, twice the length of the nearly orbicular corrigate fruit. G. Native of the Cape of Good Hope, on the tops of mountains. A humble depressed branched shrub. Microcarps tumid, with 5 filiform ribs, and flattish furrows. Mountain Penny-wort. Shrub depressed.

90 H. VIRGATA (Linn. fil. suppl. p. 176.) plant shrubby, erect, branched; leaves linear-filiform, quite entire, umbels pedunculate, 1-3-flowered; flowers hardly pedicellate; leaves of involucrum lanceolate; fruit orbicular, obturate, furnished with 2 ribs on each side. G. Native of the Cape of Good Hope, ex Cham. et Schlecht. in Linnaea. 1. p. 379.

Var. a, glàberrima (D. C. prod. 4. p. 69.) plant twiggy, quite glabrous; flowers polygamous and monocious. H. virgata, Lam. ill. t. 188. f. 3. Spreng. syst. 1. p. 878.

Var. b, lanuginosa (D. C. l. c.) plant twiggy, clothed with lanuginous villi; flower polygamo-monocious; leaves expanded into linear lamina at the apex. Cham. et Schlecht. Var. γ, macrocarpa (D. C. l. c.) plant twiggy, glabrous; flowers polygamo-dioecious; fruit larger.—H. macrocarpa, Rich. hydr. no. 57. f. 40.—Pl. am. i. 510. f. 7.

Var. ε, nana (D. C. l. c.) plant short, glabrous; flowers polygamo-dioecious. Twigs Penny-wort. Pl. 1/4 to 1/2 foot.

† Species not sufficiently known.

91 H. FLUVIANTS (D. C. prod. 4. p. 69.) stems submersed, straight, filar; leaves peltate, orbicular, shining, floating; petioles thickened from the base to the apex. G. W. H. Native of Louisiana, floating in lakes and tranquil rivers, through immense tracts. H. incressatam, Rafin. fl. bul. p. 51, but not of Ruiz et Pav. Hydrocotyle Robin, Lonis. p. 461. ex Rafin. It grows also in water in Florida, very common. The stems have numerous fibres, issuing from the joints. The leaves are on long petioles, orbicular, peltate, and 15-20-nerved, glabrous, bluntly somewhat lobed, and crenated. Very like H. nátans, but differs in the leaves being peltate.

Floating Penny-wort. Pl. floating.

92 H. HEDERÉFÓLIA (Burch. cat. geogr. no. 558. trav. 1. p. 46.) plant decumbent, villous; leaves reniform, 3-angled; angles acute. G. Native of the Cape of Good Hope. The rest unknown.

Ivy-leaved Penny-wort. Pl. decumbent.

93 H. RACENóDA (Moc. et Senes, fl. mex. icon. incl. ex D. C. prod. 4. p. 70.) plant glabrous; leaves petiolate, orbicular-reniform, broadly crenated, with a narrow recess; peduncles twice the length of the leaves; flowers pedicellate, verticillate, disposed in interrupted racemes; fruit nearly globose. G. Native of Mexico. Stems creeping. Leaves rising from the nod of the stems in fascicles; petioles 12-15 lines long. Allied to H. interrupta, but the leaves are not peltate; and to H. spicata, but the flowers are evidently pedicellate.

Racenóda-flowered Penny-wort. Pl. cr.

94 H. GRUMÓSA (Moc. et Senes, fl. mex. icon. incl. ex D. C. prod. 4. p. 70.) plant glabrous; stems ascending; root grumose, fascicled; leaves pedicellate and stem-clasping at the base; leaves orbicular, cordate, crenated; umbels in fascicles; flowers distinctly pedicellate. G. B. F. Native of Mexico.

Grumose-rooted Penny-wort. Pl.

95 H. PINNATIFÍDA (Spreng. pag. 2. p. 47.) stems erect, glabrous; leaves pinnatifid; segments oblong, a little cut; umbels usually 3-flowered, involucrated.—Native country unknown. In Sprengel's subsequent works this plant is not admitted, and the name is omitted as a synonym: it is therefore very doubtful.

Pinnatifida-leaved Pennywort. Pl.?

Cult. All the species are of the most easy culture, but require to be kept moist. The stow, greenhouse, and frame kinds should be grown in pots, under which should be placed pans of water.


LIN. syst. Pentádria, Dígyánya. Tube of calyx nearly globose; limb very short or hardly any. Petals roundish, entire, obtuse. Styles obtuse. Fruit roundish, with the commissure nearly orbicular from the excavation; microcarps unequal, furnished with 3 ribs on the back (ex Nutt.), but according to Koch 5 filiform ribs: the lateral ones marginal, broader, thick

UMBELLIFERÆ. 1. HYDROCOTYLE. 2. CRANTZIA. 253
UMBELLIFERÆ. II. CRANZIA. III. DIMETOPIA.

white and spongy inside; the channels between the ribs furnished with 1 brown distinct vitta each, and the commissure with 2 vittae.—Small, glabrous, creeping herbs. Leaves sessile, narrow, obtuse, quite entire, lined with 5 transverse nerves, as the seminal leaves and petals of Erigerion cornuta. Peduncles axillary, erect. Umbels simple, 8-10-flowered. Involution 5-6-leaved. Flowers white, pedicellate, hermaphrodite, uniform.

C. lineata (Nutt. l. c.) leaves sessile, cuneate-linear, obtuse; peduncles length of leaves; umbels 8-10-flowered. 


E. B. F. Native of Illinois, Indiana, and Ohio. From C. lineata remarkably in its much longer and attenuated foliage.

Attenuated-leaved Cranzia. Fl. cr. Cult. See Hydrocytola above for culture and propagation.

III. DIMETOPIA (from dimetopos, having 2 faces; in reference to the mericarps of the fruit being unlike each other). D. C. coll. 4. p. 71.

LIN. SYST. Pentadria, Digynia. Teeth of calyx obsolete. Petals ovate-oblong, entire. Styles short. Fruit didymous; mericarps nearly globose, rather contracted at the commissure, of unequal shape and size: the one muricate with rows of blunt compressed tubercles, the other echinate by conical tubercles, which are drawn out at the apex into soft prickles. Seed?—An annual herb, hardly a finger in height. Stem short, branched,iset with scattered pilis. Leaves tripartite; lobes cuneate, linear-oblong, bluntly tridentate at the apex, or trifid. Peduncles opposite the leaves, and longer than them. Umbels simple, usually 5-flowered.

Involucrem of 5 linear-lanceolate leaves, which are the length of the flowers. Flowers white.—Habit almost of Erigenia; the fruit agrees with that of Santolina, and the petals with those of Hydrocytola.

1. D. pusilla (D. C. l. c.). S. H. Native of New Holland, at King George's Sound, and at Port Western. Small Dimetopia. Fl. ½ foot. Cult. See the seeds in a warm sheltered situation, in the open ground.

IV. ERIGENIA. V. MICROPLEURA. VI. DIDISCUS.

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IV. ERIGENIA. V. MICROPLEURA. VI. DIDISCUS.
the appearance of a head of the flowers of *Scabiosa Caucásica*, but the flowers are on longer pedicels; pedicels, after flowering, twisted inwards, bearing the fruit, which lies within the involucre, but erect at maturity. Fruit, when young, rather hairy, but in the adult stage it is covered with minute tubercles. This is one of the most showy plants of the order.


2. **D. albihörus** (D. C. prod. 4. p. 72.) plant glabrous; radical leaves on long petioles, palmate; segments dilated at the apex, cut, toothed; cauline leaves few, small; umbels simple, on long peduncles. 2. G. Native of New Holland, at Port Jackson. Trachymene incisa, Rudg. in Lin. trans. 10. p. 300. t. 21. f. 2. Fruit much compressed, beset with minute tubercles. Petals white.

**White-flowered Didiscus.** Cite. 1819. Pl. 1 1/2 foot. Cult. Sow the seed of these plants on a slight hot-bed in spring, and when the plants are 3 inches high, plant them separately into small pots, and shift them from size to size of pots as they grow.


**Lin. syst. Pentádria, Digynia.** Margin of calyx 5-toothed. Petals elliptic, entire, acutish, straight at the apex, rather valvate in activation; styles diverging. Fruit didymous, compressed, and contracted from the sides; mericarps gibbously convex, without any vittae, 5-ribbed: the 3 dorsal ribs and their channels mucrinated with tubercles; lateral ones marginal. Carpophore undivided. Seed gibbously convex, flattish in front.—Herbs or subshrubs, all natives of New Holland. Umbels compound, many-rayed: umbellules containing 5-12 flowers. Involucrum of many leaves. This genus agrees with *Hydrocystyle* in the fruit being compressed; the rest agrees with *Azoréllula*. *Por桑théra* of Rudge agrees with this genus in habit, but the structure of the flowers is very different, and most probably belongs to the order *Tremándræae*.


1. **T. aëccps** (D. C. prod. 4. p. 73.) plant glabrous, nearly leafless; stem 2-edged, branched; leaves also at the tops of the branches cut into a few fine lobes. 2. G. Native of New Holland. It agrees with *T. compressa* in the stem being compressed, but it is one half narrower, the leaves more finely cut, the umbel more slender. The fruit has not been seen, but the analogy of the herb with the following species is sufficient to indicate its belonging to the same genus.

**Two-edged-branched Trachymene.** Pl. 1 foot.

2. **T. cornacias** (Spreng. umb. spec. p. 9. exclusive of the Chili specimen) plant glabrous; fruit, leafless; leaves very few, small, binate or ternate: upper ones linear, entire; stem 2-edged, branched. 2. G. Native of New Holland, on the sandy coast. Azoréllula compressa, Labill. nov. holl. 1. p. 75. t. 101. Fruit compressed, obovate; mericarps convex on the back, 3-ribbed: ribs wrinkled from the tubercles. Involucrum shorter than the pedicels.

**Compressed Trachymene.** Pl. 1 foot.

### Sect. II. Dendromene (from ἄνεσις, dendron, a tree; in reference to the species being shrubby). D. C. prod. 4. p. 73. Plants shrubby. Leaves entire.


**Linear-leaved Trachymene.** Fl. Ju. Aug. Cite. 1824. Sh. 1 to 2 feet.

4. **T. tenuis** (D. C. prod. 4. p. 73.) shrubby; branches terete, beset with glandular hairs at the apex; leaves scattered, spreading, linear, acute; umbels few-flowered. 2. G. Native of New Holland. Branches very slender. Leaves hardly 1/4 line broad, and 3-4 lines long. Umbel trifid: umbellules 3-5-flowered. Ribs of fruit scabrous from tubercles. Very like *T. erícoides*.

**Slender Trachymene.** Shrub 1 foot.

5. **T. subvelutina** (D. C. l. c.) shrubby; branches terete; leaves linear, thickish, acute, velvety from short crowded down, as well as the branchlets; umbels crowded. 2. G. Native of New Holland, at Port Jackson. The leaves are almost like those of *T. erícoides*, but differ in being velvety and crenatish. Branches hardly diverging.

**Rather-velvety Trachymene.** Shrub 1 foot.

6. **T. erícoides** (Sieb. pl. exsic. nov. holl. no. 121.) shrubby; branches rather angular, glabrous; leaves linear, acute, spreading; umbels crowded. 2. G. Native of New Holland. Branches numerous, spreading. Leaves a fine broad, with the margins hardly revolute when dried. Umbels 5-cleft: umbellules 3-5-flowered. Fruit hairless from tubercles on the ribs.

**Heath-like Trachymene.** Shrub.

7. **T. lanceolata** (Rudge, l. c. Spreng. syst. 1. p. 879.) shrubby; branchlets rather angular, glandular, and velvety when examined by a lens; leaves lanceolate-linear, nerved, erect; umbels crowded, many-flowered. 2. G. Native of New Holland. Azoréllula lanceolata, Labill. nov. holl. 1. p. 74. t. 99. Leaves an inch and a half long, and 2 lines broad. Leaves of the involucrum the length of the umbel. Umbels 5-8-rayed; umbellules 8-10-flowered. Branches sometimes terminated by an 8-10-flowered, simple umbel.

**Lanceolate-leaved Trachymene.** Shrub 1 foot.

8. **T. myrtifólia** (Sieb. pl. exsic. nov. holl. no. 125.) shrubby; branches rather angular, hardly glandular or puberulous, even when examined by a lens; leaves oval-oblong, rather attenuated at both ends; umbels crowded, many-flowered. 2. G. Native of New Holland. Very nearly allied to *T. lanceolata*, but differs in the leaves being 9-10 lines long, and 3 lines broad. Umbels 8-10-rayed; umbellules 8-12-flowered.

**Myrtle-leaved Trachymene.** Shrub.

9. **T. ovális** (D. C. prod. 4. p. 73.) shrubby; branches densely clothed with short hairs; leaves oval, nerved, scattered, nearly sessile, hardly attenuated at either end; umbels many-flowered, crowded. 2. G. Native of New Holland. T. o'atá; Spreng. umb. spec. p. 8. (exclusive of the syn. of Labill.). Sieb. pl. exsic. nov. holl. no. 124. Perhaps only a variety of *T. myrtifólia*.

**Fur. 2. confèrta** (D. C. l. c.) leaves and branchlets much crowded. 2. G. Native of New Holland, at Port Jackson. Perhaps a proper species.

**Oval-leaved Trachymene.** Shrub 1 foot.

10. **T. o'atá** (Rudge, l. c. but not of Spreng. nor Sieb.) shrubby; branches smoothish; leaves broadly ovate, nearly sessile, hardly longer than broad; umbels crowded, many-flowered. L 1
G. Native of New Holland. Azorella ovata, Labill. nov. holl. 1. p. 74. t. 100. T. buxiifolia, Sieb. pl. exsic. nov. holl. no. 122. Leaves 4 lines long, and 3 lines broad. Umbels much crowded, small, 8-10-rayed.

Ovate-leaved Trachymene. Shrub.

Cult. All the species of Trachymene will grow well in a mixture of loam, peat, and sand; and they may be increased by cuttings, under a hand-glass, or by seeds.

VIII. ASTROTRICHA (from astro'v, astron, a star, and τρις τρίχως, thrice trichos, a hair; in allusion to the starchy down on the outside of the petals). D. C. coll. mem. 5. p. 29. t. 5. and 6. prod. 4. p. 74. —Bolax species, Sieb. ex X. Rudge, fl. nov. holl. exsic. no. 248.)

Lin. syst. Pentandria, Digyna. Tube of calyx ovate; limb small, hardly 3-toothed. Petals oval, acutish (f. 58. b.), permanent, flat, velvety from stellate down on the outside. Styles 2, filiform (f. 58. c.), not gradually thickening to the base. Fruit crowned by the calycine lobules and petals; mericarps ovate-oblong, contractcd at the commissure; ribs very blunt, hardly prominent; of the primary ones there are 3 dorsal, and 2 marginal, which are more acute and not so evident: of the secondary ones 4; vittae wanting on the back, but there are 2 rather prominent ones in the commissure, which are covered by a spongy pellicle.—Australian, branched subshrubs, having the branches, petioles, under side of leaves, and umbels beset with white stellate hairs. Peduncles panicked, each ending in a simple, many-flowered umbel. Bracteas under the branches and bracteolts solitary. Leaves of involucrum few and linear. Habit almost of Hérnus, but the fruit is very different. It differs from Bolax in habit, and in the fruit not being tetragonal.

1 A. floccosa (D. C. I. c. t. 5.) the whole plant is clothed with fleshy lanuginose down; leaves ovate-lanceolate, obtuse at the base, and acuminate at the apex.

G. Native of New Holland. Bolax floccosus, Sieb. exsic. nov. holl. no. 258. Leaves 3-6 inches long and 15-15 lines broad; petioles half an inch long.

Fleshy Astrotricha. Shrub.

2 A. lepidophila (D. C. I. c. t. 7.) plant clothed with short adpressed down; leaves oblance-linear, coriaceous, acutish at both ends.

G. Native of New Holland. Bolax lepidophila, Sieb. exsic. nov. holl. no. 257. Leaves 20 lines long and 3 broad; petioles 2 lines long.

Lanced-leaved Astrotricha. Shrub.

Cult. See Trachymene above for culture and propagation.


Lin. syst. Pentandria, Digyna. Tube of calyx ovate, compressed; limb 5-toothed; lobes ovate, acute, colored a little. Petals stipitate, oval, cuspitate at the apex, replicate. Stamina opposite the calycine lobes. Stylopodia (glands, Rudge) 2, thick, villous at the tops of the mericarps. Styles 2, filiform, rising from the inner bases of the stylopodia. Fruit compressed, striated; mericarps contracted at the commissure, 7-9-ribbed: ribs filiform: 2 lateral ones marginal; channels without vittae, as well as the commissure, which is very narrow. —Australian shrubs, usually covered with stellate hairs. Leaves alternate, simple, or tripartite. Umbels variable.

Sect. I. Eexanthosia (this section is supposed to contain the true species of Xanthosia, from eu, well, and Xanthosia). D. C. prod. 4. p. 74. Umbels axillary, simple, or bifid. Leaves of involucrum small.

1 X. montana (Sieb. fl. nov. holl. exsic. no. 248.) the whole plant clothed with villi: some of them starry, and others simple and elongated; leaves ternate, rarely 3-lobed; umbels axillary, nearly sessile, simple, 1-flowered; involucre and involucels 2-leaved. G. Native of New Holland, on the mountains. X. pilosa, Rudge; the flowers are only referrible to this plant.

Mountain Xanthosia. Shrub.

2 X. hirsuta (D. C. prod. 4. p. 74.) the whole plant clothed with hairs, some of which are stellate, and others simple and elongated; leaves sinuate, nearly 3-lobed; umbels axillary, pedunculate, bifid; umbelles 1-flowered; involucrum 2-leaved; involucels 3-leaved. G. Native of New Holland, near Port Jackson. X. pilosa, Rudge, only in the form of the leaves. Sieb. pl. exsic. nov. holl. no. 247.

Hairy Xanthosia. Shrub.

3 X. tridentata (D. C. prod. 4. p. 75.) young branches strigose: adult ones glabrous; leaves cuneate, acutely tridentate at the apex, tomentose from starry down beneath, but glabrous in the adult state; umbels pedunculate, axillary, bifid; umbelles 1-flowered; involucrum 2-leaved; involucels 2-3-leaved: leaves lanceolate. G. Native of New Holland, at Port Jackson. Leucola’na tridentata, R. Br. ex herb. mus. par.

Tridentate-leaved Xanthosia. Shrub.

Sect. II. Leucola’na (from leukos, leucaos, white, and χλαώνα, eklaina, a garment; in reference to the involucrum). D. C. prod. 4. p. 75. Umbels terminal, 3-4-rayed. Leaves of involucrum large, white.

4 X. rotundifolium (D. C. prod. 4. p. 75.) branches densely clothed with hairs, or rather rough from deciduous down; leaves reniformly orbicular, coarsely and acutely toothed; umbels 3-4-rayed: umbelles many-flowered; involucrum and involucels 3-leaved. G. Native of New Holland, on the eastern coast. Crucílina cándida, Lessch. in herb. Juss. Leaves of involucrum lanceolate, hairy at the base: those of the involucels broader, somewhat cordate, apiculated, glabrous. Fruit more compressed in the young state.

Round-leaved Xanthosia. Shrub.

Cult. For culture and propagation see Trachymene, above.


Lin. syst. Pentandria, Digyna. Tube of calyx compressedly tetragonal; limb 5-toothed. Petals elliptic, entire, acute. Fruit ovate, much contracted at the raphe, turigid, rather tetragonal, flatish on both sides at the back; mericarps without vittae, marked on the back by an oval impression; with 5 obsolete ribs: the 3 middle ones on the back: and the 2 lateral ones placed in the commissure, which is flat. —Weak, South American herbs, usually scabrous from stellate down. Leaves petiolate, opposite, simple, lobed, or toothed. Umbels simple, axillary, few-flowered. This genus is allied to Spandinthe.

1 B. palma’ta (Ruiz et Pav. fl. per. 3. t. 251. f. a.) plant
leaves palamately parted; segments 3-5, jagged; umbels 3-flowered: upper ones on short, and the lower ones on long peduncles. O. H. Native of Peru, in the province of Chancay, on sandy hills. Plant 2 feet high, brittle, perhaps erect.

**Palmate-leaved Bowlesia.** Pl. 2 feet.

2 B. lobata (Ruiz et Pav. l. c. t. 251. f. b.) plant decument, covered all over with fascicles of bristles or stiffer hairs; leaves reniform, 5-7-cleft, or with 5-7 deep crenatures; umbels 3-5-flowered, pedunculate. O. H. Native of Peru, in bushy places, on the Andes towards Pillao. The bristles on the upper surface of the leaves are 3-5 in a fascicle: those on the rest of the plant are 8, and stellate.

**Lobed-leaved Bowlesia.** Pl. decumbent.

3 B. inca'na (Ruiz et Pav. l. c. t. 268. f. a.) plant procumbent, hoary from crowded stellate fascicles of hairs; leaves reniform-roundish, bluntly 5-7-cleft; lobes entire or tridentate; petioles axillary, on short peduncles. O. H. Native of Peru, on hills in the tract at Huancayo, Rondos and Pillao. Spreng. umb. spec. p. 13. t. 5. f. 10. Petioles permanent, rather tendril-formed. In cultivation the plant however becomes smoother, longer, and more procumbent than in the wild state.

**Hoary Bowlesia.** Pl. procumbent.

4 B. tropo/zech/folia (Gill. and Hook. in bot. misc. 1. p. 325.) plant clothed with stellate down; stems procumbent, slender; leaves palmately 5-7-parted; segments lanceolate, bluntish, quite entire, with acute sinuses; peduncles 5-flowered; fruit small. F. F. Native of Chili, in shady places at El Salto de San Isidro, and in the valleys of the Andes, towards Mendoza. Stems filiform.

Var. β, trip'ar/ta (Hook. et Arn. in bot. misc. 3. p. 346) the 2 lower lobes of the leaves approximating, small, coarsely tridentate from the middle. F. F. Native of Chili, about Valparaiso.

**Tri'plexema-leaved Bowlesia.** Pl. pr.

5 B. te/nera (Spreng. syst. 1. p. 860.) plant clothed with stellate pubescence; stems procumbent, slender; leaves on long petioles, reniform, 5-7-lobed: lobes obtuse, bifid or trifid; peduncles short, bearing a 3-flowered umbel each. F. H. Native of Chili, about Concepcion, Valparaíso, Buenos Ayres, and Talcahuana; of Peru, on the mountains about Huancayo; and of Brazil, in dry fields about Monte Video, and at Porto Allegretto. Link. et Otto, abbild. t. 4. B. nodiflorus, Pers. in Huenk. herb. ex D. C. prod. 4. p. 75. B. geraniifólia, Cham. et Schlecht. in Linnaea. 1. p. 382. Hook. et Gill. in bot. misc. 1. p. 324. B. incana, Hort. par.


6 B. dich'otoma (Peppig, diar. no. 363. pl. exsicc. 95.) plant erect, dichotomous, hoary from stellate fascicles of hairs; leaves short, petiolate, obovate, coarsely tridentate at the apex; umbels 5-7-flowered, on long theads. O. H. Native of Chili, about Valparaíso and the baths of Collina. Peduncles of umbels about equal in length to the leaves, or longer; sometimes simple, bearing an umbellule at the apex: sometimes bifid at the apex, bearing 2 linear leaves, each of the branches bearing an umbellule. This species, like the others, varies much in the proportionate length of the peduncles; they are, however, usually much shorter than the petioles.

**Dichotomous-peduncled Bowlesia.** Pl. 1 foot.

Cult. The seeds may be reared on a hot-bed in spring; and when the weather gets warm, the plants may be planted out into the open ground, in any warm sheltered situation.

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**XI. FRAGOSA** (in honour of John Fragosa, first physician to Philip II. King of Spain.) Ruiz. et Pav. fl. per. prod. p. 45.

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**XII. AZORELLA** (meaning not explained). Gaud. in ann. L 1 2
UMBELLIFERÆ. XII. AZORELLA.

366. UMBELLIFERÆ. XII. AZORELLA.

1. A. ARETIÓIDES (Willd. herb. ex D.C. prod. p. 47.) leaves imbricate, tripartite, coriaceous; lobes oblong, acutish; petals thick and rather coryck, villous at the apex; umbils nearly sessile, 2-8-flowered; pedicels about equal in length to the involucre. Perhaps this genus is hardly distinct from Fragósa.

2. A. LYCORÓIDES (Gaud. in ann. sc. nat. p. 105. t. 5. f. 1.) leaves imbricate, sheathing at the base, trifid, coriaceous; lobes subulate, acute; sheaths funnel-shaped, ciliate toothed; umbels almost sessile, 3-4-flowered; leaves of involucre somewhat ciliate and bristly. 2. F. Native of the mountains of Magellan and the Maclowe Islands. 

3. A. FILAMENTÓSUS (Lam. ill. t. 189. f. 1.) leaves oblong, coriaceous, quite entire, crowded; pedicels dilated, ciliate with long bristles; umbels nearly sessile; leaves of involucre somewhat ciliate and bristly. 2. F. Native of the mountains of Magellan and the Maclowe Islands. A. chaititis, Pers. enchy. no. 3. D'Urv. fl. mal. p. 46. Bó lax filamentosus, Spreng. in Schultes, syst. 6. p. 359. There are varieties of this plant with either an elongated or crowded habit; and with the umbels either few or many-flowered, and the lower ones 1-flowered. Perhaps the same as Chamaétis integrifólia, Gaertn. fruct. t. 22. f. 4.

FILAMENTOSEAZORELLA. Pl. 1/2 foot.

4. A. Gilliesii (Hook. et Arn. in bot. misc. p. 346.) plant densely tufted; leaves petiolate, trifid; umbels pedunculate, 4-10-flowered; fruit utricular. 2. F. Native of Chili, in the valley of Usqualita, on the Andes of Mendoza, at the elevation of from 6000 to 12,000 feet. Bó lax Gillissii, Gill. et Hook. in bot. misc. 1. p. 323. t. 63. Root long, descending. Plant 2 inches high. This plant yields abundantly a gummy substance, which is gathered by the natives, and employed by them in the cure of headache.

Gillees's AZORELLA. Pl. 2 inches.

5. A. CESPTRÓSUS (Cav. icon. 5. p. 57. t. 484. f. 2.) leaves imbricated, spreading at the apex, thick, quite entire, and quite glabrous; umbels on short peduncles, 6-8-flowered; leaves of involucre one half shorter than the pedicels. 2. F. Native of Chili, on the higher mountains, called the Cordillera del Planchón. A. crassifólia, Pers. enchy. 1. no. 2. Fruit ovate; having the mericarps furnished with 3 slender stripes on the outside, as in the genus Fragósa.

TUFFED AZORELLA. Pl. 1/4 foot.

6. A. RÁCOIDES (D'Urv. fl. mal. p. 45.) leaves all radical, long pinnate; segments or leaflets remote, opposite, short, pinna-tild; lobes alternate, acutely cut; scapes short, very hairy; involucre 8-10-leaved; fruit glabrous, striated, nearly sessile. 2. F. Native of the Straits of Magellan, along the rivulet called Bougainville River. Root thick, fusiform. Umbels 3-8-flowered. Leaves hardly an inch long, but still longer than the sepal.

Carrot-like AZORELLA. Pl. 1 inch.

7. A. RANUNCULUS (D'Urv. fl. mal. p. 46.) stem stolonicerciform, very short; leaves on long petioles, 5-parted; partitions 3-lobed at the apex, obtuse; umbels axillary, on short peduncles; leaves of involucre 5, lanceolate, acute, ciliated at the base, about equal in length to the flowers. 2. F. Native of the Straits of Magellan, along with the last. Habit of a small Hydrocotyle or Ramunculus. Fruit round, hardly pedicellate, crowned by the calyeene teeth. Umbels 4-8-flowered. Petals greenish yellow.

CHIFFLE-foot-like AZORELLA. Pl. 1/4 foot.

Cult. See Fragósa, p. 259. for culture and propagation.

XIII. PECTOPHYTUM. XIV. BOLAX.

MULTIÆ (this tribe contains plants agreeing with Malúnum in important characters), or Orthospermeae imperflecti Umbelláte, parallelo bisnatis, D. C. prod. p. 78. Hydrocotyle Multíneae, D. C. coll. mem. 5. p. 32. Mericarps much contracted at the commissure, without any vitce; ribs 5, usually filiform. Fruit compressed from the back, hence it is square. Petals spreading, flat, entire in all the genera, with the exception of Asteriscium.


LIN. SYST. Penhátria, Digitiá. Margin of calyx entire. Petals oval, entire. Styles short. Fruit tetragonal, concave in the disk; mericarps with 5 nerve-formed smooth ribs, 1 dorsal, 2 in the middle forming the angles, and 2 filiform inner ones; commissure very narrow.—A tufted herb, with the habit of Arítia. Leaves imbricate, trifid, glabrous, coriaceous; lobes ovate, obtuse; petioles meunbranous, rather coryck, with the margins not ciliated. Umbels simple, nearly sessile, 4-flowered. Leaves of involucre 4, about equal in length to the pedicels. Fruit while young furnished with stellate down.

1. B. CLEBARIA (Comm. ined. ex Gaud. ann. sc. nat. 5. p. 104. t. 3. f. 2.) 2. F. Native of the Straits of Magellan, on the mountains; in the Maclowe or Falkland Islands; Chili and
UMBELLIFERÆ. XV. MULINUM. XVI. LARETIA. XVII. DRUSA. XVIII. HUANACA.

and 65. ex D'Urv. Hydrocotyle gummifera, Lam. dict. 3. p. 156.
ill. p. 189, f. 21. Bôlax gummifera and B. complicata,
Spreng. emb. spec. p. 9. and p. 10. Azorîlla cæspitosâ, Valîh,
symb. 3. p. 428.
Clathria Bolax. Pl. 3/4 foot.

Cult. See Frâgôsûa, p. 259, for culture and propagation.


林. syst. Pentândria, Digînîa. Limb of calyx 5-toothed, permanent. Petals oval-oblong, acute, flat. Styles acute. Fruit 4-winged or parallelly bissette; mericarp without vitae, very much contracted at the commissure, compressed on the back, 5-ribbed; middle rib on the back nerve-formed, as well as the 2 lateral ones, the 2 intermediate ones expanded into ample lateral wings.—Suffruticose tufted herbs, natives of Chili. Leaves 3-5-cleft or undivided; petioles sheathing. Umbels simple; pediols longer than the many leaved involucre. Flowers yellow.

This genus, according to Lagasca, is probably divisible into several;

1 M. spinôsùm (Pers. ench. 1. p. 309.) cauline leaves triâd; segments subulate and spiny; lateral segments bipartite; petioles sheathing, glabrous; peduncles longer than the leaves; leaves of involucre distinct, short, spreading a little; fruit orbicular. 2. F. Native of Chili, on the highest mountains, called Cordillera del Planchon and del Portillo, towards Mendoza; between Los Ojos de Aâga, and El Rio de Los Ojos de Agua; Andes of Chili, and Cordillera of Chili, at the elevation of 5,500 or 7,000 feet. Selinum spinosum, Cav. icon. 5. p. 59. t. 487. f. 1. Bôlax spinous, Spreng. in Schultes, 6. p. 352. exclusive of the synonyms. Stems half a foot high. Umbels 10-12-flowered. Petals of a reddish yellow-colour.

Spîny Mulínum. Pl. 3/4 foot.

2 M. prolîfêrûm (Pers. 1. c.) cauline leaves triâd; segments subulate, spinose; petioles sheathing, glabrous; leaves of involucre short, distinct, rather spreading; umbels pedunculate, longer than the leaves; fruit orbicular. 2. F. Native of South America, at Port Desire; and of Chili, on the Andes of Mendoza between San Isidro and Portezuela, on the declivities of mountains at the elevation of 5,000 to 10,000 feet. Selinum proliferum, Cav. icon. 5. p. 58. t. 486. f. 1. Bôlax prolifer, Spreng. in Schultes, syst. 5. p. 361. Root twisted. Stems 3-4 inches high, covered by the sheaths. Leaves glabrous. Umbels 5-7-flowered, sometimes proliferous. Petals yellow.

Proliçerous Múlímum. Pl. 3/4 foot.

3 M. cenæànum (Hook. and Arrn. in Beech. bot. 1. p. 26.) leaves wedge-shaped, triad, and sometimes 5-6-cleft: each lobe ending in a spiny point; sheaths of leaves elongated, stiff, ciliated; umbels many flowered, on short peduncle. 2. F. Native of Chili, about Valparaiso, and on the mountains of Valparaiso; and at Huilequima, in the province of Raro. Azorîlla spinaçà, Pers. ench. 1. p. 303. Frâgôsûa spinosa, Ruiz et Pav. fl. pcr. 5. p. 27.

Cûmuedâted-leaved Múlímum. Pl. 3/4 foot.

4 M. elîcinûm (Gilît. and Hook. in bot. misc. 1. p. 328. t. 64.) leaves triadii: segments subulate, spiny; umbels nearly sessile, terminating the very short branches; fruit elliptic. 2. F. Native of Chili, near La Clieera de Bonilô, near the tops of the Usaplata range of mountains, at the elevation of 9,500 feet. M. cëlinus, D. C. prod. 4. p. 79. Bôlax cëlinus, Presl. mss. A glabrous, much branched, humble, odoriferous plant. Petals marked by an elevated longitudinal line in the middle. Leaves of involucre linear-subulate.

Fûrzî-like Múlímum. Shrub 3/4 to 4 foot.

5 M. microscopy (Pers. 1. c.) cauline leaves imbricate, minute, tripartite: lobes linear-lanceolate, each terminated by a petiole; petioles stem-clasping, ciliated at the base. 2. F. Native of South America, at Port Desire. Selinum microphyllum, Cav. icon. 5. p. 59. t. 486. f. 2. Petals reddish, yellow in the dried state. Stem shrubby, 3 inches long, branched, covered by the sheaths.

Small-leaed Múlímum. Pl. 3/4 foot.

6 M. alrovâgîmânum (Gilît. et Hook. in bot. misc. 1. p. 328.) leaves triad; segments ovate-lanceolate, mucronate; umbels axillary, small, few-flowered, sessile. 2. F. Native of Chili, at Ætreno de la Póuletra, on the Andes of Mendoza. Shrub branched, dichotomous.

White-sheathed Múlímum. Pl. 3/4 foot.

Cult. See Frâgôsûa, p. 259, for culture and propagation.

XVI. LARETIA (Lareta) is the vernacular name of the plant). Gill. et Hook. in bot. misc. 1. p. 329. t. 65.

林. syst. Pentândria, Digînîa. Margin of calyx 5-toothed. Petals ovate, entire. Fruit elliptic, square, flatly compressed from the back, 4-winged; mericarps lenticular, with dorsal ribs, and 2 lateral marginal ones, destitute of vitae. Seed flat.


Stealeus Laretia. Pl. 3/4 foot.

Cult. See Frâgôsûa, p. 259, for culture and propagation.


林. syst. Pentândría, Digînîa. Limb of calyx entire, not perspicuous. Petals oval, entire. Fruit oval; mericarps much compressed on the back, without any vitae: the dorsal rib and the 2 inner ones linear, and not prominent: the 2 intermediate ones are drawn out into marginal re pandly sinuated wings, having the sinuses obtuse, and the angles furnished with hooked stellate spinules. Seed much compressed.—A decumbent slender stonîferous herb, native of Tenerife. Leaves opposite, petiolate, broadly 3-lobed, crenated. Hairs on divers parts of the plant very different, some of which are still, stellate, and hooked at the apex; others are soft, simple, solitary, or in stellate fascicles. Umbels axillary, pedunculate, 1-2-flowered, without any involucre. Flowers small, white. Plant with the habit of Bowrâisìa, but the fruit is very different.


1 H. Cavannille (D. C. prod. 4. p. 81.) stems scape-formed, trifid at the apex, and bearing 2 opposite sessile tripartite leaves; umbels on 3 stems each: lateral ones on long, and the middle one on a short peduncle; segments of leaves filiform, multifid. 2. F. Native of South America, at the Straits of Magellan, and Port Desire. H. acalis, Cav. icon. 6. t. 528. f. 2. Oenanthe Huanaeca, Spreng. umb. prod. p. 37. and in Schultz, syst. 6. p. 628. Spanantha Huanaeca, Lag. l.c.

Cavannille’s Huanaeca. Pl. 1/4 foot.


Cult. See Fragisia, p. 259. for culture and propagation.

XX. Spananthe. XXI. Homalocarpus. XXII. Pozoa.


Linn. syst. Pentandra, Digynia. Margin of calyx 5-toothed. Petals elliptic, entire, acute, with a straight apex. Fruit ovate, much compressed at the raphe, flattened, and compressed from the back on both sides; mericarps flat, without any vitre; ribs 5, very slender, equal, 3 intermediate ones on the back, and the 2 lateral ones seated in the commissure, which is flat. Seed flat.—A South American branched erect herb, glabrous in every part, except on the petioles, which are ciliated along the sheaths, and ornamented with a collar of hairs under the origin of the limb. Leaves cordate, toothed, acute. Umbels rather compound, proliferous. Involucra composed of many leaves. Flowers white on long pedicels.

1 S. paniculata (Jacq. l. c. and icon. rar. 3. t. 350.) C. S. Native of South America, in Trinidad, and the Spanish Main, as well as of Peru. Hydrocolitea spananthe, Willd. spec. 1. p. 1363. Phellandrium ciliatum, Wild. herb. Perhaps the Peruvian plant is the same as that from the Spanish Main, but it is much smaller and hardly panicked.

Panicled Spananthe. Fl. July, Aug. Cilt. 1795. Pl. 1 to 2 ft. Cult. The seeds of this plant should be raised on a hot-bed, and when the plants are of sufficient size plant them into separate pots, and then place them in the stove, where they will flower and seed; and some may be planted out in the open ground. Not worth cultivating except in botanical gardens.

XXI. Homalocarpus. (from ἕμαλος, homalos, equal, and καρπος, karpos, a fruit). Hook. and Arn. in bot. misc. 3. p. 348.

Linn. syst. Pentandra, Digynia. Margin of calyx 5-toothed; teeth subulate, minute, hardly permanent. Petals ovate, concave, entire. Styles 2, divaricate, short. Fruit roundish-ovate; mericarps compressed on the back, flat, wingless, constituting 2 parallel disks; commissure very narrow; ribs 5, filiform, very slender, hidden in the substance of the pericarp, one dorsal, 2 lateral ones near the raphe, 2 middle ones forming the angles, without any vitre; carpopetalous entire. Seed less than the cavity of the fruit.—Herb annual, erectish, hoary from stellate hairs, dichotomously branched. Root slender, simple. Leaves petiolate, reniform-roundish, somewhat 5-lobed; lobes equal, ovate, obtuse, quite entire or deeply lobed; lower leaves alternate; superior ones opposite. Peduncles axillary and terminal, about equal in length to the petioles. Umbels simple, 3-6-flowered. Teeth of calyx pilose, almost emulating a fascicle of hairs. Fruit nearly twice the length of their pedicels, which are a fine long. This genus comes near to Spananthe.

1 H. bowlesioides (Hook. et Arn. l. c.) C. H. Native of the Cordillera of Chili. The ridges or ribs of the fruit are only to be seen on a transverse section of the fruit, because they are sunk in a thin substance of the pericarp. The middle ridges do not expand into wings as in Mullossum, and some other allied genera.

Bowlesia-like Homalocarpus. Pl. 1/2 to 1/4 foot. Cult. See Spananthe above for culture and propagation.


Linn. syst. Pentandra, Digynia. Calyx 5-toothed, perma-
nent. Petals entire. Fruit prismatically tetragonal, 5-ribbed, crowned by the calyx, emarginate at the apex; mericarps concave and channelled on the back: lateral ribs close, nearly in straight lines; commissure much contracted.—Herb. Leaves on long petioles, simple, cuneate, profoundly toothed at the apex, quinquangular. Umbels simple. Involucrum obliquely lobed, crenately toothed, many nerves: bracts branch a little.—This genus is allied to Astrantia and Malminum.


N. B. There are two other species of this genus mentioned by Lagasca in nat. 2. p. 94. under the names of P. denticulata and P. incisa, but these he has not described.

Cult. See Fragosa, p. 259, for culture and propagation.


Lin. syst. Pentandria, Digynia. Calyx 5-toothed, permanent: teeth ovate. Petals ending in an indented point, emarginate, with the recess callous. Fruit compressed, tetragonally prismatic, crowned by the calyx, rounded at the base; mericarps 5-ribbed, 2 intermediate ribs expanded into wings, central one as well as the 2 placed near the raphe stripe-formed: having the furrows between the ribs destitute of vitre; commissure very narrow. Seed unknown.—Quite glabrous perennial herbs. Stems terete, branched, few-leaved. Leaves petiolate, simple, roundish-cuneate, unequally toothed, somewhat 3-lobed, 3-15-nerved, rather coriaceous. Umbels simple, nearly globose. Involucrum many leaved, shorter than the umbel. Flowers either sterile and male, or long pedicellate, or fertile and hermaphrodite in the same umbel.—This genus differs from Poza and Malminum in the petals being emarginate, not entire.

1 A. Cuillnes (Cham. et Schlecht. l. c.) leaves 3-lobed, deeply serrated; peduncles elongated, scattered; petals deeply emarginate, ending in a long involute point; fruit narrowest at the base; leaves of involucrum lanceolate, cut. 1/2. F. Native of Chili, in dry sandy places about Talagucano, and about Concepcion; Cuesta de Zapata, at the elevation of 6,000 feet; cliffs by the sea side at Valparaiso. Hook. bot. misc. 1. p. 332. t. 67. A. Anisillus vulgo Mouchu, Feuil. clin. 3. t. 2. Var. 3. He'necki (D. C. prod. 4. p. 82.) lower leaves roundish, undivided, acutely few-toothed at the apex: upper leaves trifid. 1/2. F. Native of Chili. Cassidicarpus Chilenis, Presl, in herb. Henke. Erjungia tricuspidatum, Domb. herb. Chilli Asteriscium. Pl. 1/2 foot.

2 A. Poeppigt (D. C. prod. 4. p. 82.) leaves deeply trifid; lobes obovate, obtuse, usually toothed. 1/2. F. Native of Chili. Very like the preceding, but differs in the lobes of the leaves and recesses being obtuse, and regularly toothed all around.

Poeppig's Asteriscium. Pl. 1/2 foot.

3 A. Polycthalum (Gill. et Hook. in bot. misc. 1. p. 332. t. 67. 1/2.) plant leafless; peduncles corymbose, numerous, sometimes abortive and spinose; petals entire, acute, with an involute apex; fruit broadly oblong; leaves of involucrum linear, entire. 1/2. F. Native of Chili, in the valleys on the Andes near Ladera de la Jaula, and towards Usquilata in the province of Mendoza, at the elevation of 7,500 feet. Matumin Diperygia, D. C. prod. 4. p. 80. The reflexed petals of this species and the next forbid their being united to Matumin.

Many-headed Asteriscium. Pl. 1/2 foot.

4 A. Isatisdicarps (Hook. et Arn. in bot. misc. 3. p. 352.) stem much branched; branches terete; umbels many, few-flowered, disposed in panicles; involucra of few leaves; fruit oval, particularly bicuspid; mericarps approximate. 1/2. F. Native of the Cordillera of Chili. Matumin isatidicarpum, D. C. prod. 4. p. 80. Dipteryx isatidicarpa, Presl, miss. Umbels small, very numerous. Carpohpore bipartite; mature mericarps yellow, rather cuneate at the base.

Isatis-fruited Asteriscium. Pl. 1/2 foot.

Cult. See Fragosa, p. 259, for culture and propagation.

Tribe III.

SANICULEE (this tribe contains plants agreeing with Sanicula in important characters). D. C. prod. 4. p. 82. or Umbellata imperfecta Orthospermea turgidae, Koch. umb. 185.—Umbellata diciscentes, Spreng. in Schultes, syst. 6. p. 30. exclusive of 3 genera. Transverse section of fruit nearly terete. Mericarps covered with scales, furnished with 5 equal primary ribs, without any secondary ones, and destitute of vitre. Transverse section of seed semi-terete, flattish in front. Petals erect, bent downwards from the middle, and emarginate. Umbels fasciculate or capitulate. Simple or irregularly subcompound.


Lin. syst. Pentandria, Digynia. Tube of calyx ovate, contracted at the top; limb 5-lobed: lobes oval-oblong. Petals wanting. Stamens opposite the calyceine lobes. Styles 2, thickened at the base and villous, but secalous at the apex. Ovary 1-ovulate. Fruit ovate, villous, marked by 5 stripes, and crowned by the calyx.—Erect branched Australian herbs. Leaves alternate, petiolate, variously cut. Umbels simple, many flowered, capitate; pedicels very short; involucrum many leaved, radiating, longer than the flowers.

1 A. Hella'snit (Labill. nov. holl. 1. p. 67. t. 92.) the whole plant clothed with tomentose wool; leaves bipinnatifid; lobules bluntish; involucrum 10-18-leaved, clothed with softomentum. 1/2. F. Native of New Holland, about Port Jackson, &c. Ericoalia major, Smith, exot. bot. t. 78. Involutex expanded 1 1/2 of 2 inches in diameter, yellow. Flowers white.


2 A. Minor (D. C. prod. 4. p. 83.) plant smoothish; leaves clothed with adpressed villi beneath, tinate; segments or leaflets trifid, acute; involucrum 9-10-leaved, acute, clothed with silky villi. 1/2. F. Native of New Holland, on the Eastern coast. Ericoalia minor, Smith, exot. bot. t. 79. Sieb. pl. exsic. nov. holl. no. 127. Involutex expanded, 5 lines in diameter, red. Smaller Actinotus. Pl. 1 foot.

Cult. The seeds of these plants may be reared on a hot-bed in spring, and in the month of May the plants should be planted out in the open border in a warm situation, where they will flower and seed freely.


Lin. syst. Pentandria, Digynia. Umbellae containing only
3 flowers; central one hermaphrodite, fertile, sessile; 2 lateral ones male, pedicellate; the pedicels rather coarse at the base, with the calyx of the fertile or central flower. Male flowers with the tube of the calyx almost wanting, but with an obsolete somewhat 5-toothed limb; petals oval-oblong, acute at both ends, inflexed at the apex; stamens 5, alternating with the petals, and longer than them. Female or hermaphrodite flowers, having the tube of the calyx ovate and compressed, and the limb obsolete: petals the same shape as those of the male flowers, rather membranous, permanent; stamens 5, caducous; styles 2; filiform, divaricate, very long; fruit ovate, compressed, 8-ribbed, with 3 nerves on each side, particularly one central, indicating where the raphes is, 2 in the middle, and 2 more conspicuous, seated on the dorsal angle of the mericarps. Mericarps and carpophore not distinct. Fruit empty or containing one ovulm, from one of the mericarps being abortive.—Herb perennial, smooth. Root or rhizome like that of Atëska or Hacquetia. Leaf radical, on a long petiole, rather petulate, 5-parted; partitions ovate-cuneated, somewhat 3-lobed at the apex, and toothed: teeth mucronate. Stem solitary, hardly half a foot high, bearing at the apex 2 almost sessile opposite 3-lobed toothed leaves. Branches 2, bifid at the apex. Bracteas or leaves of involucrum 2, opposite, oblong-acute, mucronately serrated, seated just under the branches. Branches or rays of umbel 2, short, bearing each 2 flowers at the apex, furnished with 2 small bracteas under the ramifications. This very singular genus is allied to Hacquetia and Sanicula.  


Sect. I. Sanicula (an alteration from the generic name). Tube of calyx ciliated. Leaves palmate lobed.  

1. S. europaeae (Lin. spec. 339) leaves radical, palmate-parted; leaves trifid, toothed; flowers polygamous, all nearly sessile, disposed in umbellae; lobes of calyx denticulate.  

2. H. Native throughout the whole of Europe and Caucasus, in woods and groves, and particularly by the sides of rivulets. Oed. fl. dan. 293. Schkuhr, handb. t. 60. Hoffin. umb. p. 67. Smith, engl. bot. t. 98. Blaekew. herb. t. 63. S. officialinarum, Neck. gallo. p. 137. Astrantia Dipiflora, Scop. carn. 304. S. mas. Fuchs. hist. p. 671. S. officinalis, Gouan. horst. 131. Caeulis Sanicula, Crantz. Flowers white or tinged with red, sessile, disposed in little heads. The plant was much cultivated formerly as a vulnerary. It discovers to the taste a bitterness and roughness. It has, however, been long discarded in medi-
numerous, pedicellate. 

2. S. Native of Java, on the top of Mount Gede. Perhaps this is the same as S. Javanica, Juss., from the description of the leaves; but the umbels are nakedish above, in the forks of the stem, and on the tops of the branches, each umbel bearing 3 nearly sessile fruit afterwards.

Java Sanicle. Pl. 1 foot.

9 S. montana (Reinw. in Blum. bijdr. p. 832.) leaves all ternate; leaflets somewhat 3-lobed, rather ovate-ellipsoid, deeply and sessilately serrated; flowers all pedicellate. 2. S. Native of Java, in mountain woods in humid places. Said to be nearly allied to S. Canadensis.

Mountain Sanicle. Pl. 1 to 2 feet.


Triclinium Sanicle. Pl. 1 to 2 feet.

11 S. bipinnatifida (Doulg. miss. ex Hook. fl. bor. amer. 1. p. 258. t. 92.) plant caulescent; leaves bipinnatifid: lower ones on long petioles; segments remote, obovate or obovate-lanceolate, acute, deeply serrated; serratures very acute; rachis winged, acutely toothed; peduncles elongated; umbels compound, somewhat proliferous; umbellules globose. 2. H. Native of the north-west coast of America, at Fort Vancouver, on the Columbia. Root rather fusiform. Plant glabrous. Stem erect, branched, furnished with a few leaves. Segments of the upper caulin leaves narrow. Male flowers on short pedicels.

Bipinnatifid-leaved Sanicle. Pl. 1 foot.

12 S. Arctopus (Hook. et Arn. in Beech. voy. pt. bot. p. 141.) plant almost stemless; leaves on long petioles, profoundly 3-parted; segments long, cuneate: lateral ones bifid: intermediate one trifid; all are somewhat ciliately pinnatifid; peduncle hardly longer than the leaves; leaves of involucrum foliaceous, lanceolate, quite entire, longer than the simple compact umbel. 2. H. Native of the north-west coast of America (Hood and North California. Hook. fl. bor. amer. 1. p. 258. t. 91.) Root fusiform. Habit of the genus Arctopus. Arctopus-like Sanicle. Pl. 1/2 foot.

FIG. 59.

moist situation, and they are easily propagated by dividing at the root. Some of the species being natives of warm climates, will require to be protected in winter.


Lin. syst. Pentantria, Digitaria. Tube of calyx furnished with 10 ribs, and 5 lobes: lobes foliaceous, permanent. Petals erect, connivent, obovate: with the segment at the apex length of the limb of the petal, and bent in from the middle. Fruit crowned by the calyx, contracted from the sides; mericarps gibbously convex, furnished with 5 filiform ribs.—A small perennial herb. Leaves radical, petiolate, palmate; leaflets 3-cuneate, 2-3-lobed, mucronately serrated. Scapes 1-3, bearing at their tops simple umbels. Involute of 5-6 obovate leaves, which are toothed at the apex, and longer than the umbels. Flowers yellow, on short pedicels, some male, and some female. Fruit compressed from the sides; mericarps with 5 broad ribs, which are rather conate at the base, but separated by channels above.


Cult. See Saniclea above for culture and propagation. The plant, however, does best in a pot in a mixture of sand and peat, placed among other alpine plants.


Lin. syst. Pentantria, Digitaria. Tube of calyx 10-ribbed, with tubercular teeth; lobes 5, foliaceous. Petals erect, connivent, oblong-obovate: bent in from the middle by a segment, which is nearly the length of the petal. Fruit rather compressed from the back; mericarps without any vitre, but having 5 elevated obvolute plicately toothed inflated ribs, inclosing in the cavity of each a smaller fistular rib; carpophore not distinct. Seed semi-terete.—Perennial herbs, natives of Europe and Caucasus. Roots blackish. Radical leaves petiolate, palately lobed; cauline ones few, sessile. Universal umbels irregular, of few rays, surrounded by variable involucra: partial umbels regular, and containing many flowers, surrounded by many leaved involucres. Flowers white or rose-coloured, pedicellate, usually polygamous, the female ones alone fertile.


Var. b, macrodonta (D. C. prod. 4. p. 86.) segments of leaves lanceolate-linear, profoundly and sharply serrated; leaves of involucrum exceeding the umbel. 2. H. Native of the Alps of Piedmont.—Bocc. pl. sic. p. 10. t. 5. f. 111.

M m
Smaller Master-wort. Fl. May, June. Clt. 1866. Pl. $\frac{1}{2}$ to $\frac{1}{4}$ foot.

2 A. fauchëllà (Bertol. journ. bot. 1813. p. 76. am. inun. 96. and 347.) leaves palmate; segments 5-7, entire at the base, but finely and sharply serrated from the middle to the apex; leaves of involucre entire, exceeding the umbel. 2. H. Native of the mountains of Abruzzo and Naples. Very like A. minor. There is a variety having the segments of the leaves linear or oval-oblong.


3 A. Carriñéicà (Jacq. fl. austr. 6. t. 10.) radical leaves palmate-parted: leaves 5-7, oblong, acuminated, unequally serrated, toothed; leaves of involucre 12-13, quite entire, exceeding the umbel. 2. H. Native of Carinthia, Carinola, in alpine meadows. Sturm, deutsch. fl. with a figure. A. major $b$, Spreng. in Schultes, syst. 6. p. 341. A. minor, Scop. fl. corr. no. 305. t. 7. Smith, exot. bot. 2. t. 77. Habit of A. minor, but with the character of A. major. Leaves of involucre linear, with a green line running along the middle of each, tinged with red. Petals white. Caluna leaves 2-lobed or simple. Root dark brown, having an aromatic balsamic smell, with a taste at first slightly aromatic, but nauseous, and afterwards acid.

Carniolan Master-wort. Fl. May, June. Clt. 1812. Pl. $\frac{1}{2}$ to 1 foot.


Var. a; leaves of involucre white; flowers white.

Var. $b$; leaves of involucre purplish; flowers tinged with red.


5 A. intermedia (Bieb. suppl. p. 194.) radical leaves palmate-parted: leaves 5, rarely only 3, ovate-oblong, deeply biserated, and ciliated with bristles; caluna leaves nearly palmate; leaves of involucre 12-13, oblanceolate, bearing from 1 to 3 spines each at the apex, exceeding the umbel a little. 2. H. Native of Caucasus, in mountain meadows. A. trifida, Hoffm. emb. ed. 2. vol. 1. p. 8. A. Caucaicide, Spreng. umb. p. 17. syst. 8. p. 874. exclusive of the synonyms. Flowers pink?

Var. $a$; leaves of involucre nearly entire. 2. H. Native of Caucasus and the mountains of Naples. A. major, Bieb. fl. and suppl. no. 599.


6 A. helóbórròfíà (Sálshis, par. loud. 1. t. 66.) radical leaves palmate-parted; leaves 3, ovate-lanceolate, unequally serrated, ciliated with bristles; leaves of involucre 12-13, ovate-lanceolate, exceeding the umbel a little, ciliated with bristles their whole length. 2. H. Native of Eastern Caucasus, in the more elevated meadows. A. máxima, Pall. nov. act. petrop. 7. p. 357. t. 11. Sims, bot. mag. 1553. A. heterophylla, Willd. nov. act. berol. 3. p. 119. Bieb. fl. taur. 1. p. 202. suppl. p. 196. Involuture and flowers pink. There are varieties of this species having the caluna leaves either 3-lobed or undivided.


Cult. The species of this genus grow well in any common garden soil, and are well adapted for ornamenting flower-borders, being rather pretty; they are easily increased by dividing at the root. A. minor and A. Canadique, being more tender than the rest, should be grown in pots, and placed among other alpine plants.


Lin. syst. Pentándria, Digýnia. Tube of calyx beset with minute tubercles. Petals inflexed. Transverse section of fruit terete, ovate, tubercular on the outside; mericarps without ribs, and without vitre; carpophore adnate its whole length to the seeds.—An herb, with the habit of Eryngium nudicladæ, native of the Cape of Good Hope. Radical leaves petiolate, oblong, ciliated toothed from sinuencest bristles. Stems nearly naked, branched, umbellate at the apex. Leaves under the branches small, and stem-clasping. Umbels like those of Astrantia. An intermediate genus between Astrantia and Eryngium.


Ciliolated-leaved Alepide. Pl. 1 foot.

Cult. Any light rich soil will suit this plant, and it will be easily increased by dividing at the root.


1 H. acetéa (Blum. l. c.) ? E. S. Native of Java, on Mount Tjerimai, in the province of Cheribon, where it is called Gampung. The rest unknown.

Priëck Horsfieldia. Shrub.

Cult. Any light rich soil will suit this shrub, and cuttings will easily root in the same kind of earth under a glasshouse, in heat.


Lin. syst. Pentándria, Digýnia. Tube of calyx rough from vesicles and scales; lobes 5, foliaceous. Petals erect, connivent, oblong-obovate: bent in from the middle by a segment as long as the limb of the petal, which consequently appears emarginate. Fruit obovate, seamy or tuberculare, with the transverse section nearly terete; mericarps semi-terete, without ribs, and without vitre; carpophore adnate its whole length to the seeds.—Herbs, usually perennial and spiny. Radical leaves, as well as the caluna ones, sheathing more or less at the base. Flowers congested into oblong or roundish dense heads. Lower bracteas usually the largest, and forming an involucre round the head of flowers; the rest like chaff, mixed among the flowers.

§ 1. Ramossînèrîva (from ramosus, branched, and nereus, a
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sinew or nerve; in reference to the nerves of the leaves being more or less branched and diverging). D. C. prod. t. p. 88.

* Limbs of radical leaves multifid.

1 E. Camp'stre (Dodd. pempt. 730. f. 2. Lin. spec. 337.) radical leaves nearly ternate; segments pinnatifid: lobes ovate; caune leaves aniciated; stem panicked; leaves of involucren linear-lanceolate, nearly entire, exceeding the head of flowers, which is roundish; paleae among the flowers subulate. 2. H. Native of South and Middle Europe, and Caucasus; very common in dry sandy fields. In Britain not very common; on the coast near the ferry from Plymouth to Cornwall; and near the Devil's Point at Stonehouse, Plymouth; near Newcastle upon Tyne; on the shore called Frier's Goose, below Melling, in Yorkshire; also far inland opposite Bockhall, near Daventry, in Northamptonshire. Laroch. eryng. p. 52. Oed. fl. dan. t. 554. Hayne. arz. gew. t. 1. Smith, eng. bot. 57. Jacc. austr. 2. t. 155. Plench. t. 173. E. vulgäre, Bauh. pin. 358. E. Méditerranéen, Ger. 999. Corollas blue, but sometimes white and yellow. Roots creeping. Plant rather glaucous.

Far. β; radical leaves nearly entire. 2. H. Native of Portugal and the Levant.


2 E. Bourgqi (Goun. ill. p. 7. t. 3.) radical leaves orbicular, tripinnatifid: lobes pinnatifid or cut in a forked manner, quite entire orbicular. tripinnatifid: lobes lanceolate, a little branched at the apex; leaves of involucren 10-12, lanceolate, pungent, erect, furnished with 1 or 2 teeth on each side, much longer than the head of flowers, which is ovate; paleae among the flowers entire. 2. H. Native of the Pyrenees, but has not been found elsewhere. D. C. fl. fr. 4. p. 355. Laroch. eryng. p. 24. Tratt. arch. t. 207. E. amethystinum. Lam. fl. fr. 3. p. 401. but not of Lin. E. Bourgqti, E. planum, and E. alpinum, Lapeyr. abr. p. 137. There are varieties of this species with either sky blue or pale flowers; and with the stems either bearing one or more heads of flowers. Plant glaucous.


3 E. Billardie (Laroch. eryng. p. 25. t. 2.) radical leaves nearly orbicular, tripinnatifid: lobes lanceolate or cut in a forked manner, quite entire orbicular. tripinnatifid: lobes lanceolate, a little branched at the apex; leaves of involucren 8, linear-lanceolate, 3 times higher than the head of flowers, which is globose; paleae among the flowers entire. 2. H. Native of the Levant; and in fields on the mountains at the limits of the Turkish districts called Khör, in the province of Abeeridjeen. Tratt. arch. t. 326. Very nearly allied to E. Bourgqti, but differs in the lobes of the leaves being toothed all round, and in the paleae being hardly longer than the calyxes. Flowers blue.

La Billardie's Eryngo. Pl. 1 foot.

4 E. Spina-alba (Vill. dauph. 2. p. 660. t. 15.) radical leaves 3-5-parted; lobes profusely toothed, or cut in a forked manner; stem thick, nearly simple; leaves of involucren 2-10, pinnatifid, very stiff, pungent, about equal in length to the head of the flowers, which is of an ovate-cylindrical form; paleae among the flowers entire, or usually tripinnatispdate. 2. H. Native of Dauphiny, Provence, &c. in arid exposed places of mountains. D. C. fl. fr. p. 356. Laroch. eryng. p. 26. t. 3. E. rigidum, Lam. dict. 4. p. 752. E. alpinum, Lin. mant. p. 349. but not of his spec. E. alpinum β, Schultes, syst. 6. p. 328. E. palléssens, Mill. dict. no. 9. Spina alba, Dalech. l. 1462. Both heads of flowers and herb are white. There are varieties with either dwarf stems, or a foot high.


5 E. Dilatatum (Lam. dict. 4. p. 735.) radical leaves pinnatifid: lobes spiny-toothed; upper leaves the largest; petioles pinnatifid; lower leaves pinnatifid; lower leaves more or less distinct from the petioles; having the nerves more or less branched, and diverging, but never parallel.


6 E. cinereum (Presl, cl. prag. p. 139.) radical leaves pinnatifid: outer lobes trifid, spiny toothed: lower ones much smaller and bristly, or jagged into bristle-formed teeth; petioles furnished with bristles from the base; stems nearly simple, bearing few heads; leaves of involucren 5-6, lanceolate, spiny ciliated, exceeding the head of the flowers, which is roundish; paleae exceeding the flowers, outer ones spiny ciliated. 2. H. Native of Spain. Very nearly allied to E. dilatatum, but it differs from it and all the others in the bristles being yellowish, and rather spiny along the petioles and the lower lobes of the leaves. Flowers blue.

Hair Eryngo. Pl. 1 to 2 feet.

Eryngium. (Lin. spec. p. 337. var. a.) radical leaves pinnatifid: lobes cut, spiny, somewhat pinnatifid; petioles entire at the base; stems smoothish, corymbosely branched at the apex; leaves of involucren 7-8, lanceolate, furnished with a few teeth at the base, much exceeding in length the head of flowers, which is globose; paleae among the flowers entire; outer ones hardly furnished with a tooth on each side. 2. H. Native of Dalmatia, Croatia, and Belgium, but in the last mentioned country it has probably escaped from the gardens. Waldst. et Kt. lung. 3. t. 215.—Besl. hort. syst. ord. t. 8. f. t. Tratt. arch. 206. E. campéstre azurium, Lejœm, in herb. Gay. E. caeruléum, Bauh, hist. 3. t. 86. f. 1. The upper part of the stem, and also the heads of flowers, are of the finest amethyst colour, so that they make a very fine appearance. This species is often confused with E. dilatatum, but is easily distinguished from that species in the petioles being entire, not pinnatispdate.


9 E. Andersoni (Lag. in litt. Lond. hort. brit. p. 101.) radical and caune leaves pinnatifid: 3 terminal segments large, lanceolate, and 3-lobed at the apex: the rest of the segments small; all spiny toothed; stem smooth, striated, corymbosely and trichotonemously branched; leaves of involucren 7-8-lanceolate, spiny toothed, much longer than the head of the flower, which is round, furnished with retrograde forked or simple prickles on the lower side at the very base; upper paleae among the flowers linear, entire, and the lower ones trifid, ending in spiny points, about the length or longer than the flowers. 2. H. Native country unknown. E. amethystinum, Hort. Chelsea. Upper part of stem, and heads of flowers of a beautiful blue.


9 E. Scariosum (Laroch. eryng. p. 28. t. 5.) leaves pinnatifid: lobes linear, distant, trifid, or entire; petioles with scarios margins; stem furrowed, branched at the apex; leaves of involucren 5-8, linear, much longer than the head of flowers, which is globose; paleae among the flowers entire. 2. H. Native of the Levant. Tratt. arch. t. 775. E. pentechiun, Sieb. herb, palest. Allied to E. amethystinum. Heads of flowers pale green.

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16. *E. maritimum* (C. B. B. p. 386. *Lin. spec.* p. 337.) leaves of a whitish glaucous hue, coriaceous; radical leaves on long petioles, roundish, cordate, spinly-toothed: superior ones stem-clasping, palmately lobed; leaves of involucrem 5-7, ovate, spinly-toothed, exceeding the head of flowers, which is roundish; paleae among the flowers, tricuspitate, about equal in length to the calyces. 2. H. Native throughout Europe, among the sand along the sea-shore; and on both sides of the Mediterranean Sea. It is to be found plentiful in some parts of Britain, on the sea-shore. Oed. fl. dan. t. 718. Tratt. arch. t. 295. *Woodly. med. bot.* t. 102. *Smith, engl. bot.* t. 718. Roots creeping. Flowers very pale blue. By English writers the Sea eryngo has been called *sea holly, sea bulbous, and sea boluce.* The young flowering shoots of the plant, eaten like asparagus, are very nourishing, according to Linnaeus. The leaves are sweetish, with a slightly aromatic warm pungency. The roots are supposed to have the same aphrodisiacal virtues as the Orchis tribe. They are kept in the shops candied, and are still regarded by the Arabs as an excellent restorative. Eryngo roots were first candied at Colchester about the beginning of the 17th century by Robert Buxton, apothecary. His apprentice, Samuel Great, continued this business, and it has ever since been carried on by the posterity of the latter.—Morant's Colchester, p. 161.

*Sea Eryngo* or *Holly.* Fl. July, Oct. Brit. Pl. 1 to ½ ft. 17. *E. oliveri'ana* (Laroch. eryng. p. 37. t. 12.) radical leaves on long petioles, roundish cordate; lower cauline leaves petiolate, 3-lobed, and deeply toothed: upper cauline leaves stem-clasping, 3-parted, and cut; leaves of involucrem 10-12, lanceolate, stiff, having 5-6 teeth on each side, which are more crowded towards the base, exceeding the head of flowers; paleae among the flowers, tricuspitate, and entire. 2. H. Native of the Levant. *E. alpinum* g. *Schulz.* sest. p. 323. Heads of flowers blue. Nearly allied to *E. alpinum,* but is constant to its characters, even in cultivation: it differs from it in the radical leaves being much less cordate, in the lower ones being more dissected, and in the leaves of the involucrem being still, and having fewer teeth. The colour of the herb is green. *Oliver's Eryngo.* Pl. 1 to 2 feet.

18. *E. gigante'um* (Bieb. fl. taur. l. p. 201.) radical leaves on long petioles, profoundly cordate, crenate-toothed; cauline leaves stem-clasping, deeply lobed, spiny-serrate; leaves of involucrem 8-9, large, ovate-lanceolate, deeply spiny-serrated, longer than the head of flowers, which is ovate; paleae among the flowers tricuspitate. 2. H. Native of the Alps of Caucasus, Armenia, and Iberia. *E. glaucum,* Wield. herb. ex Stev. in litt. *E. asperifolium,* Laroch. eryng. p. 36. t. 11. Poir. suppl. p. 289. Tratt. arch. t. 355. Stem dichotomously branched, 3-4 feet high, blue at the top as well as the heads of flowers. Lower leaves roughish, pubescent or glabrous beneath, reticulated with anastomosing nerves.

*Giant Eryngo.* Fl. Jul. Aug. Clt. 1820. Pl. 3 to 4 feet. 19. *E. alp'imum* (*Lin. spec.* p. 337.) radical and lower cauline leaves on long petioles, deeply cordate, serrate-toothed: upper cauline leaves palmately lobed, ciliately serrated; serratures spinulous; leaves of involucrem 10-20, rather soft, a little longer than the head of flowers, pinnatifidly serrated, having 12-15 cilia-formed serratures on each side; and with the lower serratures pinnatifid; paleae among the flowers tricuspitate or entire. 2. H. Native of Switzerland, Piedmont, Germany, Croatia, Carniola, &c. in alpine pastures. *Jacq.* icon. rar. l. t. 55. Sims, bot. mag. t. 922. Tratt. arch. t. 205. Involutricem along with the upper part of the herb and the flowers are of a beautiful blue colour; but there is also a variety which is white in the last-mentioned parts; and another which has the paleae among the flowers pinnatifid. Herb green.

**Scariosus-petiolate Eryngo.** Pl. 1 to 2 feet. 10. *E. glomerat'um* (Lam. dict. 4. p. 755.) leaves pinnatifid; lobes linear, very sti/th, deciduous; heads of flowers small, collected into a thyrsus; flowers small; leaves of involucrem much longer than the head of flowers, and are as well as the paleae nearly entire, and spinose. 2. H. Native of Crete. Laroch. eryng. p. 29. t. 6. Tratt. arch. t. 760. E. parviflorum, Smith, prod. fl. grace. 1. p. 175. Herb white, densely beset with leaves. Perhaps the *E. glomeratum,* Sieb. herb. crete, which he gathered at the foot of Mount Ida, is the same, but it differs from the figure given by Laroco, in the heads of flowers being disposed in a corymb, in the lobes of the leaves being broader, and in the leaves of the involucrem being furnished with a spine-like subulate deciduous tooth on each side.

**Glomerate-headed Eryngo.** Fl. Jul. Aug. Clt. 1826. Pl. 1 fl. 11. *E. rostrat'um* (Gau. icon. 6. t. 552.) radical leaves long, lanceolate; outer ones spinous-ciliolate: inner ones pinnatifid; stems a little branched; leaves of involucrem entire, rather shorter than the head of flowers, which is globose; paleae among the flowers, entire; upper paleae ending in a horn each, much longer than the flowers. 2. H. Native of Chili, at Talcahuano, Concepcion, &c. Laroch. eryng. p. 29. This species is intermediate between the sections *Ramosinerea* and *Parallelinerea.*

**Bent-knoted Eryngo.** Pl. 3 to 4 feet. 12. *E. cono'sum* (Laroch. eryng. p. 30. t. 7.) radical leaves pinnatifid; lobes linear, winged; stem dichotomous at the apex, bearing many heads; leaves of involucrem 5-6, trifid, longer than the head of flowers, which is ovate; paleae among the flowers simple; upper paleae spinous-toothed, drawn out into a tuft. 2. H. Native of Mexico, in temperate places between Rio Sacra and Tolloc. H. B. et Kuntl, nov. gen. amer. 5. p. 30. Flowers blue?


**Cretan Eryngo.** Pl. 1 to ½ foot. 14. *E. mul'tatimid* (Sibth. et Smith, fl. grace. t. 259. prod. 1. p. 175.) leaves all pinnatifid, somewhatly lyrate, and palmate-parted at the apex; lobes deeply lobed; stems corymbose, coloured at the top; leaves of involucrem linear-lanceolate, pinnatifid, or nearly entire, exceeding the head of flowers, which is ovate; paleae among the flowers, entire. 2. H. Native of the hills of the Morea and Sicily. E. alpinum, chatum, &c. Cup. pamp. 1. t. 29. Guss. prod. fl. sic. 1. p. 305. Top of stem and heads of flowers blue. Allied to *E. amethystinum* and *E. Cre'ticum.*

**Multiple Eryngo.** Pl. 2 feet. 15. *E. ov'ertim* (Cuming, in Field's new south wales, p. 558.) stems erect, furrowed, dichotomous; leaves pinnatifid; lobes linear, stiff, spinose, deciduous; leaves of heads of flowers spherical, pendent; leaves of involucrem linear, mucronate, stiff. 2. H. Native of New Holland, near Baradur. Flowers white. The plant when young is much sought after by sheep.


**Limbs of radical leaves cordate at the base, undivided, or a little lobed.**

20 E. planum (Math. comm. p. 505.4 with a figure. Lin. spec. p. 337.) lower leaves on long petioles, oval, cordate at the base, crenated, flat; middle cauline leaves sessile, undivided: superior ones 5-parted, serrated; leaves of involucrum 6-7, lanceolate, remotely spiny-serrate, spreading, about equal in length to the head of flowers, which is round; palea among the flowers entire, but the lower or outer ones are tricispidate. 1. 11. Native of Austria, Russia, Siberia, Transylvania, Galicia, Caucasus, Mauritania, Provence, &c. in meadows. Jacq. aust. t. 591. Tratt. arch. t. 214. Laroch. eryng. p. 40. Upper part of the stem, leaves of involucrum, and heads of flowers blue; there is, however, a variety equally common in the gardens with white flowers. Herb green.


22 E. falsatum (Laroch. eryng. p. 40. t. 13.) radical leaves on long petioles, cordate, unequally 3-5-parted; cauline leaves sessile, palmately parted: lobes lanceolate, spreading, spiny-serrate; leaves of involucrum 5-8, lanceolate, furnished with 1-2 teeth on each side, twice the length of the head of flowers; outer palea tricispidate: middle ones entire. 1. 11. Native on Mount Lebanon. Tratt. arch. t. 365. E. dichotomum μ, Schultes, syst. 6. p. 321. The plant is easily distinguished from E. dichotomum by the form of the radical leaves.

Heads of flowers blue?

Falcatum Eryngium. Pl. 1 to 2 feet.

23 E. dichotomum (Desf. atl. 1. p. 226. t. 55.) radical leaves petiolate, oblong, cordate at the base, toothed; cauline leaves palmately parted, spreading: lobes spiny-toothed; leaves of involucrum lanceolate, furnished with a few spiny teeth, much longer than the head of flowers; which is globose; outer palea tricispidate, the rest entire. 1. 11. Native of Asia Minor, Caucasus, Mount Lebanon, Candia, Mauritania, Sicily, and about Montpellier, in exposed places. Upper part of stems, leaves of involucrum, and heads of flowers blue.


Var. β; stems dwarf; flowers crowded at the neck of the plant. Laroch. eryng. p. 40. t. 14.


24 E. diffusum (Torr. rock. mount. no. 177.) leaves all digitately palmate; segments oblong, deeply serrated, spinose; stem dichotomously branched, diffuse; heads of flowers globose; leaves of involucrum 4-6, tridif, deeply serrated, longer than the head of flowers; ovaries septic. 1. 11. Native of North America, on the banks of the Canadian river. Perhaps this species will form a proper section.

Diffuse Eryngium. Pl. 1 foot.

*** Lims of radical leaves oblong-obovate, or oval, never cordate at the base.

25 E. pusillum (Lin. spec. p. 337.) radical leaves lanceolate, entire, toothed or pinnatifid, attenuated at the base, petiolate: cauline leaves palmately parted, sessile; heads of flowers sessile: leaves of involucrum subulate, longer than the head of flowers, furnished with an appendage, or tooth at the base; palea among the flowers, entire. 1. 11. Native of Spain, Portugal, Mauritania, Sicily, Sardinia, &c. Laroch. eryng. p. 44. Tratt. arch. t. 212.—Barrel. icon. t. 1247. Heads of flowers greenish. This species is nearly allied to E. dichotomum, but differs from it in the radical leaves being attenuated at the base, never in any way cordate.


Var. γ, galoides (D. C. l. c.) stem erect; lower leaves somewhat pinnatifid, small; heads few-flowered. Laroch. l. c. E. galoides, Lam. dict. 4. p. 757.

Var. ε, paludosum (D. C. l. c.) stem nearly erect; lower leaves pinnatifid, large; heads few-flowered. Laroch. l. c. t. 16. E. paludosum μ, Lam. l. c.


26 E. teretum (Poir. suppl. 4. p. 295.) radical leaves undivided, linear, spiny-toothed; cauline leaves tripartite; leaves of involucrum lanceolate, cuspitate. 1. 11. Native of Candia, on hills in rugged places. Tausch. hort. canal, with a figure and description. E. Tournefortinum, Sternb. synll. fl. nov. 17. p. 32. ex Tausch. E. trifolium, P. Alp. exot. 132, with a figure.—Mor. ex. 3. sect. 7. t. 36. f. 24. Laroch. eryng. p. 63. Heads of flowers blue? 

Ternate-leaved Eryngium. Clt. 2. Pl. 1 foot.

27 E. tridif (Desf. cat. hort. par. 1828.) radical leaves glabrous, petiolate, tridif; leaves obovate-oblong, cuneate at the base, coarsely serrated: serrations distant, ending in spiny points; stem much branched; cauline leaves nearly sessile, 3-5-parted: lobes lanceolate, coarsely serrated; leaves of involucrum twice the length of the head of flowers, which is ovate-globose; outer palea tricispidate: inner ones undivided. 1. 11. Native country unknown.

Tripartite-leaved Eryngium. Pl. 1 foot.

28 E. angoloides (Cav. ann. sc. nat. 3. p. 32.) radical leaves oblong-obovate, nearly sessile, attenuated at the base, coarsely ciliated or spiny-toothed from the base; cauline leaves somewhat spiny-toothed, broadest at the base; leaves of involucrum 8, ovate-lanceolate, spiny-toothed, longer than the head of flowers, which is roundish; palea ending in 3 or 5 points. 1. 11. Native of Spain. Laroch. eryng. p. 34. t. 10. Tratt. arch. t. 753. E. maritimum μ, Pers. ench. p. 299. exclusive of the syn. of Fl. dan. Heads of flowers blue. The plant cultivated under this name has the lower leaves much longer and narrower at the base than those in the figure cited. Plant glaucous.


29 E. corniculatum (Lam. dict. 4. p. 758.) radical leaves oblong-lanceolate, spiny-toothed; petals fistulifer, septiferous; cauline leaves stem-clasping, tridif; leaves of involucrum 5, linear-subulate, quite entire, pungent; palea among the flowers, entire: ultimate ones drawn out each into a long horn at the apex. 1. 11. Native of Portugal and Spain, in boggy places. Brot. fl. lus. 1. p. 416. Laroch. eryng. p. 32. t. 15. Tratt. arch. t. 756. Sims. bot. mag. 1427. E. cornutum, Dorn. hort. cant. ed. 4. E. suavioles, Brouss. inded. E. odoratum, Hort. par. E. paludosum, Hort. madr. Heads of flowers whitish, sweet-scented. Plant glaucous. The leaves of the involucrum when the plant grows in dry places, about equal in length to the head of flowers. Horns sometimes on 2-3 of the pales, which are usually joined together.


30 E. tricuspidatum (Lin. spec. p. 337.) Desf. atl. 1. p. 224.) radical and lower cauline leaves on long petioles, orbicular,

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cordate, acutely toothed; cauline leaves sessile, palmate-parted; lobes lanceolate, spiny-serrate; leaves of involucre lanceolate, spiny-serrate, exceeding the head of flowers, which is nearly globose; palea tricuspidate, longer than the calyces.

E. cauline floral leaves pales; stem leaves trilobed, with linear lobes; heads of flowers lateral, on short peduncles; leaves of involucre 3, lanceolate-subulate, and are as well as the palea entire; calyx papulose.

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37 E. vesiculosis (Lodd. nov. holl. 1. p. 73. t. 98.) spherical creeping; radical leaves lanceolate, cuneate, and attenuated at the base, deeply toothed, almost pinnatifid; floral leaves trilobed, with linear lobes; heads of flowers lateral, on short peduncles; leaves of involucre 5, lanceolate-subulate, and as well as the palea entire; calyx papulose.

38 E. subspallani (Cav. flor. 6. t. 556. f. 2.) radical leaves petiolate, lanceolate, nearly quite entire; scape naked, bearing only 1 head of flowers, longer than the leaves; leaves of involucre 8, lanceolate, spiny, spreading, furnished each with 1 tooth on each side, longer than the head of flowers, which is hemispherical; palea subulate, shorter than the calyx.

Native of Mexico, in Chalma. Laroch. cryg. p. 56. Tratt. arch. t. 778. Plant hardly more than a finger in height.

39 E. radoresii (Tratt. arch. t. 764.) radical leaves sessile, ovate, spiny-serrate; heads of flowers solitary, roundish, sessile at the neck of the plant; leaves of involucre 6, ovate-lanceolate, tridentate at the apex, discoloured, longer than the head; palea entire.

Native of New Granada, on the mountains of Pasto. E. humile y. Laroch. cryg. p. 34. t. 18. f. 2. H. B. et Kunth, nov. gen. amer. p. 34.

40 E. praediculum (Hook. et Arn. in bot. misc. 3. p. 350.) radical leaves flaccid, on long petioles, deeply pinnatifid; segments linear, spinaceous, bent downwards; stem slender, panicled at the apex; leaves of involucre linear-lanceolate, stiff, acute, quite entire, about equal in length to the head of flowers, which is elliptic; palea hardly equal in length to the flowers.

Native of Buenos Ayres.

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41 E. coronatum (H.-ok. et Arn. in bot. misc. 3. p. 350.) radical leaves lanceolate, spinously pinnatifid; segments lanceolate-subulate, spreading; stem panicled at the top, many-headed; leaves of involucre linear-subulate, spiny, quite entire, reflexed, about equal in length to the head, which is cylindrical; palea oblong, acute, pale, equal in length to the flowers, the 2 or 4 superior ones protruding in long horns, which emulate the sepals of the involucre.

Native of Buenes Ayres. Stem 6-8 inches high.

42 E. humile (Cav. flor. 6. t. 556. f. 1.) radical leaves on long petioles, oval-oblong, spinoserrate; cauline leaves 1 or 2, oblong, sessile, serrate; stems bearing only 1 head of flowers, shorter than the radical leaves; leaves of involucre 10, ovate-lanceolate, tridentate at the apex, colourless above, exceeding the head of flowers, which is globose and depressed at the apex; palea entire.

Native of Peru, on the mountains of Chimborazo and St. Antonio. E. humile a, Laroch. cryg. p. 55. Tratt. arch. t. 763.


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Y. G. Native of Santa Fe de Bogota. Tratt. arch. t. 777. H. B. et Kuntth, nov. gen. amer. 5. p. 53. Leaves of involucre smooth, yellow above.

Stellate Eryngo. Pl. 1 foot?

44 E. PHYTREMA (Laroch. eryng. p. 51. t. 21.) cauline leaves few, petiole, linear-lanceolate, unarmured, crenate; crenate mucronate; stem nearly simple, bearing 2 heads of flowers; heads oblong, crowned by exerted foliaceous paleae; leaves of involucre 3-10, linear, deflexed. Y. F. Native of Mexico, in meadows, near the town of Toluco. H. B. et Kuntth, nov. gen. 5. p. 50. Heads of flowers white.

Phlyctena-like Eryngo. Pl. 1 to 1 1/2 foot.

45 E. GRAFTE (Laroch. eryng. p. 54. t. 24. but not of Nutt.) radical leaves petiolate, elliptic, very blunt at the base, crenate; stem nearly naked, few-flowered; leaves of involucre 8, linear-lanceolate, pungent, a little toothed, twice the length of the head of flowers; paleae subulate, entire, longer than the calyxes. Y. F. Native of Mexico, in humid places. H. B. et Kuntth, nov. gen. amer. 5. p. 53. Plant a foot high. Heads of flowers of an amethyst blue colour. Leaves of involucre smooth and yellow above, but green beneath.


46 E. Bonplandii (Laroch. eryng. p. 52. t. 22.) radical leaves petiolate, ovate-oblong, crenate; stem nearly naked, 1-3-flowered; leaves of involucre 8, and are as well as the palea lanceolate; paleae scarcely exceeding the calyxes, of equal size and shape. Y. G. Native of Mexico, in shady woods. Tratt. arch. t. 754. E. Bonplandianum, H. B. et Kuntth, nov. gen. amer. 5. p. 51. Tube of calyx tubercular.

Bonplandii's Eryngo. Pl. 1 to 1 1/2 foot.

47 E. syrpheale (Lam. dict. 4. p. 759. t. 187. f. 2.) radical leaves obvate, coarsely spiny-toothed; teeth ciliated; stem dichotomous, nearly naked, bearing few heads; leaves of involucre lanceolate, spinose, equal in length to the head of flowers, which is roundish; paleae subulate. Y. H. Native of Monte Video; and of Chili, in the province of San Louis, on the tops of the mountains called Cerro del Morro, at the elevation of 4500 feet. Laroch. eryng. p. 51. Tratt. arch. t. 769. Cham. et Schlecht. in Linneæa. 1. p. 251. There are varieties of this species with bracteas all entire; or the outer ones are spiny-toothed, and the rest entire; or all spiny-toothed ex Cham. et Schlecht. et L. The teeth of the leaves are sometimes entire and not again ciliated, and this brings the species very near E. serratum.

Naked-stemmed Eryngo. Pl. 1/2 foot.

48 E. serratum (L. p. 132. 1c. 6. t. 554.). radical leaves petiolate, lanceolate, profusely serrated; stem nearly naked, and almost simple, few-flowered; leaves of involucre 8-10, subulate, spreading, length of the head of flowers, which is globose; paleae entire, subulate, exceeding the flowers a little. Y. G. Native of Mexico. Laroch. eryng. p. 55. Tratt. arch. t. 776. Calyx covered with white scales. Stem a foot high. Perhaps the same as E. serratum, Link, enum. 1. p. 260. but the leaves are not doubly serrated as described by him, but acutely crenate. Heads of flowers blue?


49 E. carlsinæ (Laroch. eryng. p. 53. t. 23.) radical leaves lanceolate, deeply spiny serrated, acute; cauline leaves palmatifid; lobes deeply serrated; stem branched, bearing few heads; leaves of involucre 7-8, lanceolate, deeply serrated; paleae subulate, simple. Y. G. Native on the mountains about the town of Mexico, and between Joya and Las Vagas, near Perote, and on Mount Orizaba. H. B. et Kuntth, nov. gen. amer. 5. p. 52. Leaves of involucre yellow above. Flowers blue.

Var. a. erectum (D. C. prod. 4. p. 94.) stem erect, solitary; leaves of involucre ovate, twice the length of the head of flowers Y. G. Laroch. eryng. l. c. with a figure. Tratt. arch. t. 358.

Var. β, decumbens (D. C. l. c.) stem simple, diffuse; leaves of involucre equal in length to the head of flowers, which is oblong. Y. G.

Carline-like Eryngo. Pl. 1 foot.

50 E. hirundinosus (D. C. prod. 4. p. 94.) leaves glabratis: radical leaves obovate-lanceolate, peltately serrated; teeth entire, stalk, blunt; stem naked, bearing 1-3 heads; heads elliptic, ciliated from the paleae, which are subulate acuminate and smooth, and exceed the flowers; leaves of involucre similar to the paleae. Y. G. Native of Brazil, in the provinces of Cisplatine and Rio Grande, in fields. Heads coloured, 8-9 lines long. Ciliated-leaved Eryngo. Pl. 1 foot.

52 E. elegans (Cham. et Schlecht. in Linneæa. 2. p. 248.) leaves linear-lanceolate, spiny-serrate, ciliated, tricuspidate at the apex; stem bearing many heads; heads globose, ciliated; leaves of involucre 10, lanceolate, spiny-toothed, tricuspidate at the apex; paleae tricuspidate, a little longer than the flowers, smooth. Y. G. Native of Brazil, in the provinces of Monte Video and Rio Grande do Sul. Root nearly globose, size of a fist. Leaves 10-inches long and 9 lines broad. Heads of flowers small, of one colour.

Elegant Eryngo. Pl. 1 foot.

53 E. sudave (Gill.-et Hook. in bot. misc. 1. p. 334.) stem tall, panicked; leaves linear-subulate, channeled, spiny-ciliated: spines 2-3 together; heads of flowers globose. Y. G. Native about Buenos Ayres, in the plains called the Pampeas. Stem 4-5 feet. Allied to E. ebracteatum, Lam.

Naked Eryngo. Pl. 4 to 5 feet.

54 E. divaricatum (Hook. et Arn. in bot. misc. 3. p. 350.) stems prostrate, dichotomiously divaricate, leafy, rigid; lower leaves bipinnatifid: cauline leaves pinnatifid: segments linear, spineless, divaricate; peduncles short, axillary, and in the forks of the stem; leaves of involucre subulate, reflexed, 4 times shorter than the head of flowers, which is elliptic. Y. F. Native of Buenos Ayres.

Divaricate Eryngo. Pl. 1 foot.

55 E. serrea (Cham. et Schlecht. in Linneæa. 2. p. 246.) leaves ensiform, spiny-serrate, ciliated; stem panicked, bearing many heads; heads ovate, ciliated; leaves of involucre and outer palea lanceolate, subulate acuminate, spiny-toothed, smooth: inner palea entire, a little smaller than the outer ones. Y. F. Native of Brazil, in the province of Cisplatine, and near Monte Video. Radical leaves half a foot long. Heads ungulicular, of one colour.

San-leaved Eryngo. Pl. 1 foot.

56 E. unicornatum (Cham. et Schlecht. in Linneæa. 2. p. 247.) leaves lanceolate, serrated; sutures ending in recurved spines, ciliated; stem bearing few heads; heads globosse, ciliated; paleae scabrous, tricuspidate; leaves of involucre spinosely pinnatifid. Y. G. Native of the south of Brazil.

H. obed-spined Eryngo. Pl. 1 foot.

57 E. florenodum (Cham. et Schlecht. in Linneæa. 1. p. 245.) leaves ensiform, spiny-serrate, ciliated; stem panicked, bearing many heads; heads ciliated by scabrous, subulate muronulolate paleae; leaves of involucre ovate, acuminate, flowers
subulate, hardly different from the pales. \textit{U. G.} Native of the south of Brazil. Stem festuciform at the base.

\textit{Buddle-flowered Eryngium.} \textit{Fl.} \textit{B.} \textit{f.} \textit{S.} \textit{X.} \textit{Y.} \textit{Z.} \\

59 \textit{E. foetidum} (Lin. spec. \textit{p.} 336, exclusive of the syn. of \textit{Gron.}) radical leaves lanceolate, bluish, attenuated at the base, spinulously serrated; floral leaves palmate-parted, sessile; heads nearly sessile, cylindrical; leaves of involucre lanceolate, spiny-serrate, much longer than the heads; pales among the flowers entire. \textit{Y. G.} Native of Jamaica, Cayenne, Demerara, Florida, Brazil, \&c. in fields and woods. \textit{Laroch. eryng.} \textit{p.} 50. Michx. \textit{fl. bor.} \textit{amer.} \textit{t.} \textit{p}. \textit{163.} Sloane, \textit{hist.} \textit{t.} \textit{156.} \textit{f.} \textit{3}-\textit{4}.—Herm. \textit{Indg.} \textit{t.} \textit{237.} Plant with an ungrateful odour when bruised. Flowers white. Calyx ornamented with roundish vesicles, not scales. The radical leaves are sometimes trifid at the apex in the plants we have seen growing in Brazil. The plant named \textit{E. foetidum} by Ucria, a native of Sicily, is probably distinct from this. All parts of the plant are reckoned very powerful anthelmintics, and much used by the negroes and poorer whites on all occasions of that nature, whence they call it \textit{fweed}. It is chiefly administered in decoctions or infusions.

\textit{Fried Eryngium.} \textit{Fl.} \textit{Aug. Oct.} \textit{Ch.} \textit{1714.} \textit{Pl.} \textit{1 foot.} \\


§ 2. \textit{Parallelinœria} (from \textit{parallelus}, parallel, and \textit{nervus}, a nerve; \textit{nerves} of \textit{leaves} parallel). \textit{D. C. prod.} \textit{p.} \textit{95.} \textit{Nerves} of \textit{radical leaves} \textit{parallel} and \textit{longitudinal}. \textit{Leaves} narrow, and probably reduced to the dilated petioles.

\textit{Tiggy Eryngium.} \textit{Fl.} \textit{June. July.} \textit{Ch.} \textit{1810.} \textit{Pl.} \textit{2 feet.} \\


\textit{Virginia Eryngium.} \textit{Fl.} \textit{July. Sept.} \textit{Ch.} \textit{?}. \textit{Pl.} \textit{2 feet.} \\


\textit{Virginia Eryngium,} \textit{Fl.} \textit{July. Sept.} \textit{Ch.} \textit{?}.
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68. E. angustifolium (D. C. prod. 4. p. 95.) radical leaves linear, with parallel nerves, lobately serrate; serratures distant; cauline leaves few, opposite; heads of flowers short; scales of involucre and palea very long, linear-subulate, very acute. 2. G. Native of New Holland. Stem terete, a foot high, striated, twice trifid, erect. Leaves of involucrem and palea half an inch long, much longer than the flowers.

Narrow-leaved Eryngo. Pl. 1 foot.

69. E. canaliculatum (Cham. et Schlecht. in Linnaea. 2. p. 238.) leaves very narrow, channelled, with parallel nerves, shining, spiny eiliated; spines often accessory; stem panicked, bearing many heads: heads nearly unarmed, globose; leaves of involucre conuate at the base, smooth, hardly larger than the pales. 2. G. Native of the interior regions of Brazil. Habit of E. pristis. Radical leaves 2 lines broad. Spines 7-8 in the space of an inch.

Channelled-leaved Eryngo. Pl. 1 foot.

70. E. pristis (Cham. et Schlecht. in Linnaea. 2. p. 237.) leaves with parallel nerves, very narrow, flat, striated, spiny-ciliated, often with accessory spines; stem panicked, bearing many heads: heads globose, eiliated from subulate-spinescent bractes; leaves of involucre ovate, acuminate, subcoriaceous, twice the length of the calyxes, hardly different from the pales. 2. G. Native of Brazil, in the province of Rio Grande. Stem 4 feet high and more, solid. Radical leaves tufted, a foot and a half long.

Gromppus Eryngo. Pl. 4 feet.

71. E. pandanifolium (Cham. et Schlecht. in Linnaea. 2. p. 236.) leaves with parallel nerves, linear, obsoletely and remotely spiny-toothed; stem panicked, bearing many heads: heads globose, eiliated from subulate-spinescent bractes; leaves of involucre ovate, acuminate, subcoriaceous, twice the length of the calyxes, hardly different from the pales. 2. F. Native of Brazil, in the province of Gisplatine. Heads semi-unguicular, coloured. Radical leaves 18 lines long, broad at the base.

Seven-panicle-leaved Eryngo. Pl. 2 to 3 feet.

72. E. petiolatum (Hook. fl. bor. amer. 1. p. 259.) leaves with parallel nerves, lanceolate, tapering into long petioles, remotely spiny-ciliated; upper leaves narrow, sessile; leaves of involucre and palea subulate, spiny-ciliated, still, twice the length of the flowers. 2. H. Native of north-west America, in moist soils on the plains of the Mulnomak river. Petioles 4-6 inches long. Heads eiliated.

Petiole-leaved Eryngo. Pl. 2 feet?

73. E. paniculatum (Laroch. cryogn. p. 59. t. 26.) leaves with parallel nerves, linear, spiny-ciliated: floral ones very short; stem nearly naked, bearing at the apex umbellate branches; branches bearing 1-3 heads; leaves of involucre 9-10, lanceolate, and are as well the palea entire. 2. G.


Var. b. oligodon (D. C. l. c.) leaves of involucre hardly different from the palea; lower leaves entire, or scarcely eiliated on the edges. 2. G. Native of Brazil. E. paniculatum, var. a. Cham. et Schlecht. in Linnaea. 2. p. 234.

Var. c. bracteatum (D. C. l. c.) leaves of involucre elongated and reflexed. 2. G. Native of Brazil, in the province of Gisplatine. Cham. et Schlecht. l. c.

Panicle-leaved Eryngo. Pl. 1 foot.

74. E. cymosum (Laroch. cryogn. p. 63. t. 31.) leaves with parallel nerves; lower ones linear, channelled, bearing very long, acuminated, subulate teeth; upper leaves pinnatifid; floral branches umbellate; leaves of involucre 8-10, linear, quite entire, at length reflexed, longer than the head of flowers, which

is round; palea subulate, a little longer than the calyces. 2. F. Native of Mexico, in the higher plains near Tясco. Tratt. arch. t. 361. H. B. et Kunth, nov. gen. 5. p. 35.

Cynose-leaved Eryngo. Pl. 2 feet.

75. E. lucellefolium (Cham. et Schlecht. in Linnaea. 2. p. 240.) leaves with parallel nerves, linear, denticulated; lower teeth subteres; upper ones obsoletely spinulose; stem bearing few heads; heads unarmed, globose; leaves of involucre ovate, acute, roughish, hardly different from the palea. 2. G. Native of the south of the province. Leaves 2-3 lines broad. Heads pale straw-coloured, as also the rest of the plant.

Luzita-leaved Eryngo. Pl. 1 foot.

76. E. graminium (Laroch. crygn. 60. t. 27.) leaves with parallel nerves, narrow-linear, remotely spiny-ciliated; stem bearing only 2 heads; leaves of involucre 8-9, lanceolate-subulate, nearly entire, spreading, a little shorter than the head of flowers, which is ovate; palea subulate, a very little longer than the flowers. 2. F. Native of Mexico, in shady woods near Santa Rosa. H. B. et Kunth, nov. gen. amer. 5. p. 54. Tratt. arch. t. 761. Stem simple, 2 feet high. Heads of flowers of an amethyst colour.

Grassy-leaved Eryngo. Pl. 2 feet.

77. E. bromeliifolium (Laroch. crygn. 60. t. 28.) leaves with parallel nerves: bearing large subulate teeth, which are shorter than the breadth of the leaves; radical leaves very long, broadly lanceolate-linear: floral ones opposite, keeled; arched; leaves of involucre 10, lanceolate, acuminated, few-toothed, exceeding the head of flowers, which is round; palea entire, twice the length of the calyxes. 2. F. Native of Mexico, in humid woods. Tratt. arch. t. 557. H. B. et Kunth, nov. gen. amer. 5. p. 34. Flowers white?

Pine-apple-leaved Eryngo. Pl. 3 to 4 feet.

78. E. fectinatum (Ypres, in herb. Haenk. ex D. C. prod. 4. p. 96.) leaves with parallel nerves, bearing twin, subulate teeth, 1 in each pair, very short, and the other longer than the breadth of the leaves; radical leaves long, lanceolate-linear: floral ones opposite; leaves of involucre 10, lanceolate, acuminated, cosily spiny-toothed at the base. 2. F. Native of Mexico. E. Depp. et Schlecht. et Cham. in Linnaea. 5. p. 207. Very like E. bromeliifolium, but differs in the leaves being much narrower. Branches of stem bearing either 1 or 3 heads.

Pectinate-leaved Eryngo. Pl. 2 to 3 feet.

79. E. humboldtii (Laroch. crygn. 61. t. 29.) leaves with parallel nerves, lanceolate-linear, closely spiny-toothed; spinules in pairs; stem branched above; heads of flowers oblong, conglomerate; leaves of involucre 7-8, lanceolate, toothed, usually shorter than the head of flowers; outer palea toothed: inner ones entire. 2. G. Native of New Granada, on Mount Quindiu. Tratt. arch. t. 785. E. Humboldtianum, H. B. et Kunth, nov. gen. amer. 5. p. 34.

Humboldt’s Eryngo. Pl. 2 to 3 feet.

80. E. proteiflorum (Laroch. crygn. 62. t. 30.) leaves with parallel nerves; cauline leaves densely crowded, rather inbredicate, lanceolate, cosily spiny-toothed; heads of flowers large, oblong; leaves of involucre 20-22, large, toothed, lanceolate, exceeding the head of flowers; palea entire. 2. F. Native of Mexico, at the foot of the burning Mount Jorullo, and on Mount Orizaba. Tratt. arch. t. 773. H. B. et Kunth, nov. gen. amer. 5. p. 35. Leaves of involucre smooth and yellow above.

Protea-flowered Eryngo. Pl. 2 to 3 feet.

81. E. monspeliense (Cav. ann. 3. p. 116. icon. t. 553.) lower leaves with parallel nerves, linear, channelled, bearing unequal, terete, subulate teeth; upper leaves pinnatifid; stem bearing only 1 head of flowers; leaves of involucre 20-24, lanceolate, furnished each with 1-2 spreading spines, exceeding N

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the head of flowers, which is roundish. 2. F. Native of Mexico, near Huamajato and Chilpancingo. Laroch. eryng. p. 62. Tratt. arch. t. 767.

One-headed Eryngo. Pl. 4 feet.

82 E. JUICEUM (Cham. et Schlecht. in Linnaea. 3. p. 241.) leaves with parallel nerves, very narrow, inconspicuously spiny-denticulated, acute; stem bearing few heads; heads nearly unarmd, globose; leaves of involucrum 10-12, ciliate at the base, ovate, 5-nerved, acuminated, and are as well the pale and smooth. 2. G. Native of Brazil. Heads of one colour, 5 lines in diameter.

Rushy Eryngo. Pl. 1 to 2 feet.

83 E. Sencymum (Cham. et Schlecht. in Linnaea. 3. p. 212.) leaves very narrow, linear, with parallel nerves, quite entire, fringed with villi at the base; stem bearing 1 or few heads; heads between egg-shaped and globose, unarmd; leaves of involucre as well as the palea elongated, acuminate, and striated. 2. G. Native of Brazil, in the province of Cipatlan and Rio Grande. Stem bearing few leaves, from 1 to 2½ feet high. Leaves a line broad: radical one a foot and more long. Bracteas longer than the flowers. Habit almost of a Cypérus.

Wood-bearing Eryngo. Pl. 1 to 2 feet.

84 E. Sanguisorba (Cham. et Schlecht. in Linnaea. 3. p. 239.) leaves linear, with parallel nerves, spiny-serrate: serrations towards the apex of the leaf blunt and retrograde; stem naked, bearing few heads; heads ovate; leaves of involucre as well as the palea subulate acuminate, a little longer than the flowers. 2. F. Native of the south of Brazil, in the province of Rio Grande. Tube of calyx clothed with scarious scales at the angles. Heads echinated, coloured, 5-10 lines long.

Sanguisorba-like Eryngo. Pl. 1½ feet.

85 E. SECTAM (Lam. dict. 4. p. 759.) leaves linear, with parallel nerves, usually ciliated at the base with long bristles; stem trichotomously corynose; heads cyllindrical, unarmd; leaves of involucre as well as the palea entire, shorter than the flowers. 2. G. Native of the south of Brazil. Laroch. eryng. p. 64. t. 32. Tratt. arch. t. 758. Cham. et Schlecht. in Linnaea. 2. p. 244. E. nudiflorum, Willd. herb. which was collected about Ibagu, in New Granada, is the same, according to Cham. et Schlecht. 1. c. Stem erect, 2 feet high. Habit of the last species. Calyx rough from scales.


SARGENTII H. LESSONIA (in honour of - Lesson, a writer on compositae). Bertero, miss. Hook. bot. misc. 3. p. 351. Small shrubs or trees, with dichotomous branches, which are marked below by the cicatrices of the fallen leaves, but densely leafy at the extremities. Peduncles terminal, bearing a solitary, globose, or hemispherical head of flowers each.


87 E. SARCOPHYLLUM (Hook. et Arn. in bot. misc. 3. p. 352.) arborescent; leaves cylindrical, fleshy; leaves of involucrum wanting. ½. G. Native at Massa Fueria, near Juan Fernandez. The heads of flowers are exactly globose, without any involucre. Branches dichotomous.

Fleshy-leaved Eryngo. Shrub 5 to 6 feet.

† Species not sufficiently known.

88 E. FALIE'CESCENS (Mill. dict. no. 5.) radical leaves roundish, multifid; heads pedunculate. 2. H. Native of Europe. E. alpinum amethystinum, capitulum majore pallescente, Tourn. inst. 327. Allied to E. amethystinum, according to Mill. but distinct from it.


89 E. AMERICANUM (Walt. fl. carol. p. 102.) leaves entire: radical ones roundish: cauleine ones ovate-lanceolate; upper-most ones trifid; stem procumbent. 2. H. Native of Carolina.

American Eryngo. Pl. procumbent.

90 E. carthamoídes (Smith, in Rees’ cycv. vol. 13.) leaves oblong, toothed, undivided, cordate at the base, and stem-clasping; stem nearly simple, bearing few heads; leaves of involucre few and ovate. 2. H. Native of Mauritania. Perhaps the same as E. aquifolium?

Cathamomus-like Eryngo. Pl. 1 foot.


Starry-blue Eryngo of Mount Lebanon. Pl. 1 foot.

92 E. PARVUM PALLARE FOLLIS SERRATIS. Mor. oxon. sect. 7. t. 36. f. 13.

Small Eryngo with serrated leaves.


Mexican Eryngo with long toothed leaves. Pl. 1 foot.

N.B. E. lateriflorum (Lam. dict. 4. p. 473.) or Grimen orientale squacatum (Tourn. cor. p. 39.) is not a Cenchrus, as has been supposed by Linnaeus, nor an Eryngium but Coriandrum pungens.

Cult. Most of the species of this genus are extremely handsomé and beautiful, and particularly so the hardy kinds, which are therefore well fitted for decorating borders. They all succeed well in common garden soil; but the lighter and more sandy the soil is the better they will grow. The greenhouse or frame kinds should be grown in pots, so that they may be sheltered in winter. All are readily increased by dividing at the root, or by seed.

XXXII. ACTI'ANANTHUS (from actin, actin, a ray, and anthus, anthos, a flower; involucels). Ehrenb. in Linnaea. 4. p. 398. D. C. prod. 4. p. 668.

LIN. Syst. Pentaédrä, Digynia. Flowers monocous, female ones capitata: male ones in capitata umbels: marginal ones joined, abortive, and spinescent, having the receptacle destitute of palea. Teeth of calyx permanent. Pedals oblong, complicate at the apex, rather ciliate. Fruit compressed from the sides; mericarps with the 5 alternate sutural ribs strongest: having the furrows between the ribs furnished with 1 vitice each, and the commissure with 2 vities; carpophore adnate.—A stiff, squarrose plant. Lower leaves ternately bipinnate. Involucrum none; involucels of many leaves. Flowers white. This genus comes between Oenanthae and Eryngiæm, according to the fruit, but from the infrorseence it is analogous to Echinophora.

I. A. SYRACUSÆ (Ehrenb. l. c.). 2. H. Native of Syria, between the towns of Sacheh and Balbec.

Syrian Actinanathus. Pl. 1 foot.

Cult. See Eryngium above for culture and propagation.

§ 2. Unbels compound or perfect. Vitice on the fruit variable, rarely wanting.

* Fruit having only primary ribs present.

Tribe IV.

AMMI’NÆE (plants agreeing with Ammi in important
UMBELLIFERA. XXXII. RU'MIA. XXXIV. CICUTA.

[Text content not provided in the image]
stronger, they carefully avoid it; that goats, however, devour it greedily with impunity, and that horses and sheep eat it with safety. Strong enemics are the most approved remedy for this poison.

*Var. b. tenenifolia* (Schrhark, akad. munch. philos. class. 7. p. 56, t. 4, f. 1.) trunk of root slender, bearing fascicles of cylindrical fibres; leaves bipinnate; segments linear, entire, and subseriat: umbels opposite the leaves, and terminal. 2. W. H. Native of Germany, near Fussan.

Poisonous Water Hemlock or Cowbane. Fl. July. Britain. Pl. 2 to 3 feet.

* * * American species. Fibres of roots oblong and fleshy.


Cult. The species should be planted in ponds or ditches, where they will increase without any further care.


—Smýmýnium species of Lin.—Smýmýnium, Ell. sketch. p. 139.—Smýmýnium and Tháspium, Nutt. gen. amer. 1. p. 195 and 196.—Smýmýnium species of authors.

Lin. syst. Pentádraea, Dígyinía. Margin of calyx oblong-ovate, or with 5 very short teeth. Petals elliptic, tapering into a long inflexed acumen. Fruit contracted from the sides, rather didymous, roundish or oval; mericarps with 5 filiform, prominent, equal ribs; lateral ribs marginal; furrows between ribs furnished with 1 vitta each, and the commissure with 2 vittae; carpophore bipartite. Seed teretely convex, scarcely flattened in front.—Perennial herbs, natives of North America. Stems nearly simple, erect. Leaves ternate or biternate; segments oblong-ovate, or cordate. Involutamer wanting; involucres few-leaved, variable. Flowers yellow, rarely white, or dark purple. This genus differs from Smýmýnium in the seed being not involuted, and from Alpium in the petals ending in a long inflexed acumen each.


*Var. b. angucinátum* (D. C. prod. 4. p. 100.) intermediate segment of leaves nearly pinnate, with 5 segments. 2. W. H. Growing along with the species. Smýmýnium angucinátum, Smith, in Rees' cycl. vol. 33. no. 8.


2 Z. Zizii (Koch. l. c.) radical leaves undivided, cordate, crenated, petiolate; caudine ones nearly sessile, ternate; leaflets petiolate, ovate-cordate, serrated; involucres usually 1-leaved. 2. W. H. Native of Carolina, on moist mountains and pastures; and probably on the mountains of Virginia and Pennsylvania, plains of the Red River, Saskatchewan, and the river Winnege and prairies of the Rocky Mountains. Smýmýnium cordátum, Wilt. fl. carol. 1. p. 635. Schultes, syst. 6. p. 438. Torrey, fl. un. st. 1. p. 307. Sison trifoliátum, Michx. fl. bor. amer. 1. p. 168. Smýmýnium trifoliátum, Muhl. ed. p. 31. Nutt. gen. amer. 1. p. 195. Flowers golden yellow, very like those of the preceding species; but according to Nutt, they are white, and according to Elliot either white or yellow; there are therefore probably two species confused.


Cult. A moist soil suits the species of this genus best; and they are easily increased by dividing or by seeds.


1 P. atropérfre (Lehm. in sem. hort. lamb. 1828. p. 16.) 2. F. Native of Mexico. Mature fruit brownish, and have a strong scent of parsley, as well as every part of the plant. Dark-purple-flowered Pentacrypta. Pl. 2 feet.

Cult. This plant will require to be protected in winter; it can only be increased by seeds.


Lin. syst. Pentâdriaea, Monogynía. Margin of calyx oblong-ovate. Petals roundish, entire. Stylopodium depressed. Fruit roundish, contracted from the sides, didymous; mericarps with 5 filiform equal ribs; lateral ribs marginal: furrows between the
ribs having one vitex each, but the outer ones have 2-3 vitæ; carpophoræ unilocular. Seed gibbously convex, flatish in front.

- Herbaceous, with the roots thickish at the neck. Stems furrowed, branched. Leaves pinnate; leaflets cuneiform, cut. Umbels axillary on the branchlets, and nearly sessile at the top of the stem. Involucrum and involucelles wanting. Flowers white or greenish.

**Sect. I. Eucelarium** (from eu, well, and apium, celery; this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 101. Point of petals closely involute.

1. A. graveolens (Lin. spic. 379) plant glabrous; leaves pinnate; upper parts ternate; leaflets cuneate, cut and toothed at the apex. δ. H. Native nearly throughout the whole of Europe, even to Caucasus, in ditches; and also of Chili, near Mendoza, and of the Falkland Islands. D. Urv. fl. mal. p. 457. In Britain it is a common weed by the sides of ditches, brooks of water, and marshy ground, especially towards the sca. Smith, engl. bot. t. 1210. Schultes, syst. 6. p. 429. Hayn. arz. gew. 7. t. 24. Fl. dan. t. 790. Plessch. icon. t. 217. Sessile graveolens, Scop. carn. no. 360. Sium A. rium, Roth, germ. 1. p. 128. Sium graveolens, Vest. man. bot. p. 517. Celery is known in Britain in its wild state under the name of smallage. The seeds and whole plant in its native ditches are acrid and dangerous, with a peculiar rank coarse taste and smell, and the effects of cultivation in producing from it the mild sweet stalks of celery are not a little remarkable; for which, and its name, we are indebted to the Italians, and which has now supplanted our native Alexanders (Smýrýttum Úlasáttrum).

**Cec.—** The blanched leaf-stalks are used raw as a salad from August till March; they are also stewed, and put in soups. In Italy the unblanched leaves are used for soups, and when neither blanched nor the green leaves can be had, the seeds bruised form a good substitute. The root only of the variety called the *celeriac*, is used, and is excellent in soups, in which, whether white or brown, slices of it are used as ingredients, and readily impart their flavour. With the Germans it is also a common salad, for which the roots are prepared by boiling, until a fork will pass easily through them; after they are boiled and become cold, they are eaten with oil and vinegar. They are also sometimes served up at table, stewed with rich sauces. In all cases before they are boiled, the coat and the fibres of the roots, which are very strong, are cut away, and the root is put in cold water on the fire, not in water previously boiling. The varieties are as follow:

**Var. β, dióices** (D. C. prod. 4. p. 101.) leaves erect; petiolo very long; leaflets 5-lobe, serrated. A'pium dióice, Mill. dict. no. 5. A'pium Celleri, Gaertn. fruct. 1. t. 22. *Celery* of the English; *celeri* or *ache* of the French; *cuppich* of the Germans; and *oppio* of the Italians. There are several sorts of the common or sweet celery, viz. 1. Common upright Italian. 2. Large hollow upright. 3. Solid stalked upright. 4. Large red stalked upright.

**Var. γ, rapóceum** (D. C. l. c.) leaves spreading; petiolo short; segments of leaves 5, serrated; root roundish. A'pium rapóceum, Mill. dict. no. 5. *Celeria* of the English; *celeríte* of the French; and *knot-l战机* of the Germans. There are 2 or 3 sorts of celeriac, viz. 1. Common celeriac or turnip-rooted celery. 2. Celeri-rave of the French; and 3. Knot-l战机 of the Germans. This last is harder than the others, and will continue longer in spring. It is grown to a large size in the neighbourhood of Hamburg, and is sometimes imported for the London market.

**Var. ε, Lusítanii*um (D. C. l. c.) radical leaves 3-lobe; cauline ones 5-lobe, crenated. A'pium Lusítaniium, Mill. dict. no. 7.

**Estimate of sorts.**—The first three sorts of var. β are preferable for general culture. The red variety is rather coarse for salads, but is hardly to stand the winter, and well adapted for soups and stews. The sorts of var. γ are cultivated for their roots, under the name of *celeriac*, which are fit for use in September and October, and may be preserved in sand through the winter. Celery may be grown to 10 lbs. weight, and averaging 6 lbs. each head. A head of celery, we are informed (Cal. mem. vol. 2. p. 297.), was dug up on the 4th of October, 1815, at Longford, near Manchester, which weighed 9 lbs. when washed, with the roots and leaves still attached to it, and measured 6 feet 6 inches in height. It was the red sort, perfectly solid, crisp, and firm, and remarkably well flavoured.

**Propagation.**—All the sorts are raised from seed; and half an ounce is reckoned sufficient for a seed-bed 4 feet and a half wide by 10 feet in length, of the upright sorts; but for celeriac, a quarter of an ounce will be enough for a bed 4 feet square.

**Soil.**—Celery delights in a soil rather moist, rich in vegetable mould, but not rank from new unmorted dung.

**Times of sowing.**—The most forward crop is slightly forced, any of the varieties may be sown in the spring in the open garden, at 2 or 3 different times, from the 21st of March until the first week of May; but the principal sowing should be made in the first fortnight of April.

**Early crop.**—For early summer and autumn celery, sow a small portion towards the end of February, in a moderate hot-bed. When the young plants are about 2 inches high, put out some into a warm border, 2 or 3 inches apart, or rather into a second slight hot-bed, if before the 21st of March, as well to protect the plants, as to expedite their growth for final planting. As soon as the leaves are 6 inches high, in May or June transplant them into trenches for blanching, as directed below for the main crops. But as these early sown plants will not continue long in full growth before many of them will pipe or run, you should plant only a moderate crop, for a temporary supply; when they are advanced in the trenches from 8 to 12 inches in growth, begin to earth them up several inches on both sides of each row; continue earthing up by degrees as they rise higher, till they are whitened from 6 to 12 inches in length; when they may be dug up as wanted.

**Main crop.**—To raise the main crops for summer, autumn, and winter, make a considerable sowing at the commencement of April. Sow in beds of light mellow earth, and rake in the same as soon as covered with soil. In very dry weather give moderate waterings, both before and after the plants come up. When they are 2-3 or 4 inches high, thin the seed-bed, and pick out a quantity at successive times into intermediate beds, 3-4 inches asunder. Water those removed, and till they have struck fresh root. D. Judd sows the middle of January in a warm situation, on very rich ground, protecting it by mats at night. When the plants are from 2-3 inches high, he pricks them out into a nursery-bed, immersing the plants, as he draws them, in water, so as they may remain moist while out of ground. The plants remain in the nursery-bed until they become very strong. John Walker, a gardener near Manchester, grows the red celery; sows for the early crop about the 1st of March, and for the late crop about the 1st of April. "The seed-bed is formed of fresh dark loamy soil, mixed with old rotten dung, half and half, and placed on a hot-bed. The nursery or transplanting bed is formed with old hot-bed dung, very well broken, laid 6 or 7 inches thick, on a piece of ground which has lain some time undisturbed, or has been made hard by compression. The situation should be sunny. The plants are set 6 inches apart in the dung, without soil, and covered with hand-glasses. They are watered well when planted, and frequently afterwards. By hardening the soil under the dung in which the plants are set,
the root is formed into a brush of fibres; and by thus preventing the pushing of a tap-root, the plant never runs to seed before the following spring."—Cal. hort. mem. vol. 2.

Transplanting into trenches.—When either the plants left in the seed-bed, or those removed, are from 6 to 12 inches high, or when the latter have acquired a stalky growth, by 4 or 5 weeks' nurture in the intermediate bed, transplant them into trenches for Blanching. For this purpose allot an open compartment. Mark out the trenches a foot wide, and from 3 feet to 3½ distant; dig out each trench lengthwise, a spade in width, and a light spout deep, that is, 6 or 8 inches, or even a foot. Lay the excavated earth smoothly in the intervals, making the edges of the trenches equally full and straight; also loosen the bottom moderately, in a level order, to receive the plants. Before inserting them, it would essentially strengthen the soil, to apply some good rotten dung in each trench 3 inches thick, and let it be dug into the bottom regularly a moderate depth. Then having lifted the plants, just thin any long straggling tops of the leaves and fibres of the roots; also slip off side-shoots; plant a single row along the bottom of each trench, 4 or 5 inches apart. Give a good watering directly, and occasionally after, if the weather be dry, till the plants take root, and show renewed growth. Continue planting out a monthly succession in June, July, August, September; thus providing a supply from July and August of the present summer throughout the course of autumn and winter, till May in the following spring. Judd prepares his ground for transplanting by trenching in 2 spades deep, mixing with it the operation a good dressing of well-reduced dung from the old forcing beds. He says, "I give it a second trenching in order that the dung may be better incorporated with the mould, and then leave it in as rough a state as possible, till my plants are ready to be put out." In the ground thus prepared, he forms trenches 20 inches deep, and 6 feet distant from each other, measuring from the centre of each trench. Before planting he reduces the depth of the trenches to 3 inches, by digging in sufficient dung to fill them so much up. At the time of planting, if the weather be dry, the trenches are well watered in the morning, and the plants are put in, 6 inches apart in a row, in the evening, care being taken by the mode above mentioned, to keep the fibres quite wet whilst out of ground; as they are drawn from the nursery-bed, the plants are dressed for planting, and then laid regularly in the garden pan. The trenches, in which his rows of celery are planted, being so very shallow, the roots of the plants grow nearly on a level with the surface of the ground: this he considers particularly advantageous; for as considerable cavities are necessarily formed on each side when the moulding takes place, all injury from stagnant water or excess of moisture is prevented. The trenches when planted are watered, as may be required. Here he prepares his ground for celery during the winter, and avoids putting much of a crop in the space between the trenches, especially one that grows tall, as he finds celery does best when it grows as open as possible. Walker makes his trenches at 4 feet distance, and 18 inches wide, 12 deep, and filled 9 inches with a compound of fresh strong soil, and well-rotted dung; three-fourths dung, and one-fourth soil. Old hot-bed dung is the best. The plants should be taken up with as much soil as will conveniently adhere to the roots, and the side-shoots are removed from the stems; they are then set with the hand at 9 or 10 inches apart, in the centre of each trench; it is necessary to wait until they are ready to be earthed, but not afterwards.

Landing or earthing up.—As the plants in trenches rise from 10 to 15 inches high, Abercornbe begins to land-up for blanching, observing "to trim in the earth gently when first raised to the stems, with a hoe or spade, but mostly the latter. When the plants are of a more advanced growth, earth them up equally on both sides each row, 3½ or 5 inches, according to the strength and height of the different crops. Repeat this once a week or fortnight, till by degrees they are landed-up from 12 inches to 2 feet, in order to Blanch them of some considerable length. Continue thus landing-up the different crops from July till February. As the autumnal and main winter crops attain full growth, give them a final landing-up near the tops, which will increase the length of the blanched part, and also protect the later crops more effectually during the winter." In landing-up, Judd does "not think it well to level the plants with too much mould at first. The two first mouldings, therefore, are done very sparingly, and only with a common draw-hoe, forming a ridge on each side of the row, and leaving the plants in a hollow, to receive the full benefit of the rain and the waterings. When the plants are strong enough to bear 6 inches high of mould, the moulding is done with the spade, taking care to leave bases enough to support the masses of mould, which will ultimately be used in the ridge, and still keeping for some time the plants in a hollow, as before directed. The process of moulding is continued through the autumn, gradually diminishing the breadth of the top, until at last it is drawn to as sharp a ridge as possible to stand the winter. In the operation it is necessary, in order to prevent the earth from falling into the hearts of the plants, to keep the outer leaves as close together as possible; for this purpose, before I begin the moulding I take long bands of bass matting, tied together till of sufficient length to answer for an entire row, and I fasten this string to the first plant in the row, then pass it to the next plant, giving it one twist round the leaves, and so on till I reach the other, where it is again fastened; when the moulding is finished, the string is easily unravelled, by beginning to untwist it at the end where it was last fastened." Walker, removing the lateral shoots, the leaves of each plant being held together with one hand, the soil pulverized, is drawn round with the other, taking care not to earth up too high at once, nor too close. The heart should always be left quite free. This may be repeated about once a fortnight until the plants are ready for use.

Late crop.—For late spring celery to stand till the end of May in the returning spring, without running considerably, it is expedient to make a small late sowing at the commencement of May. The plants when 6 weeks old may be pricked on intermediate beds, 6 inches by 3 asunder; to remain till September or October, then transplant them into moderate trenches; as they advance in growth, earth them up a little in winter, and finally in the spring in February and March.

Occasional shelter.—On the approach of frost take up a part of the crop, and lay it by under dry sand for winter use. To preserve the plants left in the bed, lay some long dry litter over the tops, which remove in every interval of mild weather. It is a common complaint, that very fine looking celery is often found to be rotten at the base of the leaf-stalks; the fact being, that when it is full grown, and the blanching completed, it begins to decay, and will not keep good in the ground for more than a month at most. Some, therefore, take up and preserve in dry sand, but in that situation it soon becomes tough and dry. The best mode seems to be that of forming successive plantations.

Taking the crop.—It is best to begin at one end of the row, and dig clean down to the roots, which then loosen with a spade, that they may be drawn up entirely without breaking the stalks.

Cultivation of celeriac.—The times of sowing are the same as that for other sorts of celery. The plants require a rich well-manured soil, and according to an account communicated by Lord Stanhope to Mr. Sabine, the plants are reared on a hot-bed under glass, and transplanted when 2 or 3 inches high to another hot-bed, and set an inch and a half apart. In the be-
ging or middle of June they are transplanted into flat beds in the open air, at the distance of 15 inches from each other, and not in trenches like other celery. They must be abundantly watered as soon as they are set out, and the watering must be repeated every other day, or, if the weather should be warm, every day. As they increase in size they will require a greater quantity of water, and they must be occasionally hoed. The roots will be fit for use in September or October. Mr. Sabine states that he has been informed, that the plan of giving excess of water is peculiar, and that the vigorous growth of the plant is more dependent on richness of soil than on any other cause. Abercrombie directs to earth up the bulbs 4 or 5 inches to blanch them, when they are full grown.

To save seed.—Either leave some established plants in the spring where growing; or in February or March dig up a competent number, cut down the top leaves, and set the plants in the ground full 2 feet asunder. They will produce seed in autumn. Walker grows only red celery, and in preparing plants for seed, chooses the most solid, of the reddest colour, and the smallest size. When taken out of the transplanting bed, the lateral shoots being removed, they should be planted in a dry warm situation, where the seed will ripen well.


2 A. CHILENSE (Hook. et Arn. in bot. misc. 3, p. 333,) plant glabrous; stem nearly terete, hardly angular; leaves spreading, bipinnate: lobes cuneate, somewhat trifidly cut, quite entire; petals involute at the apex.  9. II. Native about Valparaiso. The plant is much stouter than A. graveolens, and the stem is not deeply furrowed. The leaves resemble those of common parsley, but are much smaller, and more flaccid. The peduncles or short lateral branches are stout and firm. Fruit much larger than that of A. graveolens. Involucre and involucres wanting. Chili Celery. Pl. 2 feet.

SEC. II. OROSOLIDÆM (oëos oëos, oros oros, a mountain, avus avus, an umbel; habitat of plants). D. C. prod. 4. p. 101. Petals denticulated, with an inflexed point.


4 A. RANUNCULIFÖLUM (H. B. et Kunth, l. c. p. 18. t. 421,) leaves somewhat terete; leaflets obovate-cuneate, lateral ones 5-lobed: intermediate one 3-parted: segments 2-5-lobed.  9. F. Growing along with the preceding, of which it is probably only a variety. Crowfoot-leaved Celery. Pl. 2 to 3 feet.

5 A. GLAUCESCENS (H. B. et Kunth, l. c.) leaves subternate; leaflets obovate-cuneate, tripartite; lobes bifid or trifid.  9. F. Growing along with the two preceding species, of which it is perhaps only a variety. Glaucescent Celery. Pl. 2 to 3 feet.

6 A. COMMERSONII (D. C. prod. 4. p. 101,) leaves pinnate; leaflets multifid: lobes linear.  9. F. Native of South America. Styles a little longer and more divaricate than any other of the species. It is very nearly allied to A. ranunculifolium, but the segments of the leaves are narrower and more acute, and the lower leaves are pinnate. Commerson's Celery. Pl. 2 to 3 feet.

† Species not sufficiently known.

7 A. BRACHYPHYLLUM (Horn. hort. hafn. suppl. p. 128,) segments of radical leaves cordate, and truncate at the base, and trifid at the apex.  9. H. Native country unknown. The fruit is very like that of A. graveolens.


Cult. The species will grow in any common soil, and are increased by seeds.


Lin. syst. Pentádria, Dingyín. Margin of calyx obsolete. Petals roundish, incurred, entire, hardly emarginate, with an inflexed point. F. Styles somewhat short, conical, rather crenulat. Styles diverging. Fruit ovate, contracted from the sides, somewhat didymous; mericarps with 5 equal filiform ribs: lateral ribs marginal; having the furrows between the ribs furnished with one vitta each, and the commissure with 2. Carphopodi bipartite. Seed gibbously convex, flattish in front.—Branched glabrous herbs. Leaves decomposed, with cuneate segments. Involucra few-leaved; involucres many-leaved. Flowers white or greenish, uniform; those in the dish of the umbel frequently sterile. Stamens longer than the corolla.

1 P. SATIVUM (Hoffin. et Koch, l. c.) stem erect, angular; leaves decomposed, shining; lower leaflets ovate-cuneate, trifidly toothed: superior ones lanceolate, nearly entire; leaves of involucrus filiform.  9. II. Native of Sardinia, Greece, Archipelago, Turkey, Chili about Concepcion, &c. on shaded rocks; and now cultivated in every culinary garden. Nees. off. pflanz. 16. t. 21. A'pium Petroselinum, Lin. spec. 379. Hayn. arz. gew. 7. t. 23. A'pium vulgäre, Lam. fl. fr. 3. p. 1027. A'pium tenuifolium, Riv. pent. irr. with a figure. The Parsley is called Persil in French, Petersilie in German, and Petroselino in Italian. It is a hardy biennial; introduced to England in 1548 from Sardinia. It is now so common as to be naturalised in several places both in England and Scotland. The root leaves are much curled in some varieties. The flowers are yellow, and appear in June; they have usually one leaf at the origin of the universal umbel; and the involucre often of from 6 to 8 short small leaves, fine almost as hairs to the partial umbels.

It may be right to notice, that the poisonous plant called fools-parsley (Athasá Cynápin), a common weed in rich garden soils, has sometimes been mistaken for common parsley. They are very easily distinguished: the leaves of fools-parsley are darker green, of a different shape, and, instead of the peculiar parsley smell, have when bruised a disagreeable odour. When the flower-stem of the fool's-parsley appears, the plant is at once distinguished by what is vulgarly called its beard, the 3 long pendant leaves of the involucre. The timid may shun all risk of mistake by cultivating only the curled variety. This last it may be remarked, makes the prettiest garnish." Neill.

Varieties.—There are:

1. The common plain leaved, which is the true species, is seldom cultivated.

2. The curled-leaved. This is the most esteemed variety. A'pium crispum, Mill. dict. no. 2. P. sativum β crispum, D. C. prod. 4. p. 102.

3. The broad-leaved or large-rooted Hamboigh, which is cultivated for its carrot-shaped roots. A'pium latifolium, Mill. dict.
UMBELLIFERÆ. XXXVIII. Petroselinum. XXXIX. Wydleria.

no. 3, but not of Poir. P. sativum var. latifolium, D. C. prod. 4. p. 102.

UMBRELLIFERiE. leaves radiate. September, October.

The leaves of the two first varieties are used as pot-herbs at all seasons of the year; also as a garnish. The third kind is esteemed for its large white carrot-shaped roots, drawn in winter like parsnips for the table; and occasionally to be used in medicine, being a good remedy for the gravel.

Culture of the pot-herb kinds.—" One sowing in spring will mostly furnish young leaves all the year, though to answer a constant demand, many persons make successive sowings from February to May. Some also sow early in autumn for young parsley in winter and spring; but such a supply is better provided by cutting down established plants. Sow in a single drill along the edge of any compartment, or occasionally in rows 9 or 12 inches asunder. Draw small drills, something less than an inch deep, in which to drop the seed moderately thick, and cover a little above half an inch. The plants will come up in 3 or 4 weeks, and when 2 or 3 inches high, may be gathered as wanted all the summer, winter, and following spring till May, when they will go to seed. Have always a young crop sown timely in the spring, to succeed the declining old plants. In gathering pot-herb parsley, cut close and regular. In summer, when the plants grow rank, yielding more leaves than can be used, cut them in close to the bottom, and they will shoot up stocky in a regular close growth. Observe also to do the same in autumn, about the end of September, that the plants may form heads of fresh young leaves before winter. On the approach of frosty weather protect them with h ± m and reed-pa nnels, laid upon branches of birch or other light supports."

Culture of Humberg parsley.—" To obtain large roots allot a compartment where the soil is deep, and has been well dug. Any common mould will suit, if dry and not too rank. Sow in February, March, or early in April, in one or more beds; either in drills 9 inches asunder, or broad-cast, and rake it. The plants should be thinned to 9 inches distance, to give room for proper growth in the roots, for use in August, September, October, and thence till the following spring. On the approach of frost take up some roots, and preserve them in sand. A sowing may be made in the third week in June, when young roots are wanted in winter."

To save seed.—" Permit some old plants to run to stalks in May; they will produce plenty of seed, ripening in July or August." Abercrombie.


3 P. selinoides (D. C. prod. 4. p. 102.) stem striated; radical leaves tripinnate; cauline ones bipinnate; leaflets pinnatifid; lobes linear-lanceolate, acute, entire, or tripartite; umbels drooping a little; involucrum almost absent. § H. Native country unknown. Selinum peregrinum, Willd. cmmn. p. 306. This plant differs from GaUium apar i, to which it is joined by Sprengel, in the segments of the leaves being much larger, in the petals being cream coloured, not white, and in being entire, not obcordate.

Selinum-like Parsley. Pl. 2 feet.

5 P. prostra t'um (D. C. prod. 4. p. 102.) stem procumbent, flexuosus; leaves pinnate; leaflets pinnatifid: lobes 5-7-lanceolate; ultimate ones trifid at the apex; umbels nearly sessile, opposite the leaves; involucrum usually of one leaf. 2 F. Native of Van Diemen's Land. A pium prostratum, Labill. nov. holl. 1. p. 76. t. 103. Vent. malm. t. 81. Schultes, syst. 6. p. 430. Herb edible.

Prostrate Parsley. Pl. prostrate.

5 P. se'g'etum (Koch, umb. p. 128.) stem erect, twiggy, nearly naked; leaves pinnate; leaflets nearly sessile, roundish-ovate, pinnatifidly cut, mucronately toothed: upper lobes linear; involucrum 2-3-leaved; rays of umbel very unequal. 0 F. Native of Britain, France, Caucasus, and Switzerland, in corn-fields, vineyards, and gardens. In Britain in a chalky rather moist soil, but not very common; as about Mapledurham, Hants; at Binham, Norfolk; near Kelmarsh, Northamptonshire; at Walthamstow, Essex; and in the island of Tiree, Scotland. Sison se'getum, Lin. spec. 362. Jacq. Hort. vild. t. 134. Smith, ent. bot. 228. Sium se'getum, Lam. dict. 1. p. 406.—Mor. hist. 3. p. 283. sect. 9. t. 5. f. 6. Flowers and fruit agreeing with the rest of the genus Petroselinum, but the habit is that of Pimpinella. Flowers all fertile, white or even reddish. Teeth of calyx rather conspicuous. Perhaps Sison arvensis, Brotn. fl. lus. 1. p. 424. and Schultes, syst. 6. p. 418. is not distinct from this. The whole account of this herb by that accurate observer Gooolyer, with the origin of honewort, from its cur ing a swelling in the cheek, called a hone, &c. is a model of precise information.

Cow's Honewort. Fl. July, Aug. Britain. Pl. 1 to ½ feet. Cult. The species will grow in any soil, and they are only to be propagated by seed.

XXXIX. WYDLERIA (in honour of H. Wydler, who has written a monograph of the genus Scrophulariaceae). D. C. coll. mem. v. p. 36. t. 7. prod. 4. p. 103.

Lin. syst. Pentaudiaria, Digynia. Margin of calyx obsolete (f. 60. c.). Petals ovate-lanceolate, entire, acuminate (f. 60. c.); acumen incurred. Fruit ovate, rather didymous, crowned by the short stylopodium, and short reflexed styles (f. 60. b.); mericarps somewhat semi-terete, and rather contracted at the margins; furnished with 5 filiform thickish obtuse ribs at equal distances; having the furrows between these ribs furnished with one vitta each, but the commissure is narrow, and furnished with 2 vittae; all the vittae are very narrow. Carpophore bifid.—A smooth West Indian herb, with a terete branched cest stem; terete leaves, with multifid leaflets, and cuneate lobes. Involucrum none or only of one leaf, but the involucres are many leaved. Flowers white, not sufficiently known. This genus, according to Koch, is allied to Petroselinum, but differs both from it and Feniculum, in the petals ending in long taper points. It is also to be distinguished from GaUium, in the fruit being somewhat contracted at the sides, and in the ribs not being winged; from Scutellaria, in the calyx being toothless, and from both these last genera in the petals being entire.

1 W. portoricie'sis (D.C. 1. c.) in F. Native of Porto Rico, on the west coast, where it is cultivated along with Misis paradoxa and Lepidium Virginicum. Plant a foot high and more.
Leaves rather stiff. Umbels numerous, 12-14-raycd. (fig. 90.)

Porto-Rico Wydleria. Pl. 1 foot.

Cult. A plant of easy culture, and only to be propagated by seeds.


LIN. SYST. Penæaëria, Digiyaria. Margin of calyx obolate. Flowers usually dicoccous from abortion, rarely monoecious. Petals of the male flowers lanceolate, ending in an involute segment; those of the female or hermaphrodite flowers ovate, and ending in a short reflexed point each. Fruit ovate, compressed from the sides; mericarps furnished with 5 filiform, rather prominent equal ribs; lateral ones marginal; having the furrows between the ribs either without vitrea, or with one in each furrow; carpophore flat, bipartite from the base. Seed gibbosely convex, flattish in front.—Much branched biennial herbs. Stems angular. Leaves bipinnatifid; leaflets triterate; lobes linear, pale or glaucous. Umbels numerous, of many rays; without any involucrum, either disposed in a thysure or panicle. Umbels usually naked, seldom furnished with an involucre, sometimes proliferous or somewhat racemose. Flowers white, dicoccous or polygamous.


4 T. ramosissima (Fisch. ex Koch, in nov. act. bonn. 12. p. 127.) germs glabrous; ribs of mericarps very blunt, rounded; umbelles few flowered, furnished with involucres; fruit bearing discs much larger than the merocarps. H. Native of Altaiia, in plains at the river Irtysh near Krasnojezarsk, and elsewhere; and about Buchtorminsk. It differs from T. Kitaibèlîi, in the involucres being present, and in the pedicels being more slender and elongated.

Much-branched Trinia. Pl. ½ foot.

5 T. Hoffmannin (Bieb. suppl. p. 244.) plant glabrous; involucres wanting or of one leaf; ribs of fruit, especially the carinal ones, acute. H. Native of Russia and Tauria. Trinia glaberrima var. Hoffm. umb. 93. Flowers white.

Hoffmanni's Trinia. Fl. June, July. Pl. ½ to 1 foot.

6 T. nîsîria (Hoffm. umb. 94.) stem, leaves, and fruit furfuraceous, from short scattered down; involucrum none, but when present of only one leaf; ribs of fruit acute. H. Native of the south of Russia and Tauria, in dry desert places. T. Hoffmannii var. β, Bieb. suppl. p. 245. Pimpinella dioica Râssica, Fisch. hort. gorenk. 1812. Pimpinella dioica, D'Urâ. enum. pl. orient. p. 34. Perhaps only a variety of the preceding. Flowers white.

Hispid Trinia. Pl. 1 foot.

7 T. Dufoîrî (D. C. prod. 4. p. 104.) stem and leaves smooth; involucres almost wanting; fruit puberulous, roundish, with obtuse ribs. H. Native of Spain, near Tudela. Sélesi dioïcum, Dufoîr in litt. Pedicels after flowering time very short, hardly longer than the fruit. The species of this genus are very variable, and by no means easily distinguished.

Dufoîr's Trinia. Pl. 1 foot.

Cult. A light sandy soil suits the species, in which the seeds should be sown in spring.


LIN. SYST. Penæaëria, Digiyaria. Margin of calyx 5-toothed, or obsolete. Petals ovate, entire, with a straight or inflexed apex. Styles short. Fruit compressed from the sides, ovate or oblong; mericarps furnished with 5 equal, rather prominent filiform ribs, lateral ribs marginal; having the furrows between the ribs furnished with one vitta each; carpophore entire, distinct. Seeds gibbosely or teretely convex, flattish in front.—Herbs. Umbels compound. Flowers white. Involucre variable in the different sections, which are probably genera.

SECT. I. MAUCIÆRA (in honour of Bure, Dav. Manchart, author of Dissertationes Botanicae Catoe, 4to. Tubingen, 1735). D. C. prod. 4. p. 104.—Necck. elem. no. 286.? Common involucres composed of from 1 to 3 leaves, rarely wanting; involucres of 5-6 leaves.—Procumbent or creeping aquatic herbs, with pinnate leaves.

1 H. crâssîpes (Koch, l. c.) stems creeping at the base, ascending; leaves pinnate; upper ones ternate; leaflets obovate, deeply toothed at the apex; umbels 3-5-eilet, without any involucre; pedicels of umbelles stiff, a little thickened at the base, and rather cuneate. H. Native of Corsica, in watery places about Bonifacio and Porto Vecchio; and of Sardinia. Reich. icon. bot. 3. p. 16. no. 365. t. 218. Sium limosum, Moris, in herb. Balk. Sium crâssipes, Spreng. Lois. Flowers white.

Thick-pedicelled Heloscidiæum. Pl. creeping 1 foot.

2 H. soñoflorîn (Koch, umb. p. 126.) stem rooting, pro- cumbent, striated; leaves pinnate; leaflets oblong, equally serrated; umbels opposite the leaves, sessile or on short pedicules; involucre wanting or few-leaved, deciduous. H. Native of O
of many parts of Europe, in ditches and rivulets; plentiful in some parts of Britain. Sium nolidiformum, Lin. spec. 361. Woodv. med. bot. 3. t. 182. Smith, engl. bot. t. 629, but not of the Flora Danica. Sison nolidiformum, Brot. fl. lus. 1. p. 423. Sēsēli nolidiformum, Scop. carn. 2. p. 553. Flowers white. There is a dwarf variety of this mentioned in D. C. fl. fr. 4. p. 300, which is hardly a finger in height; and a large variety, which grows even 15 foot high. This plant was formerly admitted into the London Pharmacopoeia, in the character of an anticorptic, or rather as a corrector of acrid humours, especially when manifested by cutaneous eruptions, and tumours in the lymphatic system. The best proofs of its efficacy are from Dr. Withering. A young lady was cured of a most obstinate cutaneous eruption by taking three large tea-spoonfuls of the juice twice a day; and he has repeatedly given to adults 3 or 4 ounces every morning, in similar complaints, with the greatest success. It is not nauseous, and children take it readily if mixed with milk. In the dose he has given it, it neither affects the head, the stomach, nor the bowels. This plant, therefore, if it should be eaten for water-cresses, does not seem to be very dangerous, or to require all that caution which Miller prescribes, to distinguish it from water-cresses.

Var. δ, ochræum (D. C. prod. 4. p. 104.) stems rather creeping; petioles membranous, and dilated at the base; umbels on rather longer pedicels than those of the species involucrum permanent. 2. W. H. Native of ditches and rivulets about Ludgum. Sium règens δ, D. C. fl. fr. 4. p. 300. This variety is said to be intermediate between H. nolidiform and H. rèpons.


3 H. rèpons (Koch, l. c.) stem prostrate, rooting; leaves pinnate; leaflets roundish, deeply toothed; umbels on long peduncles, opposite to the leaves; involucrem of 2-4 ovate-lan-ccolate permanent leaves. 2. W. H. Native of France, Denmark, and Germany. In Britain in boggy meadows, or on watery commons; on Bulington Green and Cowley Bottom, near Oxford; on Coldham Common, Cambridgeshire; on Goldington Green and Stevington ponds; at Fisher Row and on Guil- lon Links, near Edinburgh; and in ditches near Forfar. Sium rèpons, Lin. fil. suppl. 181. Fl. dan. 1513. Jacq. auct. 3. t. 360. Smith, engl. bot. t. 1381. Peduncles of umbels equal to the naked part of the petioles, which are in H. nolidiformum much shorter. Flowers white.


4 H. inundatum (Koch, l. c.) stems creeping; leaves pinnate; leaflets of the submersed leaves capillaceously multifid; those of the emerged ones cuneiform and deeply trifid; umbels opposite the leaves; peduncles bearing 2 rays or umbels, without an involucrum; umbellules 5-flowered. 2. W. H. Native of Europe, in marshes, bags, ditches, pools, and wet ground over-flowered in winter; plentiful in some parts of Britain. Siam inundatum, Wigger's, Holnat. p. 24. Hydrocotyle inundatum, Smith, fl. brit. 1. p. 290. Engl. bot. t. 227. Fl. dan. t. 89. Sion inundatum, Willd. Meinn inundatum, Spreng. umb. spec. 113.—Pl. arm. t. 61. f. 2. Flowers white.


6 H. Califormiæ (Hook. et Arn. in Beech. bot. p. 143.) plant procumbent? leaves pinnate, with 8-11 ovate, acute, deeply serrated leaflets; lower leaflets pinnatifid or pinnate, with few leaflets; umbels lateral and terminal; involucra and involucels of many leaves; styles dilated. 2. B. H. Native of North California, and on the low moist soils of the Columbia. The plant has a good deal the habit of H. rèpons. Douglas says the stems are 2-3 feet high, from which expression it may be inferred that the plant is not procumbent.

Califormiæ Helosciadium. Pl. 2 to 3 feet.

SECT. II. CYCLOSPERMEÆ (from κύκλος, kyklos, a circle, and σπέρμα, sperma, a seed). Lag. am. nat. 2. p. 101. D. C. prod. 4. p. 105. Both the involucra and involucels are wanting. Fruit quite glabrous.


8 H. laciniätum (D. C. mem. soc. genev. vol. 4.) plant glabrous, erect; leaves many times territorially divided: leaflets cut, oblong-linear: caulline leaves all petiolate; umbels sessile, opposite the leaves, 3-rayed, one-half shorter than the petioles. 2. H. Native of Peru and of Chili, in stony pastures. Berttero, herb. no. 101. Poccp. no. 93. p. 281. Very like H. leptophyl-ium, but differs in the leaflets being broader, and in the petioles of timble. Sison laciniátum, Lher. herb. in herb. Dumb.

Jiggled-leaved Helosciadium. Pl. 1 foot.

9 H. k. nunculiformium (D. C. prod. 4. p. 105.) plant glabrous, erect, dichotomous; lower leaves bipinnate: upper pinnate and tereate, opposite; leaflets cuneate at the base, cut into acuminate lobes; umbels rising from the forks of the branches, on short peduncles. 2. W. H. Native of Chili, on the Andes in Rio Salado, in the province of Cordova; and in the conception. H. lateriflora, Hook. et Arn. Some of the petals are entire, and some of them somewhat emarginate, from the point being bent in such a manner. Calyx obsolete. Fruit cor- datate at the base when young, more compressed, and less ribbed than in the rest.
Crownfoot-leaved Helosciadium. Pl. 1 foot.

10. **H. tenerrimum** (D. C. prod. 4. p. 105.) plant glabrous, erect; leaves bipinnate; leaflets tripartite; lobes oblate, obtuse, small; umbels opposite the leaves, sessile, 3-5-rayed; rays elongated.—Native of Nipaul on the high mountain of the Philippines. Sison? Téner, Wall. mss. Herb 6-8 inches high. Sheath of petals dilated and membranous. Fruit small, ovate, glabrous in the immature specimen. Styles very short.

**Tender Helosciadium.** Pl. ½ foot.

11. **H. Ruta** (D. C. prod. 4. p. 106.) stem multiple, diffuse; leaves biterminate; lower ones on long petioles; lobes oval, confluent a great way, obtuse; upper leaves on short petioles, with oblong lobes; umbels opposite the leaves, sessile, 3-5-rayed; rays elongated.—Native of the Cape of Good Hope. Simum foster (Rutaceae) from the axis, pedunculate, 4-5-rayed, without any involucrum.—Native of Nipaul, on the high mountain of the Philippines. Sison? Téner, Wall. mss. Herb 6-8 inches high. Sheath of petals dilated and membranous. Fruit small, ovate, glabrous in the immature specimen. Styles very short.

**Rac-leaved Helosciadium.** Pl. diffuse.

12. **H. Heyneanum** (D. C. prod. 4. p. 106.) stem nearly simple, erect; leaves on long petioles, ternate; leaflets oblanceolate, acuminate, deeply toothed; umbels on long peduncles, opposite, with 5-6 elongated rays; and the umbellules 5-8-flowered. O. H. Native of the East Indies, but in what place is unknown. Pimpinella Heyneana, Wall. mss. Mature fruit not seen. Allied to the following section, but differs in the fruit being glabrous while young.

**Heyne's Helosciadium.** Pl. 1 foot.

**Sect. III. Trachyscia'dium** (from *trachys*, trachys, rough, and *skaidion*, an umbel; in reference to the tough fruit of the species). D. C. prod. 4. p. 106. Both involucre and involucres are wanting. Fruit rough from short stiff hairs.

13. **H. trifoliatum** (D. C. prod. 4. p. 106.) stem glabrous, branched, erect; lower leaves 3-5-parted, the rest ternate; leaflets nearly sessile, ovate-lanceolate, smooth above, but scabrous from pili along the nerves beneath, deeply toothed; teeth mucronate; fruit ovate, scabrous from rigid pili.—Native of Nipaul, on the higher mountains about Gosaingtham. Pimpinella? trifoliata, Wall. mss. Umbels terminal, and opposite the leaves, 6-8-rayed. Styles very short. Fruit rather didymous.

**Trifoliata Helosciadium.** Pl.

14. **H. pubescens** (D. C. prod. 4. p. 106.) stem erect, multiple, pubescent, as well as the petioles, rays of umbel, and under side of leaves; lower leaves ternate; leaflets ovate, toothed, stalked; upper leaves on long petioles, ovate-cordate, toothed, rarely cut; fruit scabrous.—Native of Kumaon, in the East Indies. Pimpinella pubescens, Wall. mss. Very like the preceding, but differs in the pubescence and structure of the leaves. The immature fruit has only been seen.

**Pubescent Helosciadium.** Pl.

Cult. Those species belonging to the first section of the genus being aquatic perennial plants, should be grown in ponds of water; the rest being annual, the seeds of them should be sown in any warm situation.

**XLII. DISCOPLEURA** (from *δίστος*, díston, a disk, and *πλεύρα*, pleúra, a rib; the 2 lateral nerves of the fruit form a disk on both sides of the fruit). D. C. coll. mem. 5. p. 58. t. 8. 6 and 9. prod. 4. p. 106.—Amphi species of Michx. Ell. & C.

**Lin. syst.** Pentádria, Digynia. Margin of calyx obsolete. Petals elliptic, entire. Styles permanent, short. Fruit compressed from the sides, ovate; mericarps with 5 hardly prominent ribs: having one vitta in each furrow between the ribs. Seed convex on the outside, and flattish on the inside; carpophore bicipal at the apex.—Glabrous, slender, smooth, erect North American annual herbs. Stems terete. Leaves multifid; leaflets linear. Umbels pedunculate, opposite the leaves, and terminal, with few rays, destitute of involucre: rays of umbellules few and unequal; involucres short, few-leaved. Flowers small, white.

**§ 1. Fruit neither scabrous nor echinated.**

1. **L. inermis** (Nutt. in litt. ex D. C. prod. 4. p. 107.) fruit o o 2
UMBELLIFERÆ. XLIII. LEPTOCAULIS. XLIV. PYCHOTIS.

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UMBELLIFERÆ. XLIII. LEPTOCAULIS. XLIV. PYCHOTIS.
UMBELLIFERÆ. XLIV. PSYCHOTIS. XLV. FALCARIA.

**Fennel-leaved Psychotis.** Pl. 1 foot.

5 P. *Ajowan* (D. C. menl. soc. gen. vol. 4.) stem erect, dichotomous; leaves few, cut into multifid linear segments: upper leaves pinnatifid; umbels of 7-9 rays; leaves of the involucre linear, univalved. *O. H.* Native of the East Indies, where it is called *Jaranca, Ajowan, Ajowan or Ajowain.* Ligísticum Ajowan, Rexb. hort. beng. p. 21. Athamántha Ajowan, Wall. *Ligísticum Ajáváin,* Schultes, syst. 6. p. 556. Fleming, ind. med. in asiarch. 1. p. 170, jour. bot. 4. p. 200. *Ajava-seed,* Pereiv. ess. 1. p. 453. Very like *P. Cópicea,* but differs in the stem being less leafy, in the umbels being of fewer rays, in the rays being puberulous, and in the fruit being more ribbed, but puberulous tubercular in the same way. The fruit of this plant is prescribed in India in diseases of horses and cows.

**Ajowan Psychotis.** Pl. 1 to 2 feet.

6 P. *Roxburghiána* (D. C. prod. 4. p. 109.) stem erect, dichotomous; leaves ternate; leaflets deeply pinnatifid; lobes oblong-linear; umbels of 6-8 rays; leaves of involucre few, linear, univalved. *O. H.* Native of and cultivated in various parts of India, but particularly in Bengal, in the island of Singapure, and the mountains of Prone, &c. ex Wall. *Azipium involucratum,* Roxb. ex jour. bot. 1824. vol. 2. p. 188. Athamántha Roxburghiána, Wall. *Ligísticum* et herb.

**Roxburgh’s Psychotis.** Pl. 1 to 2 feet.

7 P. *Achilleefólia* (D. C. prod. 4. p. 109.) stem erect, a little branched; leaves bipinnate; leaflets pinnatifid; lobes linear-subulate, trifid, stiffish; umbels of 6-8 rays; leaves of involucre few, linear-lanceolate; fruit glabrous, rather munitate on the back along the ribs. *O. H.* Native of Nipaul and Kamaon. Athamántha achilleefólia, Wall. *Ligísticum* et herb. A very distinct species, but the fruit on the specimen examined not being mature, the genus to which it belongs is still rather doubtful.

**Mitfyl-leaved Psychotis.** Pl. 1 foot.

**Sect. III. Heteróptycha (from írispec, heteros, variable, and πτέρυx, ptyche, a plait; in allusion to the middle nerve of the petals being lamellate above, and varying in this respect from the rest of the sections).** D. C. prod. 4. p. 109. Universal involucre none. Teeth of calyx nearly obsolete. Petals rather emarginate, having the middle nerve lamellate above. Fruit cedinated by bristles. Styles long, diverging a little.—Perhaps a proper genus. Mature fruit unknown, and therefore also the vittæ.

8 P. *piringállla* (D. C. prod. 4. p. 109.) stem erect; leaves and rays of umbel beset with short hairs in every part. *O. H.* Native of the Levant, about Bagdad. Rays of umbel 6-9 lines long; and those of the umbellules 2 lines long.

**Puberulous Psychotis.** Pl. 1 to 2 feet.

9 P. *Barbáta* (D. C. l. c.) stems erect, and are as well as the lobes of the leaves glabrous; but with the sheath of the petiole and limb of the leaf at the origin of the leaflets bearded with soft hairs. *O. H.* Native of the Levant, between Bagdad and Kermancha. Rays of umbel 5-6 lines long, and those of the umbellules hardly 2 lines long. Perhaps only a variety of the preceding species.

**Bearded Psychotis.** Pl. 1 foot.

10 P. *Vargasaína* (D. C. l. e.) stem much branched, erect, glabrous as well as the leaves; leaves pinnate, leaflets cuneate, cut at the apex; involucre almost wanting; fruit clothed with short pubescence. *O. H.* Native of South America, about Caracas, where it was collected by Vargas. Perhaps this plant belongs to a different section of the genus.

**Vargas’s Psychotis.** Pl. 1 to 2 feet.

**Cult.** The species being natives of rather warm latitudes, their seeds will require to be sown in warm sheltered situations, or they may be reared in a hot-bed in spring, and the plants afterwards planted out in the open border in May.


**Lin. syst. Pentáduria, Gignquina.** Margin of calyx 5-toothed; the tube in the sterile flowers wanting, but those in the fertile flowers are cylindrical. Petals obovate, curved, emarginate, with a broad recess, having the terminating segment reflexed. Styles divaricate. Fruit oblong, compressed from the sides; mericarps furnished with 5, filiform, equal ribs: lateral ribs margination; carphopore free, bifid; furrows between the ribs furnished with 1 filiform vitta each. Seed tetely convex, flatish in front.—Glabrous, perennial herbs. Leaves pinnate; leaflets broad-linear, decrement, carliginato-serratæ. Umrels opposite the leaves and terminal, compound, of many rays; involucre of many leaves; involucelles somewhat dimidiate, in consequence of the inner leaves being small. Flowers white, having hermaphrodite, fertile ones, and male sterile ones in the same umbelle. This genus differs from *Sium* in the petals being curved, in the furrows of the fruit being furnished with 1 vitta each, and in the carphopore being free and bifid.


† *Species hardly known.*

3 F. *Jaya’ká* (D. C. prod. 4. p. 110.) leaves pinnate or bipinnate; leaflets ovate-oblong, deeply serrated; umbels opposite the leaves; involucre wanting; but the involucelles are of many setaceous leaves. *B. B.* Native of Java, in marshes, where it is called *Teispang* by the natives. *Sium Javanicum,* Blum. biîdr. p. 881. The furrows of the fruit are furnished with 1 vitta each, and the commissur with 2, as in the following species.

**Java Falcária.** Pl. 1 to 2 feet.

4 F. *Lacíniáta* (D. C. prod. 4. p. 110.) leaves bipinnate; leaflets pinnatifid; umbels opposite the leaves; involucre wanting; involucelles of many setaceous leaves. *B. B.* Native of Java, in the province of Bataar, in marshes. *Sium lacíniátum,* Blum. l. e. Perhaps a species of Oeválthe.

**Jagged-leaved Falcária.** Pl. 2 to 3 feet.

5 F. *Diversifólia* (D. C. l. c.) superior leaves ternate;
leaves petiolar, quite entire, some linear and others filiform. 2. H. Native of Nipaul. Sison? diversifolius, Wall. miss. Stem much branched. Herbs glabrous. Lower leaves unknown. Fruit ovate. Flowers all hemiphrapodite. Mature fruit not seen, and therefore the ovit are not well known. Both the involucru and involucres are composed of a few linear, short, acute, undivided leaves.

Diverse-leaved Falcaria. Pl. 2 feet. Cult. The two first species will grow in any soil, and under any circumstance. Those natives of Java will require to be grown in a stove.

XLVI. SISON (from sismo, Celt. a running stream; some plants formerly contained in this genus were inhabitants of running streams). Log. am. nat. 2. p. 103. Koch, umb. p. 123. D. C. prod. i. p. 110. — Sison species, Lin. and all other authors. Lin. syst. Pentandra, Digynia. Margin of calyx obsolete. Petals roundish, curved, deeply emarginate, with an inflexed point. Styles very short. Fruit compressed from the sides, ovate; mericaps with 5 filiform equal ribs; lateral ribs marginate: having one short, club-shaped vitta in each furrow between the ribs; carpophore bipartite. Seed gibbous convex, flattish in front. — Herbs pinnately branched. Leaves pinnate; lower leaflets a little lobed, toothed, or cut: upper ones linear, multifid. Both the involucres and involucres are composed of few leaves. Umbels of 4 unequal, elongated rings; and the umbellules of 4-5 short rays.

1 S. asio (Lin. spec. p. 362.) stem erect, terete, pinnately branched; leaves pinnate; lower leaflets rather lobed and toothed; upper ones linear-multifid; upper leaves ternate. 3. H. Native of Britain, France, Italy, Sicily, Greece, &c. in fields, on a dry calcareous soil; in Britain not unfrequent in rather moist spots under hedges, where the soil is marly or chalky. Jahnr. jov. vind. 3. t. 17. Haym. term. bot. t. 36. f. 10. Schkuh, handb. t. 65. Smith, engl. bot. t. 504. Sium aromaticum, Lam. dict. 1. p. 405. Seléi Anémonum, Scop. carn. ed. 2. no. 355. Centa Amomum, Crantz, anst. p. 96. Smyrnium heterophyllum, Menuch, meth. p. 97. Flowers cream-coloured. Seeds aromatic and pungent when dry and ripe; but in an early state they, like the whole herb, have a peculiar nauseous smell.


† Doubtful species.

2 S. Sieberiicum (D. C. prod. 4. p. 111.) plant glabrous, dwarf; leaves almost radical, ternate, or tripinnate; segments approximate, cuneated at the base, very blunt at the apex, cre- nately toothed, or somewhat cut; involucrum wanting. 0. ? H. Native of Camilia, on the tops of the Sphacetic mountains. Sison alpinus, Sieb. in Schultes, syst. 6. p. 414. Peucédanum Créticum, Sieb. herb. cect. 1826. Speng. nev. cect. 2. p. 148. From the immature fruit this appears to be a species of Cúrum or Brinum, the fruit being compressed from the margin, not from the back. Stem a finger in height. Umbels 4-5-rayed. Stecher's Stone-parsley. Pl. 3/4 foot.

3 S. Trinerve (Hamilt. ex D. Don. prod. fl. nep. p. 184.) stem erect, terete, dichotomous, striated, nearly naked; leaves all radical, pinnate; leaflets lanceolate, acute, quite entire, 3- nerved, glabrous; involucres 5-leaved; leaves of involucres lanceolate, awned. 2. H. Native of Nipaul, about Bassaria. The fruit is undescribed, and the genus is therefore doubtful. Three-nerved-leaved Stone-parsley. Pl. 1 foot. Cult. The seeds of the species only require to be sown in spring, in any common earth.


Lin. syst. Pentandra, Digynia. Margin of calyx obsolete. Petals elliptic, terminated by a short inflexed point. Stylopodium conical. Styles erect, rather capitate at the apex, permanent, at length diverging. Fruit cylinodically prismatic, the transverse section nearly terete; mericaps somewhat compressed from the sides, and furnished with 5 filiform, exserted ribs: the 2 lateral ribs nearly marginal: having the furrows between the ribs flat, and furnished with 1 vitta each. Carpophore undivided. Seed nearly terete. — Smooth perennial herbs. Leaves either radical, or from the lower part of the stem, bipin- nate; leaflets many-parted, decussate at the radius: segments linear, acute. Umbels terminal, on long peduncles of many rays. Both the involucra and involucres are composed of many multifid leaves; the lobes linear and acute. Flowers white, all fertile.


Lin. syst. Pentandra, Digynia. Margin of calyx obsolete. Petals obovate, emarginately 2-lobed, with an inflexed point; lobes of petals unequal, irregular, those of the outer part of the umbel usually the largest. Fruit ovate-oblong, compressed from the sides; mericaps furnished with 5 equal, filiform ribs; lateral ribs marginating: having the furrows between the ribs furnished with one vitta each; carpophore free, bipartite. Seed teretely convex on the outside, and flattish in front. — Herbs with the habit of Daucus, having fusiform roots and pinnate or many-parted leaves. Umbels compound, of many rays. Both the involucra and involucres are of many leaves; the leaves of the involucrum trifid or pinnatifid. Flowers white.


2 A. cicutefolium (Lin. spec. 319. exclusive of the syno- nyme of J. Bauh.) stem glabrous; leaves all pinnate, jagged; segments narrow-linear, acute, and a little serrated. 3. H. Native of France, at Lucon (Guett. etamp. 2. p. 433.), about Paris (Thuill. par. 137.) Andegavenny (Bast. ess. 105.) Rouen, Namastes, and in Dauphiny (Vill. dauph. 2. p. 592.), Greece, (Smith, prod. fl. grace. 1. p. 185.), Spain at Aranquez, Sicily, Liguria. This species differs from A. măjus in the characters mentioned above, and in the more branched habit and glaucous
hues. There is a monstrous variety of this species, found about Rouen, which has the 2 carpels changed into petals, besides having also the usual number of petals.

**Glaucus-leaved Bishop's-weed.** Pl. II. June, July. Cit. 1816. Pl. 2 to 3 feet.

3. *A. intermedius* (D. C. prod. 4. p. 113.) plant glabrous; leaves all decomposed, many-parted, greenish; segments cut or toothed: lower ones cuneate: upper ones linear-subulate, serrated, and ending in long tapering points. ○ H. Native of the Pyrenees, and the kingdom of Naples. *A. glaucifolium*, Lapey. fl. Paris. p. 114. An intermediate plant between *A. glaucifolium* and *A. Visnaga*. It differs from the first in the leaves being greenish, not glaucous, and in being tripartite; from the last in the lobes or leaflets of the upper leaves being much acuminate and serrated, and in the umbel spreading after flowering.

**Intermediate Bishop's-weed.** Pl. 1 to 2 feet.

4. *A. Visnaga* (Lam. dict. 1. p. 132.) stem terete, straited, glabrous; leaves decomposed; lobes or leaflets linear, cuspidate, divaricate: rays of umbel contracted after flowering, and indurated. ○ H. Native of the south of Europe, in fields; north of Africa, Caezcus near Kuby, and in plains towards the Caspian Sea, and the Levant; and also in Chili, at Mendoza and Hacienda de Vasquez, between Casa Blanca and Valparaiso. D. C. fl. fr. 4. p. 592. Dauces Visnaga, Lam. spec. 594. Jacc. hort. vnd. 3. t. 26. Visnaga daucoides, Gardn. fruct. 1. p. 92. t. 21. Visnaga, Vill. daurph. 2. p. 594. Daucus gingidium, Lin. herb. ex Smith, Gohonis, Neck. clem. no. 287.—Gardin, abr. t. 36.—Lob. icon. 726. f. 1. Umbels often not very much above the leaves. Receptacle of the rays of the umbel not much dilated. Rays crowded, very numerous, and at length they become so hard as to be used as tooth-picks, hence the name of the plant in France herbe aux eure-dents. In Spain, when they have served this purpose, they are chewed, and thus are supposed to be of service in cleaning and fastening the guns; however this may be, the leaves have a pleasant aromatic taste in the mouth. Flowers with white petals and purplle anthers.


5. *A. daucoides* (Salzm. pl. exsic. ann. 1825. ex D. C. prod. 4. p. 115.) stem terete, straited, muralcated, having a few scattered bristles at the top of the petioles and branchlets; leaves bipinnate, rather ciliated; leaflets linear, cut, acute; leaves of involucres either simple or trifid; fruit covered all over with small, obtuse tubercules. ○ H. Native about Tangiers. Habit almost of *Daucus*. Umbels nearly as in *A. Visnaga*, having the receptacle of the rays of the umbel thickened, and the rays very numerous. Fruit ribbed, as in the rest of the genus, but differs in being muralcated.

**Carrot-like Bishop's-weed.** Pl. 2 feet.

6. *A. Crinitum* (Guss. pl. rar. p. 128. t. 25. prod. 332.) stem terete, straight, glabrous, rather seose at the apex; leaves supra-decomposed; leaflets linear-setaceous, glabrous; petals biseriote; margins of the sheaths of the petals scarious; fruit glabrous, somewhat tetragonal. ○ H. Native of Calabria and Sicily, in fields. Leaves of involucrum multifid, reflexed. Flowers yellow in the dry state, as in *Daucus aures*. **Hairy Bishop's-weed.** Pl. 2 to 4 feet.


8. *A. petiolum* (D. C. prod. 4. p. 115.) stem erect, angular, leafy, glabrous; leaves bipinnate; segments or leaflets pinnatifid; lobes linear; umbels opposite the leaves, pedunculate; leaves of involucres numerous, with scarious margins, and are rather scarious, as well as the rays; some of the leaves of the involucra are trifid at the apex. ○ H. Native of Portugal, in sandy places, at the river Tavora, and elsewhere in Beira. Sisón pumilus, Brot. fl. Ins. 1. p. 695. Fruit, according to Brébner, like that of *Daucus*. Lower leaves like *A. glaucifolium*. Petals obvate, unequally obcordate. Herb a foot high, not dwarf. This is joined by Sprengel with *Psychotis cisticarii*, but it is very distinct from that plant; but from the obsolete teeth of the calyx, and from the leaves of the involucrum being sometimes trifid, it comes nearest to the present genus, although it may hereafter form a proper genus, from the fruit being much more angular?

**Dwarf Bishop's-weed.** Pl. 1 to 1¼ feet.

9. *A. Broussonetii* (D. C. prod. 4. p. 113.) stem erect, terete, leafy, glabrous, branched; lower leaves unknown; upper ones triplicate: lobes cuneate-oblong, entire or trilobulate; leaves of involucrum linear or rarely trifid; young fruit rather scarious from adpressed short hairs. ○ H. Native of Africa, probably about Mogador. Habit nearly of *A. supinus* and *A. glaucifolium*, but the involucra are very different.

**Broussonet's Bishop's-weed.** Pl. 1 to 2 feet.

10. *A. cicuta* (Willd. rel. in Schultes syst. 6. p. 531.) stem angularly-furrowed, quite glabrous, furnished with few leaves; leaves teramately tri-pinnatifid; ultimate segments lanceolate, very acute, trifid; umbels with 6-8 rays; leaves of involucrum bipinnate: having the lobes or leaflets linear, and deeply toothed. ○ H. Native of South America, but in what place is unknown. Plant small. Schlecht in litt. Petioles 3 to 4 inches long. Rays of umbel stiff, angular, shorter than the involucrum. Leaves of involucre pinnatifid or trifid. Fruit ovate, compressed from the sides, glabrous, glabrous, diverging. Ribs of mericarps rather prominent, having the furrows between the ribs furnished with 1 vitta cava, and the commissure with 2 vitae.

**Cicuta-like Bishop's-weed.** Pl. 1 foot.

* Species not sufficiently known.

11. *A.? Pyrenaicum* (Lapeyr. abr. p. 145.) stem glabrous, flexuous; leaves somewhat bipinnate; lobes or leaflets entire or cut, ultimate ones decurrent; leaves of involucres setaceous or trifid, twice the length of the umbellules. ○ H. Native of the Pyrenees, in fields about Madrres and St. Bent. The petals are said by La Peyrouse to be rounded (arrondis) which indicates that the plant does not belong to this genus.

**Pyrenean Bishop's-weed.** Pl. 1 foot.

12. *A. rubricali* (Horn. horit. lafn. 1. p. 272.) stem unknown; leaves somewhat verticillately tripinnate: leaflets capillary; leaves of involucrum compound, longer than the umbellules. ○ H. Native of North America, near Baltimore. Perhaps the same as *A. anethiifolium*.

**Red-stemmed Bishop's-weed.** Pl. 1 to 2 feet.

* Cult. The species of *Annu* are very showy while in flower; the seeds of them only require to be sown in the open ground early in spring.
distinct, conical, terminated by the long deflexed styles. Fruit compressed from the sides, ovate; mericarps with 5 filiform ribs; lateral ribs marginating; furrows between the ribs destitute of vitreous. Carpophore setaceous, forked at the apex. Seeds teretely convex on the outside, and flattened on the inside. Branching herbes, with creeping roots. Leaves binate or trinerved; upper cauline ones ternate: leaves ovate-oblong, acuminate, serrated. Umbels composed of many rays. Both the involucra and involucels are wanting. Flowers white: anthers when young purple.

1. **Æ. podagrária** (Lin. spec. p. 379.) stem furrowed; leaves binate or trinerved; leaflets oblong-serrate, unequal at the base, lower ones bilobate. 2. H. Native throughout the whole of Europe, even to Caucasus and Siberia, in hedges and orchards. Very common in some parts of Britain. Oed. fl. dan. t. 670. Smith engl. bot. t. 946. Schkuhr, hamb. t. 79. Riv. t. 47. Tragoselinum anglicum Lam. fl. fr. 3. p. 419. Pimpinêlla angelicafolia, Lam. dict. t. 1. p. 451. Ligusticum podagrária, Crantz, ann. 200. Sesel zygópodium, Scop. carn. 2. no. 329. Podagrária zygópodium Ménch. Meth. p. 90. Sison Podagrária Spreng. umb. prod. p. 35.—Lob. icon. t. 700. f. 2. The plant is called Herb Gerard, Gout-weed, Ash-weed, or Ash-weed, and Wild Masterwort, and being a great creeper, it cannot be admitted of gardens, for after it gets hold it is next to impossible to eradicate it again. Though it has the quality of most umbelliferous plants, of being aromatic, yet it is not used at all in medicine; nor has it any title to its name gout-weed, though the Germans formerly used it to assuage the pain both of the gout and piles. Lineus says it is eaten in Sweden, boiled for greens, when tender in the spring. The roots are sometimes sold for those of the true Masterwort, the *Imperinnium Ostreichanum*. Gout-weed. Fl. May, July. Britain. Pl. 2 t. 26 feet. on

2. **Æ. alpéstre** (Led. fl. Ross. alt. ill. t. 7. fl. alt. 1. p. 354.) stem smooth; lower leaves ternately pinnate; leaflets ovate, cut, lower and terminal ones somewhat tripartite; upper leaves ternate, having the leaflets pinnate at the base, but drawn out at the apex, and nearly entire. 2. H. Native of Altai, in shady places on the north sides of the mountains near Riddersk, about the fountains of the rivers Uba and Tscharayich. Root creeping. Flowers white.


**Cult.** The plants will grow under any circumstance.

L. **CARUM** (so named from Caria, in Asia Minor; originally found there) Kock, umb. 121. D. C. col. 1005. 5. p. 41. prod. 4. p. 414. Cárâm, Sison, and Búnum species of Lin. and Hoffm.—Cárum and Sium species of Spreng.

**Lin. syst.** *Pentândria Digynia*. Margin of calyx obsolete. Petals regular ovobo, emarginate, with an infused point. Stylopodium depressed; styles deflexed. Fruit contracted from the sides, ovate or oblong; mericarps furnished with 5 filiform, equal ribs; lateral ribs marginating; having the furrows between the ribs furnished with one vitta each, and the commissure, which is flat, with two vittae. Carpophore free, forked at the apex. Seed terete, convex on the back, and flatish in front. Herbs glabrous, usually perennial. Roots tuberous, edible. Leaves pinnate; segments or leaflets multiform. Both the involucra and involucels are variable. Flowers white.

**Sect. I. Cáróm** (an alteration of the generic name). D. C. prod. 4. p. 115.—Cárâm, Lin.—Cárum, Adans. fam. 2. p. 98. Involucrum wanting; involucels wanting, or of very few leaves. 1 C. **Cári** (Lin. spec. 378.) root fusiiform; leaves bipinnate; leaflets decussate, multifid; stems furrowed; involucra and involucels wanting. 2. H. Native throughout the whole of Europe, in meadows and pastures; and of Altai, in dry grassy places at the river Tscharayich. Frequent in Britain, but is only a naturalised plant. Fl. dan. 1091. Smith, engl. bot. t. 1503. Nees, off. pil. t. 17. Mart. rust. t. 55. Hayn. arzn. gel. t. 19. Woodry. med. bot. long. rust. t. 353. A. pium Cárvi, Gram. ust. Cárvi, Scop. carn. no. 361. Búnum Cárvi, Bieb. fl. taur. 1. p. 211. supp. p. 206. Legêaëa cuminumoides, Willem. ptyt. 1. p. 254, but not of Lin. Cárvi, Riv. pent. irr. with a figure. Flowers white. Leaflets of leaves in sixes, appearing rather verticillate. The caraway is called *Carum* in France, Italy, and Scotland, and Kummel in Germany. They are cultivated chiefly for the seed, which is used in confectionary and in medicine. In the spring the under leaves are sometimes put in soups; and in former times the fusiform roots were eaten as parsnips, to which Parkinson gives them the preference.

**Garden culture.**—The plant is raised from seed, of which a quarter of an ounce is sufficient for a seed-bed 4 feet by 6. Now annually, in autumn, soon after the seed is ripe: the seedlings will rise quickly, and should be thinned to a foot distance each way. In default of sowing in autumn, sow in March or April, either in drills or broad-cast; but the plants so raised will not, in general, flower till the following year. When the seed is ripe, the plant is generally pulled up in gathering, especially in field culture.

**Field culture.**—The culture and management of the caraway is the same as that of Coriander. In all probability both plants would answer if sown like clover among a crop of corn, hoed and thinned when the crop was removed, and again in the following spring. The method of culture in Essex is, about the beginning of March to plough some old pasture land; if it has been pasture for a century the better; and the soil should be very strong clayey loam. Twelve pounds of caraway-seed are mixed with ten pounds of coriander, and twelve pounds of teazle-seed; this is sufficient for an acre, and is sown directly after the plough, harrowing the land well. When the plants appear of sufficient strength to bear the hoe, which will not be until about ten weeks after sowing, it must not be omitted; and in the course of the summer the crop will require three hoeings, besides one at Michaelmas. The coriander, being annual, will be fit to cut about the beginning of July. It is left in the field after cutting, and threshed on a cloth in the same manner as rape-seed. About April following the caraway and teazle will want a good hoeing, done deep and well, and another about the beginning of June. The caraway will be fit to cut the beginning of July, and must be threshed in the same manner as the coriander. This compound crop is mostly sown on lands so strong as to require being a little exhastened to make it fit for corn. Caraway and coriander are oftenest sown without teazle; the latter being a troublesome and uncertain crop, and the produce of caraway much greater without it. The produce of caraway, on very rich old leys, in the hundreds or low lands of Essex, has often been twenty cwt. to the acre. There is always a demand for the seed in the London market. The uses of caraway-seed are the same as those of coriander, and its oil and other preparations are more used in medicine. Dr. Anderson says, both the roots and tops may be given to cattle in spring. The seeds have an aromatic smell, and warm pungent taste, and yield much essential oil. They are employed as stomachic and carminative, in flatulent colicky. The oil is used in the same way as other volatile oils.


Var. ε, *elongatum*, segments of the leaves linear, elongated.

Toothed. Petals ovate-lanceolate, quite entire, oblique or inflexed at the apex. Stylodipodium depressed, margined. Styles reflexed. Fruit ovate-oblong, compressed from the sides; mericarps solid, having 3 equal filiform ribs: the lateral ribs margined; with the furrows between the ribs furnished with 3-4 vitte each. Seed somewhat semi-terete, flattish in front; carpopodium bifid at the apex.—An herb with a fusiform root, supra-decompound or bipinnate leaves: having the segments or leaflets divided into many setaceous lobes. Scapes radical. Involucre and involucrals of many leaves. Petals yellow.


Sec. Ll. BULBOCASTANUM (from bulbus, a bulb, and castanea, a chestnut: the root is bulbous, and tastes like a chestnut.) Adams. fam. 2. p. 97, but not of Lag. Both the involucra and involucrals are many-leaved.

* Root bulbous.


Bulboestanum, or Earth-nut. Fl. May, Ju. Pl. 1 to 2 ft.

** Root fasciculate.

4 C. VERTICILLATUM (Koch, umb. p. 122.) root fasciculate, with spindle-shaped branches; stem terete, hardly branched; leaves pinnate; leaflets many-paired; segments crowded in a whorled manner, linear-filiform; leaves of both involucra and involucrals numerous, short, and deflexed. 2. H. Native of the western parts of Europe, from Corsica to Britain; plentiful in the western parts of Scotland and Wales; in Ireland, near Lane bridge, Killarney, and between Bantry Bay and the river Kenmare. Sison verticillatum, Lin. spec. 363. Smith, engl. bot. t. 396. Light. scot. 1096. t. 35. Sium verticillatum, Lam. dict. 1. p. 107. Carvi folis tenerissimis asphodelico radice, Tour. inst. 396. Carvi Lusitanicum, ð. Juss. herb. Sprengel refers to this as Æbútha fátua, Ait. hort. kew, 1. p. 355, or Meum fátum, Pers. ench. 1. p. 319, but it appears to have nothing to do with the present plant. Flowers white.


Cult. The more sandy the soil is the better the species will grow. They are increased either by dividing at the root, or by seed.

LI. CHAMESECIUM (from χίμος, chimaï, on the ground, and ἕλυσσος, skidion, an umbel; in allusion to the plant being dwarf as well as umbelliferous). Meyer, verz. pflanz. p. 122.—Buniurn species of Beib.

Lin. syst. Pentádria, Diçýnia. Margin of calyx obsolete. vol. III.
Divion. Sium viriscens, Spreng. umb. spec. 94. syst. 1. p. 906. and in Schultes, syst. 6. p. 542. Peucedanum Tauricum, hort. par. 1821. Lor et Dus. cat. pl. côté-d'or, p. 37. Peucedanum alpître. Stev. in hist. 1819. Bünium petraeum, Bieb. ex Stev. Sium Cordátûm and Sium viriscens, Lois. fl. gall. ed. 2. p. 194. Petals greenish, nearly entire, at the apex involute; section of fruit nearly terete. Vitae in the outer furrows of the fruit 3; 2 of these are incomplete; and 2 or 4 in the commissure.

Greenish-flowered Earth-nutt. Pl. 1 to 2 feet.

3 B. lutéum (Hoffin. umb. p. 108.) root nearly globose; stem terete, branched; leaves pinnate; leaflets decussate, pinnatifid: lobes linear, very fine; leaves of involucra and involucrals very short, with membranous margins; fruit linear-cylindrical. 2. H. Native of Siberia, in deserts, at the river Don, near the colony of Sarepta. Bünium luteum, Bieb. suppl. p. 297. Sium luteum, Spreng. syst. 1. p. 906. There are 3 vitae in each furrow of the fruit, according to Koch. Petals yellow. Yellow-flowered Earth-nutt. Pl. 1 to 2 feet.

Sect. II. Caroûdes (from Carum, the caraway, and idee, form; plants with the habit of Carum,) D. C. coll. mem. 5. p. 41. prod. 4. p. 116. Involucra usually of many leaves, rarely absent. Flowers white. Stylodipodium depressed: styles diverging. This section is intermediate between the genera Carum and Conopodium.

4. B. carvifolium (D. C. prod. 4. p. 116.) root fusiform, terete, elongated; leaves bipinnate; leaflets divided into many linear acute lobes; stem flexuous, erect, furnished with a few leaves; leaves of involucra and involucrals linear acute. 2. H. Native of Abruzzo, and on Mount Fuart among the Appenines; but not of Sicily, ex Guss. prod. 1. p. 359. Sisón carvifolium, Bert. in herb. Moric. Sisón prolifer, Brochi and Jan. Petals of a greenish white colour when dried. The furrows of the fruit, when immature, are furnished each with 2 or 3 vitae.

Caraway-leaved Earth-nutt. Pl. 1 to 2 feet.

5 B. Glauce’scens (D. C. prod. 4. p. 117.) bulb ovate-oblong; stem erect, straight, terete; branches alternate; leaves glaucous: radical ones bi-tri-pinnate, with multifid leaflets, and linear short lobes; cauleine leaves distant, small, multifid; leaves of involucra as well as of involucrals, 6-7 in number, linear-oblong, acute, white. 2. H. Native of Persia, in grassy valleys among the mountains about Seidkhodzî. Stem ½ foot high. Umbels 10-11-rayed. Flowers white. Glauce’scens Earth-nutt. Pl. ½ foot.

6 B. Paucifolium (D. C. prod. 4. p. 117.) bulb globose; stem erect, straight, terete; branches alternate; superior leaves tripartite, having the lobes linear and entire; upper leaves un-divided, linear; involucrum of 3-4-leaves, and the involucre of 5-6 linear white leaves. 2. H. Native of Persia, in grassy valleys of the mountains about Seidkhodzî. Herb 2 feet high. Lower leaves unknown. Flowers white. Umbels of 1-5 rays. Fruit unknown. Few-leaved Earth-nutt. Pl. 2 feet.

7 B. Apírum (Jan. herb. ex D. C. prod. 4. p. 117.) root nearly globose, thick; stem terete, erect, nearly simple; cauleine leaves striated at the sheaths, reduced to a short limb: both the involucrum and involucre are composed of 4-5 acuminate leaves. 2. H. Native of Sicily, on the Nebrodes. Herb 4 to 5 inches high. Leafless Earth-nutt. Pl. ½ foot.


9 B. Ferulaefolium (Desf. ann. mus. 11. p. 275. t. 50. cor. Tourn. 55. t. 43.) root nearly globose; stem terete, dichoto-mous; leaves all somewhat trinerved: leaflets linear; leaves of involucrum 1-3, of the involucrum 4-5, very short; fruit narrow, cylindrical. 2. H. Native of the islands of Cyprus, Canáia, and Siclo. Sium ferulaefolium, Spreng. in Schultes, syst. 6. p. 539. B. ferulaefolium, Smith. Tuberc about the size of a filbert, rufous on the outside, and white on the inside. Flowers white. Fruit not sufficiently known. The involucrum is very variable in the number of leaves.


Sect. III. Conopodium (from κονος, konos, a cone, and ποις, poïes, puts, pods, a foot; in allusion to the stalk or foot of the style, called the styloïdium or pedicel conicum) D. C. coll. mem. 5. p. 191. prod. 4. p. 117.—Conopodium, sect. 1. Koch, umb. p. 118. Involucrum wanting, or of few leaves. Stylodipodium conical, exserted. Styles short.—Perhaps a proper genus.

12 B. Denuíatum (D. C. fl. fr. 4. p. 525.) root globose; cauleine leaves nearly sessile, with short sheaths and toothed or cut leaflets; involucrals unilaterial, few-leaved. 2. H. Native of the west and south of Europe, and Caucasus, in mountain meadows and grassy pastures and among bushes, especially on a gravelly soil; plentiful in Britain. Myrrhis capitifolia, Guss. fl. sic. 1. p. 531. Myrrhis Bünium, Spreng. umb. spec. 1. p. 131. syst. 1. p. 903. exclusive of numerous synonyms. Bünium flexuosum, With. 291. Smith, fl. brit. 1301. ingl. bot. 988. Bünium bulbacastanum, Huds. angul. 132. Curt. lond. fusc. 4. t. 24. Bünium majus, Goun. ill. p. 10. This species varies much in height. Styles long, pale, short, and reddish. Fruit ovate and oblong. Involucrum wanting, or 1-5-leaved. Segments of the leaves linear and lanceolate, more or less toothed. Sprengel refers Bünium ammonoides, Link. or Myrrhis ammonoides, Spreng. in Schultes, syst. 6. p. 517. to the present plant; and probably Myrrhis tenerrima, Presl, del. prag. 131. is also referrible to it. Flowers white. There are probably numerous species confused under this name. The plant has several names in England, as earth-nutt, pig-nutt, art-nutt, hoppur-nutt, hawk-nut.
UMBELLIFERÆ. LI. BUNIUM. LI. I. CRYPTOÆNIA. LIV. PIMPINELLA.

nut, jat-nut, or yer`nut, earth chestnut, and ground-nut; in Germany it is called erdnuss; in Holland aardnoot; in Sweden jordnöt; in France sarron, terre noire; in Italy castagno di terra; in Spain castano de tierra. Root nearly globular, black, or chestnut-coloured on the outside and white inside; aromatic, sweet, and mucilaginous, with some astringency; they are frequently dug up and eaten by children. Swine are very fond of them, and will soon become fat with feeding on them. When boiled they are very pleasant and delicious, and are supposed to afford great nourishment. Thus prepared, they are said to be eaten in Holland and the Alps, and in some parts of England in soup or broth. Roasted they are even superior to chestnuts.


*Native-stemmed or Common Earth-nut.* Fl. May, June. Britain. Pl. 1 to 2 feet. 13 B. pe'mileum (Smith, fl. grece. 274. prod. 1. p. 187.) root globose; leaves bipinnate: cauleine ones petiolate, pilose; sheaths short; segment of leaves cut and acute; involucre wanting or 1-leaved; involucels many leaves. 2. H. Native of Mount Parnassus. Fruit ovate-oblong. Flowers white.

*Dwarf Earth-nut.* Pl. ½ foot. 14 B. tenuifölium (Salzs. pl. exsic. ex D. C. prod. 4. p. 118.) root unknown; cauleine leaves petiolate; sheaths elongated, glabrous; segments of leaves few, linear, very narrow, elongated, and quite entire; involucels of many leaves. 2. H. Native of Mauritania, about Morocco. Perhaps Bünium ammoids, Link, is referrible to this plant. Flowers white.


*Stiff Earth-nut.* Fl. Ju. Jul. Ch. 1787. Shrubs ½ foot. Cult. A light sandy soil suits all the species best; and they can only be increased by seeds.

LI. CRYPTOÆNIA (from κρυπτός, cryptos, hidden, and τόνια, tónia, vine; the vitre of the mericarps are hidden by a pericarp, and are invisible, unless the mericarps are cut transversely). D. C. coll. mem. 5. p. 42; prod. 4. p. 118.—Conopodium, sect. 2. Koch, umb. 119. Cyrtospermum, Rafin. in litt. 1819.—Alacospèrnum, Neck. elem. no. 276?

LIN. SYST. Pentàndria, Digynia. Margin of calyx obsolete. Petals obovate, emarginate, with an incurved point. Fruit ovate, contracted from the sides, crowned by the pulvinate stylopodium and reflexed styles, which are capitulate at the apex; mericarps with 5, equal, filiform, obtuse ribs: the 2 lateral ribs placed before the margin; vitre in furrows between the ribs numerous, covered by a somewhat corky pericarp, but closely adnate, and only visible when the carpels are cut transversely. Seed teretely convex, flattish in front. Carpinophore free, bilabed at the apex.—Perenial, glabrous, erect herbs. Roots not bulbous. Leaves ternate; leaflets ovate, crenately toothed: teeth mucronate. Umbels numerous, almost disposed in a panicle. Rays of umbels and umbellules few, very unequal. Involucre wanting; involucels few-leaved. Flowers white.


LIN. SYST. Petántradingia, Digynia. Margin of calyx obsolete. Petals obovate, emarginate, with an incurved point. Fruit ovate, contracted from the sides, crowned by the pulvinate stylopodium and reflexed styles, which are capitulate at the apex; mericarps with 5, equal, filiform ribs: lateral ribs marginaing; having the furrows between the ribs furnished with many vittae; carpinophore free, bilabed. Seed gibbously convex, flattish in front. —Herbs, for the most part natives of Europe. Roots simple. Radical leaves piniate; leaflets roundish, toothed, rarely undivided; caline leaves more finely dissected than the radical ones. Umbels and umbellules of many rays, without any involucra. Flowers usually white, rarely reddish or yellow.


p 2
2 P. Magna (Lin. mant. 217.) radical leaves pinnate; leaflets serrated and somewhat cut, ovate or oblong; the terminal one 3-lobed. 2. H. Native throughout the whole of Europe, Caucasus, and the Levant, in mountain meadows, pastures, and woods. In Britain it grows chiefly in woods and hedges, in a calcareous soil. Smith, engl. bot. t. 408. Fl. dan. 1155. Haydn. arz. gen. 7. t. 21. Jacc. auct. 4. t. 596. P. major, Mill. dict. no. 1. Gouan. ill. p. 21. P. saxifraga, Spreng. syn. 215. Tragoshelnum major, Monch. meth. 99. -Barrel. icon. t. 248. P. saxifraga, Ray. syn. 213. Petiv. brit. t. 26. f. 5. Saxifraga magna, D. p. penpt. 315. f. 1. This and the following species partake nearly of the same qualities. The root is very acrid, burning the mouth like pepper. It affords a blue oil. Its acrimony has occasioned it to be used to cure tooth-ache, and to clear the skin from freckles. It is chewed to promote the secretion of saliva, and is used in gargles to dissolve viscid mucus in the throat. In Germany it is prescribed in the asthma and dropsy. Flowers either white or reddish.

Var. β, ribens (D. C. prod. 4. p. 120.) flowers reddish. P. rubra, Hoppe, exsic.

Var. 6, orientalis (D. C. 1. c.) leaflets all pinnatifid; lobes lanceolate, acute; flowers white. P. orientalis, Gouan. ill. 15. Jacc. auct. t. 597. Plenck, icon. t. 224. P. medica, Hoffm. ex Spreng.

Var. ε, rosea (Stev. in litt. ex D. C. prod. 4. p. 120.) leaflets acutely and deeply pinnatifid; flowers rose-coloured. Native of Caucasus, at Nartiza. P. dissecta, Bieb. fl. taur. 1. p. 241.


Var. α, nigra (D. C. prod. 1. p. 120.) plant pubescent; leaflets of lower leaves ovate, serrated, somewhat lobed, rather coriace at the base; the upper leaves pinnatifid; root black. P. nigra, Willdl. spec. 1. p. 1471.—J. Bauh. hist. 3. p. 111. f. 2.

Var. γ, hircina (D. C. 1. c.) plant rather pubescent; leaflets of nearly all the leaves pinnatifid or jagged. P. hircina, Monch. sass. no. 255. P. Genevéniss, Vill. dauph. 2. p. 604.

Var. δ, dissecta; leaflets all pinnatifid, with narrow segments.


Stem erect, branched, dichotomous; branches filiform, twiggy, almost leafless. Flowers yellow, with an aromatic odour.


5 P. Aurea (D. C. prod. 4. p. 120.) lower leaves pinnate, glabrous; leaflets cuneate, 2-3-lobed at the apex; teeth large, few, mucronate; cauline leaves trïfïd or undivided and linear, few; petals ciliated, hardly emarginate. 2. H. Native of Persia, in gravelly places at Pshoi, in the province of Aderdâljan. A very distinct species, with yellow flowers, differing from P. Major in the plant being glabrous, in the form of the leaflets, and in the petals being ciliated. Fruit subglobose, dymous, compressed, furnished with many vitae in the furrows. There is a variety with smaller bipinnate leaves, also a native of Persia.

Golden-flowed Burnet-saxifrage. Pl. 2 to 3 feet.

6 P. Ramoſisima (D. C. 1. c.) plant glabrous; lower leaves pinnate; leaflets ovate-rhomboid, rather trïfïd, acuminate, quite entire at the base, deeply toothed at the apex, some of them crossed in a decussate manner; stem much branched; the leaves under the branches reduced to short ligule; umbels 5-rayed; fruct glabrous, ovate, not contracted at the commissure. 2. H. Native of Persia. Flowers unknown. Transverse section of fruit terete, as in the genus Stellâ, but without either involucrum or involucel, but with the habit of Pimpinella. Leaves like those of Tussilago farfara. Perhaps a proper genus.

Much-branched Burnet-saxifrage. Pl.

7 P. Anisoides (Brign. act. acad. neap. 1819, vol. 1. p. 1. t. 1.) plant glabrous; radical leaves bipinnate; leaflets roundish-ovate, serrated; umbels numerous; styles erect; fruit glabrous. 2. H. Native of the kingdom of Naples. It differs from P. bubonoides, ex Guss. prod. 1. p. 331., in the fruit being glabrous, in the styles not being divericate, and in the stigmas not being globose.

Aisne-like Burnet-saxifrage. Pl. 1 to 2 feet.


8 P. Depressa (D. C. prod. 4. p. 120.) stem pubescent; radical leaves pinnate; leaflets cuneate, pinnatifid, smoothish, ciliolate; lobes lanceolate, obtuse; cauline leaves pinnatifid, 1 under each branch; fruit rather puberulous from small, adpressed bristles. 2. H. Native of Candia, on the Spachiote mountains. Tragium depressum, Sieb. exsic. exsic. Spreng. in Schulz. syst. 6. p. 392. Herb 1-2 inches high. Stem terete. Root woolly. Flowers white.


9 P. Noosa (D’Ur. enum. or. p. 33.) plant glabrous; stem branched, dichotomous; leaves many-paired, with linear segments; umbels numerous; petals glabrous; fruit small, ovate, with a few adpressed hairs. 2. H. Native of the Island of Sogos, among stones, frequent, and on the old walls of cities. In the place of the stem where the involucrum ought to be, there is a thick tuberous knot, probably caused by insects.

Nodose Burnet-saxifrage. Pl. 1 foot.

10 P. Tragium (Vill. dauph. 2. p. 606.) stem canescent; radical leaves pinnate, smoothish; leaflets cuneate-obovate, deeply serrated, usually variously cleft; cauline leaves very few; petals pilose on the outside; fruit clothed with canescentomentum. 2. H. Native of the south of France, Italy, Sicily,

Var. β, glauca (D. C. prod. 4. p. 121.) plant of a canescent glaucous hue: radical leaves pinnate; leaflets roundish-ovate, somewhat 3-lobed, toothed, pubescent on both surfaces, the 3 or 4 superior lobes linear; petals and fruit clothed with adpressed villi. 2. H. Native of Sicily, on the Nebrodes. Tragium glaucum, Presl, del. frag. p. 125. Flowers white. Allied to P. Cumbre, but the leaflets are all 3-lobed, and the terminal one deeply so.

Var. γ, laevicrata (D. C. l. c.) leaflets of all the leaves dissected into narrow linear segments. 2. H. Native of Tauria. P. Tragium var. Bieb. suppl. p. 250. P. petraeæ, Beaupr., ined. Perhaps a proper species. The whole plant is clothed with woolly pubescence.


The first leaves are simple, the second ternate, but the succeeding ones are pinnate, also the lower stem ones: but the upper stem leaves are variously divided into lanceolate segments. The umbels are dropping before the expansion of the flowers. The seeds have no smell, and when first chewed have scarcely any taste, but in a short time are very acrimonious, and excite a great heat in the faucies.


Villons Burnet-saxifrage. Fl. Ju. Aug. Clt. 1817. Pl. 2 ft. 1¼. P. Cumbre (Buch. ubers. can. p. 29. and beschreib. d. can. ins. p. 152.) the whole plant is hoary from short down; radical leaves pinnate; leaflets 5-7, ovate, deeply serrated, terminal one usually 3-lobed; stem nearly leafless, branched; petals villous. 2. H. Native of Teneriffe, on the highest mountains. Tragium incanum, Chois. ined. Said to be allied to P. villosum, but differs in being more hoary, and in the leaves being simply pinnate, not doubly pinnate. Root woody, throwing out many stems at the neck.

Cumbre Burnet-saxifrage. Pl. 1 foot.
15 P. suebo-Tragium (D. C. prod. 4. p. 122.) plant glaucous and canescents; radical leaves pinnate; leaflets roundish-ovate, somewhat 3-lobed, deeply toothed, velvety-canecent on both surfaces: upper ones trifid; lower ones undivided, linear; petals rather villous on the outside; fruit very hairy. 2. H. Native of Persia, in dry exposed stony places about Seidkhodzi. This is an intermediate plant between P. tragium and P. aromácicum. The fruit is larger than in either, and the hairs on the plant are soft and spreading, not as in P. tragium, adpresso. Petals rather villous on the outside, not as in P. aromácicum very hairy.

False Tragium. Pl. 2 feet.
16 P. ? Flava (Meycr, verz. planz. p. 128.) the whole plant is canescents from minute down; radical leaves supra-decom- pond; petals cut: lobes lanceolate, mucronately acuminated; sheaths of upper cauline leaves leafless; petals yellow, canescents on the back, as well as on the germen. 2. H. Native of Caucasus, in dry stony places on the mountains of Tulshur, near Swatt, at the elevation of about 3000 feet.

Yellow-flowered Burnet-saxifrage. Pl. 1 to 2 feet?

18 P. Diversifolia (D. C. prod. 4. p. 123.) leaves ternate or bi- ternate: leaflets petiolulate, cordate, coarsely toothed, membranous, glabrous above, but puberulous along the nerves below; pericarpium wanting; involucres 3-leaved; rays of umbels and umbellules 15-20 in number, and are as well as the fruit pubescent. 2. H. Native of the East Indies, in Sirmore. Heracleum diversifolium, Wall. miss. Leaves as if they were pinnate, from the 2 lateral leaflets being undivided, and the middle one ternate. Teeth of lower leaves rounded and mucronate; of the superior leaves acute. The immature fruit has only been seen.

Diverse-leaved Burnet-saxifrage. Pl. 1 to 2 feet.
19 P. Leschenuaíth (D. C. l. c.) radical leaves petiolate, orbicular, cordate, toothed, rather coriaceous, many-nerved at the base, glabrous above, velvety from short down beneath: canescent leaves few, parted, almost reduced to the sheaths; stem a little branched, glabrous. 2. H. Native of the East Indies, on the Nellyberry Mountains, where it is called by the natives Touresson. Petals hardly emarginate. Young fruit rather puberulous, when examined under a lens, but at length becoming glabrous. Plant 1-2 feet high. Rays of umbel 5, of the umbellules 12-15. Flowers white.

Leschenuaíth's Burnet-saxifrage. Pl. 1 to 2 feet.
20 P. ? Java'na (D. C. prod. 4. p. 122.) caneline leaves petiolate, cordate, acute, cartilaginosely serrated, many-nerved at the base, velvety beneath as well as the petioles, but pubescent above; sheaths ciliated; involucrum wanting, or of 1 linear leaf; fruit hairy. 2. H. Native of Java. Herb said to be
2 feet high. Stem terete, velvety at the apex. Umbels of many rays. Fruit ovate, hairy. Styles diverging.

*Anethum* Burnet-saxifrage. Pl. 2 feet.

**Sect. III. Anisum** (the herb anise; containing plants agreeing with it). Adams, fam. 2. p. 95. Gaertn. fruct. 1. p. 102.

—Bibon species of Lag. Fruit puberulous. Annual plants.

21 P. anisum (Lin. spect. 599.) stean glabrous; radical leaves cordate-roundish, lobed, deeply serrated: middle ones pinnatifid, with cuneate-lanceolate lobes: upper ones trifid and undivided, linear; fruit bearing a few scattered hairs. O. H. Native of the Island of Scio, Egypt, and cultivated in Europe. Nees, off. plz. 12. t. 17. Hayn. arz. gew. 7. t. 22. Woodv. med. bot. t. 180. Anisum vulgare, Chls. hist. 2. p. 292. Gaertn. fruct. 1. t. 23. f. 1. Anisum officinale, Munch. medth. p. 100. Sium anisum, Spreng. in Schultes, syst. 6. p. 40. P. anisum, Trag.—Blackw. herb. t. 374.—Lob. icon. 731. Flowers of a yellowish white colour. Fruit pubescent when young. Styles short, straight. The anise is cultivated in Malta and Spain for its seeds, which are annually imported as medicinal, and for distillation and expression. In this country it is occasionally grown in the garden, to be used as a garnish, and for a seasoning like the fennel. For this last purpose, the seeds require to be sown in April, in a warm border, in a dry light soil, or raised in pots on heat, and removed to a warm place in May, where the plants will blossom and ripen their seeds in August, in favourable seasons. The plants should be thinned to 3 or 4 inches' distance.

*Anise*. Fl. June, Aug. Ch. 1551. Pl. 1 to 1 1/2 foot.

22 P. *cretica* (Poir. suppl. 1. p. 68.) plant dwarf; radical leaves roundish, 3-lobed, toothed; superior leaves small, terminally multitudinous; segments rather filiform; fruit puberulous. O. H. Native of Candia, Scio, and the Morea. A'pium Créticum minimum anisi facie, Tourn. herb. P. tenuis, Sieb. pl. exsic. Stems filiform, 4-5 inches high. Umbels spreading; with capillary rays; umbellules small. Fruit shorter than the styles, not glabrous, but puberulous, as in *P. anisum*, of which it is probably only a small variety. Flowers white.


23 P. *nichotomum* (Lin. mant. 58.) plant glabrous, dichotomously branched, erect; leaves biternate or trinerved; leaflets linear; petals winged, membranous; peduncles opposite the leaves; fruit marinated from short hairs. O. H. Native of Spain, on hills about Aranjuez. Habit of *Trinia*, but differs from that genus in the flowers not being dioecious. Petals all emarginate at the apex, from the point being incurved. Fruit nearly globose, striated. Styles reflexed. Flowers white.

*Dichotomous Anise*. Pl. 1/2 foot.

† *Species not sufficiently known."


*Fine-leaved Burnet-saxifrage*. Pl. 1 foot.


*Hairy-fruited Burnet-saxifrage*. Pl. 1 foot.

26 P. *alpica* (Host, fl. austr. 1. p. 399.) radical leaves pinnate, glabrous; leaflets of lower leaves ovate, cut; of the intermediate ones, pinnatifid, and of the upper ones linear-subulate, entire. O. H. Native of the Alps of Styria and Austria, in stony places. The petals are said to be yellowish-white. Fruit striated, probably glabrous, or villous. This is perhaps only a variety of *P. majus.*


27 P. *rupestres* (Borny, ann. gen. sec. ph. 3. 1820. p. 12.) radical leaves on long petioles, pinnate; leaflets deepely crenated, acute; stems rather dichotomous. O. H. Native of Spain, among stones, on Sierra Nevada. Plant glaucous, stiff, slender. Perhaps only a variety of *P. saxifraga.*

*Rock Burnet-saxifrage*. Pl. 1 foot.

28 P. *Capreus* (Thum. prod. p. 51. fl. cap. 2. p. 207.) stem terete, striated, glabrous; leaves ternately decomposed; leaflets lanceolate, acute, deeply pinnatifid; involucrum composed of many short leaves.—Native of the Cape of Good Hope, on the Table Mountain. Sísán Capensis, Schultes, syst. 6. p. 411. Flowers white. Fruit ovate, obtuse, striated: with the ribs obstate.

*Cape Burnet-saxifrage*. Pl. 1 foot.

*Cult.* All the species are of easy culture.—A dry sandy soil suits them best; and they are only to be increased by seeds, which ripen in abundance. Those species marked perennial are little better than biennial in the gardens.

**Sect. I. Sisarum** (altered from the Arabic name of the plant digiser; this word signifies a carrot in Persian, and *Sisarum* has small bundles of roots resembling carrots). D. C. prod. 4. p. 124.—Sisum, Koch, deutschl. fl. Lateral ribs of fruit margination, having 3-4 superficial vitta in each furrow between the ribs. Seed terete, convex on the back, and flattish in front.

1 S. *Sisarum* (Lin. spect. p. 361.) root composed of fascicles of fusiform tubers; stem terete; leaves pinnate, but the uppermost ones are ternate; leaflets ovate-lanceolate, acute, serrated: involucrum of 5 reflexed leaves; calyeine teeth almost obsolete. O. H. Native of China, Japan, Corea, Altaina, Mongol, and Cochinchina, but only cultivated in Europe. Schkuhr, handb. t. 69.—Lob. icon. t. 710. f. 1. Col. phyt. 89. with a figure.—Park. par. t. 507. f. 1. The commissure of the fruit, according to Koch, is furnished with 4 vitta. *Sisum brevicifolium* and *S. Podolicum* are probably hardly varieties of this species. Flowers white. The tubers of the root are about the size of the finger, joined together at the crown or head; they were formerly much esteemed in cookery. The Skritet is called *Chervis* in French, *Zuckerwurzel* in German, and *Siaro* in Italian; it is also cultivated in the north of Scotland, under the name of *crummock.* The tubers are boiled, and served up with butter,
and are declared by Worledge, in 1682, to be "the sweetest, whitest, and most pleasant of roots." This plant grows freely in lightish soil, moderately good. It is propagated both from seed and by offst or established roots. The better method is to raise the offst to have the roots in perfection, young, and tender.

By seeds.—"Sow between the 21st of March and the 15th of April; a fortnight later, rather than earlier, for a full crop, as plants raised forward in spring are apt to start for seed in summer. Sow on an open compartment of light ground, in small drills 8 inches apart. When the plants are 1 or 2 inches high, thin them to 5 or 6 inches asunder. They will enlarge in growth to the end of autumn; but before the roots are full grown, in August, September, or October, some may be taken up for consumption, as wanted; those left to reach maturity will continue good for use throughout winter and in spring, till the stems run.

By slips.—"Having some plants of last year's raising, furnish with root offst, slip them off; taking only the young outward slip, and not leaving any of the large older root adhering to the detached offst; which plant by diable, in rows from 6 to 9 inches asunder. They will soon strike and enlarge, and divide into offst; which, as well as the main roots, are eatable, and come in for use in proper season.

To save seed.—"Leave some old plants in the spring: they will shoot in stalks, and ripen seed in autumn."

Var. β, Ninsia; stem bulbiferous; leaves broader, rather coriaceous. Sium Ninsi, Burm. ind. t. 29. Thumb. jap. 118.


2 S. sisiroidum (D. C. prod. 4 p. 124.) stem root unknown; leaves pinnate; leaves ovate, rather coriaceous at the base, toothed; upper leaves ternate, having the leaves oblong, acuminate, and serrated; involucre of 4-5 reflexed leaves; calyceal teeth almost wanting. 2 H. Native of Persia, in the province of Aderbajdhan, about Badelan, in shaly sandy places, where it is collected by Szovits. The root is said to be creasing, but according to the specimens examined, they appear to be fasciculate like those of the common skirret. The whole plant is like S. Sisirum, and especially variety β, but differs in the stem being furred, in the leaves being broader, in the fruit being shorter, and in the fibres of the roots being cylindrical.

Skirret-like Water-parsnip. Pl. 1 to 2 feet.

3 S. Lactifolium (Bieb. suppl. p. 230.) root creasing; leaves pinnate; leaves lanceolate, equally and sharply serrated; involucre of many leaves; calyceal teeth very short. 2 H. Native of Tauria and Caucasus, in marshes and humid places; and of Altaia, at the river Irtysh. S. lactifolium, Bieb. fl. taur. 1 p. 225. exclusive of the synonymes. S. latifolium Ukrani- cenum, Fisch. cat. hort. gor. 1812. Bérla lactifolium, Bess. enum. pl. volh. p. 44. Very nearly allied to S. latifolium. The commissure of the fruit, according to Koch, is furnished with 4-6 vitae.


9 S. Thunbergii (D. C. prod. 4 p. 123.) stem fibrous, throwing out stolons from the neck; stem erect, striated; branches angular; leaves pinnate; leaves ovate, acutely, regularly and callously serrated; umbels pedunculate, opposite the leaves, and terminal; involucrum of 3-5 linear acute univalved leaves. 2 H. Native of the Cape of Good Hope, in marshes near Seekhuwali. Sium angustifolium, Thunb. prod. p. 51. Leaves approximate and regularly disposed. Plant erect.

Thunberg's Water-parsnip. Pl. 2 to 3 feet.

† Species not sufficiently known, and are therefore doubtful whether they belong to the genus.
UMBELLIFERÆ. LV. SIMU. LVI. BUPLEURUM.

10 S.? hispidum (Thunb. profl. p. 51. fl. cap. 2. p. 210.) stem branched, striated, glabrous, rather hispid at the nodi; leaves tripinnate, hispid beneath, as well as on the petioles; leaflets short, divided into many lobes; umbels opposite the leaves; involucrum of 5 leaves. 2. F. Native of the Cape of Good Hope. Anthricus capensis, Spreng. in Schultes, syst. 6. p. 526. Sium hispidum, Spreng. umb. spec. 96. Root fusiform. Fruit unknown.

hispid Water-parsnip. Pl.? 

11 S. xerophyllum (Thunb. prod. p. 51. fl. cap. 2. p. 210.) stem striated, glabrous, erect; leaves somewhat tripinnate, glabrous; leaflets multifid, lanceolate; petioles and peduncles scarious; umbels terminal; involucrum of 6 leaves.—Native of the Cape of Good Hope. Spreng. umb. spec. 96. Fruit unknown.

Xerophylius Water-parsnip. Pl. 

12 S. rugosum (Thunb. l. c.) stem erect; branches divaricate, striated; leaves tripinnate; leaflets ovate, deeply serrated, and are, as well as the petioles, ciliated with villi; umbels terminal; leaves of involucrum 6, ovate, with scarious margins.—Native of the Cape of Good Hope. Spreng. umb. spec. 97. Viilous Water-parsnip. Pl.

13 S. filiforme (Thunb. prod. p. 50. fl. cap. 2. p. 207.) stem erect, flexuous, terete; radical leaves simple, linear-form, elongated; umbels terminal; involucrum of 8 leaves, which are about equal in length to the umbel.—Native of the Cape of Good Hope. Spreng. umb. spec. 99. Fruit said to be obovate, and striated.

filiform Water-parsnip. Pl. 2 feet?

14 S. grandiflorum (Thunb. prod. p. 50. fl. cap. 2. p. 208.) stem erect, striated, branched a little; leaves glabrous, bipinnate; leaflets roundish, deeply toothed; umbels terminal; leaves of involucrum 8, ovate, acuminate. 2. G. Native of the Cape of Good Hope. Spreng. umb. spec. 89. Fruit said to be obovate, and striated.

Grandiflorum Water-parsnip. Pl. 2 feet.

15 S. ? sativum (Thunb. l. c.) stem striated, glabrous; branches divaricate; leaves bipinnate, somewhat fasciculate; leaflets linear, trifid; umbels terminal; involucrum of 6 lanceolate leaves, with scarious margins.—Native of the Cape of Good Hope. Spreng. umb. spec. 89. Spreng. umb. spec. 89. Spreading Water-parsnip. Pl. spreading.

16 S. paniculatum (Thunb. l. c.) stem terete, striated, glabrous, panicled; leaves bipinnate; leaflets deeply pinnatifid, linear, channelled; umbels terminal; involucrum of 6 lanceolate leaves, with scarious margins.—Native of the Cape of Good Hope. Spreng. umb. spec. 98. Fruit unknown. Panicled Water-parsnip. Pl. ?

17 S. japonicum (Thunb. fl. jap. p. 118.) stem erect, flexuous, branched above; leaves pinnate, glabrous; leaflets unequal, oblong-ovate, deeply toothed at the top; upper ones lanceolate, quite entire; umbels terminal.—Native of Japan. Stem terete. Superior leaves ternate. Umbels of many rays.

Japan Water-parsnip. Pl. 1 to 2 feet.

18 S. ? decumbens (Thunb. fl. jap. p. 118.) stems decumbent; leaves bipinnate, on long petioles, glabrous; leaflets trifid; umbels terminal, nearly simple. 2. H. Native of Japan. Perhaps S. Grae'num, Lour. coch. p. 179. is referrible to this species.

Decumbent Water-parsnip. Pl. decumbent.

19 S.? ? varittorum (Kit. in Schultes, fl. austr. 2. p. 495. syst. 6. p. 506.) leaves numerous, opposite, doubly pinnate; leaflets linear, acuminate, quite entire.—Native of Hungary, on the mountains.

Opposite-leaved Water-parsnip. Pl. ?

Cult. All the species of this genus do best in a moist soil, and most of them altogether in water. They are increased by separating the roots and stolons.


Petals roundish, entire, strictly involute, with a broad retuse point. Fruit compressed from the sides or somewhat didymous, crowned by the depressed stylopodium; mericarps with 5 filiform acute winged ribs, or with obsolete ones; lateral ribs marginating; furrows between the ribs either furnished with vittae or without them, smooth or granular. Seed teretely convex, flatish in front.—Quite glabrous herbs or shrubs. Leaves rarely cut, but mostly quite entire in consequence of the limbs, which are supposed to be absent, and the petioles being dilated, and changed into quite entire phyllodias, as in many species of Acacia. Umbels compound. Involucrum variable. Flowers yellow.—A very natural genus, with a distinct habit from all other umbelliferous genera, but the fruit is variable in character.

* Annual plants.

1 B. papillosum (D. C. prod. 4. p. 127.) stem erect, branched; leaves linear, acute, stiffish; umbels terminal, of 3-4 rays; involucrum of 3-4 unequal leaves; umbellules 10-flowered; involucels of 6 reflexed leaves, longer than the fruit; fruit coarsely papillose all over. (H. Native of the Levant. Allied to B. glaucum and B. tenusissimum, but the branches of the umbel are perfect; and the fruit is beset with large, obtuse, white papillose.

Papillosum-fructed Hare’s-ear. Pl. ½ to 1 foot.


UMBELLIFERÆ.

almost of B. tenuissimum, but the stems are procumbent, and the umbels are 2-5-rayed.

Procumbent Hare's-ear. Pl. procumbent.

4 B. glau'cem (Roh. et Cast. in D. C. suppl. fl. fr. p. 515.) stem branched, diffuse; leaves linear; umbels terminal, usually of 3 rays; lateral rays incomplete; involucres of 5 lanceolate cupulate denticulate leaves, exceeding the flowers and fruit; fruit without vitre, and almost without ribs, echinated with tu-

bercles. O. H. Native of Provence, Nice, Corsica, Narbonne, Spain, and Sicily, on the sea shore; and of Caucasus, on dry hills near Baku and Sallian. Rehb. icon. 2. p. 60. t. 178. Odontites glauca, Spreng. in Schultes, syst. 6. p. 383. The whole plant is very humble and glaucous.


5 B. seminoma'trum (Lin. spec. p. 342.) stem erect, branch-

ed; leaves oblance-spatalate; umbels terminal, of 3-5 rays: lateral rays incomplete; leaves of involucres lanceolate, cupulate, quite entire, 3-nerved, exceeding both the flowers and fruit; fruit without vitre, and the ribs are obliterated, and the furrows are granular. O. H. Native of the south of France, Italy, Corsica, Sardinia, Dalmatia, Istria, Algeria, Greece, &c. in cultivated fields. Gouan. ill. t. 7. f. 1. Smith, fl. græc. t. 261. Rehb. icon. 2. p. 77. t. 183. B. divaricatio B. Lam. fl. fr. Odontites ulotoca, Hoffm. umb. 299. t. 1. B. f. x. but not of Spreng.


6 B. gracile (D. C. prod. 4. p. 128.) stem erect, much branched; leaves linear, acute; umbels terminal; lateral ones somewhat 3-rayed; leaves of involucres lanceolate, shorter than the fruit-bearing umbel; fruit granular, having the ribs obliterated. O. H. Native of the south of Tauris, in gravelly saltish places; and of the plains of Caucasus, adjoining the river Terek. Odon-

tites gracilis, Bieb. suppl. p. 198. Allied to B. decumpositum, but differs in the involucres being shorter than the umbellules, not longer than them.


7 B. Ché'nse (D. C. prod. 3. p. 128.) stem with erect branches; leaves broadly linear, 5-nerved; umbels of 5-6 rays; involucra and involucres of 1-2 linear leaves, shorter than the flowers; fruit with 5 acutish ribs, having the furrows smooth. O. H. Native of China. Habit of B. tenea, but differs in the involucres being narrower and fewer, and in the pedicles being hardly equal in length to the flowers.

China Hare's-ear. Pl. 1¼ foot.

8 B. tenea (D. Don, prod. fl. nep. p. 182.) stem erect, filiform, branched; leaves 7-nerved; lower ones linear-mucronate, 5-nerved: upper and rancelae ones lanceolate; umbels of usually 4 rays; involucres of 4-5 elliptic mucronate leaves, which are about equal in length to the fruit; fruit acutely ribbed, with the furrows smooth. O. H. Native of Nipan, at Narainhetty, Kamaon, and Gosaingan. B. virgatum, Wall. cat. 555. Very like B. tenuissimum, but differs in the umbels being of 4 rays, instead of 5, and in the leaves of the involucres being elliptic, not lanceolate, &c. Umbels numerous.

Var. β, flexuös (Wall. ms.) stem much branched, flexuous; leaves having 7-9 nerves, and dotted between the nerves. O. H. Native of Nipan.

Slender Hare's-ear. Pl. 1 to 2 feet.

9 B. Gerä'di (Jacq. austr. 3. t. 256.) stem erect, branched;

leaves linear, cupulate; umbels terminal, of 5-7 rays; leaves of involucel linear, cupulate, exceeding the flowers, which are 5 or 6 in each umbel; ribs of fruit hardly elevated, and the furrows between the ribs are furnished with 5 vitre. O. H. Native of Provence, Nice, Sicily, Austria, Tauris, Caucasus, &c. in dry fields. Rehb. icon. 2. p. 56. t. 104. and t. 165. B.

Gallopov. t. 6. There are varieties of this plant with either erect or spreading branches, and with the involucres either shorter or longer than the flowers.


10 B. ju'nceum (Lin. spec. p. 343.) stem erect, paniced; leaves linear-lanceolate, cupulate; umbels terminal, of 3 rays; leaves of involucel linear-lanceolate, cupulate, shorter than the flowers, which are 3-5 in each umbel; ribs of fruit elevated, acute; having the furrows smooth, and almost without vitre. O. H. Native of south and middle Europe, even to Caucasus, in fields. Rehb. icon. 2. p. 57. t. 160. B. juncum B. Lam. fl. det. 1. p. 319. B. Gerardi, Smith, fl. græc. t. 282. B. juncum a, Spreng, in Schultes, syst. 6. p. 371.—Lob. icon. t. 243. f. 1.

Var. β, Risàndi (D. C. prod. 4. p. 128.) fruit-bearing peduncles short, axillary, hardly attaining one-half the length of the leaves.


11 B. glumaceum (Smith, prod. fl. græc. 1. p. 177. but not of Spreng.) stem erect, very slender, paniced; leaves linear, 3-

nerved; involucra and involucres of 5 lanceolate cupulate 3-

nerved leaves, which are pellucid between the nerves and veins, exceeding the umbels; furrows of fruit smooth, furnished each with one vitta, and the ribs are acute and very slender. O. H. Native of Calabria, in barren fields; chief of Scio; about Con-

st. 2. 342.)

nialis, Fl. t. 209. B. flavum, Forsk. eg. ar. suppl. p. 205. 7 B. græcium d'Urvill. enum. 30. p. 250. but not of Bieb. Nearly allied to B. odontites, but perfectly distinct, in the leaves of the involucel being diaphanous between the nerves, not reticulated.

Glumaceous Hare's-ear. Pl. 1 foot.

12 B. Oron'te's (Lin. spec. p. 342. exclusive of the syn. of Haller.) stem erect, paniced; leaves linear, 3-nerved; leaves of involucel 5, linear-lanceolate, cupulate 3-nerved, reticulately veined from the middle nerve being pinate; fruit having the fur-

rows smooth, and furnished with one vitta each, and the ribs acute and very slender. O. H. Native of Italy, Sicily, Greece, Smyrna, Montpelier, and Mauritania. Jacq. hort. vind. 3. t. 91. Reth.

nic. 256. ex ind. sem. hort. bocc. 1825. ex ind. sem. 1826. pl. rar. 112. and prod. 1. p. 312.


13 B. arista'tum (Barth. in Rehb. icon. 2. p. 70. t. 178.) stem erect, paniced; leaves lanceolate, linear, 3-nerved; leaves of involucel 3, elliptic, aristately cupulate, reticulately veined, from the middle nerve being pinate, exceeding the umbellules; fruit with smooth furrows, furnished with one vitta each, and acute very slender ribs. O. H. Native of England, France, Ba-

learic Islands, Corsica, Sardinia, Sicily, Liguria, Dalmatia, &c. in dry fields and on hills. In England on a marble rock in Devon-

shire, unquestionably wild. B. divaricatum, Lam. fl fr. p. 410. B. glumaceum, Spreng. umb. spec. 18. t. 3. f. 3. but not of Sibth. B. Odontites, Smith, engl. bot. t. 2468. Odontites lirata, Spreng. prod. 33. Schultes, syst. 6. p. 380. but not of Hoffm. By most authors this species has been confused with the preceding.


14 B. nodifórum (Sibth. and Smith, fl. græc. t. 360.) stem dichotomous or trichotomous from the base; branches spreading, forked; leaves linear; radical ones distich; umbels axi-

itary and terminal, rather capitate; leaves of involucel 5, ovate, cupulate, 3-nerved, transparent between the nerves, as well as the margins of the upper leaves; fruit with smooth furrows. O. H. Native of Candi, in corn-fields; in Syria near Baruth; and Egypt. B. nanum, Poiret. suppl. t. 750. B. Marecostium, Q q
UMBELLIFERÆ.

Delil. ined. B. proliferum, Delil. fl. egypt. p. 61. t. 22. f. 2. B. minium, Spreng. nece entd. 3. p. 163. Fruit striated, not wanted.


Variable-leaved Hare’s-ear. Fl. May, July. Clt. 1818. Pl. 1 f. 16.


Protracted Hare’s-ear. Fl. May, July. Clt. 1819. Pl. ½ to ¾ foot.

17 B. rotundifólium (Linn. spec. p. 340.) caule leaves perfoliate, roundish-ovate; umbels of 5-6 rays; involucrum wanting; involucels of 5 mucronate leaves; furrows of fruit smooth, and destitute of vitae: ribs very slender. ☞ H. Native of Europe, in fields, especially in Caucasus, south of Siberia, and Persia; in England in corn-fields, especially on a chalky soil. Smith, engl. bot. t. 99. Sturm, deutsch. fl. with a figure. Hayn. arz. gew. 7. t. 1. B. perfoliáatum, Lam. fl. fr. 3. p. 405. B. rotundifólium a, Spreng. in Schultes, syst. 6. p. 364.—Moris, hist. 3. p. 299. sect. 9. t. 12. f. 1. This plant has been reckoned among the vulnerary herbs; but its virtues, whether ever experienced or not, are recorded in old herbals only.


* * * Perennial plants.

18 B. autéreum (Fisch. in Schultes, syst. 6. p. 366.) leaves coriaceous; radical ones ovate, ovate-oblong, obovate, attenuated into the petioles at the base: caule leaves ovate, acute, stem-clasping; leaves of involucrum 3-5, elliptic, or nearly orbicular, mucronate; of the involucels 5, conforming to those of the involucrums, coloured, longer than the flowering umbels. ☞ H. Native of Siberia, on mountains beyond the Baikal; and of Altáia. B. longifólium var. Spreng, umb. spec. p. 119. Very nearly allied to B. longifólium, but differs in the involucels being yellow, obtuse with a mucrone, not acuminate.

Golden-umbelled Hare’s-ear. Fl. May, June. Clt. 1820. Pl. 1 to 2 feet.

19 B. longifólium (Linn. spec. p. 341.) leaves ovate-oblong: radical ones petiolate: caule ones stem-clasping; leaves of involucrum 9-4, ovate, somewhat acuminate; of the involucels 5. ☞ H. Native of France, Germany, Transylvania, Switzerland, Savoy, &c. on the mountains.—J. Bauh. hist. 3. p. 199. f. 1. Cam. hort. t. 38. Umbellules 7-14 flowered. With fruit with elevated, sharp, rather winged ribs: and with the furrows between the ribs smooth, and furnished with 3 vitae each, which are full of pellucid dots, ex Koch, umb. p. 117.

Long-leaved Hare’s-ear. Fl. May, July. Clt. 1713. Pl. 1 to 2 feet.

20 B. Pyrenéum (Gouan, ill. p. 8. t. 4.) radical leaves lanceolate, elongated: caule ones cordate-lanceolate, half stem-clasping, acuminate; umbels of 5, very rarely of 3 rays; involucrum of 3 broadly ovate leaves; involucels of 5 obovate distinct leaves, which are almost twice the length of the umbel.


Pyrenean Hare’s-ear. Fl. May, July. Clt. 1814. Pl. 1 ft. 22 B. stellátum (Linn. spec. p. 340.) radical leaves linear-lanceolate, elongated: caule ones almost wanting; involucrum of 3 ovate-lanceolate leaves; involucels of 8 leaves, which are joined together into an 8-eleft disk, longer than the umbel.

2. H. Native of the Alps of Switzerland, Piedmont, Dauphiny, and Savoy, in stony meadows; and of Corsica, on the mountains, and probably of the Pyrenees. D. C. fl. fr. 4. p. 346.—Hall. helv. hist. no. 771. t. 18. Ribs of fruit broadly winged; wings sharply and membranously keeled; furrows smooth, each furnished with one vitæ.

Stellate-umbelled Hare’s-ear. Fl. May, July. Clt. 1775. Pl. 1 to 1½ foot.

22 B. thyrádum (Adams, ex Fisch. in litt. ex D. C. prod. 4. p. 130.) radical leaves linear-oblong: caule ones 3, stem-clasping, oblong or ovate, hardly acute; umbels of 3 rays; involucrum of 3 obovate leaves; involucel of 7-8 obovate leaves, which are scarcely longer than the umbel.

2. H. Native of Altáia or the mountains, and at Lake Baikal. Allied to B. Pyreneum, but differs in the leaves being much less acute, in the umbels being of 3 rays, in the involucels being hardly longer than the flowers, and in the young fruit not being glaucous.

Three-rayed-umbelled Hare’s-ear. Pl. 1 foot.

23 B. multíneve (D. C. mem. soc. gen. vol. 4.) radical leaves oblong-linear, attenuated at both ends; caule ones stem-clasping, ovate, acuminate, with many parallel nerves; involucra of 5 unequal leaves, having many parallel nerves; leaves of involucel 5, ovate, acuminate, coloured, hardly longer than the umbelle.

2. H. Native of Altáia, on the mountains. Allied on the one hand to B. aéreus and B. longifólium, and on the other to B. graminifólium.

Var. β, angustáus (D. C. prod. 4. p. 130.) caule leaves narrower, more glaucous; involucrum of 2 leaves. ☞ H. Native of Dahuria.

Var. γ, minus (D. C. l. c.) involucrum of 3-4 leaves; stem nearly simple; leaves narrower. ☞ H. Native of Altáia, on the mountains.

Many-rayed-leafed Hare’s-ear. Pl. 1 foot.

24 B. graminifólium (Vahl. symb. 3. p. 48.) stem nearly naked; leaves radical, linear; involucrum of 5-5 elongated leaves, about one-half shorter than the rays of the umbel; leaves of involucel 5-8, oblong, mucronate. ☞ H. Native of the Alps of Europe and the Pyrenees. Rom. fl. eur. fase. 7. with a figure. D. C. fl. fr. 4. p. 367. Spreng. in Schultes, syst. 6. p. 368. B. petraéum, Vill. dauph. 2. p. 576. t. 14. Jacq. icon. rar. 1. t. 56. This species differs from B. ranunculóides, in the leaves being all nearly radical, in the involucels being often 7-8-leaved, in the leaves of the involucrum being more elongated. B. invernus, Bell. app. 77. t. 11. is hardly a variety of this species, unless that the leaves of the involucrum are more elongated. B. carpódium and B. petraeum of many authors are identical with this.

Var. β, bicályculátum (D. C. prod. 4. p. 131.) leaves of in

25 B. ranunculoides (Lin. spec. p. 342.) radical leaves linear-lanceolate, attenuated towards the base; cauline ones stem-clasping, oblanceolate, or ovate-cordate, striated; involucrum of 3 unequal leaves; involucels of 5 ovate or oblong nerv'd distinct mucronate leaves.  2. H. Native of the Alps, Pyrenees, Jura, Apennines, Siberia, in rough exposed places; and of North America, at Cape Muggrove, in Behring's Straits. Lam. dict. 1. p. 518. D. C. fl. fr. 4. p. 348. B. angulosum, Spreng. in Schultes, syst. 6. p. 366.—Park. theatr. 581. no. 7.—Bauh. hist. 3. p. 199. f. 2. Ribs of fruit elevated and sharp; and the furrows between the ribs smooth, and furnished with one vitta each, ex Koch, umb. p. 116. Habit of herb very variable, from a finger to a foot in height, simple or branched, bearing one or many umbels. Involucre of from 1 to 3 leaves, very variable in length, either broader or narrower than the leaves. The limits between the varieties are hardly perceptible, and to these may be referred the B. angulosum, ranunculoides, repens, obtusatum, and graminifollium, Lapere. abr. and suppl. as well as B. graminatum and Vaqinceilla, Vill. B. carici-follium and Burserlissium, Willd. B. Baldense, Hort. B. petraeum, Geners. B. angulosum L., Lin. &c.

Var. β, carici-follium (D. C. prod. 4. p. 131.) radical leaves rather convolute, linear-subulate; cauline ones hardly dilated at the base.  2. H. Native of the Apennines and the Pyrenees, in exposed rocky places. B. carici-follium of many herbaria. B. petraeum, Lin. spec. 540.  1. but the leaves of the involucel are distinct, not jointed.

Var. γ, oblongifolium (Led. fl. alt. 1. p. 348.) stem very simple; radical leaves 2, linear-oblong, 1 1/2 to 2 inches long, and 2 to 3 lines broad, acutish; cauline leaves sessile, broader than the radical ones, of different shapes: the uppermost ones coriaceous, rounded at the apex, and mucronate; involucrum of 3-5 unequal leaves; umbel of 4 unequal rays; involucels of 5-7 obovate mucronate leaves.  2. H. Native of Siberia. Crownfoot-like Hare's-ear. Fl. July, Aug. Clt. 1790. Pl. 4 1/2 ft.

26 B. Baldeense (Host, syn. 141.) stem branched; leaves stem-clasping, nearly linear, acute, nerv'd; radical ones tapering into the petioles; leaves of involucel oblong-linear, about equal in length to the fructifereous pedicles; ribs of fruit short, rounded; vitta 3 in each furrow.  2. H. Native of Mount Baldo; and of Altaia, on the rivers Tschersky, Kerly, Bucktor- mins, and near Schultbins. B. bicurc.; Helm. in act. mosq. 2. p. 106. t. 8.—Gmel. sib. 1. p. 209. no. 24. Stems numerous, erect or ascending, simple at the base, and branched at the apex. Radical leaves 2-6 inches long. Involution of 4-5 lanceolate-linear leaves, but sometimes only of one elongated decumbent leaf. Umbels of 5-13 rays. Involution of 5-9 oblanceolate acute 3-nerved leaves; umbellules of 10-20 flowers.

Var. β, multicaule (Led. fl. alt. 1. p. 530.) plant tufted; leaves rather fleshy.  2. H. Native of Altaia, in saltish deserts at the river Tschaja.

Baldo Hare's-ear. Fl. June, July. Pl. 1/2 to 1 foot.

27 B. longicaule (Wall. cat. no. 557.) stems erect, sparingly branched; leaves linear-linear-acuminate; vitta 3 in each furrow, rather membranous; umbels 2-5-rayed; involucra of 1 or 3 ovate acute leaves; umbellules 15-rayed; leaves of involucel 5, ovate, mucronate, longer than the flowers, but shorter than the fruit; fruit 3 times longer than the pedicels, acutely ribbed; vitta 3 in each furrow.  2. H. Native of Nipal, at Gossingthang, Emodi, and Kamaon. Herb 1 1/2 to 2 feet high, dividing into many stems at the neck. Leaves 3-6 inches long. Mature fruit 2 lines long.

Long-stemmed Hare's-ear. Pl. 1 to 2 feet.

28 B. Candollei (Wall. cat. no. 552.) stems rising from horizontal surculi, erect, sparingly branched; leaves lanceolate, acute, membranous, obliquely many nerv'd on both surfaces; umbels 12-15-rayed; involucel of 2-3 ovate, acute, many-nerved leaves; umbellules 12-15-rayed; involucels of 5 oval acute leaves, which exceed the fruit.  2. H. Native of Nipal, at Gossingthang and Emodi. Herb 2 feet high. Immature fruit hardly longer than the pedicels, oblong, ribbed, with the furrows smooth.

De Candolle's Hare's-ear. Pl. 2 feet.

29 B. paniculatum (Brot. fl. his. 1. p. 455.) leaves linear-narrow, many nerv'd; radical ones very long; stem erect, panicled; umbels 2-3-rayed; involucel of 2-3 small leaves; involucels of 4-5 subulate leaves, which are 3 or 4 times shorter than the umbellules; fruit oblong.  2. H. Native of Portugal, on calcareous hills. Fruit with 3 ribs on each side, usually of one mericarp from abortion. Habit of B. fruticosum, but the stems are annual.


30 B. eurynum (Ten. app. 1st cat. hort. neap. ex D. C. prod. 4. p. 131.) stems erect, simple; leaves linear, acute, narrowed at the base so much as to form petiolar, many nerv'd; umbels 5-9-rayed; involucel of 2-4 leaves; involucels of 5-7 acutish leaves; furrows of fruit smooth.  2. H. Native of the kingdom of Naples, on calcareous rocks. B. obtusifolium, Ten. prod. p. 18. Leaves acute. A very distinct species, although it has been joined by Sprengel with B. semicompitaminum. Very nearly allied to B. paniculatum.

Drooping Hare's-ear. Pl. 1 foot.

31 B. exaltatum (Bieb. tabl. casp. p. 166.) leaves all linear, many-nerved: stem one elongated; stem erect, leafy, paniculately branched; umbels 3-5-rayed; involucra and involucelles of 3-5 subulate unequal, small leaves; fruit ovate.  2. Bieb.  2. Stev. H. Native of Tauria and Caucasus, in maritime meadows, and on hills. B. Baldeense, Willd. spec. 1. p. 175. exclusive of the syn. Bieb. fl. cauc. no. 513, but not of Turr. or Host. Allied to B. falcatum, but differs in the fruit being shorter, and in the ribs being less acute.


32 B. linearifolium (D. C. prod. 4. p. 131.) stem erect, paniculately branched; leaves linear, very long, hardly acute, many nerv'd; umbels of 5-6 rays; involucra and involucelles of 4-5 small acuminate leaves; fruit linear-oblong, with rather pronounced ribs. Native of Persia, on mountains about Badaia, in the district of Khoi in the province of Aderbeijjand, where it was collected by Szovits. Very like B. exaltatum, but differs in the fruit being longer. It is perhaps, however, only a variety of it.

Linear-leaved Hare's-ear. Pl. 1 foot.

33 B. scorzonerinae-folium (Willd. enum. suppl. p. 30.) radical leaves lanceolate; cauline ones linear, all striated with 9-11 parallel nerves; stem paniculately branched; umbels 8-10-rayed; involucel of 1-2 leaves; involucels of 4-5 lanceolate apiculate leaves, which are shorter than the umbellules.  2. H. Native of Siberia, at Lake Baikal. Allied to B. falcatum, but differs in the leaves being narrower, and in the nerves being parallel and more crowded.


34 B. lancolatum (Wall. cat. no. 551.) stem erect, sparingly branched; leaves lanceolate, much acuminate, glabrous, membranous, furnished with 2 oblique nerves on each side; umbels 5-6-rayed; involucel of one small leaf; umbellules 5-8-rayed; involucels of 1-2 small leaves, rarely wanting; fruit ovate-oblong, with the ribs hardly elevated, and the furrows smooth.
L. H. Native of Nipan, on the mountains. Herb 2 feet high, quite glabrous. Leaves 4 inches long, and an inch broad. Fruit a line and a half long. Burrows of immature fruit furnished with 3 vitre each.

Lanceolate-leaved Hare’s-ear. Pl. 2 feet.

35 B. marginatum (Wall. cat. no. 556.) stems erectly ascending, sparingly branched; leaves linear, acute, stiff, 5 7-nerved; outer nerves nearly marginal; umbels 6-8-rayed; involucre of 3-5 acuminate lanceolate leaves; umbelles 10-12-rayed; involucels of 3-5 leaves, which are shorter than the pedicels; fruit oblong, ribbed, with the burrows smooth. 36. H. Native of Nipan and Kamaon. Root hard, branched, thick. Herb a foot and a half high. Lower leaves 3 inches long, and 3 lines broad, usually obtuse from some cause; nerves very prominent.

Middle-leaved Hare’s-ear. Pl. 2 feet.

36 B. tataricum (Tenore, prod. fl. neap. p. 18.) stems erect, branched; leaves lanceolate, 9-nerved; upper ones rather falcate, much shorter than the branchlets; involucrum of 3 very short linear-subulate leaves; involucels of 5 setaceous leaves, shorter than the umbelles, which are trifid. 37. H. Native of Calabria, on dry rocks. Perhaps only a var. of B. scorzoneraefolium or B. falcatum.

Trifid-leaved Hare’s-ear. Pl. 1 to 2 feet.

37 B. falcatum (Lin. spec. p. 341.) leaves oblong; lower ones oblong, petiolate; cauline ones sessile, linear-lanceolate, attenuated at both ends; leaves of involucel oblong-lanceolate, acuminate, about equal in length to the fructiferous pedicels. 38. H. Native of Middle Europe, in hedges and among bushes in dry situations; and of Siberia, on the Altai mountains; and throughout the whole of Caucasus. Jacq. auct. 2. t. 158. D. C. fl. fr. 4. p. 347.—Lob. icon. t. 456. f. 1. Ribbs of fruit elevated, narrow, and a little winged; vitre 3 in each burrow; burrows smooth, ex Koch, umb. 116.


Falcatum-leaved Hare’s-ear. Fl. May, Sept. Clt. 1739. Pl. 1 to 2 feet?


Stiff Hare’s-ear. Fl. May, July. Clt. 1830. Pl. 2 feet.

39 B. sylvicum (Ait. hort. kew. 1. p. 331.) stems dichotomous, 2-leaved; radical leaves decompound, flat, cut; involucrum of one leaf; involucels of 5 lanceolate acute leaves, which are shorter than the umbelles. 40. G. Native of the Cape of Good Hope. Flowers pale yellow. The rest unknown.


** Shrubby species. — Tenoria and Bypréstis, Spreng. l. c.

40 B. Muñow (Cham. et Schlecht. in Linneae. 1. p. 384.) shrubby, much branched; leaves linear-setaceous; umbels 2-3-rayed; involucels of 5 narrow lanceolate acute leaves, which are equal in length to the umbelles; fruit oblong, smooth. 41. G. Native of the Cape of Good Hope. Lower leaves 8 inches long. B. salicifolium 42. Africanum, Berg. cap. 76. 9 but the umbels are said to be 5-rayed, and the involucels of 5 leaves.

M north Hare’s-ear. Clt. 1726. Shrub 1 to 2 feet.

41 B. Sphenopodium (Smith, fl. gracc. t. 264. prod. 1. p. 179.) plant suffrutescent; leaves linear, rather falcate, with smooth margins; involucra usually of 5 leaves; leaves of involucel linear-lanceolate, cuspidate, shorter than the umbelles. 42. H. Native of the Morea. A specimen collected near Theben agrees very well with the character given to this; and is probably the same. Plant only frutescent at the base.

Sibirian Hare’s-ear. Shrub 1 foot.

42 B. spinosum (Lin. fil. suppl. p. 178.) shrubby, erect; floriferous branches divaricate, stiff; the deflowered ones spinose; leaves linear-subulate, many veined, quite entire; involucra of 5-5 small subulate leaves. 43. H. Native of Spain and Mauritania. Gouan. iii. p. 8. t. 2. f. 3. Desf. adl. 1. p. 233. Tenoria spinosa, Spreng. Ribbs of fruit obtuse.


43 B. frutescens (Lin. amon. 4. p. 269.) suffrutescose, erect; branches slender, elongated, erect; leaves linear-subulate, stiff, striated, 5-7-nerved; involucra of 3-5 very short subulate leaves. 44. H. Native of Mauritania, Spain, and between Perigpin and Narbonne. Cott. icon. 2. t. 106. Tenoria frutescens, Spreng. in Schultes, syst. 6. p. 376.—Barr. icon. t. 1253. Umbels small, 3-5-rayed. Ribbs of fruit obtuse.


44 B. foliosum (Salzun, pl. exsic. ex D. C. prod. 4. p. 133.) suffrutescent, erect, nearly simple; leaves sessile, half stem-clasping, linear-lanceolate, acuminated, undulated, crowded, 1-nerved, quite entire; leaves of involucra ovate. 45. F. Native of Mauritania, about Tangiers. Stem a foot high. Leaves broad and half stem-clasping at the base. Involucra of 3 leaves; involucels of 4-5 leaves. Fruit ovate, with obtuse ribbs.

Leafy Hare’s-ear. Shrub 1 foot.

45 B. elatum (Guss. prod. fl. sic. 1. p. 316.) plant suffrutescent at the base; branches elongated; leaves membranous, many veined; radical ones oblong-lanceolate, tapering into the petioles; cauline ones sessile, linear-lanceolate; umbels 8-12-cleft; involucra of 4-5 short leaves; leaves of involucels oblong, acuminate, longer than the umbelles. 46. F. Native of Sicily, on calcareous rocks. Allied to B. plantagineum, but the plant is frutescent at the base, and the leaves are acute. Ribbs of fruit smooth.

Tail Hare’s-ear. Shrub 3 to 5 feet.

46 B. casei (Schousb. mar. beob. p. 113.) shrubby, erect, branched; leaves oblong, membranous, very blunt, quite entire, sessile, with many parallel nerves; umbels 8-10-rayed; leaves of involucra oblong, obtuse, short. 47. F. Native of Mogodor. Branches of a greyish white-colour. Plant glabrous. Fruit like that of B. fruticosum. Leaves much thinner, and one-half smaller than those of B. plantagineum.


47 B. plantagineum (Desf. atl. 1. p. 233. t. 57.) shrubby, erect, branched; leaves lanceolate, mucronate; stiff, coriaceous, sessile, quite entire, many umbels; umbels 4-10-rayed; leaves of involucra elongated, subulate, acute. 48. F. Native of Mount Atlas, near Bougie. Tenoria plantaginea, Spreng. in Schultes, syst. 6. p. 376. Nerves almost diverging from the base of the leaves, not parallel.


48 B. Gibira (Lam. dict. (1784.) 1. p. 520.) shrubby, erect, branched; leaves lanceolate, attenuated at both ends, 1-nerved, coriaceous, glaucous, oblique, quite entire, sessile; leaves of involucra lanceolate. 49. F. Native of Gibraltar, on the


50 B. diffus'orme (Linn. spec. 343.) shrubby, erect, branches; leaves variable on the same branch, simple or ternate; leaflets undivided or cut; umbels terminal, 3-8-rayed; leaves of involucrum linear, acute, much shorter than the peduncules. ♀. F. Native of the Cape of Good Hope. Burm. afr. t. 71. f. 1. Cham. et Schlecht. in Linnae. 1. p. 384. Thumb. fl. cap. 248. Tenoria diffusiformis, Spreng. in Schultes, syst. 6. p. 377. Buprestis diffinis, Spreng. mag. ribs of fruit rounded and turgid, lateral ones somewhat dilated; vitte 2-3 in each furrow. This shrub sends out side branches, which in the spring have on their lower parts leaves, composed of many small flat leaflets, finely cut like those of coriander, and of a sea green colour; these leaves soon fall off, and the upper part of the branches are closely covered with long rush-like leaves, having 4 angles, coming out in clusters from each joint.


† Species not sufficiently known.

51 B. polyphyllum (Ledebe. mem. ac. se. petrop. 5. p. 528.) stem erect, striate, branch above leaves lanceolate, stem-clasping; umbels of many unequal rays; involucrum almost wanting; involucres of 6 lanceolate acuminate leaves, which exceed the fruit. ♀. H. Native of Caucasus. Flowers said to be solitary in the axils of the branches.

Many-leaved Hare's-ear. Fl. May, June. Clt. 1823. Pl. 1 ft.

52 B. oppositifolium (Lapeyr. abr. pry. p. 141.) stem naked; branches umbellate; leaves opposite, lanceolate, obtuse, nerved; involucrum almost wanting; involucres of 5 lanceolate awned leaves. ♀. H. Native of the Pyrenees, at a place called Trancade d'Ambouilla. This species is very obscure, and very doubtful whether it is an umbelliferous plant at all.

Opposite-leaved Hare's-ear. Pl. 1 foot.

 Cult. All the species grow well in any common garden soil. The leaves of the young plants only require to be sown in the open ground early in spring. The herbaceous perennial kinds are either increased by being divided at the roots, or by seeds; and the shrubby species by cuttings.

LVII. HETEROMORPHA (from ἕτερος, heteros, diverse, and μούφω, morphe, form; leaves). Cham. et Schlecht. in Linnae. 1. p. 385. 5. f. 2. D. C. coll. mem. 5. p. 43. prod. 4. p. 134.—Bupleurum species of authors.

Linn. syst. Pentândria, Digynia. Margin of calyx 5-toothed. Petals elliptic, drawn out into a long acumen, which is bent in nearly to the base. Fruit nearly terete, variable in length, crowned by the teeth of the calyx in the immature state, and by the stipulodiam and short spreading styles. Mericarps smooth, with 5 filiform ribs, lateral ones marginal; vitte large, solitary under each rib, but none in the commissure nor furrows.—Perennial herbs, natives of the Cape of Good Hope, yielding an aromatic juice. Radical leaves cut. Stems erect, hispal, naked, branched, furnished with sheathing scales or abortive leaves. Umbels of umbels compound, fertile: lateral ones often sterile. Involucra, and involucres of the short marcescent leaves. Flowers yellow? This genus from the situation of the vitte agrees alone with Melanoselinum, but the form of the fruit is very different.


Jagged-leaved Lichtensteinia. Pl. 3 to 4 feet.


Trefida Lichtensteinia. Pl. 1 to 2 feet.

UMBELLIFERÆ. 

LXXXI. LICHTENSTEINIA. 

LX. OTTOA. 

LX. GÉNANthe.

prod. p. 40. fl. cap. 262. ex Spreng.-syst. p. 4. n. 118. 
GÉNANthe Capensis, Houtt. ? Sprengel says his plant has rough leaves, and Thumb. says his is glabrous; they are, however, only the same. The plant is called GLYCH by the Hottentots, and is made by them into an inebriating liquor.


4 L. Palma'ta (D. C. prod. p. 135.) leaves pilose on both surfaces, palmate; petals broad, sheathing; lobes or leaflets 5, oblong; rather cuneate, cartilaginously serrated; stem terete, glabrous, sparingly branched; petiolate sheaths short, leafless; fruit ovate. 

Ô. 

GÉNANthe of the Cape of Good Hope.

Palmate-leaved Lichtensteinia. Pl.? 

Cult. The species of this genus require to be grown in pots so as they may easily be sheltered in the winter. Any light soil will suit them; and they may be easily increased by dividing at the root or by seeds.


Linn. syst. Pentándria, Digínia. Margin of calyx obsolete. Petals equal, with an inflexed point. Styles arcuately divaricate, capitulate at the apex. Fruit oblong; mericarps acutely 5-rilled, rather compressed at the commissure; ribs membranous.—Smooth perennial herbs. Stems simple, with few leaves. Leaves (phylloidia?) sheathing at the base, intercepted by transverse disseminules. Umbels terminal, without any involucral, in many rays. Umbellules without involucres. Flowers white, polygamous, 3-4, hermaphrodite, and 6-7 male in each umbel.

This genus is allied to GÉNANthe, but differs in the margin of the calyx being obsolete, not 5-toothed; in the petals being entire, and in the styles being divaricate.

1 GÉNANtheæides (H. B. et Kuntz, l. c.) Ô. 

GÉNANthe of Quito, between St. Vincent and Ybara. GÉNANthe Quitsônis, Spreng. syst. p. 1. 888. Herb very like Tiedemannia cetrifôlia, but the generic character is different, and the involucrum is wanting.

GÉNANthe-like Ottoa. Pl. 1 foot.

Cult. Any soil will suit this plant, and it may either be increased by seed or by dividing at the root.


Linn. syst. Pentándria, Digínia. Margin of calyx 5-toothed, permanent, somewhat acerate after flowering. Petals obvate, emarginate, with an inflexed point. Stylodes conical. Fruit cylindrically ovate, crowned by the long erect styles. Mericarps with 5 rather convex obtuse ribs; lateral ribs marginaul, and a little broader than the rest; vittae in one each furrow.

Carophorophy indendent.—Smooth usually aquatic herbs, natives of Europe and Asia. Umbels compound. Involucrum variable, usually wanting; involucres of many leaves. Flowers in the rays of the umbellules on long pedicels sterile; those in the disk on short pedicles fertile; petals white. The species of this genus are difficult to extricate, in consequence of the roots having being neglected by the authors who have described them.

§ 1. True species, natives of Europe, &c. but not of the Cape of Good Hope. 

* Plants perennial. 

Roots tuberos; tubers disposed in fascicles.

1 GÉNANthe fistulósa (Lin. spec. 365.) roots fasciculate, intermixed with oblong tubers; neck of root throwing out stolons; stems and leaves fistulátor; radical leaves bipinnate; leaflets cuneate, lobed; cauleine leaves pinnate; leaflets filiform; umbels 3-4-rayed, without any involucrum; fruit turbinate, much crowded, ribbed. Ô. 

H. Native of Europe and Caucasus, in ditches, ponds, and other watery places; plentiful in Britain. Drev. et Heyne, pl. eurip. t. 5. v. 48. Blunt. d. t. 846. Smith. engl. bot. t. 565. O. aqüatica, Bunt. pin. 162.—Bauh. hist. p. 192. f. 1.—Petiv. herb. brit. t. 25. f. 5. and 6. There is a variety of this which its roots are composed of whorles of fibres. The plant has an unpleasant smell, and a hot nauseous taste, like many other umbelliferous plants. The roots and whole herbage are said to be poisonous. Flowers pale red.

Var. β, Tabernamontani (Koch, ex D. C. prod. p. 136.) radial leaves divided into many linear segments. Ô. 

H. Native of Alsatia, in inundated places. O. Tabernamontani, Gmel. fl. bud. p. 676, exclusive of the syn. of Poll. 

Var. γ lanceolata (Spreng. ex D. C. prod. p. 136.) radical leaves pinnate or bipinnate; leaflets or segments linear-lanceolate; umbels bifid. Ô. 


2 GÉNANthe Lachenalii (Gmel. fl. bud. p. 678.) fibres of roots cylindrical, rather fleshy, in fascicles; radical leaves somewhat bipinnate; leaflets cuneiform, obtuse, tridentate at the apex; cauleine leaves pinnate; leaflets linear, entire; involucrum wanting, or of few leaves. Ô. 


Var. α, approximâta (D. C. prod. p. 137.) radical leaves pinnate; leaflets or segments trifid, obtuse, cuneate at the base. Ô. 


Var. γ, involucrâta (D. C. l. c.) involucrum of many leaves. Ô. 

H. Ô. peucedanifôlia, Schleisch. pl. exsic. Ô. Rheëna, Moricand, fl. ven. p. 149. In some specimens the involucrum is absent. Fruit ovate, striated; pedicels not thickened after flowering.

La Chenal's Water-droprrowt. Fl. June, Aug. Cl.1817. Pl. 2 to 3 feet.

3 GÉNANthe peucedanifôlia (Poll. pal. p. 1. p. 280. f. 5.) tubers of roots sessile, elliptic, ending in a fibre each at the apex; radical leaves bipinnate; cauleine ones pinnate; lobes or leaflets all linear; umbels 3-8-rayed; involucrum wanting, or of 1 leaf; fruit oblong, attenuated at the base, nearly sessile, coarctate beneath the calyx. Ô. 

H. Native of middle Europe, in meadows, ditches, and bogs; as in France, Switzerland, &c. In England, near Bury; about Bedford; on the banks of the Isis, beyond Isley; and in peat bogs, under Headington Wick Cospe, Oxfordshire. Umbellules dense, many-flowered, surrounded by the many leaves of the involucres, which are of equal length. Smith, engl. bot. t. 548. Ô. filipenduloïdes, Thunb. fl. par. p. 146. Ô. Pollichii, Gmel. fl. bud. p. 1. p. 679. Ô. peucedanoides, Roth. Ô. pânets, Meencl. —Lob. icon. 729. f. 2.—Dalech. hist. 773. f. 1.

Flowers often reddish. The roots taste like the gardenparsnip, but are probably dangerous food; yet they are not reckoned poisonous, though the roots of other species are virulent.

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4. G. silaioôia (Bieb. suppl. p. 232.) knobs of roots of an oblong-fusiform shape, or cylindrical, fasciculate; leaves pinnae; leaflets of the lower leaves lanceolate; of the upper ones linear; involuca almost wanting; fruit ovate, crowded, sessile, hardly longer than the involuca.  2. II. Native of Europe, common. Plentiful in Britain, in wetary places, osier holts, and about the banks of rivers. Consp. 6. t. 52. Smith. engl. bot. t. 2313. Bull. herb. t. 114. Woody. suppl. med. bot. t. 267.—Lob. icon. t. 730.—Mor. ox. sect. 9. t. 7. f. 2.—Matt. valg. p. 2. p. 290. f. 1. Leaves of involuca and involucels various in number and shape. Flowers white, tinged with purple. Plant strong. Roots abounding with an acrid, fetid, very poisonous saffron-coloured juice, such as exudes less plentifully from all parts of the herb, when wounded. Brood mores sometimes eat the root, according to Sir Thomas Franklin, and are poisoned by it. Ehret, the celebrated botanical draughtsman, experienced a giddiness from the scent of the herb. Dr. Pulney remarks, that the root is one of the most virulent poisons of all the vegetable poisons that Great Britain produces. In Westmorland the country people apply a poultice of the herb to the ulcer which forms in the fore part of the callus in the horned cattle, which is called the foul. It may be safely used externally, but internally it should be taken with caution, as is evident from the accounts given above, and others received by Mr. Howell and Sir William Watson, in the Philosophical Transactions. The former of these says that two French prisoners at Pembroke died by eating the root, that the inhabitants call it five-fingered root, and that it is much used there in cataplasmis. In the same Transactions, a case is related of eight young lads near Clonmel in Ireland, where the plant is called talons, mistaking its roots for the water-parsnip, of these they died. Mr. Miller informed Sir William Watson that a whole family were poisoned with it at Battersea. The more caution is necessary respecting this plant, because it is not uncommon in some places, its appearance and smell resemble smallage or cedry, and the roots have not any flavour disagreeable enough to deter persons from eating them.


9. G. sarmentosa (Presl, in herb. Haenk, ex D. C. prod. p. 138.) root unknown; stems branched, weak, rather scendent; leaves bipinnate; leaflets ovate, toothed: terminal ones somewhat 3-lobed; umbels opposite the leaves, of many rays; involucrum almost wanting; fruit oblong; styles very long.  2. II. Native of North America, at Nootka Sound. Leaves early as in G. apiiôia, but the umbels are those of E. phellandrum, root unknown, and therefore its proper situation among the species is doubtful.

Sarmentose Water-dropwort. Pl. sarmentose.

10. G. globulosa (Lin. spec. 365.) knobs of roots oblong, attenuated at the base, but ending in an elongated fibre each at the apex; radical leaves bipinnate; leaflets lanceolate, cut; cauline leaves pinnate, with linear leaflets; umbel 5-6-rayed, without any involucrum; fruit nearly globose, sessile (the proper pedicles being almost wanting) spongy, with thick, obtuse ribs, and small furrows.  2. H. Native of Estruria, Mauritania, Spain, Portugal, &c. in meadows. Gouan. ill. p. 18. t. 9. Spreng. umb. spec. p. 106. G. diffusa, Lag. gen. et spec. p. 19. ex Spreng. Stem compressed at the base, diffuse. Fruit larger than in any other species of the genus. Umbels on long peduncles.


11. G. prolifera (Lin. spec. 365.) knobs of roots fusiform, sessile; leaves bipinnate; leaflets cuneate, lobately toothed; umbels capitulate, without an involucrum; outer pedicles of the umbel flat, branched, proliferous; fruit turbinate, 10-ribbed; ribs thick; furrows deep.  2. H. Native of Candia, Calabria, Lycia, Dalmatia, Carniola. Jacq. Hort. vind. 3. t. 62.—P. Alp.
UMBELLIFERÆ. LX. ÓNANTHE. LXI. ANNESORHIZA.

p. 304. with a figure and p. 305. with a description.—Mor. ox. sect. 9. t. 7. f. 5. a.


* * Annual or biennial plants, with fibrous roots.

12 (E. phellandrium (Lam. fl. fr. 3. p. 432.) root fusiform, with many whorled fibres; stem furrowed, fistular, branched; leaves stalked, repeatedly pinnate, with innumerable, fine, expanded, dark green, narrow, wedge-shaped, cut, shining, acute, divaricate leaflets; umbels opposite the leaves, on short tubid peduncles, without involucre; involucels of many narrow, taper-pointed leaves; fruit ovate, with 5 broad ribs, and narrow intermediate furrows, rather shorter than the pedicels. \( \downarrow \). H. Native of Europe, Tauria, and Siberia, in rivers, ditches, and lakes; plentiful in some parts of Britain, as in ditches in Bat terssea-fields, near London; and near Edinburgh. Phellandrium aquaticum, Lin. spec. 366. Fl. dunt. t. 1154. Smith, engl. bot. t. 684. Schkuhr, handb. t. 71. Hoffm. umb. 1. p. 71. descrip. and icon. t. 1- f. 17. Hayne, arz. gew. t. 1- 40. Nees. oss. pl. 14. t. 6. Woodv. med. bot. suppl. 266. Bull. fr. t. 147. Erh. pl. off. 24. L. aquatica, Lam. dict. 4. p. 530. Ligustrum phellandrium, Crantz. hort. fasc. 3. p. 84. Cleitaría paralístris, Ger. emac. 1603. f. 1. Lob. icon. 735. f. 1. Phellandrium, Dod. pempt. 591. f. 1. Roth always writes the old name phellandrium, which agrees with an etymology hazarded by Sir James Smith, in Rees' cyclo. vol. 27. from ὑπέρ, to be treacherous, alluding to the poisonous nature of the plant; ἀλέες αὐτοκε, as Linneas has it, κορκίν, is not at all satisfactory. Linnees informs us that the horses in Sweden are seized with a kind of palsy by eating this plant; hence Withering and Sibthorpe named it horse-bane. This effect, however, is not to be ascribed to the plant, but to a coleopterous insect breeding in the stalks, which he therefore names Cercidium paraplecticum. The leaves are sometimes applied to discomatous calpens, and for this reason Boerhaave speaks highly of it. The seeds are recommended in intermittents, and are said to be diuretic, antiseptic, and expectorant. The efficacy of this plant rests chiefly on the testimony of Ernstingius and Lange, by whom various cases of its successful use are published, especially in wounds and inverteate ulcers, and even in cancers; also in phthisis, pulmonary, asthma, dyspepsia, and intermittent fevers. Dr. Woodville readily observes, that though the disorders here noticed are so dissimilar as to afford no satisfactory evidence of the medicinal qualities of these seeds, yet they appear to be well deserving of farther investigation.

Phellandrium or Fine-leaved Water-dropwort. Britain. Pl. 2 to 3 feet.

15 (E. stolonífera (Wall. cat. no. 585.) stems creeping at the base, ascending, fistular strated; leaves bipinnate; upper ones pinnate; leaflets lanceolate, acuminate at the base and apex, with a few coarse serratures; umbels opposite the leaves, exconvoluted; fruit obovate-oblong, much shorter than the pedicels. \( \downarrow \). H. Native of Silkhet, in the cast of Bengal, in rice grounds. Phellandrium stoloníferum, Roxb. hort. beng. p. 81. Teeth of calyx 5, subulate. Styles permanent. Stolonífera Water-dropwort. Pl. creeping.

14 (E. linarií (Wall. cat. no. 586.) stems throwing out roots from the nodi at the base, erect, fistular; leaves pinnate; leaflets of the lower leaves linear; stem; of the upper ones linear, elongated, toothed, or undivided; umbels opposite the leaves, without involucre; rays compressed. \( \downarrow \). H. Native of Nipaul, in rice grounds. Fruit unknown. Linear-leaved Water-dropwort. Pl. 1½ to 2 feet.

15 (E. Jayaíanca (D. C. prod. 4. p. 138.) stems terete, fistular; leaves divided into 3 parts above the sheaths of the petioles, which are bipinnate; leaflets oval-oblong, cuneated at the base, deeply toothed at the apex; umbels opposite the leaves, pedunculate; involucre of a few small leaves; leaves of involucels sessate; fruit ovate. \( \downarrow \). S. Native of Java. Siam Javanicum, Blum.

Java Water-dropwort. Pl. ?

16 (E. bu'nils (Rafin. prec. son. p. 41.) stem simple, pentagonal; leaves pinnate; leaflets of the lower leaves ovate, jagged: of the upper leaves lanceolate, entire; umbels erect, simple; flowers sessile. \( \bigcirc \). H. Native of Sicily, on the Nebro- mounes, in woods. The rest unknown. The plant is very douliful.

Humble Water-dropwort. Pl. 1 foot.

§ 2. Species, natives of the Cape of Good Hope, the greater part of which are hardly known, and all of them, most probably, belong to different genera from the present.


Filiform Water-dropwort. Pl. 1 foot.

18 (E. tenuefolia (Thumb. prod. 49. fl. cap. p. 253.) stem simple, striated; leaves bipinnate; leaflets linear-sessacaus, deeply pinnatifid; upper leaves undivided, filiform; leaves of involucre and involucels very short; ribs of fruit rather winged. \( \downarrow \). G. Native of the Cape of Good Hope. Spreng. umb. spec. p. 109.


19 (E. ferulácea (Thumb. prod. 50. fl. cap. p. 253.) root unknown; stem branched, striated; leaves decomposed; leaflets lanceolate, acute, furrowed on both sides; involucre of few leaves. \( \downarrow \). G. Native of the Cape of Good Hope. Spreng. umb. spec. p. 109.

Ferula-like Water-dropwort. Pl. 1 to 2 feet.

20 (E. interrup'ta (Thumb. prod. 50. fl. cap. p. 253.) root unknown; stem simple, terete, nearly leafless; leaves radical, petiolate, divided into 3 parts, and these parts are decomposed; leaflets oblong, sinutate pinnatifid, mucronated toothed; lower ones reflexed; involucre of 5 leaves. \( \downarrow \). G. Native of the Cape of Good Hope. Spreng. umb. spec. p. 107. Stem said by Thunberg to be villous at the base, but by Sprengel it is said to be smooth. Perhaps the same as Annesorhiza Ca-pensis.


Cult. All though all the species grow naturally in ditches, rivers, and watery places, they grow well in any kind of soil, whether dry or wet. Increased by dividing at the root, or by seeds.

LXI. ANNESORHIZA (from ayngs, agnes, chaste, and μῆκος, rhiza, a root; smell of root). Cham. et Schlecht. in Linnaea. 1. p. 398. t. 5. f. 4. D. C. prod. 4. p. 139.

LIN. SYST. Pentádria, Dígynia. Margin of calyx 5-toothed, permanent. Petals elliptic, acuminate, more or less emarginate, with an indented point. Fruit 3-angled, prismatid, crowned by the reflexed calyx and styles; mericarps convex on the back, unequal; one of them 3-winged, in consequence of the carinal and marginal ribs being winged, but the intermediate ribs are filiform; the other 4 winged, in consequence of the carinal
umbellifer.e. lxii. Sclerosciadium. lxiii. Dasylo'Ma. lxiv. cynosciadium. lxv. ethusa.

rib being filiform, and the intermediate 2 and marginal 2 being winged; vittae 1 in each furrow, and 2 in the commissure, which is flat. Carpophore bipartite.—An herb, native of the Cape of Good Hope. Root fusiform. Stem erect. Cauline leaves scale-formed. Umbels of 12-15 rays. Involutex and involucels of many leaves, having hyaline margins.

1 A. Cape'nis (Cham. et Schlecht. l. c.). 2. G. Native of the Cape of Good Hope, on the sides of mountains. The root smells of anise, hence the name of the herb at the Cape, Anonyswertel.

Cape Anise-root. Pl. 1 to 2 feet?

Cult. Any soil will suit this plant; and it will be easily increased by cuttings or by seeds.

lxii. Sclerosciadium (from σκληρός, skleros, hard, and σκίας, skiaion, an umbel; in reference to the solid fruit). Koch, diss. ined. in litt. 1828. D. C. coll. mem. 5. p. 43. t. 2. f. F. prod. 4. p. 140.

L. Syst. Pentandra, Digynia. Teeth of calyx 5, conical, permanent. Petals obcordate, with an indented point, which is bidentate or tridentate at the apex. Stylodum conicidal; styles filiform, at length diverging. Fruit ovate-globose, solid; mericarps with 5 thick, elevated, blunt, equal ribs; vittae 1 in each furrow, which are narrow, and 2 in the commissure. Carpophore distinct, univalved. Seed terete, flattish on inside.—Herb glabrous. Root fibrous. Leaves divided into linear-oblong lobes or leaflets. Umbels axillary, sessile, almost without any involucrum; rays very unequal, that is, some of the umbellules are sessile, and some are on long pedicellae in the same umbel. Involutex of 5-7 leaves, having membranous margins. This genus is allied to Cynonathu', from which it differs in the carpophore being free, in the stylodum being conical, and in the ribs of the fruit being prominent, &c. (f. 56. F.)

1 S. Hume'le (Koch. l. c. D. C. l. c.). 2. H. Native of fields, about Mogodor, and probably of Teneriffe. Cynonathu' nodifloru', Schoubs. mar. p. 120. Conium rigidum, Mert. herb. and perhaps the same as Biumum rigidu', Spreng. but neither the description nor the country agrees with the present plant.


lxiii. Dasylo'Ma (from diasys, dasys, thick, and lemma, lemma; a fringe; in reference to the ribs of the fruit). D. C. prod. 4. p. 140.

L. Syst. Pentandra, Digynia. Margin of calyx obsolete. Petals unknown. Stylodum depressed; styles short. Fruit ovate, with the transverse section terete; mericarps semi-ovate, not separating at maturity, with 5 corky, cellular ribs: the 3 dorsal ones small, and the 2 lateral ones large and blunt; vittae 1 in each furrow, which are narrow, and 2 in the middle of the commissure, which is flat. Carpophore indistinct. Seed triangular, that is, convex on the back and angular at the commissure.—Herbs with the habit of Cynonathu'. Stems fissilis. Leaves bipinnate; leaflets cuneate, few-toothed at the apex. Umbels opposite the leaves, 5-6-rayed. Umbellules crowded, many-flowered. Involutex and involucels none.


2 D. glau'cum (D. C. l. c.) umbels pedunculate. 2. H. Native of Bengal. Biforis? glauca, Wall. Differs from the preceding in the umbels being distinctly pedunculate, in the leaves vs.

being larger and glaucescent, in the dorsal ribs of the fruit being more acute, and the lateral ones smaller.

Glaucous Dasylo'ma. Pl. 1 foot?

Cult. The seeds only require to be sown in the open ground.

lxiv. Cynosciadium (from κυνός, κυνος, κυνος, a dog, and σκίας, skiaion, an umbel). D. C. coll. mem. 5. p. 44. t. 11. prod. 4. p. 140.

L. Syst. PentANDria, Digynia. Teeth of calyx 5, subulate, permanent (f. 63. c.). Petals ovate-oblong or ovate (f. 63. b.), attenuated at the apex; mericarps with 5 thick, corky ribs (f. 63. a.), 2 lateral ribs marginal; vittae nearly straight, 1 in each furrow, and 2 in the commissure. Seed sub-semicretaceous. Carpophore bipartite.—American glabrous herbs. Stems angular, fistular, branched a foot high and more, with very few leaves. Leaves pinnate or palmate; leaflets linear, elongated, entire, articulated near the base, at which places the leaflets fall off; lower and upper ones undivided, linear, and elongated. Involutex and involucels of many leaves. Flowers white.—This is an intermediate genus between Cynonathu' and Ethu'sa, but it differs from both, and from all its allies in the petals being flat and entire; it differs particularly from Ethu'sa in the calyx being 5-toothed, in the vittae of the commissure being straightish, and in the involucel and involucels being of many leaves; from Seseli in the stylodum being conical; and from Cynonathu' in the carpophore being distinct.

1 C. digita'tum (D. C. l. c. t. 11. f. A.) leaves palmate; leaflets 3, linear, quite entire; fruit ovate at the base, but attenuated at the neck.—Native of North America, on plains of the Arkansas River. Cynonathu' digitatus, Nutt. mss. Umbels few-flowered. Involutex of a few unequal leaves: leaves of involuclus subulate, very short. Rays of umbel very long.

Digita'te-leaved Cynosciadium. Pl. 1 to 1½ foot.

2 C. pinax'tum (D. C. l. c. t. 11. f. B.) leaves pinnate; leaflets distant, few pairs, linear, quite entire: terminal one very long; fruit ovate-oblong.—Native of North America, along with the preceding species. Ethu'sa pinnata, Nutt. mss. Pedicels a little longer than the leaves of the involucel. Leaves of involuclus 7-8, nearly equal, linear-subulate.

Pinnate-leaved Cynosciadium. Pl. 1 foot.

Cult. Sow the seeds in the open ground, and the plants will rise and flower and seed freely.


L. Syst. PentANDria, Digynia. Margin of calyx obsolete. Petals obovate, emarginate, with an indented point; outer ones radiating. Fruit ovate-globose; mericarps with 5 elevated, thick, acutely keeled ribs: lateral ribs marginal, and a little broader than the rest, girded by a somewhat winged keel; vittae 1 in each furrow, and with 2 arched ones in the commissure. Seed semi-globose. Carpophore bipartite.—Erect, annual, pinnate herbs. Leaves uniform, multifid. Involutex wanting Rr
or of 1 leaf; involucres of 3 or 5 spreading, or pendulous, secta-
ceous leaves, situated on the outside of the umbellules, that is,
unilateral. Flowers white. Three species of this genus are
admitted, but they are probably only varieties of one.

1 E. cynapium (Lin. spec. p. 367.) leaflets wedge-shaped,
decurrent, with lanceolate segments; rays of umbel nearly
equal; involucrum wanting; involucres of 3 leaves, which are
longer than the umbellules. O. H. Native throughout the
whole of Europe, in cultivated grounds: a common weed.

2 E. cynapioides (Bieb. fl. taur. 1. p. 227, suppl. p. 232.)
segments of the leaves oblong, acute; rays of umbel nearly
equal; involucrum wanting; involucres of 3 leaves, which are
shorter than the umbellule; vitæ in the commissure contiguous
at the base. O. H. Native of the Ukraine, in shady places.

3 E. elata (Friedlander, ex Fisch. cat. hort. gor. 1813. p.
45.) segments of the leaves oblanceolate; involucrum usually
of 1 leaf; involucres of 1-2 leaves, which are longer than the
umbellules; outer rays of umbel longest; pedicels twice the length
suppl. p. 34. Petals white, not as in E. cynapium, greenish
at the base. Styles purple after flowering. The plant is said
to be edible, and not poisonous as the others.


Cult. The seeds only require to be sown in the open ground.

LXVI. FICNICALMUL (the Latin name of the fennel, from
fenum, hay; the small of the plant resembling that of hay).
umb. p. 120. t. 1. f. 13. c. Lagen. nat. 2. p. 90. Koch.
Méum species of Spreng.

L. syl. Pentandria, Digynia. Margin of calyx tymid,
obsolete, toothless. Petals roundish, entire, inovallate,
with a rather square retuse point. Transverse section of fruit nearly
terete; mericarps with 5 prominent, bluntly keeled ribs: lateral
ribs marginal, and a little broader than the rest; vitæ 1 in each
furrow, and 2 in the commissure. Seed somewhat semi-terete.

—Bimial or perennial herbs. Roots fibrosiform. Stems terete,
striated, branched. Leaves truly pinnate, decomposed: with
linear, sectaceous leaflets. Involucrum and involucres almost wanting.
Flowers yellow.—This genus differs from Anéthum with which
it was formerly combined, by the mericarps being more turbid;
having the margin rather more compressed than the back; and
the transverse section of the fruit is therefore nearly terete, or
with the margin rather compressed.

1 F. vulgare (Ray, syn. 217. Gerdt. fruct. 1. p. 105.)
stem terete at the base; leaflets bipinnate, distich; leaflets awl-
shaped, drooping; umbels 13-20-rayed; involuera and involucres
wanting. O. H. Native of Europe, in exposed, uncul-
tivated places; in Britain, on chalky cliffs, very plentiful; and
of Caucasus, near Baku, and in the plains between Sallian
bot. t. 1208. Mill. fig. t. 13. Hayne, arz. gew. 7. t. 18. Ficn
icalmum officinale, All. pedem. no. 1359. Mém Ficnicalmum,
Ligusticum Ficnicalmum, Roth. germ. 1. p. 124. Ficnicalmum,
and aromatic flavour of this our garden fennel are well known,
and has long been an inmate of our gardens. The tender stalks
are used in salads; the leaves boiled enter into many fish sausages.
The sweet and warm seeds are a common carminative medicine
for infants. The blanched stalks of the next species, F. dulce,
called finocchio, are eaten with oil, vinegar, and pepper, as a cold
salad, and they are likewise sometimes put into soups. This
thickened part is blanched by earthing up, and is then very
tender. "Owing to the peculiar nature of this species," Mr.
Neill observes, "it is more tender than the common fennel,
and often perishes in the course of the winter. Mised by this
circumstance, several horticulturists describe it as an
annual plant, under the name of Anéthum végétum." All are
raised from seed, of which half an ounce is sufficient for a seed-
bed 4 feet by 6 feet. Sometimes also they are raised from
offsets from the old plants, where only a few are wanted.
Sow in the spring in light earth, either in drills from 6-12 inches
apart, or broad cast and raked in. When the plants are 3 or 4
inches high, thin or transplant a quantity 15 inches asunder.
As the roots of old plants divide into offsets, these may be slipped
off in spring, summer, or autumn, and planted a foot apart.
They will produce immediate leaves for present supply and in
continuance; or for immediate larger supply of leaves, you may
procure some established full roots, and plant as above; let
them be well watered. The same plants remain several years
by the root, but in the fall sends up strong stems for seed in
summer, these, or a part of them, should be cut down, to encou-
trage a production of young leaves below in succession.
It is apt to spread more than is desirable, if suffered to seed.
The swelling stems of the Finocchio or F. dulce, when of some toler-
able substance, should be earthed up on each side 5 or 6 inches
blanch them white and tender. This will be effected in 10
days or a fortnight; and by successive sowings or cutting down
plants during summer, successive crops of blanched stalks may
be had from June to December. In procuring seed, permit
some of the best flower-stems to shoot; and they will produce
large umbels of seeds in summer.

2 F. dulce (C. Bacth. pin. 147.) stem rather compressed
at the base; radical leaves rather distich; leaves all tripinnate;
with capillary elongated leaflets; umbels 6-8-rayed. O. H.
Native of Italy, and Portugal, where it is cultivated for the sake
of the blanched stalks, under the name of Finocchio. Finocchio
dulce, Targ. cors. agr. 2. p. 52. Anéthum dulce, D. C. cat.
hort. monsp. p. 78. Ficnicalmum dulce, &c. J. Baint. hist. 3.
p. 4. with a figure. It differs from the preceding species in
being hardly a foot high, in the earlier florescence, in the darker
hue, in the stalks being edible, and in the characters given
above. The use of this kind of fennel is given above with the
common fennel.

Sweet Fennel or Finocchio. Fl. May, June. Cht. Pl. 1 ft.

**LIN. SYST. PI'ENTÀDRIA, Díg'ýnia.** Margin of calyx 5-toothed, increased a little after flowering. Petals roundish, entire, involute, with a broad retuse segment: stylopodium conical; styles short, somewhat reflexed. Fruit terete, 10-furrowed; mericarps with 5 filiform, obtuse, equal ribs: lateral ribs marginal; vitae many, both in the furrows and commissure. Carpophore undivided. A glabrous perennial herb. Root fusiform. Radical leaves rarely undivided, but usually pinnate, or bipinnate; leaflets ovate or lanceolate, serrated; upper leaves ternate, and jagged. Umbels compound, terminal, of many rays. Involucra and involucels of many filiform reflexed leaves. Flowers yellow. This genus is very nearly allied to Foeniculum, but differs in the calyx being 5-toothed and permanent.


Cult,—The plant will grow in any soil, and is easily increased by dividing at the root, or by seed.

IXVIII. **DEVERRA** (a goddess worshipped by the ancients for encouraging housewifery, or rather the goddess of brooms; the plant having much the appearance of a broom.) D. C. coll. 5. p. 45. prod. 4. p. 143. Búbon species of authors.

**LIN. SYST. PI'ENTÀDRIA, Díg'ýnia.** Margin of calyx obsolete. Petals ovate, acuminate, with an inflexed point. Styles short, at length divaricate. Fruit ovate, or roundish, rather compressed from the sides, rough from scales or spreading pili; mericarps semi-terete, with obsolete ribs; vitae 1 in each furrow, and 2 in the commissure. Carpophore bipartite.—Aromatic, leafless, glaucous, stiff, broom-like shrubbery, natives of Africa. Pétioles sheathing, permanent; limbs of leaves wanting in the adult plant, or nearly so; but in young plants they are small and many-parted, with setaceously linear leaves. Umbels of few rays. Involucra of 4-6 small deciduous leaves; involucels of 4-6 ovate-lanceolate, deciduous leaves, with membranous margins. Flowers white.

**SECT. I. DÍVERRA'BIA** (an alteration from the generic name). D. C. prod. 4. p. 143. Fruit villous or hispid.


2. **Var. b. Burechellí** (D. C. prod. 4. p. 143.) young fruit beset with short, tubercul villi. 3. **G.** Native of the Cape of Good Hope. Very like the species, but the fruit is much less villous, and is therefore perhaps distinct.

**Leaffess Dverrã.** Shrub.

1. **D. TÓRTUÓSA** (D. C. prod. 4. p. 143.) stem much branched, twisted, divaricate; lower sheaths furnished with divided limbs, bearing subulate leaflets; fruit sparingly villous. 4. **F.** Native of the north of Africa.


**SECT. II. PÍTURÁNSTHOS** (from πτέρω, pteron, and αἴβος, anthos, a flower; in allusion to the fruit bearing scurf-like scales). D. C. prod. 4. p. 144. Fruit covered with scales.


**Scurfy-flowered Dverrã.** Shrub 1 to 2 feet.

Cult.—A mixture of loam, peat, and sand will suit the species of Diverrya; and they can only be increased by seeds.

IXIX. **SORÁNTHUS** (from σωρός, soros, a heap, and αἴβος, anthos, a flower; in reference to the close capitulate umbels of flowers). Led. fl. ross. alt. ill. t. 82. fl. atl. 1. p. 344. D. C. prod. 4. p. 669.

**LIN. SYST. PI'ENTÀDRIA, Díg'ýnia.** Margin of calyx obsoletely toothed. Petals broad-oval, permanent, with an inflexed point. Fruit a little compressed from the back, crowned by the divaricate styles: the transverse section elliptic; mericarps with 5 hardly prominent, equal ribs: lateral ribs marginating; vitae 1 in each furrow, and 4 in the commissure. Carpophore bipar...
suit.—An erect herb, with a habit between *Seseli* and *Géranthe*, but differs from the first in the teeth of the calyx being obsolete, in the petals being broad-ovate, not obovate, and in the ribs of the fruit being less prominent; and from the last in the shape of the petals, in the styles and in the carpophore being present.

1 S. Meyerii (Led. l.c.).  
2. H. Native of Siberia, at the river Irtysh, not far from the lake called Noor-Saian; and at the river Bekin, in sandy places. Root fusiform. Stem erect, striated, simple at the base, and usually bearing 3-4 verticillate branches at the apex; branches leafless, or furnished with membranous scales in the middle. Radical leaves 3-4, tripinnate: leaflets linear; cauline leaves 1-2. Umbels of 10-15 rays, of these 4 are longer than the rest. Involutura wanting, rarely of 1 leaf; involucels of 6-8 leaves, which are ovate-lanceolate, pilose on the outside, and ciliated, shorter than the umbellules. Flowers sessile in the umbellules: outer ones female: intermediate ones hermaphrodite: central ones male.

*Meyer’s Soranthus.* Pl. 1½ to 3 feet.

*Cult.* This plant will grow in any soil, and is easily increased by seed.

LXX. *Seseli* (Seyecytous is the Arabic name of an umbelliferous plant, but to what plant it was given is now unknown). Lin. gen. no. 560. Lag. an. nat. 2. p. 103. D. C. coll. mem. 5. p. 56. t. 3. F. R. prod. 4. p. 144.—*Seseli and Bubon species, Spreng.—Seseli species, Koch.

Linn. *Petúndria Díégia*. Margin of calyx 5-toothed; teeth short, thickish, and sometimes obliterated. Petals obovate, coarctate into an inflexed point at the apex, emarginate or nearly entire. Fruit oval or oblong (f. 55. D. a. E. u.), with the transverse section nearly terete, and crowned by the styles, which are reflexed (f. 55. D. b. E. b.); mericarps with 5 prominent filiform or elevated thick coryck ribs: lateral ribs margi

nating, and a little broader than the rest; vitte one in each furrow, but there are sometimes 2 in the outer furrows, and always 2 in the commissure, but very rarely 4. Seed somewhat semi-terete.—Usually glaucous biennial or perennial herbs. Leaves pinnate or ternately compound. Involucrum wanting or almost so; involucels of many leaves. Flowers white, very rarely yellow.

**Sect. I. Hippomária** (from *iirxe, hippe*, a horse, and *maorarh, marathron*, fennel; horse fennel). Rivin, Roehl, but not of Linn, D. C. prod. 4. p. 144. Involutura wanting. Leaves of involucels joined together nearly to the apex into a bowl-shaped cap, having a toothed margin.

1 S. Hippomária (Lin. spec. 573.) stem terete, and nearly branched at the apex, and nearly naked; leaves glaucous, bipinnate; leaflets linear, trifid, acute; petioles dilated and sheathing; fruit smoothish; involucel cup-shaped.  

**Var. br, herbárium** (D. C. prod. 4. p. 144.) fruit beset with down, even in the mature state.  
2. H. Native of Siberia. Nearly allied to *S. tomatíllus*, but the habit is more that of *S. Hippomária*, and the umbel is downy, not tongtoid.


2 S. tomentósum (Vis. daln. spec. p. 6. t. 3. f. 1.) stem simple, terete; leaves hibernate or trinate: leaflets filiform, chan

nelled; upper ones ternate; involucra wanting; involucel cup-shaped, and is, as well as the fruit, tongtoid from stellate down.  
2. H. Native of Dalmatia, on stony hills towards the sea. This species is intermediate between *S. Hippomária* and *S. lécopérnium*, nevertheless it is more nearly allied to the former than to the latter.

**Tomentose Meadow-saxifrage.** Pl. 1 to 2 feet.

**Sect. II. Hippomáraäthrogídes (agreeing with the plants in section Hippomária; hence the name).** D. C. coll. diss. 5. p. 47. prod. 4. p. 144. Involutura wanting or of few leaves. Leaves of the involucels joined to each other, particularly at the base. Flowers white.

3 S. Ledeböörii: stem a little branched; leaves glaucous, bipinnate or tripinnate; leaflets ternate, with the segments linear, upper sheaths ventricose, nearly leafless; involucrum of one lancelolate leaf; involucel cup-shaped, divided at the apex into long acuminated marcescent segments, about equal in length to the flowering umbellule; fruit prismatic, on short pedicels, pilose.  

*Ledeböör’s Meadow-saxifrage.* Pl. 1 to 1½ foot.

4 S. dicíthórum (Bieb. fl. taur. 1. p. 233. suppl. p. 245.) stem terete, erect, clothed with fine down; lower branches short: superior ones longer than the central umbel; leaves pinnate; leaflets multiform, with the segments linear; involucrum wanting; leaves of involucels joined together to about the middle, but ovate and mucronate in the free parts.  

**Dichotómous Meadow-saxifrage.** Fl. June, July. Cl. 1818. Pl. 1 to 2 feet.

5 S. **cumíme** (Smith, exot. bot. t. 120.) stem terete, thick, stiff, branched at the top, clothed with fine pubescence; leaves tripinnate, elliptic; leaflets cuneate, trifid; involucra of few leaves, rarely wanting; umbels 20-rayed; leaves of involucel joined together nearly the length of the pedicels into an expanded dish, having the free parts subulate, and exceeding the umbellules.  

**Var. críthmifólia** (D. C. prod. 4. p. 145.) stems, rays of umbels, and upper leaves rather velvety; segments of leaves elongated; central umbel surrounded by a 10-12-leaved involucrum.


**Gum-bearing Meadow-saxifrage.** Fl. July, Sept. Cl. 1804. Pl. 3 to 4 feet.

6 S. **rigidus** (Walást. et Kit. rar. hung. 2. p. 156. t. 146.) stem terete, thick, rather tomentose, stiff, sparingly branched; leaves glaucous, three or four times pinnate; leaflets linear, stiff, mucronate, rather pungent, usually trifid; involucrum none; umbel 20-rayed; leaves of involucel joined together at the base, equal in length to the umbellule; fruit tomentose.  

7 S. *cuneífolium* (Bieb. fl. taur. 1. p. 230. and suppl. 244. exclusive of the synonymes,) stem unknown; leaves several times
pinnate; leaflets broad, cuneiform, forked; superior ones oblun
tate; leaves of involucres very short, joined together at
the base; fruit villous. 2. H. Native of Eastern Caucasus, in
subalpine situations. Bäböl cunefolius, Spreng. syst. 1 p. 900.

Wedge-leaved Meadow-saxifrage. Fl. 1 foot.

8 S. Peucanadiolus (Bess. cnm. cont. p. 44.) stem terete,
sparingly branched at the apex, glaucous; leaves trinervate;
leaflets linear-lanceolate, acuminate; sheaths adpressed; in-
volute almost wanting; leaves of involucres subulate, joined
together at the base; flowers nearly sessile; fruit velvety from
flocky short down. 2. H. Native of the south of Podolia.
In Schultes, syst. 5 p. 402.? Bäböl peucanadiolus, Spreng.
syst. 1 p. 900. Involucrum sometimes of few leaves.

Cl. 1818. Fl. 1 foot.

9 S. Leucopetrum (Waldst. et Kit. pl. rar. hungr. 1 p. 92.
t. 89.) stem terete, flexuous, branched at the apex; leaves
glaucous, decompound; leaflets setaceous, linear; petioles
dilated, and sheathing; involucrum usually of one leaf; leaves
of involucres subulate, joined together at the base, and are
as well as the fruit puberulous. 2. or 3. H. Native of
Pannonia, about Buda on chalky hills. Athamantha leucop-
êrma, Poir. suppl. 1 p. 534. Very nearly allied to S. Hippo-
máratrum, but differs in the leaves of the involucres joined
only at the base, not to the apex. Umbellules dense.
Fruit with elevated corky ribs and narrow furrows, ex Koch,
emb. p. 110.

1 ½ foot.

Sect. III. Eusélêli (so called from containing what are con-
templated the true species of the genus.) D. C. prod. 4 p. 145. —
Sélêli vérâ, Koch, umb. p. 110.—Hippomáratrum, Duby, in
D. C. bot. gall. 1 p. 234. but not of Link, nor Rivín. Invo-
lucra wanting or of few leaves. Leaves of involucres distinct, or
sometimes somewhat concrete at the very base.

* Flowers yellow.

10 S. Gráçile (Waldst. et Kit. hungr. 2 p. 122. t. 117.) stem
terete; leaves trinervate; leaflets triangularly setaceous, very
thin and rather falcate; rays of umbel elongated; involucra
wanting or nearly so, very short. 2. H. Native of Pannonia
and Transylvania, on calcareous rocks. Baumg. fl. trans. 1 p.
238. Flowers yellow; petals oval-oblong, incised at the apex.
Cauldix ascending. Flowering stems erect. Sheaths of leaves
entire. Fruit elliptic and smooth, like the rest of the plant.
Umbels opposite the leaves, drooping before expansion.

Fl. 1 to 2 feet.

11 S. triéntum (Pursh, fl. amer. sept. 1 p. 197.) root
 fusiform; leaves sheathing a long way, ternate, binate, or
trinervate; leaflets or segments elongated, linear or linear-lan-
celate, quite entire, petiolulate; stem leaf at the base; umb-
els compound, with nearly equal rays; umbellules capitate;
flowers dioecious or polygamous; immature fruit oblong, some-
what cylindrical; mericarps with 5 elevated acute ribs; in-
volute and involucres wanting. 2. H. Native of North Am-
erica, about the Columbia river; common on the dry gravelly
soils near Fort Vancouver. Hook. fl. bor. amer. 1 p. 264. t.
94. This has much the habit of S. lieiodrómun. Petals invo-
lute entire. Teeth of calyx obsolete. Flowers yellow.

Trinervate-leaved Meadow-saxifrage. Fl. June, July.
Cl. 1828. Fl. 2 feet.

12 S. difívari um (Pursh, fl. amer. sept. p. 732.) stem dichó-
tomous, leafy; leaves petiolate, with short sheaths, bipinnate or
tripinnatifid; segments linear-oblong, acute, short, peduncles
lateral and terminal; rays of umbels equal; leaves of invo-
lucres linear-subulate; fruit roundish-ovate, crowned by the
calyxine teeth; mericarps rough, with 5 elevated ribs and many
vittae. 2. H. Native of North America, on the banks of the
Missouri; and about Carlton House upon the Saskatchewan.
Sims, bot. mag. 1742. Nutt. gen. amer. 1 p. 194. S. hieudim,
Fr. cat. 1813. Mârattrum, Rafin. journ. phys. 1820. Flowers
yellow. The vittae are numerous, and abound in powerfully
aromatic oil.

Difívariate Meadow-saxifrage. Fl. June, July. Cl. 1812.
Fl. 1 foot.

13 S. Lieódaru (Hook. in fl. bor. amer. 1 p. 263. t. 93.) leaves
with long sheaths, trinervate or trinervately pinnate; leaf-
lets petiolate, oblong, entire, attenuated or trifid, glaucous; stem
nearly naked; umbels compound, with the rays very unequal;
umbellules capitate; flowers dioecious or polygamous; immu-
ner fruit very smooth; involucra and involucres wanting. 2.
H. Native of the north-west coast of America; on gravelly
soils near Fort Vancouver, on the Columbia. Flowers yellowish.
Styles reflexed.

Smooth-fruited Meadow-saxifrage. Fl. ½ foot.

14 S. defoliátum (Led. fl. oss. alt. 1 p. 343.) radical
leaves early, caduceous; stem furnished with leafless sheaths;
involucra and involucres of few leaves. 2. H. Native of Si-
beria, in the Kirghisean Steppe, in sandy wet salt situations.
Plant with the habit of Fërata silva. Root perpendicular. Stems
solitary, simple at the base, divided into floriferous branches
from the middle, which are branched again. Flowers yellow,
polygamous. Carpels with 5 prominent equal filiform ribs;
vitta one in each furrow, and 2 in the commissure.

Defoliate Meadow-saxifrage. Fl. 1 foot.

** Flowers white.

15 S. Elâum (Gouan, ill. 16. t. 8.) stem rather dichoto-
mous, terete, few-leaved; leaves bipinnate; leaflets linear-fil-
iform, stellifer, involucra almost wanting; fruit ovate, tuber-
cular while young, but glabrous in the adult state, crowned by
the calyx. 2. H. Native of the south of France, Italy, &c. in
Spreng. umb. spec. 118. exclusive of the first and perhaps of the
second synonyme. S. ékhtum, Lin. spec. p. 375. is very proba-
bly a distinct plant.—Lob. icon. t. 727. f. 2. Plant glaucous.

Var. f. ligula. (D.C. prodr. 4 p. 146.) superior calicu-
lar leaves long-linear, quite entire. Native country unknown, but
is usually to be found in gardens, under the name of S. glau-
cum.

Tall Meadow-saxifrage. Fl. July, Aug. Cl. 1710. Fl. 1 to
2 feet.

16 S. varium (Trev. ind. sem. wratis. 1808. nov. act. bonn.
13 p. 168.) stem terete; branches few, erect; petioles fur-
rowed, as well as the leaves, which are triinnate; leaflets linear,
glabrous, glaucous; involucrum almost wanting; leaves of invo-
lucres short, subulate; fruit oblong, glabrous, not crowned.
2. H. Native of Caucasus and Austria. S. vérâum, Koch, emb.
p. 110. S. Tauricum, Link, in Spreng. syst. 1 p. 884. but not of
ex Trev. Diffr. from S. montânum and S. Pallâtisii, in the fruit
not being crowned by the teeth of the calyx.

Var. f. brachyphleum (Bess. in litt. 1828.) fruit shorter.
2. H. S. chaerophyllæoides, Hortul. but not of Thumb. Perhaps
a proper species.


17 S. jüneum (Sibth. et Smith, fl. grave. prod. 1 p. 200.) stem
much branched, divaricate, stiff, glabrous; leaves rather
glaucus; radial ones trinervate; leaflets keeled, trifurcate;
calicu lar petals very short, spreading; umbels solitary, few-
UMBELLIFERAE. LXX. SESELI.

flowered. 2. H. Native of Greece. Perhaps sufficiently distinct from *S. montanum.*

**Rushy Meadow-saxifrage.** Pl. 1 foot. 18 S. *montanum* (D. C. fl. fr. 4. p. 285. and suppl. p. 505.) Stem striated; leaves glaucous, bipinnate, with entire sheaths, and narrow-linear mucronulate leaflets; involucra of 1-3 leaves, and the involucres of many linear-subulate leaves; fruit elliptic, glaucous, glabrous, or clothed with fine pubescence. 2. H. Native from France to Tauria, in open mountainous places.


**var. e-, nudicaule** (D. C. prod. 4. p. 147.) Stem multiple at the base; leaves strictly adpressed. 2. H. *S. multicaule,* Retz. obs. 3. p. 27. Jacq. hort. vind. 2. t. 129.


**Mountain Meadow-saxifrage.** Fl. June, July. Ch. 1659. Pl. 2 to 3 feet.

19 S. *Pallasii* (Bess. cat. hort. crem. 1816. p. 130.) Stem terete, branched at the top; leaves bipinnate or tripinnate; leaflets trifid; segments linear, flat, acutish, glabrous, glaucous; upper leaves trifid or undivided; involucra wanting; leaves of involucres subulate, very short; fruit ovate, glabrous, crowned by the short 5-toothed calyx. 2. H. Native of Russia. D. C. mem. soc. gen. vol. 4. S. *crassifolium,* Schrad. and Hort. Umbels 10-rayed. Fruit elegantly striated with fuscous vitre. Petiolar sheaths narrow, elongated. Allied to *S. élatum,* but the fruit is not tuberced when young; to *S. lencospérum,* but the fruit is glaucous. According to Koch, it is a variety of *S. glaucum.*


20 S. *TenuiFolium* (Ledeb. fl. ross. alt. ill. t. 97. fl. alt. 1. p. 333.) Stem branched, flexuous; leaves bipinnate; leaflets linear, stiffish; involucrum almost wanting; involucres short; fruit prismatic, tubercularly warted, rather shorter than the pedicels; receptacle with a membranous margin. 2. H. Native of Altai, in dry open sterile places near Ustkmengorsk, and in the Kirghisian steppe, between the first mentioned place and Abalak. Plant glaucous. Stems many. Leaves with 5 opposite pinnae, and each pinna bearing 3 or 5, usually entire leaflets. Umbels 6-8-rayed. Involucrum usually wanting, rarely of one setaceous leaf; involucres of 7-8 small lanceolate membranous acuminate reflexed leaves. Styles and teeth of calyx reflexed on the fruit.

*Fine-leaved Meadow-saxifrage.* Pl. 1 foot.

21 S. *Coronatum* (Ledeb. fl. ross. alt. ill. 169. fl. alt. 1. p. 336.) Stem branched; leaves bipinnate; leaflets linear-oblong, decurrent, entire or tripartite; involucrum of 2 deciduous leaves; involucres of many lanceolate acute membranous reflexed leaves; fruit at length rather prismatic, wrinkled, crowned by the conical stylodium. 2. H. Native of Siberia, in the Soongarian desert. Plant glaucous. Radical leaves 8-10 inches long. Petioles dilated, and rather violaceous at the base, with white membranous margins. Umbels 6-8-rayed. Leaves of involucres indented at the points. Calyx obtusely 5-toothed. Styles reflexed.

**Crowned Meadow-saxifrage.** Fl. July, Aug. Pl. 13 to 2 ft.

22 S. *Vaginátum* (Ledeb. fl. ross. alt. ill. t. 171. fl. alt. 1. p. 336.) Plant glaucous; stem very simple; radical leaves pin-
umbellules; fruit prismatic, glabrous. \(\text{\} H\) Native at the bottoms of the Altaian mountains, frequent; as near Sogra, Loktevsk, Smegow, and elsewhere. Root fusiform. Rays of umbels 15-50, angular, roughish at the angles. Umbellules with 20-30 flowers. Mericarps with 5 prominent ribs. Stylopodium pulvinate. It differs from \(S.\) coloratum, in the leaflets of the leaves not being roughish on the margins, in the rays of the umbel not being pustulose, and in the leaves of the involucel.

Var. \(\beta\) simplex; stem simple; leaves bipinnate: leaflets 2-3 inches long, very narrow.

**Straight Meadow-saxifrage.** Fl. July. Ch. 1830. Pl. 1\(\frac{1}{2}\) ft.

28. \(S.\) purpureum (D.C. Prod. 4 p. 147.) stem striated; petioles dilated at the base; sheaths with membranous margins; leaves decomposed; leaflets few, linear, acute, glabrous; involucrum of one leaf; rays of umbels and fruit puberulous; involucels shorter than the umbellules.

29. \(S.\) tortuosum (Lin. spec. p. 373.) stem striated, stiff, much branched, divaricate; leaves bipinnate, stiffish: leaflets trifid: segments linear, short, acute, with the margins and keel rather scabrous; petioles sheathing, oblong; involucre wanting or of 1-2 leaves; umbels 5-10-rayed; leaves of involucel about equal in length to the umbellules.

30. \(S.\) subflavum (Bieb. Hist. p. 147.) stem sheaths dilated, with pale margins; petioles and styles white, or hardly reddish.

\(\sharp\). Not perhaps Selenium cativifolium. Vill. is referrible to this variety.

**Puberulous Meadow-saxifrage.** Pl. 1 foot.

29. \(S.\) tortuosum (Lin. spec. p. 373.) stem striated, stiff, much branched, divaricate; leaves bipinnate, stiffish: leaflets trifid: segments linear, short, acute, with the margins and keel rather scabrous; petioles sheathing, oblong; involucre wanting or of 1-2 leaves; umbels 5-10-rayed; leaves of involucel about equal in length to the umbellules.

29. \(S.\) subflavum (Bieb. Hist. p. 147.) stem sheaths dilated, with pale margins; petioles and styles white, or hardly reddish.

\(\sharp\). Not perhaps Selenium cativifolium. Vill. is referrible to this variety.

**Straight Meadow-saxifrage.** Fl. July. Ch. 1830. Pl. 1\(\frac{1}{2}\) ft.

30. \(S.\) subflavum (Bieb. Hist. p. 147.) stem sheaths dilated, with pale margins; petioles and styles white, or hardly reddish.

\(\sharp\). Not perhaps Selenium cativifolium. Vill. is referrible to this variety.

**Puberulous Meadow-saxifrage.** Pl. 1 foot.

29. \(S.\) tortuosum (Lin. spec. p. 373.) stem striated, stiff, much branched, divaricate; leaves bipinnate, stiffish: leaflets trifid: segments linear, short, acute, with the margins and keel rather scabrous; petioles sheathing, oblong; involucre wanting or of 1-2 leaves; umbels 5-10-rayed; leaves of involucel about equal in length to the umbellules.

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**Straight Meadow-saxifrage.** Fl. July. Ch. 1830. Pl. 1\(\frac{1}{2}\) ft.

30. \(S.\) subflavum (Bieb. Hist. p. 147.) stem sheaths dilated, with pale margins; petioles and styles white, or hardly reddish.

\(\sharp\). Not perhaps Selenium cativifolium. Vill. is referrible to this variety.

**Puberulous Meadow-saxifrage.** Pl. 1 foot.

29. \(S.\) tortuosum (Lin. spec. p. 373.) stem striated, stiff, much branched, divaricate; leaves bipinnate, stiffish: leaflets trifid: segments linear, short, acute, with the margins and keel rather scabrous; petioles sheathing, oblong; involucre wanting or of 1-2 leaves; umbels 5-10-rayed; leaves of involucel about equal in length to the umbellules.

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**Straight Meadow-saxifrage.** Fl. July. Ch. 1830. Pl. 1\(\frac{1}{2}\) ft.

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**Puberulous Meadow-saxifrage.** Pl. 1 foot.

29. \(S.\) tortuosum (Lin. spec. p. 373.) stem striated, stiff, much branched, divaricate; leaves bipinnate, stiffish: leaflets trifid: segments linear, short, acute, with the margins and keel rather scabrous; petioles sheathing, oblong; involucre wanting or of 1-2 leaves; umbels 5-10-rayed; leaves of involucel about equal in length to the umbellules.

29. \(S.\) subflavum (Bieb. Hist. p. 147.) stem sheaths dilated, with pale margins; petioles and styles white, or hardly reddish.

\(\sharp\). Not perhaps Selenium cativifolium. Vill. is referrible to this variety.
UMBELLIFERÆ. LXXI. LIBANOTIS.

Sect. I. Eríotis (from aper, evion, wool, and one, oes, ota, an ear; in allusion to the petals being covered with short down). D. C. coll. mem. 5. p. 17. t. 3. f. 5. prod. 4. p. 149. Petals canescent from fascicles of short down (f. 55. F. g.).

1 L. Buchtormiánus (D. C. coll. mem. 5. t. 3. f. 5. mem. soc. gen. vol. 4.) stem angular, branched; leaves stiff, bipinnate, shining: leaflets broad-ovate or oblong, serrated at the top, with the serratures mucronate; peduncles stiff; involucrum almost wanting; involucels of many leaves, which are shorter than the umbelles; fruit villous from fascicles of hairs. \( \tau. \) H. Native of Siberia, very common in dry sterile places, especially about Buchtorminsk. Bábun Buchtormiánus, Fisch, in Spreng. pag. 2. p. 55. Schultes, sst. 6. p. 496. Athamánta rigidís, Horn, Hort. haf., 2. p. 960. Athamánta cervarívulós, Schrad. med. Sésell Buchtormiánus, Koch, umb. p. 111. Habit almost of Libanotis vulgáris. Rays of umbel unequal in length. Leaves of involucel clothed with white down. Involucrum wanting, or of 2 or 3 entire or trifid or pinnatifid leaves.


2 L. gravéolens; plant clothed with hoary pubescence; stem branched; leaves pinnate; leaflets in fascicles, unequal, 2-3 times plicate pinnate: segments 2 or 3-parted: lobes linear, cuspidate; involucra variable; involucels of many distinct leaves; fruit villously pubescent. \( \tau. \) H. Native of Altâia, on rocks, but rare near the Fort called Usktamengorsok, but frequent beyond the river Irtysh. Sésell gravéolens, Led. fl. Ross. alt. ill. t. 166. fl. alt. 1. p. 340. Involucrum wanting or of one bipinnate leaf, or of many lanceolate-linear reflexed lobes. Leaves of involucel hoary, length of the umbelles. Petals pilose on the outside. The plant has a strong aromatic smell, and excudes a resinous gummy juice.


3 L. Pátrínián (D. C. prod. 4. p. 150.) stem terete, branched; leaves bipinnate, canescent; leaflets multifid: lobes short, linear-subulate; umbelles 30-flowered; fruit rather compressed. \( \tau. \) H. Native of Altâia, on a schistous arid hill at the river Irtysh, and at Usktamengorsok. The plant exudes a yellow aromatic juice. Mercarcis of fruit much compressed from the back, as in other species of Séselli and Libanotís. Involucrum of a few multifid leaves. Leaves of involucels linear, connected together a little way at the base. Perhaps the same as L. gravéolens.

Pátrínián's Stone-parsley. Pl. 1 to 2 feet.

Sect. II. Eulibanótis (this section is supposed to contain the genuine species of the genus). D. C. l. c. Petals glabrous (f. 55. F. j.).


5 L. verticíllátá (D. C. prod. 4. p. 151.) stem terete, furrowed, naked at the apex; leaves pinnate: radical ones petiolate; cut; lower lobes decussate; involucra of few leaves: adult fruit naked. \( \tau. \) H. Native of Mount Parnassus. There is a plant very similar to this grows about Bayonne, as at a place called Chambre d'Amour. Athamánta vertíccíllátá, Smith, fl. grace. t. 275. prod. 1. p. 188. The plant is very different from Pychóitís vertíccíllátá, to which it has been joined by Sprengel.

Whortled-leaved Stone-parsley. Pl. 1 to 2 feet.
Cultr. See *Sézici*, p. 311. for culture and propagation.

LXXII. CENOLOPHIFLUM *Linn. s.n.*. *Pentándria, Digýnia*. Margin of calyx obsolete. Petals of involucel leaves of involucrum, about equal size, each involucre in an inflexed point (f. 55.G. l.f.). Transverse section of fruit nearly terete; mericarps with 5 equal wings, ribs, which are hollow inside: lateral ones marginating; vitta one in each furrow, and 2 in the commissure. Seeds semi-terete. 


3 C. *Petétivíllium* (D. C. prod. 4. p. 152.) stem striated; leaves of trifid petioles: the divisions bi-tripinnate; leaflets linear-lanceolate, quite entire, or trifid; upper ones pinnate, having the segments usually undivided; umbels erect, of many rays; involucrum involucres wanting. O. H. Native country unknown. *Peccédánnum petétivíllium*, Desf. hort. par. 1821. Leaves large, with elongated segments or leaflets. Umbels 12-20-rayed. Petals greenish-white, with an inflexed point. Calyx entire.

8 L. *tenuífólia* (D. C. prod. 4. p. 151.) plant glabrous; stem terete; leaves supra-decompound: leaflets linear, divaricate; sheaths dilated; leaves of involucrum 5, about equal in length to the middle of the rays of the umbel; leaves of involucres membranous ciliated edges, length of the umbellules; fruit glabrous. O. H. Native of Altai. Athamánta tenuífólia, Pall. ex Schultes, syst. 6. p. 495. Umbels lateral. Involute of few leaves; the outer leaf the largest. Calyxes glabrous. Mature fruit unknown.

Fine-tipped Stone-parsley. Pl. 1 to 2 feet. 

9 L. *Stéphâniâna* (D. C. prod. 4. p. 151.) stem simple, fissional, glabrous, striated; leaves glabrous, pinnate; leaflets oblong or ovate, sessile; cut: uppermost leaflets rather trifid; petioles ending in a sheath at the base; lower cauline leaves larger than the radical ones, and on longer petioles; umbels dense, sheathed; sheaths, as well as the involucres and involucres, are membranous and villous; involucres of many oblong-cuneate leaves; involucres of many linear leaves. O. H. Native of Altai, in the more humid parts of the Alps, especially at the fountains of the river Tscharyshch, and elsewhere. Athamánta compácta, Led. fl. rss. alt. ill. 1. t. 31. fl. alt. 1. p. 327. Athamánta cérvarâ® Pall. itin. 2. p. 560. Athamánta monstrosâ®, Steph. ex Willd. rel. in Schultes, syst. 6. p. 495. *Ligístitum* athamánticum, Adans, miss. Petals erect, ovate-oblong, with an inflexed point. Styles equal in length or longer than the mericarps. Fruit nearly cylindrical, a little compressed from the sides, ploise, crowned by the permanent calyx and styles; mericarps with 5 filiform ribs: lateral ones marginating; vitta 2 in each furrow, and 4 in the commissure.

Var. 0. *pinnatifida*: leaves pinnate; leaflets pinnatifid; segments linear, a little cut.

*Stephan's* Stone-parsley. Pl. 1 to 1½ foot. 

10 L. *Cachóoides* (D. C. prod. 4. p. 151.) plant glabrous, glaucous; stem terete; leaves pinnate; leaflets multifold: lobes linear, entire; superior petioles dilated; involucres and involucres of many elongated acuminate leaflets. O. H. Native of Dahuria, near Nerstinski Sawod, Chárys Sibârica, Steph. ex Fisch. in cat. sem. 1823. Spreng. syst. 1. p. 892. Trev. act. soc. nat. ur. 13. p. 168. This species will probably form a proper genus, from the fruit being very much compressed from the back, in the dorsal ribs being prominent, and in the marginating ones being dilated into narrow wings. Vitta 2 in the commissure, covered, and one in each furrow. Seed flat, not involute, as in *Cinchó*, *Arcáda*, cadia, involucrul, and petals of *Libânòtis* fruit nearly of *Peccédánnum*. Ovary sometimes villous when young. Fruit glabrous. Petals glabrous. Perhaps this, with *Sézeli Patriníïnna*, will form a new genus, nearly related to *Agássizis in tribe Síriçvèë*.

*Cachyris-like* Stone-parsley. Pl. 1½ foot. 

Cult. See *Sézeli*, p. 311. for culture and propagation.

—Cultr. See *Sézeli*, p. 311. for culture and propagation.

LXXIII. CENOLOPHIFLUM *Linn. s.n.*. *Pentándria, Digýnia*. Margin of calyx obsolete. Petals of involucel leaves of involucrum, about equal size, each involucre in an inflexed point (f. 55.G. l.f.). Transverse section of fruit nearly terete; mericarps with 5 equal sharp rather winged ribs, which are hollow inside: lateral ones marginating: vitta one in each furrow, and 2 in the commissure. Seed semi-terete, inclosed in a dry pericarp, which is adnate to it when young (f. 55.G.).—Glabrous perennial herbs. Leaves bipinnate or many times ternate; leaflets divaricate, rather trifid; segments lanceolate, cuspitate, quite entire, nervcd. Involute wanting or of one leaf; involucres of many leaves (f. 56. G. c.). Flowers white. This genus is nearly allied to *Cnidium*, but differs in the seed being inclosed in a dry lower pericarp when mature.
Parsley-like Cnidium. Pl. 2 feet.

4. C. venosum (Koch, umb. p. 109.) stem terete, smooth, straight, hardly branched above; leaves pinnate; leaflets pinnatifid or bipinnatifid; segments linear, or oblong-linear, acute, quite entire or trifid; involuca wanting or of few leaves; leaves of involucels sometimes, about equal in length to the umbellules. 2. H. Native of Germany, about Halle and Witenberg; and of Caucasus and Siberia, in rather moist places. Séseli venosum, Hoffm. fl. ger. p. 144. Séseli dubium, Schkuh, handb. 1. p. 217. Schultes, syst. 6. p. 399. Séseli saxifragum, Schott. bartb. p. 397. Sélénium praténsis, Spreng. fl. hal. p. 92. t. 2. Séseli selincoudés, Besser. cat. hort. crem. p. 130. Séseli alpinum, Bib. fl. taur. no. 557. ex suppl. p. 243. Sélénium lineare, Schum. enum. pl. saland. 1. p. 95. Sheaths of leaves oblong; superior ones close. Involuca of few leaves. Leaves of involucres and involucels entire. There are varieties of this with more or less dissected leaves. Perhaps the German plant and the Siberian are the same.


5. C. anomálum (Lled. fl. ross. alt. ill. t. 311. fl. alt. 1. p. 330.) stem furrowed, glabrous, twiggy; leaves pinnate; leaflets bipinnately cut; segments cut or nearly entire, acute; leaves of involuca oblong-linear, entire, pinnatifid, or bipinnatifid. 2. H. Native of Altinâ, in fertile humid meadows, in the valleys of the rivers Tscharysch and Kotsum, near Alexandrowsk. Gmel. fl. sib. 1. p. 190. t. 42. and 43. There is also a stemless variety found on the banks of the river Tschegam. Root fusiform. Leaves pale green, glabrous. Involucres and involucels of many leaves; those of the involucres are oblong, entire, and ciliated, and about equal in length to the umbellules. Petals white. Fruit beset with glittering atoms; vittea 1-3 in each furrow, and 2 in the commissure. Stylopolium pulvinate. Calyx 5-cleft.

Anomalous Cnidium. Pl. 1½ to 2 feet or more.

6. C. cuneatum (Lled. fl. ross. alt. ill. t. 312. fl. alt. 1. p. 331.) stem furrowed, glabrous, branched; superior branches verticillate or opposite; leaves bipinnate; lower leaflets ternate; upper ones 2-3-parted, or cut, cuneate; leaves of involuca oblong-elliptic, a little toothed at the apex; leaves of involucels broad, oblong, entire, mucronate. 2. H. Native of Siberia, in meadows at the river Kelyk, but rare. Root fusiform. Leaves pale green, glabrous. Rays of umbel 12-20. Calyx with 5 minute teeth.


7. C. fontanésii (Spreng. umb. spec. p. 41.) stem striated, dichotomous at the apex; leaves ternately decumposed; leaflets rather trifid; segments linear, bluntish; leaves of involuca and involucels many, linear, acuminate. 2. H. Native of Algiers, in fields near Shibia. Lascertipus pumicadaëdis, Desf. fl. alt. 1. p. 254. t. 71. Lascar. Fontanésii, Pers. enc. 1. p. 313. Lascar. Atlánticum, Poir. suppl. 3. p. 394. Ligásticum Fontanésii, Spreng. in Schultes, syst. 6. p. 565. Perhaps the furrows of the fruit are furnished with 1 or many vitres, and therefore may be either a species of Ligásticum or Cnidium; but the habit is that of Cnidium.

Desfontaines Cnidium. Pl. 1 to 2 feet.

8. C. saufruticosum (Cham. et Schlecht. in Linnea. 1. p. 387.) stem shrubby, naked, decumbent; branches erect, leafy; leaves ternately decumposed; leaflets short, rather trifid; sheathes of leaves permanent. 2. G. Native of the Cape of Good Hope, in sand by the sea-side. Caulis saufruticosum, Berg. cap. p. 77. The habit of this plant is very different from all the other species.

Saffruticos Cnidium. Shrub decumbent.


Diffuse Cnidium. Pl. 1 foot.

10. C. carphophorum (Bieb. suppl. p. 212.) stem nearly simple; leaves pinnate; leaflets cuneiform, pinnatifid; segments linear, bluntest; involuca of 1-2 elongated, somewhat pinnatifid leaves. 2. H. Native of Caucasus. Lascertipus Caucasicum, Bieb. fl. taur. 1. p. 222. Said to be allied to Lascertipus Diacrisum, and Muun nuttellum. Leaves of involucels subulate, shorter than the umbellules. Stylopolium and styles dark purple.


11. C. meffoulium (Bieb. suppl. p. 212.) stem unknown; leaves pinnate; leaflets profusely pinnatifid; segments linear-subulate; involuca and involucels of many subulate, reflexed leaves. 2. H. Native of the Alps of Caucasus. Involucres of 6-8 leaves. Involucels longer than the flowers. Flowers of a beautiful rose colour.

Memen-leaved Cnidium. Pl. 1 to 2 feet?

12. C. canadensë (Spreng. in Schultes, syst. 6. p. 415. exclusive of many of the synonyms) stem angular, flexuous; leaves bipinnate, shining; leaflets many-parted; segments lanceolate; involuca and involucels of few leaves. 2. H. Native of North America, at the mouths of large rivers from Canada to Carolina; at the mouth of the St. Lawrence, in Canada. Selúnum Canadense, Michx. fl. bor. amer. 1. p. 155. A'pium bipinnatum, Walt. carol. p. 115. The fruit is unknown, and therefore it is a doubtful species of Cnidium. Flowers white.


Cult. See Séseli, p. 311. for culture and propagation.


Lin. syst. Pentândria, Diguîna. Calyx toothless. Petals lanceolate, entire, with an involute point. Fruit oblong, crowned by the reflexed styles; transverse section roundish-elliptic, furrowed on both sides, from the raphé being nearly central, not marginal; mericarps rather convex on the back, with 5 contiguous, thick, elevated, wingless, bluntly keeled ribs, therefore the transverse section is triangular, spongy inside; lateral ribs not broader than the rest, nor marginal. Vittea solitary in the furrows, which are narrow, and twin in the commissure. Seed adhering to the tegument, compressed, not angular.—A glabrous, green, biennial herb: with a very long, branched, thick root, which is spongy inside, and intercepted by transverse, membranous dissepiments. Stem short, nearly simple, thick, fusiform, leafy at the base, striate above, and scabrous at the strige. Leaves tripinnate; sheaths large; rachis smoothish; lobes linear, scabrous on the margins, and on the dorsal nerve, mucronate at the apex. Umbels terminal, of many rays: rays 14-33, very rough, and very unequal; central ones much the shortest. Involuca wanting, rarely of 2 leaves; involucels of from 4-12 linear-subulate, quite entire leaves, which are much shorter than the umbels. Flowers greenish. Stylopolium large.

1. P. scabra (Gay, l. c.), 2. H. Native of the Eastern Pyrenees, in the valley called d'Eynes, at a place called La Ceiulade de Nouri, among the debris of schistous rocks, at the elevation of 7200 feet, a little below the limits of perpetual snow. Selúnum scabrum, Lappre. abr. 1818. p. 147. Spreng.

Seabron's Pettita. Pl. 1/2 to 3/2 foot.

Cult. Sow the seeds in a dry situation in spring, in light earth.

**LXXV. ENDRESSIA** (in honour of M. Endress, a young botanist, who has travelled in the Pyrenees). Gay, in ann. sc. nat. 26, p. 223.

Lin. syst. Pentádria, Diégynia. Teeth of calyx at first obscure, but increase in length as the fruit comes to maturity; they are at last erect and subulate, and longer than the stylopodium. Petals without claws, quite entire, ovate-lanceolate, acuminate, and very acute, with an involucrate point. Fruit compressed a little from the sides, oblong-elliptic, crowned by the reflexed styles. Mericarps convex on the back; with 5 distant, equal, filiform ribs; lateral ribs marginating; furrows of fruit very broad; vitex 6 in the commissure, 4 in the lateral furrows, and 3 in the dorsal ones, all distinct. Seed adhering.—A perennial, smooth herb; with an oblique root, which is naked at the neck. Stem slender, quite simple, angularly striated, smooth, unless just under the umbel, where it is scabrous, a foot high, bearing 2 or 3 leaves. Leaves pinnate; leaflets sessile, decurrent, palmately 5-parted; segments palmately 3-5-crenate; lobules linear, cuneate. Umbels terminal, small, dense, when in fruit nearly globose; with short, stiff, smooth rays. Involucrum wanting, very rarely of 3-4 leaves; involucels of 1-5 linear-subulate leaves, which are about equal in length to umbellules, and sometimes much shorter. Petals white. Stylopodium small.

Carophorae bipartite.


Pyrenæa Endressia. Pl. 1 foot.

Cult. See Centélfolium, p. 513. for culture and propagation.

**LXXVI. THASPUM** (from the Isle of Thapsia, which gave the name to the Thapsia of the ancients; in allusion to its affinity with that genus). Nutt. gen. amer. 1, p. 196. exclusive of some species. D. C. prod. 4, p. 153.

Lin. syst. Pentádria, Diégynia. Margin of calyx 5-toothed. Petals elliptic, tapering into a long, inflexed point. Fruit not contracted from the sides, somewhat elliptic; mericarps convex, with 5 winged, nearly equal ribs; furrows striated, each furnished with 1 vitæ; and the commissure with 2. Seed terete.—Perennial herbs, natives of North America. Involucra wanting; involucels unilateral, of 3 leaves. This is a very distinct genus from Smyrniun and Zizia; but it is evidently allied to Cnidiun, from the fruit, but is distinguished from that genus in the calyx being 5-toothed, in the petals not being emarginate, in the involucels being 3-leaved, and in habit.

§ 1. Umbels opposite the leaves. Flowers dark purple.

1 T. atropúrupérum (Nutt. gen. amer. 1, p. 196.) radical leaves petiolate, cordate, undivided; cauline leaves pinnate, of 3-7 ovate-oblong, cartilaginosly toothed, petiolulate leaflets.

1. H. Native from Carolina to Virginia, on hills; frequent about Philadelphia. Smyrniun atropúrupérum, Lam. dict. 3, p. 567; Ell. sketch. 1, p. 306. Cnidiun atropúrupérum, Spreng. in Schultes, syst. 6, p. 418. Flowers greenish white, but at length becoming dark purple. Fruit small, with the wings exerted, and membranous.

Dark purple-flowered Thaspium. Crt. 1810. Pl. 2 feet.

§ 2. Umbels terminal. Flowers yellow.

2 T. barbinóde (Nutt. gen. amer. 1, p. 196.) lower leaves somewhat triternate: superior ones binate; leaflets ovate-cuneated, acute, unequally and deeply serrated, but entire at the base. 2. H. Native about Philadelphia, on the shady banks of the Schuykill. Ligústícum barbinóde, Mích. fl. bor. amer. 1, p. 167. Smyrniun, Muhl. cat. p. 32. Thaspia trifóliáta, Mill. dict. no. 57. Spreng. in Schultes, syst. 6, p. 615. Umbel dichotomous, terminal. Petals yellow. Fruit elliptic, with 7 wings; the alternating ones larger than the others. Stem pubescent at the joints, the rest glabrescent.


3 T. acteífoliúm (Nutt. l.c.) leaves binate; leaflets oval, equally toothed; umbels somewhat verticillate; lateral ones sterile. 2. H. Native of Canada, on the banks of the St. Lawrence, near Tadoussach; and of Virginia. Ligústícum acteífoliúm, Mích. fl. bor. amer. 1, p. 166. Herb 3 feet high. Leaves of involucels saccate. Fruit oblong-oval, with 10 rather winged ribs.


Cult. The species of this genus will grow in any common garden soil, but best in peat; and are easily increased by dividing at the root, or by seed.


Lin. syst. Pentádria, Diégynia. Margin of calyx 5-toothed. Petals on long claws, sparsely obovate, with a triangular inflexed point. Fruit a little compressed from the sides; mericarps with 5 sharp, rather winged, equal ribs; lateral ribs marginating; vitæ 6-4 in the furrows, which are broad, and 8 in the commissure. Carophorae bipartite. Seed rather semiterete.—Glabrous, perennial herbs. Radical leaf binate; leaflets large, ovate-lanceolate, unequally serrated. Stem much branched, naked at the apex. Involucra wanting, of 1 leaf; involucels of 2-5 leaves. Flowers white, those in the disk of the umbel sterile.


Cult. See Thaspium above for culture and propagation.


Lin. syst. Pentádria, Diégynia. Margin of calyx 5-toothed. Petals obovate, emarginate, or entire, with a very short unguiculate inflexed point. Fruit attenuated at the neck; transverse section nearly terete, or a little compressed from the sides; mericarps with 2 filiform, wingless, epical ribs; lateral ribs marginating; vitæ 2 or 3 in each furrow. Seed somewhat semi-terete. Carophorae unknown.—Perennial or biennial herbs, usually velvety from vili on the stem, leaves, and fruit.
UMBELLIFERÆ.

LXXVIII. Athamanta.

Leaves trinerved or pinnate; leaflets cut or multifid, involucral of 1 or few leaves; involucres of many leaves. Flowers white.

2 A. Cervariéfolia (D. C. prod. 4. p. 155.) stem suffrutescent at the base, caudex-formed; leaves glaucous, glabrous, trinerved; leaflets broad, ovate, cuspidately serrate; lateral ones somewhat bifid; terminal ones trifid; involucre of 1 or few leaves.


6 A. Sícula (Lin. spec. p. 532.) stems hoary from pubescence; leaves trinervate, rather divided; leaflets ovate, pinnatifid; segments short, bluntish; petals villous on the outside. 2. H. Native on Mount Garganus, Apulia, Sicily, and among calcareous rocks, on Mount Atlas. Desf. fl. atl. 1. p. 332. Schultes, syst. 6. p. 491. exclusive of the syn. of Bocconi. Œ. H. Native of the Levant, between Aleppo and Bagdad. Herb half a foot high, sparingly branched. Leaves of involucra and involucres ovate-oblong, apiculated. Petals some of them cleft at the apex, and others entire. Immature fruit unknown, and therefore the genus is rather doubtful.

Canescens Spignel. Pl. ½ foot.

† Species not sufficiently known, and will perhaps, when more fully examined, be removed from the genus altogether.

8 A. Depressa (D. Don, prod, fl. nep. p. 184.) leaves bipinnate, pubescent; leaflets very slender, many-parted; segments linear, mucronate; scales filiform, assurgent, velvety, exceeding the leaves; umbels simple or compound; involucrum of 5 pinnatifid leaves.


Depressa Spignel. Pl. ½ foot.

11 A. girantia (D. Don, spec. fl. nep. p. 184.) leaves supra-decompound; leaflets ovate, awned, deeply serrated, glabrous; involucre of many leaves; petals bipartite; fruit ovate, pubescent.


Grand Spignel. Pl. 3 to 4 feet.

10 A. tereus (D. Don, prod. fl. nep. p. 185.) leaves bipinnate, glabrous; leaflets pinnatifid; segments linear, acute, furrowed above; involucres of 5 short leaves; involucres of many leaves, equal in length to the rays; stem straight, terete, smooth.

2. H. Native of Siberia (ex Steph. in herb. Wild.). There are 3 specimens under this name in Willdenow's herbarium, which are very distinct from each other; one of which is Laserpitium Daucus; the second Rümia sessiloides, and the third is Rümia athamathoides. The plant is therefore doubtful.

Caraway-leaved Spignel. Pl. 1 foot.

Cult. These plants will grow in any common garden soil; and are either increased by dividing at the root, or by seed.
LXXIX. LIGUSTICUM (so named from some of the species growing abundantly in Liguria). Koch. umb. p. 104. f. 44-47. but not of Lag. D. C. prod. 4. p. 157.—Ligusticum species of authors.

Linn. syst. Petasáadia, Dígyinia. Margin of calyx 5-toothed, or obsolete. Petals obovate, acute, emarginate, with an inflexed point, on very short claws. Transverse section of fruit nearly terete, or a little compressed from the sides; mericarps with 5 sharp, rather winged, equal ribs: lateral ribs marginalizing; vitte many, both in the furrows and commissure. Seed almost semi-terete.—Herbs, for the most part perennial. Leaves decumbound, or ternately divided. Involuta various; involucels of many leaves. Flowers white.

§ 1. Margin of calyx evidently 5-toothed: teeth permanent.

1 L. Scótiu (Linn. spec. p. 530.) stem slightly branched at the upper part, striated, smooth; leaves biarticulate, opaque; leaflets rhomboid, broad, acute, smooth, serrated; involucra of unequal, partly leafy, entire leaves; leaves of involucel numerous, lanceolate, rather unequal. 2. H. Native of Lapland, Norway, &c., North America, and Siberia; Kotzebue's Sound, and Kamtchata; Scotland on the sea-coast about the Firth of Forth; also on the western coast; very abundant in rocky places; about Dunstanburgh Castle in Northumberland. Smith, engl. bot. t. 1257; Fl. dan. t. 297. Torrey, fl. un. at. 1. p. 313. Chalm. et Schlecht. in Novit. 3. p. 390. Apollo Séctica, Lam. dict. 1. p. 173. Séesi Scótiu, Riv. pert. p. 59. A. piim ternánum, Willd. herb. in Rem. et Schultes, syst. 6. p. 491. Flowers white, with a reddish tinge; anthers red. Fruit oblong, having the commissure furnished with 6 vitte. Root fusiform, warm, and pungent. The herb is eaten either crude or boiled by the natives of Scotland and its isles. The flavour is highly acid, and though aromatic, and perhaps not unwholesome, is very nauseous to those who are unaccustomed to such food. L. Scótiu, Lour. coch. p. 183. cultivated in Cochín-china, belongs probably to a distinct genus, from the circumference of the petals being entire.


§ 2. Margin of calyx minutely 5-toothed. Involuta of many leaves.

2 L. Carnólia (Host, fl. aust. 1. p. 378.) stem erect, branched, striated; radical leaves trinervate; leaflets decurrent, pinnate-parted; segments pinnaflid, mucronate; involucra of many leaves, which are toothed at the apex. 2. H. Native of Carniola, on a mountain called Groszlichenberg; and of Silézia. Fruit large, nearly 3 lines long, ovate-oblong, having the ribs short and a little winged, and with the furrows broad and furnished with 3 vitte each. Teeth of calyx very small.

Carniolian Lovage. Pl. 2 to 3 feet.

3 L. Alátum (Spreng. umb. spec. p. 125.) stem furrowed and winged; leaves supra-decompound; leaflets petiolate, ovate, decurrent, pinnaflid; segments deeply serrated, oblong; involucra of few leaves; leaves of involucels setaceous, about equal in length to the umbellules. 2. H. Native of Carnacuss, in grassy places. Rem. et Schultes, syst. 6. p. 551. Athamánta alata, Bieb. fl. nur. 1. p. 214. Cidium myrhisflórum, Bieb. suppl. p. 212. Flowers rose-coloured when young, but at length becoming white; anthers red. Margin of calyx short, 5-toothed. The commissure, according to Koch, is furnished with 4-6 vitte, and the furrows with as many, from which it differs from the genus Cidium and especially from C. apífólium, which is very like.


4 L. Verulaéum (All. pl. edn. no. 1319. f. 60. f. 1.) stem branched, striated; leaves supra-decompound; segments rather remote, linear, cuspidate; leaves of involuca pinnaflid at the apex. 2. H. Native of Dauphiny, Piedmont, and Jura, on the lower alps, in open places; and of Dauria, but not of the Pyrenees, because L. Berulaeácum of Lapeyr. is Séseli Lámnitís, Laserpitium Daúricum, Jacq. hort. vind. 3. t. 38. Ligusticum Seguérii, Vill. dauph. 2. p. 615. exclusive of the synonymes. Furrows of fruit furnished with 3-4 vitte each, and the commissure with 8 vitte. ex Koch, umb. p. 105. Stems usually spotted.


5 L. Cynaplifólium (Viv. in litt. 1820. ex D. C. prod. 4. p. 158.) stem terete, branched; leaves decumbound from the petiole being much branched; leaflets multifid: segments linear, acute; involuca and involucels of many leaves; umbel of many rays; umbellules nearly globose, many-flowered. 2. H. Native of Corsica, in the fissures of rocks. Habit almost of Cidium apióides or Ligusticum Seguérii, but is easily distinguished from them in the involuca being of many leaves; and from L. Berulaeácum it is distinguished by the stem being hardly striated, in the leaves of involucels being undivided, and in the umbellules being more crowded with flowers. Matures fruit not seen.

Fool's-parsley-leaved Lovage. Pl. 3 to 4 feet.

6 L. Consóliúm (D. C. prod. 4. p. 158.) stem terete, branched; leaves supra-decompound, glabrous; leaflets pinnaflid; lobes acutely toothed; involuca and involucels of many linear, acute, deflexed leaves, which are as well as the rays of the umbel and upper part of the stem pubescent. 2. H. Native of Nipaul, on high mountains. Laserpitium conifolium, Wall. mss. Plant tall and very showy. Radical leaves 2 feet long, with trifid petioles. Mericarps with 5 wings, and having many vitte in the furrows.

Houlaec-leaved Lovage. Pl. 4 to 6 feet.

7 L. Stiutáium (D. C. prod. 4. p. 158.) stem terete, branched; leaves bipinnate; lobes or leaflets entire, acute, rarely cut; involuca and involucels of 5-6 linear, spreadingly-deflexed leaves, which are glabrous as well as the stems and rays of the umbel. 2. H. Native of Nipaul, in the Great Valley, in rice-fields. Laserpitium striatum, Wall. mss., is but referable to the genus Ligústícum from the mericarps being furnished with 5 wings, and in the furrows being furnished with many vitte, &c.

Striped Lovage. Pl. 3 to 4 feet.

8 L. Cynaplifóliúm (Guss. pl. rar. p. 130. t. 26.) stem striated, branched; leaves shining, tripinnate; leaflets pinnaflid; segments short, cuneiform, trilobed, obtuse, awned; approximate; involuca and involucels of many linear, permanent, many leaves; fruit oval, glabrous. 2. H. Native of the kingdom of Naples, in Abruzzo, in open places of valleys. Allied to L. Pyrécúnum.

Wedge-leafletted Lovage. Pl. 1 to 2 feet.

9 L. Miscelón (Ledebe. fl. ross. alt. ill. t. 310. fl. alt. 1. p. 321.) lower leaves ternately bipinnate; lower leaflets petiolate, ternate: upper ones and segments of the lower ones oblong, pinnaflid, or cut, decurrent; involuca of many lanceolate-linear, deciduous leaves; involucels of many linear, permanent leaves. 2. H. Native of Altaia, near Riddersk, Alexandrowsk, and Belaja at the river Buchimorsk. L. Pélompréícúnum, Pall. ill. 2. p. 582. The root fusiform, supcase, perhaps biennial. Stem solitary, branched, furrowed, glabrous. Leaves pale green above, and pale glaucous beneath. Petioles of radical leaves half a foot long, ternate, and the divisions bipinnate. Rays of umbel variable in length. Calyx with 5 minute teeth. Petals white. Mericarps with 5 rather winged ribs; having the furrows furnished with 3 vitte, and the commissure with 4-6. It differs from L. Lándicuúm of Aiton, in the involuca being of many leaves.
Two-coloured-leaved Lovage. Pl. 4 to 5 feet.
10 L. canadensis (Ait. hort. kew. 1. p. 348. ed. 2. vol. 2. p. 142.) leaves supra-decompound; leaflets cuneiform, cut, glabrous; involucra of 2 rather foliaceous leaves; ribs of fruit membranous, glabrous. 2. H. Native country and the rest unknown.

§ 3. Margin of calyx obsolete. Involution wanting, or of few leaves.—Silurus species, Koch, in litt. 1828.

11 L. pyrenaicum (Goun. ill. 14. t. 7. f. 2. exclusive of the syn. of Seguier) stem branched, striated; leaves supra-decompound, shining; leaflets pinnatifid: segments linear, mucronate, short, divaricate; involucra of a few caducous leaves. 2. H. Native of the Pyrenees, in open places. D. C. fl. fr. 4. p. 309. Cudium Pyrenaicum, Spreng. umb. in Schultes, syst. 6. p. 416. L. Pyrenaicum, Koch, umb. p. 105. Sessil aristatum, Ait. hort. kew. 1. p. 359. This plant is generally confused with L. fulvicicum, but it is perfectly distinct. It is hardly to be distinguished from L. Seguieri, unless in the furrow of the fruit being furnished with many vitte, and the commissure with 6-8 vitte.


13 L. Corsicum (Gay, in ann. sc. nat. 26. p. 222.) stem nearly simple, few-leaved, striated; leaves tripinnate; leaflets palmate-pinnatifid: lobules small, linear, cuspidate; involucra wanting, or of 1 leaf; rays of umbel measured; involucres of many linear-subsalate, serrated leaves, which are about equal in length to the umbelless; teeth of calyx oblong; ribs of fruit scarious from denticulations. 2. H. Native of Corsica, on the mountains, at the elevation of 5000 or 6000 feet. Vitte in the lateral furrows 3, in the dorsal 4, also 4 in the commissure. Habit of Menna matellatum, from which it differs in the petals being emarginate, not entire.

Corsican Lovage. Pl. 1 ft. Pl. 3 to 1 ft.
14 L. Peccedanobes (Presl, in herb. Honke, ex D. C. prod. 4. p. 138.) stem branched, furrowed; leaves decumbent; leaflets linear; umbels opposite the leaves; rays angularly winged; involucra wanting, or of few leaves, which are multifid at the apex; involucres wanting, or of few leaves. 2. H. Native of Chili. The specimen is very like the rest, but varies in the involucra and involucres being sometimes wanting. Calyx oblong, somewhat wider at the base than at the apex. Petals wanting. Petals 4, alligatus, with an inclined point. Fruit ovate, roundish, with 4 or 5 stripes.

Chervil Lovage. Pl. 1 to 2 feet.
22 L. aciphylla (Spreng. in Schultes, syst. 6. p. 53.) stem strongly veined; leaves oval; leaflets linear, sinuate, entire, petiolate, punctate; leaflets wanting, or of few leaves. 2. H. Native of New Zealand. Aciphylia squarrosum, Forst. gen. p. 42. t. 21. Involucra and involucres of 6 lanceolate-subulate leaves. Calyx 5-toothed, entire. Petals wanting, with an inclined point. Fruit ovate, roundish, with 8 stripes.

Pental-leaved Lovage. Pl. 1 foot.
23 L. du'rum (H. B. et Ktch, nov. gen. amer. 5. p. 19.) stem branched, terete, striated, firm; leaves ternately decumbent, rather hairy beneath; leaflets sessile, ovate-oblong, rather crenate-serrate, emarginate at the base. 2. H. Native of New Spain, in humid places. Flowers white. Fruit un-
known. According to Kunth, this is perhaps a species of He-
ricium.

Doubtful Lavage. Pl. 1 foot.

31 L. Græcum (D. C. prod. 4. p. 159.) stem erect, branched; leaves all bipinnate. *G.* H. Native of Greece. Ligusticium Graecum folio-apii, Tourn. cor. p. 23. According to the fruit, which is preserved in the herbarium of the museum of Paris, it is a true species of *Ligusticum*. Siam Graecum, Lour. and S. Graecum, Linn. are very different plants from this.

Greek Lavage. Pl. 25

25 L. Cape'nse (D. C. prod. 4. p. 159.) stem erect, branched; leaves bipinnate; leaflets short, thick; involucre and involucels of 3-5 leaves; fruit ovate; calyx obsolete. *G.* G. Native of the Cape of Good Hope. Athamānta Capensis, Burm. fl. cap. p. 7. In Burmann's herbarium there are specimens of several plants fastened on the same sheet of paper, under the name of *Athamānta Capensis*, therefore the one which he meant to go under this name is doubtful.

Cape Lavage. Pl. 2 feet.

Cult. See Athamānta, p. 316. for culture and propagation.


Lin. syst. Pentandria, Dicygina. Margin of calyx obsolete. Petals obovate-oblong, narrowed into an inferred point, entire, or rather emarginate, appendiculate at the base, or sessile and truncate. Transverse section of fruit, nearly terete. Mericarps with 5 sharp, rather winged equal ribs: lateral ribs marginating; vitta many in each furrow, and so close together as to appear like a single broad one; and 4-6 in the commissure. Seed somewhat semi-terete. — Glabrous, perennial herbs. Leaves cut into many parts; leaflets linear. Involucre wanting, or of few leaves: involucels of many leaves. Flowers cream-coloured or greenish. This genus is very nearly allied to *Ligusticum*.

1 S. pratensis (Bess. unum. pl. vohl. p. 43. no. 1367.) stem angular; leaves supra-decompound; leaflets pinnate-parted; segments rather remote, lanceolate, nerved, a little channelled, cuspidate; involucre obsolete; or of 1-2 leaves. G. H. Native of humid meadows, from Europe to Tauria; and Siberia; in Britain, in rather moist meadows and pastures. Peucedanum Silaüs, Lin. spec. 354. Smith, engl. bot. 2142. Mart. rast. t. 128. Jacq. aust. t. 15. Hayne, arzg. gew. t. 7. 5. Crithmum Silaüs, Spreng. umb. prod. 40. Schultzes, syst. t. 6. p. 416. Silaüs Silaüs, Roth, fl. germ. 1. p. 129. Sēsēi pratensis. Riv. pot. irr. t. 58. Cramt, ausdr. 3. p. 209. t. 6. f. 1. Sēsēi selinoides. Jacq. enum. vind. 227. Ligusticum Silaüs, Duby, in D. C. bot. gall. 1. p. 230. — Mor. hist. 3. sect. 9. t. 6. f. 10. — Lob. icon. 738. f. 5. — Petiv. herb. brit. t. 28. f. 5. Root spindle-shaped. Herb smooth, dark green. Leaves bipinnate; leaflets elliptic lanceolate, entire; either undivided or separated almost to the base into 2 or 3 segments of the same shape and magnitude. Umbels of several unequal rays. Involucra of from 1-3 linear, white-edged leaves, but most frequently none at all. Involucels of several linear leaves. Flowers yellow or greenish white. Fruit roundish-ovate. The whole plant, when being fed, with this root, is subjected in some parts of Norfolk to give a bad flavour to milk and butter; but cattle certainly do not eat it; except accidentally, or in small quantities, sufficient perhaps to have the effect in question. Where this herb abounds in pastures, it may be found partially cropped, though generally left almost entire.


2 S. tenuifolius (D. C. mem. soc. gen. vol. 4.) stem terete, striated; leaves 3 or 4 times pinnate; leaflets pinnatifid or trifid; segments linear, cuspidate, somewhat divaricate; involucrum wanting; fruit cylindrical. *G.* H. Native of Hungary and Tenerife! Peucedanum tenuifolium, Desf. hort. par. 181. f. 238. — T. Poir. dicr. 5. p. 228. but not of Thumb. Peu-
cedanum serotinum, Pers. exch. 1. p. 310. Peucedanum Mathioli, Spreng. in Schultzes, syst. t. 6. p. 559. Silaüs Mathioli, Koch, umb. p. 106. Spreng. pag. 2. p. 56. umb. spec. p. 113. This plant is usually to be found in gardens under the name of *Méum Sibiricum*.


3 S. alpestreis (Bess. enum. pl. voll. p. 43. no. 1405.) stem striated; leaves bipinnate or tripinnate, with the ramifications spreading; leaflets pinnate; lower segments 3 or 4-parted: upper ones entire: lobes all entire, linear, cuspidate; involucre almost wanting; leaves of involucels setaceous; fruit ovate-oblong. *G.* H. Native of the south of Podolia, in open fields; and of Altai, near Schumilin, at the river Irtysch. Peu-


4 S. longifolius (Led. fl. ross. alt. t. 1. p. 323.) leaves supra-
decomposed, with the ramifications rather divaricate; leaflets somewhat tripartite: segments lanceolate or linear, cuspidate; involucre almost wanting; leaves of involucels setaceous. *G.* H. Native of Siberia, in meadows, about the rivers Irtysch and Borchorminsk. Ligusticium longifolium, Willd. spec. t. 1. p. 1428. Athamānta demudāta, Fisch. Angulis Fischeri, Spreng. in Schultzes, syst. t. 6. p. 605. Crithmum Mediterrānium, Bibl. fl. taur. 3. p. 215. Ligusticum Fischeri, Link, enum. t. 1. p. 276. Cnidium Fischeri, Spreng. syst. t. 1. p. 890.—Gmel. sib. 1. p. 188. no. 4. t. 41. The Alpian plant differs from the one collected on the banks of the Volga, in the leaves being more profoundly divided, nearly ternate; in the segments being linear, not 3-5-parted; in the lobes being lanceolate; and in the involucre being usually of 1 leaf. Furrows of fruit furnished with 1 vitae each, but sometimes the outer ones have 2. Tar. b. deiricatum: segments of leaves longer.

2 H. Cnidium divaricatum, Led. ind. sem. hort. jlorp.


5 S. carvifolius (Meyer, pflanz. p. 125.) root fusiform; stem furrowed and striated, branched; leaves bipinnate; leaflets of the radical leaves decussate: of the cauline linear, divaricate; involucre and involucels composed of short setaceous leaves; rays of umbel very unequal. *G.* H. Native of Caucasus, on the higher mountains. Bünium peucedanoides, Bibl. fl. taur. 1. p. 208. suppl. 211. D. C. prod. 4. p. 116. Sium peucedanoides, Spreng. umb. spec. 41. no. 5. Peu-
cedanum carvifolii, Bibl. Pets. pale yellow. Vitae solitary in the furrows, according to Besser: but there are 2-3 vitae in nearly all the furrows, rarely solitary.


6 S.? peucedanoides (D. C. prod. 4. p. 161.) root turnip-

formed; stem striated, fuscular, somewhat trichomatic at the apex; leaves nearly ternate; segments linear, acute, entire, with revolute margins; involucre of 1 leaf; involucels wanting; umbels of 4-5 rays; umbellules 8-10-flowered. O.? H. Native of South America, on temperate mountains about Popayan. Cnidium peucedanoides, H. B. et Kunth, nov. gen. amer. 5. p.
UMBELLIFERÆ. LXXXI. WALLROTHIA. LXXXII. MEUM. LXXXIII. GAYA.

15. Peucedanum juncceum, Willd. mss. in Schultes, syst. 6. p. 576. From the yellow entire petals, it comes nearer Silius than Cañorum, but the involucre is wanting.

Untouched-wort-like Pepper-saxifrage. Pl. 2 feet?
Cult. See Athamanta, p. 116. for culture and propagation.


Lin. syst. Pentândria, Diggînia. Margin of calyx obsolete. Petals entire, elliptic, acute at the base and apex. Transverse section of fruit nearly terete. Mericarps with 5 prominent, acutely keeled, equal ribs: lateral ribs margining; vitae many in the furrows, and 6-8 in the commissure. Seed nearly semi-terete. —Glabrous, perennial herbs. Stems nearly simple, terete, striated. Leaves supra-decompound, or pinnate; leaflets multiform; segments slender, linear, acute. Involuta almost wanting; involucels of many leaves. Flowers white or purple. This genus is distinguished from Ligusticum in the calyx being without teeth and in the petals being entire.


Lin. syst. Pentândria, Diggînia. Margin of calyx obsolete. Petals obovate, more or less emarginate, with a broad inflexed point. Fruit oval, rather compressed; mericarps with 5 elongated, wing-formed ribs, which are contiguous at the base, obtuse: outer ones marginal. Vitæ none. Carphophore bipartite. Seed nearly semi-terete, easily separated from the covering. —Perennial mountain herbs. Leaves all radical, pinnate; leaflets bipinnatifid; lobes linear. Stems naked, simple. Umbel compound. Involuta of a few leaves. Flowers equal, fertile, white. This species differs from Mèum in the petals being emarginate, not entire; in the furrows of the fruit being without vitæ, and in the fruit being rather bladdery.


Pyrenæca Gaya. Pl. 2/ foot.

Cult. These plants should be grown in pots, in a mixture of peat and loam, and placed among other alpine plants. They are increased by seeds.

3. Physalis. Dig.Digita. Margin of calyx obsolete. Petals obovate or ovo-vate, with an inflexed point. Styles at length diverging, reflexed. Fruit rather compressed from the back, or convex: mericarps with 5 winged ribs; the lateral ribs twice the breadth of the others, and marginal; vitice unequal, 3 than the lateral furrows, but usually 2 in the dorsal ones, and 4-8 in the commissure. Carpophore bipartite. Seed flat on one side—Glabrous, biennial herbs. Stems branched, fistular. Leaves bipinnate; leaflets pinnate-parts; segments oblong-linear. Umbels terminal, of many rays. involucrata wanting, or of few leaves. Involucels of 5-7 linear-subulate leaves, which are about equal in length to the umbellules, or longer. This is an ambiguous genus, intermediate between the tribe Peucedanide and Seselideae; with the first it agrees in the mericarps being winged, and with the last in the mericarps being convex on the back. Flowers white.

1 C. Fischi... (Wimm. et Grab. ex flora 1828. p. 215.).

3. H. Native of Siberia, Tartary, Ingriz, Silesia, and Savoy, on the mountains; North America between the Coppermine and Mackenzie rivers; Labrador; Straits of De Fuca, on the north-west coast; Kotzebea's Sound, C. Tatariacum, Hoffm. l. c. Perhaps C. Iongicum or C. neglectum, Fisch. in litt. is not distinct from this. Perhaps Ligusticum Gmelini, Cham. et Schlecht. in Linne. 1. p. 391. and Gmel. sib. 1. p. 195. t. 44. appertains also to this plant. Perhaps all these different names belong to different species, or probably to the same, but they are so much confused that it is impossible to extricate them.

Fischer's Conioselnum. Pl. 1 to 2 feet. Cult. This plant is only to be increased by seed, which should be sown in the open ground early in spring. A light soil suits it best.


LIN. Syst. Pentандрия, Dijijüna. Margin of calyx obsolete. Petals roundish, entire, inovolute, ending in an obovate segment. Transverse section of fruit nearly terete; mericarps with 5 elevated, sharp, rather winged ribs; lateral ribs a little broader than the rest, and marginating; pericarp spongy, with large cells. Seed semi-terete, constituting a free nucleus, which is covered with copious vitice in every part.—A suffruticose, glabrous, fleshy herb. Petioles saccating at the base. Leaves bipinnate; leaflets oblong-linear. Umbels compound. Involucra and involucels of many leaves. Flowers white. This genus differs from all others in the present tribe as the genus Archangelica does from the rest of the genera in tribe Angie-lieae, in the seed being a free nucleus, covered with copious vitice.

1 C. Maritimum (Lin. spec. 554.). 2. H. Native of rocky sea-shores and cliffs; as along the Black Sea, in Tauria; and along the Mediterranean Sea; and of Europe along the shores of the Western Ocean from Spain to Britain; and of the Canary Islands; in Britain, on the rocky sea-shore and cliffs. Smith. engl. bot. 819. Jacq. hort. vind. 2. t. 87. Cachrys maritima, Spreng. in Schultes. syst. 6. p. 442. Crétchamsus, Cord. hist. 201. f. 1. Sæmpire, Petiv. hort. brit. t. 24. f. 8.—Lob. icon. 392. f. 1.—Bauh. hist. 3. p. 2. 194. f. 1. Moris. hist. 3. p. 289. sect. 9. t. 7. f. 1. Root branched, creeping extensively. Herb greenish-glaucescent, salt, and pungently aromatic in flouvoir. Stems ascending. Leaves alternate; leaflets uniform, lanceolate, tapering at the base. Leaves of involucra and involucels ovate, acute, spreading, rather short. Flowers white, with yellowish anthers. Samphire is called types-pierre and Saint-pierre of which our English name appears to be a corruption) in French; Meerwurz in German; and Finschio marina in Italian. The herb makes an old-fashioned English pickle, as those know who read Shakespeare's King Lear. It is sold in the London shops; but there are many plants preferred for the same purpose, as Salixviera herbs and Judia crithmifolia, &c., and is a frequent addition in salads. In taste it is crisp and aromatic, and constitutes a light and wholesome condiment. It is generally gathered in places where it is found wild; and the allusion to the practice by Shakespeare, in his description of Dover Cliffs, is well known. The plant is also used medicinally.

Far. B. Canariaca (Cav. anal. scient. nat. 1801. vol. 3. p. 35.) leaves more sheathing (ex Cav.), but the difference between the Canary Island plant and the European is hardly discernible. Sea-side or Common Samphire. Fl. Ang. Brit. Pl. 1 ft. Cult. Samphire is propagated by parting the roots, or by sowing the seeds in April; but is rather difficult of cultivation. Marshall says it "is a cool situation; but yet prefers a sandy or a gravelly soil, and plenty of water. Some," he adds, "have found it to do best in pots, set for the morning sun only." J. Braddock placed it in a sheltered dry situation, screened from the morning sun, protected it by litter during winter, and in spring sprinkled the soil with a little powdered barilla. "This I do," he says "to furnish the plant with a supply of soda, since, in its native place of growth, it possesses the power of decomposing sea water, from which it takes the fossil alkali, and rejects the muriatic acid. With this treatment it has continued to flourish at Thames Ditton for some years, producing an ample supply of shoots, which are cut twice in the season, for pickling or to be used in salads.

Tribe VI.

ANGELICEAE (this tribe contains plants agreeing in important characters with the genus Angeliceum or Orthospermum paneczygáte tetrapéréa, Koeh. umb. p. 98. D. C. prod. 4. p. 164. Fruit compressed from the back, girdled by a double dilated winged margin, from the raphie being central or nearly so, hence the fruit is furnished with 2 wings on both sides. Mericarps with 5 ribs; dorsal 3 fíliform or winged: lateral 2 always expanded into wings, and always broader than the dorsal ones, even if they rest upon the back. Seeds rather convex on the back, and flatish in front.—A strong, perennial, glabrous, smooth herb. Stems terete. Leaves ternately decomposed; leaflets obovate-cuneate, deeply toothed, rather coriaceous. Involucra and involucels of many leaves. Flowers yellow.

odour of this plant is strong and peculiar; its taste is warm and aromatic. It abounds with a yellowish, gummy, resinous juice, very much resembling Opópanax. Its qualities are supposed to be similar to those of Angelica and Masterwort in expelling flatulences, and exciting perspiration; therefore chiefly used in hysterical disorders and uterine obstructions. The leaves, eaten as salad, are accounted as emmenagogue. The root, which is not so ungrateful as the leaves, is said to possess similar virtues, and may be employed in powder.


Cult. This plant will grow in any soil; and is easily increased by dividing at the root.


Lin. Syst. Pentádrinia, Digínia. Margin of calyx obsolete. Petals obovate, emarginate. Fruit compressed from the back, furnished with 2 wings on each side from the raphe being central; mericarps with 5 membranous, winged ribs; wings of the lateral ribs twice the breadth of the others; vitive 1 in each furrow, but there are often 2 in the outer furrows, and always 2 in the commissure. Carphophage bipartite. Glabrous perennials. Leaves ternately decimated or tripartite; leaflets pinnatifid. Umbels compound. Involuture of few leaves; involucres of many leaves. Flowers white.


2 S. Caudóli (D. C. prod. 4. p. 165.) stem terete; rays of umbel pubescent; petals obovate, having the middle nerve crested above. 2. H. Native of Nepal, on the mountains at Komon. Angelica? Caudóli, Wall. mas. Leaves ternately decimated; leaflets slender, multifid. Umbels terminal, of many rays. Involuture of many or of few leaves, or wanting, or soon falling off. Petals nearly as in the genus Pychódis. Fruit as in S. carvifólia, but larger, and more ovate. Seed furrowed on the back.

De Candolle's Milk-parsley. Pl. 2 feet.

3 S. Terébínthum (Hook. fl. bor. amer. 1. p. 266. t. 95.) plant glabrous in every part; leaves tripiniate, stiff, glaucous; segments pinnatifid; lobes short, linear, acute; peduncles elongated; involucru wanting; leaves of involucres linear, short; mericarps with 5 broad, undulating ribs. 2. H. Native of the north-west coast of America, common on the sandy grounds of Wallalawah river. Root fusiform. Rays of umbel very unequal. Fruit rather large, ovate, compressed. The genus to which this plant belongs is truly doubtful. The fruit not corresponding to which any described genus.

Turpentine Milk-parsley. Pl. 1 ft. foot.

4 S. Stellátum (B. Don, prod. fl. nep. p. 185.) leaves pin-
Umbelliferæ. LXXXIX. Angelica. XC. Archangelica. 323


Mountain Angelica. Fl. July. Clt. 1818. Pl. 3 feet. 3 A sylvatris (Lin. spec. 361.) stem polished, striated, with wide spreading branches, pubescent at the apex, as well as the peduncles; leaves bipinnate or tripinnate, rather glabrous; leaflets ovate or ovate-lanceolate, acute, unequal and sharply serrated, never deciduous at the base; involucra of 1-2 leaves. 2 H. Native of Europe, Siberia, and Caucasus, in watery places, alder, and along the banks of rivers, common; plentiful in like situations in Britain. Smith, engl. bot. t. 1128. Woodl. suppl. t. 265. Ger. enac. 999, f. 1. Dodon, pempt. 318, f. 1. Camer. epit. 900, f. 1. Lob. icon. 699. Angelica palustris, Riv. pent. t. 17. Hayne, arz. gew. 7. t. 9. Water Angelica, Petiv. herb. brit. t. 24, t. 10. Imperatoria sylvatris, D. C. fl. fr. 4, p. 286. Selinum sylvatris, Crantz, auct. 177. Selinum anglici, Roth, germ. 1, p. 133. Selinum pubescens, Mooneh, math. p. 80. Umbels convex, with numerous general and partial downy rays. Flowers white, but more generally flesh-coloured. Points of petals erectish. Vitae in the commissure superficial. The flowers are more bitter, and less grateful than the Archangelica, but the virtues of both are similar. The herb dyes a good yellow.

Wild Angelica. Fl. July. Britain. Pl. 4 to 6 feet. 4 A. lucida (Lin. spec. 360.) stem terete, glabrous; leaves bipinnate; leaflets equal, ovate, deeply serrated; sheaths dilated; involucra and involucels of 5 leaves each. 2 H. Native of North America, from Canada to Pennsylvania, in moist shady places. Pursh, fl. amer. sept. 1, p. 193. Jaccq. herb. vind. 3, t. 24. — Moris, hist. sect. 9, t. 5, f. 5. Ang. lobata, Walt. car. p. 115. ex Torr. The petals are said to be elliptic, pale green, with an indented point. By Jaccqin the flowers are said to be whitish, or of a pale yellow-colour.


Sect. II. Pseudangelica (this section is supposed to contain false species of the genus; hence the name). D. C. prod. 4, p. 168. — Angelica species, Spreng. Koch. — Selinum species, Gounan. — Sæeli species, Lin. Petals elliptic, acuminated or mucronated. The fruit is like that of the last section, but differs in there being usually 4 vitae in the commissure. Rays of umbels very unequal, the central ones very short.


7 A. integrifolia (Walt. car. p. 115.) leaflets entire, petiolate. 2 H. Native of Carolina. The rest unknown. Entire-leafletted Angelica. Pl. ?

8 A. bracteata (Roxb. in Beav. triv. voy. append. p. 297.) stem flatular; leaves unequally pinnate; leaflets rather cordate, 5-7-nerved, finely jagged, serrated; bracteas or sheaths broad, nearly orbicular at the base of the petioles, and between the segments; involucra and involucels of 6-10 broad lanceolate leaves each. 2 H. Native of the Island of St. Helena, where it is called by the inhabitants common angelica. Petals white, oval-oblong, incurved. Umbellules glabrose. Fruit unknown. Perhaps a species of Archangelica.

Bracteate Angelica. Pl. 3 to 4 feet. Cult. Any soil will suit the species of Angelica, and they are easily increased by seeds.


Lan. syst. Pentändria, Dipsáceae. Margin of calyx with 5 short teeth. Petals elliptic, entire, acuminate, with an incurved point. Fruit rather compressed from the back, furnished with 2 wings on each side, from the rhiphe being nearly central. Mericarps with 5 thickish keeled ribs, the 3 dorsal ribs elevated, and the 2 lateral ones dilated into wings, which are twice the breadth of the others. Seed not adhering to its tegument, but distinct from it, and covered by copious vittae all over. Carpophore bipartite. — Perennial or biennial herbs. Leaves pinnate; leaflets broadly ovate, acute, coarsely toothed; terminal one lobed. Petioles large, sheathing, and rather bladdery. Involucra wanting or nearly so; involucels dimidiate, of many leaves. Flowers white or greenish.

1 A. officinalis (Hoffin. and Koch, l. c.) stem polished, striated, a little glaucous, branched in the upper part; leaves ternate, then pinnate; leaflets ovate-lanceolate or subcordate, cut, and sharply serrated, partly decurrent; the odd one deeply 3-lobed; petioles dilated and tumin at the base; involucra of a very few linear leaves, or wanting altogether; leaves of involucels linear-lanceolate. 2 H. Native of Europe, on mountains by river sides, particularly in Lapland, Sweden, Norway, Germany, Carpathian mountains; and from Unalaska to the Bay of Esschelzolts, and now cultivated everywhere for the sake of its stalks. In Britain in watery places, rare, apparently a naturalized plant; as about the Tower of London, and on the banks of streams frequent; in marshes among reeds by the side of the t t 2
UMBELLIFERÆ. XC. Archangelica. XCI. Opopanax.

Thames, between Woolwich and Plumstead, very abundantly; in the county of Durham; and at Broadnare, about 7 miles north-west from Birmingham. Angelica Archangelica, Lin. spec. 360. Oed. fl. dan. t. 396. Nees, off. pl. 9. t. 14. Haym. arr. gen. 7. t. 8. Smith, engl. bot. 2561. Woody. bot. t. 60. Angelica officinalis, Mönch, meth. p. 81. Angel. sativa. Mill. dict. no. 1. Riv. pent. t. 15. Petiv. herb. brit. t. 24. f. 9. Camer. ep. 999. f. 1.—Ger. enac. 1000. Flowers greenish. The plant delights in moist situations, or the bank of running water; but will grow freely in any soil or exposure. The plants are raised from seed, and for a bed 4½ feet by 6, sown in drills a foot apart, to be transplanted; half an ounce of seed will be requisite. "Sow in August, or as soon as the seed is ripe, as the plants will come up earlier and stronger than from sowing in the spring. When the plants are advanced from 4 to 6 inches high, transplant them into rows 2 feet apart. They will soon strike root, and advance quickly in strong growth. In the second year these strong erect branchy stalks will be several feet high, producing large umbels of flowers and seed, ripening in autumn, which, as well as the leaves of the plant, are used in medicine. But for candying, the young shoots of the stem and stalks of the leaves are the useful parts; being cut while green and tender in May and June, they are made by the confectioners into the sweet-meat called angelica. In the second year, if seed is not wanted, cut the plants down in May, and the stock will send out side shoots; by repeating this practice every year, the same plant may be long continued."—Aberrickie.


2 A. ATROPURPUREA (Hoffm. umb. 169.) stem polished, purplish, with a glaucous bloom, branched at the top; leaves ternate, then pinnate; leaflets ovate, acute, deeply serrated, and somewhat lobed: the terminal ones confluent; petioles dilated, and turbid at the base; branches and umbels pubescent; involucre wanting; the involucres of many narrow leaves. 3 H. Native from Canada to Virginia, in moist meadows. Angelica atropurpurea, Lin. spec. 360. Lam. dict. 1. p. 173. Torr. fl. un. stat. 1. p. 316. Angelica triquitata, Bigel. fl. post. p. 68. ex Torr. —Corn. cam. 169, with a bad figure.—Moris, hist. sect. 9. t. 3. f. 9. bon. Petals rusty purplish or white. The plant may be used in the same way as A. officinalis.


3 A. DECIÆRÆS (Leed. fl. ross. alt. illt. t. 166. fl. alt. 1. p. 316.) stem striated, with a glaucous bloom, furnished with leaves and axillary branches at the base; leaves pinnate or bipinnate; lower leaflets pinnate, upper ones pinnatifid; segments oblong, or ovate-oblong, acuminate, decurrent; odd one 3-lobed; involucra of many narrow leaves. 2 H. Native of Altaias, everywhere on the margin of rivulets. Flowers like those of A. officinalis, but varying more to yellow. Habit of A. officinalis, but differs in the leaves being more acuminate, those on the secondary branches of the petiole running down it a great way, and serrated their whole length. Fruit exalting a heavy smell when rubbed.

Decurcent-leafletted Archangelica. Fl. year. Pl. 6 to 8 ft.

4 A. LITTORALIS (Agardh, in litt. ex D. C. prod. 4. p. 170.) stem glabrous, terete, striated, hard; leaves bipinnate; leaflets ovate, acute, serrated: odd one 3-lobed; sheaths large; leaves of involucres rather scabrous, one-half shorter than the umbel-lules. 2 H. Native of the north of Europe, on the sea shore. Archangelica spuria or A. littoralis, Walh. carp. p. 84. Major, Lag. gen. nov. et spec. p. 13.?—Dodon. pempt. 318. f. 1? Flowers whish. Stem hard and acrid, not edible.

Sea-shore Archangelica. Pl. 4 to 6 ft.

5 A. GELMINIS (D. C. prod. 4. p. 170.) stem glabrous, terete, striated; leaves ternate; leaflets tripartite: lobes ovate, serrated, cuneated at the base; sheaths middle-sized; leaves of involucres about equal in length to the umbel-lules. 2 H. Native of Kamtschatka and Kotzebue's Sound. Angelica Gelminis, Worrnsh. ex Fisch. in litt. A pium ternatum, Tall. in Spreng. syst. 1. p. 890. The plant is used for culinary purposes by the Russians in Kamtschatka. Fruit like those of A. officinalis, but more oblong, and the vitve are fewer. There is a dwarfer variety of this found in Kotzebue's Sound.

Gelminis's Archangelica. Pl. 1½ foot.

Cult. The species are of easy cultivation; and are only to be increased by seed.

Tribe VII.

PEUCEDANEE (so named from the plants agreeing with the genus Peruciadaum in many points), or Orthospermæ paucijugata dipræe.—SCLEREE, Koch, umb. p. 88. Fruit flatly or lenticularly compressed from the back, girded by an entire dilated smooth winged flattened or rather convex margin. Mericarps with 5 filiform ribs, which are rarely winged; lateral ones contiguous to the margin, or running into it; raphe marginal, hence the fruit is only furnished with one wing on each side, not as in tribe Angeliceæ, furnished with 2 wings on each side from the raphe being central. Seed flattened or convex on the back.

XCI. OPOPANAX (from οποπανακτιανα in many points) Færula scopoletinæ, Spreg. Lax. spec. Pentandria, Digynia. Margin of calyx obsolete. Petals roundish, entire, involute, with a acutish point. Stylodium broad, thick. Styles very short. Fruit flatly compressed from the back, girded by a dilated convex margin. Mericarps with 3 dorsal filiform slender ribs; the lateral ones absent or not distinct from the margins; vitve 3 in each furrow, and 6-10 in the commissure. Seed flat.—A perennial herb. Root thick. Stamens 3. Leaves bipinnate; leaflets unequally crenate, crenated, obtuse. Umbels composed of many rays. Inflorescence and involucres of few leaves. Flowers yellow.

O. CHIRONIUM (Koch, 1. c.) 2 H. Native of the south of France, in open situations; also of Italy, Sicily, Croatia, and Greece. Nees, off. pl. 17. t. 11. Guld. bot. 288. Woodv. med. bot. t. 113. Seinum Opopanax, Crantz, austral. pl. p. 61. Færula Opopanax, Spreng. spec. 77. Schultes, syst. 6. p. 597. Pastinaca alissima, Lam. fl. fr. p. 465. Lob. icon. 702.—Moris, hist. 3. p. 315. sect. 9. t. 17. f. 2. Sheaths at the flowering branches spathaceous, and sometimes destitute of leaves. Leaves hairy, especially beneath. Although the plant is native of the south of Europe, the gum-resin, which is said to be obtained by wounding the stalks, is brought from the Levant and the East Indies, sometimes in round drops or tears, but more commonly in irregular lumps, of a reddish yellow-colour on the outside, with specks of white;
inwardly of a paler colour, and frequently variegated with large white pieces. It is supposed to be an emmenagogue, but is seldom used.

Chiron’s or Common Opopanax. Fl. June, July. Ct. 1640. Pl. 6 feet.

Cult. This is a plant of easy culture; and may be increased either by seeds or dividing at the root.


Lin. Syst. Pentadactyla, Digynia. Margin of calyx with 5 short teeth. Petals ovate, entire, acuminate, with the points ascending or incurved. Fruit thinly compressed from the back, girded by a flattened dilated margin. Mericarps with 3 dorsal filiform ribs, and 2 lateral obsolete ones, which are lost in the dilated margin. Vitae 3 or more in the dorsal furrows, and 4 or more in the commissure. Seed flat. Carpophore bipartite. Herbs, with thick roots, tall stems, and supra-decompound leaves: leaves usually cleft into linear segments. Umbels of many rays: lateral ones usually opposite or verticillate. Involuta variable. Flowers yellow. Stems in many of the larger species filled with medulla, interspersed with fibres, as the stems of monocotyledonous plants.

Sect. I. Ferula’ago (an alteration from the generic name). Koch, umb. 97. Dorast and commissurall vita numerous, from 50 to 60. Involuta constantly of 4-5 leaves. Stems usually striated or angular.

1 F. sylvatica (Bess. cont. enum. pl. vohl. et pod. p. 44. no. 193.) stem striate, straited, rather angular; leaves pinnate, with 10-20 pairs of opposite bipinnate-parted leaves; lobes or segments linear, cuspitate; leaves of involucra ovate-lanceolate, deflexed. 2. H. Native of Volhynia, Caucasus, Podolia, and at the river Don, in woods and meadows. Peuce-danum officinale, Bess. prim. fl. galic. et cat. hort. erem. 1816. Ferula nodiflora, Rochel. F. myriophylla, Bieb. miss. Ferulago sylvatica, Rchh. inc. bot. 4. p. 371. Leaves a foot or a foot and a half long.

Wood Giant-fennel. Pl. 6 feet.

2 F. rauclisaca (D. C. prod. 4. p. 171.) stem striated, angular; leaves pinnate, with 4-5 pairs of opposite leaflets; leaflets bipinnatifid; lobes or segments linear; involucra of 2-5 erect leaves, which are cuspitate at the apex, and membranously dilated at the base. 3. H. Native of Persia, at the foot of the mountains about Badala, where it was gathered by Szovits. Allied to F. sylvestri, but differs in the stem being more angular, and in the leaves being 3-4 inches long, and in the leaflets being only 4-5 pairs. Umbel terminal, of 12-14 very unequal rays. Herb glabrous, a foot and a half high.

Few-paired-leaved Giant-fennel. Pl. 1 1/2 foot.

3 F. Ferulago (Lin. spec. p. 356.) stem terete, striated; leaves supra-decompound; leaflets pinnatifid, divaricate; segments linear, cuspitate; leaves of involucra numerous, oblong-lanceolate, reflexed. 4. H. Native on hills and exposed places in the islands of the Mediterranean, and the adjacent region; and of Transylvania and Galicia. Spreng. umb. prod. p. 82. F. nodiflora, Jacq. asst. append. t. 3, and probably of all other authors.—F. latifolium, Moris, ox. sect. 9. t. 15. Lb. inc. t. 779. Dodon. pempt. t. 321. f. 2.

Ferulago or Broad-leaved Giant-fennel. Fl. June, July. Pl. 6 to 8 feet.

4 F. geniculata (Guss. prod. fl. sic. 1. p. 366.) stem terete, a little striated, gibbous at the nodi; leaves supra-decompound; leaflets decussate: segments linear, flat, acute, stiff, rather awned; floriferous branches alternate; leaves of involucra and involucels ovate-lanceolate, short; fruit oblong-elliptic, with acute prominent ribs. 5. H. Native of Sicily and the kingdom of Naples, on dry calcareous hills. F. rigidis, Tenore, fl. neap. append. 4. p. 15. exclusive of the synonyms. Bubon rigidos, Ucria ex Guss.—Bocc. mus. 2. t. 76.?

Geniculate-leaved Giant-fennel. Pl. 2 to 3 feet.

5 F. thyrsiflora (Sibth and Smith, fl. graece. t. 289. prod. no. 664.) stem angular and furrowed at the top; floriferous branches terminal, aggregate, compound; leaves supra-decompound; leaflets linear, elongated, roughish; leaves of involucra 4-6, linear-lanceolate. 6. H. Native of Candia, on rocks. Ferulago thyrsiflora, Koch, umb. p. 98. Vitae above 30 in the commissure, according to Koch, but in a specimen examined there are only from 20 to 25.


6 F. sylviola (Deuf. atl. 1. p. 352. t. 67.) stem angular and furrowed; leaves supra-decompound; leaflets pinnatifid; lobes linear, acuminate; leaves of involucra many, oblong-linear, reflexed. 7. H. Native of Italy, Naples, Sicily, Mauritania, and Portugal, on hills. F. nodiflora, Spreng. umb. spec. p. 84. but the figure of F. nodiflora in fl. graece. is destitute of involucra, and therefore does not belong to this plant; therefore the plant of Linnaeus is truly doubtful. F. Barrelieri, Tenore, in herb. Merat. Ferulago nodiflora, Koch, umb. p. 98. Ligusticum luteum, Poir. voy. barb. 2. p. 136. ex Poir. suppl. 3. p. 481. Peuce-danum Lucanisium and repliceto, Willd. herb. ex Spreng. syst. 1. p. 914. Vitae 60 in the commissure, ex Koch.

Var. B. campéstris (Bess. in litt. ex Spreng. syst. 1. p. 914.) segments of leaves linear-elongated.


7 F. stricta (Spreng. in Schultes, syst. 6. p. 592.) stem straight, stiff, furrowed; leaves ternately supra-decompound, straight; leaflets trinerved, triquetrous, filiform, glabrous; leaves of involucra ovate-oblong. 8. G. Native of the Cape of Good Hope.


Sect. II. Ferula’la (an alteration from the generic name). D. C. prod. 4. p. 172.—Ferula, Koch, umb. 96. Vitae 3 in each of the dorsal furrows, and 4 in the commissure. Involuta wanting. Stems terete.

*Stem leafy.

8 F. communis (Lin. spec. p. 355.) stem terete, branched; leaves supra-decompound, green; leaflets linear-setaceous, flaccid; central umbel nearly sessile; lateral ones male, pedunculate; involucre wanting; sheaths of upper leaves very large. 9. H. Native on hills in the region of the Mediterranean, from Portugal to Greece, and of Mauritania. D. C. fl. fr. 3. p. 343. F. nodiflora, Lin. spec. 356? Smith, fl. graece. t. 279.—Dodon. pempt. p. 321. f. 1. Lb. inc. t. 778. f. 2.—F. fennica, Plunt. Tourn. Moris, umb. 35. t. 2. hist. 3. p. 309. sect. 9. t. 15. f. 3. Lateral umbels usually opposite, rising from the axils of the sheathing petals under the central umbel. Fruit 5 lines long, and 3 lines broad. There issues from the stem when cut a yellowish feitid juice, which hardens on the surface of the wound. The dry dead stem is full of white pith, which easily takes fire, and the Sicilians use it for tinder. Hence the name of Prometheus. In Apulia, where the plant grows in great plenty, it is grateful to buffaloes, which form the chief part of the subsistence of many farmers there.

F. glauca (Lin. spec. p. 356.) stem terete, branched; leaves supra-decompost, glaucous beneath; leaflets linear, elongated, flat; involucra wanting; petioles of upper leaves dilated; central umbel pedunculate; lateral ones male, on longer peduncles. 2. H. Native of the south of France, at Merival, near Montpelier in the spot mentioned by Lobel; also of Provence, Italy, Sicily, Greece, &c. F. folio glauco, Bauh. hist. 3. p. 2. p. 45 with a figure. Fcrula et Ferulago, Lob. adv. p. 348. F. commünis, Gouan. hort. monsp. p. 140. F. glauca, D. C. fl. fr. suppl. p. 514. Schultes, syst. 6. p. 588. Leaves of involucra many, linear-setaceous, caducous, ex Spreng. but in the plants examined there has been no involucra from this; therefore Sprengel's plant is probably distinct from this.


10 F. bigdula (D. C. prod. 4. p. 173.) stem terete, branched, and is, as well as the petioles, quite glabrous; leaves bipinnate; leaflets pinnatifid; lobes short, few, acute, channelled, stiffish, hardly puberulous; umbels rather panicked, without any involucra. 2. H. Native of Persia, on rocks among the mountains about Seidkhozd. Very like F. Cásperca in the in florescence and fruit, but differs in the primary pairs of leaves being an inch and a half distance from each other, and the secondary pairs are more elongated; leaflets fewer; lobes fewer, stiffer, and rather fleshy. Sheaths larger, and rather glaucous.

Stiffish Giant-fennel. Pl. 3 feet.

11 F. Cásperca (Bieb. fl. taur. suppl. no. 551.) stem terete, branched; leaves triplicate pinnate; leaflets pinnatifid, soft, approximate; segments very short; umbels somewhat panicked; the peduncles of the lateral umbels furnished each with a subulate ligula at the base; involucra none. 2. H. Native of arid fields from Odessa to Sarepta; and of Caucasus, near Kishiar. Spreng. umb. spec. p. 81. F. carchoides, Fisch. in litt. 1822. There are varieties of this with either glabrous or pubescent leaves, according to Bieb. The habit is like that of Cachrys Odontálgica. Sheaths ciliate; upper ones almost destitute of leaves. Fruit oval, glabrous, 3 lines long, 1/3 line broad. Commissure furnished with 4 vitte. Umbel-bearing branches alternate; lower ones often opposite, and upper ones in whorles. Perhaps a species of Peucedanum, according to Boesser.

Caupian Giant-fennel. Fl. June, July. C1t. 1819. Pl. 2 to 3 feet.

12 F. orientalis (Lin. spec. p. 356.) stem terete, branched; leaves 5 times pinnate; leaflets multifid, setaceous, apparently puberulous when examined by a lens; sheaths large, ciliate; involucra wanting. 2. H. Native of Asia Minor, Greece, Caucasus on Mount Beschcharmak, and perhaps of Numidia. Lam. dict. 2. p. 456. Spreng. umb. spec. p. 89? Tourn. trav. 2. t. 379. Branches of root thick. Leaves a foot and a half long. Upper two-thirds of it are sheaths, and an inch broad. Sprengel refers to this the Fashbook of Jackson's account of Morocco. t. 7. Steven says it is the same as F. peucedanifolia, Willd. herb., but Pallis's figure, which is cited for it, is very different from our plant.


13 F. Pérsica (Willd. spec. 1. p. 1413.) stem terete, glauca; leaves ternately supra-decompost; leaflets rather remote or decurrently pinnate; segments linear-lanceolate, dilated, and cut at the apex; primordial umbel sessile; involucra and involucra wanting. 2. H. Native of Persia, and of Caucasus, on hills near Baku. Andr. bot. reg. 558. Sims. bot. mag. 2006. F. asafsátida, Mart. in Mill. dict. no. 9. exclusive of the synonyme of Kémf. Woodv. med. bot. 22. t. 8. Plench. icon. t. 202. Assa-fesátida, Hoppe, in phill. trans. 1785. p. 36. t. 3 and 4. The plant smells very strong of asafoetida, and there is a yellow gummy juice very like it flows from the plant, which in all probability has the same virtues as that of the true asafoetida, F. asafsátida. Plant of a yellowish hue.

Persian Asafoetida. Fl. June, July. C1t. 1782. Pl. 3 to 6 feet.

14 F. Tintozána (Lin. spec. p. 355.) stem terete, branched; leaves supra-decompost, shining; leaflets or segments oblanceolate, deeply toothed; upper petioles large, sheathing; terminal umbels on short peduncles; lateral umbels few, male, on longer peduncles; involucra none. 2. H. Native of Spain and Barbary, and in fields about Tangiers. Rivin. pentap. 3. t. 10. Herrn. par. t. 165. Moris. ox. sect. 9. t. 15. last figure. Desf. fl. atl. 1. p. 231. Fruit 6 lines long, and 3 lines broad. This plant is easily distinguished from the rest, in the leaflets being broader, and shining.

Tanger Giant-fennel. Fl. June, July. C1t. 1680. Pl. 2 to 8 feet.


16 F. Tolucce-inus (H. B. et Kunth, nov. gen. et spec. 5. p. 12. t. 418.) stem terete, fistular; leaves quadripinnate; leaflets or segments linear, acute, flat; involuca of one leaf; involucro of 3-7 linear leaves, which exceed the fruit. 2. F. Native of Mexico, in cold places near the town of Tolulco. Herb glabrous, a foot high, a little more. Rays of umbel unequal. Leaf of involueruma linear, shorter than the rays of the umbel. Leaves of involucro 5-6, very unequal, the longer ones exceeding the umbelulas. Flowers many, abortive. Vitte 4 in the commissure, and 3 in the furrows. Tolulco Giant-fennel. Pl. 1/2 foot.

17 F. petiolarius (D. C. prod. 4. p. 173.) plant quite glabrous; stems terete, branched, leafy at the base; petioles alternate, having the ultimate divisions very long, and cylindrically conical, acute, bearing no foliacium segments; upper sheaths small, undivided, acuminate; involucra and involucro none. 2. H. Native of Persia, among stones on the tops of the mountains about Seidkhozd, where it was collected by Szovits. The species is very remarkable in the absence of foliacia leaflets, and therefore the leaves are reduced to the naked petioles. Ultimate lobes of petioles 7-8 inches long, usually knotted at the third part of their length, as in Juncus articulatus, the knave indicating the places of the abortive branches. Umbels few-flowered. Young fruit oblong, glaucous.

Petiodar Giant-fennel. Pl. 2 to 4 feet.

18 F. seseloides (Meyer, planz. p. 126.) glabrous, glaucous cent; stem rather angular, leafy, branched; lower leaves bipinnate; leaflets pinnatifid; lobes linear; sheaths narrow: upper sheaths less, acuminate; umbels all fertile, pedunculate; involucro almost wanting; leaves of involucro sessile; vitte 1-3 in the furrows. 2. H. Native of Caucasus, on Mount Beschcharmak. Leaves of Seseli montanum; but the petals are yellow like other species of Férula. Margin of calyx obsolete. Fruit nearly like Peucedanum.

Seseli-like Giant-fennel. Pl. 2 to 3 feet.

** Stecus almost naked.

19 F. Assa-fesátida (Lin. mat. med. 79.) stem terete, simple, furnished with leafless sheaths; radical leaves pinnate, having 1 or 2 pinnatifidly cinated leaflets on each side; lobes oblong, obtuse; involucro wanting. 2. H. Native of Persia, in the provinces of Khorassan, Laar, and Fars. Assa-fesátida, Kémf. amun. p. 535. p. 536. with a figure. Stein
Asafoetida is well known by its peculiar nauseous fetid smell, the strength of which is the surest test of its goodness. This odour is extremely volatile, and of course the drug loses much of its efficacy in keeping. It comes in large irregular masses, composed of various shining little lumps or grains, partly whitish, partly brownish or reddish, and partly of a violet hue; those are accounted the best which are clear, of a pale reddish-colour, and variegated with many fine white tears. It is a gummy resin, but has the gum in largest quantity. It is the most efficacious of the fetid gums, and is commonly used in hysteria hypochondriasis, some symptoms of dyspepsia, amenorrhoea and chlorosis, flatulent cholics, and most diseases termed nervous; it is thought to be the most powerful remedy we possess for those peculiar convulsive and spasmodic affections, which often recur in hysterics. It is recommended as an emmenagogue, anthemimetic, expectorant, antiasmatic, and anodyne. Its action is quick and penetrating.

Asafoetida. Fl. July, Aug. Pl. 6 to 7 feet.

20 F. Szovitsian’s (D. C. prod. 4. p. 173.) stem terete, nearly naked, branched, glabrous; leaves tripinnate, clothed with velvety pubescence; leaflets deeply toothed, obtuse; umbels somewhat panicked, without involucra; fruit oval-obovate, flat, longer than the pedicels. 2. H. Native of Persia, at Seidkhozdji, in gravelly and stony places, where it was collected by Szovits. Neck of root appearing hairy from numerous erect fibres. Petioles of leaves trifid. Umbels terminal, on short peduncles. Fruit the size of F. communis.

Szovits’s Giant-fennel. Pl. 5 to 6 feet.

21 F. Pune’cens (Pall. ex Willd. rel. in Schultes, syst. 6. p. 598.) stem pubescent, panicked, nearly leafless; radical leaves clothed with hoary pubescence, ternately tripinnate; leaflets jagged: lobes linear, tripartite, obtuse; sheaths opposite, small; involucra and involucelles minute and caducous. 2. H. Native of Siberia.


22 F. Pumila (Pall. ex Willd. rel. in Schultes, syst. 6. p. 598.) stem smooth, panicked, leafless; sheaths naked; radical leaves pubescent, ternately tripinnate; leaflets pinnatifid; lobes decussate, bluntnish. 2. H. Native of Siberia.

Dwarf Giant-fennel. Pl. 1 foot.

23 F. Armena (D. C. prod. 4. p. 174.) glabrous; petioles ternate at the base, having the divisions bipinnate; leaflets short, divided into thick, oblong, obtuse, aggregate, somewhat whorled lobes; stem naked, terete; leaves of involucra and involucelles short, oblong; fruit elliptic. 2. H. Native of Armenia. Oreoselinum Armenii Sesseleos Massiliensis folio, Tourn. herb. Upper leaves reduced to short leafless sheaths.

Armenian Giant-fennel. Pl.? + Little known species.

24 F. brevifolia (Link, in Schultes, syst. 6. p. 592.) stem terete, glabrous; leaves supra-decompound; leaflets linear, channelled, divaricate, aciculiform, ciliate, elongated; involucra wanting; primordial umbels sessile. 2. H. Native of Portugal.

Short-leaved Giant-fennel. Pl.?

25 F. capillaris (Link, in Spreng. umb. spec. 85.) stem terete, glabrous; leaves trinervate; leaflets filiform, capillary, loose; sheaths of petioles almost wanting; umbels axillary; involucra of a few sessile leaves. 2. H. Native of Portugal. Narthecium, Dalech. lundg. p. 754. Ferula teniouri-folia, Mor. ox. sect. 9. t. 15.


26 F. necedantifolia (Wildl. herb. in Schultes, syst. 6. p. 592.) stem kheed, branched, leafy; leaves tri-nervate, stiff; leaflets trifidly pinnatifid, linear-subulate, elongated; involucra wanting; umbellules rather capitae. 2. H. Native of Siberia, at the Volga. F. nodiflora, Pall. ilin. app. p. 39. t. N. ed. gall. t. 56. F. Sibirica, Willd. spec. 1. p. 1411. Leaflets very long, nearly terete. Fruit unknown. The herbarium of Wildenow is said not to contain this plant.

Sulphur-mort-leaved Giant-fennel. Pl. 5 to 6 feet.

27 F. nudicaulis (Spreng. neu endt. 2. p. 149. but not of Nutt.) stem naked, furrowed, glabrous; radical leaves bipinnate; leaflets deeply serrated, mucronate; sheaths of upper leaves abortive; leaves of involucrum linear-baccate. 2. H. Native of Sicily, on the Nebrodos, in the higher pastures. Lasertipium resinosum, Presi, sic. p. 156. Leguminosum resinosum, Guss. ind. sem. 1826. prod. 1. p. 396. Fruit glaucous, compressed, marginated.

Naked-stemmed Giant-fennel. Pl. 2 to 3 feet.

28 F. fennicaeira (Nutt. gen. amer. 1. p. 183.) plant pubescent; stem short, naked, furrowed, glabrous; radical leaves pubescent, supra-decompound; leaflets linear, very narrow, acute, short: ultimate ones trifid; involucra wanting; involucelles univalent, digitate, with linear segments. 2. H. Native of North America, on the plains of the Missouri; and on the north-west coast near Fort Vancouver, and barren sandy grounds on the Columbia river; low hills near the source of the Wallawalla river, and on the Saskatchewan at Carlson House. Pastinaca fennica, Spreng. in Schult. PI. coreae, syst. 6. p. 587. Flowers yellow. Herbs smelling of fennel. Fruit furnished with 5 stripes, 3 of which are conspicuous. Umbel solitary, terminal. Sprengel refers to this Lomatium villosum, Rafin, in journ. phys. 1819. aug. 1. p. 101. and the flowers are said to be white by the author, but according to Nuttall they are yellow; and it is therefore also the Cosgweilá villósa, Schultes, syst. 6. p. 588.


29 F. Canadeïsis (Lin. spec. p. 356.) segments of leaves branched, shining, linear.—Native of Canada. Lin. horst. ups. p. 61. Gron. virg. p. 147. This is a very obscure plant, and probably the same as Angélica bicida.

Canadian Giant-fennel. Pl. 2 feet.

30 F. nuttallii (D. C. prod. 4. p. 174.) plant small, almost stemless, glabrous; leaves supra-decompound; leaflets linear, short, acute; scapes radical; rays of umbel elongated; involucra wanting; involucelles univalent, digitate, with linear segments. 2. H. Native of North America, on the plains of the Columbia; banks of streams among stones at the Great Falls of the same river. F. nudicaulis, Nutt. gen. amer. 1. p. 183. but not of Spreng. Smyrnium nudicaule, Pursh, fl. bor. amer. 1. p. 196.
Pastinaca medicaeae, Sprung. in Schultes, syst. 6. p. 587. Root fustiform. Plant having the odour of fennel, but more aromatic. This plant differs from the genera Férula, Pastinaca, and Smyrnium, in the flowers being white, not yellow, as in those genera.

*Nutallii* Giant-fennel. Fl. July, Aug. CIt. 1817. Pl. 12 to 2 feet?

31 F. ? *Palme'lla* (Hook. in fl. amer. bor. amer. 1. p. 268,) plant glabrous, nearly stemless; leaves bipinnatifid, on longish petioles, glaucous; leaflets linear, bluish; lower ones often again pinnatifid; peduncles rather shorter than the leaves; involucrum none; involucre unilateral, dimidiate, palmate, with the disk floriferous. 2. H. Native of North America, about Carlton House on the Saskatchewan. Root long, thick, rather fusiform. The involucres are very remarkable; truly palmate, gradually tapering into the broad petiole or ray, and bearing a small umbellule of white flowers on the disk.

*Palmella* Giant-fennel. Pl. 7/ foot.

32 F. *Aff'inis* (Bess. cat. hort. crem. 1816. p. 57.) Native near Odessa. This species is not described.

*Allied* Giant-fennel. Pl. 2 to 3 feet.

Cult. Any common garden soil answers the species of *Férula*; and they are only to be increased by seeds.

**XCHI. DOREM'A** (from *dorēma*, dorēma, a gift or benefit; not that the plant is considered pre-emminently deserving that title, but that the name is also agreeable to the ear). D. Don, in Lin. trans. vol. 16. p. 601.

LIN. SYST. *Pendudria, Digyinia*. Flowers sessile, immersed in wool. Margin of calyx 5-toothed. Petals ovate, with an inflexed point. Disk epigynous, cup-shaped, fleshy; with a plicate, rather lobulate margin. Style connate, recurved at the apex. Stigmas truncate. Fruit elliptic, much compressed from the back, girded by a complains broad margin; raphe very narrow, usually closed. Mericarps 5-ribbed; the 2 intermediate ribs distinct, filiform, at equal distances; lateral 2 confluent with the margins; vitreous prominent, one in each furrow, and 4 in the commissure, which is flat. Carpophore bipartite, filiform. Seed flat.—A robust, greenish, glaucous, Persian herb, with a perennial root, and clothed with glandular down, almost with the habit of *Opóqueuax Chiróium*. Leaves large, petiolate, somewhat bipinnate, 2 feet long; pinnae usually 3 pairs, each pair rather remote; lower leaflets distinct; superior ones confluent, deeply pinnatifid; segments oblong, mucronate, quite entire, or rarely a little loded, coriaceous, veined beneath, 1-5 inches long, and half an inch to 2 inches broad. Petioles and rachis terete, ribbed, pubescent, very much dilated at the base, and sheathing a little, with the upper margin winged and stipulate. Umbels profuse, racemose; umbellules globose, on short peduncles, usually disposed in a spicate manner. Peduncles terete, woolly, involucra and involucres wanting. Petals white. Stamens and styles yellow. *Ovarium* densely woolly. Fruit naked.

1. D. *AMon'ium* (D. Don, L. c.) 2. H. Native of the south of Persia, in the vicinity of Jezid Kast, a town of Irak El Ajam, the ancient Parthia, about 42 miles south of Isphahan. To discriminate and characterize those plants which more immediately administer to the wants and comforts of man, is one of the chief objects of practical botany; but it is a task replete with difficulties; the countries whence many of the substances are derived, particularly those belonging to the Materia Medica, being generally remote, and often inaccessible to travellers. Although the gnm Ammoniacum has held a place in the Materia Medica from a very early period, yet the plant from which it is obtained has hitherto remained almost totally unknown; and the same may be said of the analogous gun Galbanum, and many other articles derived from the vegetable kingdom, enumerated in the *Pharmacopoeia*. It is true Dioscorides and Pliny mention the plant which yields the gun Ammoniacum, the former under the name *delphinii* of Agasialis, and the latter under that of *Metopium*, and give Libya as its native country; but if the gun was ancienly imported thence, it must have been the produce of a different plant than ours; and probably identical with the species of *Férula*, represented by Jackson in his account of Morocco, as the gun now comes to Europe by way of the Levant and India. Dioscorides, whose opinion is adopted by all subsequent writers, derives the name Ammoniacum from Ammon or Hammon, the Jupiter of the Lybians, whose temple was situated in the desert of Cyrene, near to which the plant was said to grow. But it appears that Dioscorides was altogether mistaken as to its native country; and that the name Ammoniacum or Armoniacum, as it is indifferently written, is really a corruption of Armenianum; for it is now ascertained beyond all doubt, that the plant is a native of Persia, and that the gun must have been ancienly brought to Europe by way of Armenia; and we sometimes find the name of the apricot written Malum Amnoniacum. Willdenow, having seen some seeds picked from the gun-Ammoniacum, a species of Heracleum came up, which he called Heracleum gummarifum, but this appears to be identical with Heracleum Pyrenaeicum; but as the plant possesses no smell analogous to Ammoniacum, and affords no gummy substance whatever, it is probable it was only an accidental weed.

The materials from which the description was drawn were procured by Lieut.-Colonel Wright, of the royal engineers, in the district where the gun Ammoniacum was collected, which is given above, and presented by him along with other dried plants to the Linnaean Society. Every part of the specimen is covered with drops of a gum possessing all the properties of Ammoniacum; and this circumstance alone, independent of any other evidence, would seem sufficient to remove all doubt on the subject; besides the specimen has been compared with the portions of inflorescence and fruit, which are found abundantly intermixed with the gum in the shops, and they are found to agree in every particular. The name applied to the plant by Dioscorides is already pre-occupied by another genus of *Um belllelfer*, and that of Pliny is scarcely unexceptionable, as originating in a mistake, Metopium having been used by some ancient authors to denote the *Galbanum*, and by others the gum-Arabic tree; but most writers seem to agree in considering it the appellation of an ointment, or some oleaginous substance, rather than of a plant. The name *Dorema* has been given to avoid confusion.

The first volume of the *Dictionnaire Universel de Matière Médicale*, by Merat and De Lens, published at Paris in 1829, contains some valuable notices on the Ammoniacum plant, from which it appears that the plant was already known to Mr. Brown, and had been determined by him to constitute a new genus. We also learn from the same work that M. Fontanier, a geologist sent into the Levant by the French government, had visited the district where the plant grows spontaneously, and transmitted a drawing, together with specimens of the herb and gum, to the museum of natural history at Paris. M. Fontanier was informed that the plant grows likewise in Khorassan.

In the appendix to the first volume of the transactions of the Medical Society of Calcutta, p. 369, is an extract of a letter addressed to Dr. Wallich by Lieut.-Colonel Kennett, accompanied by a rude figure of the plant, which yields the gum-Ammoniacum, of which the following is a copy: "I have the pleasure to forward you a drawing and description of Oslane, a Persian plant that produces the gum Ammoniacum. It was procured by Capt. Hart, of the 5th battalion Bombay native regiment, whilst on sick certificate in Persia; and understanding it was a desideratum in botany, he has requested me to send it to you in his name. It is to be regretted that Capt. Hart did not know enough of botany to give a particular description of the plant,
umbelliferæ. xcli. dorema.

flower, and seed; but he brought away a root, with a piece of the stem, and some dry leaves attached; and which I have forwarded in a box to your address. You will observe the account of the plant was dated in July, 1822, though I only received it a short time ago.

"Description of the Oshak or gum-ammoniac plant, by Capt. Hart."

"It having been intimated to me while at Bushire by the Resident, Capt. Bruce, that the plant which produces the gum-ammoniac, called by the Persians Oshak, would be acceptable to botanists, as it was but imperfectly known, I procured the accompanying piece of stem, leaf, and flower, and took a drawing of one of the finest plants. Its height was 7 feet 2 inches, and the circumference of the lower part of the stem 4 inches. It grows principally on the plains between Yerdekanst and Kumisha, in the province of Irak, without cultivation. The gum is so abundant, that upon the slightest puncture being made, it instantly cozes forth, even at the ends of the leaves. When the plant has attained perfection, innumerable beetles, armed with an anterior and posterior probe of half an inch in length, pierce it in all directions; it soon becomes dry, and is then picked off, and sent via Bushire to India and various parts of the world; and is an article of considerable export. I am of opinion it might be cultivated with success in many parts of Kattywar, and the experiment might be worth the consideration of government. The gum might easily be procured by artificial means, which would answer the purpose equally well.

"From the part of the stem attached to the roots of the specimen I sent you, a considerable portion of the gum will be seen exuded, in which respect it resembles the Asafoetida plant, which mountains abounds in the south of Persia, particularly in the province of Pars."

The gum is collected about the middle of June; a tenth is remitted as tribute to the government; the rest is sent to Bushire on the Persian Gulf. Part of that imported to this country comes from the Levant; but the largest quantity and the best comes by way of India.

According to Major Willcock, who has visited the districts where the plant grows wild, the Ooshak or gum-ammoniac plant grows in great abundance over the arid plains in the vicinity of the town of Jezd Khāst, on the borders of the provinces of Fars and Irak, a district appertaining to the government of Ispahan. The white juice which forms the gum pervades the whole plant, but exudes chiefly from the principal stem. It either remains on them in lumps, or, falling to the ground, is gathered by the villagers in the autumn, and is sold by them. The Ooshak plant is to be met with nowhere but in the province of Irak, growing in very dry plains, gravelly soils, and exposed to an ardent sun.

Ammoniac has a nauseous taste, followed by a bitter one; and a peculiar smell, somewhat like that of Galbanum, but more grateful; it softens in the mouth, and acquires a white colour upon being chewed. It softens by heat, but is not fusible; when thrown upon live coals it burns away in flame. Such tears as are large, dry, free from small stones, seeds or other impurities, should be picked out, and preferred for internal use; the coarser kind is purified in solution, colature, and careful inspiration; but unless this be artfully managed, the gum will lose a considerable deal of its more volatile parts. These are often vended in the shops under the name of stained gum-ammoniacum, a composition of ingredients much inferior in virtue.

The general action of gum-Ammoniac is stimulant. On many occasions, in doses of 10-30 grains, it proves a valuable antispasmodic, deobstruent or expectorant. In large doses it purges gently, excites perspiration, and increases the flow of urine. It is used with advantage to promote expectoration in some pulmonary diseases, especially asthma and chronic catarrh; in dropsical affection to augment the flow of urine, and to support the salivation in small pox. In long and obstinate cholices, proceeding from viscid matter lodged in the intestines, this gummy resin has produced good effects, after purges and the common carminatives had been used in vain. Externally it is supposed to soften and ripen hard tumours, is often applied as dissolvent in white swellings of the knee, and other indolent tumours. A solution of it in vinegar has been recommended by some for resolving even schirrous swellings. It is exhibited internally combined with vinegar, vinegar of squills, assafetida &c. and in pills, with bitter extracts, myrrh, assafetida; externally, dissolved in vinegar, combined with turpentine, common plaster, &c.


xcv. eriosynaph. xcv. palimbia.

Erioseynaph (from ουρον, erion, wool, and σύνην, synaph, connection; in reference to the commissure, which is the connection of the two mericarps that compose the fruit, and which is clothed with wool-like down in the hollows between the nerves). D. C. coll. mem. 5. p. 50. t. 1. f. 9. prod. 4v. 175. —Ferula species, Fisch.

L. n. s. t. Pentándria, Digynia. Limb of calyx with 5 short blunt teeth. Petals ovate, entire, acuminate; points short, incurved. Fruit compressed from the back, girdled by a thickish margin. Mericarps with 3 dorsal filiform ribs, but the 2 lateral ones are lost in the thickish margin, which is spongy inside; furrows between the ribs broad, and furnished with 2-3 striae, and bearing 2-3 small vitæ; commissure without vitæ, marked by a middle nerve and 2 marginal ones, tomentose, and rather concave between the nerves. Seed complanate.—A perennial glabrous herb, with the habit of Ferula. Leaves decomposed: leaflets long, linear. Involucre and involucels none. Flowers yellow. This genus is very nearly allied to Ferula, but the singularity of the commissure of the fruit distinguishes it from all other umbelliferous genera.


L. n. s. t. Pentándria, Digynia. Margin of calyx obsolete. Petals elliptic, with an inflexed acute point. Fruit oblong or oval: the transverse section elliptic. Mericarps compressed from the back, having 5 filiform blunter ribs: the 2 marginal ones rather the broadest; furrows between the ribs furnished with 3-5 veins each; commissure bearing 2 broad markings. Seed oblong, with many stripes free from the pericarp.—Glabrous perennial herbs. Leaves tripinnate; leaflets mottilud. Stem terete, branched. Involucre of few leaves or wanting. Flowers cream-coloured. This genus differs from Peneclandum, in the furrows of the fruit being furnished with 3 vitre each, instead of one.

1 P. sala (Bess. enum. pl. vohl. 56. no. 1484.) stem terete, branched, naked; radical leaves tripinnate; leaflets many-

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2 P. Ramossisina (D. C. prod. 4. p. 176.) stem terete, much branched, sparingly leafy; leaves alternate: leaflets few, oblong, acutely cut; involucrum wanting; involucels of few leaves, fruit oblong. 2. F. Native of the East Indies, on the Pampa mountains on the confines of the province of Silhet. Selinum ramosissimum, Wall. mus. Root long, cylindrical, simple. Stem 2 feet high. Upper leaves reduced to the petioles. Fruit much flattened from the back; furrows furnished each with 2-3 obscure vittae; commissure covered with a pelliele, and therefore appearing without vittae at first sight.

Much-branched Palumbia. Pl. 2 to 3 feet?


Cult. See Peucedanum, p. 355. for culture and propagation.

XCVI. PEUCEADANUM (πυκνόεσχενος of Theophrastus and Dioscorides; said to be from πυκνό, peuké, a pinch, and δαννός, parched; the plant was so called on account of its strong smell, which resembles resin). Koch, umb. 92. f. 28. and f. 29. D. C. prod. 4. p. 176.—Peucedanum, Selinum, and Fétula, &c. of authors.—Orosesium and Thysellum, Hoffm. umb. p. 153. and 154.—Orosesium and Peucedanum, Lag. am. nat. 2. p. 90. Lin. syst. Pentádria, Digníga. Margin of calyx 5-toothed. Petals obvate, emarginate or entire, with an infelexed point. Fruit flattened from the back or lenticularly compressed, scariosus, pappus decurrent. Petals or involucra and involucels of many leaves. Peucedanum, having the ribs at equal distances, the 3 intermediate ones filiform, but the 2 lateral ones are more obsolete, and contiguous to the dilated margins, or lost in it. Vittae one in each furrow, but sometimes 2, and usually 2 in the commissure. Cardophora bipartite. Seed flat in front. Usually glabrous perennial herb. Leaves simply pinnate, or many times pinnate, or ternately divided. Umbels compound, terminal. Involucrata variable; involucels of many leaves. Flowers white or yellow or greenish yellow. According to Besser, the species with obcordate petals narrowed at the base are distinguished from the species with ovate petals, which are broadest at the base, and entire or a little emarginate at the apex. The first constitutes Orosesium, and the second the true species of Peucedanum.

Sect. I. Eupéuceadum (from eu, well, and Peucedanum; this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 176.—Peucedanum legitíma, Koch, f. c.—Peucedanum, Gertrn. fr. 1. t. 21. Spreng. syst. 1. p. 1082. Margin of mericarps narrow. Vittae 2-4 in the commissure. Dorsal ribs of mericarps 5, the outer 3 more remote than the rest. Involucrata usually wanting or of few leaves, rarely of 5-8 leaves.

*flowers yellow.*

1 P. paniculátum (Lois. fl. gall. p. 722.) stem terete, striated, branched at the top; leaves 5 times ternate or trichotomous; segments linear; leaves of involucra 1-2, setaceous, caducous; involucels of many leaves. 2. H. Native of Corsica. D. C. fl. fr. 5. p. 513. Schultz, syst. 6. p. 565. Umbels numerous, disposed in a panicle. Flowers yellow. Fruit unknown. This is a different plant from the Selinum paniculatum of Shoreham.

Panicled Sulphur-wort. Fl. May, June. Cult. 1818. Pl. 3 to 4 feet.

2 P. officinális (Lin. spec. p. 553.) stem terete, branched; leaves 5 times tripartite: segments linear, acute, flaccid; involucre of 3 setaceous leaves, deciduous; pedicels much longer than the fruit. 2. H. Native of Europe, in humid meadows and shady places. In Britain in salt marshes, very rare; as in ditches near Shoreham, Sussex; and at Walton near Harwich, Essex. About a quarter of a mile below Faversham, by the river side. Smith, engl. bot. t. 1767. Hayne, arz. gew. 7. t. 4. P. altissínum, Desf. cat. hort. par. p. 119. P. Alsaléiicum, Poir. dict. 5. p. 227. Selinum Peucedanum, Sowerby, engl. bot. t. 1767. P. majus Hátracum, Bauh. pin. 143. Moris, oxeon. sect. 9. t. 15. f. 1.—Bauh. hist. 3. p. 26. f. 1.—Trag. hist, p. 880. p. 851. Hóg's-fennel, Petiv. herb. brit. t. 24. f. 7. Herb smooth, with a resinous juice, and a strong sulphureous smell. In England, Gerarde says, it is called Horestrange and Horestrong (or Horestrang, from the German Haarstrang), Sour-fennel or Hóg's-fennel, Sulphur-wort, and Brinstein-wort. The root wounded in spring yields a considerable quantity of a yellow juice, which dries into a gummy resin, and retains the strong scent of the root. Many stimulating qualities have been attributed to the root, but it should seem to be rather dangerous for internal use.

Var. β, Italicum (Mill. dict. no. 2.) segments of leaves or leaflets very narrow, filiform. 2. H. Native of the south of Europe. Lob. icon. t. 781. Leaves of involucra 3-4, as in the species. Leaves almost like those of P. longifóllum. Perhaps a proper species or a variety of P. longifóllum or P. Morisónum, but very distinct from P. Parisiense. It grows on low mountains, and also in valleys by the sides of rivers in Italy. It is altogether a larger plant than the species.


3 P. Leodebœrìi; stem terete, branched; leaves 5 times tripartite; segments linear, with roughish cartilaginously serrated margins; involucels of few leaves, caducous; pedicels exceeding the fruit. 2. H. Native of Siberia, every where in open situ-
atons, particularly on rocks. P. officinalis, Ledeb. fl. alt. 1, p. 304. Bieb. fl. taur. 1. p. 215. In a note, 2. p. 214. no. 338. Segments of leaves covered with copious pellucid dots. Involucra for the most part of 3 leaves: of these 2 is lanceolate, the other lanceolate-linear, and the third filiform, 2 are caducous, and the third permanent. This species differs from P. officinalis in the margins of the leaves being cartilagineously serrated, and in the fruit being smaller. 3. Var. ß: leaves biternate; leaflets 5-6 inches long; rays of umbel and umbellules elongated and divaricatured.

Ledebour's Sulphur-wort. Fl. June, July. Pl. 3 to 4 feet.

4 P. elatum (Led. fl. ross. alt. illt. t. 305.) stem terete; leaves glabrous, 3 or 4 times pinnate; pinnae pinnatifid or cut or entire: lobes linear, acuminate, with smooth margins; primordial umbel nearly sessile; involucrum wanting; involucres short. 2. H. Native of Altai, every where in exposed places on the declivities of mountains. Primary and secondary ramifications of the leaves opposite, but the pinnae are alternate. Petals deep yellow: those of the male flowers ovate-oblong, attenuated: those of the hermaphrodite flowers obovate, all having inflexed points. Vitex almost the length of the mericarpars, 1 in each furrow, and 2 in the commissure.

Tall Sulphur-wort. Fl. May, June. Pl. 5 feet.

5 P. longifolium (Waldst. et KIT. pl. rar. hung. 3. t. 251.) stem terete, branchet a little; leaves 5 times tripartite; leaflets triquetrously setaceous, channelled, elongated; involucra wanting or of one leaf; fruit with very narrow wings. 2. H. Native of Hungary, on calcareous rocks. Schultes, syst. 6. p. 567. Host, fl. austr. 1. p. 366. Petioles of radical leaves terete. Flowers yellow. Fruit with 5 ribs, and 4 vitex on the back; and the commissure with 2 vitex.

Long-leaved Sulphur-wort. Fl. June, July. Cl. 1833. Pl. 4 to 5 feet.

6 P. ruthenicum (Bieb. fl. taur. and suppl. no. 539.) stem terete; leaves triquarteternately divided: segments or leaflets acute, 1-terminated, very long; involucre nearly wanting; pedicels long of fruit. 2. H. Native of Caucasus, Tauria, and the south of Russia. P. Tauficicum, Spreng. umb. spec. p. 53. Fërula Ruthenica, Spreng. umb. prod. 14. pug. 1. p. 27. This species differs from P. officinalis in the leaves being less divided, in the segments or leaflets being longer, and in the pedicels being one-half shorter. 3. Var. ß, Tauficicum (Bieb. fl. taur. p. 540.) leaves 5 times tripartite; segments or leaflets linear, acute, short. 2. H. Native of Tauria and Caucasus, in mountain meadows.

Russian Sulphur-wort. Fl. May, June. Cl. 1818. Pl. 3 to 4 feet.

7 P. Morsinii (Bess. in Schultes, syst. 6. p. 567, in a note,) stem unknown; leaves triquarternately divided: leaflets linear, acute, long, stiff, 3-5-nerved; involucra wanting; pedicels of many setaceous leaves. 2. H. Native of Siberia. Ligusticum longifolium, Willd. spec. 1. p. 1428. Peucedanum, Mor. oxon. 3. sect. 9. t. 15. f. 1. Vitex 2 in the commissure, but usually 4, ex Koch, umb. 93.

Moxib's Sulphur-wort. Fl. 3 to 4 feet.

8 P. Besseriænæ (D.C. prod. 4. p. 177.) stem terete, a little branched; leaves triquarternate; leaflets linear, nerved, divaricate; involucrum nearly wanting; involucres of a few very short leaves. 2. H. Native on hills about Odesa. Fërula Besseriæna, Spreng. in litt. Peucedanum species, Bess. in litt. Herb and leaves nearly as in P. Parisiæense, but the flowers are yellow, and commissure is furnished with 4, not with 2 vitex. Teeth of calyx short, not as in P. officinale subulate. Rays of umbel nearly equal. Fructiferous pedicels 3-6 lines long, not as in P. officinale an inch long.

Beiser's Sulphur-wort. Pl. 3 to 4 feet.

9 P. arenarium (Waldst. et Kit. pl. rar. hung. 1. t. 20.) stem terete, striated, branched; leaves tripinnate; leaflets linear, obtuse, stiltish, short; involucre nearly wanting; rays of umbel few, unequal; leaves of involucres linear-subulate. 2. H. Native of Hungary, in sandy places; and of Transylvania, in calcareous places; and of the south of Podolia. Spreng. umb. spec. 51. Schultes, syst. 6. p. 368. Bess. cont. p. 43. Allied to Petelium Chabrotiâ. Vitex one in each furrow, and 4 in the commissure, ex Koch, umb. 93.

Sund Sulphur-wort. Fl. June, July, Cl. 1816. Pl. 2 to 3 ft.

10 P. Sibericum (Wald. spec. 1. p. 1496. Koch, umb. p. 93.) stems terete, almost without leaves; canale sheets large, proximally glabrous; radical leaves on long petioles, triply ninate, stiff, shining; leaflets linear, cuneate, with serrated margins; involucrum almost wanting; central umbel sessile: lateral ones pedunculate. 2. H. Native of Croatia, Bessarabia, Caucasus, and Siberia. Fërula Tatariëca, Fisch. in litt. Spreng. umb. prod. 14. exclusive of the synonyms. Bess. suppl. p. 219. Fërula Siberica, Spreng. in Schultes, syst. 6. p. 592. Vitex 1 in each furrow, but sometimes 2 in the lateral furrows, and always 4 in the commissure; lateral vitex usually incomplete, and sometimes wanting in the same specimen. Habit and flowers like P. arenarium. The plant from Croatia is probably different from that of Siberia.

Siberian Sulphur-wort. Fl. June, July. Cl. 1804. Pl. 3 to 4 feet.

11 P. dissectum (Led. fl. ross. alt. illt. t. 181. fl. alt. 1. p. 306.) stem terete, leafy; superior branches in whorls; sheaths spreading; leaves pubescent, 4 times pinnate; pinnule opposite, petiolate, pinate; leaflets pinnatifid or entire; segments obtuse, that bident; primordials umbels nearly sessile; involucra and involucres very minute. 2. H. Native of Altai, on hills at the river Talovka, near Buchtominsko. Involucrum of one or few minute setaceous leaves. Petals golden yellow, ovate, acute, inflexed. Ribs of fruit filiform. Vitex 1 in furrow, and 2 in the commissure.

Dissected-leaved Sulphur-wort. Fl. June, Pl. 4 feet.

12 P. canescens (Led. fl. ross. alt. illt. t. 105. fl. alt. 1. p. 307.) stem terete, leafy; intermediate branches opposite and tern; sheaths closely adpressed; leaves clothed with hoary pubescence, 3 times pinnate; pinnule opposite, petiolate, pinate; lower segments pinnatifid: upper ones confluent: leaves broad-ovate, triolinate or entire, acute; involucrum wanting or of one leaf; involucres of many short leaves. 2. H. Native of Altai, on rocks on Mount Arkaul. Leaves of involucres many, lanceolate, acute, with a yellow keel, and white margins. Flowers deep yellow. Petals ovate, acuminate, inflexed. Fruit not seen.

Caucasian Sulphur-wort. Fl. May, June. Pl. 1 to 2 feet.

13 P. graciles (Ledeb. fl. ross. alt. illt. t. 306. fl. alt. 1. p. 308.) stem leafless, branched; branches scattered; radical leaves clothed with hoary pubescence, but at length becoming glabrous, bipinate; pinnule opposite, pinate; leaflets nearly opposite, rather trifid; sheaths leafless, stem-clasping, chartaceous, permanent. 2. H. Native of Altai, in dry saltish open places in the Kirghiz-scan teppe, between Buchtominsko and the lake called Noor-Saisan. Root thick. Involucra and involucres wanting, or of one or two leaves, which are formed from the pedicels becoming abortive and leaf-like. Flowers polygamous, those in the terminal umbels hermaphroditic and fertile; and those in the lateral umbels male. Vitex 1 in each furrow, and 4 in the commissure. Petals golden yellow, obovate, acute, inflexed. Habit of a species of Fërula, and probably the same as Fërula pimilis, Pall. ex Schultes, syst. 6. p. 508.

Var. ß, microödrys (D.C. prod. 4. p. 309.) seed one-half smaller than in the species.
UMBELLIFERÆ. XCVI. PEADEANUM.

Sulphur-wort. Fl. May. Pl. 1 to 2 feet.
14 P. dumum (Led. fl. alt. 1. p. 310.) stem leafless, branched; branches scattered; upper branches nearly opposite; leaves unknown; sheaths leafless, stem-clasping, chartaceous, permanent; fruit orbicular-elliptic. 2. II. Native of Altai, exposed to sterile places, at the river Tschunga. Habit more robust than that of the preceding species, and the stems more branched and more flexuous. Umbels polygamous. Involucra and involucels wanting, unless they are caducous. Vitex 1 in each furrow, and 4 in the commissure.

Double Sulphur-wort. Pl. 2 to 3 feet.
15 P. Soongariæ; stem leafless from the base to the apex, slender; upper branches disposed in whorls; radical leaves clothed with hoary pubescence, 4 or 5 times pinnate; pinnule opposite, pinnate-parted; segments ovate-cordate, cut; lobes acuate; involucels very minute. 2. II. Native of the Soongarian desert, between the river Iryshe and the mountains of Dolen-Kara, in saltish places. P. paniculatum, Led. fl. Ross. alt. ill. t. 199, fl. alt. 1. p. 311. Involucrum wanting, unless it be caducous. Umbels usually prolificous, hermaphrodite and male on the same stem. Involucels wanting to the hermaphrodite umbelules, unless they are caducous; but usually of many lanceolate-linear acuate leaves to the male umbelules. Flowers yellow; petals ovate-oblong. Vitex 1 in each furrow, and 4 in the commissure. Perhaps the same as Fétula Soongárica, Pall. ex Schultes, syst. 6. p. 598. The stem yields a gum which has a taste between gum-Ammoniac and parsley. Habit exactly of Fétula Soongarian Sulphur-wort. Fl. May, June. Pl. 3 to 4 feet.


17 P. capillaceum (ThUMB. prod. p. 50. fl. cap. p. 257.) stem terete, striated, naked, nearly simple; radical leaves 5 times trichotomous; segments subulate, furrowed above, stiff; involucra and involucells of 5-6 lanceolate-subulate leaves. 4. F. Native of the Cape of Good Hope, on the mountains. Sibth. pl. exsic. no. 212. Flowers yellow, according to Thumberg. Fruit ovate, compressed, marginately winged, having 3 elevated ribs on each side, ex Thumb.

Capillary-leaved Sulphur-wort. Pl. 1 foot.
18 P. tenellifolium (ThUMB. prod. p. 50. fl. cap. p. 257.) but not of Poir.) stem striated, terete, a little branched; leaflets pinnatifid; segments lanceolate and alternate, marginated; sheaths broad, stipula-formed at the base of the petioles; involucra and involucells of sterile leaves. 4. F. Native of the Cape of Good Hope, on the mountains. Spreng. umb. spec. p. 59. Fruit ovate, marginating, winged on the back, with 5 ribs, ex Thumb.

Fine-leaved Sulphur-wort. Pl. 2 to 3 feet.
19 P. virgatum (Cham. et Schlecht. in Linnaea. 1. p. 392.) stem terete, shrubby; leaves stiff, pinnate; leaflets lanceolate, quite entire, mucronate, with revolute margins; involucra and involucells of many short leaves. 4. G. Native of the Cape of Good Hope, on the mountains. Burchell, cat. pl. afr. austr. no. 2869. The whole plant is quite globulous and coriaceous. Petals ovate, yellow, entire at the apex, or hardly marginated. Fruit said to be ellipitic, with 5 ribs on the back, having a complanate margin.

Twiggly Sulphur-wort. Shrub.

** Flowers cream-coloured.
20 P. schottii (Bess. in litt. ex D. C. prod. 4. p. 178.) stem terete, a little branched; leaves pinnate-parted; segments linear, acute, entire or divided; involucra and involucells none. 2. II. Native of Volynia and Podolia. Imperatoria Chabréb', Bess. fl. gall. Very like Palumbia Chabréb', but differs in the lobes of the leaves being more diverging, in the rays of the umbels being quite smooth, in the involucels being wanting, and in the furrows being furnished with one vitæ each.

Schott's Sulphur-wort. Pl. 2 to 3 feet.
21 P. orientale; stem terete, branched, fistular; leaves pinnate; leaflets bipinnatifid; lobes linear-oblong, acute; involucrum wanting; involucells of a few leaves. 2. II. Native of Nipaul, in the Himalayas at Gomashtang. P. disséctum, D. C. prod. 4. p. 178. but not of Led. Selinium ? dissécutum, Wall. mss. Habit of Ethusa or Thyselium. Fruit nearly orbicular, with a narrow margin. Vitæ all evident, solitary in the furrows, and twin in the commissure. Flowers cream-coloured or greenish, according to the dried specimen.

Eastern Sulphur-wort. Pl. 1 to 2 feet.

** Flowers white.

Parison Sulphur-wort. Fl. May, July. Cit. 1809. Pl. 4 to 5 feet.

23 P. Galacum (D. C. prod. 4. p. 179.) stem terete, branched; leaves bipinnate; leaflets broad-linear, elongated, attenuated, with a few anned serratures; involucra and involucells wanting; fruit with membraneous wings. 2. II. Native of Nipaul, and at Debra-Dhoon. Selinium? glaicum, Wall. mss. Flowers white, but rose coloured in a dried state. The fruit is nearly like that of section 4, but the involucra are wanting. Commissure furnished with 2 curved vitæ.

Glacca Sulphur-wort. Pl. 2 to 3 feet.
24 P. vaginalum (Led. fl. Ross. alt. ill. t. 808. fl. alt. 1. p. 312.) root creeping; stem simple; leaves pinnate; pinna opposite, pinnate; leaflets alternate, pinnate-parted, or triplicate, or entire; segments linear, acute; sheaths membranous; involucrum wanting; leaves of involucels linear, length of umbelules. 2. II. Native of Altaiia, in meadows at the rivers Iryshe, and Koksun. Flowers white; petals tapering into an infelexed point. Vitæ 2 in each furrow, and 4 in the commissure. Stylodium and styles purple. Margin of mericarps broad.

Var. β. pumilum (Led. fl. alt. l. c.) differs from the species in the stems being only 3 inches high, furnished with leaves at the root; mericarps nearly one-half smaller.

Sheathed Sulphur-wort. Pl. ½ to 1 foot.

UMBELLIFERÆ.


26 P. Baical'ense (Koch, umb. p. 94.) stem furrowed at the top, much branched; leaves pinnate; leaflets pinnatifid: segments linear, acute; leaves of involucre many, rather toothed; leaves of involucels cohering at the base, exceeding the umbelules. 2. H. Native of Siberia, about Lake Baical; and of Hungary. P. terebinthináceum, Fisch. in litt. Selinium terebinthináceum, Trev. nov. act. soc. nat. cur. 13. p. 166. S. col- linum, Kit. in Wildl. herb. The Hungarian plant is the same as the Siberian one.


Var. β, latifórum (Viv. ital. fragm. 1. p. 18. t. 22.) leaves broader and less glaucous. 2. H. Native in rather boggy places.


29 P. cervar'iéfolium (Meyer, verr. pflanze. p. 126.) plant glabrous, glaucescent; stem fistulare, terete; leaves bipinnate and tripinnate; leaflets membranous, ovate, or a little cordate, cut, mucronately toothed; petioles nearly terete, fistular; sheaths narrow; leaves of both involucre and involucels setaceous; mericarps puberulous, with narrow margins; the 3 dorsal ribs sharp. 2. H. Native of Caucasus, on the Tafus mountains. Allied to P. Alsatíceus, P. cérvariá, and Imperátoria Caucásica, but sufficiently distinct from all. Flowers greenish or dirty red.

Cerarea-leaved Sulphur-wort. Pl. 3 to 5 feet.


31 P. Aèstr'a'ricum (Koch, umb. p. 94.) stem sulcate; striated; leaves tripinnate; leaflets ovate, cuneated at the base, coarsely toothed, pinnatifid: teeth bluntish, mucronate; leaves of involucre linear. 2. H. Native of Austria, Pannonia, Upper Italy, and probably of France. Selinium Austriáicum, Jacq. aust. t. 71. vind. 49. Selinium argértaceum, Craizt, austr. 174. t. 4. f. 2. Selinium nigrum, Lam. fl. fr. 3. p. 420. Oreoselinium Austriáicum, Hoffm. umb. p. 155. Vitae usually 4 in the commence, and often 2 in the outer furrows, ex Koch, in litt. P. montánun, involucrátum, and Reblésse, are probably only varieties of this species. Besser makes P. Aèstr'a'ricum and montánun one species and P. involucrátum and Reblésse another. The petioles of the radical leaves are divided into 3 branches.


32 P. Mont'n'um (Koch, umb. 94.) stem deeply furrowed, branched, and corymbose in the upper part, smooth, hollow; leaves thrice pinnate; leaflets pinnatifid, with elliptic-lanceolate segments; leaves of involucrum lanceolate, pointed, dependent,

**Mountain Milk-parsley or Sulphur-wort.** Fl. July. Britain. Pl. 4 to 5 feet.

33 P. ALPESTRÉ (Lin. spec. 353.) stem terete, furrowed, branched; leaves thrice or 4-times ternate; leaflets linear, acute; involucrum of many reflexed leaves; umbels of many rays; involucels of many linear, acute leaves, rather shorter than the umbelles. [2] H. Native country unknown. P. alpinum, Desé Hort. par. cat. 119. Horn. Hort. hafn. 1. p. 276. P. minus, Poir. suppl. 5. p. 228? but not of others. The leaves agree with those of *P. montanum*. Flowers yellow.

**Alp Sulphur-wort.** Fl. June, July. Ch. 1738. Pl. 2 to 3 ft.

34 P. WALLICHIÉNIUM (D. C. prod. 4. p. 181.) stem terete, branched; leaves supra-decompound; leaflets linear, cuspidate, smooth; involucra and involucelles composed of cut leaves; ribs of fruit elevated; vitte in the commissure 4. [2] H. Native of the East Indies, at Sirinagur; and of Nipal at Kamaon and Gossingthtan. Selinum tenuisulphum, Wall. mss. Leaves, habit, and involucrum like those of *P. involucratum*. Ribs of fruit more elevated than in the rest of the species of the present genus, and nearly as in *Selinum* exsertum, but the commissure is broad, as in the other species of the genus.

**Wallich’s Sulphur-wort.** Pl. 2 to 3 feet.


**Involucrated Sulphur-wort.** Fl. July, Aug. Ch. 1810. Pl. 2 to 3 feet.


**Broad-leaved Sulphur-wort.** Fl. July, Aug. Ch. 1816. Pl. 2 feet.


**Selinum-like Sulphur-wort.** Pl. 2 to 3 feet.

39 P. POLYPHYLLUM (Ledebl. fl. ross. alt. ill. t. 309. fl. alt. 1. p. 314.) stem sulcately striated, branched; radical leaves numerous, bipinnate; leaflets pinnatifid, trifid, or entire; segments oblong or linear, acute, with smooth margins; leaves of involucre lanceolate, with membranous margins, deciduous. [2] H. Native of Altaia, on dry rocks at the rivers Tscharysch and Keryly, near Riddlers, Lektwsk, and elsewhere; on sandy hills, about Schuhbins at the river Irtysch. Involucels of many leaves, like those of the involucrum. Flowers white; outer petals deeply margined, with an inflexed point. Mericarps with rather prominent ribs, girded by a broad margin. Vitte 2 in the commissure, and 1 in each furrow; the outer ones as broad as the furrows.

**Tar. a, pubécosus (Ledd. fl. alt. 1. p. 315) segments of leaflets short, oblong, crowded, covered with fine down or thick short hairs; stem at most 2 feet high. [2] H. Native on dry rocks, at the rivers Tscharysch, and Keryly.

**Tar. β, glabrum (Ledd. 1. c.) segments of leaflets longer, oblong-linear, more remote, glabrous; stem 3 feet high, or more. [2] H. Native in sandy places, near Schuhbins and Lektwsk.**

**Var. γ, ligneare (Ledd. 1. c.) segments of leaflets elongated, linear, rather falcate, remote, glabrous; stem about 2 feet high. [2] H. On rocks about Riddlers.**

**Many-leaved Sulphur-wort.** Fl. June. Pl. 2 to 3 feet.


**Whorled-branched Sulphur-wort.** Fl. July. Ch. 1883. Pl. 4 to 6 feet.

† *Species not sufficiently known.*

41 P. LÉTÉNÉE (Spreng. umb. spec. p. 57, and in Schultes, syst. 6. p. 569.) stem angular, much branched; leaves ternately decompound; leaflets trifid and pinnatifid; segments lanceolate, cuspidate, veiny; umbels axillary; involucra and involucelles of
many leaves. 2. H. Native of Siberia, on the mountains.—
Gmel. sib. 1. p. 190. t. 42. Root thick, fusiform. Habit of
*Trinia*. Flowers cream-coloured. Fruit oval, a little winged.

This species probably appertains to sect. *Thyselium*.


42 P. *Cresinctum* (Lin. spec. 354.) stem terete, knotted at the
origin of the leaves; leaves glaucous, pinnate; leaflets multifid:
segments linear; umbel of 8-10 rays; involucra of many short,
reflexed leaves; fruit oblong, glabrous. 2. H. Native of
Cherkesia (near Caucasus) and in Asia Minor. 209. Tourn. cor. ex herb. Juss. The **cut in Buh. hist. 3. p. 2.**
57 and 58. f. 1. agrees well with this plant, but the figure of
P. Alp. exot. p. 328. cited by Linnaeus, is very different from it.

*Cretan* Sulphur-wort. Pl. ?

43 P. *Microphyllum* (Smith, in Rees' cyclo. no. 11.) leaves
tripinnate; leaflets 3-lobed, fleshy; involucrum hardly any. 2. H.
Native of Siberia, in salt deserts about the Volga.

*Peucedanum* salvinum, Pall. in Spreng. syst. 1. p. 910. 
Atámanáth tenuifólia, Willd. herb. ex Spreng. Involuturum of 1
seolate leaf, which is also sometimes absent. Fruit unknown. A
doubtful species.

*Small-leaved* Sulphur-wort. Pl. 2 to 3 feet?

44 P. *Japonicum* (Thunb. fl. jasp. p. 117.) stem terete, flex-
umbrance; leaves tuberous; leaflets cuneiform, trifid; petioles
broad, shining. 2. H. Native of Japan, on the shore.

*S. Alp. plant*., Koch, umb. 95. Nées off. pfl. t. 7. Imperatoria, 
Rivin. pent. irrig. t. 7. Ger. emac. 1001. f. 1. Mor. oxon. 3.
278. sect. 9. f. 1. f. 1. I. major, Buh. pin. p. 156. Caudal
prop. t. 55. Laspiértium Germánicum, Fuchs. hist. 763. with a
figure. Astrántia, Dod. pempt. 320, with a figure. Clus.
hist. vol. 2. p. 194, with a figure. Smyrnium, Trag. hist. 433.
with a figure. Flowers white or pale flesh-coloured. Root
fleshy, tuberous, somewhat creeping, of an aromatic and acidic
quality; long supposed a sovereign counter-poison, and cele-
brated as a powerful external as well as internal remedy in nu-
merous disorders. It is said to be a sudorific, diuretic, and
sialogogue; recommended in dropsy and debilities of the sto-
mach and bowels; an infusion of it in wine is said to have
cured quarts that have resisted the bark. When chewed it ex-
itates a copious flow of saliva, with a warm and not disagree-
able sensation in the gums, and frequently cures the rheumatic
toothache. The mericarps are broadly winged. The plant is
cultivated in several places for the London market.

*Var. p. tritermita*; leaflets 3-parted, or nearly ternate. 2. H.
Native in the region of the Mediterranean. Imperatoria triter-
mata, Viv. in lit.

*Sparrer or Common, or Great Masterwort.* Fl. Ju. July, 
Britain. Pl. 1 to 2 feet.

2 I. *Angustifolia* (Bell. in Horn. Hort. hafn. 1. p. 286.) leaves
termate; leaflets oblong, attenuated at the base, acuminate
at all leaves, cordate at the apex; pedicels shortly and bluntly
attached at the base; umbels pedunculate, of 2-3 rays; involucrum
of 2-3 leaves; umbellae many-flowered; petals inflexed cor-
date at the apex. 2. H. Native of New Zealand. Bowlæia
geniculata, Spreng. umb. spec. 14. t. 5. f. 11. But it certainly
is not a species of *Bowlæia*, from the calyx being without teeth.

*Kneed* Sulphur-wort. Pl. prostrate.

49 P. *Sprengelii* (D. C. prod. 4. p. 182.) stem terete,
branchte; leaves bipinnate, lanceolate; leaflets pinnatifid, ses-
sile: segments lanceolate, mucronate, veiny, with serrately
searous margins; floriferous branches pinnate. 2. H. Na-
p. 50. syst. 1. p. 999. Flowers yellow. Fruit with 3-winged
mericarps, having the ribs obsolete, and the furrows convex.

*Sprengel's* Sulphur-wort. Pl. 2 to 3 feet?
UMBELLIFERæ. XVII. Imperatoria. XVIII. Callisace. XCIX. Bubon. C. Anethum.

plant has the appearance of a species of Ligústicum. Fruit winged, as in Peucedánium, sect. iv., but the calycine teeth are obsolete, and the involucre is wanting, as in the other species of Imperatoria.

Caucasan Masterwort. Pl. 1 to 2 feet.
1. I. Mexicanæ (Hort. Chelsea). 2. H. Native of Mexico. A broad-leaved species, received by Mr. Anderson, of the Chelsea Botanic Garden, from Mr. Otto, of the Botanic Garden at Berlin, in the year 1818, but it has not yet flowered. It may prove hereafter to belong to a distinct genus.

Mexican Masterwort. Cl. 1818. Pl. 3 to 4 feet.

Cult. Plants of easy culture; and may be either increased by dividing the roots or by seed.


LIN. SYST. Pentádria, Digynia. Margin of calyx somewhat 5-toothed or nearly obsolete. Petals oval, acuminate, uncurved. Fruit compressed on the back, winged on the margin, nearly orbicular, marginal at the base. Mericarps with 3 blunt, dorsal, nerve-formed ribs; the 2 lateral ribs expanded into wings, which cover the whole surface of the fruit. Vitte 1 in each dorsal furrow, which are narrow, and 1 on each side of the commissure at the margins. Parts of carpophore adnate to the mericarps. Seed complanate. — A perennial herb, with the habit of Angelica or Ostricereum. Sheaths of leaves large: upper ones leafless. Umbels pubescent, of many rays. Involucra none, or of few leaves. Umbels dense, many-flowered. Involucels of many setaceous leaves. Flowers white. This is an intermediate genus between Angelica and Imperatoria.

1. C. Damérica (Fisch. in litt. D. C. prod. 4. p. 184.). 2. H. Native of Dahuria, near Nertschinski-Savoy. Thyselium Dahuricum, Spreng. syst. 1. p. 894. Habit of Ostricereum pratensis, but more branched, finer, and thicker in the stem. Habit also of Angelica Ruzoillsis, but the leaves are more deeply serrated, the sheaths larger and inflated, and the involucrums composed of one or two leaves.


XCIX. Bubon (from böbbon, böbbon, the grain, or a tumour in that part, or elsewhere, which this herb was supposed to cure). Koch, umb. 95. D. C. prod. 4. p. 184. but not of Spreng.—Bubon species, Spreng. in Schultes, syst.—Agasylis species, Spreng. prod.—Galbanóphora, Neck. civil. no. 292.

LIN. SYST. Pentádria, Digynia. Margin of calyx obsolete. Petals ovate-oblong, entire, with a slight acute point. Fruit lenticularly compressed from the back, girdled by a dilated complanate margin. Mericarps with 3 ribs at equal distances: the 3 intermediate ones filiform; and the 2 lateral ones lost in the complanate margins. Vitte covering the whole seed, 4 on the back and 2 in the commissure. Carpoaphore bipartite. Seed rather convex, flatish in front. Quite smooth shrubs, natives of the Cape of Good Hope, abounding in a gummy, resinous, sweet-scented juice. Stems terete. Leaves biennial, glaucous, stiffish; leaflets toothed or pinnatifid; petals sheathing. Umbels compound, of many rays. Involucra and involucels of many linear leaves. Flowers greenish yellow.

1 B. Galbanum (Lin. spec. 364.) leaflets cuneate, rhomboid, deeply toothed at the apex; terminal ones 3-lobed. 2 G. Native of the Cape of Good Hope, on hills. Jacq. vind. 3. t. 39. Thunb. fl. cap. 233. Berg. cap. 77. Woodv. med. bot. 34. t. 12. Sims. bot. mag. 2489. Selinum Galbanum, Spreng, in Schultes, syst. 6. p. 563. Agasylis Galbanum, Spreng. prod. 22. Pluk. alm. t. 12. f. 2. Herrn. par. 163. with a figure. Dorsal vitte of fruit under a thick pericarp. Stem with purplish bark, covered with whitish powder. This was formerly supposed to be the plant which yielded the drug called gum galbanum; but it has lately been discovered to be the produce of quite a different plant, a native of Persia, now called Galbanum officinale.


2 B. Gumimum (Lin. spec. 564.) leaflets cuneate at the base, pinnatifid: segments lanceolate, acute. 5 G. Native of the south of Africa. Selinum gumimum, Spreng. in Schultes, syst. 6. p. 564.—Comm. hort. amst. 2. p. 115. t. 58. Like the preceding, but differs in the leaves being more finely divided. Dorsal vitte of fruit superficial.


Cult. A mixture of loam, peat, and sand is a good soil for these shrubs; but they can only be propagated by seed.


LIN. SYST. Pentádria, Digynia. Margin of calyx obsolete. Petals roundish, entire, involute, with a somewhat quadratic reteuse point. Fruit lenticularly compressed from the back, girdled by a complanate margin. Ribs of mericarps filiform, at equal distances: the 3 intermediate ones acutely keeled: and the 2 lateral ones more obsolete, and running into the flattened margin. Vitte broad, solitary in the furrows, and filling them, but with linear in the commissure. Seed rather convex, flatish in front.

—Annual, crect, glabrous herbs. Leaves decomposed, with linear-setaceous lobes. Involucra and involucels wanting. Flowers yellow, nearly like those of Pastinaca.


2 A. graveolens (Lin. spec. 377.) fruit elliptic, girdled by a flat, dilated margin. Q H. Native of the south of Europe, and about Astrachan, in corn-fields; and in meadows towards the Caspin sea, between Sallian and Lenkeran; also of the Cape of Good Hope and the Island of Timor; of South America, about Buenos Ayres. Fl. dam. 1572. Brot. fl. lus. 1. p. 464. Hayn. arz. gew. 7. t. 17. Woodv. med. bot. 159. Plench. icon. 215. Blackw. 545. Pastináca Anethum, Spreng. in Schultes, syst. 6. p. 587. Anethum minus, Goan. ill. p. 29. Selinum Anethum, Roth. fl. germ. 1. p. 113. Fenicíllium vulgáre, Hook. in Beech. bot.—Rev. pent. t. 13.—Mor. umb. t. 1. f. 22.—Fuchs, hist. p. 30. Lob. icon. 776. The common dill is a plant of upright growth, somewhat similar to fennel,
but smaller and more glaucous; it has finely divided leaves, and a slender single stem. The whole plant is powerfully aromatic. The leaves are used to heighten the relish of some vegetable pickles, particularly cucumbers; and also occasionally in soups and sauces. The whole herb is also used in medicinal preparations. Dill is raised from seed, of which half an ounce is sufficient for a bed 3 feet by 4 feet. Sow annually in February, March, or April, or occasionally in autumn, as soon as the seed is ripe, to come up stronger in the spring, in any open compartment, either in drills, 6 or 12 inches apart, or broad-cast thinly, and raked in evenly. The plants should remain where raised, and may be thinned moderately, should they rise too thick. They will shoot up in stalks, with leaves and seed umbels in summer and autumn, for use in proper season. Leave some plants when raised for seed; they will furnish plenty in the autumn. The bruised herb is anodyne and resolvent. The seeds are aromatic, and contain an ethecal oil, and useful, therefore, in flatulencies; the essential oil is also good in the colic. A distilled water, drawn off to the quantity of a gallon to a pound of seeds, was ordered in the London Pharmacopoeia, and occasionally made the basis of carminative draughts, and juleps; its flavour is more agreeable than that of the seeds in substance. Along with the water arises a considerable quantity of essential oil, which is given from 1 to 3 or 4 doses, or more, as a carminative. This, however, is now altogether disused.


3 A. Soua (Roxb. hort. Beng. p. 22,) fruit oblong, nearly destitute of a membranous margin. O. H. Native of the East Indies, where it is called Soua, and where it is cultivated for its use in medicine. Fleming, ind. med. in soc. asiat. 11. p. 156. ex. Schultes, syst. 6, p. 628. Herb very like the preceding. Rays of umbel 5-16. Fruit flat, 3-ribbed, almost wingless.


† Species not sufficiently known.

4 A. Cyseroca*rpen (D. C. prod. 4. p. 186,) fruit elliptic, puberulous on the outside, when examined by a lens, with a very narrow margin. O. H. Native of Persia, about Seidkhodzi, where it was collected by Szowits. Plant small, glabrous. Root slender, simple. Leaves many-parted: lobes linear. Umbels pedunculate, opposite the leaves, 3-6-rayed, without involucra. Umbeluhle 6-7-flowered, surrounded by an involucel. Flowers unknown, but probably yellow, as the other species. Fruit appearing turgid at first sight, ellipsoid, but empty inside, from the mericarps being thin and concave. Carpophore filiform, bipartite. Mericarps of the same structure as the other species of the genus.

Boat-fruited Dill. Pl. 1 foot.

5 A. Erythr*um (D. C. prod. 4. p. 186,) fruit elliptic, glabrous, hardly marginate; mericarps flattish; involucra and involucels of 4 or 5 leaves. O. H? H. Native of Persia, in gravelly places, at the foot of Mount Avrin, in the district of Khoi, in the province of Aderbeijan, where it was collected by Szowits. Herb glabrous. Stem terete, purplish. Leaves small, multifid, with small obtuse lobes. Umbels on long peduncles, 7-12-rayed. Invovlula of 5-7 leaves. Umbeluhles 12-13-flowered; involucels of 5-7 short leaves. Petals white, ovate, acute. Mericarps sometimes flat, and sometimes rather concave, fuscous on the outside, and purplish inside. Very like A. Segetum.

Red-stemmed Dill. Pl. 1 foot.

Cult. All the species grow very well in the open border, where the seeds should be sown.

UMBELLIFER.E. C. Anethum. CI. Cortia. CII. Capsophyllum. CIII. Tiedemannia. 337

CI. CORTIA (in honour of Bonav. Corti, who was the first to discover the motion of molecules in the cells of plants). D. C. prod. 4. p. 186.—Schultzia species, Wall.

Lin. syst. Pentändria, Digynia. Teeth of calyx elongated, acute. Petals lanceolate, acuminate, entire. Stylodium conical; styles diverging. Fruit elliptic, rather retuse at both ends; mericarps flattish, 5-ribbed; ribs winged: lateral ribs the broadest; vittae 1 in each furrow, and 2 in the commissure, which is broad and flat. Seed flattish.—A nearly stemless herb. Leaves petiolate, pinnate; leaflets divided into short, capillary segments. Scapes, some of them thick and stem-formed, bearing an involucrem, composed of 2-3 multifid leaves; others are elongated, and bearing an umbel, which is usually of few rays. Involucels of 5-7 linear, entire, or 2-3-cleft acute leaves. This genus differs from Schultzia in the calyx being 3-toothed, and in the fruit being compressed from the back, not from the sides, evidently 5-winged.


Lindley's Cortia. Pl. 1 foot?

Cult. Sow the seeds in the open border in spring, in a warm sheltered situation.

CII. CAPNOPHYLLUM (from κατάνοε, kaptos, the Greek name for fumitory, and φυλλον, phyllon, a leaf; resemblance in leaves to those of fumitory). Gaern. fruct. 2. p. 32. t. 85.

Koch, umb. p. 95. no. 24. in add.—Cönum species, Auct.—Rümia, Link, but not of Gaern.

Lin. syst. Pentändria, Digynia. Margin of calyx obsolete. Petals oblong, somewhat emarginate, tapering into an inflexed point. Fruit lenticularly compressed, girded by a complicane, dilated margin. Mericarps having the 3 intermediate ribs thickish, keeled, rather flexuous or tubercled; the lateral ribs lost in the dilated margins. Vitre solitary in the furrows, and twin in the commissure. Seed rather convex, but flat in front.—Annual herbs, natives of the Cape of Good Hope, with leaves almost like those of fumitory, whence the name. Leaves hoary, multifidly decomposed, with linear, cuneate segments. Umbels opposite the leaves, or nearly terminal. Involucera and involucels composed of 3-6 leaves, with membranous edges. Flowers white.


African Capnophyllum. Pl. 1 foot.


Cult. Sow the seeds in a warm sheltered situation in spring.

CIII. TIEDEMANNIA (in honour of Professor Tiedemann, of Heidelberg, a vegetable physiologist.) D. C. coll. dist. 5. p. 51. t. 12. prod. 4. p. 187.

Lin. syst. Pentändria, Digynia. Margin of calyx 5-toothed (f. 64. a). Petals acuminate, reflexed (Ell.); anthers erect, adnate to the sides of the filaments (Ell.). Fruit fahy com-

X
pressed (f. 64. c.) from the back. Mericarps with 5 filiform, rather keeled ribs, at equal distances, approximate; lateral ribs dilated into a membranous margin (f. 64. c.), broader than the fruit. Vitae solitary in the furrows, and filling them, and twin in the commissure. Carpophore bipartite. Seed flat.—Gla-
brous herbs, natives of North America, in marshes. Stems te-
rete. Leaves reduced to the petioles, which are terete, acute, 
fusiform, and jointed, without any leaflets. Involucra and in-
volution of 4-5 subulate leaves. Flowers white.—Habit of *Sium, 
*Campanula, and *Otosia, but the fruit is that of *Anémone, and the 
authors are very different from those of all other umbelliferous 
plants.

1 T. *TERETIFOLIA* (D. C. prod. 4. p. 187.). — H. Na-
tive of Carolina. *Campanula umbellata*, Walt. var. p. 113. but not 
354. (fig. 64.)

*Terefe-leaved Tiedemannia.* Pl. 1 foot.

*Cult.* Sow the seeds of this plant in a pot filled with peat, 
and place a pan of water under it.

**CIV. ARCHEMANOA** (from Archemorus, in mythology, 
son of Lycurgus, slain by an adder; in reference to the poison-
ous quality of the plants). D. C. coll. diss. 5. p. 52. prod. 4. 
p. 188.

**LIN. SYST.** *Penandria, Digyga.* Margin of calyx 5-toothed. 
Petals obcordate, with an indented apex. Fruit compressed 
from the back, flat, oval, or obovate. Mericarps with 5 filiform, 
rather keeled ribs at equal distances, approximate; lateral ones 
dilated into a membranous margin, which is almost broader than 
the seeds. Vitae solitary in the furrows, and filling them; but 
twin in the commissure. Carpophore bipartite. Seed flat.— 
Marsh herbs, natives of North America. Leaves pinnate. In-
volution wanting, or of few leaves; involucres of many leaves. 
Flowers white. Habit of *Campanula or Sium.* Fruit of *Pastinaca.*

1 A. *AMBIGUA* (D. C. prod. 4. p. 188.) stem smooth; leaves 
pinnate: with 3-5 pairs of linear, sessile, undivided, acute 
leaves; involucrum wanting: involucres of 3-5 subulate leaves; 
fruit oval. 2. B. H. Native of New Jersey, and about Phi-
longifolium*, Pursh, fl. amer. sept. 1. p. 194. Habit almost of 
*Campanula puccinellii*, ex Nutt. Hardly distinct from the 
following. This is a truly poisonous herb.

*Ambiguous Archemamoa.* Pl. 6 to 10 feet.

2 A. *DIGITA* (D. C. prod. 4. p. 188.) stem striated; leaves 
pinnate; leaflet sessile, oblong-lanceolate, marginate, almost 
entire; involucrum wanting: involucres of 8-8 subulate leaves; 
fruit oval. 2. B. H. Native of New Jersey, Pennsylvania, 
Maryland, and Carolina, in bogs and marshes. *Sium rigidum*, 
st. 1. p. 514. This plant is very poisonous, according to Bar-
ton, comp. fl. phil. 1. p. 142.

*Stiff Archemamoa.* Fl. July, Aug. Cite. 1774. Pl. 5 to 3 ft.

3 A. *TRICUSPIDATA* (D. C. prod. 4. p. 188.) leaves pinnate; 
lower leaflets lanceolate; upper ones ovate, tridentate; in-
volute caducous. 2. B. H. Native of Carolina, in humid 
rigidum*, Walt. car. 114. According to Elliot, this is very like 
the preceding species.

**Tricuspidata-leaffletted Archemamoa.** Pl. 2 feet?

4 A. *DENTICULATA* (D. C. prod. 4. p. 188.) leaves pinnate; 
with usually 3 pairs of oval, denticulated, acute leaflets; in-
volvera of 2 leaves, rarely wanting. 2. B. H. Native of 
Georgia, in humid places, and along the sides of water. Stem 
3-4 feet high.

*Denticulated-leaved Archemamoa.* Pl. 3 to 4 feet.

*Cult.* The species of *Archemamoa* grow best in peat earth, 
in a moist situation; and they will be easily increased by divid-
ing at the root.

**CV. PASTINACA** (from *pastinum*, a dibble; in reference 
and 27. *D. C. prod. 4.* p. 188.—*Pastinaca* and *Malabalia*, 

**LIN. SYST.** *Penandria, Digyga.* Margin of calyx obsolete, 
or minutely denticulated. Petals roundish, entire, involute: 
with a broad, retuse point. Fruit compressed from the back, 
girded by a dilated, complanate margin. Ribs of mericarps very 
slender: the 3 dorsal ones at equal distances; and the 2 lateral 
ones contiguous to the dilated margin. Vitae linear, acute, 
hardy shorter than the ribs, solitary in the furrows, but twin or 
more in the commissure. Carpophore bipartite. Seed flat.— 
Herbs with fusiform, usually flabby roots. Leaves pinnate; 
leaflets toothed, cut, or lobed. Umbels compound. Involucra 
and involucres none, or of very few leaves. Flowers yellow.

1 P. *SATIVA* (Lin. spec. 376.) stem furrowed; leaves pinnate, 
downy beneath; leaflets ovate, serrated, and cut: the ter-
tinal one 3-lobed; involucra and involucres generally wanting, 
but there is occasionally a solitary leaf under the general as 
well as partial umbels; teeth of calyx obsolete; fruit oval; com-
misium of fruit furnished with 2 vitae. 2. H. Native of Eu-
rope, even to Caucasus, in meadows. In Britain, about the 
boundaries of fields, on hillocks and dry banks in a chalky soil. 
North America, on the banks of the Saskatchewan and Red 
123. t. 1 f. 11. *Hayna. arz. géw. 7.* t. 16. *Smith, engl. bot. 
t. 566. Mart. fl. rust. 83. *Lam.* ill. t. 206. *Selenium Pasti-
Riv. pent. irr. t. 6. *Sicer sylvéstris*, Fuchs, hist. 753. with a 
figure. Root spindle-shaped, white, aromatic, mucilaginous, 
sweet, with a degree of acrimony, which it loses by cul-
tivation, becoming var. *β*, the eatable garden parsnip. *Pastinaca* 
flowers yellow: the innermost ones of the umbel frequently abortive. The leaves are sometimes downy on both surfaces.

**Var. β, colada** (D. C. prod. 4. p. 189.) leaves glabrous on 
both surfaces, shining above; root thick, fleshy. 2. H. *P. 
709. *Blackw. 379.* Cam. épit. 507. with a figure. P. sativa, 
Mill. dict. no. 2.

The garden parsnip, is called *Parnis*, in French, *Pastinaca* 
in German, and *Pastinaca* in Italian. It has smooth leaves, of 
a light yellowish green colour, in which it differs from the wild 
plant, the leaves of which are downy and dark green; the roots 
also are thick and fleshy; and have a milder taste; it does not 
differ so much from the native plant, as the cultivated does from 
the native carrot.

*Ucri.—The parsnip has long been an inmate of the garden, 
and was formerly much used.* In Catholic times it was a famous
Lent root, being eaten with salted fish. "In the north of Scotland," Mr. Neill observes, "parsnips are often beat up with potatoes and a little butter; of this excellent mess the children of the peasantry are very fond, and they do not fail to thrive upon it. In the north of Ireland a pleasant table beverage is prepared from the roots, brewed along with hops. Parsnip wine is also made in some places; and they afford an excellent ardent spirit known as parsnip after a similar preparatory process to that bestowed on potatoes, destined for that purpose." The following are the varieties:

1. **Common parsnip,** *scleris parsnip,* *swelling parsnip.*—The leaves are long; roots generally from 20-30 inches long, and from 3-4 in diameter.

2. **Guernsey parsnip,** *Jersey parsnip,* *panais long* of the French, *panais coqine* of Guernsey.—The leaves are somewhat stronger and taller than those of the common sort. The roots are also larger and more perfect, about 3 or 4 feet long.

3. **Hollow-crowned parsnip,** *hollow-headed parsnip,* *panais Lisboana* of Guernsey.—In this variety the leaves are shorter and not so numerous as in the common parsnip; the roots are oblong, about 18 inches long, more swollen at the top, and not tapering generally, but ending rather abruptly, about 4 inches in diameter at the shoulder.

4. **Turnip-rooted parsnip,* *panais ront,* *Siam parsnip.*—The leaves of this sort are few, and do not exceed 12 or 13 inches; the roots are from 4-6 inches in diameter, funnel-shaped, tapering very abruptly, with a strong tap-root, the whole being from 12-15 inches long. The shoulder is broad, and grows above the surface of the soil. The flavour of this parsnip is superior, and when dressed is of a yellower colour than the other varieties.

5. **Soil.—** The soil most proper for the parsnip should be light, free from stones, and deep. It should be dug or trenched before sowing, at least 2 spits deep; and the manure should either be perfectly decomposed, or if recent, deposited at the bottom of the trench.

6. **Seed estimate and sowing.—** Sow in the end of February, or in March, but not later than April, and for a seed-bed 5 feet by 20, the plants to remain thinned to 8 inches’ distance, half an ounce of seed is the usual proportion. Having prepared either beds 4 or 5 feet wide, or one continued plot, sow broadcast, moderately thin, and rake the seed well into the ground.

7. **Culture.—** When the plants are about 1-2 or 3 inches high, in May or June, let them be thinned and cleared from weeds, either by hand or by small hoeing, thinning them from 8 to 12 inches’ distance. Keep them afterwards clean from weeds, till the leaves cover the ground, after which no further culture will be required. The roots will be pretty large by the end of September, from which time a few may be drawn for present use: but the parsnip is far best at full maturity, about the close of October, indicated by the decay of the leaf. The root will remain good for use till April and May following.

8. **Preserving during winter.—** The parsnip is not so liable as the carrot to be hurt by frost if left in the ground. But it would be proper in the beginning of November, when the leaves decay, to dig up a portion of the roots, and to cut the tops off close, laying them in sand, under cover, ready for use in hard frosty weather. The rest will keep good in the ground till they begin to shoot in the spring: then in February or March dig them up; cut the tops off; and, preserved in sand, the roots will remain sound until the end of April.

9. **To save seed.**—Transplant some of the best roots in February, 2 feet asunder, inserted over the crowns; they will shoot up in strong stalks, and produce large umbels of seeds, ripening in autumn.

10. **Field culture of the parsnip.**—The parsnip has been partially introduced of late years as a field plant, and is nearly equal to the carrot in its product of nutritive and saccharine matter. Its culture as a field plant has chiefly been confined to the island of Jersey, where it attains a large size, and is much esteemed for fattening cattle and pigs. It is considered rather more hardy than the carrot, and its produce is said to be greater. It may be sown either in autumn or spring, and its seeds admit of drilling by machinery. The plants, when they come up, are more easily recognised than carrots, and therefore their culture is on the whole more simple, but equally so to herminal labour and therefore more suited to farming. For the rest their culture is the same as that of the carrot. The variety best suited for the field is the *Large Jersey,* the seed of which should be procured from the island, as that of the garden parsnip sold by seedsmen never attains the same size. The quantity of seed required for sowing in drills is from 4 to 5 lbs. per acre, and for broadcast 6 or 8 lbs. It must always be new, as two year old seed does not come up freely. It may or may not be prepared by steeping, but it requires no earth or sand intermixed with it, as it passes freely through the same drill that will sow tares or peas. The time of sowing is generally about the middle of February; but some sow in September, in which case the seeds are not to be planted till early in spring. This last method is obviously against the culture of the soil, which must thus remain a year in a consolidated state. The manner of sowing is generally in drills 15 or 18 inches distant; but some sow broad-cast and harrow in the seed; and in Jersey, parsnips and beans are generally cultivated together. The beans are first dibbled in, and afterwards the parsnip seed scattered over the surface and harrowed. It is acknowledged that a good crop of both plants is never obtained; and therefore, though this mode may be found to answer in the mild climate of Jersey, it is not to be imitated in other places. Drills or broadcast, without any intermixture of plants, are the only advisable modes. The after culture of the parsnip is the same as that for the carrot, with this difference, that the parsnip, when sown broad-cast, is generally thinned out to 12 inches at an average, plant from plant, and when in rows 18 inches apart, to 9 inches in the row. The produce of the parsnip is said to be greater than that of the carrot, and the economical application the same. In the fattening of cattle it is found equal if not superior, performing the business with as much expedition, and affording meat of exquisite flavour, and a highly juicy quality. The animals eat it with much greediness. It is reckoned that thirty perches, where the crop is good, will be sufficient to fatten an ox 3 or 4 years old, when perfectly lean, in the course of 3 months. They are given in the proportion of about 30 pounds weight morning, noon, and night; the large ones being split in 3 or 4 pieces, and a little hay supplied in the intervals of those periods. And when given to milch cows with a little hay in the winter season, the butter is found to be of as fine a colour and as excellent a flavour as when feeding in the best pastures. Indeed, the result of experiment has shown that not only in neat cattle, but in the fattening of hogs and poultry, the animals become fat much sooner, and are more bulky than when fed with any other root or vegetable; and that, besides, the meat is much sweeter and delicious. The parsnip leaves being more bulky than those of carrots may be mown off before taking up the roots, and given to cows, oxen, or horses, by whom they will be greedily eaten. Their produce in nutritive matter is 99 parts in 1000, of which 9 are mucilage and 90 sugar. Gerarde says, that a very good bread was made from them in his time. They afford as much spirit as the carrot. The parsnip being more hardy and luxuriant than the carrot, is less liable to the mildew and worms; but equally so to become forked if the soil be not deep and well pulverised, and if the manure be not minutely divided and equally distributed. 

X X 2
Cultivated or Garden Parsnip. Fl. Jul. Brit. Pl. 3 to 4 ft. 2 P. latifolia (D. C. mem. soc. vol. 4. prod. 4. p. 189.) stem terete, striated, pubescent, as well as the petioles and leaves on the under surface; leaves pinnate; leaflets of the lower leaves large, and dilated at the base, and rather cut; of the cauline leaves ovate; involuca and involucels wanting; teeth of calyx obsolete; fruit oval: having the commissure furnished with 2 vitae. 2. H. Native of Corsica, where it was gathered by Solerio. It differs from P. sativa in the stem being terete, not furrowed; and from P. diversifolia in the fruit being oval, not orbicular, in the commissure being furnished with 2 vitae, not with 4-6; and from other species in the leaves of the radical leaves being large.


Var. b. glabrata (D. C. prod. 4. p. 189.) leaves glabrous above, hardly pubescent beneath. 2. H. Native country unknown, but cultivated in the botanic garden at Geneva.

Broad-leaved Parsnip. Fl. Ju. Jul. Chlt. 1820. Sh. 3 to 4 ft. 3 P. Divaricata (Desf. cat. hort. par. 1815. p. 139.) stem terete, striated; leaves pinnate, clothed with short pubescence on both surfaces; radical leaves with 9-11 leaflets: cauline ones with 3-5; leaflets ovate, cuneated at the base, or cordate, undivided, sharply serrated; teeth mucronate; terminal leaflet larger and somewhat 3-lobed; involuca and involucels wanting; fruit nearly orbicular. 2. H. Native of Corsica, at Bastia. P. gravéolens, Salzm. excis. Koch, umb. 91. but not of Bleib. P. sativa, Thom. excis. P. velutina, Koch, in litt. P. Köchii, var. Duby, in bot. gall. 1. p. 230. Vitte 4-6 in the commissure, usually interrupted, 2 of which are generally larger than the rest.

Divaricate Parsnip. Pl. 3 to 4 ft.

4 P. Lucida (Lim. mant. 58.) stem furrowed, much branched; leaves glabrous, stiff, crenated, reticulated beneath: radical ones cordate, usually lobed; cauline leaves termate or quinate; leaflets attenuated at the base; upper ones ovate-rhomboid; umbels numerous, rather panicked; involuca of 1 leaf; fruit orbicular. 2. H. Native of Balearic Islands. Gounl. ill. 19. t. 11, 12. Jacq. hort. vind. t. 199. Root thick, milky. Stem when cut yielding a whitish, feid, rue-like, tenacious gum.

Flowers yellow.


5 P. Umbrosa (Stev. in litt. ex D. C. prod. 4. p. 189.) stem furrowed, angular; leaves pinnate, pubescent on the nerves and petioles; leaflets oval-oblong, serrate-toothed; terminal leaflet somewhat 3-lobed; umbels numerous, rather panicked; involucels dimidiate; fruit oval. 2. H. Native of Tauria. This species was formerly confused with P. gravéolens, but is truly distinct from it.

Shady Parsnip. Pl. 2 to 3 feet.

6 P. Stenocardia (D. C. prod. 4. p. 189.) stem striated, glabrous; leaves smoothish, pinnate; leaflets deciduous, oblong-linear, cut, and toothed; involuca wanting; involucels of few leaves; fruit oblong.—Native of Siberia. Umbels and umbellules of many rays. Fruit 3 lines long and a line broad, quite glabrous; lateral ribs not expanded into wings, but all filiform, as well as the vittae. Vittae twin in the commissure, solitary in the dorsal furrows, and often wanting in the lateral furrows.

Narrow-fruited Parsnip. Pl. 2 to 3 feet?


Strong-sequested Parsnip. Fl. Jul. Aug. Chlt. 1817. Pl. 2 ft. 8 P. Sekakul (Russ. besch. aep. p. 157.) stem terete, downy, branched; leaves pinnate, puberulous; leaflets piliform, cut, bluntly and unequally toothed; peduncles villous; involuca none; involucels of 1-2 leaves; fruit ovate-ornibicular. 2. H. Native of Syria, about Aleppo; and of Egypt, near Alexandria. Heracleum pinnatum, Viv. in litt. Tordylum suvèolens, Delille, ill. fl. aegypt. no. 323. Pastinaca dissécta, Vent. cels. t. 78. Sécacul, Rauw. reis. 1. p. 746. ex Vent. J. B. Barth. hist. 3. p. 66, with a figure.—Moris, oxon. sect. 9. t. 4. ultimate figure, and therefore the Tordylum Sékakul, Mill. dict. no. 5. Root grey on the outside and white inside, edible. According to Olivier this species of parsnip is cultivated in the Levant under the name of Sebkakul.

Sékakul Parsnip. Pl. 1 to 2 feet.

9 P. Pimpinelloides (Bieb. fl. taur. 1. p. 237. suppl. 247.) stem angular, branched; leaves pinnate, pubescent; leaflets rather trifid, cut: segments cuneated, deeply serrated: lower ones reflexed: upper ones linear-lanceolate; involuca of 1-3 leaves; involucels of 4-5 leaves, dimidiate, deciduous; fruit orbicular. 2. H. Native of Caucasus and Iberia, in grassy places; and of Persia, near Seidkhodzhi, in sandy places. Buxh. cent. 3. t. 27. Mill. fig. t. 266. Malabula pimpinelloides, Hoffm. umb. 126 and 209. t. 1. f. 6. a. b. Heracleum pimpinellifolium, Spreng. tent. 12.


Obteuse-leaved Parsnip. Pl. 1 to 2 feet.

Cult. The species are only to be increased by seed, which should be sown in spring in the open ground.

CVII. LEIOTULUS (from λείως, λειέων, smooth, and ους, ους, ους, oons, an ear; in allusion to the smooth dilated margin of the fruit). Ehrenb. in Linnaea. 1829. p. 390. D. C. prod. 4. p. 669.


Petals red or maroon, entire, involute, with a broad retuse segment. Fruit finely compressed, having a smooth thickened dilated margin: and 3 intermediate approximate ribs, and 2 very remote lateral ones; vittae filiform, solitary in the furrows, and distant in the commissure.—Herb a span high. Leaves bipinnatifid. Involucels wanting. Invocules of a few very fine entire leaves, but often wanting altogether. Flowers yellow.

1 L. Alexandrienus (Ehrenb. l. c.)—Native of Egypt, near Alexandria, on hills towards Rosetta.

Alexandriam Leiotulus. Pl. 1 1/2 to 2 1/2 foot.

Cult. Sow the seeds in a warm sheltered situation in the open ground.

CVIII. ASTYĐAMIA (a mythological name, daughter of Oceanus; the plant grows on the borders of the ocean, in the Canary Islands). D. C. coll. diss. 5. p. 53. t. 1. f. D. prod. 4. p. 190.

Lin. syst. Pentétria, Digynia. Margin of calyx 6-toothed. Petals obovate, entire, with an inflexed acumen. Stylodium thick; styles very short. Fruit compressed from the back, girded by a thick, dilated margin; mericarps rather spongy, furnished with 3 crested, approximate, short ribs on the back:
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the 2 lateral ribs lost in the margin. Dorsal vittae very few, and the commissural ones are either wanting or covered. Seed unknown.—A smooth, fleshy subshrub. Leaves pinnate; leaflets cuneate, deeply toothed at the apex: ultimate ones confluent. Umbels compound. Involuta and involucres of many leaves. Flowers yellow. It differs from *Crichtium* and *Bupleurum* in the fruit being compressed from the back, and in the calyx being 5-toothed; and from *Heracleum* in the vittae not being club-shaped, and in the petals being entire; and from *Laserpitium* in the ribs being hardly elevated, and in the petals being entire; and from *Pastinacea*, to which it is most nearly allied, in the fruit being rather fleshy and a little crested, with the margins hardly flattened.


Canary-island Astydamia. Fl. Jul. C1t. 1730. Sh. 1½ ft. Cult. This plant will require the same treatment as it is recommended for *Crichtium*, p. 321.; but it will require shelter in winter.

CVIII. SYMPHYLOMA (from σύμφυόν, συμφύον, to glue together, and λυμα, luma, a fringe; the margins of the mericarps are closely joined together). Meyer, ver. pl. 127.

Lin. syst. *Pentadactria Digynia*. Margin of calyx obsolete. Petals equal, emarginate, with an inflexed point. Stylodipodium without a margin. Styles reflexed. Fruit elliptic, compressed from the back, flat, with rounded margins; mericarps closely joined together at the margins; with 5 filiform ribs: the 3 dorsal ones at equal distances: and the lateral ones more remote and almost marginating. Vittae wanting or obsolete. Seed complanate. Carpophore wanting.—A humble herb. Leaves with 3-5, nearly orbicular leaflets. Involuta none. Petals red. Fruit very singular in its structure, by the mericarps being closely joined at the margins.


Lin. syst. *Pentadactria, Digynia*. Calyx 5-toothed. Petals obovate, emarginate, with an inflexed point: outer ones usually radiating and bifid. Fruit flatly compressed from the back, girded by a flat, dilated margin. Mericarps with slender ribs: the 3 dorsal ones at equal distances: and the 2 lateral ones remote from the others, contiguous to the dilated margin. Vittae solitary in the furrows, and usually twin in the commissure, all flat: dorsal ones 4.—Strong, coarse, robust herbs, with broad, pinnate, ternate, or lobed leaves; petioles large and sheathing. Umbels of many rays. Involuta caducous, usually of few, intricate, and difficult to define.

CVIII. SYMPHYLOMA. CIX. HERACLEUM.


1 H. NEPALE'NSIS (D. Don, prod. fl. nep. p. 185.) stem furrowed, rather hairy; lower leaves having the petioles twice trifold, binate; with tripartite leaflets; upper leaves ternate: with rather 3-lobed leaflets; leaflets all ovate, acute, and equally serrated, rather hairy above, and pubescent along the nerves beneath; fruit elliptic; commissure furnished with 4 vittae. &. H. Native of Nipal. Flowers equal, yellowish. Knees of stems bearded with white wool.

Nipal Cow-parsnip. Pl. 3 to 4 feet.

2 H. oer'sesifo'lium (Wall. miss. ex D. C. prod. 4. p. 191.) stem striated, pubescent; leaves ternate or 3-lobed, roundish-cordate; leaflets or lobes obtuse, with a few coarse teeth, rather hairy above, and beset with whitish pubescence beneath; umbels of many rays; fruit obovate; commissure furnished with 4 vittae. &. H. Native of Nipal. Dorsal vittae linear. Flowers not radiating, cream-coloured.

Oblance-leaved Cow-parsnip. Pl. 3 to 4 feet.

3 H. ru'gens (Wall. miss. ex D. C. prod. 4. p. 191.) stem striated, pubescent; leaves ternate, with the petioles rather hairy; leaflets petiolate, orbicular, rather cordate at the base, toothed, scabrous from hairs above, pubescent beneath; upper leaves bluntly trifold; fruit obovate-elliptic; commissure furnished with 4 vittae. &. H. Native of the East Indies. *Conium rigens*, Heyne, ex Wall. Leaves of involucres lanceolate, striated, puberulous on the outside. Flowers not radiating, cream-coloured. Dorsal vittae of fruit linear.

Stiff Cow-parsnip. Pl. 2 to 4 feet.

Sect. II. Ehe'racl'eum (from eu, well, and *Heracleum*; this section contains what are considered the true species of the genus). D. C. prod. 4. p. 191.—Heracleum, Hoffm. umb. p. 141. D. C. prod. 4. p. 191. Commissure of fruit furnished with 2 vittae. Umbels equal or radiating. Petals greenish-yellow.

4 H. flave'scens (Baumg. fl. trans. 1. p. 214.) leaves pinnate, rough from hairs; leaflets ovate or oblong; flowers yellowish, not radiating; commissure furnished with 2 vittae. &. H. Native from Dauphany to Siberia, in the grassy parts of mountains. Jacq. aust. t. 173.

Var. a. latifo'lium (D. C. prod. 4. p. 191.) leaflets lobed or palmately parted, unequally crenate-serrate; flowers uniform, not radiating; fruit orbicularly oval; glabrous, emarginate at the apex. &. H. Native of Tauria, Caucasus, Siberia, Dauphany, and many other parts of Russia, in rather humid meadows. H. Sibiricum, Lin. mant. 354. Bieb. fl. taur. and suppl. no. 558. Hoffm. umb. 143. t. 1. f. 1. Schult. syst. 6. p. 475. H. Austriacium, Pall. ind. taur. Spondylion conformite, Meench, meth. p. 83.—Gmel. syl. 1. t. 50. From this plant a spirit is drawn at Kantschatka, called raka, as related in Cook's voy. 3. p. 387. where the process of making the spirit is described. It is used also as food.

Var. b. angustifo'lium (D. C. prod. 4. p. 191.) leaflets oblong, lanceolate, or linear, sinutately toothed, ultimate ones confluent. &. H. Native of Dauphany, Valáis, Austria, Russia, &c. in waste, grassy fields. H. angustifolium, Lin. mant. 36. Jacq. fl. aust. t. 173. H. Sibiricum of Lin. has been raised from the seeds of *H. angustifolium*.


5 H. Ors'su (Guss. pl. rar. p. 133. t. 27.) stem furrowed, muricate, almost simple; leaves simple, cordate, glabrous on both surfaces, rather coriaceous, obscurely lobed, and tripartite,
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crenate-serrate; lobes acuminated; flowers rather radiating; involucre almost woody; leaves of involucels linear; fruit ovate. 2. H. Native of Abruzzo, in gravelly parts of mountains. Habit of *H. alpinum*, but the flowers are greenish. Commissure of fruit furnished with 2 vittæ.

*Orsia* Cow-parsnip. Pl. 2 to 3 feet.

6 H. *Achærum* (Sibth. and Smith, fl. grece. t. 282; prod. 1. p. 192.) stem much branched; leaves pinnate; leaflets lobed, cut, pubescent; of the radical ones roundish; umbels usually of 3 rays; flowers radiating; fruit orbicular; involucræ and involucels almost wanting; vittæ semi-circular. 3. H. Native on Mount Parnassus. Habit of *Pastinaca sativa*; but the petals are obcordate, with an infixed mucrone. Flowers golden yellow. Vitæ linear.

*Golden-flowered Cow-parsnip*. Pl. 1 to 2 feet.

Sect. III. *Spondylium* (σπόνδυλος, spondylus, vertebra; resemblance in the articulations of the stem). Hoffm. umb. p. 129.


7 H. *Longirostum* (Jacq. austr. t. 174.) leaves scabrous, pinnate, or pinnatifid from the coalition of the leaflets; leaflets or lobes elongated, deeply crenate; leaves of involucels linear-sagittaceous; fruit glabrous, cucumiform. 2. H. Native of Austria, in alpine meadows. Host. fl. austral. 1. p. 574. An intermedium species between *H. flavescens* and *Spondylium*. Petals at first green, but at length becoming white, obcordate; outer ones radiating a little. Fruit larger and much more cuneate than in the above-mentioned species.


8 H. *Palmatæfolium* (D. C. prod. 4. p. 192.) upper cauline leaves 5-parted from the top of the sheath, or 3-parted; outer lobes bipartite, all elongated, coarsely toothed, glabrous above, but roughish beneath; leaves of involucels linear-sagittaceous; fruit glabrous in all states, ovate. 2. H. Native country unknown. Flowers white, radiating a little. It differs from *H. Spondylium* in the leaves being palmate-parted, not pinnate-parted, less rough, and in the fruit being more obvate. Probably *H. elegans* of many authors is the same as this species.

Palmate-lobed Cow-parsnip. Pl. 4 to 5 feet.

9 H. *Sesnonia* (Linn. spec. 1. p. 353.) leaves ternate, pinnate, or pinnatifid from the coalition of the leaflets, scabrous; leaflets pinnatifid, cut, and serrated; leaves of involucels lanceolate, membranous, finely fringed, with long taper points; fruit orbicular, glabrous. 3. H. Native of Europe, and probably of Siberia, in hedges, the borders of fields, and rather moist meadows, very common; plentiful in some parts of Britain. Smith, engl. bot. t. 939. Hayn. arz. gew. 7. t. 10. H. protiforme, Cronitz, austral. 3. p. 11. H. bránea ursina, All. pedem. no. 1291. Spondylium Rall, syn. 305. Ger. emac. 1609. with a figure. Camer. epít. 548. with a figure. Riv. pent. irrit. t. 4. and of many other old authors. Spondylium bránea, Scop. carn. no. 335. Spondylium bránea ursina, Hoffm. umb. 132. t. 1. f. 11.—Acantis Germánica, Fuchs, hist. 53. with a figure. Cow-parsnip. Petiv. herb. brit. t. 54. f. 1. Root taper-shaped, white, aromatic, sweetish, and rather mucilaginous. Stem red, with white hairs. Flowers more or less radiate, white or reddish. The whole plant is wholesome and nourishing food for cattle; and is gathered in Sussex for fattening hogs, being known by the name of *hog-weed*. The seeds are strong-scented, and are accounted diuretic and stomachic. Linnaeus says the plant is used in Scania against dysentery. Gnehn says that the inhabitants of Kamtschatka, about the beginning of July, collect the footstalks of the radical leaves, and after peeling off the rind (which is very acrid) dry them separately in the sun, and then tying them in bundles, lay them up carefully in the shade in bags; in this state they are covered with a yellow saecharine efflorescence, tasting like liquorice; this being shaken off is eaten as a great delicacy. The Russians distil an ardent spirit from the stalks thus prepared, by first fermenting them in water, with the greater bilberries (*Vaccinium uliginosum*), which Gnehn says is more agreeable to the taste than spirits made from corn.

Var. *b*, *angustifolium* (Smith, fl. brit. 307.) leaves deeply pinnatifid; the 2 lowest lobes elongated, and spreading in a radiating manner. 3. H. Native of Yorkshire. Mr. Woodward has found this variety growing on the same root with the common kind.

Var. *y*, *elegans* (Jacq. austr. t. 175.) leaflets deciduous, narrow, toothed. 3. H. Native of Austria, Piedmont, &c.

Var. *t*, *laciniatum* (Desf. hort. par. ex D. C. prod. 4. p. 192.) leaflets cuneate, ovate, coarsely and deeply serrated. 3. H. Native country unknown.

Var. *r*, *subaequascens* (D. C. prod. 4. p. 192.) leaves canescen beneath. 3. H. Native of France. This variety differs from *H. Pyrenœca* in the ovaries being glabrous.


10 H. *Cæruleum* (Hortul. ex D. C. prod. 4. p. 192.) leaves pinnate, scabrous; leaflets elongated, cut, and toothed, acuminate; leaves of involucrum linear, broader at the base; leaves of involucels setaceous, ciliated on both sides with long villi; fruit ovoblate, glabrous in all stages. 2. H. Native about the Caspian Sea. This species is sufficiently distinct from any of the varieties of *H. Spondylium*.


11 H. *Canadensis* (Wall. diss. ex D. C. prod. 4. p. 192.) leaves ternate, clothed with hoary tomentum beneath, as well as on the stems and petioles, but smoothish above; leaflets petiolate, cuneate at the base, trifid or pinnatifid: lobes irregularly toothed; leaves of involucels linear, acuminate, about equal in length to the rays; fruit ovoblate-oblong; vitæ linear. 2. H. Native of the north of India, at Deyroodoo and Kamaoon.

Whitened Cow-parsnip. Pl. 4 to 5 feet.

12 H. *Lana'tum* (Med. fl. bor. amer. 1. p. 166.) leaves ternate, petiolate, tomentose beneath; upper ones 3-lobe; leaflets petiolar, broad-ovate, roundish-cordate, lobed; leaves of involucels small, subulate; fruit broadly obcordate, ovate. 3. H. Native of Virginia, Pennsylvania, and Canada, as far as the Mackenzie river; moist banks of streams in north-west America, in humid pastures. Pursh, fl. amer. sept. 1. p. 181. Begel. fl. bot. p. 67. Torr. fl. bor. amer. 1. p. 313. H. Spondy- lium, Cham. et Schlecht. in Linnaeo. 1. p. 39. Petsal said to be oblong. The plant is said to be very nearly allied to *H. Spondylium*, but very distinct. The roots and stems of this plant are eaten by the Chenoek Indians; and by the Cree Indians, under the name of Penpouo antic; i.e. flute stem; and the young stems are used by them as a pot-herb.


13 H. *Coratatum* (Presl. del. præg. p. 135.) leaves ternate; leaflets cordate-ovate, petiolate, lobately pinnatifid, minutely toothed, hispid beneath, as well as the petioles and stem, which is furrowed; leaves of involucels linear; involucre wanting; fruit glabrous, obvurate, somewhat emarginate at the apex. 2. H. Native of Sicily, in humid groves on the Nebrodes. Root black, sweet-scented, and is called *Angélica* by the Sicilians, and is used for the same purposes as *H. Spondylium* and H. Páneas Ucrica, ex Guss. prod. fl. sic. 1. p. 364.

*Cordate*-leafed Cow-parsnip. Pl. 4 to 6 feet? 1

14 H. *Pyrenaææum* (Lam. dict. 1. p. 403.) leaves very large, pinnatifid, hoary from tomentum beneath; leaflets lanceolate, toothed or ternate; involucra of few leaves; young fruit covered with long hairs; adult ones glabrous, nearly orbicular.
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Pyrenean Cow-parsnip. Fl. June, July. Ch. 1798. Pl. 4 to 6 feet.

15 H. PANÄCES (Lin. spec. p. 338.) leaves pinate, canescent beneath; leaflets on long petioles, cordate, usually 3-lobed, toothed; leaves of involucres linear-setaceous; young fruit bearing a few scattered hairs. ζ. H. Native of the southern Alps of Europe. Lob. icon. t. 701. f. 2. Mor. ox. sect. 9. t. 17. f. 3. H. setosum, Lapeyr. a. p. 153?


16 H. ASPERUM (Bieb. fl. taur. suppl. p. 224.) stem rough from stigae; leaves deeply lobed, serrated, acute, scabrous above, pubescent beneath; umbels of 40 rays; leaves of involucra setaceous; fruit orbicular elliptically; when young rather scabrous. ζ. H. Native of the north of Caucasus, on Mount Beschatu; and according to Koch also of the Alps of Bavaria and Tyrol. Spondylium asperum, Hoffm. umb. p. 154. Dorsal vittae 2 longer than the lateral ones; all filiform; those in the commissure evidently clavate. In the cultivated plant the fruit is nearly glabrous even when young.

Rough Cow-parsnip. Fl. June, July. Ch. 1818. Pl. 6 to 8 ft.

17 H. villosum (Fisch. in Schults, syst. 6. p. 579.) leaves sinuately pinnatifid, sharply serrated, acuminate, clothed with hoary tomentum beneath; leaves of involucres and involucres setaceous, deflexed; umbels sparingly radiate; fruit elliptic, ciliated, woolly on the back. ζ. H. Native of Caucasus, in gravelly places on the margins of rivulets. Stev. obs. 1828. p. 72. H. Pyrenäicum, Bieb. fl. et suppl. no. 559, but not of Lam. H. decipiens and H. marginatum, Hoffm. umb. p. 134, and 135, and probably H. giganteum, Horn. hort. hafn. ex Presc. Leaves as in H. Pyrenäicum hoary beneath, but differs in the young fruit being tomentose, and in the adult ones being rather ciliated. Vittae broad; the dorsal ones drawn out beyond the middle, and filling the furrows; the commissural ones short, rarely somewhat branched. There are varieties with larger and smaller fruit.

Var. β. subellüïfium (Hoffm. umb. gen.) fruit covered by scattered rather loose hairs; leaves less canescent beneath. Filious Cow-parsnip. Fl. July. Ch. 1836. Pl. 4 to 6 ft.

18 H. PUBESCENS (Bieb. suppl. p. 225.) leaves pubescent beneath; cauline leaves ternate; leaflets somewhat palmately pinnatifid, toothed; segments and recesses acute; umbels of many rays; involucra of 1-2 leaves; involucres short, caducous, of few leaves; fruit elliptic, having the disk rather villous. ζ. H. Native of the south of Tauria, in shady places; and of Eastern Caucasus, in alpine places. Spondylium pubescens, Hoffm. umb. p. 134. H. speciosum, Ledeb. hort. dorp. 77. H. Panäces, Steven. mem. moss. 3. p. 259! To this species is probably referrible the H. gumüferous, Wild. enum. p. 312. hort. berol. 1. p. 53. t. 53. and t. 54. It differs, however, from H. Pyrenäicum and H. Panäces, in the young fruit being clothed with short down, not with long spreading down. Fruit glabrous in the adult state; having the dorsal vittae slender, and drawn out beyond the middle, and being suddenly dilated into a club-shaped form at the apex. The young shoots are filled with a sweet aromatic juice, which is called Baldergan by the natives of Cau- casus, and is eaten by them in a crude state.

Pubescent Cow-parsnip. Fl. July. Ch. 1823. Pl. 4 to 5 feet.

19 H. BARBA'TUM (Ledeb. fl. ross. alt. ill. t. 303.) leaves pinnate, with 2 pairs of leaflets; lower leaflets and terminal one sinuately pinnate-parted, petiolate; lobes acuminate, serrated; serratures ovate, acuminate; umbels radiant; fruit elliptic, beset with a few pili, somewhat emarginate at the apex; vittae in the commissure parallel. ζ. H. Native of Altaia, in mountain meadows. Stem furrowed like the rest, beset with rigid pili, which rise from a callos or blackish point, and which are usually retrograde on the lower part of the stem; bearded with numerous pili at the knees. Petioles hispid, bearded at the insertion of the petioles. Leaves pubescent beneath, but green and furnished with a few stiff hairs beneath at the veins. Involute in one or a few leaves, caducous; involucres of a few linear permanent leaves. To this plant may be referred the one in Gmel. fl. sib. 1. p. 213. no. 29, which Linnaeus has cited for his H. Panäces. It is called Stadtkajatrasca, i. e. a sweet herb, by the natives of Siberia, a name given by them to many other plants, as to Liquorice and Milk-vetch, &c.

Bearded Cow-parsnip. Pl. 4 feet.

20 H. nisečëcës (Ledeb. fl. ross. alt. ill. t. 304. fl. alt. 1. p. 301.) leaves ternate; leaflets petiolulate; lateral leaflets pinnate-parted; terminal one palamate-parted; segments cut or pinnatifid, oblong, acuminate, serrated; umbels radiant; mericarps orbicularly elliptic, at length glabrous; commissural vittae diverging. ζ. H. Native of Altaia, in meadows, near Tschetschulcha, and the metal mines at Riddersk; and elsewhere. H. laciniatum, Fisch. in litt.? Stem deeply furrowed, sparingly pilose, hispid at the joints, villous towards the top. Leaves hispid above from a few thick hairs, but paler and pubescent beneath. Involution wanted; involucres of a few linear leaves, which are variable in length. Flowers white.

Dissected-leaved Cow-parsnip. Fl. July. Pl. 3 feet.

21 H. douglasia (B. D. C. prod. 4. p. 193.) leaves scabrous beneath, and on the petioles, glabrous above, ternate; leaflets petiolulate, cordate, 3-5-lobed, acuminate, toothed; leaves of involucra numerous, subulate at the apex; fruit obovate, glabrous; dorsal vittae elongated, rather club-shaped; commissural vittae 2, short, rather club-shaped, and 2 other small, nearly abortive ones. ζ. H. Native of the north-west coast of America. This may prove nothing but a variety of H. lanatæm. Douglas's Cow-parsnip. Pl. 3 to 4 feet.

22 H. cuenœföëm (B. D. C. prod. 4. p. 194.) leaves hispid beneath, as well as the petioles, glabrous above, pinnate; leaflets 3-5-petiolate, cordate, lobed; lobes toothed, hardly acuminate; leaves of involucra many subulate; fruit ovovate-cuneated, glabrous; dorsal vittæ filiform; commissural vittæ 2, rather clavate. ζ. H. Native country unknown, but probably of Siberia.

Cuneiform-fruited Cow-parsnip. Pl. 4 feet?

23 H. ligusticiföëm (Bieb. & suppl. no. 560.) leaves decumbent, ternate or quinately pinnate, smoothish; leaflets cuneated, obtuse, deeply serrated; fruit villous; vittæ filiform, acute. ζ. H. Native of Tauria, on stony hills; and of Caucasus, in subalpine places above Nikita, ex Stev. obs. 1825. p. 71. H. montanum, Georgii in Wild. herb. ex Stev. Stem angular, pubescent, as well as the young leaves. Flowers white, radiant. Commissural vittæ equal in length to the dorsal ones. Looeage-leaved Cow-parsnip. Fl. June, July. Ch. 1816. Pl. 2 feet.

24 H. caæcæcæcæ (Stev. mem. soc. hist. nat. moss. 3. p. 259.) leaves ternate; leaflets on long petioles, toothed, glabrous above, pubescently scabrous beneath; intermediate one 3-lobed. ζ. H. Native of Caucasus, on the mountains, at the river Ju- charibasch. Flowers white, rather radiant. A plant like this from Iberia has the upper leaves ovate and 3-lobed, on long petioles, and the young fruit bristly.

25. H. MÜHLE (Sibth. et Smith, ß. græc. prod. 1. p. 193.) leaves rather bipinnate, cut, pubescent; stem nearly simple; umbels 4-5-rayed; fruit orbicular, smoothish. H. H. Native of Greece, on Mount Olympus. Umbels large. Stems hardly a hand high. Vittae of fruit 4, red, oblong; the dorsal ones attaining the length of the middle. *Humble Cow-parsnip.* Pl. ½ to ¾ foot.

**Sect. IV. CARMELA** (from Mount Carmelo, the habitation of the species). D. C. prod. 4. p. 194. Fruit ornamented with thick adpressed stiff bristles. Vittae not sufficiently known, but there are probably 4 dorsal ones, and 2 filiform hardly elevate commissural ones. Petals hispid; exterior ones radiant. Perhaps a proper genus, or perhaps only a species of *Zozimia* or *Pastinaca.*

26. H. CARMEI (Labiill. syr. dec. 5. p. 3. t. 1.) leaves pinnate, scabrous from adpressed down beneath; leaflets ovate-oblong, deeply toothed: extreme one rather cordate, 3-lobed; rays of umbel 5, very unequal, contracted after flowering. H. Native of Syria, on Mount Carmel. Involuta and involucres composed of erect permanent setaceous leaves. Bristles on the stem and branches retrograde.

**Carmelo Cow-parsnip.** Pl. 2 to 3 feet?


27. H. ALPINUM (Lin. spec. p. 329.) leaves cordate-roundish, smooth, palatom 5-cleft: lobes bluntish, crenate toothed, rarely cut; leaves of involucres setaceous; fruit orbicular-ovulac.


**Alpine Cow-parsnip.** Fl. June, July. Cl. 1750. Pl. 1 to 2 ft.

29. H. AUSTRICUM (Jacq. austr. t. 61.) leaves pinnate, with 3-5 pairs of leaflets, scabrous from scattered hairs on both surfaces; leaflets ovate-lanceolate, doubly serrated; terminal one somewhat 3-lobed. H. H. Native of Austria, Carniola, and Transylvania, in alpine meadows. Crantz, austr. 153. t. 1. Spondylium Austriacum, Scop. carn. ed. 2. vol. 1. p. 204. t. 1. To this Sprengel refers Tordilium stilifolium, Scop. carn. no. 318. t. 8. but it differs in the petals being red, and in the fruit being hispid from vil."
Z. absinthifolia (D. C. prod. 4. p. 195.) stem furrowed; leaves supra-decompound, hoary and pilose; leaflets lanceolate, rather remote, and somewhat trifid, cuneate at the base, short.  


2 Z. anethifolia (D. C. prod. 4. p. 196.) stem terete; leaves supra-decompound, glabrous, glaucous; leaflets linear, acute.  

H. Native of Persia, between Teheran and Isplian. Habit of the first species. Involute small, glabrous. Fruit more of an orbicular form than in H. absinthifolium, and best with scattered down over the whole disk, but when young rather pilose.

Fennel-leaved Zozima. Pl. 2 feet.

Cult. The seeds of these plants should be sown in the open ground in spring. A light soil suits them best.

CXL. POLYPROPHEA (from πυλος, poly, many, and ραγίον, ταινία, vitta; the mericarps are furnished with many vittae.) D. C. Coll. mem. v. p. 53 t. 13. prod. 4. p. 197.


Flowers yellowish in the dried state. This genus is allied on the one hand to Zozima, and on the other to Tordylium.

1 P. Nuttallii (D. C. 1. c.) Native of North America, in the Arkansas territory. Tordylium Americanimum, Nutt. miss. Stem nearly terete. Leaflets trifid, eneuated at the base; lobes lanceolate, toothed at the apex. 

Nuttall's Polytrichum. Pl. 1 foot.

Cult. See Zozima above for culture and propagation.

CXLII. JOHRENA (in honour of Mart. Dan. Johreni, who was the first to introduce the dichotomous method in botany.) D. C. Coll. mem. v. p. 54 t. 1. F. C. prod. 4. p. 196.

Lin. syst. Pentadandria, Digynia. Teeth of calyx obsolete, very blunt. Petals unknown. Stylodium short, conical, a little furrowed; styles short, diverging, at length deciduous. Fruit oval, lenticularly compressed from the back, quite glabrous, rather spongy and suberose, with a tumid smooth margin, and a flat rather coloured dorsal area. Mericarps with 3 dorsal filiform ribs, which at length become brownish, and therefore probably contain vittae; the 2 lateral ribs usually indistinct in the dilated margin: but sometimes rufous, and of the form of vittæ. Commissoory spongy, without any vittæ, but furnished with 2 lines. Carpophore bipartite. Seed complanate.—A quite glabrous herb, native of the Levant. Stem terete, dichotomous. Lower leaves bipinnate; leaflets opposite, 2 pairs and an odd one, distant, divided into 2-5 linear acute lobes, which are con- 

fluent at the base; superior leaves parted into 3 linear elongated, quite entire lobes; upper ones reduced to a narrow elongated sheath. Umbels of 6-8 rays. Involution wanting or of one leaf; involucres of 4-5 linear-setaceous leaves.

1 J. dichotomy (D. C. 1. c.)—Native of the East, at Mount Lebanon. Hippomarathrum eritthus folio flore inaevo, Vaill. herb. Dichotomous Johrenia. Pl. 1 to 2 feet?

Cult. See Zozima above for culture and propagation.

Tribe VIII.

TORDYLIUM (plants agreeing with Tordylium in important characters), or Orthopteremum paucijugum annulatum, Koch, umb. p. 55. D. C. prod. 4. p. 196. Fruit longitudinally or flately compressed from the back, girded by a thick dilated thickened knobbed or plicate margin. Mericarps with 5 very slender or obsolete ribs; lateral ribs contiguous to the dilated margin, or forming the same. Seed flat. This tribe differs from tribe Peucedanum, in the margin of the fruit being ribbed or plicate, not smooth, and quite entire.


Lin. sysv. Pentadandria, Digynia. Margin of calyx 5-toothed. Petals obvolute, emarginated with an inflexed point; outer ones radiant, bifid. Fruit round the rays of the umbels flately compressed, with a somewhat thickened accessory winged margin, which is hardly tubeicularly wrinkled; those of the disk dissimilar, having one of the mericarps contracted into a hemispherical urceolus around the other, which is abortive. Mericarps with very slender ribs, the 3 dorsal ones at equal distances, and the 2 lateral ones contiguous to the thickened margin, or covered by it. Vittæ filiform, one in each furrow, and 2 in the commissure. Carpophore bipartite. Seed flattened. This genus hardly differs from Tordylium unless in the unequal mericarps of the fruit, and in their margins being hardly wrinkled, and quite smooth in the disk on both sides, as in Heracleum.

1 H. egyptiacum (Lin. amon. 4. p. 270. exclusive of the synonymes,) stem hispid; leaves scabrous, pinnate; leaflets pinnaflid; segments bluntly lobed; involucre and involucres small, setaceous. O. H. Native of Egypt and of Syria, on the sea shore. Jacq. hort. vind. t. 87. Tordylium Egyptianum, Lam. ill. t. 193. f. 2. Poir. dict. 7. p. 711. Flowers white. In this species the flowers sometimes have 5-4 styles. Carposphere green. Styles white, erect.


2 H. cordata (Lin. fil. suppl. p. 179.) plant pubescent; lower leaves ternate; leaflets ovate, rather cordate; superior leaves simple, cordate, toothed; leaves of involucres and involucres numerous, setaceous, reflexed. O. H. Native of the Levant. Jacq. hort. vind. 2. t. 193. Tordylium cordatum, Poir. dict. 7. p. 712. Rays of umbels hispid. Leaves of involucres subulate, longer than the umbellules. Flowers white. Fruit as in most of the species of Tordylium few, but unequal, as in Hasselquisitia.


Cult. The species being natives of warm climates, the plants are difficult to preserve through the winter. The surest way to procure good seed is to sow in autumn, and preserve the plants in a frame or green-house till spring, when they should be planted out in a warm sheltered situation.

CXIV. TORDYLIUM (τορδκλιομ of Dioscorides; said to

Y y

**Lin. syst. Pentádria Diganja.** Margin of calyx 5-toothed. Petals obovate, connate, with an inflexed point; outer ones radiating and bident. Fruit fiddle pressed from the back, girded by a rugged tubercular thick accessory margin. Mericarps with very slender slender: the 3 dorsal ribs at equal distances, and the 2 lateral ones contiguous to the thickened margin, or covered by it. Vitae filiform, one or more in the furrows, and 2 or more in the commissure. Carpospore bipartite. Seed complanate.—Herbs, with pinnate leaves; leaflets ovate, deeply toothed. Involuta of many leaves. Flowers white. The two sections differ from each other in the number of vitae.

**Sect. I. Eutordylium** (from eu, well, and *tordylium*; this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 197.—Tordylium, Hoffm. umb. 1. p. 198. t. 3. f. 3-4. A. Koch, umb. 87. f. 24, 25. Vitae solitary in the furrows, and twin in the commissure.

1 T. Syriacum (Lin. spec. p. 342.) plant pubescent; leaves pinnate; leaflets roundish, repandly toothed; terminal one ovate; involucra and involucelles longer than the umbels. **O. II.** Native of Syria, Caria, Asia Minor, and Greece. Jacq. Hort. vind. t. 1. t. 51. Riv. pent. t. 3. Barrel. icon. t. 349.—Mor. ex. sect. 9. t. 16. f. 7. There is a variety of this with a simple erect stem; and another with diffuse procumbent stems.

**Syrian Hart-wort.** Fl. July. Clt. 1597. Pl. 1 foot high or procumbent.

2 T. Maximium (Lin. spec. 345.) stem scarious or hispid from retrograde bristles; leaves pinnate; leaflets lanceolate, deeply serrate and toothed; terminal one elongated; leaves of involucra and involucelles lanceo-triangular, shorter than the umbels. **O. H.** Native of middle and south Europe, Caucasus, and the Levant, in cornfields. In England on banks and waste ground, but rare; about London; under a hedge on the north side of the parks, Oxford; in a hedge about half a mile from Eton. Smith, Engl. bot. 1173. Jacq. anat. t. 142.—Mor. ex. sect. 9. p. 316. sect. 9. t. 16. f. 1.—Riv. pent. tir. t. 1.—Lob. icon. 737. Hercules-Tordylium, Spreng. spec. umb. 49. T. mágnum, Broth. and T. Lusitanicum, Willd. does not differ from this species according to Link. Stem erect, branched, hollow. Leaves densely clothed with close close bristy hairs, all directed towards the point; leaflets oblong-lanceolate, the lower ones ovate. Umbels dense, bristy. Flowers reddish, the outermost petal with equal lobes, the two next with unequal unequal ones.

**Great Hart-wort.** Fl. June, July. Britain. Pl. 3 to 4 feet.

**Sect. II. Condylócaras** (from *condylo*, *kondýlos*, a finger joint, and *karpos*, *karpos*, a fruit). Hoffm. umb. 1. p. 292. Koch, umb. p. 86. but not of Desf. D. C. prod. 4. p. 198. Vitae numerous both in the furrows and commissure. In the commissure there are 4 in T. Hasselquistia, and therefore is an intermediate plant between the two sections, as there are 8-10 in the commissure of the other species.

3 T. Hasselquistia (D. C. prod. 4. p. 198.) plant pubescent; leaves pinnate; leaflets roundish, repandly toothed: the terminal one in the lower leaves is reniformly cordate; leaves of involucra and involucelles narrower, shorter than the umbels: of the involucelles similar, but longer than the umbelles. **O. H.** Native of the Levant. Like Hasselquistia cordata, but the character of the fruit is the same as that of Tordylium. Habit of T. officinale. Vitae in the commissure 4, 2 curved and 2 straight.

**Hasselquistia’s Hart-wort.** Pl. 1 foot.

4 T. Officinale (Lin. spec. p. 345.) stem generally branchéd, furrowed, clothed with soft deflexed hairs; leaves pinnate, rough, hairy; leaflets ovate, cut, erect, the odd one the longest, leaves of involucre and involucelles lanceolate, acute; those of the latter about equal in length to the umbelles; radiant petals in pairs, with very unequal lobes. **O. H.** Native of Portugal, south of France, Italy, Dalmatia, and Greece, in cultivated fields; possibly never seen at all in England, the T. máximum having been confounded with it; however, it is said to have been found by Mr. Doody about Isleworth, Ray, and about London. Petivier. Smith, Engl. bot. 44. f. grae. 3. t. 237.—Colum. ephr. t. 124. f. 1.—Mor. ex. sect. 9. t. 16. f. 6.—Dodd. pemp. p. 313. f. 314. Lob. icon. 736.—Baub. hist. 3. p. 84. f. 2. Small Hart-wort, Petiv. herb. brit. t. 24. f. 6. T. michéspérmum, Ten. add. 1827. Condylócaras officinale, Koch, l. c. Leaflets roundish or ovate, erect, and variably cut. The radius of the umbelles formed of the very unequal outer petals of the flowers of the circumference, the large lobes of 2 flowers coming together, and resembling a single petal. These lobes are sometimes reddish. Fruit hairy on the disk, known with scarcely any ribs or veins; the border greatly elevated, tufted, nearly crenate transversely. T. Apulum is readily distinguished from this species by having in each marginal flower only one radiant petal, with 2 equal lobes.

**Official Hart-wort.** Fl. June, July. Britain. Pl. 1 to 1½ ft. 5 T. Apulum (Riv. pent. t. 2.) plant erect, villous below; leaves pinnate; leaflets of the lower leaves roundish, eneuated at the base, lobately crenated: of the upper ones pinna-tidif, linear, acute; leaves of involucra and involucelles setaceous: those of the latter shorter than the umbelles. **O. H.** Native of Apulia and Greece, in cultivated fields. Lin. spec. 345. exclusive of the synonyms.—Jacq. Hort. vind. t. 53. T. grandiflórum, Mench, mch. p. 78. Condylócaras Apulum, Hoffm. umb. p. 293. T. insulare, Clark in Spreng. nec encl. 8. p. 165. There is a variety of this which is almost glabrous below. Stem hairy at the joints.


**Cult.** The seeds only require to be sown in the open border in spring. A light soil will suit the species best.

**CXV. TORDYLOPSIS** (from *tordylium* and *övel, opsis*, appearance; plant resembling *Tordylium*). D. C. prod. 4. p. 199.—Tordyloides, Wall. ms.

**Lin. syst. Pentádria Diganja.** Margin of calyx 5-toothed: teeth acute; outer teeth the largest, dilated at the base, and cuspidate at the apex. Outer petals of umbels large and obedately 2-lobed; the rest smaller, ovate, and cuspidate, entire, rarely a little 2-lobed. Stylodum conical; styles 2, erect, elongated. Fruit hairy when young. The rest unknown.—Herb a foot high, more or less hairy. Stem terecate, straited, erect, nearly simple. Petioles sheathing at the base. Leaves with 1-2 pairs of ovate cut toothed leaflets, and an odd one. Umbels terminal, 6-8-rayed. Involuta of 5-6 lanceolate linear acuminated leaves, which are almost longer than the rays. Umbelles crowded, 15-18-flowered. Leaves of involucra conforming to the leaves of the involucra, exceeding the flowers.—Habit almost of Herácleum, but the involucra are of many leaves. It agrees also with *Tordylium* in the hairiness, and in the corollas. The genus is very doubtful, the perfect fruit being unknown.
UMBELLIFERÆ. CXVI. Krubera. CXVII. Pachypleurum. CXVIII. Agasyllis. CXIX. Stenocælum, &c.

1 T. Brunonis (Wall. hist. ex D. C. prod. 4. p. 199.) Τ. F. Native of Nipaul, in Kamaon, towards Émodi. Brown's Tordyliopsis. Pl. 1 foot. Cult. This plant should be grown in a pot, so that it may be placed under shelter in winter.

Tribe IX.

SILÉRINEÆ (this section contains plants agreeing with Siler in important characters, or Orthospermæ mutagünptae lenticulares, Koch, umb. 84. D. C. prod. 4. p. 199. Fruit lenticularly compressed from the back. Mericarps with 5 primary ribs, having the lateral ones of these marginating; and 4 secondary less prominent ones; these last are rarely wanting; all filiform and wingless. Seed flattish in front.


Lin. syst. Pentándria, Digynia. Margin of calyx obsolete. Petals lancelolate, incurved. Fruit oval, compressed from the back; mericarps with 5 primary obtuse ribs; the 2 lateral ones of these more humble than the rest, and placed in front of the short accessory margin: the secondary ones sometimes absent. Seed a free nucleus, which is flat on one side, and rather convex on the other, covered with many vitres, 8-10 on the back, and 5-6 in the commissure. — A perennial herb, with the habit of Câchrys. Stem succulent. Leaves pubescent, ternately decumbent; leaflets deciduous, lancelolate, serrated, a little lobed. Involucre wanting. Umbels of many rays. Leaves of involucres numerous, sessile. Flowers white.


CXIX. STENOCAELUM (from στενή, stenos, narrow, and κοίλος, koilos, hollow; in reference to the narrow furrows of the fruit). Ledeb. fl. ross. alt. ill. t. 175. fl. alt. 1. p. 298.

Lin. syst. Pentándria, Digynia. Margin of calyx 5-toothed. Petals obovate-ornicular, somewhat emarginate, with an inflexed point. Fruit compressed from the back. Mericarps with 5 elevated roundish thick equal ribs; the lateral ribs marginaing. Vitce one in each furrow, and 2 in the commissure. Seed flat in front. Involucre and involucres of many lancelolate-linear leaves, with membranous margins. — A perennial herb, having a fuscescent root, nearly a foot long. Stem solitary, 2-3 inches high, leafy at top; but with numerous axillary elongated branches, which are furnished with leaves beneath the middle. Petals dilated into sheaths. Leaves pinnate; leaflets pinnatifid. Cauline leaves tripinnate; leaflets oblong, acute, entire or bifid. Umbels of many rays. Umbellules when bearing the fruit nearly globose. Flowers white. The whole plant is pubescent, and powdery towards the apex. Stems, petioles, peduncles, and rays of umbels violaceous.

lentically compressed from the back;—mericarps with elevated obtuse filiform ribs, having 5 primary ones: the lateral ones of these marginating; and 4 less prominent secondary ones. Vitae one in each furrow, under the secondary ribs. Seed flattish in front.—Perennial glabrous herbs. Leaves trinate; petioles trifid, sheathing at the base; branches of petioles bearing 3 roundish, coarsely and bluntly crenated, or bluntly 3-lobed leaflets. Umbels large, of many rays. Involvea wanting or of few leaves, caducous. Flowers white.

1 S. TULBRUM (Scop. carn. 1. p. 217.) L. H. Native of Europe and Asia, from Spain to Kamschatka; but the habitats given are doubtful, the plant being often confused with Las

Cult. See Lasenpintum. p. 351. for culture and propagation.

CXXI. GALBANUM (gallh or galban, in Celtic, means fat, oily; in reference to the gum). D. Don, in Lin. trans. 16. p. 603.

Lin. syst. Pentandra, Dijigia. Fruit compressed from the back, elliptic, unguncular; raphe narrow, open, not closed. Mericarps with 5 elevated compressed bluntly keeled ribs, not winged: lateral ones distinct, marginal; furrows broadish, concave, without any vitae. Commissure flat, dilated, furnished with 2 vitae; vitae broad, a little arched. The seeds from which the foregoing description has been drawn were picked from the gum. The rest of the plant remains unknown.

1 G. officina/a (D. Don, l. c.) L. H. The plant, according to Dioscorides, is a native of Syria; but it must be in some remote inaccessible part of it, as it has not been observed by any of the numerous travellers who have visited that country. As the gum-galanbun is partly imported from Smyrna and partly from India, it is very probable that the plant is also a native of Persia. The Böun Galbanum of Linnaeus possesses neither the smell nor the taste of Galbanum, but in these particulars agrees best with Fennel, and the fruit has no resemblance whatever to that found in the gum. How a plant differing so essentially from Galbanum could yet have retained so long in the Pharmacopoeia may well be subject of surprise, especially as the Böun Galbanum, being so frequent in gardens, afforded abundant opportunities of settling the question.

Galbanum agrees in virtue with gum-aromoniae, but is generally accounted less proper in asthma, and more so in hysterical complaints. It is exhibited in the form of pills or emulsions, to the extent of about a drachm. Applied externally, it is supposed to resolve and discuss tumours, and to promote suppuration. The best sort of galbanum consists of pale coloured pieces, about the size of a hazel nut, which, on being broken, appear to be composed of clear white tears, of a bitterish acid taste, and a strong peculiar smell. But it most commonly occurs in agglutinated masses, composed of yellowish or reddish, and clear white tears, which may be easily torn asunder, of the consistence of firm wax, softening by heat, and becoming brittle by cold, mixed with seeds and leaves. Galbanum is generally obtained by cutting the plant across some inches above the root. The juice which flows from the wound soon hardens, and is the galbanum brought to us from Syria and the Levant.

Official Galbanum. Pl. 4 to 5 feet.

Cult. See Thapsia, p. 350, for culture and propagation.

Tribe X.

CUMNEAE (this tribe contains plants agreeing with Cum-
num in important characters), or Orthospermae multijugata contractae, Koch, umb. 51. D. C. prod. 4. p. 200. Fruit contracted from the sides. Mericarps with 5 primary filiform ribs: the lateral ones of these marginating, and 4 secondary more prominent ones; all wingless. Seed straight, flattish in front.


Lin. syst. Pentandra, Dijigia. Teeth of calyx 5, lanceolate, setaceous, unequal, permanent. Perals oblong, cruminate, with an inflexed point, erectly spreading. Fruit contracted from the sides. Mericarps with 5 wingless ribs: the 5 primary ones filiform, and minutely muculurated, the lateral ones of these marginating: the 4 secondary ones more prominent and prickly. Vitae one in each furrow, under the secondary ribs. Carpophore bipartite. Seed rather concave in front and convex on the back.—Herbs, with multifid leaves; linear setaceous leaflets. Involvule of 2-4 simple or divided leaves; involvules dimidiate, of 2-4 leaves, which are at length reflexed. Flowers white or reddish.

1 C. Hisa/uncum (Merat, herb. D. C. prod. 4. p. 201.) segments of leaves linear-setaceous, acute; umbels bilabif; umbel
lules bearing 3-4 fruit; involucre about equal in length to the fruit, which are bearded by bristles. O. H. Native of Spain, in corn-fields in Vallez de la Manca. Habit of C. Cuminum, but differs in the fruit not being glabrous or puberulous, but bearded by long stiff spreading pili. Flowers reddish.

Spanish Cumin. Pl. 1 foot.

2 C. Minu/ten (D'Urv. enum. 32. t. 272.) segments of leaves linear, obtuse; involucre about equal in length to the fruit, which is glabrous. O. H. Native of the island of Cos, in shady places frequent. Stem slender, branched, hardly 2-3 inches high. Every part of the plant is smaller than in the other species. In the specimens received from D'Urville, the segments of the leaves are acute, and the involucres are rather shorter than the fruit.

Minute Cumin. Pl. 2 to 3 inches.

3 C. Cymnum (Lin. spec. p. 365.) segments of leaves linear-setaceous, acute; umbels 3-5 cleft; involucre exceeding the fruit, which is pubescent. O. H. Native of Upper Egypt, and Æthiopia. Cuminum, Riv. pent. t. 40. Cam. epit. 518. Schkuhr, handb. no. 714. t. 80. Woody. med. bot. t. 196. Nees, off. pl. 13. t. 7. Hayn. arz. gew. 7. t. 11. Plessch. icon. 192. Cav. icon. 4. t. 360.—Mor. hist. p. 271. sect. 9. t. 2. There are varieties of Cumin with white, red, or purple flowers. Coat of fruit aromatic; albumen insipid. The plant is cultivated in the south of Europe and all Lesser Asia. In the islands of Malta and Sicily, where it is much cultivated for sale, it is called Cumino aigro or hot cumin, to distinguish it from Cumino dolic, sweet cumin. Cumin seeds have a bitterish warm taste, accompanied with an aromatic flavour, not of the most agreeable kind, residing in a volatile oil.

Var. a, sceldridum (D. C. prod. 4. p. 201.) fruit clothed with short down; but roughish on the ribs. O. H. C. Ægyptia

cum, Merat, in herb. This is the wild plant.

Var. ß, glabridum (D. C. l. c.) fruit glabrous. O. H. C. Cuminum, Merat, in herb. This is the cultivated plant.


Cult. The seed should be sown in spring in a warm sheltered situation, where the plants will flower in summer, and produce seed in autumn.

CXXIII. TREPOCARPUS (from τρεπόντω, trepo, to turn, and
UMBELLIFERÆ. CXXIII. TREPOCARPUS. CXXIV. THAPSI.

1 T. Gargarica (Lin. var. 57.) stem terete, glabrous; leaves bi-tripinnate, shining; segments linear, acute, elongated, quite entire along the margins, decurrent or confluent; involucra of few leaves; fruit cordate at the base, with a very open recess. 2. H. Native of Calabria, Mauritania, Greece, Sicily, Sardinia, Spain, &c. in open places and on hills. Mag. nat. monsp. p. 286 with a bad figure.—Gouan. obs. p. 18, t. 10. Desf. alt. p. 268. Sibth., et Smith, fl. grece. t. 287. There are varieties of this with glabrous or hairy petioles. To this the Férula Neapolitana, Ten. fl. med. p. 316, append. 4th. p. 12., is referred by Sprengel, which is said by the author to be nearly allied to Eglane. The bruised root is said to be good for resolving tumours.


2 T. Silphium (Viv. fl. lyb. p. 17.) stem terete, furrowed, glabrous; leaves pinnate; leaflets many-parted; segments simple or trifid, all linear, elongated, hairy on both surfaces, with red veins. Wings and fruits are at the base, hairy and furrowed, with spongy tissue constructed. 2. H. Native of the north of Africa, on the mountains of Cyrenaica. This is supposed to be the plant which yielded the juice called silphium, a medicine held in such high estimation among the ancients, as to have imparted to the region where it grew (the vicinity of Cyrene, now included in the pashal of Tripoli,) the appellation of "Silphifera!" Silphium Deadly-carrot. Fl. July, Aug. Ct. 1824. Pl. 2 to 4 feet.

3 T. Villorosa (Lin. spec. p. 375.) stem terete, glabrous; leaves tripinnate, and are, as well as the petioles, villous; leaflets oblong, minutely pinnatifid; lower ones deflexed; involucra and involucres almost wanting. 2. H. Native of Portugal, Spain, south of France, and Mauritania, on hills and in bushy places. Lam. ill. t. 206. D. C. fl. fr. 4. p. 342.—Moris. exsct. 9. t. 18. f. 3. Plench. 219. Perkins. 878. t. 877. f. 2. Ger. mer. 1030. Flowers yellow, as in the rest of the species. Aspect of plant hoary. Root carrot-shaped, black on the outside. Villorosa Deadly-carrot. Fl. June, July. Ct. 1710. Pl. 3 to 4 feet.

4 T. Asclepium (Lin. spec. p. 375.) stem terete, glabrous; leaves tripinnate; leaflets digitately multifid, capillary, short; petioles glabrous; involucra and involucres wanting. 2. H. Native of Apulia, Sicily, Rhodes, and about Constantinople. Sibth. fl. grece. t. 286. ex Smith, prod. t. p. 201. Guss. prod. fl. sic. 1. p. 370. T. Apulia, Mill. dict. no. 4.—Col. ephr. t. 86. Mor. hist. 3. p. 319. sect. 9. t. 18. f. 9. Fruit one-half smaller than those of T. Gargarica, having the wings rather truncate at both ends. Habitat of Elaeosinum macedus. The root is about the thickness of a man's thumb; the bark is yellow and wrinkled; the inside white, abounding in a bitter milky juice. Swallow-wort Deadly-carrot. Fl. July, Aug. Ct. 2 to 3 feet.

5 T. Fétida (Lin. spec. p. 375.) stem terete, petioles villous; leaves tripinnate; leaflets much spreading, pinnatifid, attenuated at the base; segments short, lanceolate, toothed; involucral wanting. 2. H. Native of Spain, Zante, Cyprus, &c. Blackw. t. 708. ex Smith. Moris. hist. sect. 9. t. 18. f. 7. ex Lin. Lobel's figure is more probably referable to Laeseriptum gammaicum. T. tenuifolia, Lag. gen. ct spec. 12. is referable to the figure of Morison, but differs in the stem being glabrous. It is probably only a variety of this species. The leaves are rough and hairy. Fétida Deadly-carrot. Fl. July, Aug. Ct. 1596. Pl. 2 to 3 ft.
UMBELLIFERÆ. CXXV. Thapsia. CXXV. Cymopterus. CXXVI. Laserpitium.

** Involucra of 5-7 leaves.

6. T. polygama (Desf. fl. atl. 1. p. 261. t. 75.) stem terete; glabrous; sparingly branched; leaves glabrous, bipinnate; leaflets multifid: lobes linear, acute, divaricately trifid; involucra of 5-7 leaves; central flowers male. *H. Native of Mauritania, about Bone, Lacaille, and Tangiers. Spreng. in Schultes, syst. 6. p. 614. exclusive of the synonyme of Lam. and therefore the description. Flowers pale yellow. Stylodium thick. Styles diverging, at length reflexed.—Barrel. icon. 336. appears to be intended for this plant, but the flowers are said to be white.

* Polygamous. Deadly-carrot. Pl. 1 to 2 feet.

† Species not sufficiently known.

7. T. prealta (D'Uvry, enum. p. 32.) stem branched above; radical leaves quadrifidly decompounds, shining; leaflets oblong, cut, almost pinnatifid; umbels numerous; central one much the shortest: lateral ones on peduncles, which are furnished each with a lanceolate twin bractea at the base. *H. Native of the island of Cos, among broken rocks at the height of 900 feet. Stem 6-8 feet high. Fruit unknown.

Tall Deadly-carrot. Pl. 6 to 8 feet.


Transtanga Deadly-carrot. Pl. 2 to 4 feet.

9. T. maxima (Mill. dict. no. 2.) leaves pinnate; leaflets very broad, pinnatifid, villous beneath; petioles decurrent. *H. Native of Spain, all over Old Castile quite to the Pyrenees. Perhaps not different from T. villosa. Root said to be of a dark colour on the outside, and the leaves very thick.

Largest Deadly-carrot. Fl. June, July. Clt. Pl. 4 to 5 ft. 10. T. altissima (Mill. dict. no. 6.) leaves decompound; leaflets large, shining; umbels large. *H. Native of Apulia. Perhaps the same as T. praecita.

Tallest Deadly-carrot. Pl. 8 feet.

Cult. The species of Thaspia will grow in any common garden soil. They are only to be increased by seeds, which should be sown in autumn as soon as ripe.

CXXV. Cymopterus (from κυμα, κυμα, a wave, and πτερον, πτερον, a wing; in allusion to the undulated wings of the mericarps). Rafin. journ. phys. 1819. aug. p. 100. but not of Schultes, syst. 6. p. 34.—Thaspia, Nutt. gen. amer. 1. p. 181.

Lin. syst. Pentádria. Digydia. Calyx minutely 5-toothed. Petals roundish-oval, with an inflected point. Fruit nearly elliptic; compressed, 7-8-winged: the perfect mericarps are therefore 4-winged, and the imperfect ones 3-winged: wings undulate; furrows of fruit flat, 1-nerved; commissure naked, but with 5 stripes. Carpophore not separable from the mericarp.—A smooth humble herb, with tuberous roots, rather decumbent, nearly naked stems; binate leaves: with short obtuse decussate lobes, and long petioles. Umbels 4-6-rayed; involucra wanting; involucres 5-7-parted, dimidiate. Flowers polygamous; female ones nearly sessile and white; central ones male, pedicellate.—This genus is truly distinct from Thaspia, but perhaps may be joined with Laserpitium.


Glomerate-flowered Cymopterus. Pl. decumbent.

Cult. See Thaspia above for culture and propagation.


Lin. syst. Pentádria, Digydia. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point. Fruit compressed from the back, or nearly terete, 8-winged; the 5 primary nerves of the mericarps being filiform: and the 4 secondary ones being winged. Vitte in 1 each furrow, under the secondary ribs. Carpophore free, bipartite.—Herbs with bipinnate or tripinnate leaves; leaflets entire, toothed or cut. Umbels showy, of many rays. Involucre and involucres of many leaves. Flowers white, rarely yellow. This genus is easily distinguished from the others by the 8 wings to the fruit.

* Fruit glabrous, or the primary ribs are clothed with adpressed, very short down.


Rough Lasarwort. Pl. 1 to 2 feet.

2 L. glabrum (Cranz, austr. 3. p. 54.) leaves bipinnate, quite glabrous in every part, and shining; leaflets obliquely cordate, mucronately toothed: but those of the superior leaves are quite entire; leaves of involucra setaceous; wings of fruit equal, rather curved. *H. Native of Europe, on the mountains, in dry and stony places. D. C. fl. fr. suppl. p. 509. L. latifolium, Lin. spec. 356. Jacq. fl. aust. t. 146. Sclhkuhr. handb. t. 67. Fl. dan. t. 1313. L. Libanotis, Lam. dict. 3. p. 423.—Dodd. pempt. 312. f. 2. Chus. hist. 2. p. 149. f. 2.—Riv. pent. t. 21.—Plench. icon. 179.—Mor. hist. sect. 9. t. 17.—Mor. hist. 3. p. 320. t. 19. f. 1-6. Stem and under side of leaves rather glaucous. Flowers white. In the Alps this plant is only a foot or 2 feet in height, while in cultivation it grows much larger. The plant is acid and aromatic, with something of bitterness, and somewhat pungent, and to merit a place amongst the aromatic stimulants, emmenagogues, and apotropaics. It is used by the peasants for themselves, and by farriers for horses, in some countries. The root is the hottest part of the plant.


4 L. acanthus (Moretti, in Com. (1824.) fl. com. no. 344. and in bot. ital. (1825.) no. 3. p. 35.) leaves somewhat tripinnate: leaflets rounded 2-5-lobed, acutely and deeply serrated.
upper cauline ones tripartite; lobes linear-lanceolate; involucra and involucells of few leaves; wings of fruit flat, unequal: the dorsal ones a little smaller than the lateral ones. 2. H. Native of Switzerland and Italy, in subalpine places. L. latifolium, Gaudin, f. helv. 2. (1828) p. 948. L. trilobum, Sut. fl. helv. but not of Lin.—Hall. hist. no. 352. exclusive of the synonyme. Allied to L. aquilegifolium and L. glutinum, but differs from them in the flowers being yellow.

**Gaudin's Laserwort.** Pl. 3 to 4 feet.

5 L. marginatum (Waldst. et Kit. pl. rar. hort. 2. p. 210. t. 192.) leaves biternate, shining, and are as well as the stems glabrous; petioles and nerves of leaves rather pilose beneath; leaflets ovate, sessile, somewhat 3-lobed, serrated; upper stem leaves reduced to the petioles; involucra and involucells of 2-5 linear-lanceolate leaves; wings of fruit unequal: the 2 lateral ones the broadest. 2. H. Native of Croatia, in woods. Petals incurvally obovate at the apex, greenish yellow, margined with purple.


6 L. siculum (Spreng. sys. 1. p. 918.) stem terete, branched, few-leaved; leaves bipinnate; leaflets elliptic or obovate, glaucous, mucronate, veiny; involucra and involucells of many awned leaves, wings of fruit coloured, emarginate. 2. H. Native of Sicily, among rocks, on the Nebrode mountains. Guss. prod. f. sie. 1. p. 317. L. Nebrodense, Jan. herb. 260. spec. 15. Allied to L. Silzer, but the wings of the fruit are very different.

**Sicilian Laserwort.** Pl. 3 to 4 feet.


**Whitby or Mountain Laserwort.** Fl. May, July. Clt. 1640. Pl. 1 to 6 feet.

8 L. gallicium (C. Bauh. pin. 156. Lin. spec. p. 357.) leaves supra-decomposing, glabrous, shining; leaflets cuneate, 3-5-cleft, mucronate; leaves of involucra linear-lanceolate, acuminate; wings of fruit equal, flat. 2. H. Native of the south of France; and of Upper Italy. D. C. fl. fr. 4. p. 312. Spreng. in Schluchtes, sys. 6. p. 624. Gaud. aix. t. 58. Park. theat. 928. f. 1. L. trifurcatum, Lam. fl. fr. 3. p. 415. L. cuneatum, Moench. meth. 79. There is a variety with broader segments (in Mor. hist. sect. 9. t. 19 f. 8.) and with the lobes very much divaricate and short (Pluk. alm. t. 199. f. 1. L. formosum, Willd. spec. 1. p. 1518.) segments of leaves ob-long-linear (Mor. hist. sect. 9. t. 19 f. 9. and therefore L. angustifolium, Lin. spec. p. 357.) segments of leaves very narrow (J. Bauh. hist. 3. p. 137. and therefore L. angustifolium, Willd. l. c.) segments of leaves cut into many lobes (L. Gallicum laciniatum, Hertel, &c.) The most of the varieties have glabrous stems; very few have them hispid from scattered bristles. L. tenifolium, Riv. pent. irr. 22. is also a variety of this species. Flowers white.


9 L. peucedanoides (Lin. spec. p. 358.) leaves trinerved, quite glabrous; leaflets quite entire, oblong, mucronate; leaves of involucra, and involucells setaceous; pistils elongated; wings of fruit unequal, flatish. 2. H. Native of Carniola, Croatia, and Upper Italy, in mountain woods. There are varieties of this with oval-oblong leaflets (Hoppe, fl. exsiccat.) oblong leaflets (Jacq. icon. rar. 2. t. 250.) oblong-linear leaflets (Seg. var. 3. p. 227. t. 7.) and linear leaflets (Pluk. alm. t. 198. f. 4.) but all these varieties differ from any of those of L. Gallicum in the segments of the leaves not being cuneated nor lobed. Flowers white.

**Salphur-wort-like Laserwort.** Fl. June. Clt. 1816. Pl. 1 to 3 feet.

10 L. gummi-ferum (Desf. fl. atl. 1. p. 254. t. 72.) leaves ternately decomposing, glabrous; leaflets pinnatifid; lobes lanceolate, short, acute, stiffish; involucra and involucells of few leaves. 2. H. Native of Portugal, Spain, and Mauritania, in sandy and barren fields. L. thapsioiderne, Brot. phyt. ins. p. 77. t. 35. L. polygonum, Lam. dict. 3. p. 425. Thapsia gummi-fera, Spreng. umb. spec. p. 31. Flowers white. Petals in- flexely emarginate. Fruit 8-winged (ex Brot.) and therefore this plant if referrible to Laserpitium and not to Thapsia. Lobes of leaves, when dry, usually channelled. Petioles sometimes pilose, usually glabrous as well as the lobes.

**Gum-bearing Laserwort.** Pl. 2 to 3 feet.

11 L. hispam (Lam. fl. fr. 3. p. 618.) leaves supra-decomposing, hairy; leaflets narrow, pinnatifid; lobes short, linear, cuspidate; leaves of involucra and involucells membranous, rather tristif at the apex, ciliolate; wings of fruit thin, flat. 2. H. Native of France, Switzerland, Piedmont, on the Alps, in meadows; and of Kotzebue's Sound. D. C. fl. fr. 4. p. 313. L. Paniax, Gouan. ill. 13. L. Halleri, All. pedem. no. 1315. —Hall. helv. no. 795. t. 19. exclusive of the synonyme of Gmel. and Seg.—Mor. hist. sect. 9. t. 15. f. 16. Flowers white.

**Hair Laserwort.** Fl. June. Clt. 1759. Pl. 1 to 2 feet.

12 L. scabrum (Cav. icon. 2. p. 72. t. 190.) leaves bipinnate, scabrous; leaflets oblong, cut, acute, and are as well as the stems glaucescent; leaves of involucra and involucells lanceolate, tapering into a bristle; fruit tormentose while young; adult ones 8-winged. 2. H. Native of Spain, near Cat and Valeriemes, on dry exposed hills. Referrible to L. hispam, but truly distinct. Petals white, with a violaceous border, villous beneath. Stem scabrous.


13 L. nitidum (Zanted. comm. brix. 1813. exc Poll. fl. ver. p. 311.) leaves bipinnate, beset with setose bristles, as well as on the stem and petioles; sheaths of petioles glabrous; leaflets ovate, serrated; ultimate ones confluent; leaves of involucra and involucells lanceolate, with membranous margins, deeply serrated at the apex; wings of fruit nearly equal. 2. H. Native of Upper Italy, among rocks on the mountains. L. pilosum, Com. fl. comp. p. 53. but not of Willd. Fruit glabrous. Flowers white.

**Nitis-leaved Laserwort.** Pl. 2 to 3 feet.

14 L. Archangelica (Jacq. icon. rar. 1. t. 58. Wulf. in Jacq. coll. 1. p. 214.) leaves ternately divided; stem and petioles hispid; leaflets ovate, cuneated at the base, serrate, extreme one 3-lobed; and the lateral ones 2-lobed; leaves of involucra and involucells linear-lanceolate, hairy, 2-3-cleft at the apex; wings of fruit flat, broader than the mericarps. 2. H. Native of Carniola, Croatia, Silisia, Carpathian mountains, among rocks. L. Chirionium, Seop. earm. no. 324. Archangelica,
UMBELLIFERÆ. CXXXVI. LÆSÆRÆTUM. CXXXVII. LOPHSOCDIUM. CXXXVIII. MELANOSELUM.

Clus. hist. 2. p. 195. Lob. icon. 701. Petioles large, saccate, very villous. Stem 5 feet high, furrowed. Flowers white, purplish when young. Fruit glabrous, or clothed with adpressed pubescence according to Koch.


* * Primary ribs of fruit hispid from spreading bristles.

15 L. Hispidum (Bieb. fl. taur. 1. p. 221. suppl. p. 222.) leaves ternately bipinnate; petioles, nerves on the under sides of the leaves, stem and umbels hispid; leaflets cuneiform-ovate, deeply serrated; stem terete, furrowed: leaves of involucre and involucels oblong, acuminated at the apex, or cut; wings of fruit unequal; 2 lateral ones the largest. 2. H. Native of Tauria and Caucasus, in gravelly places. L. pilosum, Willd. enum. p. 310. L. Archangelica, Hort. but not of Jacq. Cañéalhispid, Desf. Hort. par. Petioles white.


16 L. Prutenicum (Lin. spec. p. 357.) leaves decumbent, rather hairy on the nerves and petioles; leaflets ovate-lanceolate, pinnatifid; lobes lanceolate-cuspidate; outer ones confluent; stem angular, beset with retrograde bristles; leaves of involucra and involucels linear, with entire hyaline margins: wings of fruit unequal; 2 lateral ones the largest. 8. H. Native of Hungary, Carniola, Germany, Switzerland, east of France, on hills. Jacq. fl. aust. t. 152. L. selinoides, Crantz, aust. 182. L. Gallicum, Scop. carp. 321. Jacq. vind. 48.—Breyen. cent. t. 84.—Riv. pent. irr. 23. Flowers white.

Far. b, glabratum (D. C. prod. 4. p. 206.) leaves and stems glabrous. 8. H. Native of Piedmont, Pyrenees, &c. L. daucoides, Dufour, in litt. L. Prutenicum, Lapeyr. suppl. p. 48. Balb. fl. taur. 49. Fruit pilose on the primary ribs, as in var. a. The wings of the fruit are very unequal: the 2 lateral ones are large; and the 2 dorsal ones very small, or nearly wanting, hence this species falls in almost to Thapsia, but differs in the petals being emarginate.


17 L. Athamantia (Spreng. in Schultes. syst. 6. p. 624.) plant hispid; stem furrowed, much branched; leaves ternately decumbent, rough on both surfaces, stiffish; leaflets oblong, pinnatifid; segments broadly lanceolate, mucronate; leaves of involucra and involucels oblong, reflexed. 8. H. Native of Siberia. Perhaps the same as L. hispidum or a variety of L. Prutenicum.


† Species not sufficiently known.

18 L. Cape'ske (Thunb. prod. p. 50. fl. cap. 2. p. 201.) stem terete, glabrous; leaves bipinnate; leaflets oval, mucronate, margined, quite entire; sheaths large, petiolar.—Native of the Cape of Good Hope. Fruit ovate, striated, and therefore the genus is doubtful.

Cape Laserwort. Pl. 1 to 1½ foot.

19 L. Aureum (Wild. spec. 1146.) stem terete, nearly simple; leaves ternately decumbent; leaflets ovate-lanceolate, pinnatifid; segments lanceolate, bluntish, mucronate; leaves of involucra and involucels filiform. 8. H. Native of the Levant. Spreng. in Schultes. syst. 6. p. 626.—Buxb. cent. 1. t. 43. ex Spreng. but the description hardly agrees with it. L. elegans, Clark, in Spreng. nov. endit. 3. p. 160, is related to it according to Spreng. syst. 1. p. 918. Flowers golden yellow. Fruit unknown. Perhaps a species of Thapsia.


20 L. Ferulaceum (Lapeyr. abr. pyt. p. 152. but not of Lin.) stem naked, simple, furrowed; leaves decumbent: leaflets capillary, simple in the lower part, and more decumbent at the apex; mericarps of fruit 4-winged. 8. H. Native of the Pyrenees, in a place called Pic du Gard. This is a very obscure species.

Fenestral-like Laserwort. Pl. 2 to 3 feet?

Cult. All the species grow well in common soil, but it must be rather dry. They are only to be increased by seed, which should be sown in the autumn or spring.

CXXXVII. LOPHSOCSIUM (Λοφος, lophos, a crest; and σκία, skiaion, an umbel; in reference to the crested nature of the mericarps). D. C. coll. mem. 5. p. 57. t. 3. f. 6. prod. 4. p. 207.

LIN. SYST. Pentandria, Digynia. Margin of calyx 5-toothed. Petals elliptic, entire, acuminated, somewhat involute at the apex. Fruit compressed from the back. The primary ribs of the mericarps are unknown; but the 4 secondary ones are winged: the 2 lateral of which are expanded into a somewhat serrated wing each; and the 2 dorsal ones are expanded into interrupted wings, which at first sight appear like retrograde scales. Seed unknown.—Herb glabrous. Stem terete, erect. Lower leaves like those of Achillea millefolium, pinnate; leaflets short, innumerable, divided into linear-subulate lobes; upper leaves somewhat pinnate from the base, usually rising from the axis of the sheaths. Umbels compound, sometimes proliferous. Leaves of involucra 5-7, ovate-lanceolate, cuspidate; of the involucels 5-7, but narrower, and about equal in length to the umbellules. Flowers yellow. Allied to Thapsia, but differs in the ribs of the fruit being sealy; but the fruit examined being immature and incomplete, it is therefore doubtful in what part of the order the genus should be placed. Perhaps it should have been placed near Cächstg.


Cult. See Laserpitium above for culture and propagation.


LIN. SYST. Pentandria, Digynia. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point. Fruit flatly compressed from the back. Mericarps with 5 filiform, primary ribs: the 3 intermediate ones on the back; and the 2 lateral ones placed in the commissure, which is flat; and 4 secondary ones: the inner ones of these filiform and very slender, but the outer 2 are expanded into membranous serrated wings; under all the ribs there are oleiferous canals. Carophoriparite. Seed flat.—A shrub with a terete simple stem, which is naked below. Leaves tripinnate; leaflets ovate, acuminate, serrated; ultimate ones usually confluent; petioles sheathing. Umbels composed of many rays. Involuta of many cut leaves; and the involucels of many entire leaves. Flowers white.

plant is called by gardeners Rubus Cali•bars, to which it is very similar in habit, hence it has the name of decipiens.

Cult. Any light soil will suit this plant; and it is only to be increased by seed.

Tribe II.

DAUCINEAE (this section contains plants agreeing with Daucus in important characters) or Orthosperme Multi-
A fruit lenticularly compressed from the back, or the transverse section is nearly terete. Mericarps with 5 primary, filiform, bristly ribs; the lateral ones placed in the commissure, which is flat, as in Thapsiaceae; and with 4 secondary ones, which are more prominent and prickly than the primary ones: the prickles free, or joined into a wing. Seed complanate or somewhat semi-terately convex, flattish in front.


Lin. syst. Pentändria, Digînia. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point; those in the outer ray of the umbels with unequal lobes: the outer lobe very large. Fruit compressed from the back. Mericarps with 5 primary, filiform ribs the 3 intermediate dorsal, and the 9 lateral ones placed in the commissure; and 4 secondary ribs: the 2 inner ones of these filiform: and the 2 outer ones winged; the wings deeply and sinuately lobed. Carpo-
ephore bipartite. Vitae none. Seed flat.—An annual, glabrous herb. Leaves, as well as those of the involuera and involucelles divided into linear lobes. Umbels compound. Flowers white. Herb with the habit of Nigella Damascenâ: and the inflores-
cence like that of Orlaya grandiflora.

1 A. squamata (Lin. spec. p. 347). C. H. Native of the Levant, on Mount Lebanon (Lin.); between Bagdad and Kermanshah (Olivier), on the banks of the Euphrates (C. Ros-
tan); in Syria and Asia Minor (Schr.). in the Morea, and Lycia (Smith); Cyprus (Smith), Gtélidium Rauñâfâ, Cam. hort. 16, but not of Dioscorides, ex Sibth. and Smith, fl. grece. 268. Thâpia orientâla, Tourn. cor. 22. 1 Mor. ox. sect. 9. t. 18. f. 11. Flowers white. There is a pencil-like brown brush in the centre of the umbels. Cotyledons long, linear. Compare D. C. mem. umb. t. 19. t. 7.

Cult. The seeds should be sown as soon as they are ripe, in a warm border, as if sown in spring, the plant rarely pro-
duces seed.

CXXX. ORLÂYA (in honour of John Orlay, M.D. secre-

Lin. syst. Pentändria, Digînia. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point: those in the outer rays of the umbel radiiate and profusely bifid. Fruit lenticularly compressed from the back. Mericarps with 5, fili-
form, primary, setiferous ribs: the 3 intermediate ones dorsal: and the 2 lateral ones placed in the commissure, which is flat: and with 4 secondary ones, bearing 2-3 series of prickles each: the outer ones more prominent, or a little winged: prickles hooked, or rayed at the apex. Vitae 1 in each furrow, under the secondary ribs. Carophore bifid or undivided. Seed flat, convex behind.—Annual herbs. Leaves multifid; lobes linear. Involuera variable; involucelles of many leaves. Flowers white: those in the rays of the umbels hermaphrodite, with short styles: those in the disk male: the rest female, and fertile, with long styles.

1 O. grandiflora (Hoffn. umb. 1. p. 58.) plant erect, di-
cichotous, glabrous: leaves bipinnate; leaflets pinnatifid; segment linear, short; leaves of involuera 5, with sub-margi-

2 O. platycarpos (Koch, umb. p. 79.) plant erect, di-

Cult. Sow the seeds in spring, in the open ground.


Lin. syst. Pentändria, Digînia. Margin of calyx 5-
toothed. Petals obovate, emarginate, with an inflexed point: outer ones usually radiating, and profusely bifid. Fruit somewhat compressed from the back, ovate or oblong. Mericarps with 5 primary, filiform, bristly ribs: the 3 intermediate ones dorsal: and the 2 lateral ones placed in the commissure, which is flat: and with 4 more secondary, prominent, equal, winged ribs, which are divided into a simple series of prickles. Vitae 1 in each furrow, under the secondary ribs. Seed flatish in front.—Herbs, usually biennial. Leaves bipinnate. Leaves of involuera many, trifid, or pinnatifid; involucelles of many entire or trifid leaves. Flowers white or yellow: the central ones usually fleshy, dark purple, and sterile. The species of this genus are badly known, and are extremely difficult to extricate from confusion.

Sect. I. Platyspernum (from πλατύς, platys, broad, and σπερμα, spermâ, a seed; seeds broad). Hoffn. umb. 1. p. 64.

Z. 2
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1 D. MURICATUS (Lin. ment. p. 392.) plant hispid; leaves pinnate; leaflets multifid cut; leaves of involucrum 5-7, many of which, or all, are trifid or pinnatifid; prickles of fruit longer than the breadth of the seed, peltately glochidiate at the apex. ♂. H. Native of Mauritania, Numidia, Calabria, and China, in fields.—Mor. hist. sect. 9. t. 14. f. 4. Herm. par. 111. Artèdã muricatus, Lin. spec. ed. 1. p. 242. D. muricatus, Desf. atl. 1. p. 243. Spreng. in Schultes, syst. 6. p. 477. exclusive of the synonymy of Poir. Platyspermum muricatum, Hoffm. and Koch, l. c. and perhaps Caucalis Mauritaniae is referrible to this. The hairs on the lower part of the stem are best bent.—Col. espl. 1. p. 96. t. 94. Flowers pink.


2 D. LITTORALIS (Sibth. and Smith, fl. gracc. t. 272. prod. 1. p. 185.) stem decumbent, hispid from deflexed hairs; leaves bipinnate, hispid; leaflets short, multifid, cuneiform; leaves of involucrum 3-clfed, shorter than the umbel; fruit ovate, beset with glochidiate prickles. ♂. H. Native of the island of Cyprus, by the sea-side; and of Spain. Leaves of the involucre usually 5; of the involucres membranous. Flowers white. Fruit angular, beset with strong prickles. Sea-shore Carrot. Fl. Ju. Jul. Clt. 1829. Pl. dec.


4 D. BESARRAECUS (D. C. prod. 4. p. 210.) glabrous; leaves ternately supra-decompound; segments linear-setaceous; umbels of many rays; involucre wanting; prickles of fruit length of seeds, when young subcarpous. ♂. H. Native on the shores of the Black sea, about Odessa; Bessarabia. Caucalis littorialis, Bieb. fl. taur. 1. p. 208. Cauchy littorialis, Spreng. umb. prod. 20. no. 5. Platypermum littorialis, Koch, l. c. This is very different from Daucus littorialis of Sibth., but it nearly agrees with D. pulchermissus, especially in the leaves of the involucres being ciliate, but differs from it in the segments of the leaves being fewer and longer; in the rays of the umbels and umbellules being fewer; and in the prickles of the fruit being shorter. Flowers white.

Bessarabian Carrot. Fl. May, June, Clt. 1819. Pl. 1 ft.

5 D. LASERPITTOIDES (D. C. prod. 4. p. 210.) plant glabrous; leaves pinnate and bipinnate; with linear, elongated segments; umbels of 6-8 rays; leaves of involucrum 5-6, linear, undivided; prickles of fruit joined at the base, neither scabrous nor glochidiate. ♂. H. Native of Mauritania, in sand by the sea-side, near Bone. Laserpitum daucóides, Desf. fl. atl. 1. p. 253. t. 70. Caucalis virgátæ, Poir. voy. 2. p. 133. suppl. 2. p. 136.

Lasewor-like Carrot. Pl. 2 to 3 feet.

6 D. PUBESCENS (Koch, umb. p. 77.) stem rough, branched; leaves pinnate, rather hispid; leaflets pinnatifid, with linear or trifid segments; leaves of involucre usually trifid or undivided; prickles glochidiate at the apex, longer than the breadth of the fruit, which is oblong. ♂. H. Native of Egypt, at Alexandria. Caucalis glabra, Forsk. descript. p. 206. Delije, fl. argent. 64. t. 28. f. 2 and 3.

Var. a; smaller, sea-side plant; stems humble, diffuse. Delije, l. c. f. 2.

Var. β; a larger plant, native of sandy places, with taller, erect stems, and more slender and more acutely divided leaves.

Pubescent Carrot. Fl. May, Ju. Clt. 1820. Pl. 3 to 1 ft.

7 D. SETULOSU (Guss. act. soc. bot. ex D. C. prod. 4. p. 211.) stem branched, bristy; leaves pinnate; leaflets multifid; segments linear; leaves of involucrum multifid; prickles of fruit longer than broad, glochidiate capitate at the apex. ♂. H. Native of Calabria, and at Naples. D. sebosus, Bert, ex Guss.

Bristy-stemmed Carrot. Pl. 1 to 2 feet.

Sect. II. CAROTA (from car, celt. red; colour of root). D. C. prod. 4. p. 211. Prickles of secondary ribs slender, separate, even to the base. Rays of umbel nearly equal, or gradually shorter to the centre.

8 D. PARVIFLÓRUS (Desf. fl. atl. 1. p. 241. f. 60.) stem tubercular, rather hairy; leaves bipinnate; leaflets of lower leaves ovate-oblong; of the superior ones linear-lanccolate, cut; leaves of involucrum trifid, subulate, short; of the involucres simple; flowers equal, small; prickles shorter than the breadth of the fruit, which is ovate, peltately glochidiate at the apex. ♂. H. Native of Mauritania, about Arzéau (Desf.). Flowers yellowish, according to the dried specimens.


9 D. INVOLUCRÁTUS (Sibth. and Smith, fl. gracc. t. 271. Smith, prod. 1. p. 184.) stem hispid from spreading hairs; leaves bipinnate; leaflets multifid; leaves of involucrum pinnatifid, longer than the umbel; umbellules few-flowered, uniform; leaves of involucres narrow. ♂. H. Native of Cyprus, by the sea-side. Perhaps the same as D. Créceius, Mill. dict. no. 5. Fruit small, scabrous from silvery prickles, which are hooked and glochidiate at the apex.


10 D. CAROTA (Lin. spec. 348.) stem hispid; leaves bipinnate, and tripinnate; leaflets pinnatifid, with linear-lanceolate acute segments; umbels with a solitary, coloured, abortive flower; when in seed concave; bristles of fruit slender; leaves of involucrum pinnatifid, not so long as the umbels; umbellules few-flowered, equal; leaves of involucres undivided or trifid. ♂. H. Native of Europe, Tauria, Caucasus, and now introduced to South America, China, Cochin-china, &c. in pastures and the borders of fields, in a gravelly soil; common in Britain, in like situations. Smith, engl. bot. 1174. Mart. rust. t. 82. Fl. dam. 723. Plench. off. t. 176. Hayn. arz. gew. t. 7. D. vulgaris, Neck. D. polygammus, Jacq. vind. 3. p. 43. t. 78. Caucalis Caróta, Crantz. Huds. ang. p. 114. Stephanus, Riv. pentap. irr. t. 28. Pastinacea sylvéstris, Math. valgr. vol. 2. p. 107. f. 1.—Ger. enac. 1928.—Fuchs, hist. p. 684. Root slender, aromatic, and sweetish, resembling the garden carrot, which is only a cultivated variety. Leaves rather hairy. Umbels white, except the one central neutral flower, which is blood red. Seeds small, protected by the incuration of all the flower-stalks, by which the umbels are rendered hollow, like a bird's nest. There are several varieties of the wild carrot, besides the cultivated kinds.

Var. β, sativa (D. C. prod. 4. p. 211.) root spindle-shaped, thick, succulent. This is the cultivated carrot, of which there are varieties with white, red, but usually yellow or copper-coloured roots.

The root of the plant, in its wild state, is small, dry, sticky, of a white colour, and strongly flavoured; but the root of the
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cultivated variety is large, succulent, and of a red, yellow, or pale straw colour.

Use.—It is used in soups and stews, and as a vegetable dish. Parkinson informs us that, in his day, ladies wore carrot leaves instead of feathers. In winter, an elegant chimney ornament is sometimes formed by cutting off a section from the head or thick end of a carrot, containing the bud, and placing it in a shallow vessel with water. Young and delicate leaves unfold themselves, forming a radiated tuft, of a very handsome appearance, and heightened by contrast with the season of the year.

Varieties.—Those in common cultivation are:

1. Large red or field carrot, grows to a large size, and is chiefly cultivated in fields, and in farmers' gardens, for colouring butter.

2. Orange carrot. The root is long and large, of an orange colour, and is the best sort for the main crop.

3. Early horn. Root short, smaller. It is the best kind for a small, early crop; also for shallow soils.

4. Late horn. With the same characteristics as the preceding, but suited for a late crop.

William Christie enumerates the following sorts of horn carrots:

—Early red, common early, long horn. Of large carrots:

White, yellow, long yellow, long orange, long red, and the Alpine, or superb, originally from Cheshire.

The carrot requires a light mellow soil, mixed with sand, which should be dug or trenched one or two spades deep, breaking well all the lumpy parts, so as to form a porous bed, and an even surface. The orange and red sorts, on account of their longer roots, require a soil proportionally deeper than the horns.

Seed estimate and sowing.—The seeds have numerous forked hairs on their ribs, by which they adhere together, and therefore should, previously to sowing, be rubbed between the hands, and mixed with dry sand, in order to separate them as much as possible. They are also very light, and therefore a calm day must be chosen for sowing; and the seeds should be disseminated equally, and trod in before raking. Previously to sowing, if convenient, the seed should be proven, by sowing a few in a pot, and placing it in a hot-bed, or hot-house; as it is more frequently bad than most garden seeds. For a bed 4½ feet by 50, one ounce will be requisite, and the same for 150 feet of drill rows.

Times of sowing.—To have early summer carrots, sow on a warm border in the beginning of February, or, to have them still more forward, sow in a moderate hot-bed, giving copious admission of air. In the open garden, begin with the early horn, in the last fortnight of February, or first week of March, as dry, fine, and open weather may occur. The first sown beds should be assigned a favourable situation, and covered for a time with haulm. Follow with the orange, in the first fortnight of March, and make successive sowings thence to the 20th of April for main crops. Add smaller sowings twice in May, for plants to draw young late in summer; also sow a few at the commencement of July, for a later succession of young carrots in summer and autumn. Lastly, in the beginning of August, two separate small sowings may be made for plants to stand the winter, and afford young roots early in spring, March and April.

Insects.—Carrots, when they come up, are apt to be attacked by insects, like the turnip; the most approved remedies for which are thick sowing, in order to afford both a supply for the insects and the crop; and late sowing, especially in light soils, thus permitting the grubs to attain their fly state before the seed comes up.

Culture.—When the plants are up 2 or 3 inches in growth, in May and June, they will require thinning and clearing from weeds, either by hand or small hoeing. To 3 from 5 or inches' distance, such as are designed for drawing in young and middling growth. But the main crop, intended for larger and full-sized roots, thin to 6 or 8 inches' distance. Keep the whole clean from weeds in their advancing young growth. Some of small and middling growth will be fit for drawing in June and July; large sizeable roots, in August and September; and those of full growth, by the end of October.

Preserving in winter.—Carrots are taken up at the approach of winter, cleaned, and stored among sand. They may be built very firm, by laying them heads and tails alternately, and packing with sand. In this way, if frost be excluded from the store-house, they keep perfectly well till March or April of the following year. Some persons insist that the tops should be entirely cut off at the time of storing, so as effectually to prevent their growing; while others wish to preserve the capability of vegetation, though certainly not to encourage the tendency to grow.

To save seed.—Plant some of the largest best roots in October, November, or the last fortnight of February, 2 feet apart; insert them a few inches over the crowns. They will yield ripe seed in autumn, of which gather only from the principal umbel, which is likely not only to afford the ripest and largest seed, but the most vigorous plants. A considerable quantity of carrot-seed, for the supply of the London seedsmen, is raised near Weatherfield in Essex; and much is imported from Holland.

Field culture of the carrot.—It is observed, by a judicious writer, that the carrot has been too much neglected on lands, where it would have yielded a more valuable product in agriculture perhaps than any bulbous or tap-rooted plant whatever. Several contradictory experiments in its culture have been detailed in a number of publications, from which the practical husbandman will be at a loss to draw any definite conclusion. But in a communication to the board of agriculture from Robert Burrows, an intelligent Norfolk farmer, who has cultivated carrots on a large scale, and with great success, for several years, so accurate an account is presented of the culture, application, and extraordinary value of this root, that carrots will probably soon enter more largely into the rotation of crops on suitable soils.

Varieties.—The only sort adapted for field culture is the long red or field carrot. New seed is most essential, as it will not vegetate the second year.

The best soil for the carrot is a deep rich sandy loam; such a soil ought at least to be a foot deep, and all equally good from top to bottom; on any other the field culture of the carrot will not answer.

In preparing the soil for the carrot, it is essential to plough it before winter, that it may be pulverized by frost, and to work it well in the spring to at least the depth of a foot. This deep tillage may be perfectly accomplished by means of the trench plough, following the common one, or even by the common one alone with a good strength of team; but the former method is to be preferred, wherever the lands are inclined to be stiff or heavy. Three ploughings are mostly found sufficient when the land has been previously in a state of tillage, but more may in other cases be necessary. As soon as the last ploughing has been made in March, the land should be harrowed, and the surface made as fine as possible. In Suffolk the farmers sow carrots after turnips, barley, and peas, set upon a rye-grass ley; the crops upon the first have generally been most productive; next to that they prefer the latter. In the first place, they feed off the turnips by the beginning of February, and then lay the land up in small bulks or furrows, in which state it remains till the second week in March, when it is harrowed down, double furrowed to the depth of about a foot, and the seed sown.

The climate most suitable to the carrot is the same as for the turnip; but they will thrive better than the turnip in a dry and
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warm climate, and are consequently of better growth in the south of England and France, in proportion to their size in moist climates, as Holland and Ireland, than the turnip.

Manure, according to some, should not be given to carrots the year they are sown, as it is alleged when the roots meet with it they become forked and wormy. This, however, is only applicable to cases in which recent unfermented manure has been given, or where other manure has not been properly broken in pieces, and spread over the soil, or in the drills. The Suffolk and Norfolk farmers, who are the best carrot growers, always use dung; a suitable proportion of well-rotted farm-yard dung being constantly turned into the soil at the last ploughing in March, as it has been fully shown by various trials detailed in the Annals of Agriculture, and other books on husbandry, that though good crops of carrots may be occasionally grown without the aid of manure, it is only by the liberal application of that substance that the greatest produce possibly can be obtained, as they are in general found to bear a relative proportion to the quantity that may have been employed. Mr. Burrows prepared the land with a good dressing of about 16 cart loads per acre of rotten farm-yard manure, or cottagers' ashes,—the load about as much as three horses can draw. He usually sows wheat stubbles after clover, ploughing the first time in autumn, and once more in the early part of the month of February, if the weather permits; setting on the manure at the time of sowing, which is about the last week in March, or sometimes as late as the second week in April. In Suffolk, when carrots are intended to be sown after peas, they usually plough the stubble as soon as the harvest is over, in order that the land may clear itself of weeds; in December, it is laid up in small balks to receive the benefit of the frosts; in February, it is harrowed down, and manured at the rate of 10 loads per acre; the manure ploughed in to the depth of about 4 inches, and in the month of March the land is double-burrowed, and the seed sown. By pursuing this method, they say, the manure lies in the centre of the soil, and not only affords nourishment and support to the carrot in its peripendicular progress, but renders it easy to be turned up by a single ploughing, and greatly promotes the growth of the succeeding crop of barley. In Norfolk, it is the practice to sow carrots after a crop of turnips. The manure, after being put on the land in the beginning of March, is first ploughed in with a common plough, and afterwards trench ploughed about 14 or 15 inches deep; it is then harrowed very fine, and the seed sown about the beginning of March.

The season for sowing the carrot, preferred by Mr. Burrows, is the last week in March or first of April; but he prefers the first period, having generally found early crops the most productive.

The usual preparation of the seed for sowing, is by mixing it with earth or sand, to cause it to separate more freely; but Burrows adds water, turns over the mixture of seeds and moist earth several times, and thus brings it to a point of vegetation before he sows it. "Having then weighed the quantity of seed to be sown, and collected sand or fine mould in the proportion of 2 bushels to an acre, I mix the seed with the sand or mould and 8 or 10 pounds to every 2 bushels, and this is done about a fortnight or 3 weeks before the time I intend sowing; taking care to have the heaps turned over every day, sprinkling the outside of them with water each time of turning over, that every part of the sand heaps may be equally moist, and that vegetation may take place alike throughout. I have great advantage in preparing the seed so long beforehand; it is by this means in a state of forward vegetation, therefore lies but a short time in the ground, and by quickly appearing above ground, is more able to contend with those numerous tribes of weeds in the soil, whose seeds are of quicker vegetation." Suppl. &c.

The quantity of seed, when carrots are sown in rows, is 2 pounds per acre, and for broad-cast sowing 5 pounds. Burrows sows 10 pounds per acre in the broad-cast manner.

The usual mode of sowing the carrot is broad-cast, but perhaps the better mode would be to sow them in rows at 12 or 14 inches asunder; drawing the drills, and hoeing the intervals by any suitable hoe. The most common practice, however, where carrots are best cultivated, is the hand or broad-cast method, the seed being dispersed as evenly as possible over the land, after the surface has been reduced to a very fine state of pulverization by harrowing, in order to provide a suitable bed for it to vegetate in, being then covered in by means of a light harrow. As the seed is not of a nature to be deposited with much regularity by the drill, and as the young plants can be easily set out to proper distances in the operation of hoeing, this is probably the most appropriate method of putting such sort of seed into the ground. And an additional proof of it is indeed found in its being that which is almost universally adopted in those districts where carrot-husbandry is practised to the greatest extent. The drill method, however, would save much hand labour. The seed may either be deposited by the drill-machine, or by furrows made with a hoe or other implements, burying the seed about an inch in depth, and harrowing once.

The after culture given to the carrot consists entirely of hoeing and weeding. In Suffolk they are hoed generally 3 times in the season. The first time, as soon as the plants can be distinguished from the weeds, which should be done with a 3-inch hoe. It is an operation that requires to be performed with great attention, as it is extremely difficult to distinguish the young carrots from the weeds. The second hoeing should be given in 8 or 4 weeks afterwards, according to the forwardness of the crop; it may be performed with common hoes, care being taken to set out the plants at proper distances. From 8 to 15 inches each way is the common distance, at which they are allowed to stand; and it has been proved by experience, that carrots which grow at such distances always prove a more abundant crop than when the plants are allowed to stand closer together. The third hoeing is commonly made about the middle or end of June, and in this, besides destroying the weeds, another material circumstance to be attended to, is to set the carrots at proper distances, and also wherever any have been left double at the former hoeings, to take the worst of the two plants away.

Carrots sown according to the plan of Burrows, are ready to hoe within about 5 or 6 weeks. He hoes 3, and sometimes 4 times, or until the crop is perfectly clean. The first hoeing is with hoes 4 inches long, and 2½ inches wide. The second hoeing invariably takes place as soon as first is completed, and is performed with 6-inch hoes, by 2½ inches wide. By this time the plants are set; the first time of hoeing nothing was cut but the weeds. He leaves the plants 9 inches apart from each other, sometimes they will be a foot or even farther asunder.

Carrots are generally taken up in the last week of October. The operation is performed by 3-pronged forks. "I take up in autumn a sufficient quantity to have a store to last me out any considerable frost or snow that may happen in the winter months. The rest of the crop I leave in the ground, preferring them fresh out of the earth for both horses and bullocks. The carrots keep best in the ground, nor can the severest frosts do them any material injury; the first week in March it is necessary to have the remaining part of the crop taken up, and the land cleared for barley; the carrots can either be laid in a heap, with a small quantity of straw covered over them, or they may be laid into some empty outhouse or barn, in heaps of many hundred bushels, provided they are put together dry. This latter circumstance it is indispensable to attend to; for if laid together in large heaps when wet, they will certainly sustain
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Much injury. Such as I want to keep for the use of my horses until the months of May and June, in drawing over the heaps (which is necessary to be done the latter end of April, when the carrots begin to sprout at the crown very fast,) I throw aside healthy and most perfect roots, and have their crown cut completely off, and laid by themselves; by this means carrots may be kept the month of June out in a high state of perfection."—Burrows' Communications to the Board of Agriculture, vol. vii. p. 72.

The storing of the whole crop of carrots, may be a desirable practice when winter wheat is to follow them, in which case the same mode may be adopted as for turnips or potatoes, but with fewer precautions against the frost, as the carrot if perfectly dry is very little injured by that description of weather.

The produce of an acre of carrots in Suffolk, according to Arthur Young, is at an average 350 bushels; but Burrows' crop averaged upwards of 800 bushels per acre, which considerably exceeds the largest crop of potatoes.

The uses to which the carrot is applied in Suffolk are various. Large quantities are sent to the London markets, and also used as food to different kinds of five stock. Horses are remarkably fond of carrots, and it is even said when oats and carrots are given together, the horses leave the oats and eat the carrots. The ordinary allowance is about 40 or 50 pounds a day to each horse. Carrots, when mixed with chaff, that is, cut straw, and in a little hay, keep horses in excellent condition for performing all kinds of ordinary labour. The farmers begin to feed their horses with carrots in December, and continue to give them chiefly that kind of provender till the beginning or middle of May; to which period, with proper care, carrots may be preserved. As many of the farmers in that country are of opinion, that carrots are not so good for horses in winter as in spring, they give only half the above allowance of carrots at first, and add a little corn for a few weeks after they begin to use carrots.

The application of the carrot to the feeding of working cattle and hogs, is thus detailed by Burrows: "I begin to take up the carrot crop in the last week of October, as at that time I generally finish soil ing my horses with lucern, and now solely depend upon my carrots, with a proper allowance of hay, as winter food for my horses, until about the first week of June following, when the lucern is again ready for soil ing. By reducing this practice to a system, I have been enabled to feed 10 cart horses throughout the winter months for these last 6 years, without giving them any corn whatever, and have at the same time effected a considerable saving in hay. I give them to my cart-horses in the proportion of 70 pounds weight of carrots a horse per day, upon an average, not allowing them quite so many in the very short days, and sometimes more than that quantity in the spring months, or to the amount I withheld in the short winter days. The men who tend the horses slice some of the carrots in the cut chaff of hay, and barn door refuse; the rest of the carrots they give whole to the horses at night, with a small quantity of hay in their racks, and with this food my horses generally enjoy uninterrupted health. I mention this, as I believe that some persons think that carrots only, given as food to horses, are injurious to their constitutions; but most of the prejudices of mankind have no better foundation, and are taken up at random, or inherited from their forefathers. So successful have I been with carrots, as a winter food for horses, that with the assistance of lucern for soiling in summer, I have been enabled to prove by experiments, conducted under my own personal inspection, that an able Norfolk team-horse, fully worked two journeys a day, winter and summer, may be kept the entire year round upon the produce of one statute acre of land. I have likewise applied carrots with great profit to the feeding of hogs in winter, and by that means have made my straw into a most excellent manure, without the aid of neat cattle. The hogs so fed are sold on Norfolk-hill to the London dealers as porkers." The profits of carrots so applied, he shows in a subsequent statement, together with an experiment of feeding four Galloway bullocks with carrots, against four others fed in the common way with turnips and hay.—Burrows' Communications, &c.

In comparing the carrot with the potatoe, an additional circumstance greatly in favour of the former is, that it does not require to be steamed or boiled, and it is not more difficult to wash than the potatoe. These, and other circumstances considered, it appears to be the most valuable of all roots for working horses.

The use of the carrot in domestic economy is well known. Their produce of nutritive matter, as ascertained by Sir H. Davy, is 98 parts in 1000, of which 3 are starch, and 95 sugar. They are used in the dairy in winter and spring to give colour and flavour to butter. In the distillery, owing to the great proportion of sugar in their composition, they yield more spirit than the potatoe; the usual quantity is 12 gallons per ton. They are excellent in soups, stews, and haricots, and boiled whole with salt beef.

Medical qualities.—The seeds, especially of the wild variety, have a moderately warm pungent taste, and an agreeable smell. They are carminative, and are said to be diuretic. The roots, especially of the cultivated variety, contain much mucilaginous and sacchariform matter, and are therefore highly nutritious and emollient. When beaten to a pulp, they form an excellent application to catarrhalous and ill-conditioned ulcers, allaying the pain, checking the suppuration and fetid smell, and softening the callous edges.


11 D. maritimum (Lam. dict. 1. p. 634. but not of Wich.) stem elongated, smooth, and glabrous at the base, but scabrous from tubercles above; leaves glabrous: lower ones bipinnate; leaflets jagged: segments linear, acuminate; leaves of involucre pinnatifid, linear, acute; of the involucres univalved; prickles about equal in length to the diameter of the fruit, which is ovate. 2. H. Native of France, in sand, along the sea-shore; as well as along the shores of the Mediterranean Sea, where it is generally mixed with D. Carota, but from which it is easily distinguished. D. C. fl. fr. 4. p. 329 bot gall. 1. p. 215.


12 D. glabraebrum (Desf. fl. atl. 1. p. 244. t. 61.) stem glabrous, or rather scabrous from small down; leaves pinnate; leaflets cuneated, bluntly 3-5-lobed, glabrous; leaves of involucres pinnatifid, acute, one half longer than the umbels; involucres trifid or simple; prickles about equal in length to the breadth of the fruit, which is ovate. 3. H. Native of the north of Africa, near Tozer, in woods of palm trees. Flowers small, white.

Quite-glabrums Carrot. Pl. 1 to 2 feet.

13 D. Gasciiumi (Lin. spec. 345.) stem and petioles scabrous from scattered bristles; leaves bipinnate; leaflets deeply toothed, ovate: segments obtuse, mucronate; leaves of involucre striated, pinnatifid, about equal in length to the umbels: prickles bristle-formed, equal in length to the breadth of the fruit, capitately glochidiate at the apex. 3. H. Native of Corsica, on rocks by the sea-side, and probably of Sicily. D. Mauritianicus, Salzim, exsic. —Ginigodium, Math. ed. Valgr. 373. f. 1. D. liceus, Lin. fil. suppl. 179. ex Smith, in Lin. trans. 9. p. 133.—Bocc. mus. t. 20. Habit of D. Hispaliensis, but differs in the fruit. Τυγγενός, is a name employed by D. Dorskides for an umbelliferous plant, but what plant is now unknown.

UMBELLIFERÆ.

CXXXI. DAUCUS.


15 D. pectinatus (D. C. prod. 4. p. 212.) stem smoothish, striated, rather scabrous at the apex; leaves bipinnate, glabrous; leaflets ovate-lanceolate, pinnatifid: segments ovato-lanceolate, acute; leaves of involucra pinnatifid, about equal in length to the umbels, which are many-rayed; prickles simple, regularly pinnatifid, shorter than the breadth of the fruit, which is ovate. § H. Native country unknown. This species differs from all the rest in the fruit.


16 D. Mauritánicus (All. pedem. no. 1381. t. 61. f. 1.) stem scabrous from retrograde bristles; leaves bipinnate, glabrous; leaflets of the lower leaves lanceolate, deeply toothed: of the superior leaves linear, acute; leaves of involucra striated, pinnatifid, shorter than the umbels; prickles simple, acute, exceeding the breadth of the fruit, which is ovate. § H. Native in fields about Nice, and in the south of France, and of Mauritania. D. C. fl. fr. 5. p. 512. and probably of Lin. spec. 248.

Var. β. pterocéleus (D. C. prod. 4. p. 212.) leaves of the involucres variable, some of them undivided; and some, as the outer ones, pinnatifid. § H. Native of Tauria, on the banks of rivers.


17 D. Mâximus (Desf. fl. Atl. 1. p. 241.) stem scabrous, striated; leaves bipinnate or tripinnate; leaflets of the lower leaves ovate, equally cut, with obtuse mucronate segments: of the upper leaves linear, acute; leaves of involucra pinnatifid, about equal in length to the umbels; prickles glochidate at the apex, equal in length to the breadth of the fruit, which is ovate. § H. Native of Mauritania, Sardinia, south of France, on the borders of fields. Umbels large, radiating: having the central flower abortive.

Largest Carrot. Pl. 2 to 4 feet.

18 D. cuttâtus (Sibth. et Smith, fl. grœc. t. 269. Smith, prod. 1. p. 184.) stem hairy from spreading pili; leaves bipinnate; lower leaflets cuneated, pinnatifid, mucronate: superior ones lanceolate, finely serrulately: involucra shorter than the umbels; leaves of involucres membranous; central flowers of umbels abortive, and of a different colour from the rest. § H. Native of the Grecian islands, and of Asia Minor.

Spotted Carrot. Pl. 1 foot.

19 D. pâlygâmus (Gouan. ill. p. 9.) stem terete, nearly scabrous; leaves bipinnate, smoothish, but pilose beneath on the nerves, as well as on the petioles; leaflets pinnatifid: segments lanceolate-linear, acute; leaves of involucra triod or pinnatifid: outer flowers of umbel abortive; prickles acute, about equal in length to the fruit, which is ovate. § H. Native of Spain, and probably of Sicily, if the figure in Bocc. sic. t. 40. f. 3. appertain to this species. D. Carôtâ β, Pers. exch. exclusive of the synonyme of Jacq. Fruit larger than those of D. Carótâ, and the prickles are twice the length. Perhaps sufficiently distinct from D. Carótâ.


21 D. grandiflorus (Desf. fl. Atl. 1. p. 240. t. 59.) stem pilose; leaves tripinnate and quadripinnate; leaflets trifid, linear, cuspitate; leaves of involucra pinnatifid, with subulate segments, about equal in length to the radiating umbels; prickles peltately glochidiate at the apex, exceeding the breadth of the fruit, which is ovate. § H. Native of Algiers, among corn. Flowers like those of Orléâna grandiflora, and the leaves like those of D. Mauritánicus, but differs in the prickles of the fruit being glochidiate at the apex.

Great-flowered Carrot. Pl. 2 to 3 feet.

22 D. pusillius (Michel. fl. bor. amer. 1. p. 164.) stem hispid from retrograde pili at the base, and rather scabrous at top; leaves bipinnate, rather scabrous; leaflets cut into linear segments; leaves of involucra pinnatifid, about equal in length to the umbels, which are small; prickles distinctly glochidiate at the apex, about equal in length to the breadth of the fruit, which is ovate. § H. Native of Carolina, at St. John's and Savannah, in dry places (Bibl. sketch. 1. p. 340); at the Red River (Nutt. in litt.); in Pennsylvania, at Reading (Herb. Koch.). Truly distinct from D. Carótâ.

Small Carrot. Pl. 1 foot.

23 D. microphyllus (Presl. in herb. Henke, ex D. C. prod. 4. p. 213.) stem villons from soft retrograde hairs, especially at the bottom; leaves bipinnate, villous; leaflets cut into linear segments; leaves of involucra pinnatifid, about equal in length to the umbels, which are small and crowded; prickles distinctly glochidiate at the apex, about equal in length to the breadth of the fruit, which is ovate. § H. Native of the northwest coast of America, at Nootka Sound; Straits of De Fuca; Rocky places of the Grand Rapids of the Columbia; and on the plains of the Multnomah River. Very nearly allied to D. pusillius, but the hairs on the stem are more numerous, longer, soft, and not tubercular at the base; and the fruit is a little larger.

Small-leaved Carrot. Pl. 1 foot.

24 D. setösus (Desf. fl. Atl. 1. p. 244. t. 65.) stem smooth, erect; leaves decomposed, pubescent; leaflets many-parted, opposite, somewhat verticillate: segments elongated, filiform, very narrow; leaves of involucra multifid; fruit cylindric, pubescent, ciliately echinated at the angles; prickles short. § H. Native of Mauritania, near Mascar, on uncultivated hills. Central flowers abortive. Perhaps the same as D. verticillatus, Horn. bot. hafn. 1. p. 272.

Bristle-leaved Carrot. Pl. 3 feet.

25 D. âurêus (Desf. fl. Atl. 1. p. 242. t. 61.) stem hispid from spreading pili; leaves glabrous, supra-decomposed; leaflets multifid: segments linear-lanceolate, acute, with rather revolute edges; leaves of involucra and involucres decomposed, reflexed; prickles stiff, peltately glochidiate at the apex, longer than the diameter of the fruit, which is oblong. § H. Native of Mauritania, in corn-fields near Mascar; and of Sicily and Calabria, in argillaceous soil; and of Lycia. Flowers white,
but becoming yellowish on drying. Umbels of many rays. Fruit yellow.

26 D. cinerea (Desf. fl. atl. 1. p. 242. t. 62.) stem rather roughish from small, retrograde down; leaves glabrous, pinnate; leaflets multifid, somewhat verticillate: segments setaceous, stillish; leaves of involucre many-parted at the apex; prickles bristle-formed, acute, and a little cleft at the apex, double the length of the diameter of the fruit. 2. H. Native of Mauritania, near Tangiers, Mascarin, Themens, and on Mount Atlas. Bristles of fruit purplish in Desfontaines’s specimens, but yellowish in those of Salzmann. Torilis crinita, Spreng. umb. spec. 141. D. meifolius, Broth. phyt. t. 36. is not distinct from the present species.

27 D. hispida (Sibth. and Smith, fl. græco. t. 269. prod. 1. p. 184.) stem hairy from spreading pile; leaves bipinnate; leaflets lanceolate, finely serrulated; leaves of involucre entire, trilobed, or pinnatifid, shorter than the umbels; prickles of fruit elongated, glabrous, and coloured. ©. H. Native in the islands of the Archipelago and Asia Minor, frequent. Spreng. umb. 143. Leaves of involucres membranous. Flowers white; central ones abortive. Prickles of fruit golden yellow.

28 D. bicolor (Sibth. et Smith, fl. græco. t. 276. prod. 1. p. 184.) stem beset with spreading hairs; leaves puberulous, bipinnate; leaflets multifid, with linear lobes; leaves of involucre trilobed, longer than the umbels; involucres membranous, on one side; central flower discoloured. ©. H. Native of Asia Minor.

Two-coloured-flowered Carrot. Pl. 1 to 1 1/2 foot.

Sect. III. Anisactis (from anisos, unequal, and actis, a ray; in allusion to the unequal rays of umbels). D. C. prod. 4. p. 214. Carphophore undivided, or hardly bipinnate at the very top. Rays of umbels very unequal.

29 D. Brachyles (Sieb. exsic. nov. holl. no. 115.) stem glabrous; leaves bipinnate, smooth; leaflets divided into linear lobes; leaves of involucre multifid, much shorter than the rays of the umbel, which are unequal; leaves of involucres simple, much shorter than the pedicels; prickles glabrous at the apex, about equal in length to the breadth of the fruit, which is oblong. ©. ? H. Native of New Holland. Stem 2 or 3 from the same root, about a foot high. Rays of umbels diverging much.

Brachiate-umbellled Carrot. Pl. 1 foot.
30 D. toriloides (D. C. prod. 4. p. 214.) stem hispid from deflexed hairs; leaves bipinnate, scabrous; leaflets divided into linear lobes; leaves of involucre multifid, much shorter than the rays of the umbels, which are unequal and scabrous from bristles; leaves of involucre simple, much shorter than the pedicels; prickles stellately hooked at the apex, about equal in length to the breadth of the fruit, which is oval-oblong. —Native of Peru, on the mountains; and of Mexico to Tohmebo, and the Cordilleras de Guichlaque; and probably of Chili and Caraccas. D. montanus, Willd. rel. in Schultes, syst. 6. p. 482. ? Torilis Peruvian, Presl. in herb. Hænke. Habit of Torilis; but differs from that genus in the albumen not being involuted. Rays of umbels shorter and less diverging than in the preceding species.

Torilis-like Carrot. Pl. 1 foot.
31 D. Monthevidæsis (Hort. berol. ex Bernh. in herb. Balb. D. C. prod. 4. p. 214.) stem, petioles, and under side of leaves hispid from long, soft villi; leaves bipinnatifid; segments divided into linear-subulate lobes; terminal umbels 5-7-rayed; axillary ones 3-5-rayed; rays unequal; prickles of fruit glabrous at the apex. ©. H. Native of Monte Video. Leaves of involucre multifid, about equal in length to the umbel. Petals obcordate.

32 D. australis (Papprig. pl. exsic. no. 97. diar. no. 330.) stem simple, hispid; hairs on the lower part of the stem deflexed; leaves bipinnate, hispid; leaflets multifid, with short acute lobes; leaves of involucre multifid, almost exceeding the umbels, which are crowded, and composed of few rays; prickles of fruit glabrous at the apex. ©. H. Native of Chili. Flowers small, golden yellow in the dried state. The whole herb yellowish.

Southern Carrot. Pl. 1 to 2 feet?

† Species not sufficiently known.

33 D. cuminoïdes (Lam. ill. t. 192. f. 2. Poir. suppl. 2. p. 118.) stem glabrous, flexuous; leaves tripartite; segments linear, very long, glabrous; leaves of involucre ternate, shorter than the umbel, which is composed of few rays; prickles shorter than the breadth of the fruit, which is oblong. —Native country unknown. Perhaps a species of Anthiscus.

Cuming-like Carrot. Pl. 1/2 foot.
34 D. Strobus (Tineo, pug. sic. 1. p. 6.) stem erect, striated, hispid; leaves pinnate; leaflets ovate, deeply toothed; teeth obsolete, mucronate; petals hairy; leaves of involucre pinnatifid, larger than the umbel. ©. H. Native of Sicily. Schultes, syst. 6. p. 623. Schrank, in fl. 1819, p. 383. Outer flowers of umbels yellow; inner ones reddish. Fruit unknown.

Sicilian Carrot. Pl. 1 to 2 feet.
35 D. frölicheri (Presl, del. prag. 130.) stem erect, rather dichotomous, furrowed, covered with retrograde hairs; leaves bipinnate; leaflets cordate, pinnatifid, toothed; leaves of involucre entire, or deeply toothed; primary umbel proliferous; pedicels and fruit very hairy. ©. H. Native country unknown, according to Gussone, prod. fl. sic. 1. p. 324.; but according to Presl, it is a native of Sicily, between Syracuse and Catania, in sand by the sea-side. Perhaps the same as D. Siculus.

Proliferous-umbellled Carrot. Pl. 1 to 2 feet.
36 D. alatus (Poir, suppl. 2. p. 118.) stem erect, furrowed, hairy; leaves glabrous, somewhat pinnate; leaflets broadly cut: segments bluntish; petals pilose; leaves of involucre pinnatifid at the apex, with linear segments; rays of umbel crowded, hispid; ribs of fruit membranously winged, spiny-toothed. ©. H. Native of Barbary, in uncultivated stony places by the sea-side.

Winged-furrowed Carrot. Pl. 2 feet?
38 D. rioides (Hort. par.) These 2 species have not D. macercoprus (Hort. erf.) been described.

Cult. All the species grow well in any common garden soil. The seeds of them should be sown in spring.

Suborder II. Camptolepeæ (from kamptos, curved, and pepon, sperma, a seed). D. C. prod. 4. p. 215. Albumen involuted, or marked by a longitudinal furrow or channel on the inner side.

Tribe XIII.

ELEOSELÆNÆ (this tribe contains plants agreeing with the genus Eleocharis in important characters) or Camptolepeæ multijuga'te atalne. Koch, in lit. D. C. prod. 4. p. 215. Fruit cylindrical, more compressed from the back than from the sides. Mercicarp with 5 filiform, primary ribs; and 4 secondary ribs: the 2 dorsal ones of these last nerve-formed:
and the 2 lateral ones expanded into wings; having the margins nerve or wing-formed. Seed involute, semi-lunar.

**CXXXII. ELÆOSELÉNINUM** (from *Ælonia, elæion, an olive tree, and *ælion, *ælion, parsley). Koch, in litt. *D. C. precd. 4.* p. 215.—Laserpitium species, Desf. Thapsia species, Guss. *Lin. syst. Pentádiæ, Digeán. Margin of calyx, hardly 5-toothed. Petals obvolute, entire, with an inflexed point. Fruit somewhat compressed from the back, nearly terete, 4-winged. Mericarps with 5 filiform primary ribs; the 3 intermediate ones dorsal, and the 2 lateral ones placed within the wings and the nerve-formed margins; and 4 secondary ribs, the inner ones of these last obtuse, and the 2 outer ones expanded into membranous wings. Vittae under all the ribs abounding in oil, those under the primary ribs slenderer and narrower than those under the secondary ones; and 4 in the commissure. Seed involute.—Perennial herbs. Stems terete, glabrous. Leaves decumposant from the branched petioles. Umbels and umbellules of many rays. involucral and involucres of many linear-unifoliate leaves. Flowers yellow. Carpopody unidiected in *E. meoideas,* but bipartite in *E. thapsoides.*


**Metho-like Olive-parsley.** *Fl. July, Aug. Cl. 1815. Pl. 2 to 3 feet.*

2 H. thapsoides (D. C. prec. 4. p. 215.) leaves pinnate, hardly velvety on the petioles and nerves; leaflets pinnate-parted, cuneated at the base; lobes obovate-oval, toothed—ultimate one trifid. *2. H. Native of Mexico, about St. Angela. Herb 6-7 feet high, with the habit of Thapsia Gargantua. Teeth of calyx nearly obsolete. Fruit a little smaller than in *E. meoideas,* but the rest of the plant is similar.


Cult. The plants will grow in any common garden soil; and are only to be increased by seed.

**Tribe XIV.**

**CAULALINEÆ (this tribe contains plants agreeing with *Caulaxis in important characters),** or Campyloterpes, multifoli-atate arrandie, Koch, umb. p. 79. *D. C. prec. 4.* p. 216. Fruit contracted from the sides or nearly terete. Mericarps with 5 filiform primary bristly or prickly ribs; the lateral ones placed in the commissure, which is flat; and 4 secondary more prominent, prickly ribs, or they are obliterated from the coincisus prickles covering the whole furrow. Seed involute or inflexed on the margin. *Caulaxis* is allied on one hand to *Daucus,* and on the other to *Scandix.*


**Lin. syst. Pentádiæ, Digeán.** Teeth of calyx 5, ovate-lanceolate. Petals obvolute, emarginate, with an inflexed point: outer ones radiating, profoundly bilab. Fruit somewhat compressed from the sides. Mericarps with 5 filiform primary bristly or prickly ribs: the 3 intermediate ones on the back and the 2 lateral ones placed in the commissure, which is flat; and 4 secondary more prominent ones, which are deeply cleft into a simple series of prickles. Vittae one in each furrow, under the secondary ribs, and 2 in the commissure, which is flat. Carpo-

*phore stiff, cleft at the apex. Seed involute or inflexed on the margin.—Herbs, with multifid leaves. Involucrum wanting, or of 1 or 2 leaves. Leaves of involucres 3-5, lanceolate, spreading. Flowers white; those in the disk of the umbels male and sterile.


2 C. leptophylla (Lin. spec. p. 347.) stem glabrous or rough from scattered retrograde hairs; leaves decumbent, with linear-lanceolate acute segments; umbels 2-3-cleft; involucrum wanting; prickles of fruit scabrous, hooked at the apex. *O. H. Native of Middle and South Europe, and of Mauritania and the Levant, as well as of Caucasus. C. himal., Jacq. hort. vind. 2. t. 185. C. parvifolia, Lam. dict. 1. p. 657. Involucres of 5 leaves. Petalikes stiff. Flowers pinkish.


3 C. glochidiata (Poir. suppl. 2. p. 137.) stem glabrous above, but rough from retrograde bristles at the base; leaves pilose, decumbent, with short linear segments; involucres of 2 leaves; rays of umbel unequal, few; prickles of fruit glochidiate at the apex. *O. H. Native of Van Diemen's Land. Scândix glochidiata, Labill. nov. holl. l. 1. p. 75. t. 102. Cåulis glochidiata, Spreng. umb. prod. p. 24. Schultes, syst. 6. p. 471. Fruit ovate. The petals are said to be pilose on the outside.

**Glochidiate-prickled Bur-parsley.** Pl. 1 foot.

4 C. tenuifolia (Delli. fl. eg. p. 58. t. 21. f. 3.) stem hispid from adpressed retrograde hairs; leaves decumbent, hispid, with linear-subulate setaceous-acute segments; umbels 5-7-rayed; involucra wanting or of one large prickles shorter than the length of the fruit, which is oblong; fruits of fruit smooth. *O. H. Native about Alexandria, in stony places.

**Slender Bur-parsley.** Pl. 1 foot.

† Species not sufficiently known.

5 C. Mauritania (Lin. spec. p. 347.) stem stiff, rough, spreadingly branched; leaves bipinnatifid, with linear-lanceolate strigose segments; peduncles bilab; involucrum wanting; involucres usually of 3 leaves; umbellules 6-flowered. *O. H. Native of Mauritania. Spreng. umb. spec. 143. Fruit somewhat prismatic, having the 3 dorsal ribs prickly. The fruit under this name in Wildl. herb. does not differ from that of *Daucus marciatus,* but the description given by Linnæus does not agree with that plant.

**Mauritania Bur-parsley.** *Fl. June, July. Cl. 1818. Pl. 3 ft.*

6 C. strigosã (Russ. beschr. aple. ex Schultes, syst. 6. p. 473.) leaves pinnate, cut, pilose; umbel of many rays; leaves of involucra and involucres membranous; fruit glabrous, and the bristles are lanceolate-subulate. *O. H. Native about Aleppo.

**Sirigosa Bur-parsley.** Pl. 1 foot?

7 C. angustifolia (Forsk, ægypt. descr. suppl. p. 206.)
leaves multifid, narrow; involucra and involucels hispid, as well as the fruit.—Native of Arabia, at Hadie.

Narrow-leaved Bur-parsley. Pl. ?

Cult. The seeds may be sown either in autumn or spring.


LIN. SYST. Pentadria, digyna. Teeth of calyx 5, setaceous. Petals obovate, emarginate, with an inflexed point: outer ones radiating, bifid. Fruit contracted from the sides, rather dilated. Mericarps with 5 primary ribs, and 4 secondary ones: the lateral primary ones placed in the commissure, which is flat, furnished with a simple series of muricar or prickles; not as in the rest of the ribs, which are furnished with 2 or 3 rows of prickles each; prickles all equal. Furrows under the secondary ribs 1-vittate from both sides of the raphé. Carpophage setaceous, bifid. Seed involucrated. —Erect scabrous herbs. Leaves pinnae; leaflets oblong, toothed. Umbels of few rays. Leaves of involucra and involucels 3-5, ovate, concave, equal, with membranous margins. Flowers white or rose coloured; those in the disk of the umbellules male and sterile.

1 T. latifolia (Hoffin. l. c.) leaves pinnae; leaflets deeply pinnatifid or strongly serrated, the upper ones decurrent; umbels of 2-4, but usually of 3 long firm rays; umbellules having the flowers in the circumference alone fertile; ribs of fruit beset, with double rows of straight purplish bristles; the ribs in the commissure bear acute tubercles, not bristles. O. H. Native of Middle and South Europe, Mauritania, Greece, Caucasus, and Persia, in corn fields. In England in fields on a chalky soil, but rare; in Cambridgeshire not uncommon. Caicalis latifolia, Lin. syst. nat. ed. 12. vol. 2. p. 276. Smith, engl. bot. t. 198. Jacq. hort. vindi. t. 128. —Mill. fig. t. 85. Card. prov. t. 22. Tordylum latifolium, Lin. spec. 345. Reich. spec. 1. p. 696.—Colun. cephr. 98. t. 97. f. 1. Broad Bur-parsley, Petiv. herb. brit. t. 27. f. 6. Broad-jagged Bur-parsley, Petiv. herb. brit. t. 27. f. 7. Herbage rough, rather glaucous. Stem beset with minute ascending prickles. Teeth of calyx broad, short, spreading. Petals bright pink; those in the circumference of the umbellules twice as large as the rest. The plant varies much in nature, in the leaves, and in the colour of the flowers, which are sometimes white. This is one of the most striking and handsome of our native umbelliferous plants.

Broad-leaved Turgenia. Fl. July. Britain. Pl. 2 to 3 feet.

2 T. multiflora (D. C. prod. 4. p. 218.) leaves ternate above the sheath; leaflets pinnatifid; umbels of 4 or 5 rays; ribs of fruit in the commissure bearing true prickles. O. H. Native of fields about Constantinople. Fruit more ovate than in the preceding species, 6-8, not 2-3 in each umbellule; and all parts of the plant are much more robust.

Many-flowered Turgenia. Fl. July. Pl. 3 feet.

3 T. heterotheca (D. C. prod. 4. p. 218.) leaves pinnate; leaflets oblong, deeply toothed; umbels of 6-10 rays; mericarps of fruit dissimilar, having the secondary ribs in both toothless. O. H. Native of Persia, in the district of Khoï, in corn fields; and of the Levant, between Bagdad and Kermancha. Habit and flowers very similar to those of T. latifolia. Outer mericarp of fruit having the 3 dorsal primary ribs ornamented with 2-4 broad prickles each, and the lateral ribs filiform and toothless; the secondary ones hardly distinct, or a little toothed; the inner mericarp has the primary ribs all toothless, but the dorsal 3 are larger than the lateral ones; and the secondary ribs are hardly distinct. Alburnum involuto

Variable-fruited Turgenia. Pl. 2 to 3 feet.

Cult. See Caicalis above for culture and propagation.


LIN. SYST. Pentadria, digyna. Teeth of calyx 5, triangular-lanceolate, acute, permanent. Petals obovate, emarginate, with an inflexed point: outer ones of the umbellules larger than the central ones and bifid. Fruit contracted from the sides. Mericarps with 5 brisly primary ribs: the 3 intermediate ones on the back, and the 2 lateral ones placed in the commissure, which is flat; the secondary ribs beset with cypisous prickles, which occupy the whole furrows, having one vitta under each secondary rib below the prickles. Carpophage setaceous, bifid. Seed with an inflexed margin.—Herbs, with multifid leaves, beset with short adpressed hairs, which are retrograde on the stems, and erect on the rays of the umbels. Umbels opposite the leaves. Involucra of 1-5 leaves, involucels of 5-8 lanceolate ciliate leaves. Flowers white, those in the dish of the umbellules male and sterile. Prickles of fruit hair-formed, usually hooked at the apex.

SECT. I. ECTORILIS (from ev, ev, well, and Torilis; this section is considered to contain the true species of the genus). D. C. prod. 4. p. 218. Fruit covered with stiff prickles, which are usually hooked at the apex.

1 T. microcarpa (Bess. cont. enum. no. 1562.) stem branched; leaflets linear-cut, outer ones not elongated; umbels on long peduncles, 7-10-rayed; leaves of involucra and involucels setaceous; fruit ovate; prickles much shorter than the fruit, incurved. O. H. Native of the Ukraine and the south of Podolia. Torilis Ukrajina, Spreng. in Schultes, syst. 6. p. 485. Involucra as in T. Anthiscus, equal in length to the umbellules.

Small-fruited Hedge-parsley. Pl. 2 to 3 feet.

2 T. Anthiscus (Gmel. fl. b. 1. p. 613.) umbels on long peduncles of 5 to 10 closely rayed; leaves of involucra and involucels several, awl-shaped; fruit covered with incurved bristles. O. H. Native of Europe and Caucasus, and hedges and on the borders of fields, very common; plentiful in Britain in like situations. Caicalis Anthiscus, Spreng. fl. cern. no. 311. Huds. angl. t. p. 114. Smith, engl. bot. t. 987. Fl. dan. t. 919. Curt. lond. fasc. 6. t. 32. Tordylum Anthiscus, Lin. spec. 346. Jacq. fl. austr. t. 261. Torilis rubella, Mæchn, math. p. 103. Caicalis aspera, Lam. quot. 1. p. 636.—Riv. pent. irr. t. 32. Bauh. pin. 153. prod. 80. with a figure. Stem rough from deflexed hairs. Leaves bipinnate, pinnatifid, and sharply cut, rather than soft, but harsh to the touch; the lowermost one much more compound than the others. Flowers small, either white or flesh-coloured; the exterior ones only a little irregular or radiant.


3 T. neolécta (Schultes, syst. 6. p. 484.) stem and branches erect; leaflets ovate-lanceolate, cut; the terminal one hardly longer than the rest; umbels on long peduncles of from 7 to 10 rays; involucrum wanting. O. H. Native of Sardinia, Germany, &c. in fields and on the margins of woods. Scândix infestá, Jacq. fl. austr. t. 46. Caicalis infestá, Vest. ech. p. 493. ex Schultes. Peduncles longer and the fruit larger than in T. infestá. Flowers white.


4 T. inteésta (Hoffin. umb. p. 89. Spreng. prod. 24.) stem erect, much branched; leaflets pinnatifid, deeply cut, and sometimes almost bipinnate: the terminal leaflets elongated; umbels 3 A
UMBELLIFERÆ.


Var. a, diaphorá (D. C. prod. 4. p. 219.) stem branched, divericate. O. H.

Var. β, anthriscádes (D. C. prod. 4. p. 219.) stem sparingly branched, or almost simple; tall; branches erect. O. H. This appears to be a variety intermediate between T. infesta and T. anthróicus, and is probably the T. Anthriscus, Spreng; exclusive of the synonyms.

Var. β, purpéræ (D. C. l. c.) leaflets hardly elongated. O. H. Native of the south of Europe. Torilis purpéræ, Ten. append. 4. p. 12. Guss. prod. fl. sic. 1. p. 325. In the specimens examined of this variety, the flowers are white, and the prickles of the fruit are more or less coloured. Perhaps a proper species.

Troublesone or Spreading Hedge-parsley. Fl. July. Britain. Pl. ½ to 1½ foot.

5 T. heterophylla (Guss. prod. flor. sic. 1. p. 326.) stem erect, sparingly branched: segments of leaves linear-lanceolate, cut; outer or terminal one not elongated: upper ones linear, entire; umbels on long peduncles of 2-3 mm.; involucrum almost wanting; prickles equal in length to the breadth of the fruit. O. H. Native of Sicily, Corsica, and south of France. Caúcalis linearifólia, Requien, in litt. 1815. The fruit in this species is very variable in form and size, as in T. nodosa.


African Hedge-parsley. Pl. 1½ foot.

7 T. rufóchórus (Spreng. syst. 6. p. 889.) stem branched, rather puberulous; leaves bipinnate; leaflets or segments lanceolate, pinnafiddly serrated; umbels on long peduncles, 7-8-rayed; involucrum usually of only one leaf; bristles coloured, rather soft, scabrous, glabiate at the apex, rather longer than the diameter of the fruit. O. H. Native of the Canary Islands.

Green-fruited Hedge-parsley. Pl. 1 to 2 feet.

8 T.nodocá (Garrn. fruct. 1. p. 82. t. 20. f. 6.) umbels nearly sessile, glomerate, lateral, simple; stems prostrate; involucre of several linear hairy leaves; the outer mericarps of each external fruit thickly clothed with long, straight, pale, rough bristles, minutely hooked at the tops; the inner, as well as the interior fruits covered with dense, whitish, shining, tubercular granulations. O. H. Native of Europe and the Levant, on banks, and about the borders of fields; most plentiful in a gravelly or chalky soil; plentiful in Britain. The plant is also to be met with in Chili and Peru, but has probably been transported thither. Caúcalis nodocá, Huds. augl. bot. t. 199. but not of All. Tordiúm nodocus, Lin. spec. 346. Jaccq. aut. append. t. 24. Caúcalis nodóifóra, Lam. dict. 1. p.

656.—Riv. pent. irr. t. 36.—Mor. oxon. sect. 9. t. 14. f. 10. Stem rough from reflexed bristles. Leaves a deep glaucous green, hairy, bipinnate, and sharply cut, with very narrow tolerably uniform segments. Petals white or reddish, hardly at all radiating or unequal. This plant is very different from Ockerophyllum nodocá, of which it is said to be a synonyme by Sprengel in Schultes, syst. 6. p. 485. The Caúcalis Hispánica, Lam. 1. p. 658. appears to be referrible to this from the description; and Caúcalis lappuláceus, Poppig. diar. no. 356. pl. excis. p. 96. does not differ from this.


9 T. Japonóica (D. C. prod. 4. p. 219.) stem smoothish, terete; branched; leaves pubescent, bipinnate; leaflets oblong, pinnafiddly; umbels pedunculate, axillary, and terminal, 5-7-rayed; involucrum and involucres of a few short subulate leaves; mericarps oblong; bristles of fruit stiff, hooked at the apex. O. H. Native of Japan. Caúcalis Japonica, Houtt. pl. syst. 8. p. 42. t. 45. f. 1. Upper branches and rays of umbel angular, beset with upright hairs.

Japan Hedge-parsley. Pl. 1 to 2 feet.

10 T. scabra (D. C. prod. 4. p. 219.) stem smoothish, terete; branched; leaves pubescent, pinnate; leaflets oblong, pinnafiddly, much acuminated; umbels terminal, and opposite the leaves, 5-7-rayed, sometimes without an involucrum; leaves of involucres subulate; mericarps oblong, covered with stiff bristles, which are hooked at the apex.—Native of Japan. Chaerophyllum scabrum, Thumb. fl. jap. 119.

Scarbourous Hedge-parsley. Pl. 1 to 2 feet.

11 T. tuberculátà (Spreng. in Schultes, syst. 6. p. 486.) plant glabrous; branches twiggy; leaves pinnate; leaflets linear, quite entire; involucre and involucres wanting; hairs of fruit hardly hooked.—Native of Syria. Caúcalis tuberculáta, Poir. suppl. 2. p. 137. Styles tubercular at the base; hence the name. Fruit the size of that of T. micrócarpa.


12 T. elátà; hispid, erect, branched; involucre of many leaves; fruit ovate, very hispid from stiff bristles; leaves supra-decompound; leaflets lanceolate, deeply pinnafiddly; outer ones elongated. O. H. Native of Nipal, on the mountains. Caúcalis élata, D. Don. prod. flor. nep. p. 183. Caúcalis conífolia, Wall. cat. miss. Umbels of 8-10 rays. Involucres of 6-8 linear-subulate leaves.

Tall Hedge-parsley. Pl. 2 to 3 feet.

Sect. II. Trechosóre's (from θρόχος, thríschis, a hair, and κορός, korós, a fruit; in allusion to the fruit being covered with long soft hairs). D. C. prod. 4. p. 220. Fruit covered with very long, soft, setaceous, crowded, spreading, coloured hairs, which are not hooked at the apex.

13 T. thičosóre's (Spreng. umb. spec. 142.) stem nearly erect; branches smoothish; leaves bipinnate, rough from adpressed hairs; leaflets pinnafiddly, acute; umbels on long peduncles, 3-6-rayed; involucre wanting; involucres of 2-3-subulate leaves. O. H. Native of Egypt, ex Lin.; and of Syria, at Tripoli. Scándix trichóspérma, Lin. mant. 57. Chaerophyllum trichóspérma, Lam. dict. 1. p. 685. but not of Schultes. Anthriscus trichóspérma, Pers. euch. 1. p. 685. but not of Schultes. Bristles of fruit painted with rufous or violet colour.


Cult. Sow the seeds in the open ground.

Tribe XV.

SCANDICITAE (this tribe contains plants agreeing with

Lin. syst. Pennádría, Bigýnia. Margin of calyx oblong, or somewhat 5-toothed. Petals ovate, truncate or emarginate, usually furnished with an inflexed point. Fruit somewhat compressed from the sides, having a very long beak; mericarps with 5 blunt equal ribs; lateral ribs marginating; furrows without vittae, or with obsolete ones. Carpophore undivided, or forked at the apex. Seed teretely convex, with a deep furrow in front. Annual herbs, with terete, rather striated stems, and bi-pinnate leaves, having the leaflets divided into linear lobes. Umbels of few rays. Involutula wanting, or of one leaf. Umbellules of few rays; involucels of 3-7 leaves. Flowers white.


Common Shepherd's-needle, 'Toun's-comb, or Needle Chervil. Fl. June, Sept. Britain. Pl. 1 foot. 3 S. BRACHYCEPA (Guss. ind. sem. 1825. prod. sic. 1. p. 320.) involucrum wanting; leaves of involucels entire; umbels of few rays; fruit glabrous in the seminiferous part; beak hardly twice the length of the seed. C. H. Native of Sicily, on the Nebrodes; and of Syria. This is an intermediate plant between the two sections of the genus from habit; but the beak of the fruit is compressed from the back, not from the sides. Leaves terminally decumbent, glabrous; lobes short. Stem hardly a hand high. Fruit 10 lines long. Short-fruited Shepherd's-needle. Pl. ½ to ⅔ foot.


5 S. FALCATA (Lond. jour. must. 1. p. 87. t. 5. ex Hoffm.) leaves of involucels obvate, bluntly bidentate, ciliated, with membranous margins; radiate petals obolate, somewhat emarginate; fruit rather falcate, scabrous from bristles; stem and petioles pilose; umbels glabrous. C. H. Native of Tauria, frequent. S. australis β., Bieb. suppl. 424. Wylia rágians, Schultes, syst. 6. p. 504.?


6 S. APICULÁTA (D.C. prod. 4. p. 221.) leaves of involucels ovate, acutely mucronate or bidentate, with membranous ciliated margins; radiant petals oblong-ovate, entire or bifid, with an acute recess; fruit scabrous from bristles; stem and petioles pilose; umbels glabrous. C. H. Native of the Levant. Very S. falcóta, but differs in the involucels being mucronate and acute; in the styles being long, and at length diverging; in the lower leaves being on longer petioles, and in the plant being smaller.


7 S. GRANDIFLÓRA (Linn. spec. 369.) leaves of involucels ovate, obtuse, somewhat denticulated, with membranous ciliated margins; radiant petals somewhat obcordate, with an obtuse recess; fruit bristly; stem and leaves hairy. C. H. Native of Greece, Tauria, and Iberia, in fields; also of Dalmatia, if S. hirsúta of Bissoletto, collected at Lassín-Piccólo, be the same. Scándix orientalis flore maximo, Tourn. cor. p. 23. Cherophyllum grandifórum, Lam. dict. 1. p. 686. Wylia grandifóra, Hoffm. umb. 1. p. 15. t. 2. f. 3. Far. β., glabriáta (D. C. prod. 4. p. 222.) stem and leaves glabrous. C. H. Native of the Levant, about Bagdad. Rays of umbel forming almost a straight angle: lateral ones bearing 12-15 fruit, and the terminal ones 5-6, the rest abortive. Involucels spreadingly deflexed, rather ciliated. Perhaps a proper species, or a variety of S. falcóta.


8 S. IREƒÍCA (Bieb. fl. taur. 1. p. 230.) leaves of involucels ovate, somewhat bidentate, with rather membranous ciliated margins; radiate petals obcordate, with an acute recess; fruit 3 a 2.
umbels. Fruit the umbels of 5 deflexed leaves, with ciliate margins. Flowers either white or red.


4 A. *stylifera* (Hoffm. umb. 40-46, t. 1. f. 19. p. 216. t. 1. B. f. 17.) stem branched, striated, the lower part downy; leaves tripinnate; leaflets ovate, pinnatifid, rough-edged: extreme ones elongated; umbels smooth, terminal; involucels of 5 ovate fringed deflexed leaves: styles short, hardly diverging; fruit lanceolate, with a deep channel on each side, smooth.

2. H. Native throughout the whole of Europe, even to Cauca-

Cicuta, in hedges and the borders of pastures and fields, in a rather fertile soil, very common; plentiful in Britain. *Chere-


4. Cult. Sow the seeds in the open ground.

404. *UMBELLIFERÆ.*

9 S. *Gila* (S. G. Gmel. t. n. 3. p. 304. t. 31. f. 2.) stems branched, striated; fruit smooth.—Native of the north of Persia. Gmel. syst. veg. 486.

*Gilan Shepherd’s-needle.* Pl. 1 ft.

5. *H.* Fruit outer brous or glabrous, deflexed, or glabrous; leaves terminal, opposite; the leaves of involucels deflexed, lanceolate, acuminate, ciliate; umbels terminal; rays glabrous; outer petals radiant; fruit shining, girded by a series of small bristles at the base. 2. H. Native of the Alps of Provence and Piedmont. *Chereophyllum torquatum,* D. C. fl. fr. suppl. 505. *Myrhis fulvus,* All. pedem. no. 1373. exclusive of the synonymes. *Myrhis torquata,* Schultes, syst. p. 6. 511.


2. A. *Scilla* (D. C. prod. 4. p. 223.) stems glabrous, striated; leaves ternately decumbent; sheaths and involucera ciliate; leaflets ovate, pinnatifid; lobes oblong, deeply toothed, bluntish; fruit oblong, smooth, girded, by a series of bristles or hairs at the base. 2. H. Native of Sicily, in woods and shady groves. *Chereophyllum Scilum,* Guss. prod. 1. p. 352.

*Var. β, scabra* (D. C. l. c.) fruit scabrous from tubercles, particularly on one side. 2. H. Native of Sicily.

*Scillan* Rough Chervil. Pl. 2 to 3 feet.

3. A. *Cicutaria* (Duby, in D. C. bot. gall. 1. p. 239.) plant smoothish; leaves ternate, then pinnate; leaflets pinnatifid, unequal at the base; segments lanceolate, bluntish toothed; umbels opposite the leaves and terminal; rays numerous, glabrous; petals hardly emarginate, outer ones radiant; fruit ovate-oblong, smooth, naked at the base. 2. H. Native of the Alps of Dauphiny and Switzerland, &c, in humid places; also of Vol-


milis, Bess. enum. p. 13. no. 358. *Chereophyllum daucifölium,* Desf. cat. hort. par. 1828. Leaves membranous, glabrous; leaflets broad. Involucels of 5 deflexed leaves, with ciliate margins. Flowers either white or red.

4. Cult. Sow the seeds in the open ground.

357. *UMBELLIFERÆ.*

2. *H.* native of the south of Europe. In Britain, near Worecester; in great

Far. β, trichespérama (Koch, in litt. ex D. C. prod. 4. p. 224.) stem weak, glabrous; leaves ternately decomposed or triply pinnate; leaflets coarsely 5-7-toothed; segments blunt; umbels opposite the leaves, pedunculate; rays few, glabrous; fruit oblong-linear, mucronated from short down; styles short, erect.

O. H. Native of Panama. Chérophyllum trichespérama, Schultz, eastr. fl. 2. 1. p. 504. but not of Lam. Anthdráceae trichespérama, Schultz, syst. 6. p. 522. but not of Pers. Chérophyllum trichespérama, Bass. in litt. Allied to A. celerófilum, but very different from Torids trichespérama. Perhaps a variety of Scândix celerófilum, with scabrous fruit, ex Jaqc. and Biebr, and therefore Chérophyllum nemorósum, Jaqc. appertains to this plant.


7 A. fumárioides (Spreng. umb. prod. 27.) plant quite glabrous; stem striated, branched; leaves ternately supra-decompound; leaflets pinnatifid; segments linear, remote, cut, ciliated; umbels terminal; leaves of involucres reflexed, not ciliated; fruit oblong-linear, scabrous. 3.-H. Native of Croatia, on limestone mountains. Schultz, syst. 6. p. 322. Scândix fumárioides, Waldst. et Kit. pl. rar. hong. 3. p. 349. t. 224. Petals white, oblong, cuneate. Fruit oblong, echinated with stiff short hairs. Styles short, parallel, erect. Perhaps the same as Chérophyllum divaricátum, Poir. suppl. 4. p. 343. and Chérophyllum tubérculósum, Poir. suppl. 4. p. 342. or Anthródrus tubérculátus, Schultz, syst. 6. p. 557.


Common Beaked-parsley. Fl. May, Britain. Pl. 2 to 3 feet. Cult. All the species are of the most easy culture, and will grow in any soil and situation.


Sect. I. Physocalais (from φυσκα, phýska, a bladder, and καλλις, kalliς, a stem; in allusion to the stems being tumid at the joints.) D. C. coll. diss. 5. p. 59. prod. 4. p. 225. Fruit subpyramidical, somewhat attenuated at the apex, covered by stiff, compressed, angular bristles: having the ribs obtuse and much depressed. Styles short, straight.—Annual.


Far. β, Basée (D. C. prod. 4. p. 225.) stem rather hairy, erectish; leaves tripinnate; leaflets pinnatifid; segments short, bluntish; umbels of 2-3 rays. 3.-H. Native of Carolina. Stem a foot or a foot and a half high, contracted at the nodi in the dried state. Invólucra of 1 or 2 multifid leaves; involucres of 5 ovate entire leaves. Fruit 3 lines long, without any beak. Mericarps with 5 ribs, and one vitta in each furrow. Styles 2, very short. Chérophyllum articulátum, Bose, in herb. Vent.

Procúmbent Cicely. Pl. procúmbent.

3 C. vilòsòsum (Wall. cat. no. 558.) stem erect, the base beset
with retrograde hairs, and the top with spreading ones; leaves rather ploose, pinnate; leaflets bipinnatifid; lobules short, acut- ish; umbels of 3-4 rays, without any involucra. 8. H. Native of Nipaul, on the mountain called Chandaherry. Herb 2 feet high, branched, very hispid at the base. Involvecles of 3-4 linear acute leaves. Fruit a little shorter than the pedicels. Styles short, straight.

*Villous Cicely.* Fl. 2 feet.

### Sect. III. Eucalyxphyllum (from eu, eu, well, and chero- phyllum; this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 225. Fruit glabrous, evidently ribbed. Styles more or less diverging. —Biennial or biennial plants.

1 C. coloratum (Lin. mant. p. 57.) root simple, fusiform; stem terete, and is as well as the petioles ploose; leaves terately decompound; leaflets pinnatifid, divaricate; involucre glabrous, yellow. 8. H. Native of Dahamua. Jaq. hort. vind. 1. t. 51. Myrrhis colorata, Spreng, in Schultes, syst. 6. p. 515.—Pink, alm. t. 190. f. 5.—Mors, expon. sect. 9. t. 19. f. 6. Root yellowish. Flowers yellow. Styles short, diverging. Hairs on the stem usually deflexed.


2 C. Pescettii (D. C. prod. 4. p. 225.) root unknown; stem beset with retrograde hairs below, but glabrous above; leaves supra-decompound, the lower ones ploose at the petioles: super-orior ones glabrous: leaflets multifid: lobes linear; leaves of involucres cupisicate and glabrous; styles hardly diverging; fruit cylindrical.—Native of Altaia. Very like C. bulbosum, but the styles are hardly diverging, and erectish on the fruit, which is much slenderer and longer.

*Prescott’s Cicely.* Fl. 1½ foot.

3 C. bulbosum (Lin. spec. p. 370.) root turbinate; stem beset with retrograde hairs at the bottom, and glabrous at the top; leaves supra-decompound; lower ones ploose at the petioles: superior ones glabrous; segmentes multifid, linear; leaves of involucres glabrous, cupisicate; styles short, divergente.

8. H. Native of Alsatsia, Germany, Siberia, Daham, even to Persia, in humid parts of woods. Jaq. fl. austral. t. 63. Hayn. arb. 1. t. 32. Scandix bulbosa, Roth, germ. 1. p. 123. Myrrhis bulbosa, Spreng, in Schultes, syst. 6. p. 513. Horn. fl. dan. t. 1768.—J. Bank. hist. 3. p. 183, with a figure.—Pench. icon. t. 207. Perhaps the same as C. verticillatum, hort. paris, ex Pers. Root not bulbous, but turgid and turnip-formed. Stem usually tumid at the nodi, spotted at the base. Leaves triply pinnate, finely cleft. Flowers white. The roots taken up early in the spring are eaten boiled, with oil and vinegar. Gmelin affirms both these and the seeds to occassion vertigees; but certainly this is not true, at least of the fresh root, many persons having eaten of that with impunity.


7 C. Tenne'nti (Lin. spec. 370.) root spindle shaped, subdivided; stem solid, striated, rough with short deflexed hairs, and spotted with dark purple, swelled under each leaf like most of the other species; leaves dark green, hairy, twice pinnate; leaflets pinnatifid or lobed; umbels of many unequal hairy seeds; involucra wanting, of one leaf, rarely of several; involucræ of several ovate pointed leaves, which are finely fringed at the margins and keel, occasionally confoent at the base; seeds forrowed, nearly smooth. 8. H. Native of Europe, in bushy places, and under hedges, common; plentiful in Britain. Jaq. austral. t. 65. Fl. dan. 918. Smith, engl. bot. 1621. Curt. lod. fasc. 6. t. 24. Hayn. arb. gew. t. 34.—Scandix tenua, Roth, fl. germ. 1. p. 22. C. tenuulm, D. C. prod. 4. p. 126. Scandix nitans, Monch, meth. p. 101. Myrrhis tenuula, Gaertn. fruct. 1. p. 23. t. 10. Schultes, syst. 6. p. 514. Myrrhis tenuifolium, Smith, engl. fl. 1. p. 51. C. aurem, Lin. mant. p. 355, but not of his spec. according to Smith in Lin. trans. 10. p. 339.—Myrrhis, Riv. pent. i. t. 49.—Moris, hist. 9. p. 305. sect. 9. t. 10. f. 7. Cerefolium sylvæstre, Raui, syn. 207. Anthriscus Plautii, Dalesch, hist. 791. with a figure. —Wild Chervil, Petiv. herb. brit. t. 25. f. 3. Flowers white, numerous, very slightly irregular, partly barren; those of the circumference principly fertile. Fruit linear, crowned with the short recurved caryee. The whole plant is sweetish and aromatic, acceptable to domestic catle, nor is any intoxicating quality recorded, notwithstanding the specific name. The herbage is often mildewed. Linnæus asserts that all the flowers are perfect, which does not accord with Haller’s account, nor with our English specimens.

*Intoxicating or Rough Cicely, or Rough Cow-parsley.* Fl. June, July, Britain. Fl. 3 feet.

### *Perennial species.*

8 C. monocyclorum (Kit. ex Link, enum. 1. p. 281.) stem quite glabrous; leaves decompound, each with leaflets lanceolate, deeply serrated, having the middle nerve and margins hairy; leaves of involucra and involucræ ciliated. 8. H. Native of Hungary. C. angulatum, Kit. According to Link and Koch, this is a very distinct plant from Anthriscus sylvestris, although it has been joined into it by Sprengel. Perhaps C. ciliatum, Kit. in Schultes, syst. is the same, and probably C. nitidum, Wahl. fl. carp. p. 85. It is perhaps only a variety of C. aurem.

*Monogynus Cicely.* Fl. May, June. Fl. 1810. Fl. 3 feet.

9 C. aurem (Lin. spec. p. 370. but not of his mant.) stem solid, branched, angular, striated, downy, with copious short deflexed hairs, intermixed with more or less numerous coarser bristles; leaves decompound; the stem ones remarkable for their tapering leaflets, with numerous fine sharp parallel segments, their surfaces hairy or smooth; fruit in the early state club-shaped, when ripe linear, crowned with the lengthened spreading styles; seeds linear, of a tawny yellow, each with 3 prominent obtuse permanent ribs, which are often roughish upwards, as well as the furrows; involucra wanting, or of very few leaves; leaves of involucræ ovate-lanceolate, pointed, reflexed, coloured. 8. H. Native of Middle Europe, among the mountains. In Scotland between Arbroath and Montrose; and at Corstorphine near Edinburgh, on the borders of fields. Smith, engl. bot. 2103. Jaq. austral. t. 64. Myrrhis aurea, Spreng. Prod. 29. and in Schultes, syst. 6. p. 511. Smith, engl. fl. 1. p. 52. exclusive of the synonyms of Wild. Scandix aurea, Roth, germ. 1. p. 123.—Lob. icon. t. 734. Ger. emac. 1059.—Moris, hist. 9. p. 301. sect. 9. t. 10. f. 2.—Rupp. gen. ed. Hall. 282. t. 5. Joints of stem more densely hairy than the other parts, and a little swollen, crowned by the narrow annular base of each petiole. Flowers cream coloured, slightly irregular, the barren ones numerous, with only globose rudiments of styles. Stylodia somewhat depressed, and considerably wrinkled.


10 C. maculatum (Willd. ex Link, enum. suppl. 15.) stems smoothish, angular, spotted; leaves supra-decompound, ploose; leaflets lanceolate, deeply serrated, attenuated at the apex; fruit mutic, coloured, 6 times longer than broad. 8. H. Native of the south of Europe, but the particular places are not known. It differs from C. aurem, to which it has been joined by Sprengel, in the stem being spotted and smooth, and in the fruit being twice the length.

*Spotted-stemmed Cicely.* Fl. May, Ju. Fl. 1819. Fl. 3 feet.

11 C. villosellum (D. C. prod. 4. p. 226.) stem and petioles hispid from pili; leaves many-parted; leaflets linear-ligniform, glabrous, distant; involucræ of one leaf; leaves of involu-

*Millefoil-leaved* Cicely. Fl. May, June. Cite. 1818. Pl. 1 to 1 ½ foot. 12 C. róseum (Stev. mem. mose. 3, p. 260. Bibb. Fl. taur. no. 582.) stem and petioles hispid, and rather pilose; leaves many-parted; leaflets pinnatifid, glabrous; segments linear, approximate; involucre generally of one leaf; leaves of involucres numerous, deflexed, subulate at the apex, ciliated at the base, woolly, longer than the umbelles. 2. H. Native of Caucasus and Iberia, in mountain meadows. Leaves as finely cut as those of the carrott. Petals of a fine rose colour, not ciliated as in C. hirsutum. Myrrhis rósea, Spreng. in Schultes, syst. 6, p. 519. Fruit not seen.

*Rose-colored-flowered* Cicely. Fl. May, June. Cite. 1817. Pl. 1 to ½ foot. 13 C. húmile (Bieb. suppl. 240.) stems aggregate, declinate, equal, pubescent; leaves decomposed; leaflets pinnatifid; segments oblong, very short; involucre of 1 or 2 leaves; involucres usually of 5 leaves, which are ciliated and margined with white. 2. H. Native of Iberia, at the river Ksani. Myrrhis húmílis, Schultes, syst. 6, p. 519. Flowers white.

*Humble* Cicely. Fl. May, June. Cite. 1823. Pl. 1 foot. 14 C. hybriúm (Ten. fl. nap. prod. 66.) stem glabrous, striated, rather scabrous; leaves tripinnate; leaflets lanceolate-oblong, deeply serrated; segments acuminated, smoothish above, rather hispid beneath; leaves of involucre and involucres ovate, acuminated, ciliated with long hairs; petals glabrous; styles divaricate. 2. H. Native of the kingdom of Naples, in the woods of Magella. Flowers white.

*Hybrid* Cicely. Fl. May, June. Cite. 1822. Pl. 3 feet. 15 C. hírsútum (Lin. spec. 371.) stem fistular, beset with deflexed hairs; leaves ternately decomposed, nearly naked; leaflets ovate-cordate, acute, pinnatifid; segments deeply serrated; petals usually ciliated; styles stiff, diverging, straight, permanent. 2. H. Native of the temperate parts of Europe, as in Switzerland, Germany, Austria, Carniolia, in mountain groves. Jacq. fl. austral. t. 148. Scándix hírsutu, Scop. carp. no. 330. Myrrhis hírústa, Spreng. in Schultes, syst. 6, p. 510. —Riv. pent. irr. t. 51.—J. Banh. hist. 5, pt. 2, p. 182. f. 2.—Moris. hist. p. 304. sect. 9. t. 10. f. 6. Petals white, with the ciliæ sometimes deciduous or almost wanting. Involute of 5 lanceolate acuminated leaves. Leaves sometimes hairy on the veins beneath.

Var. β, glabrárum (Lam. dict. 1, p. 683.) stem and leaves smooth. 2. H. Native of more humid places than the species. C. cicurátia, Murr. bot. 60. but not of Vill. C. pállácens, Presl. in helv. Balb. Petals ciliated.

Var. γ, élegans (Schlecht. cat. 1821.) stem hairy; leaves pubescent; leaflets and segments elongated. 2. H. Native of the Alps of Switzerland. Ch. élegans, Gaudin, helv. fl. fr. 364. Ch. hírústum subverticillárum, Schlecht. et exsic. no. 40. 2. H. rubírfórum (D. C. prod. 4, p. 227.) flowers of a rusty purplish colour. 2. H. Native of Switzerland, Savoy, Germany, Carniola, &c. in meadows on the higher mountains.

*Hair-y* Cicely. Fl. June, July. Cite. 1759. Pl. 1 ½ foot. 16 C. mágelle'nsc (Tenor. fl. nap. append. 4, p. 15. var. β, exclusive of variety γ,) stem beset with retrograde hairs, especially at the base; leaves pubescent, many-parted; leaflets oblong, pinnatifid; lobes acute, deeply toothed, lanceolate; petals a little ciliated; fruit cylindrical; styles stiff, permanent, diverging. 2. H. Native of the kingdom of Naples, on Mount Magella. The species received from Tenore under this name is nothing but Anthusis sylvestris var. γ; but another specimen has been sent by him to Moricand in flower and fruit, which differs from C. hírsútum in the fruit being longer and thicker.

*Magella* Cicely. Fl. May, June. Pl. 3 feet. 17 C. calábricum (Guss. in act. reg. soc. bor. ex litt. 1828.) stem finely pubescent; leaves doubly dissected; leaflets broad, ovate, somewhat cordate, acute, deeply toothed, puberulous along the nerves, the rest glabrous; sheaths of leaves and leaves of involucres glabrous, hardly ciliated; petals subciliated; styles erect. 2. H. Native of Cabaria, on the mountains about springs and rivulets. In habit the plant is intermediate between C. hírsútum and C. aro'máticum.

Calabrian Cicely. Fl. 1 to 2 feet. 18 C. aro'máticum (Lin. spec. 371. Jacq. fl. austral. t. 150.) stem striated, round, and hairy in the lower part, but smooth upwards, slightly tumid and angular below each joint; leaves binate, large, on narrow-winged footstalks; leaflets stalked, broad, ovate or elliptic-oblong, acute, sharply and finely serrated, both sides nearly smooth, the serratures minutely fringed; umbels smooth; involucre occasionally of a few lanceolate pointed leaves; involucres of several; fruit linear, smooth, crowned by the long, slender, spreading styles. 2. H. Native of Greece, Turkey, Hungary, Poland, Silesia, Austria, &c. In Scotland, near Guthrie, by the road leading from Forter to Arbroath. Scándix tinctíoría, Scop. carp. no. 351. Myrrhis aro'mátiu, Spreng. prod. 23. Smith, engl. fl. 1, p. 52. Schultes, syst. 6, p. 509.—Riv. pont. t. 53.—Boeck. mus. 29, t. 19. Herb when bruised somewhat aromatic; but the seeds, according to Jacquin, have scarcely any flavour. Seopoli says, they stain the fingers when rubbed with a brownish red. Flowers numerous, white, the external ones fertile.


† Species not sufficiently known.

20 C. arbo'reescès (Lin. spec. 1, p. 571.) stem frutescent; leaves supra-decompound, smooth; involucres present only; flowers all fertile. 2. H. Native of Virginia. This species is very doubtful.

Arborescent Cicely. Shrub. 21 C. Capé's(e) (Thumb. prod. p. 51, fl. cap. 2, p. 204.) stem terete, glabrous; leaves trinerved, rather hairy; leaflets rather remote, linear-lanceolate, somewhat trifid, cuspitate; involucels glabrous; fruit obliquely pyramidal, a little beaked, acutely 5-ribbed; styles permanent, reflexed.—Native of the Cape of Good Hope. Myrrhis Capénís, Spreng. umb. spec. p. 352. Schultes, syst. 6, p. 513.

Cape Cicely. Fl. May, June. Cite. 1810. Pl. 1 ½ foot. 22 C. ? arístå'tum (Thumb. fl. jap. 119.) stem terete, gla-
brons; leaves ternately decompound, rather bipartite on both surfaces; leaflets ovate, acuminate, pinnately cut; fruit rather strigosous; styles permanent, divaricate.—Native of Japan. Myrrhis aristata, Spreng. umb. spec. 133. Schultes, syst. 6. p. 512. Said to be allied to *Urospermum dioic* and probably a species of that genus.

*Anned Cicely.* Pl. 2 to 3 feet.

23 **C. minimum** (Vand. in Roth. script. p. 56.) stems numerous, hairy; radical leaves flat on the ground, binate, hairy; leaflets somewhat 3-lobed, cut; involucrally wanting; involucels minutely-ovate, about 7-10 cm. diam. On the mountains about Milan. Vittm. suppl. p. 369. Schultes, syst. 6. p. 524. Moretti suspects this to be nothing but a variety of *C. hirsutum*.

*Least Cicely.* Pl. ½ foot.

24 **C. tenuifolium** (Poir. suppl. 4. p. 342. but not of Stev.) plant glabrous; leaves decumbent; leaflets finely cut, acute; fruit nearly glabrous, profoundly ribbed.—Native of the kingdom of Morocco. Myrrhis tenuifolia, Schultes, syst. 6. p. 520.

*Fine-leaved Cicely.* Pl. 1 to 2 feet?

*Cult.* All the species are of the most easy culture, and will grow in any soil.

**CXXXIX. CALDA'SIA** (in honour of J. Caldas, a naturalist of Santa Fe de Bogota). Lag. am. nat. 1821. no. 2. p. 98. obs. nov. p. 26, and dis. in litt. D.C. coll. dis. 5. p. 60. t. 2. f. 1. but not of Wild. nor Murias.—Myrrhis, Kunth, nov. gen. amer. 5. p. 13. t. 419. but not of Koch.

**Lin. syst.** Pentadria, Digynia. Margin of calyx obsolete. Petals oval, with an entire subinvolute point, pilose on the outside. Fruit somewhat compressed from the sides, ovate-oblong, crowned by the short diverging styles. Mericarps with 5 obtuse prominent ribs, 3 dorsal, and 2 marginating; vitte one in each furrow, which are broad, flat, and striated. Commissure furrowed in the middle. Carpophore bipartite. Seed teretly convex, somewhat convoluted at the commissure.—Puberulous or hairy tufted herbs, not above 2 or 4 inches high. Leaves tripinnately multifid; segments lanceolate-linear, acute. Scapes erect, pubescent. Umbels simple, containing about 20 flowers, surrounded by involucres composed of about 20 leaves each, which are oblong-lanceolate. Flowers white, some male, and others female.—This genus, from the seed and fruit, is allied to *Sciadix*; but differs from *Chereophyllum* in the umbels being simple, in the ribs of the mericarps being distant, and in the furrows being broad.

1 **C. Anécula** (Lag. in litt. D.C. coll. mem. 5. t. 2. f. j. 1-3.) the plant is either wholly glabrous or puberulous; pedicels smooth, a little longer than the involucrum. **2. F.** Native of South America, in grassy plains at Antisana, at the height of 6000 to 7000 feet. Myrrhis Anécula, H. B. et Kunth, nov. gen. amer. 5. p. 13. t. 419. Plant dwarf, tufted, deep green, but becoming blackish on drying. Umbels 10-12-flowered. Scapes rarely twice the length of the leaves. Kunth's specimen is less than that of Dombrey's, and more glabrous; but the hairs of the scapes in both are deflect. Pedicels glabrous.

*Anned Caldasia.* Pl. 2 to 3 inches.

2 **C. eriófora** (D.C. l. c. f. j. 4-5.) the whole plant is clothed with hairy pubescence; pedicels tomentose or hairy, much longer than the involucrum. **2. F.** Native of New Holland, where it was collected by D'Urville. Scapes 4 times longer than the leaves. Leaves of involucrum oval-oblong. Fruit quite glabrous, seated on very hairy pedicels.

*Woolly-pedicelled Caldasia.* Pl. 2 to 3 inches.

† **Species not sufficiently known.**

3 **C. cerophyllum** (Lag. am. nat. 2. p. 98. and in litt. med.) stems covered with retrograde hairs; segments of involucrem entire, or cut, about equal in length to the flowering umbel. **2. F.** Native of Peru.

*Tar. α, globériscula* (D.C. prod. 4. p. 229.) leaves puberulous, especially above, as well as the outside of the involucra; petals almost glabrous; peduncles dichotomous, twin. **2. F.** Native of Peru, at the town of Chinchin, in the province of Chanchay, where it was collected by Ruiz et Pav.

*Tar. β, hirsuta* (D.C. l. c.) leaves pubescently hairy on both surfaces, as well as the outside of the involucres and petals; forks of umbels 0-4-rayed.

*Chereophylli Callasía.* Pl. 2 to 3 inches.

4 **C. lamiópetala** (Lag. in litt. ex D.C. prod. 4. p. 229.) stem and leaves rather tomentose, greyish; segments of involucres cut and pinnatifid, longer than the umbels; petals pubescent on the outside. **2. F.** Native of the Andes, in the tract called Cordillera del Peru.

*Hairy-petalled Caldasia.* Pl. 2 to 3 inches.

*Cult.* See Frigiana, p. 259. for culture and propagation.

**CXL. SPALLEROCRATRUS (σπάλλος, spállo) to deceive, and κύρσας, kúrás, fruit; from the fruit being liable to be mistaken for cumin seed).** Bess. in litt. 1828. D. C. coll. mem. 5. p. 64. t. 2. f. N. prod. 4. p. 230.

**Lin. syst.** Pentadria, Digynia. Teeth of calyx 5, subulate. Petals ovato-elliptic, emarginate, with an index point; outer ones of the umbrella radiant. Styles short, at length reflexed. Stylopodium rather ureate, toothed. Fruit elliptic-oblong, contracted from the sides, without a beak. Mericarps with 5 subulate ribs: lateral ribs marginaling. Vitte 2-3 in each furrow, which are convex; and 4-6 in the commissure. Carpophore bipartite. Seed having a furrow inside.—Herbs. Stems terete, and as well as the petioles hairy. Leaves bipinnate; leaflets pinnatifid; lobes linear, acute. Involucrum wanting. Umbels 6-7-rayed. Involucels of 5 lanceolate leaves. Flowers white, nearly all hermaphrodite in the terminal umbels, and male in the lateral ones.


*Cumin-like Spalleroecarpus.* Fl. June, July. Ch. 1822. Pl. 2 to 3 feet.

*Cult.* The seeds of this plant only require to be sown in the open border.

**CXL. MOLOPOSPERMUM (from μολόψ, molops, a stripe, and σπόρος, sporos, a seed; the fruit is yellowish, and the vitive chestnut coloured, giving the fruit the appearance of being striped).** Koch, umb. p. 108. diss. inc. in litt. 1828. D. C. prod. 4. p. 230.—Ligusticum species, Lin. and Spreng.

**Lin. syst.** Pentadria, Digynia. Calyx 5-toothed, foliaceous. Petals lanceolate, entire, ending in a long ascending acumen each. Fruit contracted from the sides; mericarps with 5 membranous winged ribs, the 2 lateral ones marginaling, and one-half shorter than the rest, and the 3 dorsal ones are very sharp. Seed bluntly tetragonal or angular; angle of commissure opposite, engraved by a profound furrow; the canals empty between the seed and commissure of the pericarp. Vitte broad, brown, solitary in the furrows; but none in the commissure, which is very narrow. Carpophore bipartite.—A perennial glabrous herb. Leaves ternately decompound; leaflets lanceo-
late, elongated, shining, or decurvately pineate-parted; segments sharply pinnatifid. Leaves of involucrum numerous, elongated, rather membranous, sometimes multifid. Involucres of many leaves. Flowers white, on short pedicels. Terminal umbels, large, fertile: lateral ones smaller, male. Fruit often deformed, having the lateral ribs almost meeting, and the vittae of the lateral furrows. Perhaps this genus comes nearer to _Pleurispermum_ and _Hymenolepis_ than to _Valeriana_.


*Cult.* This plant will grow in any soil, and is easily increased either by dividing at the root or by seed.


**LIN. Syst. Pentadria, Digynia.** Margin of calyx obliterated. Petals unknown. _Stylodium_ conically depressed, short. Styles erect, filiform. Fruit ovate, without a beak; mericarps somewhat compressed from the sides, having the transverse section nearly terete; ribs 5, the 2 lateral ones marginaled, and nearly filiform, the 3 dorsal ones winged; vittae usually 5 in the furrows, but sometimes only 2, probably from 2 of them being joined in one; and 4 in the commissure. _Albumben involuta_. _Carphophore bipartite from the base._—A branched glabrous herb. Stem subulate striated. Leaves ternately decumpli; leaflets nearly sessile, trifid, or pinnatifid, serrated, cuneated at the base. _Umbels_ terminal, of about 20 rays. _Involucra_ and involucres none. Fruit almost like that of _Cudium_, but differs in the alburnen being involute; of _Pleurisperum_, but the calyx is toothless, the commissure less contracted, and the furrows marked with many stripes; of _Myrrhis_, but the vittae are more numerous, and the carphophore is bipartite to the base.


_Toluccæ Velæ_. Pl. 2 feet.

*Cult._ This plant will require some shelter in severe winters. It will be easily increased by seed or by dividing at the root.


**LIN. Syst. Pentadria, Digynia.** Margin of calyx obsolete. Petals obvolute, hardly emarginate, with a short inflexed point each. Fruit elongated, tapering into a tail at the base, solid, acutely angled: having the transverse section nearly terete; mericarps with the angles rather furrowed and hispid: having 5 acute ribs each; commissure furrowed, vittae none. Seed tersely involute, much shorter than the tube of the calyx. _Carphophore semibifid._—_American perennial herbs_. Roots fibrous, sweet-smelling. Stems branched, 2 feet high. Leaves biarrately; leaflets broadly ovate-lanceolate, deeply-toothed. _Involucra_ of 2-3 leaves; involucres usually of 5 leaves; leaves of both the involucra and involucres lanceolate, ciliated. Flowers white, the central ones of the umbellules male, the outer ones alone fertile.

§ 1. _Involucra_ and _involucres_ of 3 or 5 leaves.


3 B

2 O. brevistylis (D. C. prod. 4. p. 232.) styles short, conical, tapering at the base and apex, one-half shorter than the breadth of the fruit. 2. H. Native of North America, in the United States and Canada, and in woody places on the west side of the Rocky Mountains; and from the mouth of the Columbia to Observatory Inlet, in lat. 55° on the north-west coast. Hook. fl. amer. bot. 1. p. 272. t. 97. Myrrhis Clayton., Torr. fl. un. st. 1. p. 310. exclusive of many synonyms. Ursiparmium hirsutum, Big. fl. bost. ed. 2. p. 112. Umbels usually of 3-4 rays. Leaves of involucre linear-lanceolate, deciduous. The root, according to Bigelow, has an ungrateful scent, similar to that of Arâlia nudicaulis; but according to Torrey it has a sweet anise scent.

Short-styled Osmorhiza. Pl. 2 feet.

§ 2. Involucra and involucels wanting.


Bertero’s Osmorhiza. Pl. 2 feet.

Cult. See Myrrhis, p. 369. for culture and propagation.


Lin. syst. Pentádria, Digínia. Teeth of calyx 5, stiff, permanent. Petals obcordate, with an inflexed point. Styles short, conical, diverging, permanent, stiff. Fruit cylindrical, without a beak; mericarps with 5 primary flat-tipped white ribs; furrows flat, having one vitta in each; and the commissure having 2. Seed unknown.—Quite glabrous herbs, natives of the Levant. Stems branched. Leaves pinnate; leaflets multifid: lobes linear-setaceous. Umbels compound, of from 5 to 16 rays. Leaves of involucra 5-7, multifid; of the involucels linear-subulate, rarely cut. Pedicels stiff, thickening after flowering. This is a very distinct genus, but from the structure of the seed being unknown, the place which it should occupy in the order is doubtful.

1 G. daceóides (D. C. l. c. t. 3. f. K.) leaves of involucra multifid; most of the flowers in each umbelkule are fertile; fruit terete, crowned by the calycine teeth, which are conical and elongated.—Native of Armenia, ex herb. Tourn. about Amadán in Persia, ex herb. Oliv. et Brug. Myrrhis Armenia folius Mei seu ficiniseli semine brevi. Tourn. herb. Herb quite glabrous, erect. Root terete, nearly simple. Stem furrowed, a foot high. Leaves nearly like those of Daicus scítolíus, having the petals dilated at the base. Central umbel of 15-16 rays, lateral ones of 10-12.

Carrot-like Grammosciadium. Pl. 1 foot.


Mean-like Grammosciadium. Pl. 1 foot.

Cult. The species will grow in any common soil, and will be easily increased by seed.

Tribe XVI.

SMYRNEÆ (this tribe contains plants agreeing with the genus Smyrnium in character), or Campylomérpaœ pæcijugate turgideæ, Koch, umb. 133. D. C. prod. 4. p. 233. Fruit turgid, usually compressed or contracted from the sides; mericarps with 5 ribs: the lateral ribs marginating, or situated in the front of the margin; the ribs sometimes nearly obliterated. Seed involute, or with a furrow inside, semilunar or complicate.

—Habit of plants and inflorescence variable; the genus Exoa- clántula and Echínóphora agree in habit with Eryngium, in consequence of having spinose leaves; Lagóceia agrees with Acti- nothus in the one-seeded fruit; Peucpérmium with Astrántia in the utricular fruit.

CXLVI. LA-GÉCIA (from laryng, larys, a hare, and osce, olos, a house; the place where a hare lies; the seeds enrolled in the hairy involucrum have been likened to young leverets in a hare’s form). Lin. gen. no. 255. Gaertn. fruit. I. p. 103. t. 23. f. 3. Lag. am. nat. 2. p. 106. D. C. prod. 4. p. 233.—Cumnóides, Tourn. inst. t. 155.

Lin. syst. Pentádria, Digínia. Lobes of calyx large, pinnated. Petals obcordately bífid, shorter than the calyx; lobes awned. Ovarium bilocular, one of the cells abortive; the fruit is therefore ovate, and crowned by the calyx, hence there is a furrow on one side indicating the place of the abortive cell. Seed marked with a furrow on one side, and therefore appearing involute.—An annual erect herb. Leaves pinnate; leaflets ovate, uniform, alternate, coarsely toothed; teeth arched. Peduncles opposite the leaves. Umbels compound, of many rays. Umbellules 1-flowered. Leaves of involucra 6-7, pectinated, of the involucels 4, also pectinated. Flowers pedicelate, within the involucel, white. Fruit downy.

1 L. cu-míoines (Lin. spec. 294.) C. H. Native of Galatia, Persia, Greece, Candia, Lyibia, Spain, etc. in corn fields and vineyards. Smith. fl. grec. t. 243. prod. 1. p. 162. Schkuhr, handb. 1. t. 48. Lam. ill. t. 142. Sabb. hort. 4. t. 55. Plench. icon. t. 155.—Mor. hist. 3. sect. 9. t. 13. umb. 1. f. 13. Umbels nodding before flowering, but at length becoming nearly globose. The seeds are mostly all abortive in the plants cultivated in gardens.


Cult. The seeds should be sown in autumn, soon after they are ripe; otherwise if this is deferred till spring, they commonly remain a year, and sometimes two or three years before they grow.

CXLVII. OLLéRIVIA (in honour of M. G. A. Olivier, author of a history of insects, and formerly one of the editors of the Encyclopédie Methodique, and who was sent with M. Bruguière by the French government into the Levant, for the purpose of collecting objects of natural history). Vent. hort. cels. t. 21. Lag. am. nat. 2. p. 105. D. C. prod. 4. p. 234.

Lin. syst. Pentádria, Digínia. Margin of calyx 5-toothed. Petals profoundly obcordate, nearly biparite: lobes involute on the margin at the base, and excavated on the side, undulate and reflexed above. Fruit obovate-ovate, hairy; mericarps nearly terete, bluntly 5-ribbed. Carpolobus bifid at the apex. Seed marked with a furrow on the inside, therefore the albumen is probably involute.—A branched herb, native of the Levant. Stems erect, white. Leaves pinnate, having the scent of thyme when bruised; leaflets many-parted: segments trifid, acute. Umbels of 3-4 rays. Umbellules dense, many-flowered. Leaves of involucrum 3-4, trifid: lobes usually tridentate. Leaves of
involucres numerous, cuneiform, trifid. Flowers equal, hermaphrodite, white.

1 O. ORIENTALIS (D. C. prod. 4. p. 234.) C. H. Native about Bagdad, on the banks of the Euphrates, where it was detected by Olivier and Bruguier. Oliviera decumbens, Vent. hort. cels. t. 21. Stems white, decumbent in Venetian's figure, but stiff and erect in the spontaneous specimens. Lower and floral leaves clothed with soft velvety villi.

**Eastern Oliviera. Fl. May, July. Clt. 1816. Pl. 1 foot. Cult.** The seeds of this plant only require to be sown in the open border in spring or autumn, in a warm sheltered situation.

CXLVIII. ANISOSCIADIIUM (from *anemos*, *anisos*, unequal, and *sciaer*, *sciadion*, an umbel; in reference to the lobes of the calyx and petals being unequal in the outer and inner flowers of the umbel). D. C. coll. mem. v. p. 63. t. 15. prod. 4. p. 234.

**Lin. Syst. Pentantria, Digynia.** Lobes of calyx in the outer flowers of the umbels, large, ovate, and foliaceous; in the inner central flowers stiff, hooked, and mucronate-formed; in the inner ones all wanting or tooth-formed. Petals very unequal, outer ones large, obcordately bifid; inner ones small. Fruit rather pubescent, oblong-cylindrical, crowned by the calyx, and 9-sti. conic in the umbel. Mericarps semi-terete, one of which is usually abortive; ribs 5, very blunt; vitre one in each furrow, brown, but none in the commissure. Albumen involute.—An herb, native of the Levant. Root simple. Stems diffuse, stiff, dichotomously branched, puberulous when examined by a lens. Leaves petiolate, pinnate; leaflets deeply pinnatifid: lobules short, hardly acute. Branches opposite the leaves. Involucra of 4-5 leaves, which are unequal, oblong, acute, and at length rather spinose. Rays of umbel 4-5, stiff; a little longer than the involucre. Leaves of involucres 4-5, oval, spreading, permanent, unequal. Flowers white, 7-10, sessile, stiff.

1 A. ORIENTALE (D. C. l. c. t. 15.) C. H. Native of the Levant, between Bagdad and Aleppo, where it was collected by Olivier and Bruguier.

**Eastern Anisosciadium. Pl. spreading. Cult. See Oliviera above for culture and propagation.**


**Lin. Syst. Pentantria, Digynia.** Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point; or the outer ones are larger and bident. Styles in the female flowers elongated (f. 65. A.), filiform, 2, rarely 3. Fruit ovate, nearly terete (f. 65. f.), enclosed in a hollow receptacle, furnished with a short emersed beak. Mericarps with 5 depressed equal undulated ribs. Vitre one in each furrow, covered by a cobwebbed membrane. Albumen deeply involute (f. 65. j.).—Perennial herbs. Leaves pinnatifid; segments cut. Umbels terminal; the flowers of the ray male, and joined together at the base before flowering, having the receptacle girding them; the female flowers solitary and central. Involucra and involucules constantly of many leaves.

**Sect. I. LEUCÉPHAORA (from *leukos*, leukos, white, and *phore*, phero, to bear; in reference to the white flowers of the species). D. C. prod. 4. p. 235. Flowers white. Petals obcordate, glabrous, nearly equal. Lobes of leaves pungent, terete or conical.**

1 E. STVINOSA (Lin. spec. 344.) plant glaucous, finely downy; leaves pinnate; leaflets subulate, trifid, stiff; leaves of involucrum and involucules spinose. 2. H. Native along the Mediterranean, in the sand by the sea side. Said to have been found by Ray on the sea coast of Lancashire, and by Mr. Blackstone between Forrestan and Sea Salter; between Whitsable and the Isle of Thanet, by Sandwich, and near West Chester by Gerarde; but it has been since searched for without success; it was therefore nothing but the common samphire that was found in the above mentioned habitats. Cav. icon. 2. t. 127. Smith, fl. grac. t. 263. eng. bot. 2413. D. C. coll. mem. v. t. 16.—Mor. ox. sect. 9. t. 1. f. 1. Root fusi-form, edible. Flowers white. (f. 65.)

**Vari. β, pubescens** (Guss. prod. fl. sic. 1. p. 309.) stem pubescent, deeply furrowed; leaves scabrous; rays of umbels piously pubescent. 2. H. Native of the Levant.

**Prickly Sea-paraspin. Fl. Jul. Pl. 2 to 3 feet.**

2 E. FLATY'LOBA (D. C. prod. 4. p. 235.) plant smoothish or pubescent in the upper part. Leaves petiolate, pinnate; leaflets 3-4-cleft: lobes lanceolate, flatish, divaricate, spineose; leaves of involucre lanceolate, spinous. 2. H. Native of Persia, about Teheran. Stems angular, flexuous. Umbels small, when young, pubescent. Flowers white.

**Broad-lated Sea-paraspin. Pl. 1/2 to 1 foot.**

3 S. TRIKOHYLLA (Smith, in Rees' cyclo. vol. 12. no. 3.) leaves biternate; segments filiform, channelled, acute, unarm'd. 2. H. Native of the Levant, in stony places at the foot of Mount Ararat; and of Persia, in the province of Aderbeijanzjan, where it was gathered by Szovits. Umbels turbidly muricated, about the size of those of *E. spinosa*, of a deep purple while young; petals white. Perhaps this plant is the same as *E. orientalis*pageIndexuedifolium, Vaill. herb. The plant has a strong smell of galdaban according to Szovits.

**Hair-leaved Sea-paraspin. Fl. July. Clt. 1820. Pl. 1 foot.**

**Sect. II. CURYSHÖPHA (from *chrysos*, chrysos, gold, and *phore*, phero, to bear; in reference to the yellow flowers). D. C. prod. 4. p. 235. Flowers yellow. Petals ovate, barbately ciliated; the outer ones of the umbel rather radiant. Lobes of leaves flat, foliaceous, toothed at the apex. According to Fischer it is probably a distinct genus.

4 E. TETRÖFILA (Lin. spec. 344.) plant pubescent; leaves bipinnatifid; leaflets pinnatifid or cut, cuneated, unarm'd at the apex. 2. H. Native of Apulia, Sicily, Greece, Tauria, and abot Smyrna and Constantinople, in fields; and of Persia, in the province of Erivan, in dry saltish places. Sibth. and Smith, fl. grce. 266. prod. 1. p. 179. Stev. mem. soc. mosc. 3. p. 240 and 258. D'Urv. enum. 29.—Moris. oxon. sect. 9. t. 1. f. 2. Pink. aln. t. 11. f. 1. The fruit is similar to the rest of the species. A much branched glaucous plant.

**Fine-leaved Sea-paraspin. Fl. July, Aug. Clt. 1731. Pl. 13 f. Cult.** These plants not producing seeds in this country are increased by cuttings of the roots or stems. Place them in a warm situation and a dry soil, or else cover them in winter, to prevent the frost from destroying them.

CL. EXOACANTHA (from *exos*, exo, without, and *acrotha*, a spine; in allusion to the leaves of the involucres being spinose, and situated on the outside of the umbellules). Labill. pl. syr. dec. 1. p. 10. t. 2. Lag. am. nat. 2. p. 106. D. C. prod. 4. p. 235.
UMBELLIFERÆ. CL. EXOACANTHA.

LIN. SYST. PENTADRIA, Digiñia. Flowers polygamous, central ones fertile, the rest sterile. Calyx in the sterile flowers, with obsolete margins. Petals obcordate, indented, equal. Young fruit of the sterile flowers obovate, and striated; those of the central flowers much larger, ovate, and somewhat papillos, crowned by 15 elongated stiff bristles. Seed unknown.—An herb, native of the Levant. Leaves pinnate: leaflets of the radical leaves ovate, toothed, rather cut; of the cauline leaves lanceolate-linear, acute. Umbels terminal, compound; umbelules on short peduncles. Leaves of involucra 10-12, large, channelled, spinose, longer than the rays, spreading; leaves of involucels 7-11, spinose, situated on the outer side of the umbelules, and longer than them, very unequal, 1 of which is very long, 2-4 are middle-sized, and 2-4 are bristle-formed. Flowers white.—This very singular genus is allied to Echinophora and Arctopus from the inflorescence, but the fruit is scarcely known. Perhaps the fruit is said to be crowned by 13 bristles, because the calyx is 5-parted, and each of these parts again trisected.

1 E. heterophylla (Labill. 1. c.) G. F. Native of the Levant, at Nazareth. Variable-leaved Exoacantha. Fl. 2 feet.

Cult. The seed of this plant ought to be sown in a pot; and the plants when of sufficient size to be potted separately; and in the second year, about the month of May, they may be planted out into the open border, where they will flower and seed freely.

CL. ARCTOPUS (from ἀρκτός, a bear, and ρουσ, ροσ, a foot; this singular plant is beset with spines, which have been compared to the claws of a bear.) Lin. Hort. Cliff. 493. Gen. no. 1163. Lam. ill. t. 865. Gertr. fil. carp. 3. p. 14. t. 182. f. 4. D. C. prod. 4. p. 256.—A. Rich. Adans. Fam. 2. p. 182.

LIN. SYST. PENTADRIA, Digiñia. Flowers polygamo-dioecious. Margin of calyx 5-toothed. Petals lanceolate, with an incurved acute entire margin. Stamens in the male flowers twice the length of the corolla, antheriform. Stylodium flat. Styles 2, very short, deciduous. Ovary abortive. Stamens in the female flowers none. Styles 2, thickened at the base, and divaricate at the apex. Fruit ovate, beaked, crowned by the calyx, and conterminated with it from the middle, having one side depressed and nacked, with a furrow, not separable into two parts, but bilocular, with one of the cells abortive; the fruit is therefore 1-seeded from abortion, roundish, convex on one side, and concave with a furrow on the other.—A perennial herb, native of the Cape of Good Hope. Radical leaves pressed close to the ground in a stellate manner, with flat petioles, and roundish trifid limbs; the lobes toothed and spiny-ciliated. Male umbels compound, pedunculate, sterile, but mixed with a few female flowers; umbelules nearly glabose; involucel usually of 3 leaves, which are joined together after flowering. Female umbels sessile, fertile, surrounded by the 3 concrete leaves of the involucel, which are coriaceous, reticulated, and spiny toothed, girdling the fruit. Petals white.

1 A. Echinatus (Lin. spec. ed. 2. vol. 2. p. 1512.) G. F. Native of the Cape of Good Hope, on hills about Cape Town, &c. Thumb. fl. cap. 255. Ker. bot. reg. t. 765.—Burm. aff. 1. t. 1.—Pluk. mant. t. 271. f. 5. The roots are used with success at the Cape in cases of siphilit; but upon trial here some years since they were found to be less efficient than sarasinilla.

Rough Arctopus. Fl. May, June. Cl. 1771. Fl. 1 foot.

Cult. This plant should be grown in a mixture of peat, sand, and loam; and it may either be increased by dividing the plant or by seed.

CL. I. CACHRYS (one of the names given by the Romans to the Rosemary. According to Morison, the name was derived from καθώς, katho, to burn, on account of the carminative qualities of the plants.) Tourn. inst. t. 172. Lin. gen. no. 342. D. C. coll. mem. v. p. 65. prod. 4. p. 236.—Cachrys and Hippomâtrathrum, Link. hort. berol. 1. p. 271. Koch, umb. 136. f. 36, 37.—Cachrys species, Schultes.

LIN. SYST. PENTADRIA, Digiñia. Margin of calyx 5-toothed, or rarely obsolete. Petals ovate, entire, involute or indented at the apex. Stylodium depressed, short, hardly distinct in the mature fruit. Fruit turigrid, the transverse section nearly tertate, or somewhat didymous; mericarps with 5 thick ribs, variable in the different sections. Commisurate nearly equal to the breadth of the mericarps. Seed constituting a free nucleus, covered with copious vitex, deeply involuted. Cotyledons of embryo diverging.—Perennial herbs. Leaves decumbent. Umbels numerous. Involucra and involucels of many leaves. Flowers yellow.

SECT. I. E. CACHRYS (from καθώς, well, and cachrys; this section contains what are supposed to be the true species of the genus). D. C. prod. 4. p. 236. Cachrys, Koch, umb. 1. c. Margin of calyx obsolete. Ribs of fruit broad, thick, obverse, sometimes so very broad at the base as hardly to be distinct. Prickles, bristles, or tubercles none.

1 C. Levigata (Lin. dam. 1. (1783) 256.) plant glabrous; leaves decumbent; leaflets multifid, linear-setaceous, divaricate; leaves of involucra and involucels few, entire; fruit globose, with very blunt, hardly distinct, smooth ribs. 2. H. Native of the south of France, in dry open places.—Moris. umb. t. 3. superior figure.—C. Ischanitis, Goun. ill. p. 12. but not of Lin. C. Morisini, All. pedem. auct. (1789) p. 29. Schultes, syst. 6. p. 441. exclusive of the synonyme of Desf. The oldest name is here admitted. Flowers yellow.


2 C. Macrocarpa (Ledebl. fl. ross. alt. ill. t. 312. fl. alt. 1. p. 365.) radical leaves ternate; leaflets bipinnate or tripinnate; pinnae ternate or pinnate: segments entire or 3-parted; lobes linear or oblong; involucra and involucels of many leaves; fruit oval; mericarps glabrous, 11-angled. 2. H. Native of Siberia, on hills in the Kirghisian steppe, at Ustakmenogorsk, and between Buckturnënke and Lake Noor-Saian. Root rather woody, supurse. Stems many from the same root, straitly furrowed, pubescent, branched at top. Leaves a foot long and more than a foot broad. Umbels of 5-10-rays, but usually of 8. Leaves of involucra ovate or lanceolate, short, membranaceous; of the involucels of unequal size. Flowers yellow, all hemaphroditic in the primordial umbels; but in the lateral ones they are polygamous, the outer ones fertile, and the inner ones for the most part sterile. Calyx very minute. Petals yellow, oblong, concave, reflexed, hardly keeled on the inside. Stylodium pubinate. Fruit large, compressed from the sides; mericarps with 5 thick keeled ribs. Carpophore bipartite, free.

Large-fruited Cachrys. Fl. 1 to 2 feet.

3 C. odonta-leca (Pall. itin. 3. p. 720. t. g. 1. 2. 3. ed. germ. 3. append. no. 75. t. 9. ed. goll. in sorto. append. no. 309. t. 76. f. 1.) leaves decumbent, clothed with hoary pubescence; leaflets linear, short, rather trifid; stem nacked; leaves of involucra and involucels few, divided; fruit oblong, having the mericarps somewhat compressed from the back, and hardly furrowed. 2. H. Native of Siberia, Taurio, and Cosaeus, in very arid muddy places. Biebl. fl. taun. 1. p. 217. suppl. 216. Hoffm. umb. 1. p. 176. t. 3. f. 2. and f. 4. d. e. Cachrys callosperma, Pall. itin. 3. p. 663. Involucrum none, ex Hoffm. 1-leaved, ex Vest; few-leaved, ex Pall. Fruit oblong, smooth, and ribless on the outside, as in C. levigata, but cylindrical, not
nearly globose. The Cossacks of the Jaik chew the seeds for pain in the teeth, and obtain relief by the copious salivation which follows their use.

Tooth-ache Cachrys. Pl. 1 foot.

4. *Paeonanthes* (Desf. fl. alt. 1. p. 250.) leaves decomposed; leaflets filiform, stiffish, rather pubescent; leaves of involucre pinnatifid; of the involucels undivided; fruit oval, with smooth obsolete ribs. 2. H. Native of Algeria, in corn fields. This species differs from *C. levigata* in the leaves of the involucrum being multifid, and in the leaves being pubescent.

*Paeonanthes*-like Cachrys. Pl. 1 foot.

5. *C. vaginata* (Led. fl. ross. alt. ill. t. 9. fl. alt. 1. p. 366.) radical leaves bipinnate; leaflets pinnate-parted; segments oblong-linear, acute; lower leaflets and segments approximating the rachis; sheaths of cauline leaves, ventricose; involucrum almost wanting; involucels of many leaves; fruit didymous; mericarps nearly globose. 2. H. Native of Siberia, on the mountains of Dolenkara, in the Kirghisian steppe. Stems rather flexuous, sulcatly strumulated. Umbels of 10-20, unequal, spreading rays. Leaves of involucels linear-lanceolate, with membranous margins. Margin of calyx obsolete denticulated. Petals whitish, nearly orbicular, emarginate, with an exfolled acumen, keeled inside.

Sheathed-petioled Cachrys. Pl. 1½ foot.

6. *C. alpinus* (Bieb. fl. taur. 1. p. 217. suppl. 216.) plant glabrous; leaves decomposed; leaflets linear, elongated; leaves of involucra and involucels very short, undivided; fruit oval, having the mericarps a little furrowed and strumated, the strie connate. 2. H. Native of Tauria, on the tops of mountains. Hoff. umb. 1. p. 176. C. Libanotis, Pall. ind. taur. Allied to *C. Libanotis* and *C. levigata*, but differs in the fruit not being perfectly smooth in *C. levigata*, nor deeply furrowed as in *C. Libanotis*. Perhaps this and the two preceding plants belong to the following sections.


Sect. II. *Elymum* (from αἰλήμος, aix aigos, a goat, and μακρόθυρον, marathron, fennel; goats' fennel). D. C. prod. 4. p. 237. = Hippomarathrum, Link, 1. c. and Koch, diss. but not of Riv. = Hippomarathrum, Koch, in litt. Margin of calyx 5-toothed. Ribs of fruit very thick, obtuse, almost filling the furrows, more or less tubercular, papillose, wrinkled, or tomentose, rarely smooth.

7. *C. Libanotis* (Linn. spec. p. 355.) plant glabrous; leaves decomposed; leaflets trifid, linear, rather pungent; superior ones opposite: upper ones trifid; leaves of involucra and involucels numerous, undivided; fruit ovate; mericarps very bluntly 5-ribbed. 2. H. Native of Mauritania, Sicily, but not in France. Schuh, hnhdb. t. 55. good. Hippomarathrum Libanotis, Koch, in litt. Hippom. Siculum, Boez. sic. t. 18.—M. ox. sect. 9. t. 1. f. 5. umb. t. 3. lower figure. C. vörös, Lob. icon. t. 782. f. 2. C. Scilla γ, Guss. prod. 1. p. 339. and perhaps C. sphaerospérmá, Ten. prod. xix. syn. 129. is also referable to this plant.


8. *Pterochlæa* (D. C. prod. 4. p. 237.) plant glabrous; leaves decomposed; leaflets trifid, keeled, stiff, divaricate, with the margins and keel scabrous; central umbels furnished with divided leaves of involucra, and the lateral ones with undivided leaves of involucra; leaves of involucels all undivided; fruit nearly globose; mericarps with 5 thick blunt ribs, which are granularly muricated on every side, having the furrows between the ribs deep and very narrow. 2. H. Native of Barbary, Italy, and Greece, ex Val. Salzin of Sicily, Spain, and the island of Cyprus, ex Sidthorp. C. Sicula, Linn. spec. p. 355. exclusive of Bocc. syn. Desf. fl. atl. 1. p. 240. Sibh. et Smith, fl. grcc. t. 278. Hippomarathrum Siculum, Link. cmm. 1. p. 271. Koch, l. c. Flowers yellow, as in the rest of the species.


10. *C. melilobi*a; leaves scabrous; pedioles 6 times divided, furrowed; leaflets triplicate: segments stiff, subulate, triangular, or somewhat pentagonal, channelled above; involucra and involucels of 5 short lanceolate leaves; mericarps granular, with rather prominent ribs, and distinct furrows. 2. H. Native of Caucasus, in the vicinity of Bakur and Klarji, Hippomarathrum anapolistis, Ledeb. in litt. Meyer, verz. pld. p. 131. Echinophora? Cassia, D. C. prod. 4. p. 235. Segments of leaves short, hardly 2 lines long, thick, and stiff, by which it is easily distinguished from *C. crispa*.

*Ample-leaved* Goat's-fennel. Pl. 2 to 3 feet.

11. *C. longifolia* (D. C. prod. 4. p. 237.) plant smooth; leaves multifid, trichotomous; leaflets linear, stiffish, elongated; leaves of involucra and involucels linear, short; fruit nearly globose, granular from papille; with thick ribs: which almost close the furrows. 2. H. Native of Persia, among rocks on the mountains about Seidkhodze, where it was collected by Szovits. Flowers and fruit like the Caucasian variety of *C. crispa*, but the ultimate lobes of the leaves are very slender, about 2 inches long, not 2 lines as in that plant.


12. *C. involucrata* (Pall. in Wildl. herb. ex Schultes, syst. 6. p. 447.) plant glabrous; leaves ternately tripinnate: leaflets cuneiform, jagged, acute; leaves of involucra and involucels lanceolate, membranous; fruit spongious, tubercular from papille all over. 2. H. Native of Persia. This species is hardly known, but from the character given it is nearly allied to the preceding species. Stem branched at the base. Leaves three times tripinnate.

Involucrated Goat's-fennel. Pl. 2 feet.

13. *C. erithrythra* (D. C. prod. 4. p. 238.) leaves multifid, and are, as well as the stems, quite glabrous; lobes or leaflets trichotomous: segments linear-subulate, stiffish; rays of umbell puberulous; umbelules crowded with flowers; calyx and fruit tomentose. 2. H. Native of Persia, in gravelly places at Badam. This is a very distinct species, from the fruit being nearly an inch long, and tomentose, with thick obtuse ribs, and very narrow furrows.


14. *C. acaulis* (D. C. prod. 4. p. 238.) radical leaves bipinnate; petioles and scapes clothed with short white hairs; leaves multifid, smoothish: lobes linear, soft, short; rays of umbel 4-5, puberulous, sometimes proliferous; leaves of involucra and involucels linear, with membranous margins; umbelules crowded with flowers; calyxes glabrous. 2. H. Native of Persia, on arid hills at the Lake Ormiah, in the province of Aderbeijan, where it was collected by Szovits. Herb small, with a flourous neck. This is a very distinct species, allied to the preceding, but the fruit is unknown.

Stemless Goat's-fennel. Pl. ½ foot.
UMBELLIFER.E. CLII. CACHYRS. CLIII. PRANGOS.

15 C. he'umis (Schouw. maroc. p. 118.) plant glabrous; leaves supra-decompound, fleshy; leaflets linear, trifid, mucronate; leaves of involucra and involucrenum, lanceolate, undivided; fruit furrowed, smoothish. 2. H. Native of Barbary, near Cape Spartel, mixed with Critthum maritimum. Perhaps belonging to a different section. Humble Goat's-fennel. Pl. 2 foot.


17 C. fungens (Jan. pl. exsic. Guss. prod. 1. append. p. 7.) plant glabrous; leaves decumbent; segments or leaflets filiform, linear, acute, somewhat pungent, elongated; leaves of involucra and involucres linear; fruit ovate, with distant somewhat winged crested ribs, and broad concave furrows. 2. H. Native of Calabria and Sicily, in the sand on the shore. C. Sicula fongoliformis, Guss. prod. fl. sic. 1. p. 360. Segments of the leaves elongated, 1-3 inches long.

Var. β, echinophora (D. C. prod. 4. p. 238.) leaves decumbent; leaflets trifid, lanceolate-linear, acute, rather scabrous from short scattered down, especially on the margins; leaves of involucra and involucres lanceolate-linear, acuminate, entire, of the involucres deflexed, of the involucres equal in length to the umbellules: fruit obscurely ribbed; ribs tubercular, somewhat echinately crested. 2. H. Native of Sicily, and in fields about Naples, and probably of Greece and Spain. C. Sicula, Ten. fl. neap. prod. 19. C. Sicula var. al, Guss. prod. fl. sic. 1. p. 329. There is sometimes a one branched leaf at the base of the rays of the umbel, which may be taken for an involucrum. It is perfectly distinct from C. petrochilhe'ana; the upper leaves are opposite as in it, but the segments are broader, and striated beneath by elevated nerves. Leaves of involucra broader at the base.

Dingent Goat's-fennel. Pl. 1 to 3 feet.

Colt. The species of Cachrys are only to be increased by seeds, which should be sown in autumn. A deep light soil suits them best.


Linn. syst. Pentad'ria, Digg'nia. Margin of calyx 5-toothed. Petals ovate, entire, involute at the apex. Stylodipus compressed, hardly prominent in the fruit. Transverse section of fruit nearly terete; commissure broad. Mericarps compressed from the back, with 5 smooth ribs, which are thick at the base, and ending each in a vertical membranous wing on the back. Seed girded by copious vitre. Albumen involute.—Perennial herbs, with terete stems. Leaves decomposed; leaflets or segments linear. Umbels numerous. Flowers yellow.

1 P. pabularia (Lindl. l. e. Wall. pl. rar. asiat. 3. t. 212.) plant glabrous; leaves supra-decompound; segments linear; leaves of involucra and involucres simple; fruit corky; mericarps with 5 ribs, which are expanded into crested wings. 2. H. Native of the temperate parts of the East Indies, about Imflal and Droz. This plant is called prangos at Imflal and Droz. It is employed in the form of hay as winter fodder for sheep and goats, and frequently for neat cattle, but its seed, when eaten by horses, is said to produce inflammation in the eyes, and temporary blindness. The properties of prangos, as a food, appear to be heating, producing flatness in a space of time singularly short, and also destructive to the Fasciola hepatica, or liver fluke, which in Britain, after a wet autumn, destroys thousands of sheep by the rot, a disease which has hitherto proved incurable. The last-mentioned properties of the plant, if they be retained in Britain, would render it especially valuable to our country. But this, taken along with its highly nutritious qualities, its vast yield, its easy culture, its great duration, its capability of flourishing on lands of the most inferior quality and wholly unadapted to tillage, is in part to it a general character of probable utility unrivalled in the history of agricultural productions. When once in possession of the ground, for which the preparation is easy, it requires no subsequent culture, save that of cutting and converting the foliage into hay. Of the duration of the plant there are several facts. Seeds having been transported westward along with thousands of yellow lucern above 40 years ago, and sown on the eastern frontier of Kashmir, where they vegetated, and of which the plants of the first growth still remain in a flourishing condition. In another instance, the seeds were transported eastward, and sown upon rocks near Molbe, where the plants flourished for about 40 years, but in consequence of a long period of drought the prangos perished along with the crops of that district in general. From various facts it is conceived not unreasonable to presume, that by the cultivation of this plant moors and wastes, hitherto uncultivated, and a source of disgrace to British agriculture, may be made to produce large quantities of winter fodder, and that the yield of the highlands, and of downs enjoying a considerable depth of soil, may be trebled. As the prangos has hitherto been of spontaneous growth alone, practices better adapted to the nature of the plant or of the country may be adopted at a future time; but from a view of its habitus, Mr. Moorcroft ventures to suggest that the seeds should be dibbled into holes singly, at an inch deep and a foot apart. Yellow lucern, which is also a spontaneous production of the country of the prangos, is of a constitution more hardy than that of the lucern of Europe, and requires no other culture than that necessary for sowing it, and lasts in vigour for a long series of years. It is submitted that, as it naturally grows along with the prangos, it would be well to imitate this habitude. The joint yield is vastly greater than that of the richest meadow land, and is produced on a surface of the most sterile nature, in regard to other herbage.

Fodder Prangos. Pl. 2 to 3 feet.

fruit than the Asiatic ones, but they are probably hardly varie-
ties. Flowers yellow, as in the rest of the species.

Giant-fennel-like Prangos. Clt. 1752. Pl. 1 to 2 feet.

3 P. cylindracea (D. C. prod. 4, p. 239.) leaves supra-
decompond, rather hairy; segments or leaflets linear, di-
ariate; leaves of involucra and involucres undivided, linear; fruit
chrysalid, expanded into membranous, entire, subundulated
wings; mericarps 5 times longer than their diameter. \( \varphi \). H.
Native of Calabria. Cârchius cylindraceus, Guss. in litt. 1829.

4 P. vlôtstera (D. C. prod. 4, p. 239.) leaves decompond,
glabrous, with the petioles trichotomous; segments or leaflets
linear; leaves of involucra and involucres linear, spreading; fruit
ovate, with very curled membranous wings. \( \varphi \). H. Native of
Persia, on rocks at Seidhodzi, in the province of Aderbeijjan,
where it was collected by Szovits. Allied to P. ferulacea, but
evidently distinct from it in the fruit being one-half smaller; in
the wings being much more curled and white, and in the umbel-
lules being more dense.

Curled-winged-fruited Prangos. Pl. 1 to 2 feet.

5 P. thaspoides (D. C. prod. 4, p. 340.) leaves supra-de-
compound, glabrous: leaflets or segments subulate, stiffish, shin-
ing; leaves of involucra and involucres 5-7, undivided, deflexed;
fruit ovate: having the ribs expanded into thick wings. \( \varphi \). H.
Native of Mount Atlas. Laserpitium thaspoides, Desf. fl. alt. 1.
Thapsia Lârserpâlî, Spreng. in Schultes, syst. 6, p. 613. It diff-
ers from Laserpitium in the petals being yellow, not white, ob-
long, not marinate. Ribs of fruit few.

Thapsia-formed Prangos. Pl. 2 to 3 feet.

6 P. anisoptéla (D. C. prod. 4, p. 240.) plant glabrous; leaves
decompound: lobes or segments linear, short; stem
nearly naked; leaves of involucra and involucres ovate-lanceo-
late, acute, entire; mericarps of fruit compressed from the back,
oblung: with the ribs expanded into wings, the 3 dorsal ribs
attenuated at the base, and somewhat concrete, the 2 lateral ones
marginating and broader than the rest. \( \varphi \). H. Native of
Syria, near Nazareth. It is allied to Cârchius odontáligus, but
diffs in being glabrous, and in the fruit being winged. Calyx
with 3 short teeth.

Unequal-petalled Prangos. Pl. 2 to 3 feet.

7 P. fœncîcula (Meyer, verz. pflanz. p. 131.) plant quite
glabrous; leaves supra-decompound; segments setaceous; leaves
of involucra and involucres lanceolate; wings of mericarps flat:
furrows naked. \( \varphi \). H. Native of Caucasus, among rocks or
in stony places, on the higher mountains of Tulaesch, at the ele-
vation of 2000 or 3000 feet.

Fennel-like Prangos. Pl. 2 to 3 feet.

Cult. The species of Prângos are of easy culture, but grow
best in a dry soil. They are only to be increased by seeds, which
should be sown in the autumn.

CLIV. COLLADONIA (dedicated in honour of F. Colla-
don, M. D. author of a monograph of Câsiaix). D. C. prod. 4,
and of Mart.—Laserpitium species, Vent.—Cârchius species, Spreng.

Petals oval, entire, involute at the apex. Stylodipodum depres-
sed, hardly prominent in the fruit. Transverse section of fruit
oval; mericarips compressed from the sides; commissure narrow,
abundant with 2 vitre. Mericarips expanded into 5 vertical
membranous wings on the back, with the furrows between the
wings broadish, and furnished with one vitta each. Albumen
involute.—Perennial glabrous herbs. Stems acutely triquetrous,
at length somewhat spirally twisted. Leaves pinnatifid; lobes
broadly oblong, toothed. Umbels and umbellules of many rays.
Leaves of involucra and involucres many, undivided. Flowers
golden yellow. This genus, according to Lagasca, in obs. apar.
p. 26. is easily distinguished by its character and habit. Perle-
bia is a name given to a genus by Martius, and is therefore
already preoccupied. Colladonia of Sprengel is a species of
Pâlcoirea.

1 C. triquetra (D. C. prod. 4, p. 240.) \( \varphi \). H. Native in
the neighbourhood of Constantinople, near the canal. Laserpitium
triquetrum, Vent. cels. t. 97. Cârchius triquetra, Spreng. in
Schultes, syst. 6, p. 443.


Pl. 3 to 4 feet.

Cult. See Prângos above for culture and propagation.

CLV. LECÔKIA (named after Henry Lecôq, author of an
[...]

Petals obcordate, with an inflexed point. \( \varphi \) ovate, villously
tomentose; mericarips with 5 thick, very blunt ribs, and narrow
furrows. Seed covered all over with numerous very fine vitræ,
covers on the outside, and with a deep involute furrow on the
inside. Perennial herbs, hoary from villous tomentum in every
part, referrible to Héctôs or Heroëcum in habit. Leaves pin-
nate; leaflets lobed; lobes ovate, toothed, decurrent. Umbels
and umbellules many-flowered, involucrate. Flowers white.
This genus is easily distinguished at once from Cârchius, in
the petals being white and obcordate.

1 M. tomentósa (Koch, in litt. 1828. D. C. prod. 4, p. 241.)
leaves pinnate, with 3-5 large, broadly ovate, toothed, cut leaf-
llets; ultimate leaflets confluent; all tomentose beneath, and
nearly glabrous above; leaves of involucra and involucres nu-
merous, elongated, linear, undivided; fruit ovate; mericarips
bluntly 5-ribbed, tomentose all over. \( \varphi \). H. Native of Bar-
brary and Sicily. Cârchius tomentósa, Desf. atl. 1, p. 249.
UMBELLIFERÆ. CLVI. MAGYARIS. CLVII. HERMAS. CLVIII. CONIUM.


Tomentoso Magyaris. Fl. June, July. Clt. 1823. Pl. 3 ft. 2 M. AMBROSA (D. C. prod. 4. p. 241.) leaves pinnate, with 5 oval-oblong crenulated leaflets, which are glabrous above, and scabrous on the nerves beneath, as well as on the petioles: ultimate ones distinct; leaves of involucra and involucells numerous, lanceolate-linear, undivided; fruit ovate, woolly. 2. G. Native of Mauritania, near Tangiers. Câchrys ambrosia, Salzm. pl. exsic. 1832. This species is intermediate between the preceding and following; to this the first in fruit, and to the last in the analogy of the leaves.

Ambiguoș Magyaris. Pl. 3 feet.

3 M. PANACINA (D. C. prod. 4. p. 241.) leaves on long petioles, some of them undivided, oval-oblong, and toothed: others are pinnate, with the ultimate segments confluent, all scabrous beneath the nerves, and on the petioles; leaves of involucra and involucells numerous, deflexed, undivided; fruit oblong, base with spreading villi, hardly furrowed. 2. G. Native of Spain. Câchrys panacina, Spreng. umb. spec. 1. p. 140.—Tuero, Chus. hist. 2. p. 192.


Cult. See Perângas, p. 375, for culture and propagation.


Lin. syst. Pentândria. Digyânia. Margin of calyx 5-parted, foliaceous, permanent. Petals oval-oblong, acute, keeled, entire, equal. Fruit ovate; mericarps rather inflated, compressed from the back, 5-ribbed, the dorsal rib exserted, the two middle ones larger, and the 2 marginal ones small, and placed under the commissure; vittae many in the furrows, which are broad. Seed elliptic, somewhat concave on the inside, and probably revolute, not adnate to the tegument.—Cape herbs, having the leaves clothed with soft white tomentum. Leaves undivided, hardly toothed. Umbels compound, nearly globose, of many rays. Involucrum of many leaves; involucells of 3 leaves. Rays of umbellules many; outer ones bearing sterile male flowers; the inner one or three bearing hermaphrodite flowers; the pedicels of the sterile or abortive flowers setaeous and permanent after the florescence, forming as it were an involucel to the fertile flowers. Lateral umbels sterile, male. Flowers white or purple.

1 H. GIÀNTICA (Lin. fil. suppl. 436.) radial leaves on long petioles, oval or oblong, somewhat serrated, clothed with dense soft tomentum on both surfaces. 2. G. Native of the Cape of Good Hope. Thumb. nov. act. petrop. 14. p. 529. t. 11. fl. cap. 249. Bupleurum giganteum, Thumb. prod. 50. Leaves from the dense tomentum usually entire. The upper part of the plant and umbels glabrous. Petals purple, ex Thumb. The wool scraped from the leaves is used for tinder at the Cape of Good Hope, as that from Artemisia is in China and Japan.


2 H. villosa (Thumb. nov. act. petrop. 14. p. 531. fl. cap. 249.) leaves ovate-oblong, acute, somewhat cordate at the base, stem-clasping, toothed, glabrous above, and clothed with white tomentum beneath. 2. G. Native of the Cape of Good Hope, on the Table Mountain. Burm. afr. t. 71. f. 2. Bupleurum villosum, Lin. spec. 343. Burm. fl. cap. p. 7. H. depauperata, Lam. dict. 3. p. 121. illust. t. 351. f. 1. Stem tomentose between the leaves, and glabrous above. There is also tomentum under the bracteas and involucra. Stems purple.

Tar. β, depauperata (D. C. prod. 4. p. 242.) leaves on short petioles, velvety beneath from short fuscous tomentum; involucra and bracteas glabrous at the base. 2. G. Native of the Cape of Good Hope, Hervas depauperata, Lin. mant. 299. Perhaps a proper species.


Terry-toothed-leaved Hermas. Pl. 1 foot.


Cult. A mixture of peat, sand, and loam is the best soil for the species of Hermas, and they may be either increased by seed or cuttings.

CLVIII. CONIUM (said by Linnaeus to be from corium, or corva, conis, or conia, dust or powder; but the application of the term is not evident). Lin. gen. no. 409. Hoffm. umb. p. 99. t. 1. f. 5. Lag. am. nat. 2. p. 103. Koch, umb. p. 135, f. 40.—Ciúta, Tourn. inst. t. 100. Gertin. fruct. 1. t. 22. Lam. dict. 2. p. 3.

Lin. syst. Pentândria. Digyânia. Margin of calyx obsolete. Petals obcordate, somewhat emarginate, with a short inflexed point. Fruit ovate, compressed from the sides; mericarps with 5 prominent equal undulately-crenulated ribs: lateral ones margining; furrows with many strize, but without vittae. Carpophore bifid at the apex. Seed with a deep narrow furrow, and as if it were complicate.—Biennial poisonous herbs, natives of Europe. Root fusiform. Stem terete, branched. Leaves decumbent. Involucra 3-5 leaves; involucells dimidiate. Flowers white, all fertile.

1 C. macelatum (Lin. spec. 349.) leaves of involucels lanceolate, shorter than the umbellules. 2. G. Native throughout the whole of Europe, in cultivated ground, among rubbish, and on dung hills; also of the eastern parts of Asia, North America, and Chili, where it has been introduced; plentiful in some parts of Britain. Schkuhr, handb. t. 62. Bull. herb. t. 63.
Hayn. arz. gew. 1. t. 31. Sowerby. engl. bot. t. 1191. Jacqu. austr. 2. t. 156. Woodyd. med. bot. t. 22. Plench. Icon. t. 183. Cieuta maculata, Lam. fl. fr. 3. p. 104. Cieuta majoy, Lam. dict. 2. p. 3. Coriandrum Cieuta, Crantz, austr. 24. Coriandrum maculatum, Roth, fl. germ. 1. p. 130. Cieuta, Hall. helv. no. 766. Riv. pent. rrr. 75. Blackburn. t. 451. Lob. Icon. 732. f. 1. Cieuta domestica, Mor. umb. 18. c. b. sect. 9. t. 6. f. 1. Cominum tenuifolium, Mill. dict. no. 2. Stem hollow, green, but often of a vivid colour, marked with dark spots. Hemlock is obviously distinguished from all other umbelliferous plants by its spurred stem, by the dark and shining green colour of the bottom leaves, and particularly by their disagreeable smell when bruised. According to Linnaeus, sheep eat the leaves, and horses, cows, and goats refuse it. Ray informs us, that the thres will feed upon the seeds even when corn is to be had. Hemlock has been stigmatised as one of the most noxious of vegetable poisons, has for many years been considered as a highly useful and powerful article of the Materia Medica, and it has been proved that though highly deleterious when imprudently used, yet in small doses it has been productive of considerable benefit in cases of which has resisted the usual methods. The first physician who endeavoured to bring hemlock into repute as a medicine was Baron Stoerck, of Vienna, who announced its extraordinary effects in the most invertebrate chronic disorders in 1760. The whole plant is a virulent poison, but varying very much in strength, according to circumstances. When taken in an over-dose, it produces vertigo, dimness of sight, difficulty of speech, nausea, fetid eruptions, anxiety, tremors, and paralysis of the limbs. But Dr. Stoerck found that in small doses it may be taken in great safety, and that, without at all disordering the constitution, or even producing any sensible operation, it sometimes proves a powerful remedy in many obstinate disorders. In scirrhus, the internal and external use of hemlock has been found useful, but mercury has been generally used at the same time. In open cancer it often abates the pain, and is free from the constipating effects of opium. It is likewise used in scrofulous tumours, and in other ill-conditioned ulcers. It is also recommended by some in chin-cough, and various other diseases. Its most common and best form is that of the powdered leaves, in the dose of first of 2 or 3 grains a day, which in some cases has been gradually increased to upwards of 2 ounces a day. An extract from the seeds is said to produce giddiness sooner than that from the leaves. Hemlock should not be gathered unless its peculiar smell be strong. The leaves should be collected in the month of June, when the plant is in flower. The leaflets should be picked off, and the footstalks thrown away. The leaflets are then to be dried quickly in a hot sun, or rather on tin plates before a fire, and preserved in bags of strong brown paper, or powdered and kept in close vessels, excluded from the light; for the light soon dissipates their green colour, and with it the virtues of the medicine. The narcotic seeds are most active and uniform when perfectly ripe. When the fresh root is wounded, it yields a bitter juice and a scent, by which Stoeerck found to excite in the tongue swelling, stiffness, violent pain, and transient paralysis. Paoli is of opinion, that the virtues of the hembock reside in a volatile principle, which, however, he was not able to obtain separate. Dr. Paris says, that the medicinal activity of the plant resides in a resinous element, which may be obtained in an insulatet form by evaporating an ethereal tincture made with the leaves on the surface of water. It has a rich dark green colour, and tastes of hemlock in perfection. A dose of half a grain will produce vertigo and headache. Var. 2. striatum (Tratt. arch. 1. t. 24.) stem diffuse, much branched, very straight; umbels and umbellules proliferous. 

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CLIX. VICATIA. CLX. ARRACACHA.

CLIX. VICATIA (named after M. Vicat, who has wrote upon poisonous plants). D. C. prod. 4. p. 243.—Sison plants, Wall.

LIN. SYST. PENTANDRIA, DIGYNNIA. Margin of calyx entire. Petals unknown. Styles short, at length diverging. Fruit ovate-oblong. Mericarps almost semi-terete, with 5 filiform ribs: and broad flat furrows containing many small vitice each; commissure narrow. Carpophore thick, rather biferd at the apex. Alurnen furnished with a furrow in the commissure, convex on the outside,—A glabrous erect herb, native of Nipaul. Leaves petiolate, bipinnate; leaflets bifinnatid: lobes linear, acute, slender. Stems sparingly leafy at the base; the rest naked. Umbels terminal, without any involution, of many rays; rays unequal, umbellules of the shorter ones sterile. Involution remain, or very small, and of few leaves. Habit of Conium, but the character is near that of Arracacha. Fruit almost like that of the genus Pimpinella, but differs in the seed being curved.


Hemlock-covered Vicatia. Pl. 1½ foot. Cult. This plant will grow in any soil or situation, and will be easily propagated by seed.


LIN. SYST. PENTANDRIA, DIGYNNIA. Margin of calyx obsolete. Petals lancolate or ovate, entire, with an infiltrated point, curved above the middle nerve. Styllopodium conical, thick; styles diverging, at length reflexed. Fruit ovate-oblong, somewhat compressed from the sides; mericarps with 5 equal, not crenulated ribs: lateral ribs margining; vitice many in the furrows. Alurnen nearly semi-terete, furnished with a furrow in the commissure,—Perennial South American herbs, of a subluous quality. Roots tuberous, thick, edible. Leaves pinnate or bipinnate; leaflets deeply toothed, lower ones tripartite. Umbels opposable the leaves or terminal. Involution wanting or of one leaf; involucels of 3 leaves. Flowers polygamous; those of the rays hermaphrodite, and those of the disk male or imperfect. Petals white. This genus is nearly allied to Conium, but differs in the form of the petals, and in the ribs of the fruit being entire, not undulately crenulated.

1 A. esculenta (D. C. prod. 4. p. 244.) leaves pinnate: leaflets 5, broadly ovate, acuminate, deeply pinnatifid, profoundly serrated: the 2 lower leaflets petiolate, subulate; involucel wanting; ribs of fruit obtuse. 2. F. Native of 3 C
South America, at Santa Fe de Bogota, and of the Caraccas, where it is cultivated for culinary purposes under the name of Arracacha. Cónium Arracácha, Hook. exot. fl. bot. t. 152. Arracácha xanthorrhiza, Bancroft, l. c. who first published the history and uses of the plant in Alced. dict. geogr. amer. ex Vargas, in Koen. ann. 1. p. 400. Baner. in rev. brit. 1826.

Root forming large oblong tubers in cultivation. Stem \( \frac{1}{2} \) foot high. Petioles tubular.

The first account which reached our country of this interesting and valuable plant was published in the 1st volume of the Annales de Botany, about the year 1805, from a communication made to the editors of that excellent work by Mr. Vargas, a native of Santa Fe de Bogota, who at that period was residing in London. The arracacha is one of the most useful vegetables in that part of South America; in some parts of the country it is called apio, from its resemblance to celery. The roots immediately divide into 4 or 5 branches, and each of these, if the soil be light, and the season favourable, will grow to the size of a cow's horn. This root yields a food, which is prepared in the same manner as potatoes, is gentle to the palate, and so easy of digestion, that it constitutes the chief aliment of the sick; starch and pastry are made from its fecula; and the roots, reduced to pulp, are employed in the composition of certain fermented liquors, supposed to be efficacious as tonics. In the city of Santa Fe, and indeed wherever it can be procured, the arracacha is as universally used as the potatoe is with us. The cultivation of this plant requires a deep black soil, that will easily yield to the descent of the large vertical roots. It is propagated by planting pieces of the root, in each of which is an eye or shoot; these acquire in 3 or 4 months a size sufficient for culinary purposes, though if permitted to continue 6 months in the ground, they attain to immense dimensions, without any injury to their flavour. The colour of the root is white, yellow, or purple, but all the varieties have the same quality. Like the potatoe, the arracacha does not thrive in the hotter regions of America, for in such parts the roots acquire no size, and are indiffrent in flavour, and sometimes run altogether to stems. In the countries which are there called temperate, being less hot than those at the foot of the Cordilleras, this vegetable sometimes succeeds; but never so well as in the elevated region of those mountains, where the medium heat is between 58° and 60° of Fahrenheit. Here it is that these roots grow the most luxuriant, and acquire the most delicious taste. Before Vargas this plant was not mentioned by any other American writer, except by Alcedo, who notices it in a few words, at the end of his "Dizionario Geografico-historico delle Indie Occidentali O America." According to the late Baron de Schack, the arracacha is an essential article of food, not only to the poor, but to the rich, throughout Santa Fe and New Granada, and is every where cultivated as carrots are with us. It is also cultivated abundantly in the Caraccas and the adjacent mountainous country.

Plants of the arracacha have been introduced to this country, but have not succeed.d, although every situation, temperature, and soil have been tried; they have only produced at best a few leaves, and at the end of the year or less have perished altogether. Mr. Shepherd of Liverpool alone has been so fortunate as to have a few plants flowering in his garden.

Excitant Arracacha. Fl. Ju. Jul. 1823. Pl. 1 to 2 ft. 2 A. moschata (D. C. prod. 4. p. 244.) leaves bipinnate, or tripinnate; leaflets pinnatifid; lobes ovate, acutish, serrated; involucre of 1-3 jagged leaves; ribs of fruit acute. 2 P. F. Native of South America, in the province of de los Pastos, near Teindela, where it is called by the inhabitants Sacharachaca. Herb smelling of mus-k. Cónium moschátm, H. B. et Kuntth, nov. gen. amer. 5. p. 14. t. 420.

Musk Arracacha. Fl. June, July. Ct. 1824. Pl. 2 feet. Cult. These plants are of easy culture if kept from the frost; they may be either increased by seed or dividing at the root.

CLXI. Pleuroserpérmum. CLXII. Hyménoléna.


Austrian Pleuroserpérnum. Fl. June, July. Ct. 1597. Pl. 2 to 3 feet. 2 P. Ural'nsis (Hoffm. l. c.) vitae one in each furrow of the fruit; ribs very acute. 2 H. Native of Siberia, on the Ural Mountains. Ligústicum, Gmel. sib. 1. t. 45. This plant differs from Pleuroserpéraum Austriácum in the rays of the umbel being evidently velvety when examined by a lens; the colour of the leaves is more glaucous; the petals more obtuse at the apex, and flat.

Ural Pleuroserpérnum. Pl. 2 to 3 feet. 3 P. Kantschá'ticum (Hoffm. l. c.) vitae 2 in the furrows of the fruit; ribs somewhat dentilciliated; membranes almost cohering between themselves. 2 H. Native of Kamtschatka. Petals obvolute, with somewhat undulate margins, a little inflexed at the apex. A plant agreeing with this was found about Irkuck in Siberia, but differs in the leaves of the involucra being sometimes multifid, as is sometimes the case in P. Austriácum.

Kantschá'ta Pleuroserpémum. Pl. 2 to 3 feet. 4 P. Arcangélíca (Led. fl. alt. 1. p. 369.) 2 H. Native of Siberia. This plant is not well known. It has the habit exactly of Arcangélíca officínalis, and grows in the same places with it. The fruit is grey or dirty yellow.

Arcangélica-like Pleuroserpémum. Pl. 4 to 6 feet. Cult. Any common soil will suit these plants; and they may either be increased by dividing at the root or by seed.

CLXII. Hyménoléna (from hymen, a membrane, and chlauna, a cloak; in reference to the ribs of the fruit
Toothed-leaved Hymenolaena. Pl. 1 to 2 feet.

5 H. Candoli (D. C. L. c.) leaves pinnate; leaflets petiole, ovate, deeply pinnatifid; lobes deeply serrated at the apex; peduncles in fascicles; umbels and umbelules crowded; leaves of involucre and involucels many, oblong, obtuse, membranous, large, entire.


De Candolle's Hymenolaena. Pl. 1 foot.

7. H. Goyaniana (D. C. prod. 4. p. 246.) leaves pinnate; leaflets deeply pinnatifid; lobes oblong-linear, acute; leaves of involucre 5-7, multifid, much shorter than the rays of the umbels; leaves of involucels membranous at the base and margin, multifid at the apex, and exceeding the flowers. 2 H. Native of the Snowy Mountains of Sirmore. Ligusticum Goyaninquum, Wall. mas. Leaves like those of A. pikia. Rays of umbel 7-8, unequal. Stem striated.

Govan's Hymenolaena. Pl. 1 foot.

8. H. Benthami (D. C. L. c.) leaves pinnate; leaflets 5-7, ovate, cuneated at the base, coarsely toothed, trifid or triplicate; teeth mucronate; leaves of involucre foliaceous, oblong, deeply toothed, much shorter than the rays of the umbels; involucels about the length of the flowers.

9. H. Native of Nipaul, at Gosaingsth. Ligusticum Benthami, Wall. mas. Fruit ovate; mericarps somewhat compressed from the back, with broad furrows and narrow winged ribs. Seed convex on the back.

Bentham's Hymenolaena. Pl. 1 foot.

10. H. obtusiscula (D. C. L. c.) leaves pinnate; leaflets 5-7, ovate, deeply pinnatifid, bluntly toothed; leaves of involucre foliaceous, dilated at the base, and multifid at the apex, a little shorter than the rays of the umbel; leaves of involucels oblong, foliaceous, deeply toothed. 2 H. Native of Nipaul, at Gosaingsth. Ligusticum obtusissculum, Wall. mas. Fruit ovate; mericarps semi-ovate, with broad furrows, and undulate-toothed narrow winged ribs. Carpophore thick, bipartite. Seed semi-ovate, obtuse on the back.

Bluntish-seeded Hymenolaena. Pl. 1 foot.

Cult. See Pleurospermum, p. 375, for culture and propagation.
umbelliFerjE, CLXIII. Physospermum. CLXIV. Smyrnium.

sheaths. Leaves of involucra and involucels many. Flowers white. The ligule does not adhere to the fruit in the young state, but when ripe it does, whence the name is incongruous when the fruit is mature.

1 P. aqUElLjFÖLium (Koch, l. c.) lower leaves tridentate, glabrous; leaflets cuneate, deeply toothed; upper leaves many, reduced to the quite entire stipula-formed sheaths. 2 P. Fl. Native of Tauria, Italy, Spain, and Portugal, in woods and shady places. Danâa aquilegiföliâ, All. pedem. no. 1392. t. 63. Henselâ... Lusitanicum, Tourn. herb. Smyrnium medicâile, Bibl. fl. 1. p. 238. Spreng. umb. spec. t. 4. f. 7. Pimpinella Danâa, Bibl. cosp. p. 163. Coclême-leaved Physospermum. Fl. May, June. Clt. 1817. Pt. 3 feet.

2 P. CorNubisFÖLE (D. C. prod. 4. p. 246.) lower leaves tridentate, glabrous; leaflets cuneate-lanceolate, deeply toothed; uppermost ones reduced to the sheaths, each sheath bearing 5 linear, nearly entire leaflets. 2 P. Fl. Native only of Cornwall, in thickets, among bushes, and in hedges; in great plenty in the neighbourhood of Bodmin. Liguisticum Cornubiceum, Lin. spec. p. 359. Smith, engl. bot. t. 638. Smith, icon. pict. t. 11. Physospermum commutatum, Spreng. umb. spec. t. 4. f. 8. exclusive of many synonyms. Danâa aquilegiföliâ, Lag. am. nat. 2. p. 97. ex synonyme of Spreng. Cornwall Saxifraga, Petiv. herb. brit. t. 26. f. 9. Cattle are so fond of the plant that they eat it down to the ground. The root contains a yellow resinous juice.


4 P. ANgelcEleGFÖLium (Guss. ind. sem. 1825, prod. fl. sic. 1. p. 556.) stem furrowed, nearly naked; radical leaves bipartite, with the ramifications not divaricate; leaflets of the lower leaves ovate, of the superior ones oval-oblong, 2-3-parted, dentately serrated, glabrous above, and pubescent beneath. 2 P. Fl. Native of Sicily, on shady gravelly parts of mountains. Leaves like those of Angélica sylvestris.

Angelica-leaved Physospermum. Fl. 2 to 3 feet.

Cult. See Pleurôspèrûm, p. 378. For culture and propagation.

CLXIV. Smyrnium (from σμύρνη, Smyrna, a synonyme of μύρος; the odour of myrrh is common to many umbelliferous plants, among others the Myrîh... odorâta, for which reason it is so named). Lag. am. nat. 2. p. 101. Koch, umb. p. 153. f. 38, 39. D. C. prod. 4. p. 247. — Smyrnium species, Lin. and Spreng.


1 P. olusâ'trum (Lin. spec. 376.) stem terete; calyce leaves ternate; leaflets ovate, serrated; involucels very short. 2 P. Fl. Native of Middle and South Europe, in humid places; as in France, Spain, Italy, Belgium, and Britain. It is rather a maritime plant, and is found near our coast in various places, as about Scarborough Castle, and about Dover; it is common in Anglesea and in all the western counties, and in the flat parts of Gloucestershire, as also in many places of Dorsetshire. It occurs also among many inland towns, as Nottingham, York, Bury, Newmarket, and about Mackerell's Tower, Norwich. In several places of Cambridgeshire, Worcestershire, Kent, and Middlesex. In Scotland upon the coast of Dunglass, on the edge of Berwickshire. Lam. ill. 204. Smith, engl. bot. t. 230. S. Mathioli, Tourn. inst. 316. — Lob. icon. 705. f. 2. Moris. sect. 9. t. 4. The whole herb is of a pale bright green, in flavour something like celery. Lower leaves biternate; upper ones ternate. Petioles inflated. Umbels globular. Flowers greenish white. The plant was formerly eaten in various parts of Europe, either as a salad or pot-herb, whence, and from its blackness, the name olusatrum, from olus and alter. Ray says it was called Alexanders, because in Italy and Germany it had long been denominated herba alexandrina; having been supposed to have been brought from Alexandra. It flowers in May, and by the middle of July the stalks are dried up, but remain laden with large black seeds.

Olusatrum or Common Alexanders. Fl. May. Britain. Pt. 2 to 4 feet.

2 P. aqUElLj (Willd. spec. 1. p. 1468.) stem terete; calyce leaves cuneiform, obtuse, trifid, toothed: involucra and involucels wanting. 2 P. Fl. Native of Canadia. Schultes, syst. 6. p. 450. S. Crétium, Balb. Tourn. in Fl. so. 1825. p. 316. S. Crétium, Mill. dict. no. 4. Perhaps only a variety of the preceding. Stem angular, glabrous. The lower leaves of this plant are much smaller than those of the preceding, and more like those of smallage; the umbels are also smaller, and the seeds less are.

Smallage-leaved Alexanders. Fl. May. Clt. 1731. Pt. 2 to 3 feet.

3 P. rotundârifÖLium (Mill. dict. no. 2.) stem terete; calyce leaves stem-clasping, orbicular, quite entire, or hardly toothed. 2 P. Fl. Native of the islands in the Mediterranean, as in Corsica, Sicily, Cos, &c. on the mountains. Moretti, pl. ital. dec. 2. p. 9. S. Dodoneo's Spreng. umb. spec. 24. exclusive of many of the synonyms. S. Crétium, Math. ed. Valper. 1250. p. 255. S. Crétium, Mill. dict. no. 2. S. Mathioli, Presl. del. prag. p. 127. but not of Tourn. S. ramosum, D'Urville, emm. no. 278. S. perfoliatum a, Lam. dict. 3. p. 266. S. Egeriâcicum, Lin. ann. 4. p. 270. probably belongs to this species, which has often 2 single corollae, quite entire leaves on the floral branches, as in it. Root tuberously fusiform, black on the outside, with a sweet taste. Leaves pale green: lower ones ternate decomposed; leaflets ovate, deeply serrated, for the most part attenuated at the base. Lower calyce leaf 3-lobed.


Perfoliate-leaved Alexanders. Pl. May, June. Clt. 1½ foot. 5 S. Ecororidides (H. B. et Kunth, nov. gen. amer. 5. p. 16). leaves somewhat biternate; leaflets oblong, sharply serrated; umbels of 10-12 rays; involucra and involucelles of one leaf.  H. Native of Mexico, near Moran, at the height of about 4000 feet; and on the Cordilleras de Quialilapa. Sison agropodioidea, Spreng. syst. 1. p. 886. Flowers yellow. Fruit didymous, hardly compressed; vitte small; ribs filiform; furrows broad, reticulated; albumen involute.  Gout-need-like Alexanders. Pl. 1 foot.  

† A doubtful species.  

6 S. ? laterale (Thunb. fl. cap. 2. p. 290.) leaves pinnate and ternate; leaflets obovate, deeply lobed, mucronately toothed; umbels lateral, nearly sessile; involucrals few-leaved.  G. Native of the Cape of Good Hope. Petals white, inflexed. Fruit globose, pubescent. This plant evidently does not belong to the present genus, but to what genus it belongs is unknown.  

Lateral-umbelled Alexanders. Pl. 1 foot.  

Cult. The species will grow in any kind of soil in which the seeds may be sown.  

CLXV. EULOPHUS (from ev, eu, well, and λοφος, lophos, a crest; in reference to the stripes as well as the ribs of the fruit being rather pronounced). Nutt. in litt. 1855. D. C. coll. mem. v. p. 69. t. 2. f. M. prod. 4. p. 248.  

LIN. SYST. Pentandria, Digynia. Margin of calyx 5-toothed, at last falling off after flowering. Petals unknown. Fruit somewhat contracted from the sides, rather didymous; mericarps ovate, with 5 hardly prominent ribs: the furrows between the ribs furnished with 3 convex stripes each, which are more prominent than the ribs, they are hollow inside, and replete with oil, from containing oleiferous canals; commissure bearing 4 similar stripes or vitte. Seed seminiferum. Filling the mericarps; carpophore bipartite.—Glabrous herbs. Leaves multifo; lobes linear, elongated. Terminal umbels large, of 10 rays, fertile; the lateral ones opposite, and sterile. Involucra and involucelles of many linear acute leaves. Flowers many, abortive.  

This genus is very nearly allied to Physospermum, but differs in the fruit being covered with many vitte, as in Smyrniun.  

1 E. Americanus (Nutt. in litt.)—Native of North America, in the Arkansas Territory. Root composed of fascicles of oblong tubers. Stem terete, fistular.  

American Euophus. Pl.  

Cult. See Smyrniun above for culture and propagation.  


LIN. SYST. Pentandria, Digynia. Margin of calyx entire. Petals obcordate, with a short, inflexed, obtuse point. Stylodium thick, conically cylindrical, parallel; styles filiform, bent outwards. Fruit somewhat didymous; mericarps ovate, contracted at the raphe, scarcely compressed from the sides, with 5 filiform ribs, and flat-tish-convex furrows, each furrow containing 2-3 vitte. Commissure flatish, containing 4-6 vitte. Albumen furnished with a furrow inside.—Herb glabrous. Radical leaves on long petioles, which are hardly dilated at the base, ternate; leaflets pinnate: segments pinnatifid: lobes diverging, lanceolate, acute. Stem branched, rather dichotomous, terete. Upper leaves reduced to quite entire, or unidentate, elongated ligula. Umbels terminal, without involucra, of 9-10 rays; umbellules 12-15-flowered; involucelles of a few small, linear leaves. Flowers white.—This genus is allied to Euophus and Physospermum from habit and character, but differs from both in the calyx being toothless, in the form of the stylodium, and in the want of involucra. From habit and the somewhat didymous fruit it comes also very near Astoma.  

1 S. microcarpa (D. C. l. c.). Native of the Levant, near Seyde, at the foot of Mount Lebanon. Fruit small, blackish.  

Small-fruited Scaligeria. Pl. 1 foot.  

Cult. Sow the seeds in autumn, in the open ground; they will grow in any common soil.  

SUBORDER III. COELOSPERMAE (from κοιλός, koilos, hollow, and σπερμα, sperma, a seed; from the seeds being involutely curved from the base to the apex, and therefore forming a hollow on the inner side). D. C. prod. 4. p. 249. Albumen involutely curved from the base to the apex, excavated in front.  

TRIBE XVII.  

CORIAN'DRIFIE (this tribe contains plants agreeing with Coriandrum in important characters). Koch, umb. p. 82. D. C. prod. 4. p. 249. Fruit globose or didymous, with 2 subglobose mericarps. Mericarps with 5 primary, depressed, or flexuous ribs; the lateral ribs placed before the accessory margin; the 4 secondary ribs are more prominent than the primary ones; all wingless. Seeds involute, or curved from the base to the apex, hence they are excavated in front.  


LIN. SYST. Pentandria, Digynia. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point; outer petals nearly equal, or radiating and bifid. Fruit didymous; mericarps somewhat globose ventricose, granularly wrinkled, marked with 5 impressed obsolete stripes: the 2 lateral stripes semicircular, and placed before the accessory margin. Vittae none. Commissure furnished with 2 holes. Seed involute from the base to the apex. Carpophore bipartite, adnate on both sides.—Petid herbs, with sulcate angular stems; and decomposed leaves; having five segments. Umbels of 2-3 rays. Involucra and involucelles wanting, or of one leaf. Flowers white. —B. testiculatum (Spreng. l. c.) umbels of 2-3 rays; involucra and involucelles of one leaf; flowers nearly equal; styles very short.  


Twin-fruited Bifora. Pl. June, Jul. Cilt. 1649. Pl. 1 to 2 ft. 2. B. radianus (Biob. suppl. 233.) umbels of 5 rays; involucra and involucelles of 1-2 leaves; outer flowers radiant; styles elongated after flowering.  


Cult. The seeds only require to be sown in the open border.  

CLXVIII. ASTOMA (from a priv. and στόμα, stoma, a mouth; this genus differs from Bifora in the want of the 2 holes in the commissure; hence the name). D. C. coll. mem. v. p. 71. t. 17. prod. 4. p. 249. but not of Gray.  

LIN. SYST. Pentandria, Digynia. All as in Bifora, but the
fruit is more evidently didymous; the commissure narrow, neither perforated nor dilated at the apex; and the styles rather divergent.—A glabrous herb, at first sight appearing like a species of *Seseli*. Stem terete, striated, erect, branched. Superior leaves bipinnatifid: with a few linear, nearly subulate, elongated, quite entire segments. Umbels by threes, pedunculate at the tops of the branches: the 2 lateral ones axillary and opposite, 6-8-rayed; but the central umbel is 10-12-rayed. Leaves of involucrum 5-6, lanceolate, entire, acuminated. Umbelles of 10-12 flowers, involucels of 4-5 leaves. Flowers white, all hermaphrodite. This is an intermediate genus between *Bifora* and *Atrema*: from the first it differs in the commissure being imperforated, in the fruit being smaller, and in the involucra and involucels being of many leaves; and from the last in the margin of the calyx being obsolete, in the fruit being without ribs, and exactly didymous.

1 A. *seseliformium* (D. C. l. c.). O. H. Native of Egypt, or rather of Syria, where it was gathered by Donati. Coriändrum seseliformium D. C. The fruit of this plant is 3 times smaller than in all the other genera of Coriándraceae, and exactly didymous. Mericarps nearly globose.


CLXIX. *ATREMA* (from a priv. and τρύμα, *tremu*, a hole; there are no holes in the commissure, as in the genus *Bifora*). D. C. coll. mem. v. p. 71. t. 18. prod. 4. p. 250.

Lin. syst. *Peniändria*, *Digynìa*. Teeth of calyx 5, acute, small, permanent. Petals obovate, emarginate, nearly equal, with an inferred segment. Fruit nearly didymous; mericarps nearly globose; ventricose: marked with 5 rather prominent small ribs. Vittae none. Commisure narrow, closed. Seed involute from the base to the apex.—An herb with a furrowed stem, having the angles acute and dentately mucrinated over the umbels. Leaves multifid, with linear segments. Umbels and umbellules of 5-8 rays. Involucra and involucels of many linear-setaceous, undivided leaves. This genus is intermediate between *Coriändrum* and *Bifora*. The flowers are equal and the fruit is didymous as in *Bifora*, and the fruit is spicid, 3-ribbed, and the calyx 5-toothed, as in *Coriändrum sativum*.


1 C. *Anethódes* (D. C. ex Meyer, verz. plantz. p. 132.)

O. H. Native of Caucasus, in stony places on the mountains of Taulisch, near Swant, about 2000 feet above the level of the sea.

*Fennel-like Cymbocarpace.* Pl. 1 foot. *Cult.* For culture and propagation see *Bifora*, p. 381.

N.B. The two species of *Coriändrum* cultivated in China and Cochín-china, are mentioned by Loreiro in his fl. cochin. p. 225. under the names of *C. sativum* and *C. testiculátum*; but the first differs from the true *C. sativum* in the involucres being of one leaf; and the second differs from the true *C. testiculátum* or *Bifora*, from the involucra and involucels being multifid, and in the fruit being sweet scented.

The tube of the calyx adnate to the ovary: with the limb entire or toothed. Petals 5-10, alternating with the calycine teeth, valvate in restivation, rarely wanting altogether. Stamens equal in number to the petals, rarely double that number, inserted beneath the margin of a large epigenous disk; anthers bilocular, peltate. Ovarium adnate to the calyx: with 2 or more cells, containing each only one ovulum. Styles many, simple, sometimes distinct and diverging, sometimes joined in one, rarely wanting; stigmas simple. Berry 2-15-celled, crowned by the entire or toothed limb of the calyx; having as many 1-seeded cells as there are styles. Seeds angular, erect, with a crustaceous testa, and a membranous endopleura. Embryo small, inverted, surrounded by copious fleshy albumen; having a superior radicle, which is twice the length of the cotyledons.—

Trees or shrubs, rarely herbs. Stems frutescent, often scandent, adhering by root-formed fibres to other substances, as in ivy. Leaves alternate, exstipulate, petiolate, simple or compound. Petioles long, always dilated and thickened at the base. Flowers axillary or terminal, umbellate or capitate; the umbels or heads often disposed in a racemose or paniculate manner: having involucres usually present.

The order Araliaceae approximates Umbelliferae, but differs from it in the inflorescence being often imperfectly umbellate; in the styles being usually many; in the fruit being baccate, and usually plurilocular, always without vitre; and in the parts of the fruit not being separable; in the albumen being fleshy, and in the embryo being nearly the length of the albumen. It also comes near Ampelidaceae, but differs in the stamens in Araliaceae alternating with the petals, not as in Ampelidaceae opposite them, in the leaves being exstipulate, and in the inflorescence never being opposite the leaves, as well as in the calyx adhering to the ovary, not free from it. The genus Hedera has often been confused with Caprifoliaceae, but agrees best with the present order, in the free petals and structure of the fruit.

The flowers have no beauty, but the foliage of many is extremely fine. The medicinal properties are much the same as those of Umbelliferae, except the fruit, which differs in virtues, as it does in botanical structure. The bark of many of the species exudes an aromatic gum-resin, as in Aralia umbellifera and others. The roots are tonic, with, in some cases, the flavour of parsnip. The famous Ginseng, which is produced by a species of Panax, is reputed to have powerful tonic, restorative, and even aphrodisiac qualities; but it is probable that these have been greatly exaggerated. The plant has perhaps some really invigorating power when fresh, which after the statements made by Father Jartoux cannot reasonably be doubted.

Synopsis of the genera.


5. Gelsemium. Margin of calyx entire, drawn out beyond the ovary. Petals 5-10. Stamens 5-10. Ovarium 5-10-celled, crowned by a broad disk. Style short, composed of 5-10 concrete ones, which at length diverge a little at the apex. Fruit fleshy, 5-10-celled.

6. Gastronia. Margin of calyx entire, drawn out beyond the ovary. Petals 5-16. Stamens double the number of the petals, 2 in front of each petal. Styles 8-12, short, rather concretes at the base. Fruit 8-12-celled, 8-12-ribbed, nearly dry.


10. Sciadaphium. All as in Aralia, but the petals are joined together into the form of a calyptra at the apex.

11. Hedera. Margin of calyx elevated or toothed. Petals 5-10, not cohering at the apex. Stamens 5-10. Styles 5-10, connivent, or joined in one. Berry 5-10-celled.

12. Parateopia. All as in Aralia or Hedera, but differs in the stigmas being sessile, at first approximate, and immersed in the epigenous disk.


I. Adoxa (from a priv. and coxa, doxa, glory; without any appearance. This plant covers the places where it grows, but the flowers are hardly to be seen, being of the same colour as the leaves). Lin. gen. no. 501. Gartn. fruit. 2. p. 111. t. 112. f. 9. Lam. ill. t. 320. D. C. prod. 4. p. 251.—Moschatellina, Tourn. inst. t. 68.

Lin. syst. Octandria, Tetragynia. Tube of calyx adnate to the ovary, with 2-3 deep segments. Corolla of one petal, wheel-shaped, in 4-5 (f. 66. a.) deep ovate, acute, spreading segments, longer than the calyx. Stamens 8 or 10; anthers roundish. Ovarium half superior. Styles 4-5 (f. 66. b.), short, united at their base, which is permanent. Berry globose, its lower half invested with the permanent calyx, whose segments surround the middle part, of one cell, pulpy inside. Seeds 4, ranged round the
central pulp, compressed, surrounded by a vertical membranous border. The terminal flower is only 1-cleft, with 8 stamens: the rest 5-cleft; hence according to the rule assumed by Lin- neus, this genus is placed in Octandria.—A smooth herb of humble growth, with twice ternate leaves, and terminal capitate green flowers. (f. 66. a.)

1 A. moschatellina (Lin. spec. p. 527.) 2 H. Native of Europe and Siberia, even to Dabaria, in groves, thickets, and under hedges; plentiful in Britain in like situations; in North America in the woods between lat. 54° and 64°, and the Rocky Mountains between lat. 42° and 46°. Smith, engl. bot. t. 453. Curt. fl. lond. t. 26. Fl. dan. 94. Moschatellina tetragona, Monch. meth. 476. —Lob. icon. 674. f. 2. —Corr. hist. 1722. f. Gerard. emac. 1301. Root of several white united crossing con- cave scales, producing fibres and runners from their interstices. Stem angular. Radical leaves twice ternate, on long stalks; cauline ones ternate, on long stalks. Flowers with a musk scent, when moist, forming a round head. (f. 66. c.)

Tubercous Moschatell. Fl. April, May. Britain. Pl. ½ f. Cult. The plant will grow freely under the shade of trees; and will be easily increased by the offsets.

II. PANAX (from παν, pan, all, and αοες, akos, a remedy; that is to say, a remedy for all diseases; in allusion to the mirac- ulous virtues which is attributed to P. quinquefolium, the ginseng of the shops). Lin. gen. no. 1166. Lam. ill. t. 860. D. C. prod. 4. p. 252.

Linn. syst. Polygaminia, Dieciea. Flowers polygamous. Margin of calyx very short, obliquely 5-toothed. Petals 5 (f. 67. a). Stamens 5, inserted along with the petals under the margin of the disk, alternating with them. Styles 2-3, short. Fruit fleshy, compressed, orbicular, or didymous (f. 67. c), 2-celled: cells coriaceous cartaceously, 1-seeded. —Herbs, shrubs, and trees, having the leaves and indorecence variable. The habit of the species is heterogeneous, but the characters of those that are perfectly known agree.

§ 1. Herbaceous plants, with tuberous roots; and verticillate, petiolate, palmately-compound leaves.—Aureliana, Cat. car. append. t. 16.—Araliastren, Vaill. serrm. p. 48.

1 P. quinquefolium (Lin. spec. 1512.) root tissiform, a little branched; leaves with 5 leaflets, which are stalked from the top of the common petiole; peduncle of umbel shorter than the petioles; styles and seeds 2. 2. H. Native of North America, in shady mountain woods, from Canada to Carolina; and of the north of Asia, as in Turania; and the north of China. Sims, bot. mag. 1333. Bigel. med. bot. 2. t. 29. Woody. med. bot. t. 99. Blackw. 513. —Lafit. gins. 51. t. 1. Catesh. car. 16.—Trew. chret. t. 6. f. 1. Jartoux, in phil. trans. 20. p. 237. Herb larger than the following species. Flowers yellowish. Berry globose, depressed, red. This plant is a native of Chinese Tartary, and also of North America. In the former country it has been gathered as an invaluable drug from time immemorial. In 1709 the Emperor of China gave orders to 10,000 Tartars to go in quest of the root, and to bring as much as they could find; every one was to give two pounds of the best to the emperor, and to sell the rest for the same weight of fine silver. The roots, which are said to bear some resemblance to the human form, are gathered and dried, and enter into almost every medicine used by the Tartars and Chinese. Osbeck says that he never looked into the apothecaries’ shops but they were always selling ginseng, that both poor people and those of the highest rank made use of it, and that they boil half an ounce in their tea or soup every morning, as a remedy for consumption and other diseases. Jartoux relates that the most eminent physicians of China have written volumes on the medicinal powers of this plant, asserting that it gives immediate relief in extreme fatigue, either of body or mind, that it dissolves petrifying humours, and renders respiration easy, strengthens the stomach, promotes appetite, stops vomiting, removes hyste- risis, hypochondriacal, and all nervous affections, giving a cure in two or three times the same age. The French in Canada use the root for curing the asthma, and as a stomachic. After all, our physicians say that we have no proof of the effi- cacy of ginseng in Europe, and that from its sensible qualities it seems to possess very little power as a medicine. The Chinese name of yamnsan or yanson, and the American one garangtonges or garangtologing are both derived from the fancied resemblance in the root.


Three-leaved Ginseng. Fl. May, June. Ct. 1759. Pl. 52 f. 3 P. sussgiseng (Wall. in act. soc. med. et phys. cale. 4. p. 117. pl. rar. asiat. 2. p. 30. t. 137.) tubers of roots in fascicles; leaves in threes or fours, quinate or ternate; leaflets lanceolate, ending in a long taper point, petiolate, much attenuated at both ends, doubly and euspidately serrated, sometimes deeply serrated, beset with hoary bristles along the nerves and midrib; peduncles terminal, usually trifid, about equal in length to the petioles; flowers hermaphrodite; berries 2-3-seeded.

2. H. Native of Nipaul, on the top of Mount Shepore. Flowers whiteish. Styles 2-3. Berry 2-3-celled, red. This species comes very near to P. quinquefolium or Ginseng, but is not known to possess any medicinal qualities.

False Ginseng. Fl. June. Pl. 1 to 2 feet. 4 P. trifinumatum (Wall. cat. no. 4934.) herbaceous, unarmed; leaves trinerved; leaflets ovate, acuminate, mucron- ately serrated, pale beneath, rather downy; panicle long, pubescent; umbellules many-flowered. 2. H. Native of Nipaul, at Gossingathan. P. decompositum, Wall. but not of D. C.

Tripinimata-leaved Panax. Pl. 2 to 3 feet.

§ 2. Prickly shrubs. Leaves ternate, or palmately lobed.

5 P. aculeatum (Ait. hort. kew. 3. p. 448.) stem shrubby;

**Prickly Panax.** Pl. Nov. Chi. 1773. Shrub 3 to 5 feet.

6 P. **LOUREI** (D. C. prod. 4. p. 232.) stem shrubby; branches prickly; leaves of 3 broad, lanceolate leaflets; umbels terminal, dense; petals 4. G. Native of China, in the province of Canton. Electrónia Chínensís, Lour. cooh. p. 162. This is a true species of *Panax*, and probably nothing but *P. pseudoatum*. Flowers white, Stevens 5. Berry 2-seeded.

Loureiro's Panax. Shrub 5 feet.

7 P. **no** (Smith, in Rees' cyc. 26. no. 10.) shrub bushy and very prickly; leaves simple, palmately lobed, deeply serrated, cordate; with prickly veins; umbels capitiate, racemose; styles and seeds 2. G. Native of the west coast of North America, at Nootka Sound. Abundant on the west side of the Rocky Mountains, from the head-springs of the Columbia to the coast; and of North California, ex Smith; and of the islands of Katiak and Sitka, according to Stevens. Styles 2, short. Fruit orbicular, pulpy. Racemes hispid. Flowers polygamous. Arálica occidentalis. Willd. herb. ex Stev. The entangled stems of this remarkable plant are described as a great impediment to travellers in the woods of North America.

**Hook. fl. bor. amer.** 1. p. 273. t. 98. (f. 68.)

**Horrtd Panax.** Shrub straggling.


**Hainia Panax.** Tree.

**§ 3. Shrubbery, unarméd. Leaves simple, undivided.**


**Shell-leaved Panax.** Chi. 1820. Shrub 10 to 12 feet.

10 P. **HEYNEX** (Wall. cat. no. 4927.) shrubby, unarmed; leaves broad, roundish-cordate, petiolate, quite entire, coriaceous, glabrous; branches of panicle in clusters; umbellules few-flowered. G. Native of the East Indies.

**Heyne's Panax.** Tree.

11 P. **simplicefolium** (Forst. prod. no. 399.) stem fruticosum; leaves lanceolate, serrated; umbels compound. G. Native of New Zealand. Perhaps the same as *P. simplicifolium*, Dietr. goetr. lex. 6. p. 633.

**Simple-leaved Panax.** Shrub.

**§ 4. Unarmed shrubs, with digitate leaves.**

12 P. **ATTENUATUM** (Swartz, prod. p. 54. fl. ind. occ. 1. p. 562.) stem shrubby, unarmed; leaves petiolate, digitate; stipulas intrapetiolar, membraneous; leaflets 5, rarely 3, petiolate, ovate, narrowly acuminate, crenated, glabrous; umbels terminal; branches racemiferous. G. Native of Guadalupe and St. Christopher. Racemes shorter than the leaves. Fruit compressed, indehiscent, oblong, hardish, 2-seeded, rarely 3-seeded. Flowers hermaphroditic, all fertile. Style bifid, rarely trident.

**Attenuated-leaved Panax.** Chi. 1823. Shrub 10 to 12 feet.

13 P. **ARBOREUM** (Forst. prod. 398.) stem arborescent, unarmed; leaves digitate, petiolate; leaflets 5, oblanceolate, serratetoothed; umbels compound; rays of umbel elongated. G. Native of New Zealand. Linn. fil. suppl. 441.

**Arborescent Panax.** Tree.

14 P. **GAUDICHAYDI** (D. C. prod. 4. p. 253.) Hook. and Arn. in Beech. voy. pt. bot. 1. p. 84.) stem arborescent, glabrous, unarmed; leaves petiolate, digitate; superior ones opposite; leaflets 3, on long petioles, oval-elliptic, obtuse, remotely and sharply serrated, coriaceous; peduncles terminal, bearing umbels which are disposed in panicles; pedicels very short; styles 3; fruit globose-trigonal, 3-seeded. G. Native of the Sandwich Islands, in temperate places. Arálica trigna, Gaud. voy. p. 474. t. 98. This species is very nearly allied to *P. Lessoniíi*, and will perhaps, along with it, form a separate genus.

**Gaudichay's Panax.** Tree.

15 P. **LESSONII** (D. C. prod. 4. p. 253.) shrub glabrous, unarmed; leaves digitate, petiolate; leaflets 3-5, oblanceolate, cuneate at the base, acute, and quite entire at the apex, or bluntly somewhat toothed; umbels panicked, arising from the upper axis of the leaves, length of leaves. G. Native of New Zealand, where it was gathered by Lesson. Petioles not dilated at the base. Peduncles having the branches umbellically disposed at the apex, the rest scattered. Leaves scattered along the branches. Styles 3, very short, almost entire.

**Lesson's Panax.** Tree.

16 P. **OVATUM** (Hook. et Arn. in Beech. voy. pt. bot. 1. p. 84.) stem arborescent, glabrous, unarmed; leaves petiolate; superior ones opposite; leaflets 3, on long petioles, ovate, quite entire, coriaceous. G. Native of the Sandwich Islands. Flowers and fruit unknown.

**Ovate-leaved Panax.** Tree.

17 P. **PLATYPHYLLUM** (Hook. et Arn. in Beech. voy. pt. bot. 1. p. 84.) stem arborescent, glabrous, unarmed; leaves petiolate; upper ones opposite; leaflets 3, on long petioles, oval, quite entire, coriaceous; peduncles terminal, bearing umbels of flowers, which are disposed in panicles.

18 P. **GLABRATUM** (H. B. et Kunth, nov. gen. amer. 5. p. 10.) stem arborescent, unarmed; leaves petiolate, digitate; leaflets 5, petiolulate, elliptic-oblong, acute at the base, quite entire, glabrous; panicle terminal; umbellules few-flowered. G. Native of South America, near La Vente Grande de Caracac.

**Smooth Panax.** Tree 20 feet.

19 P. **LONGIPETIOLATUM** (Pohl, in litt. ex D. C. prod. 4. p. 553.) stem arborescent, unarmed; leaves on long petioles, digitate, glabrous; leaflets 5-9, oblanceolate, acuminate, acute at the base, entire, or acutely toothed, membranous, on long petioles; adult ones glabrous, but when young clothed with rusty tomentum beneath. G. Native of Brazil.

**Long-petioled Panax.** Tree.
20. P. splendens (H. B. et K.) stem arborescent, unarmed; leaves digitate, on long petioles; leaflets 9, petiolate, somewhat oblanceolate, acuminate, rounded at the base, or somewhat cordate, sharply and doubly toothed, rather hispid above and silky beneath.  \( \sqrt { 7 } \). S. Native of South America, in the temperate parts of Popayan. Aralí a mics, Willd. mss. in Schultes, syst. 6. p. 701. Flowers and fruit unknown.

Splendid-leaved Panax. Tree 20 feet?

21. P. serratifolium (Wall. in herb. Moricand, ex D. C. prod. 4. p. 254.) stem shrubby, unarmed; leaves on long petioles; digitate; leaflets 5?, petiolate, oblanceolate, rather acuminate, somewhat attenuated at the base, rather glabrous above, and tomentose beneath.  \( \sqrt { 7 } \). G. Native of Nipal. Umbels many, disposed in a racemose manner.

Serrate-leaved Panax. Shrub.

22. P. tomentosum (Wall. in herb. Moricand, ex D. C. prod. 4. p. 254.) stem shrubby, unarmed; leaves on long petioles, digitate; leaflets 7-10, petiolate, ovate-oblong, rounded at the base, acute and quite entire at the apex, flat, covered with silky tomentum beneath; panicles terminal, crowded; umbels of 12-15 flowers.  \( \sqrt { 7 } \). S. Native of Caracas and Porto-Rico, on sterile hills. P. spinosa, Poir. suppl. 2. p. 778. P. undulatus, H. B. et Kuntz, nov. gen. amer. 5. p. 11. p. 417. f. 2. Panicle very showy, rather spiny. Petioles 3 feet long; leaflets nearly a foot long.

Showy Panax. Tree large.

23. P. speciosum (Willd. spec. 4. p. 1126.) stem arborescent, unarmed; leaves petiolate, digitate; leaflets 7-10, petiolate, ovate-oblong, rounded at the base, acute and quite entire at the apex, flat, covered with silky tomentum beneath; panicles terminal, crowded; umbels of 12-15 flowers.  \( \sqrt { 7 } \). S. Native of Caracas and Porto-Rico, on sterile hills. P. spinosa, Poir.

Silky Panax. Tree.

24. P. Morototoni (Aubl. guian. 2. p. 949. t. 360.) stem arborescent, unarmed; leaves petiolate, digitate; leaflets 7-9, oblong-lanceolate, attenuated at both ends, quite entire, undulated, clothed with golden tomentum beneath; panicle terminal, diffuse; umbellets of 8-13 rays.  \( \sqrt { 7 } \). S. Native of Cayenne, and the Island of Trinidad. P. chrysophyllum, Vahl. edag. 1. p. 33. P. undulata, Pers. ench. 1. p. 298, but not of Kuntz. Fruit compressed, pubescent. Leaflets like the leaves of Chrysophyllum Cuinito. M. rototoni is the Guiana name of the tree.

Morototoni Panax. Cl. 1822. Tree 100 feet.

25. P. serratum (Pohl, in litt. ex D. C. prod. 4. p. 254.) stem arborescent, unarmed; leaves digitate; leaflets 6-7, nearly sessile, oblong, obtuse, eunciated, with a revolute entire margin, coriaceous, silky from very finely rusty down beneath; racemes umbelliferous, panicled, clothed with silky rusty down.  \( \sqrt { 7 } \). S. Native of Brazil. P. vinousus, Schlcht. ex Pohl.

Silky Panax. Tree.

26. P. ? Anisum (D. C. prod. 4. p. 254.) stem shrubby, unarmed; branches very hispid; leaves impari-pinnate: with 5-7 oval, quite entire leaflets, which are acute at both ends; umbels terminal, compound.  \( \sqrt { 7 } \). S. Native of the Moluccas, and other Indian islands. Anisum Moluccanum, Rumpl. am. 2. p. 132. t. 43. Fruit rather didymous, with the scent of anise-seed.

Anise-scented-seeded Panax. Shrub 10 feet.

27. P. Leschenaultii (D. C. prod. 4. p. 254.) stem shrubby, unarmed; leaves pinnate: with 5 petiolate, broadly ovate, narrowly acuminate, acutely serrated, glabrous leaflets; umbels compound, bracteate.  \( \sqrt { 7 } \). F. Native of the East Indies, on the Nelligerry mountains, where it was gathered under the name of Solé maltanet. Califly bluntly 5-toothed.

Leschenault’s Panax. Tree.

28. P. diurum (Wall. cat. 4937.) unarmed; leaves pinnate; leaflets 5, broad-ovate, acuminate, smooth, spinulose serrated, rather oblique at the base; panicle umbellate, compound, spreading; umbellules of many flowers.  \( \sqrt { 7 } \). G. Native of Nipal.

Two-paired-leafletted Panax. Tree.

29. P. visnatum (Lam. dict. 2. p. 715.) stem shrubby, unarmed; leaves impari-pinnate; leaflets oval-lanceolate, acuminate, nearly entire, glabrous; panicle terminal; umbels few-flowered.  \( \sqrt { 7 } \). S. Native of the Moluccas. Scutellaria seceda, Rumph. amb. 4. p. 76 t. 32. Panax seceda, Schultes, syst. 6. p. 215. Berry somewhat compressed.

Pinnate-leaved Panax. Shrub 10 to 12 feet.

30. P. armatum (Wall. cat. no. 4933.) stem shrubby, prickly; racis of leaves jointed, furnished with hooked prickles, particularly at the joints; leaflets ovate, acuminate, serrated, beset with bristly hairs on both surfaces, but particularly on the nerves; panicle long, downy; umbellules many-flowered.  \( \sqrt { 7 } \). S. Native of the East Indies.

Armed Panax. Shrub.

31. P. finlaysonii (Wall. cat. no. 4936.) shrub furnished with hooked prickles on the stems, and racis of leaves; leaves pinnate and bipinnate; leaflets ovate, acuminate, membranous, coarsely serrated, beset with bristly hairs on both surfaces; panicle large; umbellules many-flowered.  \( \sqrt { 7 } \). S. Native of the East Indies.

Finlayson’s Panax. Cl. 1816. Shrub.

32. P. fragrans (Robx. hort. beng. p. 21.) stem shrubby, unarmed; leaves decussate; having the petiole many times oppositely branched: the ultimate branches of the petiole trifoliate; leaflets ovate, acuminate, entire, petiolate, the middle one the longest; panicles loose; ultimate branches short, bearing few-flowered umbellules.  \( \sqrt { 7 } \). G. Native of Nipal. Hiedera fragrans, D. Don, prod. fl. nep. 137.? but the leaves are not truly ternate, nor the margins segmentally serrated, nor any way glaucous beneath.

Fragrant Panax. Cl. 1816. Shrub.

33. P. fercicosum (Lin. spec. 1513.) stem shrubby, unarmed; leaves pinnately decussate; leaflets petiolate, oval-oblong, acuminate, coarsely and dentately serrated; ultimate ones deeply tridif; panicle corymbose; with the branches umbelliferous at the apex.  \( \sqrt { 7 } \). S. Native of the islands of Ternate, Java, and Ambonaya. Andr. bot. rep. t. 295. Blum. bijdr. p. 880. Scutellaria tertia, Rumph. amb. 4. p. 78. t. 33. Styles 3. Berry 2-3-seeded. Leaves bipinnate or tripinnate.


34. P. obtusum (Blum. bijdr. p. 880.) stem shrubby, unarmed; leaves supra-decussate; leaflets oblong-roundish, entire, or deeply parted, repandly and cuspicate serrated; umbels compound, terminal.  \( \sqrt { 7 } \). S. Native of Java, where it is called Kodong-dong.

Obtuse-leafletted Panax. Shrub.

35. P. samucfolium (Sieb. pl. exsic. nov. holl. 2. no. 256.) stem shrubby, unarmed; leaves pinnate, and somewhat bipinnate; leaflets petiolate, distant, oblong, acuminate, remotely serrated; panicle terminal; umbels 10-12-flowered.  \( \sqrt { 7 } \). G. Native of New Holland. Styles 2, acute.

Elder-leaved Panax. Shrub.

36. P. decompositum (Wall. in herb. Moricand, ex D. C. prod. 4. p. 255.) stem herbaceous; unarmed; leaves impari-pinnate of 2-4 pairs of petiolate, ovate, acuminate, sharply serrated, glabrous, or rather scabrous leaflets; umbels compound.—Native of Nipal. Umbellules many-flowered; pedicels 1-5 lines long.
Decomposed-umbellled Panax. Pl. 2 to 3 feet.

Cult. The hardy species of this genus grow best in peat, and are increased by dividing at the root. The other species grow well in a mixture of loam and sand: and are increased by cuttings which should be planted in sand, with a hand-glass placed over them.


Lin. syst. Pent-Heptandra, Di-Trigynia. Margin of calyx short, entire or with 5-7 acute teeth. Petals 5-7. Stamens 5-7, alternating with the petals. Ovarium turbinate, crowned by a broad disk. Styles 2-3, short, erect, distinct, approximate. Fruit 2-3-celled, roundish, nearly dry.—Cape shrubs; with rather succulent, thick trunks. Leaves glabrous, petiolate, palmate; leaflets 5-7, 1-nerved, entire, or lobed. Flowers greenish.

1 C.スピカータ (Thunb. nov. act. usps. 3. p. 212. t. 13.) leaves palmate; leaflets petioloate, variously and acutely cut, often trifid at the apex; flowers spicicata, exactly sessile along the rachis. G. Native of the Cape of Good Hope, Thunb. fl. cap. 247. Ait. hort. kew. 2. p. 115. Shrub glabrous, 8-10 feet high. Leaflets usually 7, rarely 5, lower ones 3, variously pinchate, ternate at the apex; lobes angularly toothed, very acute. Calyx entire. Flower bud globose. Styles 2-3. Flowers spirally disposed along the rachis of the spike in 5-6 series.

Spiked-flowered Cussonia. Clt. 1789. Shrub 6 to 10 feet.

2 C. THYSFILOSA (Thunb. act. usps. 3. t. 12.) leaves palmate; leaflets sessile, cuneiform, obtuse, truncate, truncate; flowers racemose, pedicellate along the rachis. G. Native of the Cape of Good Hope. Jacq. fil. eclog. 1. p. 85. t. 61. C. thysifoila, Thunb. nov. gen. 1. p. 11. Pers. ench. 1. p. 298. Leaflets some of them entire, and a little toothed: others are ternate, varying in number from 3 to 5. Calyx acutely 5-toothed. Styles 3. There is a variety of this with jointed leaflets, the lowest joints dilated at end into smaller lobes.

Thysa-flowered Cussonia. Clt. 1785. Tree 6 to 12 feet.

3 C. TRICHTERA (Colla, hort. ripul. 43. t. 26.) leaves palmate, leaflets sessile, variously and deeply pinnatifid, trifid at the apex. G. Native of the Cape of Good Hope. The leaflets are the number and form of those of C.スピカータ, but they are sessile, as in C. thysifoila. Flowers unknown.

Three-winged Cussonia. Shrub.

Cult. A mixture of peat, loam, and sand is a good soil for the species; and cuttings root readily if planted under a hand-glass.


Madagascar Maralia. Shrub.

Cult. See Cussonia above for culture and propagation.


Lin. syst. Pent-Decandria, Monogyne. Margin of calyx entire, drawn out beyond the ovarium. Petals 5-10. Stamens the same number as there are petals, and alternating with them. Ovarium 5-10-celled, crowned by a broad disk above. Style short, thick, conical or pyramidal, composed of 5-10 jointed ones, which are erectly connivent at the apex at first, but at length diverging a little. Fruit fleshy.—Shrubs or small trees. Leaves variable. Flowers umbellate, disposed in racemose panicles. This genus differs from Gastônia in the stamens being equal in number to the petals, not double that number as in that genus; and in the style being thick and pyramidal, hardly divided at the apex, not parted to the base, and stellate.

1 G. UMBELATA (Ruiz et Pav. fl. per. 3. p. 75. t. 312.) leaves simple; petals imbricate; limb ovate-oblong, obsolescently dentilicate, glabrous; umbels terminal, compound. G. Native of Peru, in the groves of Muna. Calyx 7-toothed. Petals 7. Style thick, conical; stigmas 7, at length spreading a little. Fruit 7-celled. Wangenheimia umbellata and Gunni'ma umbellata, Dietr. ex Steud.

Umbellate-flowered Gilbertia. Tree.

2 G. PALMA (D. C. prod. 4. p. 256.) leaves simple, glabrous above, and clothed with rusty pubescence beneath, corolate, palmately lobed; lobes lanceolate, acute, serrate; petals long, prickly; flowers umbellate. G. Native of the East Indies, at Chittagon. Gabiloria palmata, Roxb. hort. beng. 33. Ländl. bot. reg. 894. Calyx plicate. Petals white, nearly ovate, 5-9. Perhaps G. palmera, Mess. se. 1825. in Fernus. bull. 1825. oct. 326. From the description the leaves are said to be nearly peltate; the leaflets petiolate, and the petals wanting. Flowers white.


3 G. REPANDA (D. C. l. c.) leaves or leaflets broadly ovate, feather-nerved, coriaceous, glabrous on both surfaces, bluntly somewhat attenuated at the base, on short petioles, with repand-toothed margins; flowers umbellate. G. Native of the Mauritius. Margin of calyx short, entire. Ovarium sulate, conical in the superior part. Style hardly any; stigmas 5-7, very short, nearly stellate. The leaves or leaflets being detached from the specimen examined, it is doubtful whether the leaves are simple or compound; but from analogy we would rather consider them as compound.

Repa-doothed-leaved Gilbertia. Shrub.


Nalugu Gilbertia. Shrub 8 to 10 feet.

5 G. FANNUKATA (D. C. l. c.) leaves or leaflets broadly obvate, obtuse, feather-nerved, quite entire, coriaceous, glabrous; flowers panicked, disposed in racemes along the branches of the panicle. G. Native of the Mauritius and Bourbon. The leaves or the leaflets, whichever they may be, are about a foot long, and 6 inches broad. Panicle 6-8 inches long. Flowers on short pedicels. Margin of calyx entire; flower-bud conical, obtuse, 10-angled. Petals 10, valvate. Stamens 10, alternating with the petals. Style thick, conical, hardly 8-10-lobed at the apex. Ovarium 8, rarely 9-10-celled.

Panicled Gilbertia. Trec.
ARALIACEÆ. VI. GASTONIA. VII. POLYSCIAS. VIII. TORICELLIA. IX. ARALIA.

† A species not described.

6 G. saururoideæ (D. C. l. c.) ¾ S. Native of the Moluccas. Gastonia saururoideæ, Roxb. hort. beng. p. 90. Saururoideæ, Saururoideæ. Tree. — Shrubs and trees, having handsome foliage. The soil best adapted to grow these is a mixture of sand, loam, and peat; and cuttings are readily rooted, if planted in sand under a hand-glass in heat.


Lin. syst. Pentándria, Digínya. Margin of calyx entire, drawn out beyond the ovarium. Petals 5-16. Stamens double the number of the petals, 2 of which are opposite each petal. Ovarium 8-12-celled. Styles 8-12, short, concrete at the base. Fruit 8-12-celled, 8-12-ribbed, nearly dry, ex Juss. capsular. — A tree, native of the Mauritius. Leaves impari-pinnate. Flowers umbellate; umbels exinovalvate, disposed in panicles. — 1 G. cutispóngia (Lam. dict. 2. p. 610.) ¾ S. Native of Bourbon, where it is called by the inhabitants bois d'éponge or sponge-wood. G. spongiosa, Pers. ench. 2. p. 20. Araliaceæ, Sibb. fl. maur. excis. 2. p. 197. A tall smooth tree, covered with spongy bark. Leaves at the tops of the branches impari-pinnate: with 5 coriaceous, ovate, obtuse, quite entire leaflets. Racemes rising under the leaves, bearing umbels, containing about 20 flowers each. Spongy-barked Gastonia. Tree tall.

Cult. See Gastonia above for culture and propagation.

VII. POLYSCIAS (from πολυ, poly, many, and σκιά, skia, a shadow; in reference to the numerous umbels). Forst. gen. p. 63. t. 32. Lam. dict. 5. p. 559. ill. t. 320. with a figure. D. C. prod. 4. p. 257.

Lin. syst. Pent-Octándria, Tri-Pentágynia. Margin of calyx short, dentilicate. Petals 5-7, but usually 8, lanceolate, spreading. Stamens equal in number to the petals, and alternating with them. Style wanting; stigmas 3-5, short, exertly spreading. Berry globose, crowned by the margin of the calyx and stigmas, 4-celled, 4-seeded. Leaves pinnate. Umbels compound or verticillately proliferous; umbellules of many rays, flat. The rest unknown. A very doubtful genus, but probably only a species of Aralía.

1 P. pinnata (Forst. l. c.) ¾ B. Native of the islands in the Southern ocean. P. umbellata, Spreng. ex Steud. nom. 546. A plant has been sent by La Billardière from New Zealand, under the name of Polysciæas, which rather disagrees with the description given by Forster of his plant in the panicle being verticillate, and in the umbellules being 5-7-flowered. Margin of calyx nearly entire. Diak fleshy, covering the ovarium. Styles 2-5, erect, approximate, acute. Leaflets oblong, obtuse at the base, and acuminate at the apex, with somewhat dentilicate margins.

Pinnate-leaved Polysciæ. Tree or shrub.

Cult. See Cussónia, p. 387. for culture and propagation.

VIII. TORICELLIA (in honour of Dr. Toricelli, who prepared a barometer for the measurement of mountains, and therefore has done something towards the geography of botany). D. C. prod. 4. p. 257.

Lin. syst. Pentándria, Tetragynia. Margin of calyx acutely 5-toothed. Petals 5, oblong, attenuated at the base, and unequally incurved at the apex. Stamens 5; filaments very short; anthers ovate. Styles 4, straight, short. Berry nearly dry, ovate, crowned by the calyx, 4-celled. Seed unknown.—A small mountain shrub: with terete white glabrous branches, ringed with cicatrices. Leaves alternate, exstipitate, simple, cordate, roundish, membranous, palmately 5-nerved, coarsely and acutely toothed, somewhat 5-lobed, pubescent along the nerves and nervules; petioles rather dilated at the base. Panicle terminal, many flowered. Flowers abortive or polygonous, or all parts of the parts are rather variable. This genus is nearly allied to Polyclæas.


Cult. This shrub will grow very well in the open ground, and it may be increased by cuttings or seeds.

IX. ARALIA (a name of unknown meaning, under which one species was sent to Fagon from Quebec, in 1764, by one Sarrazin, a French physician). D. Don, prod. fl. nep. 185. in a note. Kunth, nov. gen. amer. 5. p. 8. in a note. D. C. prod. 4. p. 257.—Aralia species of Lin. and other authors.—Aralia vere, Blum. biijdr. 869.

Lin. syst. Pentándria, Pentágynia. Margin of calyx very short, entire or toothed. Petals 5, free, and expanded at the apex. Stamens 5. Styles 5, expanded, spreading divericately. Berry 5-celled, usually torose. Pyrænae charnaceæ.—Herbs and shrubs, indigenous to North America, with compound leaves; and umbellate white flowers, which are usually disposed in panicles.

§ 1. Unarmed species.

1 A. medicuális (Lin. spec. 293.) plant stemless; radical leaf one, with a trifid petiole; impari-pinnate divisions, bearing each 5 ovate acute serrated leaflets; scape trifid at the apex, shorter than the leaf: each division bearing a many-flowered umbel, without any involucrum. ¾ H. Native of North America, from Canada to Carolina, and from Lake Huron throughout the woody country to lat 64°, and the Rocky Mountains; and of Newfoundland. Lam. dict. 1. p. 224. Torr. fl. un. st. 1. p. 327. Big. fl. bost. ed. 2. p. 122. Rafin. med. bot. 1. t. 8.—Pluks. aln. t. 238. f. 5. Petals white, reflexed. Stamens exserted. Styles 3-5, short, erect, distinct. The Crees use the root of this plant as a remedy against the venereal disease, under the name of sumpus-cokpeh, i.e. rabbit-root; and also they apply the bruised bark of its root to recent wounds.—Richardson. The roots were formerly brought over and sold for sarraparilla, and some of the inhabitants of Canada make use of it as such, but it is very different from the true sort. A. medicuális, Blum. biijdr. p. 870. introduced into Java from Japan, is distinct from our plant.


2 A. racémosa (Lin. spec. 393.) stem herbaceous, smooth, divericately branched; petioles triplicate, the partitions bearing each 3-5, ovate or cordate, acuminated, serrated, smoothish leaflets; peduncles axillary, and disposed in a terminal raceme, umbelliferous; involucrum small, of few leaves. ¾ H. Native of North America, from Canada to Virginia, in rocky shady situations: throughout Canada, &c. from Lake Huron to the Saskatchewan. Schkuhr, haud. 1. t. 86. Hayn. term. bot. t. 38. f. 5.—Corn. can. t. 75.—Moris. hist. sect. 1. t. 2. f. 9. Petals greenish-white, spreading. Styles 5, short, erect, hardly recurved at the apex. Fruit 5-ribbed. Stamens equal in length to the petals. The plant is called spikenard in North America, and is highly esteemed as a medicine. Axillary branches leafy.
ARALIACEAE.


3 A. hu'milis (Cav. icon. 4. p. 7. t. 313.) stem herbaceous, glabrous, a little branched; leaves impari-pinnate, pubescent; leaflets cordate, acute, serrated; umbels disposed in terminal racemes; involucra very short, of many leaves. 3, G. Native of New Spain. The fruit, according to Cav. icon. is nearly glabrous. Styles 5, erect, rather distant. Stem variegated with brown tubercles. Petals green.

Humble Aralia. Pl. 1/2 foot.

4 A. Pw'excens (D. C. cat. hort. monsp. 1813. p. 80.) stem woody, unarmed, glabrous, branched; leaves impari-pinnate, pubescent; leaflets ovate-lanceolate, serrated, attenuated at the base, and acuminated at the apex; umbels numerous, disposed in a terminal raceme; involucra very short, of few leaves. 5, G. Native of New Spain. A. scabra, Presl, in herb. Hccke. Petioles not dilated into auricles at the base. Styles 5, divaricately recurved. Fruit glabrous, dark purple.

Pubescent Aralia. Ch. 1818. Shrub.

5 A. hisp'na (Michx. fl. bor. americ. 1. p. 185.) stem suffruticoso, very hispid at the base from bristles; leaves bipinnate; leaflets ovate, acute, deeply serrated, glabrous; petioles hispid; umbels on long peduncules; involucra of many short setaceous leaves. 3, H. Native of North America; in stony woods in New England, &c.; on high mountains in Pennsylvania and Virginia; in Canada, from Lake Huron to the Saskatchewan; Hudson's Bay, and of Newfoundland. Vent. hort. cels. t. 41. Sims, bot. mag. t. 1085. Lodde. bot. cab. 1306. A. Muhlenbergià, Schultes, syst. 6. p. 704. does not differ from this species. The shrub is called Old-elder. Stem paniclebranched at top. Hispid Aralia. Fl. June, July. Ch. 1799. Shrub 1 foot.

+ Unarmed species, which are not sufficiently known.

6 A. corda'ta (Thumb. jap. p. 127.) stem almost herbaceous, angular, unarmed, a little branched; leaves cordate-ovate, serrate-toothed, searbovs on both surfaces; pedicels of umbels tomentose. 3, H. Native of Japan. Das Jen, Kömpf. amer. 5. p. 826. Styles 5, divaricate, ex Thumb.

Cordate-leaved Aralia. Pl. ?

7 A. jàtö'tica (Thumb. fl. jap. 128.) stem shrubby, unarmed; leaves petiolate, 7-nerved, 7-lobed: lobes ovate, serrated at the apex; panicles terminal; peduncles umbelliferous. 3, H. Native of Japan, near Nagasaki. Banks. Icon. Kömpf. t. 10. Styles 5, diverging. Berry striated. Petioles ovate, acute, reflexed (Thumb.). Leaves coriaceous, glabrous in the adult state, but when young woolly on both surfaces. (Blum. bijdr. p. 371.) Petals white.

Japan Aralia. Shrub 5 to 6 feet.

8 A. Schiff'leri (Spreng. pug. 1. p. 28.) stem shrubby, smooth; leaves on long petioles, digitate; leaflets 5, petiolate; lanceolate, attenuated at the base, serrated, glabrous on both surfaces. 3, H. Native of New Zealand. Schifflera digitata, Forst. gen. t. 23. Lam. ill. t. 221. Petals 5, nearly spatulate, erect, not as in the genus Scindaphyllum, cohering into a cyphyta at the apex. Styles 8-10, diverging, not erect, as in Hedera. Berry 8-10 angled.

Schiffler's Aralia. Shrub.

9 A.? octo'hry'lla (Lour. coch. p. 187.) stem almost arborescent, unarmed; leaves petiolate, digitate; leaflets 5, oblong, obtuse, quite entire, glabrous; panicule umbellate. 3, G. Native of Cochim-china. Flowers yellow, of 5 petals. Sigmas 5, sessile. Berry ovate, 5-seeded. Perhaps a species of Pol'ysias. Panicule large, ending in umbels, which are without involucra.

Eight-leafed Aralia. Shrub 10 feet.

10 A.? Pal'mata (Lam. dict. 1. p. 254. but not of Lour.) stem shrubby, unarmed; leaves petiolate, pinnately 9-nerved, 9-cleft; lobes lanceolate, serrated; berry subcylindric, angular, 6-8-celled. 3, S. Native of the Moluccas.—Rumph. amb. t. 43. Perhaps a species of Polysias or Hedera. Umbels crowded, terminal.

Palmate-leaved Aralia. Shrub.

11 A.? mic'ans (Wild. herb. ex Spreng. syst. 1. p. 953.) leaves digitate; leaflets or lobes 10, subcordate, oblong, acuminated, mucronately toothed, hispid above, and silky beneath; heads disposed in racemes. 3, S. Native country unknown. Perhaps a species of Hedera.

Glittering Aralia. Tree or shrub.

9 2. Prickly species.

12 A. spin'osa (Lin. spec. p. 392.) stem arborescent, and are, as well as the petioles, prickly; leaves doubly and triply pinate; leaflets ovate, acuminated, deeply serrated; panicle much branched, beset with velvety stellate down; umbels numerous; involucra small, of few leaves. 3, H. Native of North America, in fertile low woods; of Carolina and Virginia; likewise in the Illinois country. Wats. dendr. brit. t. 116. Comm. hort. amst. t. 47. Pink. aln. t. 26. Schmidt, arb. 102 and 103. A tree about 8-12 feet high, with a simple stem. Petals white, reflexed. Styles 5, divaricate, arched. Fruit 5-ribbed. Known under the name of angelica-tree. The berries used in an infusion of wine or spirits are a remarkable medicine for relieving rheumatic pains.

Tar. ß, inermis (Parsh. fl. amer. sept. 1. p. 209.) stem spinose, glaucous; petioles unarmed. 3, H. Native of South Carolina, near Charleston.


13 A. mont'a'nna (Blum. bijdr. p. 870.) stem arborescent, and are, as well as the petioles and base of the leaves, prickly; leaves decumpanied; leaflets ovate-oblong, acuminated, unequally rounded at the base, sharply serrated, villous; panicle branched; flowers glomerate. 3, S. Native of Java, on the mountains of Seribu, where it is called Kibahoya. Mountain Aralia. Shrub 8 to 10 feet.

14 A. chin'ensis (Lin. spec. 393.) Blum. bijdr. p. 870.) stem arborescent, and is, as well as the petioles, prickly; leaves bipinnate, decumpanied; leaflets ovate-oblong, acuminated, unequally rounded at the base, sharply serrated, villous; panicle branched; flowers glomerate. 3, S. Native of Java, on the mountains (Blum.), China (Lin.), Lour. cochr. 187. Styles diverging, revolute. Petioles villous, bearing a few straight prickles. The figure in Rumph. amb. t. 44. cited by Linnaeus for this plant, is a species of Lycìa. Lourucre describes the plant as very troublesome to travellers, with its numerous crooked prickles, as it climbs in the hedges. According to him the corolla is white. Styles scarcely any.

China Aralia. Tree 10 to 12 feet.

15 A. eri'nae'ca (Hook. in Brewst. edinb. journ. sc. 1827. p. 61.) stem very spiny; leaves nearly palmate, very acute; lobes cut; petioles and nerves of leaves spiny; umbellae globose, disposed in racemes. 3, H. Native of the west coast of North America, in Queen Charlotte's islands.

Eринaceous Aralia. Shrub.


Cult. The hardly herbaceous species of Aralia grow best in peat or vegetable mould, and are increased by dividing at the
root, or by seed. The hardy shrubby kinds also grow best in peat-earth, and are very ornamental and curious; they are increased by seeds brought from the places of their natural growth, which do not vegetate until the second year; or by slips of the roots. The other species being either green-house or stove plants, require to be grown in pots, in a mixture of loam, peat, and sand; and cuttings of them root readily under a hand-glass.


LIN. SYST. Pentándría, Pentagyntia. All as in Arália, but the petals cohere in the form of a calyptra at the apex, notwithstanding it ought perhaps still to be joined with Arália.

§ 1. Leaves simple, undivided.

1 S. ru'hlle (Blum. bijdr. p. 875.) shrub parasitical, diffuse; leaves simple, ovate-oblong, acuminate, distantly serrated, coriaceous, glabrous; racemes terminal; flowers umbellate, tetranthous. f. S. Native of Java, in woods on Mount Salak.

Humble Sciodaphyllum. Shrub diffuse.

§ 2. Leaves simple, palmate-labed.

2 S. FALMÁTUM (Blum. l. c. p. 875.) stem arborescent, prickly, leaves membranous, glabrous, palmately 5-9-parted: segments lanceolate, serrated from the middle to the apex; racemes axillary; flowers umbellate, with 9-11 stamens. f. S. Native of Java, in humid parts of woods on the mountains, where it is called tjukurau by the natives. Fruit hemispherical, 6 lines in diameter.

Palmate-leaved Sciodaphyllum. Tree.

§ 3. Leaves trifoliate.

3 S. scándens (Blum. bijdr. p. 878.) stem shrubby, scandent; leaves trifoliate; leaflets lanceolate, much acuminate, quite entire, coriaceous, glabrous; the middle one on a long petiole; racemes crowded, terminal, divaricate; flowers umbellate, pentandrous. f. S. Native of Java, in woods on Mount Tjermani.

Scandent Sciodaphyllum. Shrub scandent.

4 S. PARAßTRICUM (Blum. bijdr. p. 877.) stem shrubby, parasitical; leaves ternate: leaflets oblong, acuminate, obtuse at the base, remotely serrated, coriaceous, glabrous, nearly veinless; racemes axillary and terminal, solitary or twin; flowers umbellate, hexandrous. f. S. Native of Java, at the foot of Mount Salak, where it is called Ramo giling hunte.

Parasitic Sciodaphyllum. Shrub parasitical.

§ 4. Leaves digitate.

* East Indian species.

5 S. SUBRAVE'NE (Blum. bijdr. p. 876.) stem frutescent; leaves digitate: leaflets 3-5, oblong, acuminate at both ends, coriaceous, nearly veinless; racemes crowded, terminal, diverging; flowers umbellate, pentandrous. f. S. Native of Java, on Mount Salak, in woods, where it is called Ramo-hunte by the natives.

Nearly-veinless-leaved Sciodaphyllum. Shrub.

6 S. TOMENTOSUM (Blum. bijdr. p. 877.) stem pubescent; leaves digitate; leaflets 5-7, oblong, acuminate, rounded at the base, shining above, but clothed with stellate tomentum beneath; racemes panicked, axillary, and terminal; flowers umbellate, pentandrous. f. S. Native of Java, in woods on Mount Burungang.

Tar. f. farínæum (Blum. bijdr. p. 875.) leaflets 7, ending in a long taper-point each. f. S. Native of the west of Java, in mountain woods, where it is called Paungany tapok. Actinophyllum farínæum, Blum. cat. hort. bilt. p. 43.

Tomentose Sciodaphyllum. Shrub.

7 S. ELÉTRICUM (Blum. bijdr. p. 878.) stem arborescent, sometimes scandent; leaves digitate; leaflets 5-7, petiolulate, oblong, bluish at both ends, glabrous; racemes panicked, terminal; flowers umbellate, pentandrous. f. S. Native of Java, on the mountains in humid woods, in the province of Buitenzorg, where it is called Ramo-giling or Sangga-boonah. Actinophyllum Elétricum, Blum. cat. hort. bilt. p. 42. and in flora 1825. p. 147.

Dirivicate Sciodaphyllum. Shrub cl.

8 S. DIVIRICATUM (Blum. bijdr. p. 876.) stem arborescent; leaves digitate: leaflets 11-12, oblong, acuminate, rounded at the base, coriaceous, glabrous; racemes crowded, terminal, divaricate, glabrous; flowers umbellate, pentandrous. f. S. Native of Java, on the top of Mount Salak.

Shining Sciodaphyllum. Tree.

* * American species.


Brown's Sciodaphyllum. Cl. 1793. Tree 10 to 15 feet.


Conical-flowered Sciodaphyllum. Shrub 10 to 12 feet.

12 S. penta'r'drum (Poir. dict. 6. p. 747.) stem shrubby, somewhat arborescent; leaves digitate: leaflets 7-11, petiolulate, oblong, acuminate at the apex, coriaceous, glabrous above, but hirsut with stellate pili beneath; racemes 1-3, woolly; flowers capitulate, pentandrous; corollas conical, obtuse. f. S. Native of Peru. Actinophyllum pentádrum, Ruiz et Pav. fl. per. 3. p. 75. t. 311. Corollas of a whitish purple colour; anthers yellow. Berry white, almost the size of a cherry. Leaflets dark-brown beneath. Racemes pale-reddish.

Pentadrum Sciodaphyllum. Cl. 1820. Tree 18 to 20 ft.

13 S. ANGULA'TUM (Poir. dict. 6. p. 745. exclusive of Brown's synonyme,) stem arborescent; leaves digitate: leaflets 7-11, petiolulate, oblong, acuminate, concave at the base, shining above,
but clothed with powdery velvety rusty down beneath; racemes elongated, granular; flowers capitate, with 7-9 stamens; corollas obovate, angular, and truncate. h. G. Native of Peru and New Granada, on shady hills. Actinophyllum angulatum, Ruiz et Pav. fl. 5. p. 73. t. 307. H. B. et Kuntz, nov. gen. amer. 5. p. 9. Heads of flowers about the size of a walnut, yellowish. Berry dark purple, cuneiform, angular. Styles 4-6.

_angular Scidaphyllum._ Tree 20 to 80 feet.

14 S. pedicellatum (Poir. dict. 6. p. 746.) stems scendant; leaves digitate: leaflets 9-13, petiolulate, oblong, acuminate, somewhat sinuately undulated, and concave at the base, glabrous; racemes many; flowers pedicellate, umbellate on the branches; corollas hemispherical. h. G. Native of Peru, in groves at Munna. Actinophyllum pedicellatum, Ruiz et Pav. fl. per. 3. p. 73. t. 308. Stem rooting, filled with medullae; branches purplish. Racemes purplish, a foot long. Stamens 6-7. Berries angularly globose, greenish purple.

_Pedicellato-flowered Scidaphyllum._ Shrub or tree.

15 S. acumina tum (Poir. dict. 6. p. 746.) stems scendant; leaves digitate: leaflets 7-11, petiolulate, oblong, obliquely acuminate, coriaceous, glabrous, reticulately veined; racemes 2-5, tomentose; flowers pentandrous and oecandrous, capitulate; corollas hemispherical, apiculate. h. G. Native of Peru, in groves. Actinophyllum acuminatum, Ruiz et Pav. fl. per. 3. p. 74. t. 310. Corollas yellow, disposed in heads, which are a little larger than a pea. Styles 5.

_Acuminate-leaved Scidaphyllum._ Shrub or tree.

16 S. anomum (G. Don, in Loud. Hort. Brit. p. 112.) arborescent; leaves digitate: leaflets 7-9, oblong-lanceolate, acuminate at the apex, green and smooth on both surfaces: outer ones the smallest; umbels capitately panicled; branches green and smooth. h. G. Native of Trinidad, in woods. Carolina insignis, Hort. Fl. Flowers whitish yellow. Largest leaflets 1 foot long.

_Anomalous Scidaphyllum._ Cl. 1817. Tree 20 feet.

17 S. Quindiuensis (D. C. prod. 4. p. 261.) stem shrubby, scendant; leaves digitate: leaflets 7-8, oblong-acuminate, quite entire, glabrous; umbels 4-flowered, racemose; flowers with 8-10 stamens. h. G. Native of the Andes, about Quindin, at the height of 3300 feet above the level of the sea. Aralia Quindiuensis, H. B. et Kuntz, nov. gen. amer. 5. p. 8. t. 417. f. 1. Styles 3-10, spreading. Petals cohering at the apex. Fruit 8-10-ribbed. Perhaps a species of Aralia.

_Guadua._ Glume 2, awn 1, stamen 1. Shrub or tree.

_Cult._ All the species are worth cultivating in gardens for the sake of their fine handsome large foliage. A mixture of loam, peat, and sand is a good soil for them; and they are easily increased by cuttings under a hand-glass in sand, placed in a moderate heat.

XI. _HEDERA_ (a name for which many etymologies have been offered. The best explanation is, that it has been derived from _hera_, cord in Celtic, _lere_ in French. The English name of ivy is derived from the Celtic word _in_, green, from its being always green. The word is given to _Táxus_ by the French, hence _Táxus_ by Linnaeus, and comes from the genus. L.) Swartz, fl. ind. occ. p. 518. D. Don, prod. nep. p. 186. Gaertn. fruct. 1. t. 26. D. C. prod. 4. p. 261.—Aralia sect. Gymnapeoio, Blum. bijdr. p. 871.—Hédera and Aralia species Lin. and all other authors.

_Lin. syst._ Pent-Decándria, Pent-Decagynia. Margin of calyx elevated or toothed. Petals 5-10, not cohering at the apex in the form of a calyptra. Stamens 5-10. Styles 5-10, conniving, or joined in one. Stamens 5-10-celled.—Climbing or erect shrubs. Leaves simple or compound. Flowers umbellate or capituate.

§ 1. Leaves simple, undivided, or lobed.

1 H. _Helix_ (Lin. spec. 292.) stems climbing, throwing out roots from the side by which it is placed to any substance; leaves coriaceous, glabrous, shining, with 5 angular lobes; those on the old upright branches, which form the tops of the plants, ovate, acute, quite entire; umbels simple, pubescent. h. H. Native of Europe. Common ivy is a valuable ornamental evergreen climbing shrub. It is useful for covering walls and sides of houses, or training into fanciful shapes, as of human figures, &c. on skeletons of wire-work, or trained up to a stake, so as to form a standard; but when ivy has reached to the top of any support, the branches shorten, and become woody, forming themselves into large bushy heads, and the leaves become entire and more of an oval shape, and not divided into lobes like the lower ones, and in this state they produce flowers at the end of every shoot. The berries are black at maturity. The flowers are yellowish, and appear late in the season, and in consequence is much resorted to by bees and flies, when little other food is to be had. The berries increase during the winter, are full formed in February, and ripen in April; furnishing food for wild pigeons, blackbirds, thrushes, &c. in the spring. Blackbirds, and several other birds, build their nests in the stumps of ivy tufts. Sheep are fond of the leaves, especially during severe weather. The ancient held ivy in great esteem, and Bacchus is represented crowned with it to prevent intoxication; and Homer describes his heroes as drinking out of a cup made of the wood. Haller says, that the leaves are given in Germany as a specific in atrophies in children. Common people apply them to issues and corns. The berries are aperient and emetic. The wood is soft and porous, so as to transmit liquids if turned of a sufficient degree of thinness. The roots are used by leather-cutters to whet their knives upon. The whole plant is rather aromatic; and a very fragrant resin exudes from the old stems when bruised. The specific name _Helix_ is derived from _helix, elix_ to encompass or turn round; in reference to the twining stems.

_Var. a._ vulgaris (D. C. prod. 4. p. 261.) pedicels clothed with stellate down; floral leaves ovate; fruit black; leaves of the rooting branches 5-lobed, with white veins. h. H. Native of Europe, in woods, hedges, and on old buildings. _Hédera Helix._ Lin. spec. 292. Smith, engl. bot. t. 1357. Curtis, Lond. f. t. 1. 1824. Fl. dan. t. 1027. Bull. ir. t. 133. Drev. and Hayne, pl. europ. t. 66. There is a variegated-leaved variety of this in the gardens.

_Var. b._ Caucanidis (D. C. prod. 4. p. 261.) pedicels beset with lobepetalled pubescence; floral leaves subcordate: those of the creeping branches 5-lobed, larger than those of the common ivy; fruit red. h. H. Native of the Canary Islands. _Hédera Caucanis._ Willd. in Berlin. mag. 2. p. 176. t. 5. f. 1. Schultes, syst. 5. p. 508. In the gardens this is called Irish Ivy.

_Var. c._ chrysocarpum (D. C. prod. 4. p. 261.) pedicels lobepetalled: floral leaves elliptic, usually cuneate at the base; fruit yellow. h. H. Native of the north of India. _Hélix._ Wall. in Roxb. fl. ind. 2. p. 515. —D. Don, prod. fl. nep. 187. It differs from _var. a._ vulgaris in the stature being more granular, in the leaves being much more cuneate at the base, in the pedicels being lobepetalled, in the berries being yellow and usually 5-seeded. _Hélix._ Poética, C. B. pin. p. 305. H. chrysocarpum, Dalsech. ingl. H. Dionysias, J. Buth. hist. with a figure.


2 H. corymbosa (Choisy, ms. in herb. D. C. ex prod. 4. p. 262.) stem arborescent, bushy; leaves cordate, acute, bluntly 5-angled, when young velvety on the nerves beneath, but in the adult state glabrous on both surfaces; flowers corym-
Araliaceae.

Native of the Canary Islands, where it has been probably introduced, and is called Peplin de St. Augustin.

Corynabe-flowered IVV. Shrub "

3 H. POLYACANTHA (Wall, cat. no. 4907.) Stem beset with short, conical prickles; leaves glabrous, 5-lobed, cordate at the base: lobes serrated; panicle large, pedunculate; umbel's many-flowered, furnished with woolly scales at the base of the pedicels; flower buds white from pubescence.  

Native of Nipan.

Many-spired IVV. Tree

4 H. laroea (Swartz, fl. ind, occ. p. 518.) Stem arborescent, unarmed; leaves oval, acuminate; racemes terminal; umbels pedunculate; pedicels longer than the flowers.  


Bery hexagonal.

Tree IVV. Tree 10 to 12 feet.

7 H. PEDELULATA (Swartz, fl. ind, occ. 1. p. 512, icon. t. 9.) Stem arborescent, unarmed; leaves ovate, lanceolate, entire; umbels almost capitulate; peduncles very long, drooping.  


Pendulous-umbellate IVV. Chl. 1824. Tree 12 to 15 feet.

6 H. UMBELLIFERA (D. C. prod. 4. p. 262.) Stem frutescent, unarmed; leaves on long petioles, lanceolate, acuminate, rarely serrated; peduncles umbellate, trifid; umbels capitulate, nearly globose, S. Native of Ambouya, on the mountains.  

Pseduo-santanalium Aboainense, Kunpl. amb. 2. p. 54. t. 12. Aralia umbelliferata, Lam. dict. 1. p. 235. Schultz, syst. 6. p. 697. There is a yellow gum issues from this tree, which becomes blackish on drying, and is sweet scented, which is called Saruru in Ambouya. Flowers whitish.

Umbelliferous IVV. Tree.

7 H. CUNTA (D. C. prod. 4. p. 262.) Stem arborescent, unarmed; leaves petiolate, broadly oblong, acute, quite entire, cuneated at the base, membranous, glabrous, with pinnate nerves: the 2 lower nerves parallel with the margins, rising from an acute angle; umbels terminal, of many rays; heads half globose.  

S. Native of Brazil, where it was collected by Schott. Aralia umebullata, Polli. in litt. but not of Lam.

Cumact-leaved IVV. Tree small.

8 H. XANT (Swartz, fl. ind. occ. 1. p. 514.) Stem arborescent, unarmed; leaves elliptic, acute, entire, membranous, glabrous, hardly cuneated at the base, with pinnate nerves: the 2 lower nerves parallel to the margin, and rising from an acute angle; racemes few, rising from the old branches; umbels semi-globose.  

S. Native of the south of Jamaica, on the tops of the Blue Mountains. Very like H. pandula, but the peduncles are shorter, the petioles terete, and the petals reflexed. Style short, 5-angled.

Drooping-umbellate IVV. Tree 10 to 15 feet.

9 H. RAMIFERAPA (D. C. prod. 4. p. 262.) Stem arborescent, unarmed; leaves petiolate, acute, quite entire, membranous, glabrous, hardly cuneated at the base, with pinnate nerves: the 2 lower nerves parallel to the margin, and rising from an acute angle; racemes few, rising from the old branches; umbels semi-globose.  

S. Native of Brazil, where it was collected by Schott. Aralia ramifera, Polll. in litt. Flowers 15-16 in each umbel, pedicellate.

Branch-flowered IVV. Tree 10 to 15 feet.

10 H. CAPITATA (Smith, icon. pict. rar. 1. t. 4.) Stem arborescent, unarmed; leaves elliptic, acuminate, entire, with pinnate nerves: the 2 lower nerves rising from an acute angle; raceme terminal, compound; umbels capitulate, on long peduncles; flowers sessile.  


11 H. MULTIFLORA (D. C. prod. 4. p. 262.) Stem arborescent, unarmed; leaves on long petioles, oblong-elliptic, acuminate, somewhat cuneated at the base, quite entire, membranous, glabrous, with pinnate nerves: the 2 lower nerves remote from the rest, parallel with the margin, and rising from an acute angle; racemes panicled, diverging; heads globose.  

S. Native of Brazil, where it was collected by Schott. Aralia multiforma, Polli. in litt.

Many-flowered IVV. Tree 10 to 12 feet.

12 H. MUTISIANA (D. C. prod. 4. p. 262.) Stem arborescent, unarmed; leaves oblong, somewhat serratulate at the apex, acute, cuneated at the base, coriaceous, glabrous, shining; racemes solitary; flowers capitulate.  


Oate-leaved IVV. Shrub.

13 H. OVA (Wall. cat. no. 4911.) Stem unarmed; leaves ovate, elliptic, quite entire, coriaceous, ending in a short blunt point, rusty beneath; peduncles axillary, solitary, and terminal, umbellate; umbellae many-flowered.  

S. Native of Madras.

Acute-leaved IVV. Tree or shrub.

15 H. AVICENNIFOLIA (D. C. prod. 4. p. 263.) Arborescent, unarmed; leaves oblong-lanceolate, acute at the apex, and acutish at the base, quite entire, coriaceous, glabrous above, but clothed with white tomentum beneath; corymbs branched; flowers capitulate.  


Acute-leaved IVV. Tree or shrub.

16 H. CUMANENSI S (D. C. L. c.) Stem arborescent, unarmed; leaves ovate, acuminate, cuneate at the base, quite entire, somewhat 3-nerved, membranous, glabrous, shining.  

S. Native of Cumana, in shady places at Mount Cocalar, at the elevation of 1200 feet. Aralia Cumanensis, H. B. et Kunth, nov. gen. amen. 5. p. 3. Flowers and fruit unknown.

Cumana IVV. Tree.

17 H. CATALPAEFOlia (D. C. L. c.) Stem arborescent; leaves ovate, subcordate, acuminate, quite entire, glabrous; racemes short, bracteate at the base; heads of flowers globose.  


Catalpa-leaved IVV. Tree or shrub.

18 H. SEPTENNIVIA (D. C. L. c.) Stem arborescent? unarmed; leaves ovate, acuminate, rounded at the base, 7-nerved, rather coriaceous, glabrous; racemes panicled; heads globose.  

S. Native of New Granada, at the altitude of 4000 feet. Aralia septennivia, H. B. et Kunth, nov. gen. amen. 5. p. 3. Said to be hardly distinct from H. capitata. Style 1.
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Seven-nerved-leaved Ivy. Tree or shrub.
19. H. Turbacceus (D. C. l. c.) stem arboreous; leaves on long petioles, acute at the base, membranous, glabrous, of one colour; some of them are undivided, and others are trifid at the apex; with the lobes or segments entire and acuminate; having the recesses between the lobes rounded. ½. S. Native of New Granada, in hot places near Turboce, where it is called Arbol de Guaco. Arálie Turbacéensis, H. B. et Kunth, nov. gen. amer. 5. p. 3. Flower and fruit unknown.

Turbacce. Ivy. Tree 40 to 50 feet.
20. H. d'écolor (D. C. l. c.) stem arboreous? leaves petiolate, rather coriaceous, glabrous, rounded at the base, shining above, and of a rusty-purplish colour beneath: some of them undivided and 1-nerved, and others are 2-nerved and trifid at the apex; having the lobes somewhat acuminate, the intermediate one the longest; racemes panicked; heads globose. ½. S. Native of New Granada? Arâlie d'écolor, H. B. et Kunth, nov. gen. amer. 5. p. 4. Flowers and fruit not sufficiently known.

Discoloured-leaved Ivy. Tree or shrub.
21. H. Argentatus (D. C. l. c.) stem arboreous, unarmèd; leaves petiolate, coriaceous, glabrous and shining above; but marked by silvery hoary-white down beneath; which are undivided and 1-nerved, and others are 2-nerved and trifid at the apex; having the lobes or segments somewhat acuminate: the intermediate lobe remotely serrated; racemes panicked; heads of flowers globose. ½. S. Native of New Granada. Arâlie argentâtus, H. B. et Kunth, nov. gen. amer. 5. p. 4. t. 414. Styles 3, conniving. Petals white.

Silvery-dotted Ivy. Tree 15 to 20 feet.
22. H. Crassiméria (D. C. l. c.) stem arboreous? leaves petiolate, acute at the base, coriaceous, glabrous above and shining, densely beset with rusty dots beneath: some entire, ovate-oblong, and others 3-lobed and somewhat acuminate; racemes panicked; heads of flowers elliptico-globose. ½. G. Native of South America, along with H. argentâtus. Arâlie crassiméria, H. B. et Kunth, nov. gen. amer. 5. p. 5. Styles 5-6, conniving.

Thick-nerved-leaved Ivy. Tree.

Blunt-lobed-leaved Ivy. Tree or shrub.

Angular-leaved Ivy. Tree.
25. A. plataniifolia (D. C. l. c.) stem arboreous: leaves petiolate, coriaceous, glabrous above and shining, but clothed with rustyomentum beneath, truncate at the base, 7-nerved, 7-cleft at the apex: lobes or segments oblong, acuminate, quite entire; racemes panicked; heads of flowers globose. ½. G. Native of Peru, on the western declivity of the Andes. Arâlie plataniifolia, H. B. et Kunth, nov. gen. amer. 5. p. 6. t. 415. Willd. in Schultes, syst. 6. p. 699. Tree 15-20 feet. Styles 4-5. Petals white; otherwise the outside.

Platanus-leaved Ivy. Tree 15 to 20 feet.
26. H. acerifolia (D. C. prod. 4. p. 264.) stem arboreous; leaves 5-lobed, acuminate, quite entire, glabrous, shining loped-dotted and of a different colour beneath. ½. S. Native of South America, Humb. and Bonpl. Arâlie acerifolia, Willd. in Schultes, syst. 6. p. 699. The rest unknown. This is the same as H. argenteâta, according to Sprengel.

Maple-leaved Ivy. Tree.
27. H. jatrophaeifolia (D. C. l. c.) stem arboreous; leaves petiolar, coriaceous, glabrous above, but clothed with fuscous tomentum beneath, cordate at the base, 7-nerved, deeply 7-cleft: segments or lobes lanceolate-oblong, acuminate, narrowed at the base and quite entire. ½. S. Native of New Granada. Arâlie jatrophaeifolia, H. B. et Kunth, nov. gen. amer. 5. p. 6. Leaves almost like those of Mânikot. This species approaches very near H. plataniifolia.

Jatropha-leaved Ivy. Tree.

Reticulated-leaved Ivy. Tree.
29. H. chaerophylla (D. C. l. c.) stem unknown; leaves palmately 5-lobed, cream-coloured beneath: lobes or segments acuminate, toothed; heads of flowers disposed in racemes, clothed with villous tomentum. ½. S. Native of South America. Arâlie chaerophylla, Spreng. syst. 1. p. 593.

Hand-leaved Ivy. Tree or shrub.
30. H. floribunda (D. C. l. c.) stem arboreous; leaves petiolate, glabrous above, but clothed with canescent tomentum beneath, 7-9-parted: segments or lobes acuminate, remotely and sharply toothed; racemes panicked; heads elliptical-globose. ½. S. Native of New Granada, in temperate parts, at the altitude of 3600 feet. Arâlie floribundâ, H. B. et Kunth, nov. gen. amer. 5. p. 6. t. 416. Arâlie Humboldtiana, and A. inesia, Willd. in Schultes, syst. 6. p. 699. ex Kunth. Styles short, connivent, somewhat diverging after flowering. Leaves so deeply parted as nearly to be compound.

Buddle-flowered Ivy. Tree 15 to 20 feet.

Climbing Ivy. Shrub d.

§ 2 Leaves compound; leaflets divided to the top of the petiole, digeratly or palmately disposed.

32. H. ferruginea (D. C. l. c.) stem arboreous; leaves on long petioles, digitate; leaflets 7, petiolate, oblong, acuminate, cuspidate, rounded at the base, quite entire, coriaceous, glabrous above, but clothed with thin tomentum beneath: when young clothed with rusty wool; racemes panicked; heads somewhat elliptically globose. ½. S. Native of South America, in the province of Quito, between Paramo de Saraguro and Oza, at the altitude of 3600 feet. Arâlie ferruginea, H. B. et Kunth, nov. gen. amer. 5. p. 7. Wildl in Schultes, syst. 6. p. 701.

Rusty-leaved Ivy. Cit. 1826. Tree.
33. H. xalapensis (D. C. l. c.) stem arboreous; leaves on long petioles, digitate; leaflets 5-7, glabrous, shining above, but dotted beneath, lanceolate-oblong, acute, narrowed at the base, and quite entire, rather coriaceous; racemes panicked; heads of flowers nearly globose. ½. G. Native of Mexico, on the mountains near Xalapa, at the altitude of 2000 feet. Arâlie xalapensis, H. B. et Kunth, nov. gen. amer. 5. p. 8. Arâlie digitâta, Wildl. in Schultes, syst. 6. p. 701. ex Kunth. Petals glabrous. Styles joined in one.
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XI. HEDERA.

*Hedera* Ivy. Tree.

34 **H. Celniers** (Cham. et Schlecht. in Linnaea. 5. p. 174, under *Aralia*) leaves membraneous, smoothish above, except on the middle nerve, but clothed with lax stellate tomentum beneath; floral leaves entire and lobed; lower leaves compound, of 5 nearly cuneate-obovate, acuminate leaflets; heads of flowers globose. *H. G.* Native of Mexico, in woods near Hacienda de la Laguna. Middle leaflet a foot long and 5½ inches broad.


35 **H. elata** (Hamilt. in D. Don, prod. fl. nep. p. 187.) stem arborescent, unarmed; leaves digitate; leaflets 7, radiant, petiolate, elliptic-oblong, acuminate, coriaceous, quite entire, glabrous, glaucous beneath, rounded at the base; umbels glabrous, racemously panicked. *H. G.* Native of Nipal, at Na-rain-Hetty, where it is called *Cauliflora* by the natives.

*Tall* Ivy. Tree.

36 **H. Undulatum** (Wall. cat. no. 4916.) stem shrubby; leaves on long petioles, digitate; leaflets 3-5, petiolulate, smooth, oblong-lanceolate, acuminate, undulated; panicle diffuse; um- bellules few-flowered: lateral ones opposite: terminal one um- bellate. *H. G.* Native of Silhet. Fruit oblong. Style 1, crowned by a capitate stigma.

*Undulate-leaved* Ivy. Shrub or tree.

37 **H. Ascclimolia** (Wall. cat. no. 4913.) stem shrubby; leaves digitate; leaflets 7, obovate-oblong, acuminate, clothed with rusty pubescence beneath: outer ones the smallest, all serrated: racemes lateral; umbellules pedunculate, many-flowered. *H. H.* Native of Nipal.

*Horse-chestnut-leaved* Ivy. Shrub or tree.

38 **H. Tomopeda** (Hamilt. in D. Don, prod. fl. nep. p. 187.) stem arborescent, unarmed; leaves digitate; leaflets 7-9, petiolate, oblong-lanceolate, acuminate, coriaceous, quite entire, at the base, densely clothed with tormentum beneath, as well as the peduncles, petioles, and younger stems; umbellules rising in clusters, pedunculate. *H. F.* Native of Nipal.

*Tomentose* Ivy. Tree.

39 **H. suerodota** (Wall. cat. no. 4917.) stem shrubby; leaves on long petioles, trifoliolate; leaflets petiolate, membranous, ovate, somewhat cordate at the base and acuminate at the apex; panicles numerous; flowers disposed in long slender racemes. *H. G.* Native of Silhet. Flowers small, spreading.

*Subcordata-leaved* Ivy. Shrub or tree.

40 **H. Florescens** (Wall. cat. no. 4912.) stem beset with short, conical prickles; leaves digitate; leaflets 7, on long petioles, elliptic, acuminate, clothed with rusty tormentum beneath while young; racemes long; umbellules on long peduncles, rusty as well as the racis. *H. G.* Native of Silhet.

*Dulate-leaved* Ivy. Shrub or tree.


*Turpentine* Ivy. Tree.

43 **H. Robosa** (D. C. prod. 4. p. 265.) stem shrubby, parasitic; leaves digitate; leaflets 5-7, ovate, or oval-oblong, acuminate, obliquely attenuated at the base, quite entire, rugged, clothed with brown stellate tomentum beneath; panicle terminal, very long; flowers racemose. *H. S.* Native of Java, in woods on Mount Gede. Aralia rugosa, Blum. bibdjr. 871.


44 **H. simillima** (D. C. l. c.) stem shrubby; leaves digitate; leaflets 5-6, elliptic-oblong, acuminate, rounded at the base, remotely serrulate, reticulate, wrinkled and rather downy from stellate pili beneath; panicule terminal, divaricate; flowers racemose. *H. S.* Native of Java, in woods on the mountains. Allied to *H. rugosa*. Aralia simillima, Blum. bibdjr. p. 171.

*Very similar* Ivy. Shrub.

45 **H. aromatica** (D. C. l. c.) stem shrubby; leaves digitate; leaflets 5-7, elliptic-oblong, acuminated, for the most part obliquely rounded at the base, glabrous; panicles corymbose, lateral; flowers umbellate. *H. S.* Native of Java, on Mounts Salak and Gede, &c, where it is called *Panggang-pang*. Aralia aromatica, Blum. l. c. p. 871.

*Var. b.* leafless, longer, serrated. *H. S.* Native of Java, on Mounts Salak, where it is called *Kirengdang*. Blum. l. c.

*Aromatic* Ivy. Shrub.

46 **H. luteascens** (D. C. l. c.) stem shrubby; leaves digitate; leaflets 7-9, oblong-lanceolate, long-acuminated, nearly veinless, shining above; racemes crowded, terminal; flowers umbellate. *H. S.* Native of Java, in woods in the province of Bantam. Aralia luteascens, Blum. bibdjr. p. 872.

*Yellowish* Ivy. Shrub.

47 **H. dispensa** (D. C. prod. 4. p. 256.) stems shrubby, climbing; leaves digitate; leaflets 5-7, oblong, acuminated, rounded at the base, sharply serrated, glabrous; raceme terminal, scurfy; flowers umbellate; fruit 3-seeded. *H. S.* Native of Java, in the higher woods, on the mountains of Baran-grang and Tyrme. Aralia dispensa, Blum. l. c. p. 872. Perhaps a species of *Panax*.

*Two-seeded* Ivy. Shrub cl.

48 **H. gloroulata** (D. C. l. c.) stem arborescent, spinescent; leaves digitate; leaflets 5-7, rarely 3, oblong, acuminated, acu- tish at the base, serrulately toward the apex, smoothish; panicle terminal, very long; flowers glomerate; ovaries 2-seeded. *H. S.* Native of Java, on Mount Gede, where it is called *Panggang*. Aralia gloroulata, Blum. bibdjr. p. 872. Perhaps a species of *Panax*.

*Glomerate-flowered* Ivy. Tree.

49 **H. heterophylla** (Wall. cat. no. 4919.) stem shrubby; leaves digitately compound, with the divisions quinate or ter- nate; leaflets oval-oblong, acuminate, glabrous; umbellules disposed in racemes, many-flowered, with a woolly bract at the base of each peduncle; rachis woolly. *H. S.* Native of Penang. Fruit angular.

*Variable-leaved* Ivy. Tree or shrub.

§ 3. Leaves compound, pinnate.

50 **H. parachistica** (D. Don, prod. fl. nep. p. 188.) stems rooting, parasitical; leaves pinnate: with 5, elliptic, acute, quite entire, nearly sessile, coriaceous, glabrous leaflets, which are glaucous beneath; umbels glabrous, racemose. *H. G.* Native of Nipal, at Na-rain-Hetty. Aralia parachistica, Hamilt. mss.

*Parasitical* Ivy. Shrub climbing and rooting.

51 **H. glauca** (Wall. cat. no. 4921.) stem shrubby, much branched; leaves pinnate; leaflets 5, elliptic-lanceolate, acumi- nated, glaucous beneath, glabrous; umbellules terminal, soli- tary or twin, many-flowered. *H. G.* Native of Nipal, at Kamaon. Style simple.

*Glaucous-leaved* Ivy. Shrub.

52 **H. Jacki*a**; leaves pinnate: with many pairs of oppo- site, oblong-lanceolate, petiolate, quite entire, smooth leaflets, which are oblique at the base; rachis jointed; umbels com-

Cult. All the species of Ixy are of easy culture. The common ivy and its varieties only require to have slips of them planted where they are intended to remain; or to be grown in pots until they are the size required, and then finally planted out; the other hardy species should be treated in a similar manner. The greenleaved and stowe kinds will grow in almost any kind of soil, but the lighter the better; and cuttings of them are easily rooted under a hand-glass.

XII. PARATROPIA (παρατροπή, paratropo, a bending or crooking; the petioles are kneed and bent). D. C. prod. 4. p. 265.—Aralia, sect. 3. Paratropia, Blum. bijdr. p. 875.

Lin. syst. Pentändria, Monogynia. All as in Aralia or Hedera, but differs in the stigmas being sessile, at first approximate, and immersed in an epigynous disk.—Shrubs or trees. Leaves compound. Flowers panicled or racemose.

1 P. nodosa (D. C. prod. 4. p. 265.) stem arboreous; leaves impari-pinnate; with many pairs of leaflets; leaflets on short petioles, crenated, glabrous: lower ones roundish-ovate, the rest oblong; panicle terminal, very long. S. Native of Java, in woods on the mountains in the western provinces, where it is called Kicalgit. Aralia nodosa, Blum. l. c. Common petioles 5-6 feet long, bent, articulated when dried. Panicle 4-5 feet long. Flowers pentandrous.

Nodose-petiolated Paratropia. Tree.

2 P. pergamaceæ (D. C. prod. 4. p. 266.) stem shrubby, parasitcal; leaves digitate: leaflets 6-12, oval, acute, rounded at the base, in substance like parchment, glabrous; racemes crowded, terminal, scurfy; flowers subflabellate. S. Native of Java, on the higher declivities of Mount Gede. Aralia pergamaceæ, Blum. bijdr. p. 875.

Parchment-leaved Paratropia. Shrub.

3 P. rigida (D. C. l. c.) stem arboreous; leaves digitate: leaflets 6-15, oblong, acute, bluntish at the base, and acutish in the apex, in substance like parchment, glabrous; racemes crowded, terminal, divaricate, rather scurfy; flowers umbellate, ocreanous. S. Native of the western parts of Java, in woods on the mountains, where it is called Songo-Poana. Aralia rigida, Blum. l. c.

Var. ß; racemes incurved, densely clothed with scurf. S. Native of Java, in the province of Bantam, where it is called Tulak-Tangol. Blum. l. c.

Stiff Paratropia. Tree.

4 P. longifolia (D. C. l. c.) stem arboreous, scandent; leaves digitate: leaflets 9-11, rather large, oblong, acute, rounded at the base, glabrous; racemes crowded, densely clothed with tomentum: terminal, straight; flowers umbellate, with 7-9 stamens. S. Native of Java, in mountain woods, where it is called, along with many other Araliaceous plants, Ramo-gilig. Sciodaphyllum longifolium, Blum. bijdr. p. 876.

Long-leaved Paratropia. Shrub cl.

5 P. cantonensis (Hook. et Arn. in Beech. voy. pt. bot. 185.) stem arboreous; leaves on long petioles, digitate: leaflets 5-9, elliptic, acutish at the base, acuminate at the apex, rather coriaceous, glabrous; racemes terminal, furfuraceous; flowers in fascicles, decandrous; stigma sessile, 10-cleft. S. G. Native of China, about Canton. Aralia octophylla var. Cantoniensis, Lour. coch. p. 187. This species comes very near P. pergamaceæ.

Canton Paratropia. Tree. 10 feet.

Cult. Any light soil will suit the species of Paratropia; and cuttings of them will be easily rooted under a hand-glass in heat.

XIII. ARTHROPHYLLUM (from άρθρον, arthron, a joint, and φύλλον, phyllon, a leaf; in reference to the jointed petals). Blum. bijdr. p. 878. D. C. prod. 4. p. 266.


1 A. Java'sium (Blum. l. c.) leaves bipinnate: leaflets cuneate-obovate, bluntish at the apex, or the upper leaflets are rounded and coriaceous. S. Native of Java, in mountain woods.

Java Arthrophyllum. Shrub or tree.

2 A. diversifolium (Blum. l. c.) leaves impari-pinnate, terminal or bipinnate; leaflets oblong, some short acuminate, oblique at the base, membranous. S. Native of Java, in woods, on Mount Salak.

Diverse-leaved Arthrophyllum. Tree.

3 A. ellipticum (Blum. l. c.) leaves bipinnate: leaflets elliptic-oblong, acute, oblique at the base, coriaceous. S. Native of Java, in mountain woods.

Elliptic-leaffletted Arthrophyllum. Shrub or tree.

Cult. See Paratropia above for culture and propagation.


Tube of calyx adhering to the ovarium more or less, 4-lobed (f. 69. a. g.) or repandly toothed. Petals 4 (f. 69. e. i.), linear, elongated, inserted in the calyx, alternating with the calyceine lobes, involute usually valvate in aestivation: rarely wanting, but probably sometimes changed into stamina. Stamens inserted with the petals, and double their number (f. 69. b.); those alternating with the petals are fertile, and those opposite the petals are sterile and destitute of anthers (f. 69. g.); filaments all short. Fertile anthers inserted by the base, 2-celled, dehiscing in various ways. Ovarium adnate at the base, 2-celled: cells 1-seeded; ovula pendulous. Styles 2 (f. 69. l.), very rarely 3. Capsule adnate at the base to the permanent tube of the calyx, 2-celled, 2-valved; valves bifold at the apex. Seed pendulous, with a superior hyllum. Albumen corneous. Embryo straight, slender, with a superior radicle; and folioseus flat cotyledons, or having their margins rather involute.—Shrubs. Leaves alternate, bipinnate, petiolate, feather-nerved, entire or sinutately toothed. Flowers axillary, nearly sessile, in fascicles, usually bracteate, sometimes dioecious or polygamous.

Many of the genera of this order were formerly placed among the Berberidaceæ and Amurnaceæ, but were constituted a distinct order by R. Brown in 1818; but the place which it should hold in the natural system is still doubtful. According to R. Brown, it is intermediate between Bruniaceæ and Mårleæ *, (a genus which should have been placed in Alangiæ, vol. ii. p. 806. But according to Pet. Thouars, it comes nearest to Rhinodendron, and according to Juss. to Haloragidæ. But afterwards it was 3 e 2.
placed by R. Brown and Pet. Thouars near Araliaceae and Córnece. The order differs from Alangiéce in the fruit being capsular, not bacate; and from Bruniiéece in the parts of the flowers being quaternary, in the stamens being double the number of the petals, in the insertion and dehiscence of the anthers, and in the cells of the ovary being 1-seeded, &c.; it differs from Araliéce and Córnece in the fruit being capsular, in the number of the parts of the flower, and in the structure of the anthers; and from Auméntiéece in the flowers of the genera being complete; but the genus Fothergilées agrees with Auméntiéece in habit, and in the want of petals; but perhaps in this genus the outer series of the stamens represent the petals.


Lin. syst. Octádri'a, Monogónia. Tube of calyx adnate to the ovary: limb short, bluntly 6-8-toothed. Petals 6-8, linear, alternating with the teeth of the calyx. Stamens 3, adnate to the epigynous disk, and inserted at the top of the calyx; anthers long, linear. Ovary 2-celled, biovulate. Style short: stigma 4-toothed. Drupé oval, rather fleshy, umbilicate from the teeth of the calyx: containing a 2-celled nucleus. Seed compressed. Albumen fleshy. Embryo with a superior radicle and flat cotyledons.—A small Asiatic tree. Leaves alternate, exstipulate, petiolate, unequally cordate, acuminate, entire, glabrous, except the nerves on the under side. Flowers on axillary peduncles, somewhat coriaceous, whitish or yellowish.

1 M. Degenófólia (Roxb. l. c.) ½. G. Native of the East Indies, in Silhet and Nipau; and of China, near Canton, where it is called *Poutsau.* Stylidium Chinénu, Lour. l. c. Stylis Chinénsis, Poir. l. c. Leaves sometimes acutely bifid, or a little toothed.


Cult. This shrub is easily increased by cuttings in sand under a glass. The soil best adapted for it is a mixture of sand, loam, and peat.

Synopsis of the genera. 

 Tribe I.

**Hamamelis.** Petals 4 (f. 69, c.). Stamens 8, 4 fertile (f. 69, b.), and 4 sterile (f. 69, g.). Anthers dehiscing by a valve.

1 Hamamelis. Calyx 4-fold, furnished with 3-4 scales on the outside. Ovary ending in 2-3 styles at the apex (f. 69, l.). Capsule caro предоставимые, 2-целые (f. 69, c.).

2 Diocry'the. Calyx 4-fold. Styles 2. Fruit inclosed in the circumsised calyx, umbilicate at the apex, 2-horned, 2-seeded.


 Tribe II.

Fothergilées. Petals wanting. Stamens 24, all fertile. Anthers opening by a semicircular chink at the margin.


 Tribe I.

**Hamamelis.** (shrubs agreeing with the genus *Hamamelis* in important characters). D. C. prod. 4. p. 268. Petals 4. Stamens 8, 4 of which are sterile. Anthers dehiscing by a valve.

1 Hamamelis (from *Hamamélis*, a name under which Athenaeus speaks of a fruit resembling an apple; it comes from *ipam*, *amor*, like, and *pylos*, wellea, an apple-tree; but the present genus is not in any way analogous to the apple). Lin. gen. no. 169. Juss. gen. p. 238. Lam. ill. t. 88. f. 1. D. C. prod. 4. p. 268.—Trifolus, Mith. act. acad. nat. cur. 8. appendix.

Lin. syst. Tetrádródia, Digýnia. Calyx 4-lobed, adhering to the ovary at the base, furnished with 2-3 scales on the outside. Petals 4 (f. 69, a.), long, tongue-shaped, alternating with the teeth of the calyx (f. 69, c.). The 4 stamens alternating with the petals, fertile (f. 69, b.), with very short filaments: adnate 2-celled anthers; the cells opening by a vertical valve. The 4 sterile stamens (f. 69, g.) with very thick filaments and round anthers, one in front of each petal. Ovary free at the apex, ending in 2 (f. 69, l.), rarely in 3 styles. Capsule coriaceous, half free, 2-celled, 2-разрезной at the apex; valves bifid. Arils 2 in each capsule, coriaceous, 1-seeded, opening by 2 elastic valves above. Seed oblong, shining, with a superior hyolum; albumen fleshy. Embryo with a superior radicle and flat cotyledons.—Small American or Asiatic trees.

Leaves alternate, on short petioles, bipustulate, ovate or cut-uneated, feather-nerved, nearly entire. Flowers nearly sessile, disposed in clusters in the axes of the leaves, girded by a 3-leafed involucrem. Petals yellow.

1 H. Virginica (Lin. syst. nat. p. 335.) leaves obovate, acutely toothed, with a small cordate recess at the base. ½. H. Native of North America, from Canada to Florida, in stony and dry situations, but frequently near water. Mill. ill. t. 10. Duham. art. t. 114. Schkuhr. handb. t. 27. Lodd. bot. cab. 598. Guimp. abh. holzart. t. 75. Rafin. med. bot. t. 45.—Catesb. car. 3. t. 2. This singular shrub, which grows about 10 or 12 feet high, begins to show its yellow flowers in autumn, when all others have dropped their leaves, continues to flower all winter, and forms its fruit the spring following. The flowers are either polygyna, varying to dioecious, monocoeous, and androgyne; hence the names of *Hamamélis* dioica, monoeica, and androgyne; Wolt. car. 155. The Indians consider this tree as a valuable article in their Materia Medica. They apply the bark, which is sedative and diuretic, to painful tumours and external inflammations. A cataplasm of the inner rind is found to be very efficacious in removing painful inflammations of the eyes.

Tar. ½. paraffolia (Nutt. gen. amer. 1. p. 107.) leaves smaller, oblong-obovate, upper part undulated and greatly crenated: the under side pubescent, rather hairy: segments of the calyx oblong; stamens and perigynous filaments often nearly equal. ½. H. From the mountains of Pennsylvania.


2 H. Macrophyl'la (Pursh. fl. sept. amer. 1. p. 116.) leaves nearly orbicular, cordate, coarsely and bluntly toothed, secedious from dots beneath. ½. H. Native of North America, in the
western part of Georgia; and of North Carolina, on the Catabaw Mountains. The large leaves punctuated on their under side, with rough tuberules and other marks, give sufficient reason for considering it a distinct species.

**Large-leaved Witch-hazel.** Fl. May, Nov. Cirt. 1812. Shrub 10 to 12 feet.

3 H. PE'SECA (D. C. prod. 4. p. 268.) leaves oval, acumini,
ated, repandly toothed above, cuneated at the base, equal.  
*H.* Native of Persia, in the province of Lenkeran, where it was collected by Hansan. Adult leaves rather scabrous on the nerves and petioles; the rest glabrous. Flowers unknown. Fruit a little smaller than that of *H. Virginica*, but similar.

**Persian Witch-hazel.** Shrub 10 to 12 feet.

4 H. CHINESENIS (R. Br. descr. pl. chin. 1818. p. 4. with a figure,) leaves ovate, quite entire, unequal at the base, grey on both surfaces from stellate down.  
*H.* Native of China, near Nankin, and in the island of Cheusan.—Pl. amath. 32. t. 308. f. 2. Petals linear, 3-nerved, very much elongated. Anthers with deciduous valves; hence it is proposed by R. Br. to form it into a distinct section under the name of *Loropetalum*.  
Citr. the Witch-hazel. Shrub 6 to 10 feet.

**Cult.** The species of Witch-hazel are well adapted for shruberies; they will grow in any common soil, and are increased by layers or suckers.


**Lin. syst. Tetrandria, Digitina.** Tube of calyx oblong, hairy, adhering to the ovary; limb 4-lobed, circumcised after flowering. Petals 4, inserted in the upper part of the tube of the calyx, joined to the filaments at the base. Stamens 4, fertile, alternating with the petals; filaments broad at the base; anthers oblong, adnate, erect, dehiscing at the side; and 4 sterile smaller stamens alternating with the first named ones. Styles 2. Pericarp inclosed in the circumcised calyx, umbilicate at the apex, and 2-horned, inclosing 2 1-seeded coriaceous coccula, which open at the apex. Seed ovate, hanging from the top. Albumen fleshy. Embryo with a superior radicle: and flat cotyledons, having revolute edges.—A small shrub, with twiggy weak branches. Leaves alternate, on short petioles, oblong, feather-nerved, entire, furnished with 2 unequal broad foliaceous stipules at the base. Cormys terminal, somewhat fasciculate, 7-8-flowered.

1 D. DIFUL'TA (Jaum. exp. fam. 2. p. 318.)  

**Stipulate-leaved Dicoryphe.** Shrub.

**Cult.** A mixture of sand, loam, and peat will be a good soil for this plant; and young cuttings will strike root in sand under a hand-glass, in heat.

III. **TRICHOCLOUDUS** (from *thrix, thrice, thrix trichos, a hair, and *klados, klados, a branch; the branches are clothed with stellate hairs). Pers. ench. 2. p. 597. D. C. prod. 4. p. 269.—Dahilla, Thunb. diss. (1792) and in edit. greet. 1. p. 108. act. soc. hist. nat. hafn. 2. vol. 1. p. 133. t. 4. but not of Cav. 1791.

**Lin. syst. Dióeia, Menasdría.** Flowers dioecious. Scales paler, distinguished from those of capitulate flowers. Male flowers. Calyx unknown. Petal 1, convolute. Stamens 1, near the scale and the petal; anthers ovate, double celled from the connate filaments (Thunb.), valves dehiscent (Burch.). Female flowers. Calyx unknown. Petals wanting. Ovarium villous.

Style 1. Capsule ovate, 4-valved, 4-celled. Arillus (seed, Thunb.) ovate, glabrous, villous from stellate dots. Leaves opposite, petiolate, oval, acuminate, entire. Flowers in terminal heads, crowded on a common receptacle. The character is taken from the description of the tree by Thunberg.

1 T. CRASSUS (Pers. 1. c.)  
2 G. Native of the Cape of Good Hope, in the woods of Houtniqs. Dállia cristina, Thunb. Il. ec. and fl. cap. 1. The shrub has the resemblance of a species of *Cróton*.

**Hairy Trichocloudus.** Cirt. 1823. Shrub 4 to 8 feet.

**Cult.** A mixture of loam and sand is a good soil for this shrub; and young cuttings will root readily in sand under a hand-glass.

**Tribe II.**

**FOETHERGILLA** (this tribe only contains the genus *Foethergilla*). D. C. prod. 4. p. 269. Petals wanting. Stamens 24, all fertile; anthers dehiscing by a chink. This tribe is intermediate between *Hamamelideæ* and *Aneleacea* from habit.


**Lin. syst. Icosandra, Digitina.** Calyx campanulate, adhering to the ovary at the base, somewhat truncate, with 5-7 callosous subepend teeth. Petals wanting. Stamens about 25, inserted in the calyx, club-shaped, exserted; anthers terminal, of the form of a horse shoe, opening by a semi-circular chink at the margin. Ovarium 2-celled, 2-ovulate. Styles 2, filiform. Capsule adnate to the base of the calyx, 2-lobed, 2-celled; cells 2-valved at the apex, 1-seeded. Seed bony, pericarpous, with a superior hyllum.—A shrub, with alternate, obovate, feather-nerved, bitispulate leaves, clothed with soft starry down; and terminal ovate spikes of flowers, having a solitary bractea under each flower; those bracteas of the apex of the spike are trifid, and those at its apex are nearly entire. Flowers white, sweet-scented, sessile. Anthers yellow.

1 F. ALNIFOLIA (Lin. fil. suppl. 267.)  

**Var. a, oblastra (Sims, bot. mag. 1341. Mill. fig. t. 1.) leaves obovate, crenate at the top, when young clothed with fascicles of down beneath. F. major, Loddi. bot. cab. t. 1520. (f. 70.)

**Var. b, acuta (Sims, l. c.) leaves narrow, ovate, acute, nearly entire, white from beneath. T. Gardén, Jacq. icon. rar. t. 100.

**Var. ç, maior (Sims, bot. mag. t. 1342.) leaves ovate-oblong, somewhat cordate at the base, very blunt and serrated at the apex, sometimes with an acumen; when young tomentose beneath.

**Var. ç, serotina (Sims, l. c.) leaves oblong, acute, crenately toothed at the top, green beneath.**

**Alder-leaved Foethergilla.** Fl. April, May. Cirt. 1765. Shrub 3 to 6 feet.
CULT. All the varieties of this shrub are very handsome while in flower and leaf, and are therefore proper for shrubberies. A peat or vegetable soil answers them best; and they may either be increased by layers put down in spring or autumn, or by seed, which is annually received from America.

Order CXXVI. CORNEæ. This order contains plants agreeing with CORNEUS in important characters. D. C. prod. 4. p. 271. —Caprifoliaceæ Cörnæe, Kuth. nov. gen. amer. 3. p. 430. —Genera of Caprifoliææ, Juss.

Calyx having the tube adnate to the ovary; and the limb superior and 4-lobed (fig. 71 c). Petals 4, oblong, broad at the base, inserted in the upper part of the tube of the calyx, regular, valvate in restitution. Stamens 4, inserted with the petals, and alternating with them; anthers ovate-oblong, 2-celled. Style filiform; stigma simple. Drupe baccate, crowned by the vestiges of the calyx, containing a 2-celled nucleus. Seed pendulous, solitary in the cells. Albumen fleshy. Berry with a superior radicle, which is shorter than the two oblong cotyledons.—Trees and shrubs, rarely herbs. Leaves of all opposite, except in one species of the genus CÖRNUS, entire or toothed, feather-nerved. Flowers capitate, umbilicate or corymbose, naked or involucrated, rarely dioecious from abortion. Flesh or pulp of fruit edible.

This order agrees with Hamamelidææ, and Caprifoliææ, tribe Sambuceæ; but differs from the first in the restitution of the petals being truly valvate; in the stamens not being double the number of the petals; in the style being simple, not double; in the fruit being drupaceous, not capsular; and in the albumen being fleshy, not horny, &c. From Sambuceæ it differs in the corolla being polypetalous, not gamopetalous; in the parts of the flower being quaternary, not quinary; in the style being exserted, not wanting; in the stigmas being 2, not 3, and in the fruit being drupaceous, not baccate, &c. Cörnæe differs from Loranthææ in the stamens alternating with the petals, not opposite them.

All the genera of this order have more or less anstringent bark; that of CÖRNUS flórida is used in North America in intermittent fevers, as is also that of CÖRNUS sericeæ, which, according to Barton, is scarcely inferior to quinquina.

Synopsis of the genera.

1 CÖRNUS. Limb of calyx 4-toothed (fig. 71 c). Drupe baccate, marked by the vestiges of the calyx, containing a 2-celled, rarely 3-celled nucleus.

2 Votomi'ta. Tube of calyx turbinate; limb 4-toothed. Anthers approximating into a tube, and terminated by a thin membrane. Stigmas 4, oblong. Drupe crowned by the calyx, 1-celled.

3 Mastixia. Limb of calyx 4-5-toothed. Stamens 4-5; anthers didymous. Style short, girdled by a disk; stigma obtuse. Drupe umbilicate, containing a 1-seeded nucleus.


I. CÖRNUS (from corum, a horn: the wood being thought to be as hard and as durable as horn. Its value as a material for warlike instruments has been celebrated by Virgil.—Loca helly corum). Tourn. inst. 641. t. 410. Lin. gen. no. 149. Gaertn. fruct. t. 26. D. C. prod. 4. p. 271.


§ 1. Nutdiffére (from nudus, naked, and flos, a flower; in allusion to the flowers being exinnovulate). D. C. prod. 4. p. 271. Flowers corymbose or paniced, exinnovulate.

- Leaves alternate.


Alternate-leaved Dogwood. Fl. May, July. Ch. 1760. Tree 15 to 20 feet.

* Leaves opposite.

2 C. panículata (Linn. hor. no. 10. t. 5.) branches erect; leaves ovate, acuminate, glabrous, hoary beneath; corymbs thyroid; ovarium silky. h. H. Native of North America, from Canada to Carolina, rare, in swamps and near rivulets among other bushes. Schmidt, arb. 2. t. 68. C. racemosæ, Lam. dict. 2. p. 116. C. fëminea, Mill. dict. no. 4. C. citrifólia, Hort. par. Branches pale-purplish. Berries roundish, depressed, watery, white, 3 lines in diameter. The dots on the under side of the leaves, which are only seen through a lens, bear bicuspitate short adpressed hairs. Tube of calyx pubescent.

ar. β, albida (Ehrh. beitr. 4. p. 16.) leaves elliptic- lanceolate.

Var. γ, radiata (Pursh. fl. amer. sept. 1. p. 109.) racemes sterile, foliiforous.


3 C. Tolucæææ (H. B. et Kuth. nov. gen. amer. 3. p. 430.) branches dichotomous, spreading; leaves ovate-oblong, narrowly acuminate, puberulous on both surfaces, paler beneath; cymes lateral, naked. h. H. Native of Mexico, on the higher plains about the city of Tołucca. Very like C. panículata. Compare Cham. et Schlécht, in Linnéa. 5. p. 171. in which place there is a species described which was found about Jalapa, and which is probably referrible to the present plant.

Toluccæææ Dogwood. Tree or shrub.

4 C. oélongæææ (Wall. in Roxb. fl. ind. 1. p. 432.) leaves oblong, acuminate, acute at the base, glaucous and rather scabrous beneath, with many excavated glands along the axils of the ribs and nerves; corymbs spreading, paniced. h. H. Native of Nipaul, about Narainbetty, Katmandu, and the valley of Dhoon. C. paniculata, Hamilt. ex D. Don, prod. fl. nep. p. 140. Young shoots clothed with short adpressed hair. Leaves 4-6 inches
long, and 1 to 1½ inch broad; petioles about an inch long. Flowers white or pale-purplish, fragrant. Calyxelyches with adpressed silky hairs, as well as the pedicels and petals. Drupe ovate-oblong. Ovarium 3-celled.

_lobular-leaved Dogwood_. Clt. 1818. Tree 10 to 15 feet.

5 _C. stricta_ (Lam. dict. 3. p. 116.) branches straight, fastigiate; leaves ovate, acuminate, glabrous, green on both surfaces, when young hardly pubescent beneath; corymbes convex, somewhat panicked. H. Native of North America, from Carolina to Canada, on the banks of rivers, frequent; also of Mexico, between Tampico and Real del Monte. Lher. corr. no. 9. t. 4. Schmidt, arb. 2. t. 67. C. fastigiata, Michx. fl. bor. amer. 1. p. 92. C. sanguinea, Walt. but not of Lin. C. cyanocarpus, Gmel. syst. veg. 1. p. 257. C. Canadensis, Hort. par. C. carúlea, Meerb. Icon. 3. but not of Lam. Branches reddish-brown. Anthers blue. Berries globose, soft, blue on the outside, but white inside.

Var. _β._ variegata; leaves variegated with white or yellow.


6 _C. sanguinea_ (Lin. spec. p. 171.) branches straight; leaves ovate, acute, smooth and green on both surfaces; corymbes glabrous. H. Native of Europe and the north of Africa, in hedges and thickets, especially on a chalk and limestone soil, common; plentiful in Britain in like situations. It is also said to grow in North America near the Lakes of Canada and New York, but has probably been introduced there. Smith, engl. bot. t. 249. Fl. dan. 431.—Duham. arb. 1. t. 75.—C. femina, Raill, syn. 460. Ger. emac. 1467. with a figure. Virga sanguinea, var. calva, vol. 1. p. 236 with a figure. Cam. epist. 159. with a figure. Branches of a dark-red when fully grown. Leaves 2½ inches long. Flowers greenish-white, unpleasantly scented; petals revolute at the sides. Fruit dark-purple, very bitter. Matthioli records that an oil is obtained from the berries by pressure, after they have been first boiled, which is used for lamp in the country near Trent. The shrub, after a smothered combustion, affords a charcoal, esteemed the best for entering into the composition of gunpowder. It has a variety of names in different parts of the kingdom, as _femina cornel_, _dogberry-tree_, _hounds-tree_, _pickweed_, from its use in making skewers, _gaten_ or _gaten-tree_, _gater_ or _gater-tree_. The wood was formerly made use of for cart timber and rustic instruments, &c. Mr. Miller informs us, that in his time the fruit was often brought to the markets, and sold for those of _buckthorn_.

_Bloody-branch Dogwood_ or _Wild Cornelian._ Fl. June, Britain. Shrub 4 to 5 feet.

7 _C. Pu'sinia_; branches straight; leaves ovate, green on both surfaces, and pubescent; corymb spreading. H. Native of North America, near the lakes of Canada and New York. C. sanguinea, Pursh, fl. amer. sept. 1. p. 109. Schmidt, arb. 2. t. 66. Flowers with yellowanthers. Berries dark-brown. This differs from the _C. sanguinea_ of Europe in the leaves being pubescent, and in stature.

_Pursh's Dogwood_ or _Cornel_. Fl. June, July. Sh. 8 to 12 ft.

8 _C. excélsa_ (H. B. et Kunth, nov. gen. amer. 3. p. 430.) branches spreading; branchlets pubescent; leaves ovate, acuminate, pubescent and paler beneath, and with minute scattered pili above; cymes naked, spreading. H. Native about the city of Mexico. Allied to _C. sanguinea_.

_Tall Dogwood_. Tree.

9 _C. x'iba_ (Lin. marr. p. 40.) branches recurved; branchlets glabrous; leaves ovate, acute, pubescent, hoary beneath; corymbes depressed. H. Native of Siberia, at the rivers Oul's and Amur, to the north of Kamtschatka, &c. &c. Native of North America, from Virginia to Canada, on the banks of rivers and lakes; and of North California. Pall. fl. ross. 1. t. 34. C. stolonifera, Michx. fl. bor. amer. 1. p. 109. C. sibírica, Loddi. C. Tatárica, Mill. fig. 104.—Amm. ruth. t. 32. Branches of a fine red colour. Berries white or bluish-white.

Var. _β._ _circinata_; leaves larger, more hairy beneath. H. Native throughout Canada, and from Lake Huron to north lat. 69°, Newfoundland, and the north-west coast of America. C. circinata, Cham. et Schlecht. in Linn. 3. p. 139. The berries are lead-coloured according to Dr. Richardson, who further says, they are named by the Cree _wasquaumeena_, because the bears fatten upon them; and _acucluan-pemcinnackie_, and _meckinan_ (red stick berry), and that pigeons are fond of them.


11 _C. circináta_ (L. Her. corn. p. 7. no. 8. t. 3.) branches warty; leaves broadly oval, acuminate, clothed with hoary tomentum beneath; corymb spreading, hoary. H. Native of North America, from Canada to Virginia, on the banks of rivers, and probably of California, ex Cham. and Schlecht. in Linn. 3. p. 159. Schmidt, arb. 2. t. 69. C. tumécula, Michx. fl. bor. amer. 1. p. 91. C. rugósa, Lam. dict. 2. p. 115. C. Virginiána, Hort. par. Branches slightly tinged with red. Leaves broad, waved on their edges. Flowers white as in most of the species. Berries globose, at first blue, but at length becoming white.


12 _C. macrophýlla_ (Wall. in Roxb. fl. ind. 1. p. 433.) branches smooth; leaves broad-ovate, acuminate, rounded at the base, smooth, glaucous and soft beneath, with the axils slightly glandular; corymbes umbellate; flowers racemose along the branches of the corymb, and secund. H. Native of Nipal, near Saharanpore and Sirinagar, and at Kamaon. Leaves with adpressed bristles, 6 inches long, and 4 inches broad, pale beneath; the bristles fixed by the centre, and therefore bicispulate, but are only to be seen through a lens. Ovarium hairy. Berries round, smooth, about the size of a grain of black pepper.

_Long-leaved Dogwood_. Shrub.

§ 2. _Involutáceae_ (from _involvere_, an involucrum; the heads of flowers are surrounded by an involucreum). D. C. prod. 4. p. 275. Flowers disposed in heads (t. 71. b.) or umbels, surrounded by coloured involucreum, which are usually composed of 4 leaves (t. 71. a.).

*Trees, with white capitulate flowers.

13 _C. capitáta_ (Wall. in Roxb. fl. ind. 1. p. 434.) branches
spreading, smooth; leaves lanceolate, acuminate at both ends, on short petioles, rather rough from small adpressed down; flowers sessile, densely aggregate, forming a round head, girded by a 4-leaved scabrous involucrem. \( \text{\textit{H}} \). Native of Nipaan, in Gosangthan, where the tree is called \textit{eungrag}; and about Scarampore, where it is called \textit{Bhumoro}.; and between Satluy and Jumna. D. Don, prod. fl. nep. 141. Leaves coriaceous, 2 inches long, glossy and pale beneath; with sometimes pink-coloured nerves, having each a minute gland in their axils. Heads of flowers about the size of a moderate-sized cherry, supported by a club-shaped peduncle, which widens at the upper end into a convex ligneous receptacle for the reception of the flowers. Involucre yellow, of 4 obovate leaves.

\textit{Capitate-flowered Dogwood.} Tree 10 to 15 feet.

14 C. \textit{disciflora} (Moc. et Sesse, fl. mex. icon. med. D. C. prod. 4. p. 273.) branches smooth; leaves lanceolate, acuminate at both ends, on short petioles; flowers nearly sessile, disposed in capitate umbels; leaves of involucrum joined together into a roundish 4-lobed disk. \( \text{\textit{H}} \). Native of Mexico, near Jalapa, where it was collected by Berlandier, Deppe, and Schiede. C. grándis, Chann. et Schlecht. in Linnaea. 5. p. 171. Flowers white, many sterile. Fruit ovate. Perhaps C. \textit{polygama}, Rafin. fl. ind. p. 78 ?

\textit{Disk-flowered Dogwood.} Tree.


\textit{Japan Dogwood.} Shrub 5 to 6 feet.

** Trees, with yellow umbellate flowers.

16 C. \textit{ma's} (Lin. spec. 171.) branches smoothish; leaves oval, acuminate, rather pubescent on both surfaces; flowers rising before the leaves; umbels about equal in length to the 4-leaved involucrum; fruit elliptic. \( \text{\textit{H}} \). Native throughout Europe, Britain excepted, and in the north of Asia, in hedges, and among bushes; as in France, Russia, Germany, Switzerland, Austria, Carniols, Piedmont, &c. Blackw. t. 121. Plenex. icon. t. 94. C. mascula, L'Her. corn. no. 4. Guimpp. abb. t. 2. Hayne, term. bot. t. 55. Fl. græc. t. 151. Schmidt, arb. 2. t. 63. Lomi. fl. t. 74. f. 1. Klap. cent. t. 1. 18. Flowers yellow. Fruit elliptic, of a high shining scarlet colour, the size and form of a small olive or acorn, very stumpy in its immature state. The Cornelian cherry is very common in plantations of shrubs. If the season be mild, the flowers will come out in the beginning of February; and though there be no great beauty in them, yet they are produced in plenty at a season when few other flowers appear. Formerly it was cultivated for the fruit, which was used to make tarts, and a rob de cornis was kept in the shops. The fruit is gratefully acid, and is called sorbet by the Turks. Cornel, says Evelyn, grows with us of a good bulk and stature, and is exceedingly commended for its durableness in wheel-work, piles, and wedges, in which it lasts like the hardest iron.

\textit{Corylus} \( \beta \); fruit yellow or yellowish. Duhum. arb. 1. p. 182. This variety is very found but very rare in the gardens.

\textit{Var. glabra}; leaves edged with white or yellow.


17 C. \textit{florida} (Lin. spec. 1661.) branches shining; leaves ovate, acuminate, pale beneath, beset with adpressed pili on both surfaces; flowers umbellate, rising after the leaves; leaves of involucrum large, roundish, retuse or nearly obcordate; drupes ovate. \( \text{\textit{H}} \). Native of North America, from Carolina to Canada, in woods, common; and on the banks of the Columbia near its confluence with the sea. L'Hére. corn. no. 3. Curt. bot. mag. t. 536. Catesb. car. t. 27. Bigel. med. bot. 2. t. 28. Guimpp. abb. holz. t. 19. Rafin. med. bot. t. 28. Schmidt, arb. 2. t. 52. Wang. beyr. 1. t. 17. f. 41. This is a beautiful small tree. Leaves of involucrum white. Flowers greenish-yellow. Berries scarlet, about half the size of those of \textit{C. mäs-cula}, ripe in August. The wood is extremely hard, and of a very fine texture. The bark is extremely bitter, and is used in North America for the cure of remittent and intermittent fevers; and is considered not inferior to Peruvian bark. The young branches stripped of their bark, and rubbed with their ends against the teeth, render them extremely white. (Baron. 1. p. 51.) From the bark of the more fibrous roots the Indians obtain a good scarlet colour.

\textit{Flowering Dogwood.} Fl. April, May. Clt. 1731. Tree 20 to 30 feet.

*** Herbaceous plants, with subterranseous creeping roots. Stems simple, herbaceous. Flowers white, in umbels.

18 C. \textit{canadensis} (Lin. spec. 172.) stems simple, herbaceous; upper leaves in whorles, ovate, acuminate, veiny, on short petioles; flowers umbellate, much shorter than the leaves of the involucrum, which are ovate, and acuminate; drupes globose. \( \text{\textit{H}} \). Native of North America, on the high mountains, in boggy ground (from New England to Carolina; also of Newfoundland, and the island of Unalaska; throughout Canada nearly to the Arctic coast, everywhere where as far as pine woods extend, &c.) L'Her. corn. no. 2. t. 1. Curt. bot. mag. 589. Begel. fl. bot. ed. 1. p. 37. Cham. and Schlecht. in Linnaea. 3. p. 159. Kern. t. 636. ex Roem. et Schultes, syst. 3. p. 319. Flowers purplish-white; involucrum white. Berries red, ripe in July, Habit of \textit{Paris quadrifolia}.

\textit{Canadian Dogwood.} Fl. May, June. Clt. 1774. Pl. 1/2 ft. 19 C. \textit{Cercépia} (Lin. spec. 172.) stem herbaceous; umbel between two branches, stalked, surrounded by 4 unequal white involucral leaves, tinged with red; leaves ovate, nearly a deal from the base; drupe globose. \( \text{\textit{H}} \). Native of Europe and the north of Asia, Camischakta, Aleutian Islands, Greenland, Lapland, Canada, Newfoundland, and Labrador, in moist alpine pastures. In Britain in like situations; on the Cheviot hills of Northumberland, abundantly. In the highlands of Scotland, frequent in boggy spots about rivulets. In the Hole of Horcum, near Scarborough. Lin. fl. lapp. ed. 2. p. 28. t. 3. f. 3. Svensk. bot. t. 201. Penn. tour. scott. p. 39. Smith, enj. bot. t. 310.—Oeder, fl. dan. t. 5. Strum. deutscl. fl. with a figure. C. herbacea, Huds. angl. 71.—Dill. clth. 108. t. 91.—Bail. syn. 261. Park. theatré. 1461. f. 1. The involucral leaves finally turn green. Flowers dark purple. The berries are red and sweetish, containing a 2-celled nucleus, having the disseminum between the cells furnished with a large hole; they are supposed by the Highlanders to create an appetite, and hence the Gaelie name, \textit{Liu-a-echras}, plant of glutony.\( \text{\textit{Var. \beta}} \); nearly twice the size of the species. \( \text{\textit{H}} \). Native of North America, at Fort Vancouver, on the Columbia.
Swedish Dogwood or Dwarf-cornel. Fl. June, July. Britain. Pl. ½ to ½ foot.

† Species not sufficiently known.

29 C. ferulae (Jacq. ex Steud. nom. 227.) or C. ferulifolia, Nocca, syn. pl. 38, but is undescribed. Compare Róem. et Schultes, syst. 3. p. 323.

Fenssel-bark Dogwood. Shrub.

21 C. latifolia (Bray. in Steud. nom. phan. 227.) this species is undescribed as far as we know.

Broad-leaved Dogwood. Shrub.


Polygamous Dogwood. Shrub. 15 feet.

Cult. All the woody species are desirable for shrubberies; and many of the kinds will grow under the drip of trees, which renders them valuable for thickening strips of plantations which have become naked below. They are easily increased by cuttings, layering, or by suckers. The C. Suècica and C. Canadensis should be grown in a border of peat, in a rather shady situation; they are to be increased by dividing when the plants have run considerably at the roots; or they may be planted in pots filled with peat earth, and cultivated as alpines.

II. VOTOMITA (Votomita is the name of the tree in Guiana). Aubl. guian. 1. p. 90. t. 35. D. C. prod. 4. p. 275.—Glossosma, Schrèb. gen. 1728.—Guillemina, Neckl. elem. no. 813, but not of Knuth.

Lin. syst. Pentáandra, Monogynia. Tube of calyx turbinate, adnate to the ovary; limb 4-toothed. Petals 4, oblong, acuminate, spreadingly reflexed. Stamens 4, with very short filaments; anthers oblong, approximate into a tube, terminated by a thin membrane. Style filiform, perforating the tube of the anthers; stigmas 4, oblong. Drupe crowned by the calyx, 1-celled. Seed one striated. — A glabrous shrub, having the branches somewhat quadrangular at the apex. Leaves opposite, sessile, ovate, acuminate, stiff, quite entire, furnished within the base of the petioles with 2 deciduous stipulas. Flowers corymbose; coryms axillary, few-flowered. Corolla white. This genus is not sufficiently known, but is allied to Côrnus from the description.


Guiana Votomita. Shrub 5 to 6 feet.

Cult. A mixture of loam, peat, and sand will suit this shrub; and cuttings will root readily in sand-under-a-hand-glass in heat.


Lin. syst. Tetra-Pentáandra, Monogynia. Tube of calyx adnate to the ovary; limb superior, 4-5-toothed. Petals 4-5, ovate, broadest at the base. Stamens 4-5, opposite the calyx teeth. Anthers didymous, bursting inwards. Ovary containing a pendulous ovulum. Style short, girded by a disk; stigma obtuse. Drupe baccate, umbilicate, containing a 1-seeded nut. Embryo inverted in the albumen.—Tall trees, natives of Java, with oblong acuminate leaves, and corymbose flowers.

1 M. fentaëandra (Blum. l. c.) leaves alternate, oblong, quite glabrous; coryms terminal; flowers pentandrous. ÷. S. Native of Java, on the more elevated woods on Mountains Salak and Burangrang, where it is called by the natives Huru-Litin.

Pentandra Mia. Fl. July, Dec. Tree 30 to 50 feet. 2 M. trichóforma (Blum. l. c.) leaves opposite, oblong, puberulous on the under side, as well as the petioles, and the coryms which are terminal and trichotomous; flowers with a 4-toothed calyx, 4 petals, and 4 stamens. ÷. S. Native of Java, in woods on the mountains along with the preceding species, where it is called Padaglar barriet or Tenjob.

Tetra-ovariata-corymbia Mia. Tree 50 to 60 feet.

Cult. For culture and propagation see Votomita above.


Lin. syst. Tetraándria, Monogynia. Tube of calyx adnate to the ovary; limb superior, 4-toothed, permanent. Petals 4, sometimes joined at the base. Stamens 4, free, alternating with the petals; filaments linear, rather membranous; anthers bursting lengthwise inwardly, adnate, 2-celled. Ovary incompletely 2-celled, many-seeded. Style filiform; stigma truncate, simple. Drupe somewhat baccate, containing a 1-seeded nucleus. Albumen rather horny. Embryo inverted.—Trees and shrubs, native of Java, with opposite exstipulate leaves; and axillary terminal racemes of whitish, very sweet-scented flowers, furnished with 3 bracteoles under each.

1 P. liço'formium (Blum. l. c.) stem arborescent; leaves oblong, coarsely and deeply serrated at the top. ÷. S. Native of Java, on the tops of the higher mountains.

Holly-leaved Polyosma. Tree 20 to 30 feet.

2 P. serrulatórum (Blum. l. c.) stem shrubby; leaves oblong, slightly serrated. ÷. S. Native of Java, in woods on Mounts Gede and Pangurango.

Serrulate-leaved Polyosma. Shrub 5 to 6 feet.

3 P. integrófíllum (Blum. l. c.) stem arborescent; leaves oblong, quite entire. ÷. S. Native of Java, in the higher woods on Mount Barrangrang.

Entire-leaved Polyosma. Tree 60 feet.

Cult. See Votomita above for culture and propagation.


Flowers hermaphrodite, or of different sexes (f. 73. a. d.). Tube of calyx girded at the base by a calyculous, which is adnate to the ovary; limb short, entire, or lobed. Petals 4-8 (f. 73. c.), sometimes distinct from each other, sometimes cerning more or less together, valvate in activation. Stamens equal in number to the petals, and opposite them; filaments adnate to the corolla, more or less, or wanting; anthers oscillatory, or erect on the tops of the filaments; or when the filaments are deficient or wanting, they are adnate to the lobes of the corolla. Ovary ovate or turbinate, adnate to the calyx. Style filiform or wanting; stigma capitate. Berry 1-celled (f. 73. a. f.), 1-seeded (f. 73. c.), crowned or umbilicate by the calyx (f. 73. b.). Segments membranous, involving the seed. Albumen fleshy. Embryo with a superior radicle, which is thickened or truncate at the apex.—The shrubs contained in this order are almost all parasitical, that is, growing on and deriving their nourishment from other trees: very few of them grow in earth. Leaves opposite, rarely alternate or wanting, coriaceous or more or less fleshy, and always entire. The disposition of the flowers and
the habit of the plants are very variable.—Very few of the plants belonging to this order are cultivable; they being nearly all genuine parasites, fixed in the bark and wood of trees, on which they grow, and deriving from their juices the whole of their nutriment. The Viscums have little or no beauty, but the other parasitical genera are among the most lovely of plants, hanging in clusters of rich scarlet flowers from the trunks and branches of trees in the tropics, which they often clothe with a beauty not their own. The Mistletoe of the Druids is supposed to have been the Loranthus Europæus, the common Viscum never having been seen upon the oak, while the Loranthus Europæus inhabits no other tree. If this be correct, the latter must have once existed in this country, although now extinct. It has been suggested, that all vestiges of their religion were extinguished with the Druids, which will perhaps account for the Loranthus having disappeared wherever that religion formerly held its sway.

This order is very nearly allied to CephaloÆaceæ, from which it is easily distinguished by the anthers being opposite the lobes of the corolla. A connection is established between this order and Araliaceæ by means of Aiswia. Mr. Brown suggests their relation to Proteaceæ. The germination of Viscum is exceedingly remarkable; it has afforded a subject of some curious experiments upon the vital energies of vegetables. See Du Trochet sur la Motilité, p. 114.

**Synopsis of the genera.**

**Tribe I. Parasitical shrubs.**

1. **Viscum.** Flowers dioecious (f. 73. b. c.), or monoecious. Margin of calyx obsolete, but in the male flowers wanting. Petals usually 4 (f. 73. c.), connected at the base in the male flowers, but free in the female. Stamens 4. Stigma obtuse, sessile.

2. **Arceuthium.** Flowers dioecious. Male flowers sessile, without a calyx, but with a monopetalous 2-3-4-parted corolla, and the same number of sessile 1-celled anthers, and a gland in place of an ovary. Female flowers pedicellate, with an ovate, fleshy, bidentate calyx, adnate to the ovary, without any corolla, stamens, or style, but with a small obscurely-lobed stigma. Berry ovate or globose. 3. **Misolea.** Flowers dioecious: male ones unknown; female ones having a small truncate limb. Capsule oblong, trigonal.

4. **Loranthus.** Flowers dioecious or hermaphrodite. Margin of calyx entire. Petals 5-6, linear, reflexed. Stamens inserted into the middle of the petals; filaments very short. Berry globose, umbilicate by the calyx, immersed in the rachis.

5. **Symphoricarpus.** Flowers hermaphrodite, nearly all hexameric. Margin of calyx truncate. Petals linear, at length revolute. Anthers ovate, fixed near the base or beneath the middle of the petals; filaments very short. Berry ovate-elliptic.

6. **Pittacanthus.** Flowers hermaphrodite, for the most part hexameric. Margin of calyx entire, obliquely 5-6-toothed or repand. Petals linear-spatulate, erect, spreading, for the most part free to the middle. Filaments filiform from the middle of the petals; anthers fixed by the base or back. Berry ovate.

7. **Tristerix.** Flowers hermaphrodite; each furnished with 3 bracteas. Margin of calyx entire. Petals linear-spatulate, or linear, bearing the stamens in the middle; anthers fixed by the back, incumbent. Berry ovate or elliptic.

8. **Dendrophthoe.** Flowers hermaphrodite; each furnished with 1 bractea. Margin of calyx entire or toothed. Petals linear-spatulate, bearing the stamens in the middle; anthers fixed by the base. Berry ovate or elliptic.

9. **Pithirus.** Flowers hermaphrodite, perhaps always 4-petalled; each furnished with 3 or more bracteas. Anthers fixed by the back, ovate. Berry ovate.

10. **Scurcula.** Flowers hermaphrodite, tubular, divided into 4-5 short lobes, usually gibbous at the base, and bursting by a longitudinal fissure as in Lobelia. Filaments 4-5, adhering a long way to the corolla; anthers fixed by the base, erect. Style filiform; stigma capitulate.

11. **Elephantum.** Flowers hermaphrodite; petals 4-6-8, joined to the middle, forming a regular 4-6-8-cleft limb. Filaments adnate to the petals at the base, but free at the apex; anthers fixed by the base, erect. Style filiform. Stigma capitulate.

12. **Notandria.** Flowers hermaphrodite. Petals 5-6-8, but usually 6, sometimes almost free, and sometimes joined at the base. Filaments adnate to the petals at the base, but free at the apex; anthers fixed by the back, versatile or incumbent. Bracteas concave, 1 under each ovary, but often wanting.

13. **Loxanta.** Flowers hermaphrodite. Tube of corolla elongated, kn ked at the base, but somewhat clavate and oblique at the apex, and 6-lobed; the lobes somewhat spirally twisted. Filaments stiff and curved at the apex, not attenuated but rather dilated, and the anthers are fixed by the back. Style filiform. Stigma clavate.

**Tribe II. Terrestrial shrubs.**

14. **Scholppia.** Flowers hermaphrodite. Margin of calyx entire. Limb of corolla 5-cleft, rarely 4-6-cleft. Filaments adnate to the tube; anthers ovate-roundish. Drupe containing a 3-celled, 3-seeded nucleus.


**Tribe I. Parasitical shrubs.**

1. **Viscum** (viscus, birdlime, on account of the sticky nature of the berries; called gui, in French; misel in German; visco in Italian; and mistletoe in English). Tourn. inst. p. 609. t. fruct. 1. p. 151. t. 27. Lam. ill. t. 807. D. C. prod. 3. p. 277. 386. Lin. gen. no. 1103. D. C. coll. mem. 6. no. 1. Girter. 

**Lin. syst.** Monocotia or Dioecia, Tetrándria. Flowers monoecious or dioecious. Calyx a slight border in the male flowers, but rather a more evident border in the female flowers. Corolla in the male flowers gamopetalous, in 4 deep, ovate, acute equal divisions; in the female flower of 4 ovate, equal, deciduous petals, which are dilated at the base. Anthers in the female flowers none, but in the male flower there are 4 compressed, sessile ones, one on the base of each corolline segment, all over pitted or cellular. Ovary in the female flower inferior, ovate, adnate to the calyx, and crowned by its border. Stigma sessile, obtuse, undivided. Berry globular, smooth, juicy, viscid, of
Plants, leaves, branchlets, flowers, native.

**FIG.**

Native branches, involucels, leaves, fascicles, peduncles, etc.

**§ 1.** *Plants with true leaves.* *Flowers in fascicles or umbels.*

1 V. *album* (Lin. spec. 1451.) Stem much branched, forked; with sessile, intermediate heads, of about 5 flowers; branches terete; leaves obovate-lanceolate, obtuse, nerveless. \( n \), P. H. Native of Europe, parasitical on trees, especially on the apple-tree and hawthorn; but it is said also to have been found growing on the lime-tree, oak, American locust-tree, elm, fir, pear-tree, service, almon, white willow, walnut, &c. V. *album*, Engl. bot. t. 1470. Mill. fig. 87. Woodly, suppl. t. 270.—Duham. arb. 2. t. 104. Rich. ann. mus. 12. t. 27.—Fuchs. hist. 329. t. 1817. Cam. epít. 555. with a figure. V. *album* of Thumb and Walt. are distinct from this. Root hard, incorpo rated deep with the wood of the tree on which it grows, without any radicles, as in all the other species of this genus, as well as of *Loranthus* and the allied genera. Leaves permanent, stiff, with parallel ribs. Flowers yellowish. Berries white, pellucid, the size of a currant, sweet, very glutinous internally, serving to make the best bird-lime, when boiled with a small portion of vegetable oil. *Loranthus Europæus* seems to be the original and most common mistletoe, *viscum* of the Greeks, which grows usually on some kind of fir-tree. But our *V. album* is sometimes found in Greece, though rarely, growing on the oak; and this has been preferred from the most remote antiquity. Hence, when the superstitions of the East travelled westward, our Druids adopted a notion of the mistletoe of the oak being more holy or efficacious in conjurations or medicine, than what any other tree afforded, the *Loranthus* or ordinary mistletoe not being known here. This superstition actually remains, and a plant of *Viscum* from an oak is preferred by those who rely on virtues, which perhaps never existed in any mistletoe whatever. The Druids sent round their attendant youths with branches of mistletoe to announce the entrance of the new year; and something like the same custom is still continued in France. In England branches of it are hung up in most houses at Christmas, along with other evergreens. The berries are devoured by several birds of the thrush kind, and especially by the mistletoe thrush. The common mistletoe is not difficult to propagate by sticking the berries on thorn or apple trees, after a little of the outer bark has been cut off, and tying a shred of mat over them, to protect them from the birds.


2 V. *stellatum* (Hamilt. in D. Don, prod. fl. nep. 142.) much branched; branches whorled, terete; leaves obovate, obtuse, attenuated at the base, 3-nerved beneath; flowers terminal, sessile, 2-5-together in a cluster. \( n \), P. H. Native of Upper Nipaul, at Suambo, parasitical on trees. Habit of *V. album*. Nerves of leaves acutely prominent on the upper surface, but line-formed on the under surface. The branches are more likely dichotomous or trichotomous than verticillate.

**Starry Mistletoe.** Shrub parasitical.

3 V. *orientale* (Willd. spec. 4. p. 737.) branches terete; leaves oblong, obtuse, attenuated at the base, 3-nerved; peduncles axillary, usually 3-flowered. \( n \), P. S. Native of the East Indies (ex Wall.), and of Java, on the mountains (ex Blum. bijdr. 666.), and of Palestine upon olive trees, ex Sieb. pl. exotic. pal. Leaves 15-18 lines long, but in the Palestine specimens 20-25 lines long. Berries purple, ex Wall. Perhaps the Indian plant is the same as the *Easte*. Mistletoe. Shrub parasitical.

4 V. *Heyneanum* (D. C. prod. 4. p. 278.) branches terete; branchlets rather compressed; leaves ovate, acute at both ends, quintuple-nerved; peduncles axillary, aggregate, 3-flowered. \( n \), P. S. Native of the East Indies, where it was collected by Heyne. V. orientale, Heyne, herb. ex Wall, and probably of Wild. The form of the leaves is truly different from the Palestine form of *V. orientale*, but more of the figure of those of *V. monoicum*.

**Heyne’s Mistletoe.** Shrub parasitical.

5 V. *moisicus* (Roeh. bort. beng. p. 105.) branches terete, jointed; branchlets striated; leaves elliptic-oblong, acuminate at both ends, 5-nerved; fascicles of flowers axillary, aggregate, sessile, usually with only 3 flowers in each cluster. \( n \), P. S. Native of the East Indies, on the Pundu mountains. Leaves 24-27 lines long, and 9-10 broad. Flowers very small.

**Falcate-leaved Mistletoe.** Shrub parasitical.

7 V. *ovalifolium* (Wall. cat. no. 489.) branches terete; leaves ovate, obtuse, 5-nerved, narrowed into the short petioles at the base; flowers some of them in axillary sessile fascicles, and others are opposite, and somewhat verticillate, along an axillary rachis, disposed in an interrupted spike. \( n \), P. S. Native of the East Indies, in the island of Penang. Leaves 3 inches long, and 1½ broad. Racis not articulated. Berry oval.

**Oval-leaved Mistletoe.** Shrub parasitical.

8 V. *ortenssum* (Wall. cat. no. 494.) branches terete; leaves ovate, obtuse, somewhat cuneate, 5-nerved; flowers axillary, 1-5-together, almost sessile. \( n \), P. S. Native of the East Indies, in the kingdom of Ava, on Mouni Taong-Dong. Leaves 30 lines long, and 15 lines broad. Flowers small. Berries oval. Lateral nerves of leaves slender.

**Bluntish-leaved Mistletoe.** Shrub parasitical.

9 V. *heteranthum* (Wall. cat. no. 488.) branches angular, at length terete; leaves elliptic, obtuse, cuneated at the base, 5-nerved beneath; peduncles axillary, 2-5-together, equal in length to the petioles, capitate at the apex, 5-6-flowered, bearing 3-5 involucreate bractae. \( n \), P. S. Native of Nipaul. Berries ovate-globose, solitary in each head, surrounded by the small permanent bracteas. Flowers 5-cleft, one central, the rest disposed in a whorl around the central one, all sessile on the top of the peduncle.

**Variable-flowered Mistletoe.** Shrub parasitical.

10 V. *platyphyllum* (Spreng. cur. post. 47.) branches alternate, angular; leaves alternate, ovate or obovate, petiolate, attenuated at the base, nerved beneath; umbellules usually of 4 flowers, dispersed, pedunculate, solitary or aggregate; involucels 5-cleft, permanent. \( n \), P. G. Native of Nipaul, at Beempid. V. *hispidum*, Hamilt. in D. Don, prod. fl. nep. p. 142, but not of others.
LORANTHACEÆ. I. VIScum.

Casuarina (D.C. prod. p. 279.) branches terete; leaves ovate-lanceolate, acuminate, 3-nerved, on very short petioles, thick; spikes axillary, solitary, 5 times shorter than the leaves; female flowers trilobed. Ψ. P. S. Native of Jamaica, on trees, V. latifolium, Swartz, fl. ind. occ. 1798, but not of Lam., nor Don. 

V. nevera-like Mistletoe. Shrub parasitical.

20. V. tereticaule (D. C. l. c.) branches terete, smooth; leaves ovate, acute, nerveless, veinless, on very short petioles; spikes axillary, twin or solitary, shorter than the leaves; female flowers trilobed. Ψ. P. S. Native of Jamaica, on trees, V. latifolium, Swartz, fl. ind. occ. 1798, but not of Lam., nor Don.

V. tereticaule (D. C. l. c.) leaves having the middle nerved rather prominent, but with no axillary spikes; the margins rather undulated. Ψ. P. S. Native of Cuba. Lower spikes 2-3. Perhaps the same as the Jamaican plant.

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1. Box-leaved Mistletoe. Shrub parasitical.

19. V. aureo
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1. Box-leaved Mistletoe. Shrub parasitical.

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5-6 inches long and 1½ broad. Spikes 2 inches long, erect, constant of 5 joints. Flowers in 6 rows, many of which are abortive. Immature berries nearly globose, half immersed.

**Perrottet's Mistletoe.** Shrub parasitical.

26. **V. brachystachyum** (D. C. l. c.) branches terete; leaves oblong, obtuse, attenuated at the base, finely 5-nerved; spikes axillary, solitary, opposite, sessile, ovate, few-flowered; berries ovate-globose. ½. P. S. Native of Mexico, between Tampico and Real del Monte, where it was collected by Berlandier. Leaves 12-15 lines long, and 3-4 broad. Spikes 3-4 lines long.

**Short-spiked Mistletoe.** Shrub parasitical.

27. **V. berberrum** (Linn. spec. 145), branches terete, simple; leaves oblong, obtuse, tapering into the petiole at the base; spikes axillary, one-half shorter than the leaves, somewhat interrupted; flowers tripartite; berries globose. ½. P. S. Native of the Bahamas Islands, parasitical upon mahogany and other trees. Berries red. Leaves opposite, of a shining green colour.

**Red-berried Mistletoe.** Shrub parasitical.

28. **V. Berteria'num** (D. C. prod. 4. p. 281.) branches terete, dichotomous; leaves oblong-lanceolate, attenuated at both ends, acute at the base, on very short petioles, having the middle nerve rather distinct, and with 2 rather oblique veins rising from the middle; spikes axillary, solitary, opposite, one-half shorter than the leaves, jointed, with bifid sheaths. ½. P. S. Native of St. Domingo. ½. dichotomum, Spreng. syst. 1. p. 448. exclusive of the synonyms, but not of D. Don. Leaves 3 inches long, and an inch broad. Spikes 1-2 inches long. Berries globose. Flowers disposed in 4 rows on the spikes.

**Bertera's Mistletoe.** Shrub parasitical.

29. **V. Schottii** (Pohl, in litt. ex D. C. prod. 4. p. 281.) branches terete; leaves oblong-lanceolate, attenuated at both ends, and somewhat acuminate, having the middle nerve rather distinct, but the rest of the leaf veinless; racemes axillary, solitary or twin, opposite or verticillate, 2 or 3 times shorter than the leaves, articulated: with trident sheaths; berries ovate; flowers trifid. ½. P. S. Native of Brazil, where it was collected by Schott. Leaves 2½ inches long, and 8-9 lines broad. Spikes 9-12 lines long. Altered to F. Berterii.

**Schott's Mistletoe.** Shrub parasitical.

30. **V. macrostachyum** (Jacq. coll. 2. p. 109. t. 5. f. 3.) branches terete; leaves linear-lanceolate, nearly sessile, obtuse, veinless; spikes axillary, solitary, filiform, much longer than the leaves, articulated: with bowl-shaped sheaths; corolla tripartite. ½. P. S. Native of Martinique and Trinidad, on trees. Sieb. fl. trin. no. 337. Spikes 3-6 inches long; ultimate ones subpanicled. Flowers small. Leaves an inch long, and 3 lines broad.

**Long-spiked Mistletoe.** Shrub parasitical.

31. **V. fallicornis** (Hook. et Arn. in bot. misc. 3. p. 356.) branches terete, but when young compressed; leaves narrowly lanceolate, bluish, recurvedly falcate, tapering into the petiole at the base, obscurely 3-5 veined; spikes axillary, solitary, opposite, almost one-half shorter than the leaves; sheaths of spikes truncate. ½. P. S. Native of Brazil, upon laurels by the river Urugua. The sheaths of the spikes are here formed of 2 opposite and equal portions, which are truncate at the apex. In V. Liga they are keeled on the back, and acute at the extremity.

**Sickle-leaved Mistletoe.** Shrub parasitical.

32. **V. pyriformis** (D. C. prod. 4. p. 281.) plant pendulous, dichotomous, much branched; branches terete, articulated: joints bidentate at the apex; leaves eblong, narrowed at the apex, and obtuse, somewhat ensiform; spikes 2-3, axillary, articulate; flowers in 4 series, somewhat immersed in the racem. ½. P. S. Native of South America, near Carthagena and Po-


**Pepper-like Mistletoe.** Shrub parasitical.

33. **V. angustifolium** (D. C. prod. 4. p. 281.) much branched; branches terete, in whorles; leaves petiolate, linear-lanceolate, somewhat ensiform, narrowed at the apex and obtuse; spikes 1-3-together, axillary, articulated; flowers in 4 series, immersed in the racem. ½. P. S. Native of Peru, in the temperate regions of the Andes, between Ollera and Mount Aipate. Leaves 4-5 inches long, and half an inch broad; petioles 3-4 lines long. Spikes 12-18 inches long. Flowers unknown. V. stenophyl- lum, Spreng. syst. 1. p. 487. Loranthus piperoides, H. B. et Kunth, nov. gen. amer. 3. p. 442. Schultes, syst. 7. p. 155.

**Narrow-leaved Mistletoe.** Shrub parasitical.

34. **V. Affine** (Pohl, in litt. ex D. C. prod. 4. p. 281.) branchlets rather tetragonal; branches terete; leaves linear-lanceolate, obtuse, attenuated at the base, finely 5-nerved; spikes axillary, solitary or twin, twice or thrice longer than the leaves, articulated: with small sheaths; berries ovate, exserted. ½. P. S. Native of Brazil, where it was collected by Pohl. Leaves nearly 2 inches long, and 3-4 lines broad. Spikes 9-10 lines long.

**Allicd Mistletoe.** Shrub parasitical.

35. **V. ligia** (Gill. miss. ex Hook. bot. misc. 3. p. 355.) branches terete, while young compressed; leaves straight, linear-oblong, obtuse, hardly apiculate, attenuated at the base, 3-nerved, somewhat feather-veined in the middle; spikes solitary, axillary, opposite, 2 or 3 times shorter than the leaves; sheaths of spikes keeled, acute; berries ovate, exserted. ½. P. G. Native of Chili, on trees near Los Cerillos de San Juan, where it is called *Liga* by the natives. This species seems very nearly allied to V. affine, Pohl.

**Liga Mistletoe.** Shrub parasitical.

36. **V. ensifolium** (Pohl, in litt. ex D. C. prod. 4. p. 281.) branches terete; leaves linear-oblong, acuminate at both ends, petiolate, finely 3-5-nerved at the base; spikes axillary or terminal, many, verticillate, articulated, length of the petioles: with the sheaths bifid; flowers in 6 rows; berries globose. ½. P. S. Native of Brazil, where it was collected by Pohl. Leaves coriaceous, 6-7 inches long, and 8-9 lines broad; petals 8 lines long.

**Sword-leaved Mistletoe.** Shrub parasitical.

37. **V. veleutinum** (D. C. prod. 4. p. 281.) branches terete, velvety from short down; leaves linear-oblong, attenuated at both ends and acute, 3-5-nerved at the base, rather velvety when young, but glabrous in the adult state; spikes axillary, solitary or twin, 3 times shorter than the leaves, articulated: with bifid glabrous sheaths; berries in 4½ rows. ½. P. G. Native of Mexico, in the valley of Toluca, where it was collected by Berlandier. Leaves 4 inches long, and 6 lines broad. Spikes 9-15 lines long. The plate in Catesb. car. t. 81. lower figure, agrees pretty well with the present species.

**Velvety Mistletoe.** Shrub parasitical.

38. **V. tomentosum** (D. C. prod. 4. p. 670.) branches terete, while young rather compressed; leaves obovato, obtuse, a little attenuated at the base, clothed with velvety, somewhat deciduous tomentum on both surfaces, as well as the branchlets; spikes axillary, interruptedly articulated, solitary or twin, rather shorter than the leaves: with small nearly entire sheaths. ½. P. S. Native of Mexico, in the plains at Real de Rata, beyond the range of Michoacan, where it was collected by Berlandier.

**Toucanito Mistletoe.** Shrub parasitical.
39 V. interruptrum (D. C. prod. 4. p. 282.) branches compressed while young, but at length becoming terete; leaves oblong-lanceolate, obtuse, attenuated at the base, petiolate, almost nerveless, with 3-5 fine veins; spikes axillary, 1-2: with the sheaths rather truncate at the apex: joints naked at the base, and fruтиferous at the apex. 

**Branchlets 2-edged or compressed, but at length becoming terete.**

40 V. angustifolium (Spreng. sect. 1. p. 471.) branches 2-edged, but in the adult state they are nearly terete; leaves oblong-lanceolate, obtuse, attenuated at the base, having 3 veins rising from the base; spikes axillary, opposite, one-half or more shorter than the leaves. 

**Native** of Porto-Rico and Hispaniola, where it was collected by Bertero. Leaves 3-4 inches long, and 9 lines broad; petioles 4 lines long. Spikes an inch long or a little more.

41 V. hexastichum (D. C. prod. 4. p. 282.) branches 2-edged, but at length becoming nearly terete; leaves elliptic, tapering at both ends, bluish at the apex, and acute at the base, petiolate, feather-nerved; spikes axillary, solitary, opposite, articulated: with the sheaths truncate; berries globose depressed, disposed in 6 rows. 

**Native** of the island of Cuba, near Havannah. Leaves coriaceous, 3 inches long, and about 15-16 lines broad; petioles 4 lines long. This species is very like V. Perrottetii.

**Six-ranked Mistletoe.** Shrub parasitical.

42 V. undulatum (Pohl, in litt. ex D. C. prod. 4. p. 282.) branchlets 2-edged; branches terete; leaves oval or oblong, tapering at the base, and bluish at the apex, undulated, thickish, having the middle nerve rather tumbid, and the rest of the leaf veinless; spikes axillary, twin, articulated, 3 times shorter than the leaves; having the sheaths rather truncate, and the joints short. 

**Native** of Brazil, where it was collected by Pohl.

**Undulated-leaved Mistletoe.** Shrub parasitical.

43 V. macropulsum (Spreng. sect. 1. p. 488.) branches nearly terete; branchlets compressed at the apex; leaves broadly ovate or oval, petiolate, with the middle nerve rather thick, and the lateral veins perspicuous; spikes 2-4 from each axil, one-half shorter than the leaves, somewhat tetragonal; berries ovate, half immersed. 

**Native** of the West India Islands, as of St. Domingo (Plum. ed. Burm. t. 258. f. 4.), and Porto-Rico (Bertero). Leaves 6 inches long, and 2½ broad; petioles 6-8 lines long. Spikes 2½ inches long, interrupted. Fruit disposed in 4 rows on the spike, and each row composed of 4 berries. Sheaths of spike truncate.

**Long-leaved Mistletoe.** Shrub parasitical.

44 V. schiedeaeum (D. C. prod. 4. p. 670.) trunk terete; branches 2-edged, dilated under the forks; leaves fleshy, 3-5-nerved, falcate, ovate: female spikes 1-3-together, axillary; flowers 6 in a whorl. 

**Native** of Mexico, on trees near Jalapa. Fruit a little smaller than hemp seed. 

**Falcatum, Cham. et Schlecht. in Linnaee. 5. p. 172. but not of Wall. Schiede's Mistletoe.** Shrub parasitical.

45 V. flavens (Swaertz. fl. ind. occ. p. 266.) branches 2-edged, at length terete; leaves ovate, somewhat attenuated at the apex, obtuse, 5-nerved at the base, on very short petioles; spikes axillary, twi or tern, 3 times shorter than the leaves, articulated; berries ovate. 

**Native** of Jamaica (Swaertz) and Porto-Rico (Bertero), on the branches of trees. The figure of Plumier, cited for this plant by several authors, has here been omitted in consequence of the leaves in the figure being feather-nerved, and not 5-nerved at the base, as in this species.

**Yellowish Mistletoe.** Shrub parasitical.

46 V. tetragonum (D. C. prod. 4. p. 282.) branches opposite, and are, as well as the branchlets, tetragonal; leaves elliptic-lanceolate, attenuated at the base, and obtuse at the apex, 3-nerved or 5-nerved, the 2 lateral nerves being hardly evident; spikes axillary, solitary, 3 or 4 times shorter than the leaves. 

**Native** of Porto-Rico and Guadaloupe, on trees by the sea side. 

**V. undulatum, Spreng. sect. 1. p. 471.** 

**Yellowish Mistletoe.** Shrub parasitical.

47 V. maccellatum (D. C. l. c.) branches tetragonal, 2-edged while young, but nearly terete in the adult state; leaves oblong-lanceolate, attenuated at the base, obtuse, and mucronate at the apex, having the middle nerve and one on each side of it distinct; spikes axillary, solitary, 4 times shorter than the leaves. 

**Native** of St. Domingo. 

**V. myrtilloides, Spreng. in herb. Balb.** Leaves nearly an inch long, and 4 lines broad; petioles 1-2 lines long. Spikes 2½ lines long. 

**Mucronate-leaved Mistletoe.** Shrub parasitical.

48 V. penivsium (D. C. l. c.) branches tetragonal, nearly terete; leaves somewhat alternate, ovate on short petiole, obtuse: having the middle nerve rather prominent beneath, and with the lateral veins pinnate and branched, hardly persicuous above; spikes axillary, solitary, one half shorter than the leaves; berries oblong. 

**Native** of French Guiana.

**Feather-veined Mistletoe.** Shrub parasitical.

49 V. kuthanum (D. C. prod. 4. p. 283.) plant much branched; branches tetragonal, articulated; leaves nearly sessile, obliquely oblong, 3-5-nerved, rounded at the apex and cuneate at the base; spikes axillary, 2-3 together, articulated; berries globose, immersed in the rachis. 

**Native** of Quito, near Guayaquil, on trees. Leaves 18-24 lines long, and 2½-3½ lines broad. Spikes nearly an inch long. 

**Native** of the temperate parts of New Granada, parasitical on Guazuma. 

**V. rubrum.** 

**Tetragonal-leaved Mistletoe.** Shrub parasitical.

50 V. quadrangulariare (D. C. prod. 4. p. 283.) plant much branched; branches tetragonal, almost winged; leaves lanceolate-oblong, obtuse, almost ensiform, 5-nerved; spikes axillary, twin; articulated; berries globose, disposed in 4 series, sessile. 

**Native** of the temperate parts of New Granada, parasitical on Guazuma. 

**V. rubrum.** 

**Tetragonal-leaved Mistletoe.** Shrub parasitical.

51 V. oebonfolium (D. C. prod. 4. p. 283.) branches tetragonal; leaves oblong, obtuse, attenuated at the base, nearly nerveless, or somewhat 1-nerved at the base; spikes axillary, solitary, 2 or 3 times shorter than the leaves. 

**Native** of Guadaloupe, on the mountains. 

**Allied to V. tetragonum and V. mucronatum, but differs in the leaves being longer and nerveless.** Leaves 12-14 lines long and 3-4 broad. Fruit bearing spikes an inch and a half long.
Oblong-leaved Mistletoe. Shrub par.

59 V. elongatum (Wall. cat. no. 495. D. C. prod. 4. p. 284.) plant leafless; branches compressed, articulated; joints linear-oblong, somewhat attenuated at the base, 7 times longer than their breadth; fascicles of flowers somewhat verticillate, sessile, containing 1-3 flowers each, placed at the tops of the joints. ꞌP. S. Native of the East Indies, on the Pandanus mountains. Wild. Specimens 20-22 lines long, and 3 lines broad. Branchlets usually opposite.

Elongated Mistletoe. Shrub parasitical.

60 V. fragile (Wall. cat. no. 498. D. C. prod. 4. p. 284.) plant leafless; branches compressed, articulated; joints linear-oblong, striated a little, thickish in the middle, six times longer than their breadth; fascicles of flowers opposite, sessile, containing 1-3 flowers, placed at the tops of the branches. ꞌP. S. Native of the East Indies, at Martaban and Tavoy. Branchlets usually opposite. Perhaps sufficiently distinct from V. dichotomum.

Brittle Mistletoe. Shrub parasitical.

61 V. attenuatum (D. C. prod. 4. p. 284.) plant leafless; branches compressed, articulated; joints gradually attenuated both at the base and apex, linear-euneate, somewhat striated, sometimes longer than their breadth; fascicles of flowers at the tops of the joints opposite, sessile, containing 1-3 flowers. ꞌP. S. Native of the East Indies, where it was collected by Heyne. V. opuntioides, Heyne. Herb. Branches usually in whorles, or somewhat dichotomous.

Attenuated-jointed Mistletoe. Shrub parasitical.

62 V. articulatum (Burn. fl. ind. p. 311.) plant leafless; branches compressed, articulated; joints elongated, striated a little, 10 times longer than broad; fascicles of flowers at the tops of the branches opposite, sessile, containing 1-3 flowers. ꞌP. S. Native of Java, parasitical upon some species of Asnônia. Joints of branches an inch long, and a line or a little more in breadth. Stems nearly terete at the base.

V. angularis (Comm. ex Pet. Th. mel. obs. p. 43.) plant leafless, much branched; stem and branches compressed, articulated, linear-oblong; sheaths truncate; flowers sessile, 2 opposite or 4 in a whorl, situated in the axils of the sheaths. ꞌP. S. Native of the Mauritius and Bourbon. Joints 3 lines long, and a line broad, but not striated. Flowers small. Plant becoming wholly black in drying. Habitat almost of Salicaginis.

Wreath Mistletoe. Shrub parasitical.


58 V. dichotomum (Hamilt. D. Don, prod. fl. nep. 147, but not of Spreng.) plant leafless; branches compressed, articulated; joints oval-oblong, striated lengthwise; 5 times longer than its breadth; flowers by threes, sessile at the tops of the joints or branches. ꞌP. S. Native of Nippon, about Narain-gutty, V. nepalense, Spreng. cur. post. Bracteae membranaceous, cuspidata, under the fruit, which is oval. Branches usually opposite, hence dichotomous.

Dichotomous Mistletoe. Shrub parasitical.

59 V. elongatum (Wall. cat. no. 495. D. C. prod. 4. p. 284.) plant leafless; branches compressed, articulated; joints linear-oblong, somewhat attenuated at the base, 7 times longer than their breadth; fascicles of flowers somewhat verticillate, sessile, containing 1-3 flowers each, placed at the tops of the joints. ꞌP. S. Native of the East Indies, on the Pandanus mountains. Wild. Specimens 20-22 lines long, and 3 lines broad. Branchlets usually opposite.
Berries oval-oblong; flowers 3-cleft. Perhaps the present variety is the female plant, and that called the species the male.

II. ARCEUTHOBII. III. MISODENDRUM.

LORANTHACEÆ. I. VISCUM.

Antarctic Mistletoe. Shrub par.

67 V. KEMPSEI (D. C. pro. 4. p. 285.) P. G. Native of Japan, at Mikawa, Kemp b. am. ex. 7/5. It is called Gami Matto. V. album,Thumb. p. 54, but it differs from V. album in the spikes being axillary, in the berries being reddish, and in the leaves being 1-nerved.

Kempse's Mistletoe. Shrub par.

N. B. V. rubrum, Burm. fl. ind. 311. is certainly not a species of Viscum, but perhaps one of Hederá. V. cau'plaire and V. ligula'tum, Blüm. biijdr. 667. are species of Psilotis. V. terres'tre, Lin. spec. 1452. is Lysimíchina stricta. V. flae'scens, Comm. in Misodendron punctato'tum. Cult. None of the species of Mistletoe are cultivable in gardens, except the common Mistletoe, whose culture and propagation are treated of under that species.

II. ARCEUTHOBII (from arceo'bo, arceuthos, the juniper, and a, bow, bue, to live; in reference to the plant being parasitic on Juniperus Ozyctédrus). Bieb. fl. taur. suppl. p. 629. Hook. fl. bor. amer. 1. p. 277—Viscum species, D. C. fl. ed. 3. no. 3400.

LIN. SYST. Dioicío, Di-Tetradría. Flowers dioecious. Male ones sessile; calyx none; corolla monopetalous, 2,3– rarely 4-parted, tough, and fleshy; segments ovate, concave, spreading; stamens 2–3–4; anthers sessile, fixed in the middle of the segments, free, nearly globose, 1-celled, membranous, dehiscing transversely; ovum none, but in its stead there is a small 2–3–4 lobed gland. Female flowers on short pedicels; calyx oval, compressed, fleshy, bidentate, almost covering the ovarium, which is one ovulate, and adnate to it; corolla, style, and stamens none; stigma small, obscurely lobed. Berries narrow, obovate, terete, 1-seeded, on short pedicels, on a viscous pulv. pulp, fixed to the upper part of the cell, pendant, obovately cylindrical, acuminate at the base; integument thin; albumen fleshy. Embryo immersed, slender, cylindrical, placed towards the base of the seed; radical turned to the hilum of the seed.—A small, leafless, rather fleshy, proliferous branched shrub, parasitical on resiniferous trees, in Middle Europe and North America; branches opposite, blantly tetragonal, articulated in the manner of Salix; seeds above, and somewhat polviform. Flowers terminal and lateral, usually three, small, and conspicuous.

1 A. Oxycé'dri (Bieb. fl. taur. suppl. p. 629. Hook. fl. bor. amer. 1. p. 278. t. 90.) P. H. Native from Spain, near Les'caria, and to the southward, in New Spain; also in Ecuador, Peru, at the base of the Cordillera del Andes, and in the mountains of the Cordillera, of the Pacific. III. MISODENDRUM (from mu'sos, misos, disad, and idé'cif, dundrion, a tree; trees with neither appearance nor beauty). Banks, ined. D. C. coll. mem. 6. no. 2. t. 11 and 12. pro. 4. p. 285.
LIN. SYST. DIÓCECA, TETRADÉRIA? Flowers dioecious; male ones unknown; female ones having the tube of the calyx adnate to the ovary, and furnished with 3 long plumose bristles on the outside, alternating with 3 bracteas, which are adnate to the calyx; limb of calyx minute, truncate. Fruit an oblong triquetrous indehiscent uriculus, crowned by the permanent limb of the calyx. Seed one; albumen fleshy.—Small smooth parasitical shrubs, with the habit of Viseum.

§ 1. Plant leafless.


§ 2. Plants furnished with leaves. Branches alternate, bearing one or articulated leaf at the apex.

2 M. Brachyphyllum (D. C. coll. mem. vi. t. 12. f. 1.) branches alternate, bearing each an obovate or oval obtuse leaf at the apex; spiklets few-flowered, bracteas, arising from the branchlets beneath the leaves; fruit ovate. Var. a. Native of the north-west coast of America, in Statenland. Leaves 3-5 lines long, and 3-6 broad, flat, nerveless. Flowers and fruit not sufficiently known, and therefore the genus is doubtful. Short-spiked Misdendron. Shrub par.

3 M. Quadrichilum (D. C. coll. mem. iv. t. 12. f. 2.) branchlets alternate, each bearing an oblong-obovate suberectuated leaf at the apex, and 4 sessile unilateral flowers on the upper side. Var. a. Native of North America, in Statenland. This is very like the preceding species in habit, but differs in the flowers and fruit being unilateral. Calyx triquetrous, dehiscing at the sides. Four-flowered Misdendron. Shrub par.

§ 3. Plants furnished with leaves. Leaves alternate. Branches floriferous at the apex.

4 M. Globochilum (D. C. prod. 4. p. 671.) branches clothed with fine velvety down; leaves oblong-lanceolate, cuneate at the base, 3-nerved, glabrous; spikes bearing each one leaf at the base, conforming to the others. Var. a. Native of Chili (Bertero), and of Chile (Cuming). Genus novum, no. 1. Poeppl. pl. exsic. no. 813. Flowers bracteas, with 8-10 distant ones in each spike. Oblong-leaved Misdendron. Shrub par.

5 M. linearechilum (D. C. prod. 4. p. 671.) plant glabrous; leaves linear, acute; flowers sessile, solitary at the axis of the leaves in the flowering branches. Var. a. Native of Chili, where it was collected by Poeppig. Genus novum, no. 2. Poeppl. pl. exsic. no. 806. Linear-leaved Misdendron. Shrub par.

6 M. Microphyllum (Hook. et Arn. in bot. misc. 3. p. 557.) leaves minute, linear; flowers sessile, solitary at the axis of the leaves; branches pubescent. Var. a. Native of Chili, in the province of Maule. Close allied, but apparently quite distinct from the preceding species. Small-leaved Misdendron. Shrub par.

Cult. These are singular shrubs, similar to the Mistletoe, but are not cultivable in gardens.

IV. LORANTHUS (from lorum, a leaf, and anthos, a flower; alluding to the long linear shape and leathery substance of the petals). Mart. in D. C. prod. 4. p. 671.—Loranthus species of Lin. and others.

LIN. SYST. Penta-hexárdia, Monogyniá. Flowers dioecious or hermaphrodite. Calyx cup-shaped, adnate, with an entire border. Petals 5-6 (f. 7–8. a. d.), linear, reflexed. Stamens inserted into the middle of the petals; filaments short; anthers globose, dindious, having the cells dehiscing in front towards the connecting part. Style thickish; stigma simple. Berry globose (f. 7–8. c.), umbilicate by the calyx, 1-seeded, 1-seeded as in the rest of the genus, broken off from the present.—Parasitical shrubs. Flowers immersed in the fleshy racis, each propped by a somewhat orbicular bracte at the base.

1 L. Europaeus (Lin. spec. 1672.) plant glabrous, much branched; branches terete; leaves opposite, petiolate, oval-oblong, obtuse, somewhat attenuated at the base; racemes terminal, simple; flowers dioecious, of 6 petals; anthers adnate in the male flowers. Var. a. Native of Austria, Hungary, Italy, and Upper Siberia, parasitical on oak and sweet-chestnut trees. Jacq. fl. austr. t. 30. Schkuhr, lamdb. t. 94. Sturm, fl. germ. with a figure. Plenck. icon. t. 248. Habit of Viseum alburn. Flowers greenish. Berries oval, white or yellowish. This is the Viseum or Mistletoe of the ancients.

Európea Loranthus. Shrub par.

2 L. oporatus (Wall. in Roxb. fl. ind. 2. p. 215.) glabrous; branches terete; leaves nearly opposite, ovate-lanceolate, fleshy; spikes axillary, subtuscied, with a foetid slysh racis, and jointed sessile submersed spreading 6-petalled hexandrons flowers; anthers ovate, inserted by the base; style shorter than the petals. Var. a. Native of Nipanl, on the mountains of Chendiugri and Sheepore, parasitical on trees. D. Don, prod. fl. nep. p. 143. Schultes, syst. 7. p. 101. D. C. prod. 4. p. 291. Leaves pale green, at length becoming yellowish, from 4 to 6 inches long. Spikes shorter than the leaves, many flowered, almost sessile. Flowers small, nearly white, very sweet-scented, at first clavate, but at length spreading; petals cuneate, slightly concave at the apex. Ovarium supported by no other bractea than the acute margin of the foetida of the racis.

Sweet-scented-flowered Loranthus. Shrub par.

3 L. Lambertianus (Schultes, syst. 7. p. 118.) glabrous, dichotomously branched; leaves opposite, on very short petioles, ovate-lanceolate, narrowed at both ends, acute, nerved; spikes terminal, solitary; flowers half immersed in the foetid racis, 5-petalled; anthers fixed by the back. Var. a. Native of Nipanl. Habit of L. Europaeus. Lambert’s Loranthus. Shrub par.

Cult. The species have the habit of common mistletoe, but are not cultivable in gardens on account of their being parasitical.

V. STRUTHANTHUS (from struthos, struthos, a sparrow, and anthos, a flower; some of the species are called Erea de Passerinho and Herba dos Passerios, i.e. Sparrow-plant, in South America). Mart. in D. C. prod. 4. p. 671.—Loranthus species of authors.

LIN. SYST. Hexárdia, Monogyniá. Flowers hermaphrodite, almost always 6-parted (except in one species, which is 4-parted at the apex).
and dioecious, and in another 5-parted). Calyx angular, small, hemispherical, with an exstipulate truncate margin. Petals linear, distinct from each other a long way at the base, and at length revolute at the apex; anthers ovate, fixed by the back near the base or beneath the middle; filaments short, inserted beneath the middle of the petals. Ovarium ovate-globose. Style subulate. Berry ovate-elliptic.—Parasitical shrubs. Racemes terminal or lateral, solitary or aggregate in the axils, having the rachis for the most part angular or 2-edged. To this genus belongs the greater part of the sections Stachydranthus and Protostyles of Loranthus, D. C. prod. 4. p. 287 and 289, particularly the Brazilian species.

**Loranthaceae.**

**Stachya**nthus. (from σταχυς, a spike, and anthos, a flower; flowers sessile, disposed in spikes). Flowers sessile along the rachis, and sometimes immersed in pits on it, spicate, solitary or by threes, usually furnished with 3 bracteas each.

1 S. *alveolatus*; plant glabrous, much branched; branches terete; leaves petiolate, roundish-ovate, rather oblique, obtuse, somewhat coriaceous; spikes axillary, 1-3-together, without joints, somewhat tetragonal; flowers disposed in 4 rows on the spikes, immersed in pits in the rachis; petals linear-lanceolate.

2 S. *petrygopus*; plant glabrous; branches compressed at the apex; leaves opposite, on short petioles, ovate, acuminate, coriaceous; spikes axillary, solitary, longer than the leaves; peduncles compressed, winged; flowers by threes, sessile; petals 6, linear-lanceolate.

3 S. *ugaleatus*; plant glabrous, erect; branches terete; leaves alternate, oblong-lanceolate, cuneate at the point, attenuated into the petiole at the base; peduncles 1-2, filaments somewhat longer than the petals; anthers ovate, erect, stigma capitulate; berries egg-shaped.

4 S. *Porotheres*; plant glabrous, erect; branches terete, when young angularly compressed; leaves elliptic, attenuated at both ends, feather-nerved, reticulate above; spikes axillary and terminal, flexuous, pedunculate; flowers by threes, immersed in the rachis, which is winged; corolla 6-parted, with linear lobes; anthers inserted by the base; stigma capitulate.

5 S. *oblongus*; plant glabrous; branches terete; branchlets compressed; leaves oblong, nearly elliptic, obtuse, cuneate at the base, and 3-5-nerved; nerves slender, reticulately branched; spikes axillary, very short, few-flowered.

6 S. *occidentalis*; branches terete, scabrous; leaves ovate-roundish or elliptic, margined, glabrous, feather-nerved at the base, on very short petioles; spikes axillary, simple, shorter than the leaves, nearly terete; flowers almost sessile, furnished with a small very blunt bract each; petals 6, rather connate at the base; stamens 6, 3 fertile and 3 sterile.

7 S. *P. Native of Brazil. Loranthus oblongus, Schott. and Pohl, in litt. ex D. C. prod. 4. p. 287. Leaves 2 inches long, and 8 lines broad; petioles and spikes about 2-3 lines long. The nervation of the leaves is very distinct from the other species, but the young flowers are not described. It is probably a species of *Viscum*. Oblong-leaved Struthanthus. Shrub par.

8 S. *Polycauchcyus*; plant glabrous; branches terete, but compressed at the articulations; leaves petiolate, ovate-lanceolate, acute, thick, veiny; spikes axillary, by threes, one-half shorter than the leaves, diverging; flowers by threes, sessile, opposite; petals 6.


10 S. *P. Native of French Guiana, where it was collected by Patri. Loranthus Patrii, D. C. prod. 4. p. 288. Leaves 4-5 inches long, and 1-2 broad, rather glabrous above, and Rufescent beneath, on pedicels 2 lines long. Berries trigonally compressed while young, 3 lines long. Flowers unknown, therefore it is doubtful whether it belongs to this genus or not.


Loranthaceae.

V. Struthanthus.

ovate or oval, attenuated at the base, somewhat palmately veined, obtuse; spikes axillary, thick, tetragonal, shorter than the leaves, bearing flowers almost from the base; flowers deciduous; petals 6, concretes at the very base: berry ovate-oblong. \( P. \) P. S. Native of South America, amongst the bushes and woods of Carthagena. Loranthus spicatus, Jacq. amer. p. 97. t. 68. Flowers small, red. Berries green, red at the apex. Schultes, syst. 7. p. 151.

* var. \( \beta \). *atroanthus* (E. Meyer, nov. act. bonn. 12. p. 788.) lower spikes axillary, superior ones crowded in racemes, leafless. \( P. \) P. S.

* Spiked-flowered Struthanthus. Shrub par.

13 S. leptostachyus; plant glabrous; branches somewhat tetragonal; leaves petiolate, ovate-elliptic, acuminate, rounded at the base, rather coriaceous; spikes axillary, twin or tern, 2 or 3 times shorter than the leaves; flowers sessile, scattered, distant; racis compressed, rather quadrangular; petals 6, lanceolate-linear, spreading. \( P. \) P. S. Native of the Andes of Quindiu, between Carthagena and Buga. Loranthus leptostachyus, H. B. et Kunth, nov. gen. amer. 3. p. 440. Schultes, syst. 7. p. 154. Leaves 5 inches long, and \( \frac{1}{2} \) broad. Spikes 1\( \frac{1}{2} \) to 2\( \frac{1}{2} \) inches long. Flowers hardly 2 lines long.

*S. slender-spiked Struthanthus. Shrub par.

13 S. ovalifolius; plant glabrous, herbaceous; stem terete, quite simple, erect; leaves ovate, thick, nearly veinless, on short petioles, obtuse or emarginate; spikes axillary, 1-2, twice the length of the petioles; flowers sessile, bractless; petals 6, linear, retroflected at the apex. \( P. \) P. S. Native of Peru, on the Andes in groves, upon trees and shrubs. Loranthus ovalifolius, Ruiz et Pav. flux. per. 3. p. 50. t. 277. f. b. Schultes, syst. 7. p. 151. Herb a foot high. Flowers much crowded, small, purple. Berry oval, of an obscure purple colour.

* Oval-leaved Struthanthus. Shrub par.

14 S. marginatus (Lam. dict. 3. p. 596.) plant glabrous; branches terete; leaves ovate-lanceolate, acuminate, petiolate, with scarious margins, having the middle nerve rather prominent, and the lateral ones wanting; spikes axillary, solitary, opposite, shorter than the leaves; flowers by threes in a fascicle along the rachis, bracteolate; corolla 6-parted, with linear segments; anthers very caducous; stigma capitulate. \( P. \) P. S. Native of Brazil. Loranthus marginatus, Lam. dict. 3. p. 596. Schultes, syst. 7. p. 137. L. avium, Pohl, in litt. Leaves 2 inches long, and 9-10 lines broad; petioles 2-3 lines long. Corolla 2-3 lines long.


15 S. concinnus; plant glabrous; branches slender, terete; leaves opposite, lanceolate, acuminate, membranous, shining above; spikes axillary and terminal, solitary, interrupted, shorter than the leaves; flowers by threes, opposite, sessile, somewhat verticillate, bracteate; petals 6, linear, reflexed. \( P. \) P. S. Native of Brazil, in the province of Rio Negro, in woods at Ega. Loranthus concinnus, Mart. in Schultes, syst. 7. p. 150. Flowers a line and a half long, elavate in the unexpanded state. Anthers ovate.

* Neat Struthanthus. Shrub par.

16 S. nitens; plant glabrous; branches terete, rooting on one side; leaves alternate, ovate-lanceolate, acuminate, shining, membranous; spikes racemose, interrupted, lower ones axillary, solitary; superior ones panicled; flowers by threes, sessile, bracteate; petals 6, linear-lanceolate. \( P. \) P. S. Native of Brazil, in the province of Rio Negro, in woods. Loranthus nitens, Mart. in Schultes. syst. 7. p. 150. Flowers a line long, ovate-club-shaped in the unexpanded state. Anthers ovate, excavated at the side of the filaments.

* Shining Struthanthus. Shrub par.

17 S. subcampestris; branches terete, beset with rusty dots at the apex, compressed; leaves opposite, ovate-elliptic, obtuse, coriaceous, nerved, glabrous; spikes 1-2, axillary, interrupted, one-half shorter than the leaves; flowers nearly opposite, by threes, sessile, bracteate, small; petals 6, linear-lanceolate. \( P. \) P. S. Native of Brazil, in the province of Minas Geraes. Flowers half a line long. Anthers ovate. Loranthus subcamppestris, Mart. in Schultes, syst. 7. p. 151.

Field Struthanthus. Shrub par.

18 S. affinis; branches terete, compressed at the apex, and beset with rusty dots; leaves nearly opposite, ovate-elliptic, acuminate, coriaceous, nerved, glabrous; spikes axillary, solitary, interrupted, not half so long as the leaves; flowers by threes, sessile, retrosellate, bracteate, small. \( P. \) P. S. Native of Brazil, in the woods of Japura, in the province of Rio Negro. Loranthus affinis, Mart. in Schultes, syst. 7. p. 151. Very like the preceding species.

* Allied Struthanthus. Shrub par.

19 S. accepis; branches compressed, 2-edged, green; leaves on short petioles, elongated, ovate-obtuse; spikes on short peduncles, solitary, axillary, much shorter than the leaves; flowers small, somewhat imbricate. \( P. \) P. S. Native of Guiana. Loranthus accepis, Desv. in Hamilt. prod. p. 33. Schultes, syst. 7. p. 153. The rest unknown.

* Two-edged-branched Struthanthus. Shrub par.

** Sect. II. PROTOSTELIDAE (meaning unknown to us). Loranthus, sect. 3. Protostelidæ, D. C. prod. 4. p. 289. Flowers of 6 petals, racemose or panicled; the branches of the panicles or racemes usually bearing 3 flowers and 3 bracteas at the apex. — Species all natives of South America.

20 S. rufulus; branches terete; leaves nearly opposite, on short petioles, ovate-oblong, long-acuminate, coriaceous; spikes terminal, panicled; racis beset with rufous dots; pedicels very short, bearing 3 flowers and 3 bracteas each; petals 6, linear; anthers roundish-ovate. \( P. \) P. S. Native of Brazil, in the province of Rio Negro, in the woods of Japura. Loranthus rufulus, Mart. in Schultes, syst. 7. p. 150. Flowers a line and a half long, white.

* Rufous-branched Struthanthus. Shrub par.

21 S. aviculaîóus; plant glabrous; young branches tetragonal; leaves nearly opposite, ovate, rather acuminate, coriaceous; panicles axillary and terminal, solitary, diffuse, longer than the leaves; peduncles opposite, bracteate at the base; flowers by threes, sessile, 3 bracteate; petals 6, linear-lanceolate. \( P. \) P. S. Native of Brazil, frequent, where it is called Erva de Passerinho. Loranthus avicularius, Mart. in Schultes, syst. 7. p. 152. Flowers a line and a half long. Filaments of stamens excavated on the side at the apex.

* Knot-grass-like Struthanthus. Shrub par.

22 S. theobromæ; branches tetragonal, but at length becoming terete, rather radicant; leaves ovate, acuminate, on short petioles; panicles axillary and terminal, longer than the leaves; pedicels very short, 3-flowered at the apex. \( P. \) P. S. Native of Brazil, at Para, upon trees of Theobroma cacau, where it is called *Hera dos Passetura*. Loranthus Theobromæ, Willd. rel. ex Schultes, syst. 7. p. 152. According to Schultes, this is probably the same as the preceding species.

* Cacao Struthanthus. Shrub par.

23 S. virgatus; plant glabrous; branches radicant, tetragonal at the apex; leaves opposite, ovate, acuminate, complicate, rather coriaceous; panicles axillary, solitary, twiggy, 3 times longer than the leaves; having the branches tetragonal, and bracteate at the base, and the branchlets short and bearing 3 flowers at the apex, and 3 bracteas; petals 6, linear-lanceolate. \( P. \) P. S. Native of Brazil, in the province of Rio Negro, in woods about Japura. Loranthus virgatus, Mart. in Schultes, 3 G 2
syst. 7. p. 132. Flowers half a line long. Filaments of stamens excavated at the side at the apex.

**Twiggy Struthanthus.** Shrub par.

24 S. **Depeaéus**; glabrous; branches rather radicant; leaves almost opposite, petiolate, ovate-lanceolate, acuminate, sometimes 3-nerved; racemes 1-2, axillary; peduncles 3-flowered, bracteless; flowers pedicellate; anthers linear, fixed by the base. ½. P. S. Native of Mexico, near Jalapa. Loranthus Depéaéus, Cham. et Schlecht. in Linnaea. 5. p. 172. Style twisted in a circinate manner at the apex.

**Deppe’s Struthanthus.** Shrub par.

25 S. **erythrocárpus**; plant glabrous; branches terete; leaves nearly opposite, ovate-lanceolate, acuminate, attenuated at the base, coriaceous, veiny; racemes 1-3 together, rather spicate, interrupted, axillary, and terminal: having very short branchlets, which bear 3 flowers and 3 bracteas at the apex; petals 6, linear. ½. P. S. Native of Brazil, in the province of Rio Negro, on trees. Loranthus erythrocárpus, Mart. in Schultes, syst. 7. p. 138. Anthers ovate. Berries orange-coloured.

**Red-fruited Struthanthus.** Shrub par.

26 S. **citrícola**; plant glabrous; branches terete; leaves rather alternate, ovate, somewhat acuminate, and obtuse, sub-emarginate, veiny; racemes axillary and terminal, shorter than the leaves: superior ones solitary, but the lower ones are somewhat verricellate; branches of racemes short, opposite, bearing each 3 flowers at the apex and 3 bracteas. ½. P. S. Native of Brazil, near Rio Janeiro, on trees of the orange tribe, where it is called *Ieraca de Passerinho*. Loranthus citrícola, Mart. in Schultes, syst. 7. p. 137. Perhaps the same as S. *margiáditus*.

**Orange Struthanthus.** Shrub par.

27 S. **flexicaulis**; plant glabrous; branches sermentose, radicant; leaves almost alternate, oblanceolate, obtuse, with a mucronated, tapering at the base, flat, reflexed; racemes 1-2 together, axillary, erect, shorter than the leaves: having short, opposite, 3-flowered, tribracteate branchlets; petals 6, linear, spreading above the middle. ½. P. S. Native of Brazil, in the fields of Taboleira, in the province of Minas Geraes. Loranthus flexicaulis, Mart. in Schultes, syst. 7. p. 139. Flowers yellowish, a line long, clavate in the unexpanded state.

**Bent-stemmed Struthanthus.** Shrub par.

28 S. **polyrrhízus**; plant glabrous; branches scendent, root- ing; leaves subalternate, obovate, emarginate, flat, veiny; racemes axillary, solitary, compound, erect, one-half shorter than the leaves: having the branchlets tetragonal, and bearing 3 flowers at the apex and 3 bracteas; petals 6, reflexed from the middle. ½. P. S. Native of Brazil, in the province of Bahia, in the woods. Loranthus polyrrhízus, Mart. in Schultes, syst. 7. p. 139. Flowers 2 lines long, green. Anthers ovate.

**Many-rooted Struthanthus.** Shrub par.

29 S. **tetraquétér**; plant glabrous; branches compressedly tetragonal, scendent, rooting; leaves nearly opposite, ovate, obtuse, reflexed, rather coriaceous; racemes 2-3, axillary; having very short, nearly opposite 3-flowered tribracteate branchlets; petals 6, linear, hardly reflexed, spreading. ½. P. S. Native of Brazil, in the province of Minas Geraes, on trees. Loranthus tetraquétér, Mart. in Schultes, syst. 7. p. 140. Flowers hardly a line long, roundish in the unexpanded state.

**Four-side-d-branched Struthanthus.** Shrub par.

30 S. **staphyliínes**; plant glabrous; branches compressed at the apex; leaves nearly opposite, obovate or emarginate, attenuated at the base, flat, coriaceous, nerved; racemes axillary, solitary, longer than the leaves: having short bent branchlets, each bearing 3 flowers and 3 bracteas at the apex; petals 6, linear, reflexed spreading. ½. P. S. Native of Brazil, in the province of Rio Negro. Loranthus staphyllínes, Mart. in Schultes, syst. 7. p. 290. Flowers a line long. Anthers roundish-ovate. *Staphylea-like* Struthanthus. Shrub par.

31 S. **cuspíátus**; plant glabrous; branches rooting, terete; leaves nearly opposite, obovate, attenuated at the base, cuspidate at the apex, coriaceous, glaucous; racemes axillary, solitary; about equal in length to the leaves, few-flowered: having the branchlets 3-flowered at the apex, and tribracteate; petals 6, linear, reflexed from the middle. ½. P. S. Native of Brazil, in the woods, about Piaúbin. Loranthus cuspidátus, Mart. in Schultes, syst. 7. p. 140. Flowers 2 lines long, clavate in the unexpanded state. Anthers ovate.

**Cuspidate-leaved Struthanthus.** Shrub par.

32 S. **longipeudículus**; plant glabrous; branches terete; leaves opposite, oblong-ovate, acuminate, attenuated at the base, rather coriaceous, nerved; racemes axillary, solitary, longer than the leaves: with few branchlets, bearing each 3 flowers at the apex and 3 bracteas; petals 6, linear, spreading above the middle. ½. P. S. Native of Brazil, in the province of Bahia. Flowers 4 lines long, of a pale greenish colour. Anthers ovate. Loranthus longipeudículus, Mart. in Schultes, syst. 7. p. 141.

**Long-peduncled Struthanthus.** Shrub par.

33 S. **syringefólius**; plant glabrous; branches unknown; leaves opposite, petiolate, ovate, rather coriaceous, ending in a long taper point; racemes axillary, solitary, panicled, shorter than the leaves: peduncles compressedly tetragonal: with the branchlets short, thick, and bearing 3 flowers at the apex and 3 bracteas; petals 6, linear. ½. P. S. Native of Brazil, in the province of Rio Negro, in the woods. Loranthus syringefólius, Mart. in Schultes, syst. 7. p. 141. Racemes 1½ to 2 inches long. The unexpanded flowers dilated into a somewhat hexagonal club. Anthers erect, hastate at the base.

**Syringa-leaved Struthanthus.** Shrub par.

34 S. **páten**; plant glabrous; branches terete; leaves opposite, lanceolate, thin, ending in a long taper point; racemes axillary, solitary, spreading, exceeding the leaves a little; pedicels 3-flowered; flowers pedicellate; bracteas very minute, orbicular; petals 6, nearly linear, reflexed above the middle. ½. P. S. Native of Brazil, in the province of Minas Geraes. Loranthus páten, Mart. in Schultes, syst. 7. p. 142. Flowers 4½ lines long, tubularly club-shaped in the unexpanded state. Anthers ovate.

**Spreading Struthanthus.** Shrub par.

35 S. **elegantus**; plant glabrous; branches terete at the base, but compressed at the apex; leaves nearly opposite, somewhat ovate, rather coriaceous, terminating in a short reflexed acumen; racemes axillary, solitary, twice the length of the leaves: having the branchlets opposite, and bearing 3 flowers at the apex, without any bracteas; petals 6, linear-lanceolate. ½. P. S. Native of Brazil. Loranthus elegantus, Mart. in Schultes, syst. 7. p. 144. Flowers white, a line and a half long, of a roundish club-shaped form at the apex in the unexpanded state. Anthers ovate.

**Elegant Struthanthus.** Shrub par.

36 S. **rubens**; plant glabrous; branches terete, radicant; leaves opposite, somewhat reflexed, lanceolate, attenuated at both ends, nerved, somewhat undulated; racemes shorter than the leaves: and the peduncles are trifid: branchlets short, nearly opposite, bearing 3 flowers at the apex, and 3 bracteas. ½. P. S. Native of Brazil, in the province of Rio Negro, in the woods of Japura. Loranthus rhíbens, Mart. in Schultes, syst. 7. p. 144. Flowers unknown. Berries ovate-oblong, umbilicate, 3-4 lines long.

**Reddish Struthanthus.** Shrub par.

37 S. **polyántus**; plant glabrous; branches terete; leaves opposite, lanceolate, mucronately acuminate, flat, coriaceous;
racemes axillary, many-flowered, about equal in length to the leaves; branchlets 3-flowered at the apex, and tribrate; bracteas ovate, acute; petals linear, reflexed from the middle. ♂ P. S. Native of Brazil, in the province of Bahia, in the woods called Catingas. Loranthus polyanthus, Mart. in Schultes, syst. 7. p. 145. Flowers yellowish, 2 lines long. Anthers ovate.

**Many-flowered Struthanthus.** Shrub par.

38 S. PANICULATUS; plant glabrous; branches terete; floriferous branches tetragonal; leaves petiolate, ovate-elliptic, acute at both ends, rather coriaceous; panicules terminal, brachiate, diffuse; branchlets very short, bearing 3 flowers and 3 bracteas at the apex. ♂ P. S. Native of South America, on trees near Cumana, where it is called Pizarito. Loranthus paniculatus, H. B. et Kunth, nov. gen. amer. 3. p. 442. Flowers unknown. Berries oblong. Loranthus tetragonus, Willd. in Schultes, syst. 7. p. 131. Perhaps the same as S. Orinoscehis.

**Panicled Struthanthus.** Shrub par.

39 S. ORINOCOensis; plant glabrous; branches somewhat tetragonal; leaves petiolate, ovate-elliptic, acuminate, rounded at the base, and somewhat complicate, rather coriaceous; racemes axillary and terminal, exceeding the leaves, paniculately disposed, diffuse; branchlets short, bearing 3 bracteas and 3 flowers; flowers sessile; petals 6, linear-lanceolate, 3 of which are cohering; filaments broad; anthers adnate. ♂ P. S. Native on the banks of the Orinoco, parasitical on trees. Loranthus Orinocensis, Spreng. syst. 1. p. 129. Schultes, syst. 7. p. 136. Loranthus marginatus, H. B. et Kunth, nov. gen. amer. 3. p. 442. t. 299. exclusive of the syn. of Lam. Leaves ½ inches long and ½ broad; on petioles about 5 lines long. Flowers hardly 3 lines long.

**Orinoco Struthanthus.** Shrub par.

40 S. FYLHLLIREOIDES; plant glabrous; branches elongated, filiform; leaves oblong, acute, rather coriaceous, running into the short petiole at the base, velvety, with the middle nerve rather prominent beneath; peduncles axillary, rather dichotomous, 2-3 times shorter than the leaves; flowers sessile, usually by threes, tribracteate; petals 6, linear, spreading; anthers adnate, mucronate. ♂ P. S. Native of South America, parasitical on trees, near Cumana, where it is called by the natives Guat-Pizarito. Loranthus phylliraeoides, H. B. et Kunth, nov. gen. amer. 3. p. 439. Schultes, syst. 7. p. 122. Leaves 9-10 lines long, and 2-3 broad. Flowers small.

**Phylliraeoid-like Struthanthus.** Shrub par.

41 S. MICROPHYLLUS; plant clothed with hairy pubescence; branches terete; branchlets very short, bearing leaves and flowers at the apex; leaves oblong, obtuse, rather mucronate, sessile, thickish, canescent; flowers sessile, crowded, axillary, and terminal; petals 6-7, lanceolate-linear, rather acute at the base; filaments adnate to the petals, nearly to the apex; anthers adnate, mucronate. ♂ P. S. Native of Mexico, near Guanacava, on the mountains. Loranthus microphyllus, H. B. Kunth, nov. gen. amer. 4. p. 291. Flowers 4 lines long and ½½ broad. Flowers hardly 2 lines long, pubescent on the outside.

**Small-leaved Struthanthus.** Shrub par.

42 S. PARVIFOLIUS; plant glabrous; branches terete, while young angularly compressed; leaves attenuated at the base, on short petioles, obtuse at the apex, nerveless; peduncles axillary, opposite, trifid, 3-flowered, 3 times shorter than the leaves; petals 6, lanceolate-acute; stamens shorter than the petals. ♂ P. S. Native of the higher mountains of Jamaica, upon the branches of trees. Loranthus parvifolius, Swartz, prod. p. 58. fl. ind. occ. p. 638. Schultes, syst. 7. p. 126. Leaves 6 lines long, and 3 broad. Corolla 2 lines long. Berry oblong, black.

**Small-leaved Struthanthus.** Shrub par.

43 S. ROTUNDIFOLIUS; stems diffuse; leaves roundish, glabrous; flowers axillary, crowded, bracteate, hexadrous; peduncles short, many-flowered. ♂ P. S. Native of Brazil, among bushes about Rio Janeiro. Loranthus rotundifolius, St. Hil. pl. rem. bras. intr. p. 21. Schultes, syst. 7. p. 121.

**Round-leaved Struthanthus.** Shrub par.

44 S. PYRIFOLIUS; glabrous, pendulous; branches terete, compressed at the node; leaves petiolate, oblong, obtuse, acute at the base, rather membranous, complicated; racemes axillary and terminal; branchlets very short, nearly opposite, tribrate, 3-flowered; flowers sessile; petals 6, lanceolate. ♂ P. S. Native of South America, near Carthagena, growing on Crescentia Cujete. Loranthus pyrifolius, H. B. et Kunth, nov. gen. amer. 3. p. 441. Schultes, syst. 7. p. 139. Leaves 2-3 inches long, and 13-15 lines broad, on petioles 3 lines long. Racemes 3 inches long. Flowers small. Berries ovate.

**Pear-leaved Struthanthus.** Shrub par.

45 S. SUBROTUNDUS; plant glabrous, twining; branches terete; leaves alternate or opposite, petiolate, ovate-orbicular, ending in a short mucronate acumen, feather-nerved, shining above, coriaceous; racemes axillary, solitary, about equal in length to the leaves, or twin shorter than the other: branchlets opposite, bearing 3 sessile flowers and 3 bracteas at the apex; petals 6, linear, somewhat concrete at the base; filaments a little shorter than the petals, anthers ovate, erect. ♂ P. S. Native of Brazil, where it was collected by Schott. Loranthus subrotundus, Pohl, in litt. ex D. C. prod. 4. p. 292. Leaves 15-18 lines long, and 10-12 broad; petals 5-6 lines long. Corolla 3 lines long. Style filiform; stigma simple, not capitate.

**Roundish-leaved Struthanthus.** Shrub par.

46 S. GLOMERATUS; plant glabrous; branches terete, radiant; leaves opposite, on short petioles, ovate, ending in a short acumen, glaucous, coriaceous; peduncles very short, axillary, glomerate, bident; flowers by threes, sessile, tribrate; petals 6, linear, reflexed from the middle; anthers ovate; style equal in length to the petals. ♂ P. S. Native of Brazil, in the provinces of the Matos. Loranthus glomeratus, Mart. in Schultes, syst. 7. p. 121. Flowers yellowish green, 2 lines long. Glomerate-flowered Struthanthus. Shrub par.

47 S. CONFERTUS; plant glabrous; branches radical, terete; leaves opposite, ovate or roundish, obtuse, with a short acumen, coriaceous, nerves; peduncles axillary, crowded, dichotomous, simple; flowers by threes, sessile, tribrate; petals 6, spreadingly reflexed; linear; anthers ovate; style one half shorter than the petals. ♂ P. S. Native of Brazil, on trees of the orange tribe. Loranthus confertus, Mart. in Schultes, syst. 7. p. 121.

**Crowded-peduncled Struthanthus.** Shrub par.

48 S. PERRÒTTETRIT; plant glabrous; branches terete, but rather compressed in the young state; leaves petiolate, ovate, or oval, obtuse, coriaceous, feather-nerved; racemes twin, unequal, simple, axillary; with the branchlets bearing each 3 small concrete bracteas, and 3 sessile flowers; flower-buds ovate, small; berry ovate. ♂ P. S. Native of French Guiana. Loranthus Perrottettii, D. C. prod. 4. p. 292. Racemes, pediomas, and rachis of racemes rufous, appearing velvety at first sight. Flowers small. Leaves 2-3 inches long and ½½ broad. Racemes sometimes equal in length to the leaves, but sometimes twice the length.

**Perrottet's Struthanthus.** Shrub par.

49 S. INTERROGATUS; glabrous, pendulous; branches terete; leaves oblong, acute, running into the petiole at the base, rather coriaceous; racemes axillary and terminal; with short, nearly opposite, distant branchlets, bearing each 3 sessile flowers at the apex, without bracteas. ♂ P. S. Native of Mexico, near
Ario, on trees of Amnò narcissi. Loranthus interrumpitus, H. B. et Kunt, nov. gen. amer. 3. p. 440. Schultes, syst. 7. p. 138. Flowers and fruit not sufficiently known. Leaves nearly 2 inches long and 9 lines broad; petioles 3-4 lines long.

Interrupted-spiked Struthanthus. Shrub par. 56 S. aduncus; plant glabrous; branches terete, knotted, scandent; branchlets angular; leaves opposite, oblong-rounded, apiculated by a hooked point, veiny, petiolate; racemes axillary, trichotomous, or simple; flowers sessile, 2-6 together, propped by a subtriangular bracteal; petals 6, linear; anthers oblong. ½. P. S. Native of Guiana, on trees. Loranthus aduncus, Meyer. prim. essq. p. 149. Schultes, syst. 7. p. 147. Perhaps the flowers are sessile on the tops of the branches, not on a rachis.

Hooked-leaved Struthanthus. Shrub par. 51 S. magdalenæ; plant glabrous; branches terete, rather sermantine; leaves petiolate, ovate, acute, complicate, feather-nerved, rather coriaceous; panicles axillary, longer than the leaves, spreadingly branched; peduncles distant, bearing 3 flowers and 3 bracts at the apex; petals 6, linear, anthers erect, inserted by the base, 3 of which are drawn out in a horn? ½. P. S. Native of South America, on the banks of the river Magdalenæ, where it was collected by Bertero. Loranthus Magdalenæ, Cham. et Schlecht. in Linnaea 3. p. 219. Wéíhea Magdalenæ, Spreng. in herb. Balb. but not of his sys. Leaves 20-22 lines long and 12-15 lines broad; petioles 4-5 lines long. Corolla 2 lines long.

Magdalenæ Struthanthus. Shrub par. 52 S. seselis; glabrous; leaves ovate; spikes simple, solitary; flowers sessile, by threes; pedicels thick, 3-flowered at the top. ½. P. S. Native of South America, in the woods of Carthagena. Loranthus sselis, Jacq. amer. 98. Berries of reddish dirty green colour. Perhaps Loranthus sesselis, Meyer. prim. essq. 4. p. 149. is the same as that of Jacquin.

Sesile-flowered Struthanthus. Shrub par. 53 S. stevis; glabrous; branches spreading; leaves ovate or oblong, coriaceous, nearly sessile; peduncles numerous, axillary, spreading, trigonal, bifid; having the branches bearing 3 equal, sessile, hexadromous flowers. ½. P. S. Native of Cupana, upon trees. Loranthus Stevis, Lin. spec. 331. Schultes, syst. 7. p. 147. Stevis, no. 1. Loebl. itin. 187. Plant not sufficiently known, and Stevis, no. 2. Loebl. is still more obscure.

Midthoe Struthanthus. Shrub par. 54 S. pedunculatus; glabrous; branches shining; leaves cordate-ovate, ending each in a short taper point, coriaceous, shining, petiolate, feather-veined; racemes axillary, solitary, shorter than the leaves; having the rachis compressed and the branchlets 3-flowered, and the flowers pedicellate; petals 6, obtuse; stamens some of them sterile. ½. P. S. Native of South America, in the woods of Carthagena, especially on the sea coast. Loranthus pedunculatus, Jacq. amer. p. 98. Schultes, syst. 7. p. 145. Leaves 2 inches long. Flowers small, white. Pedunculate-flowered Struthanthus. Shrub par. 55 S. psitobrytis; glabrous; branches terete; branchlets angularly compressed; leaves oblong, acutish, attenuated at the base, on short petioles, nerveless, except the middle nerve; racemes axillary, 4 times longer than the leaves, 2-edged, especially at the base; pedicels nearly opposite, 1-flowered; bracteæ 3, concrete, resembling a 3-cleft cupula under each flower. ½. P. S. Native of St. Domingo, where it was collected by Bertero. Loranthus psitobrytis, D. C. prod. 4. p. 293. Loranthus uniflorus, Spreng. in herb. Balb. but it is very different from the true L. uniflorus. Alabastra oval, a line long. Racemes 6-7 inches long. Leaves 15 lines long and 4 broad.

V. Struthanthus. Naked-racemed Struthanthus. Shrub par. 56 S. Dominoensis; branches 2 edged, green; leaves obovate-oblong, mucromulate, fleshy, running down the petiole at the base; racemes simple or tern; flowers remote. ½. P. S. Native of St. Domingo. Loranthus Dominensis, Desf. in Hamilt. prod. p. 33. Schultes, syst. 7. p. 147. The rest unknown.

St. Domingo Struthanthus. Shrub par. 57 S. laxiflorus; branches terete, brownish; leaves roundish-ovate, finely margined, running into the petiole at the base; racemes for the most part solitary, greyish, on long peduncles; flowers remote; pedicels elongated. ½. P. S. Native of Hispaniola. Loranthus laxiflorus, Desf. in Hamilt. prod. p. 33. The rest unknown.

Lax-flowered Struthanthus. Shrub par. 58 S. uniflorus; glabrous; branches terete; leaves obovate or oval, on short petioles, obtuse at the apex, emarginate, and rather mucronate, feather-veined, rather membranous; racemes axillary, solitary or twin, simple; pedicels 1-flowered, a little longer than the flowers, girded by a trilîd involucrum; petals 6, obtuse; alternate anthers sterile. ½. P. S. Native of St. Domingo, upon trees and bushes in the woods. Loranthus uniflorus, Jacq. amer. 98. t. 69. Schultes, syst. 7. p. 146. Loranthus parviflorus, Lam. dict. 3. p. 595. Leaves 1-2 inches long. Flowers purple, 2 lines long. Berries cylindrical, dark.

One-flowered Struthanthus. Shrub par. 59 S. Portoricensis; glabrous; stem terete, rooting, dichotomous; branchlets compressed; leaves petiolate, lanceolate, acute, glaucous, veinless, except the middle nerve, which is conspicuous at the base but hardly evident at the apex; corony dichotomous, few-flowered, terminal, one half shorter than the leaves; fruit oval, crowned by the teeth of the calyx. ½. P. S. Native of Porto Rico, parasitical upon trees, where it was collected by Bertero. Loranthus Portoricensis, D. C. prod. 4. p. 293. Loranthus Braziliensus, Spreng. in herb. Balb. Flowers smaller than in the rest of the species. Leaves 8 lines long and 3 lines broad.

Porto Rico Struthanthus. Shrub par. 60 S. pauciflorus; glabrous; branches terete, spreading; leaves obovate-roundish, veiny, on very short petioles; racemes axillary, solitary, tripartite, shorter than the leaves; flowers nearly sessile, decussate; bracteæ concave; petals 6, lanceolate, contiguous at the base; anthers 6, ovate. ½. P. S. Native of the interior of Jamaica, and of Cayenne, parasitical on trees. Loranthus pauciflorus, Swartz, prod. p. 58. fl. ind. occ. 677. Schultes, syst. 7. p. 147. Loranthus occidentalis, Aubl. guian. p. 310. ex Swartz. Allied to S. occidentalis, but differs in the raceme or spike being tripartite, not simple.

Few-flowered Struthanthus. Shrub par. 61 S. Guadalupensis; glabrous; branches terete; leaves ovate, rather cordate at the base, acuminated at the apex, on very short petioles, veinless except the middle nerve; peduncles terminal, trichotomous and corystome at the apex, about the length of the leaves; bracteæ small; calyx denticulated; berry oval. ½. P. S. Native of Guadaloupe, where it was collected by Bertero. Loranthus Guadalupensis, D. C. prod. 4. p. 294. Loranthus pedunculatus, Spreng. in herb. Balb.

Guadaloupe Struthanthus. Shrub par. 62 S. quercicolæ; glabrous; branches terete; leaves almost opposite, petiolate, ovate, acuminate, papery, reticulately veined; racemes 1-2, axillary; flowers almost sessile, by threes, opposite; anthers orbicular, fixed by the base. ½. P. S. Native of Mexico, near Jalapa, parasitical on oak and other trees. Flowers minutely bracteolate. Corolla a line and a half long. Loranthus quercicola, Cham. et Schlecht. in Linnaea 5. p. 173. Oak Struthanthus. Shrub par.
63 S. retroflexus; glabrous; branches terete; leaves ovate, acute, deflexed, rather coriaceous, on short petioles; panicles axillary and terminal: with an angular rachis: and retroflexed branchlets, bearing ovate, concave, deciduous bracteas, and 5-4 flowers, which stand on short pedicels; petals 6, linear, reflexed at the apex.  

1. P. S. Native of Peru, in groves on the Andes, upon trees. Loranthus retroflexus, Ruiz, et Pav. fl. per. 3. p. 49. t. 279. f. 4. Schultes, syst. 7. p. 128. Leaves usually an inch and a half long and 2 inches broad; on petioles 2-3 lines long. Flowers small, purple. Berries oval, of a yellowish glaucous colour.  

Retroflexed-petalled Struthanthus. Shrub par.  

Cult. All the species of this beautiful genus being parasitical, they are consequently not cultivable in gardens. They have something of the aspect of Lonicera or honeysuckle.

VI. PSITTACANTHUS (Psittaceæ, psittacos, a parrot, and arboc, anthos, a flower; perhaps from the bright colour of the flowers), Mart. in D. C. prod. 4. p. 671. Loranthus section Oscellaria Callanthæ. D. C. prod. 4. p. 308.—Loranthus species of authors.

Lin. syst. Hexandria, Monogynia. Flowers hermaphrodite, for the most part hexameros. Calyx cup-shaped, hemispherically cymiform, with a contracted mouth: having the border sometimes entire, and sometimes obliquely 5-6-toothed or re-pand. Petals 6, linear-spatulate, in most of the species distinct to the middle, erect, spreading, often furnished with a linear scale in the middle. Filaments filiform, rising from the middle of the petals; anthers linear or oblong, fixed by the base, therefore erect: or by the back, then they are incumbent. Ovarium ovate. Style filiform; stigma capitata. Berry ovate.—Panicules dichotomous or trichotomous, expanded or corymbose; peduncles articulate inserted, bracteate; pedicels extended into a cup-shaped bracteole each. Flowers large, thick, deeply coloured.

1. P. bamilekis; glabrous; branches terete; branchlets angular; leaves ovate, bluntish, attenuated at the base; peduncles opposite, trifid, 6-flowered, spreadingly deflexed, rising beneath the leaf-bearing branches: alabastra conical; petals lanceolate-linear, acuminate; anthers versatile.  

P. S. Native of Mexico, parasitical on trees, on the mountains of Mocanitza. Loranthus bamilekis, Moc. et Sesse, fl. mex. Icon. ined. ex D. C. prod. 4. p. 308. Leaves 1½ inch long, and 6-7 lines broad; on very short petioles. Corolla 10 lines long, conical.  

Branch-flowered Psittacanthus. Shrub par.

2. P. calyculatus; glabrous; branches nearly terete; leaves opposite, ovate, or lanceolate, hardly petiolate, coriaceous, veinless; coryms terminal, trichotomous, shorter than the leaves: having a cup-shaped bractea under each flower, as in all the rest of the species; petals 6, linear, acute; anthers versatile.  

P. S. Native of Mexico, about Cuacavara, where it was collected by Berlandier. Loranthus calyculatus, D. C. coll. mem. vi. t. 101. Larger leaves 2 inches long and 1½ broad, the rest rather smaller. Flowers of a yellowish scarlet colour, almost 2 inches long. There are 2 oblong floral leaves under each lateral branch of the corymb. Limb of calyx truncate.  

Allied to P. ceillus. Perhaps the same as Loranthus Quanzchiti of Moc. et Sesse, fl. mex.  

Calyculate Psittacanthus. Shrub par.

3. P. jacquinii; glabrous; branches terete; leaves obovate or oval, coriaceous, shining, on short petioles, veinless; peduncles axillary and terminal, cymose, shorter than the leaves; ultimate ones trifid; having an unicordate, small bractea under each flower; petals 6, contiguous at the base, linear, revolute at the apex; alabastra curved a little; anthers oblong, versatile.  


Var. 3, longifolius (D. C. prod. 4. p. 308.) leaves oblique, lanceolate, attenuated at the base.  

4. P. brasiliensis; glabrous; branches terete, compressed while young; leaves petiolate, lanceolate-ovate, obliquely nerves, thickish, shining above; peduncles trichotomous, terminal, and in the upper axis: branchlets 5-flowered; alabastra club-shaped; petals 6, linear; anthers versatile.  

P. S. Native of Brazil. Loranthus Brasilienïs, Desr. in Lam. dict. 3. p. 396. Schultes, syst. 7. p. 127. Habit of Aveécinia tonentosa, but is perfectly glabrous. Leaves 3 or 3½ inches long, and 12-15 lines broad, on petioles 3-4 lines long. Corolla an inch and a half long.  

Brazilian Psittacanthus. Shrub par.

5. P. coccus; branches terete; leaves opposite and alternate, on very short petioles, oblong-ovate, obtuse, thick, margined; racemes axillary and terminal, compound: peduncles nearly opposite, 2-flowered; bractea cup-shaped; flowers tormentose on the outside, clavate at the apex in the unexpanded state; petals 6, nearly linear, glandular at the base.  

P. S. Native of Brazil, in the province of Rio Negro, in the woods of Jupara. Loranthus coccus, Mart. in Schultes, syst. 7. p. 134. Corolla 1 or 1½ inch long, densely clothed with coloured tomentum. Anthers oblong. Style equal in length to the petals. Stigma capitata.

Girded Psittacanthus. Shrub par.

6. P. speciosus; glabrous; leaves oblong-elliptic, or lanceolate, blutish, cuneated at the base, coriaceous; having the middle nerve hardly conspicuous, and the lateral veins wanting; racemes unknown; alabastra cylindrical; petals 6, linear, hardly concrete at the base; anthers versatile; stigma not capitata.  

P. S. Native of Brazil. Loranthus speciosus. Pohl, in litt. but not Dietr. nor Wall. Leaves 3 inches long and an inch broad; pedioles hardly any. Corolla 3 inches long. It differs from P. Brasilienïs, Lam. in the alabastra not being clavate.  

Showy Psittacanthus. Shrub par.

7. P. dichroïdes; glabrous; branches terete; leaves opposite, obovate, emarginate, coriaceous, hardly veined; pedicelles solitary, axillary, dichotomous: the branches 2-3-flowered; bractea cup-shaped, shorter than the ovary, 1-toothed; petals 6, linear, spreadingly reflexed from the middle; anthers linear-oblong.  

P. S. Native of Brazil, in the province of Rio Janeiro. Loranthus dichroïdes, Mart. in Schultes, syst. 7. p. 122. Flowers 18-20 lines long, scarlet, but green at the apex.  

Two-coloured-flowered Psittacanthus. Shrub par.

8. P. grandiflorus; branches terete; leaves opposite, on short petioles, ovate-lanceolate, acuminate, thick; pedicelles dichotomous: terminal ones 3-4: axillary ones solitary; flowers pedicellate by threes, tormentose; bractea cup-shaped, unidentate; petals 6, linear, bearing each a scale on the inside at the base.  


Great-flowered Psittacanthus. Shrub par.

9. P. intermus; branches terete, rather velvety; leaves nearly opposite, petiolate, elliptic, obtuse, thick, glaucescent; peduncles axillary and terminal: lower ones solitary, dichotomous: superior ones sub-panicled; flowers pedicellate, pubescent;
bracteas ovate; petals 6, linear, bearing each a scale on the inside at the base; anthers oblong, versatile. \(\in\) P. S. Native of Brazil. Loranthus biternatus, Hoffmannseg, in Schultes, syst. 7. p. 124. Corolla 12-18 lines long. Three of the stamens are shorter than the rest. Style bent, with 2 knees; stigma capitate.

**Bicordate** Psittacanthus. Shrub par.
10 P. bicordatus; glabrous; branches tetragonal; leaves opposite, dentate, on short pedicles, oblong-obovate, obtuse, thick; peduncles terminal, and corymbose crowded in the axils of the upper leaves, 3-flowered; flowers erect, angular; bracteas nearly orbicular, short. \(\in\) P. S. Native of Brazil, in the province of Rio Negro, in woods about Japura. Loranthus robustus, Mart. in Schultes, syst. 7. p. 125. Corolla yellow, 2-3 inches long, glabrous on the outside. Style filiform; stigma capitate. Anthers linear.

**Robust** Psittacanthus. Shrub par.
11 P. forcatus; glabrous; branches tetragonal at the apex; leaves opposite, ovate-obtuse, emarginate or obtuse, coriaceous, almost nerveless; peduncles axillary and terminal, 1-3 together, those in the forks bearing 2-6 flowers; bracteas ovate, acutish; petals 6, linear, longer than the base, but spreadingly reflexed at the apex. \(\in\) P. S. Native of Brazil, in woods at the river St. Francisco. Loranthus forcatus, Mart. in Schultes, syst. 7. p. 126. Corolla 1 or 1½ inch long, scarlet at the base, but paler towards the apex, and yellow inside. Anthers oblong, probably versatile.

**Forked**-peduncled Psittacanthus. Shrub par.
12 P. bicordatus; glabrous; branches tetragonal; leaves opposite, ovate-cordate, obtuse, somewhat stem-clasping, thick, glaucous; panicel terminal, dichotomous, bracteate; peduncles 2-3-flowered, tomentose; bracteas cup-shaped, girding the ovarium; calyx 6-toothed; petals linear. \(\in\) P. S. Native of Brazil, in the province of Bahia, in woods. Loranthus bicordatus, Mart. in Schultes, syst. 7. p. 125. Corolla 14 lines long, tomentose on the outside, scarlet. Style longer than the stamens; stigma capitate.

**Bicordate**-flowered Psittacanthus. Shrub par.
13 P. cordatus; glabrous; branches terete; leaves opposite, cordate at the base, stem-clasping, coriaceous, ending in a long acumens, triple or quintuple-nerved; flowers racemously panicked on the tops of the branches, and in the axils of the upper leaves; peduncles 2-flowered; rather tomentose; bracteas cup-shaped; petals 6, linear, spreading above the middle. \(\in\) P. S. Native of Brazil. Loranthus cordatus, Hoffmannseg in Schultes, syst. 7. p. 128. Corolla 12-16 lines long. Anthers oblong. Stigma capitate.

**Cordate**-leaved Psittacanthus. Shrub par.
14 P. falcirostris; glabrous; branches terete; leaves opposite, sessile, oblong-lanceolate, rather falcate, triple or quintuple-nerved, coriaceous; panicles terminal and axillary, somewhat dichotomous; flowers by threes, glabrous; pedicels equal in length to the bracteas, which are drawn out into a cup, around the ovaria, and much longer than them; petals 6, linear. \(\in\) P. S. Native of Brazil. Loranthus falcirostris, Mart. in Schultes, syst. 7. p. 129. Corolla golden-yellow, 11-18 lines long. Anthers oblong, yellow.—There is a variety of this species having shorter, ovate-oblong, hardly falcate leaves.

**Sickle-leaved** Psittacanthus. Shrub par.
15 P. acinarius; glabrous; leaves lanceolate, acuminated, oblique; rather falcate; thick, hardly veined; cymes 5-parted, with the branchlets 3-flowered; flowers pedicellate; bracteas cup-shaped, large, truncate, nearly entire; calyx 6-toothed; petals 6, linear. \(\in\) P. S. Native of Brazil, in woods in the province of Piauí. Loranthus acinarius, Mart. in Schultes, syst. 7. p. 130. Corolla 1½ inch long, club-shaped at the apex in the unexpanded state. Anthers oblong. Stigma rather oblique.

**Actinarios** Psittacanthus. Shrub par.
16 P. cucullarum; glabrous; branches terete, nodose at the joints; leaves broad-lanceolate, falcate, 5-nerved, opposite, on short pedicles; peduncles axillary and terminal, bifid or subpaniculate, nearly one-half shorter than the leaves: with 1-5-flowered branches; bracteas large, concave, cordate, acuminated, flowers sessile; petals 6, linear; anthers versatile. \(\in\) P. S. Native of French Guiana. Loranthus cucullaris, Lam. journ. hist. nat. 1. p. 144. t. 23. Schultes, syst. 7. p. 130.

**Cuclular-bracted** Psittacanthus. Shrub par.
17 P. mexicanus; glabrous; leaves ovate-lanceolate, rather falcate, running down the short pediole in a cuneate manner at the base, 5-7-nerved, rather coriaceous; panicles axillary and terminal: with thick branchlets, bearing 3 flowers at the apex; pedicels shorter than the bracteas, which are drawn out into ovate cupula, much exceeding the ovaria; petals 6, linear, acute, velvety on the outside; anthers oblong. \(\in\) P. S. Native of Mexico, where it was collected by Haenke. Loranthus Mexicanus, Mart. in Schultes, syst. 7. p. 129. Leaves 5 inches long and 1½ broad. Flowers 18-20 lines long, golden yellow in the dried state. The leaves are very similar to those of *P. cucullaris*, but differs in the bracteas being much smaller.

**Mexican** Psittacanthus. Shrub par.
18 P. \(?\) destructor; glabrous; branches tetragonal, warted; leaves petiolate, oblong, acute, coriaceous, having the middle nerve rather prominent beneath, the rest of the leaf veinless; racemes terminal, having the branchlets 3-flowered, approximate, secund, and bracteas; flowers pedicellate; petals 6, linear; anthers incumbent. \(\in\) P. S. Native of Quito, on trees near Villa de Ibarra, where it is called *Mota pula*. Loranthus destrctor, H. B. et Kunth, nov. gen. amer. 3. p. 485. Schultes, syst. 7. p. 135. Leaves 2 inches long and 8-9 lines broad; petals 5 lines long. Flowers about an inch long, orange-coloured. Berries globose, black. It is very doubtful whether this is a species of the present genus from the want of bracteas.

**Destructive** Psittacanthus. Shrub par.
19 P. formosus; quite glabrous; branches compressedly angular at the nodi; leaves elliptic-lanceolate, obtuse, on short petioles, coriaceous, feather-veined; umbels 3, 1 terminal, and 2 axillary, pedunculate; bracteas irregular; calyx re pandly truncate; corolla 6-parted, with linear lobes; anthers versatile. \(\in\) P. S. Native of Brazil. Loranthus formosus, Cham. et Schlecht. in Linnaea. 3. p. 211. An intermediate species between *P. jacquinii* and *P. Matelisi*. Leaves almost alternate or opposite, 2-4 inches long, and 1-2 broad. Corolla 4 inches long, showy.

**Beautiful** Psittacanthus. Shrub.
20 P. cucullifolius; glabrous; branches terete; leaves nearly sessile, cuneiform, small, ending in a short acumen, fleshy, shiny; pedicules 1-3 together, axillary, 1-flowered, 3 times shorter than the leaves; bracteas cup-shaped, one under each flower; petals 6, linear-spatulate, concrete at the base; anthers versatile. \(\in\) P. S. Native of Brazil and Peru, on trees and shrubs; of Chili, in valleys in the Andes of Mendoza, Cordillera of Chili, on *Cavania Cavina* at Llalay, and upon willows at Banda Oriental. Loranthus cucullifolius, Ruiz et Pav. fl. par. 5. p. 46. t. 276. f. b. Cham. et Schlecht. in Linnaea. 3. p. 212. Schultes, syst. 2. p. 128. Loranthus montevideosis, Spring, syst. 2. p. 128. Leaves hardly an inch long, some of them emarginately retuse at the apex. Corolla scarlet, an inch and a half long. Berries roundish, black, crowned by the urceolate calyx. *Cuneiform-leaved* Psittacanthus. Shrub par.
21. *P. cupulifer*; glabrous; branches terete; leaves nearly sessile, obliquely ovate-oblong, narrowed at the apex and obtuse, reticulately many veined, somewhat membranous; pedun- 
cles axillary, 2-3-flowered, unbracteate; pedicels furnished with a 
large cup-shaped bractea under the flower; petals 6, linear, spreading, revolute at the apex; anthers incumbent. 
†. P. S. Native of Peru, near Loa. Loranthus cupulifer, 
120. Leaves 5 inches long and 2 inches broad, on very short 
pedicels. Flowers 1 or 1½ inch long, on very short pedicels. 
Berry elliptic, about the length of the cup-shaped bractea.

*Cup-bearing* Psittacanthus. Shrub par.

22. *P. Plumi*; glabrous; branches terete; leaves ovate 
(3-nerved ex Lam.) 5-7-nerved at the base, coriaceous; pedun-
cles axillary, trichotomously corymbose, shorter than the leaves; 
petals 5, linear, contiguous at the base; alabastra a little curved; 
anthers versatile. †. P. S. Native of the West India Islands, 
parasitical on trees. Loranthus Plumi, π. & Schlecht, in 
Linnea, 3. p. 311. Lonicera, Plum. nov. gen. 17. t. 37. pl. 
par. 1722. p. 201. Plumier says the flowers of his plant are 
composed of 6 petals, but the number of the parts of the flower is 
unknown.

*Plumier's* Psittacanthus. Shrub par.

23. *P. ecalyptiformis*; glabrous; branches terete; leaves 
petiolate, ovate, rounded at the apex, coriaceous, almost vein-
less; peduncles axillary, 3-flowered, shorter than the leaves; 
pedicels furnished with a cup-shaped bractea each under the 
flower; petals 6, linear, a little dilated at the apex, hardly 
cohering at the base; anthers incumbent. †. P. S. Native of 
South America, in the province of Caracas, at Villa de Cura. 
Loranthus ecalyptiformis, H. B. et Kunth, nov. gen. amer. 3. 
p. 433. Leaves 3 inches long, and nearly 2 broad. Flowers 
yellow, glabrous, about 1½ inch long. Schultes, syst. 7. p. 120.

*Ecalyptus-leaved* Psittacanthus. Shrub par.

24. *P. crassifolius*; branches terete, dotted with brown 
at the apex; leaves opposite, broad-ovate, obtuse, with subrevolute 
margins, coriaceous; peduncles axillary, 1-3-together, dichoto-
mous; flowers twain or tern, pedicellate, tubular; the tube ven-
tricose above the middle, and spreading at the apex, and having 
the throat constricted; bractees cup-shaped, one under each 
flower. †. P. S. Native of Brazil, in the province of Rio 
Grande, in woods about Japura. Loranthus crassifolius, Mart. 
in Schultes, syst. 7. p. 123. Corolla purplish, 2 and 2½ inches 
long. Anthers linear.

*Thick-leaved* Psittacanthus. Shrub par.

25. *P. dichotomus*; glabrous; branches terete, dichotomous, 
5 or 4 in a whorl; leaves usually in whorles, ovate-elliptic, 
rounded at the apex, coriaceous; peduncles axillary, twin, bifur-
cate, penioulous in the flower-bearing state, but erect in the 
fruit-bearing state; limb of calyx truncate; bractees cup-
shaped, one under each flower; petals 6, linear, concrete at the 
base, revolutely spreading at the apex; anthers incumbent. †. 
P. S. Native of Peru, on the Andes, in groves about Muna. 
Loranthus dichotomus, Ruiz et Pav. fl. per. 3. p. 45. t. 274. f. 
rel. ex Schultes, syst. l. c. Leaves 2 inches long, and a hand 
and a half broad. Corolla about a hand and a half long, scarlet 
at the base, and yellow at the top. Petioles very short.

*Var. β. Balthasaris* (D. C. prod. 4. p. 311.) petioles 8-9 
lines long; margins of leaves somewhat revolute, shining above, 
and rudder glaucous; flowers red, 3 inches long; petals a little 
dilated at the apex. †. P. S. Native of South America, 
on the branches of the Orchis, near Balthasar. Loranthus di-
chlorous, H. B. et Kunth, nov. gen. amer. 3. p. 433. Perhaps 
sufficiently distinct from the species.

Dichotomous-peduncled Psittacanthus. Shrub par.

26. *P. nodosus*; glabrous; branches terete, dichotomous, arti-
culated at the nodi; leaves opposite, petiolate, ovate-roundish, 
coriaceous, somewhat 7-nerved at the base; peduncles axillary, 
and in the forks of the branches, in fascicles, 1-2-flowered, nearly 
the length of the petioles; bractees semicircular; alabastra 
terete, acute; petals 6, linear-lanceolate; filaments adnate a 
long way to the petals. †. P. S. Native of Peru. Loranthus 
119. Leaves 3½ to 4 inches long, and 2½ to 3 inches broad. Corolla 
3 or 3½ inches long.

*Knotted*-branched Psittacanthus. Shrub par.

27. *P. Mutisi*; glabrous; branches terete; leaves 3 in a 
whorl, sessile, somewhat obliquely elliptic-oblong, or obovate, 
rounded at the apex, coriaceous; peduncles axillary, few-flowered, 
bractless; petals 6, linear, glabrous, concrete at the base? 
†. P. S. Native of South America, near Santa Fe de Bogota. 
Schultes, syst. 7. p. 124. Loranthus longifolius, Mutis, ined. 
ex Boulp. Leaves 2½ to 3 inches long, and 1½ broad. Flowers 
half a foot long.

*Mutisi's* Psittacanthus. Shrub par.

28. *P. diversicatus*; glabrous; branches terete, divaricate; 
leaves petiolate, oblong or elliptic, rounded at the apex, coria-
ceous, glaucous; peduncles panicked on the tops of the 
branches, 3-flowered, bractless; pedicels expanded into an entire 
cupula under each flower; petals 6, linear, glabrous; anthers 
incumbent. †. P. S. Native of South America, on the banks of 
the Orinoco. Loranthus diversicatius, H. B. et Kunth, nov. 
gen. amer. 3. p. 433. Schultes, syst. 7. p. 127. Flowers more 
than an inch long. Leaves 10-15 lines long, and 5-9 broad.

Peduncles axillary and terminal.

*Divaricate* Psittacanthus. Shrub par.

29. *P. acutiformis*; glabrous; branches terete; leaves petio-
late, lanceolate, very acute; racemes axillary, one-half shorter 
than the leaves, having the branches 1-3-flowered; flowers pe-
dicellate, furnished with a common acute bractea each; petals 6, 
linear, somewhat spatulate, erect to the middle, and convining. 
†. P. S. Native of Peru, parasitical on trees, and in hedges at 
Huanaco. Loranthus acutiformis, Ruiz et Pav. fl. per. 3. p. 
48. t. 274. f. b. Schultes, syst. 7. p. 142. Leaves 2-3 inches long, 
and nearly an inch broad; petioles 2-3 lines long. Corolla white, 
4-5 lines long. Berry oval, blackish.

*Var. β. Chiléensis* (D. C. prod. 4. p. 314.) racemes dense-
flowered, almost bractless; petals erect beneath the middle, and 
convining, linear and acute at the apex. †. P. G. Native of 
Chili, where it was collected by Hænke. Loranthus acutiformis, 
Presl, in herb. Hænke. Perhaps a distinct species.

Acute-leaved Psittacanthus. Shrub par.

30. *P. Eschscholtzianus*; branches terete, or a little angu-
lar, rough; leaves subalternate, on very short pedioles, rough, 
ovate or roundish, obtuse, glabrous, coriaceous; peduncles 
corymbose racemose, terminal and axillary, erect, for the most 
part 3-flowered; the middle flower sessile; bractes ovate, 
fringed at the apex, equal in length to the ovaria; corolla 
5-cleft, clavate; anthers fixed by the back. †. P. G. Native of 
Chili. Loranthus Eschscholtzianus, Mart. in Schultes, syst. 

Eschscholk's Psittacanthus. Shrub par.

31. *P. thyrsiflorus*; glabrous; branches dichotomous or 
trichotomous; leaves broad-lanceolate, acutish or acuminated, 
with pellucid cartilaginous margins; racemes terminal and axil-
ary; flowers 2-3, sessile at the tops of the branches; bractes 
ovate, acute, or; under each flower; corolla 6-parted, with linear 
lobes; anthers versatile. †. P. S. Native of Brazil. Loranthus 
thyrsiflorus, Chum. et Schlecht. in Linnea. 3. p. 214.
Leaves 2 inches long, and 8-9 lines broad; pediolos 6-9 lines long. Flowers 5 lines long. Limb of calyx very narrow, truncate.

_Tyrse-flowered_ Psittacanthus. Shrub par.

32. _P. flagellare:_ glabrous, tormentose; branches terete; leaves sessile, linear, acute, coriaceous, with the middle nerve hardly conspicuous; racemes terminal, naked, erect; lower pedicels 3-flowered, superior ones 1-flowered; bracteas deciduous, one under each flower; calyx lacerate, truncate; corolla 5-parted, having the lobes linear and dilated at the apex; anthers versatile. ʒ. P. S. Native of Chili; of _Chili_, near La Punta de San Luis, at El Aquadita, and on the banks of El Rio Chorillo. Loranthus flagellarius, Cham. et Schlecht. in Linnaea. 3. p. 213. Like _Loranthus cuneiformis_ and _sarmen- tus_, Ruiz et Pav. in fl. per. Corolla fine red, 6 lines long. Style attenuated at the apex. Leaves 20 lines long and ½ broad.

_Whip_ Psittacanthus. Shrub par.

33. _P. Berteroii:_ glabrous; branches terete; leaves alternate, broad, elliptic, obtuse, tapering into the short pediolos at the base, coriaceous, with somewhat revolute margins; peduncles terminal, in dense corymbose racemes; the partial peduncles 2-5-flowered; flowers tubular, with 6 linear-spatulate, nearly free sepals; filaments equal in length to the petals; anthers linear-oblong, ovaliatory; style filiform, angular, stigma hardly capitate; ovary ribbed, exceeding the unilateral bractea, which is roundish and dentilicate at the apex. ʒ. P. G. Native at Juan Fernandez, growing on _Myrtus Persicaria_. Hook. et Arn. Loranthus Berteroii, Hook. et Arn. in bot. misc. 3. p. 528. _Loranthus venetus_, Bertero, but not of Kunit. The partial peduncles are simple, and bear 2 flowers, or are forked, and then bear 3 or 5 flowers. The flowers are about an inch long. It is probably a species of _Struthanthus._

_Berteroii_ Psittacanthus. Shrub par.

34. _P. Schiedeaui:_ plant glabrous; branches subalate tetragonal, dilated at the nod; leaves nearly opposite, on short pediolos, ovate-lanceolate, obliquely falcate, feather-veined, and somewhat triple-ribbed; corymbs terminal; bracteas cup-obed, one under each flower; limb of calyx truncate. ʒ. P. S. Native of Mexico, near Jalapa. Loranthus Schiedeaeus, Cham. et Schlecht. in Linnaea. 5. p. 172. Allied to _P. Jacquini_, but differs in the flowers being more slender, and about 2 inches long. _Schiedeaui_ Psittacanthus. Shrub par.

_Cult._ The flowers of all the species of this genus are very showy, and comparatively large. The habit is that of honey-suckle. Being all parasitical shrubs, they are not cultivable.

VII. TRISTERIX (from τρις, three, and πτερις, a wing; in reference to the 3 bracteas to the flowers). Mart. in D. C. prod. 4. p. 671.—Loranthus species of authors.

_Lan. syst._ Tetra-Hexandria, Monogynia. Flowers hermaphrodit, each furnished with one bractea; bracteas sometimes lateral, and sometimes cupular and oblique. Calyx cup-shaped or campanulate, with an entire or toothed border. Petals linear-spatulate, bearing the stamens in the middle. Anthers fixed by the base, erect, linear. Style filiform; stigma capitate. Berry ovate or elliptic. Racemes for the most part lateral, subcorymbose.

§ 1. Flowers of 4-5 petals, having a ciliate bractea under each flower.

1. _D. ligusteri_: branches terete, when young, as well as the new leaves, peduncles, bracteas, and flowers pubescent; leaves petiolate, lanceolate, acuminate, coriaceous, at length glabrous; peduncles many, axillary, cymosely corymbose; bracteae lateral, ciliate under each flower: limb of calyx almost entire; corolla tetragonal; petals 4, linear, at length spreading; flowers pentandrous. ʒ. P. G. Native of _Nipal_, in woods in the great valley. Loranthus ligustrius, Wall. in Roxb. fl. ind. 2. p. 219. D. Don, prod. fl. nep. p. 143. Schultes, syst. 7. p. 101. Leaves 2 inches long, and 6-9 lines broad; pediolos 2 lines long. _Corolla_ 4-6 lines long, reddish.
LORANTHACEE.

VIII. Dendrophthoe.

Privet-like Dendrophthoe. Shrub par.

2 D. Wallachiæ: glabrous; branches terete; leaves rather alternate, ovate, obtuse, acute at the base; racemes axillary, 1-3-together, one-half shorter than the leaves, simple, in fascicles round the base of the branches; flowers small, pedicellate; bracteas lateral cuneate, one under each flower; petals 4, linear-cuneate; alabastra nearly terete; berry subglobose, reflexed; flowers tetraandrous.

3 P. S. Native of the East Indies, where it was detected by Heyne. Loranthus Wallachiæ, Schultes, syst. 7. p. 100. Loranthus polysepþhus, Wall. in Roxb. fl. ind. 2. p. 217. but not of Ruiz et Pav. Corolla deep purple, 4 lines long.

Wallich's Dendrophthoe. Shrub par.

4 D. púlcher: glabrous; branches terete; leaves opposite, petiolate, long-linear, acutish, coriaceous, with 5 subparallel veins, which are hardly conspicuous; corymb axillary, 1-2-together, pedunculate, trifid; branches 3-flowered; bracteas ovate-roundish, lateral, one at the outer side of each flower; limb of calyx truncate; alabastra terete, clavate; petals 5, linear, somewhat dilated at the apex; flowers pentandrous; anthers oblong, erect. 


Fair Dendrophthoe. Shrub par.

5 D. Pédelílis: glabrous; branches terete; leaves opposite, petiolar, long-linear, acutish, coriaceous, with 5 subparallel veins, which are hardly conspicuous; corymb axillary, 1-2-together, pedunculate, trifid; branches 3-flowered; bracteas ovate-roundish, lateral, one at the outer side of each flower; limb of calyx truncate; alabastra terete, clavate; petals 5, linear, somewhat dilated at the apex; flowers pentandrous; anthers oblong, erect. 


Pendulous Dendrophthoe. Shrub par.

6 D. con génér: glabrous; branches terete; leaves oblong, obtuse, attenuated at the base, on short petiolo; coriaceous, veined; racemes axillary, shorter than the leaves, subcoriaceous; peduncles 3-flowered; flowers pedicellate; bracteas ovate, acute, lateral, one under each flower; limb of calyx truncate; alabastra terete, somewhat club-shaped; petals 5, linear, acute; flowers pentandrous; anthers linear, inserted by the base. 


Congener Dendrophthoe. Shrub par.

7 D. Forstériæ: glabrous; branches terete; leaves opposite, petiolar, ovate, veiny, thin; cymes axillary, solitary, shorter than the leaves; peduncles 3-flowered; bracteas ovate, obtuse, lateral, one under each flower; calyx truncate; corolla pentagonal, subclavate in the young state. 

P. G. Native of the Society Islands. Loranthus Forstériæ, Schultes, syst. 7. p. 114. Loranthus stélis, Forst. prod. ex specimen in herb. Scherb. from Schultes obs. Perhaps this species does not belong to the present genus.

Forster's Dendrophthoe. Shrub par.

8 D. Gaudichaudi: glabrous; branches terete; leaves opposite, linear, obtuse, thickish, attenuated at the base; peduncles axillary, much shorter than the leaves, divaricately bifid at the apex, 2-4-flowered; parts of flowers equal; flowers tetraandrous; petals spatulate; anthers ovate, inserted by the base. 

P. G. Native of New Holland, where it was collected by Gaudichaud. Loranthus Gaudichaudi, D. C. prod. 4. p. 295. Leaves 10-12 lines long, and 2 lines broad. Flowers 5-6 lines long. Style filiform.

Gaudichaud's Dendrophthoe. Shrub par.

9 D. tetraphæ'talus: leaves opposite, nearly sessile, oblong, or elliptic, coriaceous; flowers tetraandrous, one on each side of each leaf, and therefore there are 4 at each joint, disposed in a short raceme; petals 4, linear. 

P. G. Native of New Zealand. Loranthus tetraphæ'talus, Lin. fl. suppl. 211. Forst. prod. no. 156. Schultes, syst. 7. p. 96. Calyx nearly entire. Style a little longer than the petals, filiform; stigma capitate. Bracteas probably wanting.

Four-petalled Dendrophthoe. Shrub par.

10 D. luzon'œnës: glabrous; branches terete, dichotomous or whorled, knotted at the joints: leaves opposite or verticillate, oval-oblong, coriaceous, sessile, almost veinless; peduncles terminal, cymose, cymose synflorescence at the apex, pubescence; bracteas ovate, acute, lateral, rather concave, one under each flower; limb of calyx truncate; corolla of 4 linear acute petals, which are somewhat concrete at the base (sometimes joined by pairs); style filiform. 

P. G. Native of Luzon, one of the Philippines. Loranthus Luzonëenës, Presl. in herb. Henck. and Schultes, syst. 7. p. 104. Leaves 11-15 lines long, and 6-7 broad. Corolla 15 lines long, hardly pubescent on the outside.

Luzon Dendrophthoe. Shrub par.

11 D. pentape'talus: glabrous, much branched; leaves opposite, petiolar, lanceolate-ovate or oval-cordate, obliquely attenuated, smooth; racemes 1-2, axillary, simple, stiff, length of the leaves; flowers very numerous, on short pedicels; bracteas oblique, oval, adpressed to the ovary; limb of calyx nearly entire; petals 5, swelled out at the base into a fleshy triquetrous body, recurved at the apex; stamens 5; anthers obovate; style angular; berry oblong. 


Five-petalled Dendrophthoe. Shrub par.

12 D. racemi'ferus: glabrous, clothed with rufous villi in the young stage, as well as the peduncles; leaves opposite or alternate, on short petioles, oblong-lanceolate, bluntish at the base, and acutish at the apex; glabrous; racemes axillary, spicate, simple, length of leaves; bracteas cuneate, lateral, one under each flower; petals 4, triquetrous at the base. 

P. G. Native of the East Indies, in the Burman empire, at Amherst and Tavoy. Loranthus racemi'ferus. Wall. mas. Very like D. pentape'talus, but differs in the flowers being tetraandrous.

Raceme-bearing Dendrophthoe. Shrub par.

13 D. coccineüs: glabrous; branches elongated; leaves alternate, on short petioles, oblong-ovate, obtuse, somewhat coriaceous at the base; spikes axillary, 1-2-together, erect, longer than the leaves; flowers sessile, with one bractea under each; limb of calyx nearly entire; corolla tubular; petals 4, linear, dilated at the base; anthers adnate; flowers tetraandrous. 


Scarlet-flowered Dendrophthoe. Shrub par.

§ 2. Flowers tubular, slender, 4-cleft, disposed in racemes, with one bractea under each flower. Many of the plants in this section are probably species of Scærnæ.
petioles, elliptic-lanceolate, at length glabrous; flowers in fascicles from the axils of the leaves, velvety from dense rufous pubescence, as well as the racemules and peduncles; bracteas lanceolate, thin, subuliform, under each flower 1-3 in a flat ring of calyx hardly any; corolla tubular, arched; lobes 4, oblong; anthers erect. ʃ. P. S. Native of the Burmese Empire, on Mount Taong-Dong, near Ava. Loranthus obtectus, Wall. mss. Leaves 2 inches long and an inch broad; petioles ½ inch long. Corolla 4-6-cleft, 10-11 lines long. Stigma hardly capitate.

Covered Dendrophthoe. Shrub par.

14 D. recurvus; branches terete, adult ones glabrous; leaves alternate, petiolate, elliptic, obtuse, acute at the base, smoothish; peduncles axillary and lateral, branched, 2-5-flowered, and are, as well as the flowers, velvety; flowers recurved; bracteas broad, obliquely capitulate, one under each flower; limb of calyx cup-shaped, toothed; alabastra terete; lobes 3, oblong; flowers tetradrous. ʃ. P. S. Native of the East Indies, on the Nelligerry mountains, where it was collected by Noton. Loranthus recurvus, Wall. mss. Leaves 2 inches long and 1½ lines broad; petioles 3-4 lines long. Alabastra 6 lines long. Anthers oblong, inserted by the base. Style filiform. Stigma hardly capitate.

Recurred-flowered Dendrophthoe. Shrub par.

15 D. lepta'mnthus; branches terete, while young as well as the leaves white from velvety down; leaves opposite, or rather alternate, petiolate, oval, obtuse at both ends, at length glabrous; racemes short, axillary, and are, as well as the flowers, velvety from white tomentum; tube of corolla long, terete, somewhat incurved; lobes 4, nearly equal, spreading; flowers tetradrous. ʃ. P. S. Native of the Burmese empire, at the river Irrawaddy, near Yenan. Loranthus leptanthus, Wall. mss. var. rotundifolia, D. C. coll. mem. vi t. 5. Corolla 4-cleft, 15-17 lines long. Anthers linear, erect. The species is allied to D. pulverulentus.

Dichotomous-flowered Dendrophthoe. Shrub par.

16 D. ferrugineus; branches long, pendulous, densely clothed with ferruginous down when young, as well as the under side of leaves, pedicels, calyxes, and corollas; leaves opposite, on short petioles, elliptic, obtuse, coriaceous, glabrous above; peduncles 1-4 together in the axils of the leaves, 2-6-flowered; bracteas small, adpressed to the ovaria, one to each; corolla tubular, deeply 4-parted; berry ovate; flowers tetradrous. ʃ. P. S. Native of the East Indies, in Pulo-Penang, Singapore, and Sumatra. Loranthus ferrugineus, Roxb. fl. ind. 2. p. 207, Jacq. mal. miss. 1 p. 5. Schultes, syst. 7. p. 98. Corolla densely clothed with rusty hairs, 7 lines long.

Rusty Dendrophthoe. Shrub par.

17 D. graciliflorus; branches compressed, at length terete, glabrous; leaves opposite, on short petioles, elliptic-oblong, acute at both ends, at length glabrous; racemules axillary, 5-7-flowered, somewhat umbellate; bracteas lateral, small, acute, one under each flower; corolla whitish from velvety down, slender, 4-lobe; lobes linear. ʃ. P. S. Native of the East Indies, in Siilhet. Loranthus graciliflorus, Schultes, syst. 7. p. 98. Leaves an inch and a half long, and 6-9 lines broad. Corolla 5 lines long, 4-cleft, with the tube tetragonal at the base. Anthers inserted by the base. Allied to D. ligustrinus.

Slender-flowered Dendrophthoe. Shrub par.

18 D. Heyne; branches terete, glabrous in the adult state; leaves opposite, on short petioles, oval, bluntish, rather velvety beneath from rufescent down; peduncles axillary, in fascicles, or branched, much shorter than the leaves, and are, as well as the flowers, clothed with rufous velvety down; bracteas lateral, small, one under each flower; corolla very slender, tubular, terete, 4-lobe; lobes oblong, short. ʃ. P. S. Native of the East Indies. Loranthus Heynei, Wall. mss.
peduncles axillary, 3-5-flowered; bracteas lateral, cuneulate, one to each flower; corolla cylindrical, truncate at the apex; style cleft. P. S. Native of the East Indies, at Munnar, on the banks of the Irriwaddy. Loranthus cuneatus, Wall. mas. Heyne, ex Roth, nov. spec. p. 198. Anthers probably 5, but in the younger flowers they are glued together, and with the stigmas. Corolla 6 lines long, velvety on the outside. This, with the preceding species, may hereafter form a distinct genus, or at least a separate section.

Cuneated-leaved Dendrophthoe. Shrub par.

Cult. Like the rest of the genera of this order, the species are not cultivable in gardens. They are showy plants, with the habit of honeysuckle.

IX. PITHIRUSA (from φίθιρος, φίθιρο, to destroy; the species destroy the trees on which they grow). Mart. in D. C. prod. 4. p. 672. Loranthus, sect. Claneastini, D. C. prod. 4. p. 287.

LIN. SYST. Tetrandria, Menogynia. Flowers hermaphroditic, 4-parted, furnished with 3 jagged bracteas each, some of them crowding in the axils of the leaves. Anthers fixed by the back, ovate. Styles short; stigma capitate. Berry ovate. Flowers small, axillary, sessile, or in axillary racemes.

1. P. Claneastini; glabrous; branches compressedly tetragonal while young; leaves opposite, obovate, coriaceous; flowers axillary, solitary, sessile, small; petals 4, concave; anthers ovate; berries oblong. P. S. Native of Brazil, in the province of Pará, in woods. Loranthus clandestinus, Mart. in Schultes, syst. 7. p. 96. Flowers hardly half a line long. Bracteas subcordiangular, jagged, one under each flower. Stamens shorter than the petals, but equal in length to the style. The anthers are said to be almost sessile.

Clandestine-flowered Pithirusa. Shrub par.

2. P. Salicifolius; branches compressedly tetragonal above; leaves opposite, lanceolate, acuminate, glaucous, coriaceous; racemes solitary, axillary, 3 times shorter than the leaves; pedicels 3-flowered, short, bearing 3 bracteas at the apex; petals 4, linear-lanceolate; anthers roundish-ovate. P. S. Native of Brazil, in the province of Minas Geraes. Loranthus salicifolius, Mart. in Schultes, syst. 7. p. 102. Flowers small, probably dioecious.

Willow-flowered Pithirusa. Shrub par.

3. P. Lucarqueensis; plant glabrous, much branched; branches terete; leaves petiolate, roundish-elliptic, acute, rounded at the base, somewhat membranous, veiny, with the middle nerve rather prominent; racemes axillary and terminal, few-flowered; flowers almost sessile, scattered, bracteal; petals 4, oblong, rather concave; anthers unknown. P. S. Native of Peru, in temperate parts near Lucarque. Loranthus Lucarqueensis, H. B. et Kunth, nov. gen. amer. 3. p. 440. Schultes, syst. 7. p. 102. Leaves an inch long, and 9-10 lines broad; petioles 4-5 lines long. Racemes 3 lines long. Flowers minute, of a whitish yellow colour.

Lucarque Pithirusa. Shrub par.

Cult. The species of this genus do not possess any beauty, and are not cultivable in the gardens.

X. SCRURULA (a diminutive of Scérra, a parasite; plants parasitical on trees). Loranthus, sect. iii. Scurrula, D. C. prod. 4. p. 301.

LIN. SYST. Tetra-Pentandria, Monogynia. Flowers hermaphroditic. Petals 4-5, joined together into a long tube, which is divided at the apex into 4 or 5 short unilateral lobes, usually gibbous at the base, opening by a longitudinal fissure as in Lobélia. Stamens 4-5; filaments adhering a long way to the corolla, but free at the apex; anthers fixed by the base, seldom by the back, to the top of the filaments, oblong, erect. Style filiform or cleft; stigma capitate. Peduncles axillary, few-flowered, or racemose, having a solitary bractea under each flower, which is usually pressed to the ovary.

§ 1. Flowers tetrandrous. Corolla 4-parted.

1. S. Roxbeíghi; branches terete, glabrous; leaves opposite, ovate, subcoriaceous, white from soft down beneath; peduncles crowded in the axils of the leaves, very short, simple or branched, 1 or few-flowered; bractea adpressed to the ovary, which is turbinate; alabastra cylindrical, 4-lobed at the apex, and having the tube cleft longitudinally. P. S. Native of Malabar, and probably of China, if the synonyme of Linnaeus does not appertain to S. Chinénsis. Loranthus Scurrula, Lin. spec. 472. Roxb. cor. 2. t. 140. Corolla of a rusty grey colour and mealy on the outside, but dark purple inside.

Roxburgh's Scurrula. Shrub par.

2. S. Chinénsis; branchlets and young leaves clothed with rusty villi; the rest glabrous; leaves opposite, ovate, on short petioles, coriaceous, obtuse, cuneated at the base; peduncles axillary, very short, bearing 2-5 umbellate pedicellate flowers; bractea ovate, small, under the ovary; limb of calyx truncate; corolla cleft, and curved in the bud, cleft longitudinally on one side; lobes of corolla 4, linear, short, reflexed. P. S. Native of China, where it was collected by Sir George Staunton. Loranthus Chinénsis, D. C. coll. mem. vi. t. 7.

Chinese Scurrula. Shrub par.

3. S. Fulvuleíenta; the younger parts of the plant are clothed with mealy stellateomentum; branches terete; leaves opposite, petiolate, broad-ovate, acute, at length glabrous; racemes lateral, tomentose, in fascicles; flowers pedicellate; tube of corolla long, terete, cleft at the apex into 4 short unilateral reflexed lobes. P. S. Native of Nipanul, on trees of Hetourou, and along the banks of the river Rapit. Loranthus fulvuleíentus, Wall. in Roxb. fl. ind. 2. p. 221. Schultes, syst. 7. p. 99. Petioles an inch long. Leaves 5-7 inches long. Corolla more than an inch long, mealy outside. Berry large, club-shaped, mealy.

Powdered Scurrula. Shrub par.

4. S. Fasciculata; glabrous; branches terete; leaves opposite, or somewhat verticillate, obovate, veiny above, but veinless beneath, coriaceous; fascicles lateral, few-flowered; lobes of corolla 4, reflexed, second; style longer than the exserted stamens. P. S. Native of Java, near Linga Jattie, in the province of Cheribon, on trees. Loranthus fasciculatus, Blum. bijdr. p. 661. Loranthus odoratus, Blum. bijdr. p. 663. This does not differ from this species according to the author.

Fasciculé-flowered Scurrula. Shrub par.

5. S. Fuscus; glabrous; branches terete, rather angular in the young state; leaves opposite, on short petioles, obovate, and oval, acute at the base, coriaceous, beset with rusty dots beneath while young; peduncules axillary, 1-2-flowered; corolla cleft on one side, having 4 erect lobes. P. S. Native of Java, on Mounts Salak and Gede, on trees. Loranthus fuscus, Blum. bijdr. p. 660. Genitals dark purple. Stigma capitate. See Blum. bat. verd. 1823. p. 190.

Fuscus Scurrula. Shrub par.

6. S. Umbellifer; glabrous; branches terete; leaves opposite, oblong-lanceolate, on short petioles, acute at the base; peduncles in fascicles, axillary, and lateral, pubescent, 3-flowered, subumbellate; corolla very long, slender, cleft into 4 linear reflexed segments at the apex; stigma cleft. P. S. Native of Nipanul, on Mount Sheeporou. Loranthus umbellifer, Schultes, syst. 7. p. 97. Loranthus umbellatus, Wall. in Roxb. fl. ind. 2. p. 222. but not of Roth. Corolla of a bright red colour, curved, pubescent. Peduncules clothed with ferruginous tomentum.

Umbel-bearing Scurrula. Shrub par.

7. S. Cordifolia; branches terete, villous, mealy while young;
leaves opposite, ovate-cordate, obtuse, villous on both surfaces, petiolate; racemes fascicled, villous, axillary; corolla tubular, clavate, villous, cleft at the apex into 4 short lanceolate lobes. 1. P. G. Native of the East Indies, at Shreemagur. Loranthus cordifolius, Wall. in Roxb. fl. ind. 2. p. 222. Schultes, syst. 7. p. 100. D. Don, prod. fl. nip. p. 143. New shoots, as well as all the tender parts of the plant, covered with pale or white stellate tomentum. Petioles an inch long. Corolla an inch long.  

Cordate-leaved Scurrula. Shrub par.  

8 S. DENDROIDES; branches terete, velvety when young; leaves usually opposite, ovate, on short petioles, glabrous above, and clothed with fine velvety down beneath; racemes of flowers axillary, on short peduncles, hardly longer than the petioles; bracteas ovate, small, one under each flower; tube of corolla arching, clothed with rusty velvety down, cleft into 4 linear-cuneated unequal lobes. ½. P. S. Native of the East Indies. S. buddeioides, Desr. in Linn. dict. 3. p. 600. Schultes, syst. 7. p. 97.  

Buddleia-like Scurrula. Shrub par.  

9 S. DENDRO; glabrous; branches terete; leaves petiolate, ovate-roundish, thickish; peduncles axillary, 1-2, bifid, a little shorter than the petioles; bractea ovate, girding the base of the ovarium; bud of corolla slender, somewhat clavate at the apex, arching, clothed with rusty velvety down. ½. P. S. Native of the East Indies. Loranthus bilobatus, Desr. in Linn. dict. 3. p. 600. Schultes, syst. 7. p. 119. Corolla 4-lobed.  

Two-flowered Scurrula. Shrub par.  

10 S. PHILIPPINESI; branches terete, velvety from short down when young, as well as the peduncles, bracteas, calyces, and corollas; leaves on short petioles, oval, rather pubescent, obtuse at both ends; flowers few, in fascicles, axillary, on short pedicels; bractea ovate, concave, small, under the ovarium; limb of calyx truncate; corolla cylindrical, cleft into 4 linear nearly equal lobes at the apex; style filiform. ½. P. S. Native of the Philippine Islands. Loranthus philippinensis, Cham. et Schlecht. in Linneea. 3. p. 204. Leaves 3 inches long and an inch broad. Corolla 7-8 lines long. Stigma small, capitate. Anthers linear, erect.  

Philippine Scurrula. Shrub par.  

11 S. VESTITA; branches terete, pedicels, under side of leaves, peduncles, bracteas, and flowers, clothed with rusty, mealy, velvety, stellate tomentum; leaves oblong-lanceolate, acute, shining above, and glabrous; fascicles of flowers numerous, on short peduncles in the axis of the fallen leaves; bractea concave, small under the ovarium; limb of calyx somewhat 4-toothed; corolla cylindrical, 4-cleft; lobes of corolla 4, linear, unilateral, reflexed. ½. P. G. Native of Nipaul, on the mountains of Chandagiri and Sheepeore. Loranthus vestitus, Wall. in Roxb. fl. ind. 2. p. 218. D. Don, prod. fl. nep. p. 143. Wall. pl. rar. asiat. 3. t. 250. Plant stout. Fascicles numerous, few-flowered, in the axis of the fallen leaves. Corolla cylindrical, with a subglobular apex before expansion, afterwards its limb bursts into 4 linear reflexed segments. On the outside the flower is rust or cinnamon coloured, and within purple and smooth. Berry oblong, tomentose.  

Clothed Scurrula. Shrub par.  

12 S. LEVIGATUM; branches terete, glabrous, when young compressed; leaves petiolate, opposite, elliptic-oblong, obtuse, glabrous, smooth; peduncles axillary, branched, 7-8-flowered, 4 times shorter than the leaves, and are, as well as the flowers, rather velvety from rusty down; bractea lateral, small; tube of corolla terete, cleft on one side: lobes 4, oblong. ½. P. S. Native of the East Indies, at Tavoy, in the Burmese Empire. Loranthus levigatissimus, Wall. mss. Flowerbud 7-8 lines long, regular while young. Anthers erect. Stigma rather capititate.  

Smooth Scurrula. Shrub par.  

13 S. HUTFULDA; branches terete, glabrous in the adult state, but when young angularly subcompressed; leaves opposite, petiolate, elliptic-oblong, acutish, glabrous, or clothed with rufous velvety down on the nerves beneath; bractea lateral, small, concave; corolla with a terete tube, and 4 oblong lobes. ½. P. S. Native of the East Indies, at Tavoy, in the Burmese Empire. Loranthus rigidulus, Wall. mss. This is hardly distinct from S. levigata.  

Small-rufous Scurrula. Shrub par.  

14 S. LEPIODOTA; branches terete, compressed while young, beset with velvety dots at first, but at length glabrous; leaves nearly opposite, oval, beset with rusty dots beneath; corolla 4-cleft, curved, elongated, covered with rusty dots; lobes reflexed, unilateral. ½. P. S. Native of the western parts of Java, on the higher ranges of mountains. Loranthus leptodetus, Blum. bijdr. p. 660. bat. verh. 1823. p. 192. but not of Schultes.  

Lepioidota Scurrula. Shrub par.  

15 S. RUFOLOSA; glabrous; branchlets rather compressed, but at length terete; leaves opposite, on rather short petioles, oblong-lanceolate, obtuse, glaucous, reticulately wrinkled, with smooth cartilaginous margins; racemes axillary, opposite, simple, shorter than the leaves; bractea concave, one at the side of each ovarium; corolla tubular, arching; limb of 4 lanceolate lobes. ½. P. S. Native of the East Indies. Loranthus rugulosus, Roth, nov. spec. p. 194. Schultes, syst. 7. p. 191. Corolla nearly an inch and a half long.  

Wrinkled-leaved Scurrula. Shrub par.  


Club-flowered Scurrula. Shrub par.  

17 S. ? OBOVATUS; leaves nearly opposite, obovate, glabrous; racemusescrowded, axillary; flowers tetrandrous; tube of corolla elongated. ½. P. S. Native of Java, about Linga Jattie, on trees. Loranthus obovatus, Blum. bijdr. p. 665.  

Obovate-leaved Scurrula. Shrub par.  

§ 2. Flowers pentandrous. Corolla 5-lobed.  

* Species natives of Africa.  

18 S. THONNINGII; branches terete, compressed at the apex; leaves petiolate, ovate, somewhat caduninmated, coriaceous, glabrous and dark green above, somewhat canescent beneath from almost imperfectly discernible down, as well as the branchlets; peduncles 1-3, axillary, short, bearing each 3-4 umbellate flowers on short pedicels; bracteas small, ovate, lateral, one under each pedicel; fruit ovate. ½. P. S. Native of Guinea, where it was collected by Thonning. Loranthus Thonninii, D. C. prod. 4. p. 303. Loranthus clavatus, Thonn. mss. but not of Lam. Flowers unknown.  

Thonninii Scurrula. Shrub par.  

19 S. KUTESESSIS; branches terete, rather compressed at the apex; young leaves, peduncles, and flowers clothed with rusty down; leaves petiolate, oval, obtuse at both ends, coriaceous; peduncles 1-3 together, shorter than the pedicels, bearing 2-3 1-flowered pedicels; bracteas lateral, oblong, 1 under each pedicel; flower-bud pentagonal at the apex; fruit ovate. ½. P. S. Native of Senegambia, near Nghianga, on trees. Loranthus rufescens, D. C. prod. 4. p. 303. Alabastra 3 lines long. Calyx truncately urceolate. Very nearly allied to S. Thonningii.  

Rufescens Scurrula. Shrub par.  

20 S. SENSILIFOLIA; glabrous; branches terete, simple; leaves sessile, opposite, ovate-roundish, cordate at the base; flowers
many in the axis, fascicled, sessile, deflexed; corolla tubid at the base, narrowed above, cleft longitudinally, hence it is expanded into a 5-lobed ligula on one side. 7. P. S. Native of Africa, at Koto or Keta. Loranthus sessilifolius, Beauv. fl. d'ow. 2. p. 8. t. 23. Schultes, syst. 7. p. 108. The anthers are delineated in the figure versatile.

**Sessile-leaved Scruulla.** Shrub par.

21. S. belvii; glabrous; branches simple, terete; leaves on short pedioles, rarely opposite and alternate, broad ovate-lanceolate, acute; peduncles very short, axillary, numerous, fascicled, 1-flowered, deflexed; corolla tubid at the base, narrowed above, cleft laterally, expanded into a 5-lobed ligula at the apex; anthers somewhat versatile. 7. P. S. Native of Africa, in the kingdom of Waree, at Chama or Sama. Loranthus belvii, D. C. pro. 4. p. 303. Loranthus lanceolatus, Beauv. fl. d'ow. 2. p. 8. t. 64. Schultes, syst. 7. p. 108, but not of Ruiz et Pav.

**Bela's Scruulla.** Shrub par.

22. S. pentagonia; glabrous; branches terete; leaves on short petioles, ovate or lanceolate, coriaceous, almost veinless, glaucous; flowers 4-5, in the axis of the leaves, sessile, crowded; bracteae calyxform under the ovarium; corolla tubid at the base, and narrowed above, cleft, expanded at the apex below, filaments and pentagonal at the apex before expansion, but at length expanded into a 5-lobed ligula; filaments inflexed; style tymid and pentagonal under the apex; stigma capitate. 7. P. S. Native of Senegal, on trees. Loranthus pentagonia, D. Coll. mem. vi. t. 8. This species is easily distinguished from the rest in the form of the style and flower-bud. It is very like S. Belviisi.

**Pentagonal-flowed Scruulla.** Shrub par.

23. S. dodoneae; glabrous; branches terete; leaves on short petioles, elongated, oblong-linear, obtuse, attenuated at the base, thick and coriaceous, glaucous, almost nerveless; flowers 2-3 together, sessile, crowded; bracteae cup-shaped, one under each ovarium; alabastra ciliard; corolla tubid at the base, but somewhat constricted above, expanded into a 5-lobed ligula at the apex; filaments inflexed; style tymid at the apex and pentagonal; stigma capitata. 7. P. S. Native of Senegal, on the trunks of tamarind trees. Loranthus dodoneae, D. Coll. mem. vi. t. 9. Allied to S. pentagonia.

**Dodonea-leaved Scruulla.** Shrub par.

24. S. glauce; glabrous; branches terete; leaves alternate, opposite, and 3 in a whorl, oblong or obv-oblong, obtuse, covered with a glaucous bloom; peduncles axillary, erect, bearing 3 or 5 flowers at the apex, on short pedicels; corolla rather tubid at the base, constricted in the middle, and divided at the apex into 5 linear revolute lobes; anthers linear, erect. 7. P. G. Native of the Cape of Good Hope. Loranthus glaucus,-Thumb. fl. cap. p. 293, but not Ruiz et Pav. Schultes, syst. 7. p. 104. Moquinia ribra, Spreng. ex Zeyh. in herb. Moricand. Habit almost of S. oleasfolia, but differs in the anthers being long and linear, not ovate, and in the stamens being free, not concretes.


**Glaucus Scruulla.** Shrub par.

25. S. oleasfolia; branches terete; leaves opposite, oblong, silky, bluish, feather-nerved; peduncles axillary, very short, bearing each 3 almost sessile flowers at the apex; corolla tubid at the base, and narrowed above, tubular, 5-lobed; lobes short, deflexed; stamens monadelphous; anthers oblong, fixed by the base. 7. P. G. Native of the Cape of Good Hope. Loranthus oleasfolia, Cham. et Schlcht. in Liouard, pl. 209. Lichtensteinia oleasfolia, Wendell. coll. 2. p. 4. t. 39. Loranthus speciosus, Dietr. Corolla red. Ovarium 1-celled; cell pentagonal, 1-seeded, ex Cham. et Schlcht. not 5-seeded.

**Olive-leaved Scruulla.** Shrub par.

26. S. canescens; every part of the plant is canescent; leaves ovate, obtuse, small. 7. P. S. Native of the Cape of Good Hope, in arid places on the branches of Lycium. Loranthus canescens, Burch. cat. geogr. 1119. trav. afr. 2. p. 90.

**Cancereiro Scruulla.** Shrub par.

27. S. clava-ta; glabrous; branches terete; leaves opposite, on short petioles, ovate, obtuse, coriaceous, almost veinless, rusty beneath; peduncles many, crowded, very short, in the axis of the leaves, dilated under the apex into a somewhat discoid bracteae; limb of calyx 5-toothed; alabastra cylindrical, clavate; corolla at length cleft laterally, 5-lobed; style striated angular. 7. P. S. Native of Madagascar. Loranthus clava-tus, Lam. dic. 3. p. 598. but not of Roxb. Schultes, syst. 7. p. 106. Filaments of stamens adnate a long way to the corolla; anthers oblong, erect, terminal.

**Clavate-flowed Scruulla.** Shrub par.

**Species natives of Asia.**

28. S. Henkea; glabrous; branches terete; leaves petiole, lanceolate-oblong, obtuse or acuminate, coriaceous, obsolescently veined; peduncles from the forks of the branches erect, bearing 3-flowered pedicels; bracteae ovate, concave, one under each ovarium; calyx pubescent, entire; corolla tubular, cleft laterally on one side: lobes 5, linear, reflexed. 7. P. S. Native of the island of Luzon. Loranthus Henkea, Presl, in herb. Henke, ex D. C. pro. 4. p. 304. Schultes, syst. 7. p. 113. Leaves 3-6 inches long, and 1½ to 2 inches broad, on petioles 8-10 lines long. Corolla 3-4 lines long, glabrous. Calyx reddish.

**Henke's Scruulla.** Shrub par.

29. S. malifo; glabrous; branches terete; leaves ovate, acute, petiolar, lanceolate-oblong, obtuse or acuminate, coriaceous, obsolescently veined; peduncles axillary, solitary, reflexed, bearing a dense umbel of flowers; pedicels and calyces clothed with rusty pubescence; limb of calyx nearly entire; corolla 5-cleft beyond the middle, and somewhat laterally cleft: lobes linear, reflexed. 7. P. S. Native of the island of Luzon. Loranthus malifo, Presl, in herb. Henke, ex D. C. pro. 4. p. 304. Schultes, syst. 7. p. 113. Perhaps sufficiently distinct from S. Henkea.

**Apple-leaved Scruulla.** Shrub par.

30. S. longifolii; glabrous; leaves oval-oblong, obtuse, veiny, coriaceous; upper ones rather cordate at the base; racemes axillary, simple, short, subcorbaceous; bracteae concave, one under each ovarium; limb of calyx entire; corolla long, clavate, contracted beneath the limb: lobes 5, unequal, cuneate. 7. P. S. Native of Malabar and Pondicherry. Loranthus longifolius, Desr. in Lam. dic. 3. p. 498. Wall. in Roxb. fl. ind. 2. p. 217. Schultes, syst. 7. p. 112. Walli-li-can, Rheed. mal. 10. p. 5. t. 4. Flowers purple, curved, 20 lines long. Anthers linear, inserted by the base.

**Long-flowered Scruulla.** Shrub par.

31. S. incarnata; plant while young beset with deciduous stellate down; leaves alternate, on short petioles, broad-ovate, acute, nerved; racemes rising beneath the leaves, hoary from wool; flowers nearly sessile, each furnished with 1 bracteae; limb of calyx 5-toothed; tube of corolla gibbous at the base, but constricted a little above the base: limb 5-parted: lobes reflexed; stigma clavate. 7. P. S. Native of the East Indies, in the island of Pulo Nias. Loranthus incarnatus, Jack, in Roxb. fl. ind. 2. p. 213. Schultes, syst. 7. p. 111. Leaves 9 inches long. Corolla above 2 inches long, slightly tomentose without, pale rose, with a greenish limb; tube gibbous below, contracted a little above the base, then widening upwards till it suffers a
second contraction before expansion into the limb, which is about a fourth the length of the tube, 5-parted, with reflexed segments. Berry mealy, ovate, 1-seeded. This is a beautiful species.

**Loranthaceae.**

32 S. *'elegans*; glabrous; branches terete; leaves opposite, or nearly alternate, oblong, obtuse, somewhat cuneate at the base, with undulated margins, almost veilless, coriaceous; racemes axillary, short, twin or tern, erect, 5-7-flowered; corolla terete, somewhat incurved, 5-tailed; lobes linear, spreadingly reflexed, nearly equal; style exerted beyond the anthers. *f.* P. S. Native of the East Indies, near Yennanag. Loranthus elegans, Wall. cat. no. 530. Leaves 2 inches long, and 9 lines broad. Corolla glabrous, an inch and a half long, red. Anthers linear, erect. Calyx truncate. Bracteas lateral, small, one under each ovary.

**Elegant Scruella.** Shrub par.

33 S. *cy^2^r^2^rdia*; glabrous; leaves alternate, petiolate, lanceolate, acute at both ends, smooth, nervled; racemes axillary, stiff, length of the leaves; flowers pedicellate, rather distant from each other, each girded at the base by a bracteae on the outer side; limb of calyx almost entire; limb of corolla much longer than the tube, which is cylinudcular, with reflexed segments. *f.* P. S. Native of Sumatra. Loranthus cylinudricus, Jack, in Roxb. fl. ind. 2. p. 213. Schultes, syst. 7. p. 110. D. C. prod. 4. p. 305. Leaves 4-5 inches long; pedicels about an inch long. Corolla red, perfectly cylinudcular, before expansion, 5-petalled; limb reflexed, 3 times as long as the tube; petals linear, separating almost to the base. Ovary cylinudcular, 1-seeded. Flowers sometimes tetraudrous.

**Cylindrical-flowered Scruella.** Shrub par.

34 S. *i^2^n^2^dica*; glabrous; branches terete; leaves nearly opposite, ovate-oblong, on short pedicels, bluntish, feather-nerved; racemes axillary, or nearly terminal, solitary, simple, shorter than the leaves; flowers on short peduncles, each peduncle bearing 1-3 sessile flowers at the top, each flower propped by an ovate bracteae; petals 5, linear, acute, hardly concre at the base; the border reflexed; anthers linear, erect. *f.* P. S. Native of the island of Timor, and probably elsewhere in India. Loranthus Indicus, Desc. in Lam. dict. 5. p. 601. Schultes, syst. 7. p. 149. D. C. prod. 4. p. 305. Lionéica Zeyclanica, Gærtn. fruct. 1. p. 157. t. 27.? Corolla purple, glabrous, 7-8 lines long. Leaves 3 inches long, 1 or 1½ broad, on pedicels, which are 2-3 lines long. Berry ovate.

**Indian Scruella.** Shrub par.

35 S. *turbinata*; glabrous; branches terete; leaves sub-alternate, on short pedicels, oval or oblong, obtuse or acutish, thick; peduncles axillary, 2-3-cleft, much shorter than the leaves; bracteae ovate, one under each ovary, which is turbinate; limb of calyx unequally and bluntly 5-toothed. *f.* P. S. Native of the East Indies, on the Nelligerry mountains, where it is called Mandjil, along with other species, by the natives. Loranthus turbinatus, D. C. prod. 4. p. 305. Leaves 3 inches long, and 12-16 lines broad; pedicels 3-6 lines long. Corolla unknown, and is only judged to belong to the present section of the genus in the calyx being said to be 3-parted.

**Turbinate-fruited Scruella.** Shrub par.

36 S. *violaceus*; glabrous; leaves nearly opposite, on short pedicels, from oval to lanceolate, thick, unadulterated, hardly veined; racemes axillary, simple, solitary, many flowered; bracteas concave, cordate, small, one adpressed to each ovary on the outer side; calyx cup-shaped, with an entire border; corolla long, tubular, a little curved, swelling from the bottom to within a third of the mouth, then contracting a little, with a 5-parted border; upper fissure much the deepest; lobes linear, reflexed towards one side; stigma clavate; berry oblong, smooth, 1-celled, 1-seeded. *f.* P. S. Native of the East Indies, frequent on trees. Loranthus bicolor, Roxb. cor. 2. p. 19. t. 139. fl. ind. 2. p. 205. Schultes, syst. 7. p. 109. D. C. prod. 4. p. 305. Flowers the size and appearance, and much like those of a honeysuckle, red at the base, and green at the apex, nearly 1½ inch long. Anthers exerted, linear, fixed by the base. Leaves from 3-5 inches long, and from ½ to 1 inch in breadth.

**Two-coloured-flowered Scruella.** Shrub par.

37 S. *falcata*; glabrous; branches terete; leaves opposite, on short petioles, linear, glaucous, coriaceous, obtuse, laterally falcate; racemes axillary, few-flowered; bracteae short, one under each ovary on one side; alabastra falcate, cylinudcular, pentagonal at the apex; lobes of corolla 5; anthers linear-oblong, inserted by the base. *f.* P. S. Native of Madras. Loranthus falcatus, Lin. fil. suppl. 211. Schultes, syst. 7. p. 150. The flowers are fulvous according to Linnaeus.

**Falcate-flowered Scruella.** Shrub par.

38 S. *venosa*; glabrous; branches terete; leaves subalternate or opposite, oval, attenuated at both ends, coriaceous, having the veins blood-coloured beneath; racemes axillary, much shorter than the leaves, rather conicent; limb of calyx somewhat 5-toothed; tube of corolla more or less cleft on one side; lobes 5, reflexed, umbraculifer; berries oblong-conical. *f.* P. S. Native of Java, at Buitenzorg, upon trees. Loranthus venosus, Blum. bijdr. p. 668. bat. verhund. 1823. p. 188. Corolla 4-5 lines long. Leaves variable in form. Style a little longer than the stamens; stigma capitate. Anthers linear, adnate. Blum. l.c.

**Veiny Scruella.** Shrub par.

39 S. *pentaedra* (Lin. mant. p. 63.) glabrous; branches terete; leaves alternate, on short petioles, oblong, blunthish, thickish; racemes axillary, solitary, few-flowered, and are, as well as the flowers, covered with velvety mealy down; bracteae ovate, one under each ovary; limb of calyx bluntly 5-toothed; tube of corolla cylindrical; petals 5, linear. *f.* P. S. Native of Java, on trees. Loranthus pentandrus, Lin. mant. p. 63. Blum. bijdr. p. 661. Schultes, syst. 7. p. 110. D. C. prod. 4. p. 305. Leaves 4 inches long, and an inch broad. Corolla 7 lines long, purplish inside. Anthers erect.

**Var. *f. floccus* (Blum. bijdr. p. 661. under Loranthus) racemes crowded; tube of corolla inflated. *f.* P. S. Native of Java, on trees, about Buitenzorg.

**Pentandrous Scruella.** Shrub par.

40 S. *amplexifolium*; glabrous; branches terete; leaves sessile, opposite, corotate at the base, orbicular, coriaceous, marginate; flowers racemose; bracteae rather concave, orbicular, one under each ovary on one side; corolla cylindrical, contracted under the apex; lobes oblong. *f.* P. S. Native of the East Indies, on the Nelligerry mountains, where it was collected by Noton. Loranthus amplexifolius, D. C. prod. 4. p. 305. Loranthus amplexicaulis, Wall. miss. but not of Kuntz. Corolla 15 lines long, of a brownish purple colour. Anthers linear, erect. Calyx truncate. Upper leaves 2 inches in diameter.

**Clasping-leaved Scruella.** Shrub par.

41 S. *heteranthum*; glabrous; branches terete, angular while young; leaves alternate, on short petioles, elliptic or lanceolate, sometimem atenuated at both ends, thick, and coriaceous; racemes axillary, length of the leaves; pedicels twice the length of the calyx; bracteae convex, short, one under each ovary on the outside; bud of corolla nearly straight, somewhat pentagonal; with 5 linear lobes; anthers erect, linear, twice the length of the filaments. *f.* P. S. Native of the East Indies, at Martaban. Loranthus heteranthus, Wall. cat. no. 537. Leaves 4 inches long, and 15-18 lines broad. Flowers 8-10 lines long. Calyx truncate.
LORANTHACEAE. X. SCURRULA. XI. ELYTRANTHE.

Variable-flowered Scurrula. Shrub par. 42 S. prælonga; leaves alternate, ovate, obtuse, tapering at the base, glabrous, of the consistency of parchment; racemes axillary; flowers secund; tube of corolla very long, clavate, angular. ɣ. P. S. Native of Java, near Tjiradjas. Loranthus prælongus, Blum. bijdr. p. 564. Schultes, syst. 7. p. 117. Vahl to C. clavata and S. lungifolia. Tube of corolla yellow, nearly 3 inches long; lobes linear, channeled inside, greenish.

Longest-flowered Scurrula. Shrub par. 43 S. curvata; leaves opposite or alternate, oblong, bluntish, acute at the base, coriaceous, rather veiny, glabrous; racemes axillary, solitary; tube of corolla elongated, curved; lobes reflexed. ɣ. P. S. Native of Java, on Mount Salak, parasitical on trees. Loranthus curvatus, Blum. bijdr. p. 655. Schultes, syst. 7. p. 110. Tube of corolla nearly 1½ inch long, yellow, but having the limb of a pale orange colour. Anters adnate, elongated.

Curved-flowered Scurrula. Shrub par. 44 S. braecteata; every part of the plant clothed with grey starry tomentum; branches terete; leaves small, alternate, obtuse-ovate, obtuse, tapering to the base, rather long petioles; umbels axillary, 5-flowered; braecest oblong, tongue-shaped, one under each ovarium; corolla long, slender, cylindrical at the base, but widening at the apex, with the throat contracted; lobes linear, unilateral, much shorter than the tube. ɣ. P. S. Native of the East Indies. Loranthus braecestus, Heyne, in Roxb. fl. ind. 2. p. 220. Loranthus Heyneanaeus et L. tomentosus, Schultes, syst. 7. p. 102 and 106. Loranthus tomentosus, Roth, nov. spec. p. 191. Umbels densely villous; pedicels one-third of an inch long.

Braecest Scurrula. Shrub par. 45 S. goodenii-foëlia; branches terete, glabrous; leaves alternate, obovate-cuneated, obtuse, somewhat emarginate, tapering into the petioles at the base, rather vein, glabrous in the adult state, but canescent in the young state from stellate decumbous down; peduncles axillary, 2-3-flowered; braecest ovate, acute, one under each ovarium; tube of calyx pubescent, with 5 rather ciliated teeth; corolla cylindrical, cleft on one side: lobes 5, linear, reflexed, unilateral; style filiform. ɣ. P. S. Native of the East Indies, on the Nelligherry mountains, where it is called Mandjil, and where it was collected by Leschenault. Loranthus goodenii-folius, D. C. prod. 4. p. 390. Very nearly allied to S. lobelici-floëa.

Goodenii-flowered Scurrula. Shrub par. 46 S. lobelici-floëa; glabrous; branches terete; leaves obovate-cuneated, obtuse, tapering into the petioles, sparingly veined; pedicels 1-2, axillary, 1-flowered, very short, spreading; braecest ovate, acute, one under each ovarium; tube of calyx cylindrical, cleft on the inner side: lobes 5, linear, reflexed, unilateral; style filiform. ɣ. P. S. Native of the south of India, where it is called Vira-marum and pile-rivili by the natives, and where it was collected by Leschenault. Loranthus lobelici-fólius, D. C. prod. 4. p. 396. Leaves an inch long, and 4 lines broad. Corolla an inch long, red in the dry state. Loranthus cuneatus, Roth, nov. spec. p. 193.?

Lobelia-flowered Scurrula. Shrub par. 47 S. elástica; glabrous; branches strong, columnar: internodes short; leaves sessile, thick, ovate, acute, obsolescent 5-nerved; flowers almost sessile, in fascicles about the joints; tube of corolla cylindrical: having the limb beaked before expansion: segments linear, and more or less numerous, from the base upwards, revolute. ɣ. P. S. Native of Malabar. Loranthus elásticus, Desr. in Lam. dicr. 3. p. 599. Wall. in Roxb. fl. ind. 2. p. 217. Schultes, syst. 7. p. 107. Belutta-itti-cami, Rheed. mal. 10. p. 7. t. 3. The leaves are remarkably thick, and appear both trinerved and triple-nerved.


Cult. The species of this genus are easily distinguished from the rest that are broken off from the old genus Loranthus in the tube of the corolla being curved, and bulged at the base on one side, as in Lobèlla, cleft longitudinally on the upper side, and the segments all leaning to the lower side, and reflexed. The plants have the habit of honeysuckle, but are not cultivable.

XI. ELYTRANTHE (from elytron, elytron, a case or sheath, and anthos, a flower; in reference to the joined bracteae forming a sheath under the flower). Lepeostegères and Elytrânthes species of Blum. in litt. 1829. Loranthus species of authors. Loranthus, sect. iii. Symphyanthus, § 1-34 and 5. D. C. prod. 4. p. 296–299.

Lin. syst. Pentâ-Hexâdiâria, Monogynia. Flowers hermaphrodite, pentameros or hexameros. Petals 5-6, joined together into a tube to the middle, and therefore divided to the middle into a 5-6 cleft regular limb. Stamens 3-6: filaments adnate to the petals at the base, and free at the apex; anthers fixed by the base, erect. Style filiform; stigma obtuse. Racemes axillary; flowers bracteate.—This genus differs from Struthânthus in the corolla being gamopetalous, and from Denophthhe, to which it comes nearest, in the flowers being racemose, not corymbose, and in each flower being usually furnished with more bracteas than one, which are not cup-shaped nor oblique, as in that genus: it also differs from Scurrula in the limb of the corolla being regular, not as in that genus unilateral; and from Lozaxthéra in the anthers not being oscillatory.

§ 1. Anguliflori (from angulus, an angle, and flos, a flower; the flowers are more or less hexagonal from 6 crests at the base). Flowers tubular, usually tramid at the base, and more or less hexagonal from crests, dividing into 6 lobes to the middle; anthers erect. Bracteolas 3, joined together under each flower.

1 E. retusa; glabrous; leaves opposite, on short petioles, obovate-oblong, coriaceous, retuse, or emarginate, with the lateral nerves indistinct; racemes short, usually solitary, rising from the axils of the fallen leaves; flowers pedicellate, each furnished with 1-2 bracteas at the base; limb of calyx entire; tube of corolla clavate, gibbosus, and angular, contracted at the limb: lobes 5-6, lanceolate, reflexed. ɣ. P. S. Native of the Island of Singapore. Loranthus retusus, Jack, in Roxb. fl. ind. 2. p. 212. Schultes, syst. 7. p. 112. The plant fastens itself by long runners to trees. Leaves smooth, about 3 inches long. Margin of calyx entire. Tube of corolla clavate, gibbosus, and angled above, rosy, suddenly contracted at the limb, which is yellowish green, having the lobes or segments shorter than the tube.

Retuse-leaved Elytranthe. Shrub par.

2 E. amplulaeæa; glabrous; leaves opposite, on short petioles, oblong, polished; racemes axillary, solitary or in pairs, much shorter than the leaves; flowers opposite, on short pedi-
of the island of Pulo-Penang. Loranthus oleoides, D. C. prod. 4. p. 297. Loranthus oleifolius, Wall. ms. but not of Cham. et Schlecht. Allied to E. pellens, ex Wall.

**Olivo-like Elytranthe.** Shrub par.

8 E. **globiosa**; plant glabrous, branched; leaves opposite, though sometimes alternate, and 3 in a whorl, oblong, coriaceous, smooth, almost veinless; racemes or spikes axillary, or between the leaves, or from the axils of the fallen leaves, generally solitary, but sometimes 2-3 together, much shorter than the leaves; flowers sessile, opposite, from 3-6 pairs on each spike; bracteas no other than the perianth of the fruit, but according to D. C. they are corollas; limb of calyx truncate; tube of corolla gibbous, 6-sided; limb 6-parted; segments regular, reflexed; berry round-oval, size of a pea. P. S. Native of the East Indies, throughout Bengal on trees. Loranthus globosus, Roxb. fl. ind. 2. p. 206. Leaves 2-3 inches long. Flowers small, of a greenish orange colour. Perianth of the fruit inferior, 2-leaved, the under and exterior corollate, the inner bidentate; that of the flower no other than the circular margin of the pit, which receives the flower. Filaments inserted at the base of the segments of the corolla. Berry smooth, size of a pea, when ripe the pulp is yellow, clammy, and elastic.

**Globos-flowered Elytranthe.** Shrub par.


**Shawly Elytranthe.** Shrub par.

10 E. **spherocephala**; glabrous; branches terete; leaves on short petioles, opposite, ovate-oblong, coriaceous, veinless beneath; racemes axillary, solitary or twain; flowers angular. P. S. Native of Java, about Buitenzorg, Batavia, &c. on trees, where it is called *Mengenndo*, as well as many other species, by the natives. Loranthus spherocephalus, Blum. bijdr. p. 661. and bat. verhandl. 1823. p. 189. Schultes, syst. 7. p. 149. Tube of corolla angular: flower-bud 5 lines long.

**Round-fruited Elytranthe.** Shrub par.

11 E. **patula**; glabrous; leaves opposite, petiolate, elliptic-ovate, coriaceous, smooth, acute; peduncles axillary, or rising beneath the leaves, shorter than the leaves; bracteas 2 or 3, embracing the ovum; limb of calyx entire; tube of corolla acutely 6-angled, equal in length to the segments of the limb, which are 6, narrow, and revolute. P. S. Native of the interior of Bencoolen, on trees. Loranthus pataulus, Jack, in Roxb. fl. ind. 2. p. 214. Schultes, syst. 7. p. 135. Leaves about 3 inches long. Corolla green, tipped with light red, and with a purplish tinge tending to the base; having the tube clavate and dilated upwards. Stigma capitate. Berry subglobose.

**Spraying-paniced Elytranthe.** Shrub par.

12 E. **cochinchenis**; glabrous, much branched; leaves opposite, ovate-lanceolate, acute; peduncles axillary, many-flowered, crowded, furnished with 3 concrete bracteas under each flower: tube of corolla hexagonal, with 6 linear-lanceolate lobes, which burst elastically, and become revolute; stigma capitate; berries ovate. P. G. Native of Cochin-china, on trees in gardens. Loranthus Cochinchenis, Lour. coch. p. 195. Flowers greenish yellow. Berry yellowish red.

**Cochin-china Elytranthe.** Shrub par.

13 E. **avenia**; glabrous; branches terete; leaves opposite, narrow-lanceolate, coriaceous, glabrous, veinless; peduncles crowded, axillary, usually 2-flowered; flowers angular, hexan-
loranthaceæ. xi. elytranthe.

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4. involvulcâta (the flowers are involucrated with bracteas).

§ 4. involucrati (the flowers are involucrated with bracteas). Flowers tubular, 5-6-cleft. Anthers erect. Bracteas many, crowded, constituting an involucrum around the flowers, which are subcapitate.

19 E. involucrâta; glabrous; branches shining; leaves opposite, on short pedicels, ovate-cordate, smooth; umbels axillary, nearly sessile, much shorter than the leaves, 4-flowered, involucrated by 4 bracteas; bracteas ovate-lanceolate, smooth, entire; calyx villous, with a 5-toothed border; tube of corolla villous, widening towards the mouth; limb regular, 5-parted, with linear-revolute segments; anthers oval; stigma 2-lobed.

§ 5. Elytranthes (from ελύραιος, elytron, a sheath or case, and αὐθος, anthesis, a flower; in reference to the large bracteae. 3 1 2
forming a sheath to the flowers. *Flowers tubular, 6-ovate, hexandrous; lobes of limb linear, acute. Flower-buds nearly terete. Authors erect. Flowers sessile, and decussate along the rachis of the spikes, furnished each with 3 bracteas, one under the flower and two opposite lateral combined ones; all large, concave, and deciduous.

23 E. *Loranthia* (Blum. in litt. 1392.) glabrous; branches compressed; leaves opposite, oval-oblong, acute, coriaceous; spikes axillary, on short peduncles, sub-capitate, each bearing 4 decussate, tribracteate flowers. ₂ P.S. Native of Java, in woods on the mountains. *Loranthus albicans*, Blum. bijdr. p. 665.

Whitish *Elytranthe*. Shrub par.

24 E. ? *obumnitus*; branches terete, straight; leaves spatulately linear, thickened at the apex; peduncles nutant, somewhat secund. ₂ P.S. Native of Brazil, on the banks of the Rio Grande. *Loranthus obumnitus*, spreng. cur. port. 139. Each ovary is supported by a cup-shaped bract, or by 3 concrete ones.

Cleft *Elytranthe*. Shrub par.

Colt. Like the rest of the genera of the present order, the species are not cultivate. The plants have much the habit of *Lonicera*.

XII. NOTHANTHERA (from *notos*, *notus*, the back, and *arnipa*, *anthera*, an anther; the authors are fixed by the back to the filaments; hence they are oscillatory). *Loranthus*, sect. iv. *Notanthera*, exclusive of 1. *Tetraptera*, and 2. *Calanthe*, D.C. prod. 4. p. 307.—*Loranthus* species of authors.

Linn. *Syst. Pentá-Hexátria, Monogynia*. Flowers hermaphrodite. Petals 5-6-7-8, but usually 6, sometimes almost distinct to the base, and sometimes equally joined together at the base, linear or lanceolate. Stamens equal in number to the petals; filaments adnate to the corolla at the base, but free at the apex; anthers fixed by the back, oscillatory or incumbent. Style filiform. Stigma clavate. Berries ovate.—Parasitical shrubs, natives of South America, except one from Asia. Peduncles corymbose or racemose; bractelets usually bearing 3 flowers and 3 bracteas; sometimes the pedicels are 1-flowered, and with a bractea under each flower.

§ 1. *Pentánera* (from *pentos*, *pente*, five, and *μέγας*, *moris*, a part; the flowers are pentameros or divided into 5 parts). *Flowers pentameros and pentandrous*, large, from 1-8 inches long.

1 N. *grandiflóres*; shrub glabrous, dependent; stems terete; leaves on short pedioles, oval, thick; racemes terminal, subcorymbose, few-flowered; pedicels bearing each 1 flower and 1 bracteas; bracteas ovate, concave, length of fruit; petals 5, linear, joined to the middle; anthers versatile. ₂ P.G. Native of Peru; parasitical on trees, where it is called *Hutan Mecân*. *Loranthus grandiflorus*, Ruiz, et Pav. fl. per. 3. p. 45. t. 273. f. a. Schultes, syst. 7. p. 115. Corolla very long. Berry blue, size of an olive.

Great-flowered *Notanthera*. Shrub par.

2 N. *longibracteáris*; glabrous; branches terete; leaves scattered, lanceolate, or ovate-lanceolate, acute, sessile, coriaceous, veinless; spikes terminal; bracteas foliaceous, linear-lanceolate; flowers adhering to the bracteas at the base; flower-bud clavate; petals 5, linear; anthers versatile. ₂ P.G. Native of Peru. *Loranthus longibracteátus*, Desr. in Lam. dict. 3. p. 599. Schultes, syst. 7. p. 117. Leaves 15-24 lines long, and 8-9 lines broad. Corolla 2½ inches long. *Long-bracteát Notanthera*. Shrub par.

3 N. *verticillé*; branches terete, 3 in a whorl; leaves also usually 3 in a whorl, lanceolate, nerveless, glaucous, usually secund; flowers terminal, second, crowded into heads; bracteas ovate, concave, 1 under each flower; petals 5, joined at the base, spatulately-lanceolate and revolute at the apex; anthers oblong. ₂ P.G. Native of Chili, upon trees and shrubs on the banks of the river Andalban. *Loranthus verticillé*, Ruiz, et Pav. fl. per. 3. p. 17. Schultes, syst. 7. p. 117. Berry oval, blackish-purple.

Whitish *Elytranthe*. Shrub par.

4 N. *caicús*; glabrous; branches terete; leaves on short pedioles, oval-lanceolate, or lanceolate, thickish, veinless; peduncles 1-flowered, disposed in terminal racemes, bearing under each flower an oblong bract, which is 3 times longer than the ovarium; petals 5, joined to the middle, and spreading at the apex, linear; anthers incumbent. ₂ P.G. Native of the Andes of Peru, upon trees. *Loranthus cacicús*, spreng. syst. 1. p. 13. *Loranthus glauca*, Ruiz, et Pav. fl. per. 3. p. 45. t. 279. f. b. H. B. et Kunth, nov. gen. amer. 3. p. 438. but not of Thumb. *Loranthus corymbósus*, Dietr. gart. lex. 4. p. 458. Schultes, syst. 7. p. 115. Leaves an inch or more long, and half an inch broad; pedicels 2 lines long. Flowers an inch long, red at base and apex, but yellow in the middle. Berry oval, dark purple. This species is nearly allied to *N. longibracteátus*.

Grey *Notanthera*. Shrub par.

5 N. *Pestrophórum*; glabrous; branches terete, rather glaucous; leaves opposite, on short pedioles, lanceolate, thickish, veinless; peduncles 1-flowered, disposed in a terminal raceme, bearing an ovate, acute bractea under each flower, which is one-half shorter than the ovarium; limb of calyx truncate; petals 5, joined together a little beyond the middle; anthers fixed by the back to the filaments. ₂ P.G. Native of Chili, where it was collected by Poeppig. Leaves an inch long. Flowers 2 inches long.

Poepig’s *Notanthera*. Shrub par.

6 N. *Sterbergianus*; glabrous; branches terete; leaves ovate or oval, obtuse, coriaceous, veinless above; peduncles many, short, 1-flowered, crowded, corymbose, rising from the axis of the upper leaves and the tops of the branches: bracteas ovate, each one under each ovary; and shorter than it; petals 5, linear, hardly concrete at the base; anthers versatile. ₂ P.G. Native of Chili, near La Guardia, and Aconcagua, and on the Cordillera of Chili. *Loranthus Sterbergianus*, Schultes, fil. in herb. Hanke, and syst. 7. p. 116. Loranthus glaucus, Gill. but not of Ruiz and Pav. nor Thumb. Leaves 12-15 lines long, and 8-10 broad; pedicels 1½ line long. Allied to *N. caicús*, but differs in the bracteas being 1 half shorter than the ovaries, not 3 times longer.

*Sterberg’s Notanthera*. Shrub par.

7 N. ? *Pohl*; glabrous; branches terete; leaves oval, obtuse at both ends, on short pedioles, thick, coriaceous, glaucous; the middle nerve hardly distinct at the base, the rest of it obsolete; pedicels axillary, solitary, shorter than the leaves, opposite, dichotomously corymbose, few-flowered; petals 5, linear, thick, almost distinct, bearing each a ligula beneath the stamens; anthers versatile. ₂ P.S. Native of Brazil, where it was detected by Pohl. *Loranthus glaucus*, Pohl. in litt., but not of others. *Loranthus Pohlii*, D.C. prod. 4. p. 308. Leaves 12-15 inches long, and 8-9 broad. Corolla an inch long. Bracteas small, very blunt, one under each flower. Perhaps a species of *Psittacanths*.

Pohl’s *Notanthera*. Shrub par.

₉ 2. *Micrínthera* (from *μικρα*, *mikra*, small, and *ανθος*, *anthos*, a flower; flowers of the species small). *Flowers small, usually hexameros or divided into 6 parts, but in a very few they are divided into 4-5-7 parts, disposed in racemes; the branches of the raceme usually bearing 3 flowers and 3 bracteas each.—Species all natives of America.
8 N. sarmentosus: glabrous, rather scandent, hence the branches throw out roots on one side; branches angular; leaves petiolate, oblong-lanceolate, acute, somewhat complicate and keeled: having the middle nerve rather prominent; racemes axillary, about equal in length to the leaves: having their branches short and angular, and bearing 3 bracteas and 3 sessile flowers each at the apex; petals 6, linear, spathulate; anthers ovate, incumbent. f. P. G. Native of Peru, at Munnà: parasitical on trees. Loranthus sarmentosus, Ruiz et Pav. fl. per. 3. p. 49. t. 278. f. a. Schultes, syst. 7. p. 145. Corolla yellowish, 3-4 lines long. Berry oblong, greyish. Leaves 1½ inch long, and an inch broad; petioles 2 lines long.

Sarmentiaca Notanthera. Shrub par.

9 N. acuminatus: glabrous; branches angular, somewhat sermentose; leaves petiolate, remote, ovate, long-acuminated; racemes axillary, one half shorter than the leaves: having the branches bractiate, and bearing each 3 ovate, concave, acute bracteas, and 3 sessile flowers; petals 6, linear; anthers ovate. f. P. G. Native of the Andes of Peru, in groves. Loranthus acuminatus, Ruiz et Pav. fl. per. 3. p. 49. Schultes, syst. 7. p. 144. Very nearly allied to N. sarmentosus, but differs in the leaves being flat, in the stigma being petalate, and the berries being brownish yellow.

Acuminated-leafed Notanthera. Shrub par.

* * Racemes terminal and axillary. 10 N. Selidewiosa: glabrous; branches tetragonally terete, radicant; leaves obovate, retuse, or emarginate, ending in a recurved mucron, carilaginous, feather-nerved, tapering into the short petioles; racemes axillary and terminal, naked, shorter than the leaves: having the branches bearing 3 flowers and 3 bracteas; limb of calyx lax; corolla 6-parted; with linear lobes; anthers versatile. f. P. S. Native of Brazil. Loranthus Selidewiosa, D. C. prod. 4. p. 312. Loranthus reticus, Cham. et Schlecht. in Linneo, 3. p. 215. but not of Jack. Leaves 20 lines long, and 15-16 lines broad; petioles 4 lines long. Corolla 3 lines long. Stigma thickish.

Sellerio's Notanthera. Shrub par.

11 N. radiicans: glabrous; branches terete, elongated, radi- cent; leaves ovate, oblong, or lanceolate, acuminate, ending in a subulate point, feather-veined, with carilaginous margins, running down the petioles at the base; spikes axillary and terminal; flowers and bracteas by threes; corolla 6-parted, with linear lobes; anthers versatile. f. P. S. Native of Brazil. Loranthus radiicans, Cham. et Schlecht. in Linneo, 3. p. 207. Leaves 5 inches long and 1½ broad; petioles hardly 5 lines long. Corolla 3 lines long. Flowers disposed in something like whorls of five.

Rooing Notanthera. Shrub par.

12 N. buxifolius: branches rather angular, and rather hispid from stiff short hairs; branches terete, and are as well the petioles and leaves glabrous; leaves oval, coriaceous; racemes terminal and axillary, erect; pedicels bearing each 3 flowers and 3 bracteas; corolla tubular, 4-5-6-parted; having the leaves dilated and concave at the apex; anthers versatile. f. P. G. Native of Chili, near Talcahuano: parasitical on various trees. Loranthus buxifolius, Cham. et Schlecht. in Linneo, 3. p. 207. Loranthus Eschholzianus, Mart. in Schultes, syst. 7. p. 117. Leaves rough in the young state. Bracteas fringed at the apex. The root, according to Chamisso, creeps under the bark of the trees on which the plant grows. Style acute at the apex. Corolla 3-4 lines long. This comes very near to N. heterophyllus; and appears only to differ in the branches being covered with short rigid hairs.

Box-leaved Notanthera. Shrub par.

13 N. heterophyllus: branches terete, slender, scabrous, rusty; leaves scattered, on short petioles, coriaceous, mucronate, coriaceous, glabrous; racemes terminal and axillary, angular; pedicels short, bearing each 3 bracteas and 3 flowers; the 3 middle flowers stalked; and the middle one sessile; bracteas small; petals 6, linear, spathulate; anthers incumbent. f. P. G. Native of Chili: parasitical upon trees, especially myrtaceous trees. Loranthus heterophyllus, Ruiz et Pav. fl. per. 3. p. 48. t. 273. f. b. Schultes, syst. 7. p. 135. The old branches are smooth: the younger ones are angled, glabrous, or sometimes roughish from minute rust-colored tubercles. Petals 4-5, concave, and dilated at the apex. Leaves 6-12 lines long, and 4-9 lines broad; petioles 2 lines long. Corolla purplish white, 4-5 lines long.

Variable-leaved Notanthera. Shrub par.

14 N. Elliciophorus; glabrous; branches terete, slender, angular; leaves petiolate, elliptic, somewhat acuminate, thick-coriaceous, veinless, shining above; peduncles axillary and terminal, racemose; pedicels short, bearing each 3 bracteas and 3 sessile flowers at the apex; petals 7, linear, spathulate, joined together to the middle; anthers versatile. f. P. S. Native of Peru, in groves, in high frigid places on the Andes near Pozoza. Loranthus Elliciophorus, Ruiz et Pav. fl. per. 3. p. 47. t. 276. f. a. Schultes, syst. 7. p. 159. Leaves an inch long, and half an inch broad; petioles 2 lines long. Corolla yellow, 4 lines long. Perhaps a species of Gaiadendron.

Elliptic-leaved Notanthera. Shrub par.

15 N. ligustrifolius; glabrous; branches terete; leaves oblong-lanceolate, acuminate, coriaceous; corymbs axillary and terminal, one half shorter than the leaves, solitary; pedicels crowded, bracteas, bearing 2-3 flowers; petals 6, linear, somewhat dilated and concave at the apex; anthers ovate, versatile. f. P. G. Native of Peru, or Chili, where it was collected by Henke. Loranthus ligustrifolius, Schultes, fil. in herb. Henke, and in syst. 7. p. 135. Loranthus ligustrinus, Wildl. herb. ex Schultes, but not of Wall. Leaves 2 inches long, and 9-10 lines broad; petioles 2 lines long. Corolla 4-5 lines long, black in the dried state.

Privet-leaved Notanthera. Shrub par.

16 N. Veæetus; glabrous; branches scandent, terete; leaves elliptic-oblong, obovate, rounded at the apex, thick-coriaceous, glaucous, on short petioles; racemes axillary, solitary; pedicels short, bracteas, bearing each 3 sessile flowers at the apex, drooping in the fructiferous state. f. P. G. Native of Mexico, near Cuernavaca. Loranthus veæetus, D. C. prod. 4. p. 313. H. B. et Kunth, nov. gen. amer. 3. p. 434. Leaves 2 inches long, and 10-12 lines broad. Flowers unknown. Berries ovate-oblong.

Lilicky Notanthera. Shrub par.

17 N. orbicularis; glabrous; branches tetragonal; leaves petiolate, orbicular, acutish, thick-coriaceous, obsolescently veined; racemes axillary, solitary; pedicels short, bearing each 3 sessile flowers at the apex; petals 6, glabrous; anthers ovate. f. P. S. Native of Quito, near Guayaquil, on trees. Loranthus orbicularis, H. B. et Kunth, nov. gen. amer. 3. p. 494. Schultes, syst. 7. p. 143. Leaves 18 lines long and 16-17 broad; petioles 3-4 lines long. Flowers 4 lines long, green on the outside, and white on the inside.

Orbicular-leaved Notanthera. Shrub par.

18 N. salicifolius: plant glabrous, prunose 7 branches te- rete, compressed at the nodi; leaves oblong-lanceolate, acuminate, marginate, petiolate; racemes axillary, solitary or twin, erect, sessile; pedicels very short, bearing each 3 flowers and 3 bracteas; corolla 4-parted, with linear lobes, which are shell-formed at the apex; anthers versatile, stigma capitata. f. P. S.
Native of Brazil. Loranthus soliciifolius, Cham. et Schlecht. in Linnaea. 3. p. 216. Leaves ½ inches long and ½ inch broad; petioles 6 lines long. Flowers a line long.

Willow-leaved Notanthera. Shrub par.

19 N. lanceolatus; glabrous; branches terete, slender, rather angular; leaves on short petioles, lanceolate-oblong; peduncles racemose, axillary, and terminal; pedicels short, bearing each 3 bracteas and 3 sessile flowers at the apex; petals 7-9, linear-spatulate, joined at the base; anthers incumbent.

10 F. G. Native of Peru, on the Andes at Píllaro. Loranthus lanceolatus, Ruiz et Pav. fl. per. 3. p. 47. t. 278. f. b. but not of Beavu. Loranthus lanceolatus, Poir. ex Schultes, syst. 7. p. 142. Leaves 2 inches long and an inch broad; petioles 2-3 lines long. Corolla yellow, half an inch long. Berries oblong.

Lanceolate-leaved Notanthera. Shrub par.

20 N. ohyphylles; glabrous; branches terete, but somewhat compressed at the apex; leaves lanceolate-oblong, tapering into the petioles at the base, and much acuminated at the apex, feather-nerved: having the middle nerve rather prominent; racemes axillary, solitary, shorter than the leaves; pedicels opposite, bearing each 3 bracteas and 3 sessile flowers at the apex; petals 6, linear, acutely joined at the base, longer than the filaments; anthers ovate, erect, incumbent. 

11 F. P. S. Native of Brazil, where it was collected by Pohl. Loranthus ohyphyllus, Pohl. ex D. C. prod. 4. p. 314. Loranthus acuminatus, Pohl. in litt. Leaves 2 inches long. Flower-bud sub-eclavate. Style thickish; stigma truncate.

Short-petalled Notanthera. Shrub par.

21 N. seaveolens; glabrous; branches terete; leaves petiolate, ovate-oblong, acuminnated, rounded at the base, coriaceous; racemes 2-4 together; pedicels short, approximate, brickless, bearing each 3 stalked flowers at the apex; petals 6, linear, spreading; anthers incumbent. 


Sweet-scented Notanthera. Shrub par.

22 N. conduplicatus; glabrous; branches tetragonal; leaves petiolate, ovate, acuminate, acute at the base, rather coriaceous, comparatively compressed; petiole terminal, much branched, leafy: having the branches twin, and as well as the rachis: tetragonal; pedicels very short, bearing 3 flowers and 3 bracteas at the apex; petals 6, linear. 

13 F. P. S. Native of Cumana and Cumanacoa, on trees. Loranthus conduplicatus, H. B. et Kunth, nov. gen. amer. 3. p. 441. Loranthus ancepts, Will. rel. in Schultes, syst. 7. p. 131. Leaves 24-27 lines long, and 14-17 lines broad; petioles 4-5 lines long. Flowers hardly 2 lines long.

Conduplicate-leaved Notanthera. Shrub par.

23 N. attenuatae; plant glabrous, twining; branches terete; leaves rather alternate, obovate-oblong, cuneated at the base, and tapering into the petioles, and mucronate at the apex; mucrone deciduous; racemes axillary, twin or term, shorter than the leaves; pedicels short, bearing each 2-3 bracteas and 2-3 sessile flowers at the apex; petals 6, linear, hardly connected at the base, longer than the filaments; anthers ovate-roundish, fixed by the base. 


Attenuated-leaved Notanthera. Shrub par.

24 N. acepts; glabrous; branches terete; branches and peduncles compressed and 2-edged; leaves alternate or opposite, oblong-elliptic, petiolate, ending in very short mucrones, feather-nerved; racemes axillary, solitary, or twin, and terminal, subcorombose, unequal; pedicels short, bearing each 3 bracteas and 3 sessile flowers at the apex; anthers ovate, erect. 

15 F. P. S. Native of Brazil, where it was detected by Pohl. Loranthus acepts, D. C. prod. 4. p. 315. Loranthus oblongo-ellipticus, Pohl. in litt. Leaves an inch long and 6-6 lines broad; petioles 3 lines long. Corolla 2 lines long. Allied to Loranthus panicifolius.

Two-edged-branched Notanthera. Shrub par.

25 N. ovaatus; glabrous; branches unknown; leaves ovate, acute, somewhat acuminated, petiolate, coriaceous: having the middle nerve rather prominent, and the lateral ones hardly conspicuous; racemes a little shorter than the leaves; pedicels short, bearing 3 bracteas and 3 sessile flowers at the apex; petals 6, linear, distinct, acutish, a little longer than the filaments; anthers erect, fixed by the base. 

16 F. P. S. Native of Brazil. Loranthus ovatus, Pohl. in litt. ex D. C. prod. 4. p. 315. Leaves 2½ inches long and 1½ broad; petioles 2-3 lines long. Branchlets racemose, 2 lines long. Ovary glaucous. Petals 2 lines long. Style thickish, equal at the apex. Perhaps this and the preceding belong to Struthanthus.

Ovate-leaved Notanthera. Shrub par.

Cult. The species are not cultivable, and have the habit of those of the other parasitical genera of the order.


Cult. The species of this genus have the habit of the other parasitical genera of the order, and are not cultivable like them.

† Plants referred to the old genus Loranthus by authors, but the number of the parts of the flowers and their structure being unknown, it is impossible to refer them to any of the genera broken off from that genus; therefore they must stand under the names originally given.

1 L. florulentus (Rich. act. soc. hist. nat. par. p. 107.) branches opposite, spreading, quadrangular; leaves oblong-ovate, very blunt; peduncles solitary and sessile in all the axils.
LORANTHACEÆ. XIII. Loxanthera. XIII. a Gaiadendron.


**Flowering Loxanthus.** Shrub par.


**Braecate-flowered Loxanthus.** Shrub par.

3 L. *tereflœus* (Willd. reed Schultes, syst. 7. p. 161.) branches terete; leaves oblong, petiole, acute; racemes axillary; peduncles 3-flowered. *P. S.* Native of Caracas.

**Thrice-flowered Loxanthus.** Shrub par.

4 L. *laevis* (Willd. reed Schultes, syst. 7. p. 162.) leaves coriaceous, oblong, acute, tapering into the pedicles; flowers terminal, aggregate. *P. S.* Native of South America.

**Laurel-like Loxanthus.** Shrub par.

5 L. *cardiphyllos* (Willd. reed Schultes, syst. 7. p. 162.) leaves ovate-cordate, stem-clasping, opaque; flowers terminal, spicately aggregate. *P. S.* Native of South America.

**Heart-leaved Loxanthus.** Shrub par.

6 L. *tubulifœs* (Willd. reed Schultes, syst. 7. p. 162.) leaves lanceolate, acute; flowers tubular, somewhat spicate, terminal. *P. S.* Native of South America.

**Tubular Loxanthus.** Shrub par.

7 L. *Dianthera* (Willd. reed Schultes, syst. 7. p. 162.) leaves lanceolate, attenuated at the base, obtuse, glaucous, much longer than the spikes; spikes axillary and terminal. *P. S.* Native of South America.

**Gincom-like Loxanthus.** Shrub par.

8 L. *multiflœs* (Willd. reed Schultes, syst. 7. p. 162.) leaves ovate, acuminate, longer than the racemes; racemes axillary; peduncles 3-flowered. *P. S.* Native of South America.

**Many-flowered Loxanthus.** Shrub par.

9 L. *alcertæus* (Willd. reed Schultes, syst. 7. p. 162.) leaves oblong, rather acuminate at the apex; flowers axillary and terminal, panicled. *P. S.* Native of South America.

**Alternate-leaved Loxanthus.** Shrub par.

10 L. *ovallæus* (Schultes, syst. 7. p. 162.) leaves oblong, opaque, coriaceous; flowers terminal, racemose and panicled; pedicels 3-flowered; bracteal ovate, longer than the calyx. *P. S.* Native of South America. Loranthus bracteatus, Willd. rel. but not of Roxb.

**Environed Loxanthus.** Shrub par.

11 L. *microstæchus* (Willd. reed Schultes, syst. 7. p. 162.) leaves elliptic-roundish, petiole; racemes cymose, axillary, 4 times smaller than the leaves. *P. S.* Native of South America. The rest unknown.

**Small-spiked Loxanthus.** Shrub par.

12 L. *macrostæchus* (Willd. reed Schultes, syst. 7. p. 162.) leaves oblong, attenuated at both ends, bluntish, coriaceous; spikes sessile, longer than the leaves, verticillate. *P. S.* Native of South America. The rest unknown.

**Long-spiked Loxanthus.** Shrub par.

13 L. *membrææus* (Willd. reed Schultes, syst. 7. p. 162.) leaves ovate, drawn out at the apex, attenuated, membranous, nerved; flowers twin, 2 inches long. *P. S.* Native of South America. The rest unknown.

**Membranous-leaved Loxanthus.** Shrub par.

14 L. *celtidiformis* (Willd. reed Schultes, syst. 7. p. 161.) leaves ovate, oblique, glaucous beneath; peduncle axillary, aggregate. *P. S.* Native of Guinea. The rest unknown.

**Celtis-leaved Loxanthus.** Shrub par.

15 L. *maculatus* (Blum. bijdr. p. 662.) leaves opposite or alternate, elliptic-oblong, obuse, acute at the base, spotted with black, coriaceous, glabrous; flowers unknown. *P. S.* Native of Java, in the province of Bantam.

**Spotted-leaved Loxanthus.** Shrub par.


**Eucalyptus-like Loxanthus.** Shrub par.

17 L. *Hoffmannseggiæus* (Willd. in Schultes, syst. 7. p. 113.) leaves ovate-oblong, acute; racemes axillary, usually twin; flowers verticillate. *P. S.* Native of Brazil, at Para. Lor. verticillatus, Hoffmannsegg in herb. Willd. Flowers peuantoudous.

**Hoffmannsegg’s Loxanthus.** Shrub par.

†† Species only known by name.

1 L. *acinicorn-Nikkoæus*, Oudh. in Brown, append. 2. 2 L. *calycicus*, R. Brown, in Salih, abyss. 3 L. *congestus*, R. Br. l. c. 4 L. *letus*, R. Br. l. c. 5 L. *serrulatus*, Roxb. ex Steud.

N. B. *Asclepias lacteæ*, Burn. fl. ind. p. 61. is a species of Loxanthus not known.

**Tribe II. Terrestrial shrubs.**

XIII. a Gaiadendron (from *gaia*, *gaua*, the earth, and *dendron*, a tree; these trees grow in earth and not parasitical, like other genera broken off from Loranthus). Loxanthus species of authors.

**Lin. syst. Hexa-Octandria, Monogynia.** Calyx 6-8-toothed. Petals 6-8, narrow, sometimes free and sometimes joined at the base. Stamens 6-8, inserted in the petals. Style filiform; stigma simple. Ovarium oblong-cylindrical.—Terrestrial trees, with obovate leaves and racemes of yellow flowers.

1 G. *eugenioides*,arboreus; branches terete; leaves ovate-oblong, acuminate, running down the pedicles at the base, rather coriaceous; racemes axillary and terminal, solitary or twin; pedicels short, approximate, 3-flowered, bracteate; flowers pedicellate; corolla 5-6-parted; lobes linear-acute; authors incumbent. *P. G.* Native of Peru, on the Andes, near Guacamabanta; and of Brazil. Loranthus eugenioides, H. B. et Kunth, nov. gen. amer. 5. p. 453. Schultes, syst. 7. p. 153. Cham. et Schlecht. in Linnae. 3. p. 214. Loranthus attenuatus, Willd. herb. but not of Poli. Flowers about half an inch long, white, sweet-scented. Racemes 1½ to 3 inches long.

**Eugenie-like Galadendron.** Tree 15 to 20 feet.

2 G. *Tagua*; arboreus; branches terete; leaves oblong, acute, running down the pedicles at the base, coriaceous, shining above and dotted beneath; racemes axillary, solitary; pedicels short, usually 3 together, approximate, bearing each 3 bracteas and 3 flowers; flowers on short pedicels; petals 7, spreading, linear, acute. *P. G.* Native about Santa Fe de Bogota. Loranthus Tagua, H. B. et Kunth, nov. gen. amer. 3. p. 136. Schultes, syst. 7. p. 159. Loranthus arboreus, Mutis mss. Leaves 3½ inches long, and 14-18 lines broad; pedicels 6 lines long. Flowers 9 lines long. Berry ovate-oblong. Very like *N. punctatis*.

**Tagua Gaiadendron.** Tree 15 to 20 feet.

3 G. *laureolus*, arboreus; glabrous; branchlets angular; leaves elliptic-oblong, bluntish, running into the pedicelles at the base, coriaceous, shining above; racemes axillary and solitary, terminal, and panicled; pedicels short, usually by threes, approximate, bearing each 3 bracteas and 3 sessile flowers;
petals 7-8, linear, rather dilated at the apex; anthers incumbent.


Laurel-leaved Gaiadendron. Tree 15 to 20 feet.

5 G. Purace^nse; arboretous, glabrous; branches terete; leaves lanceolate-oblong, acutish, running into the petals at the base, coriaceous, shining above, and beset with black spots beneath; racemes terminal; peduncles short, 3-5-together, approximate, each bearing 3 bracteas and from 1-3 flowers; petals 6-8, linear. L. G. Native on the Andes, about Popayan, in Paramo de Purace. Loranthus Purace^nensis, H. B. et Kunth, nov. gen. amer. 3. p. 437. Schultes, syst. 7. p. 160. Leaves 22-27 lines long, and 9-10 broad; petals 4 lines long. Racemes 4-6 inches long. Corolla yellow. Perhaps sufficiently distinct from N. T^ija.

Purace Gaiadendron. Tree 10 to 15 feet.

6 G. pec^attum; arboretous, glabrous; branches terete; leaves obovate or oval, somewhat attenuated at the base into the short petioles, coriaceous, beset with black dots beneath, having the middle nerve rather prominent; racemes long, terminal, and from the axis of the superior leaves; peduncles somewhat verticillate, bearing each 3 bracteas and 3 sessile flowers at the apex; petals 6, linear-spatulate; anthers incumbent, fixed by the back near the base to the filaments. L. G. Native of the Andes of Peru, in cold places in groves. Loranthus punctatus, Ruiz et Pav. fl. par. 3. p. 47. t. 177. f. a. Presl, in herb. Hae^nke, Schultes, syst. 7. p. 134. Leaves 2 inches long, and 1 broad; petals 2-3 lines long. Corolla yellow, almost an inch long before expansion. Berry ovate-roundish, crowned by the limb of the calyx, which is truncate.

Dotted-leaved Notanthera. Tree par. Cult. For culture and propagation see Nutysia.

XIII. b NUYTSIA (named after Peter Nuyts, a celebrated Dutch navigator, and discoverer of that part of New Holland called Nuytsland). R. Br. in geogr. soc. trans. vol. 1.

L. syst. Hae^nthinia, Monogynia. Teeth of calyx 3-5, unequal. Petals 6-7, linear, distinct. Stamens 6-7, inserted towards the middle of the petals; anthers versatile, sub-bastate, 2-celled. Ovarium turbinated, rather trigonal. Style subulate; stigma acute. Fruit 1-seeded, covered by pulp or glutin, and of a different texture from the rest of the Loranthaceae gener.

A terrestrial tree, native of New Holland.

1 N. flore^nse^; arboretous, glabrous; branches terete; leaves alternate, linear, obtuse, thick; racemes elongated, simple; peduncles longer than the flowers, bearing each 3 bracteas and 3 flowers at the apex. L. G. Native of New Holland, in Van Lewin's Land. Loranthus floribundus, Labill. nov. holl. 1. p. 87. t. 113. Schultes, syst. 7. p. 133. Loranthus celastroides, Sieb. fl. nov. holl. exsic. no. 244. Leaves 2-3 inches long, and 4-5 lines broard. Racemes 6-8 inches long, crowded at the tops of the branches. Corolla 9-10 lines long, sulphur-coloured.


Cult. A mixture of sand, loam, and peat will be a good soil for this singular tree. Cuttings will probably root if planted in sand under a hand-glass.

** XIV. SCHÖPEFFIA (named after John Schoepf, a German botanist, who has written upon the plants in the neighbourhood of Ulm). Schreb. gen. no. 323. D. Don, prod. fl. nep. 145. Wall in Roxb. fl. ind. 2. p. 188. D. C. coll. mem. vi.—Codoni^num, Vahl, act. soc. hist. nat. hafn. 1. p. 206. t. 6.—Ha^nekia, Ruiz et Pav. fl. per. 3. p. 8. but not of their prod.


Arborescent Schoepfia. Tree 8 to 10 feet.

2 S. flexu^osa (Roem. et Schultes, syst. 5. p. 160.) leaves ovate-lanceolate, acute; racemes axillary, solitary, 4-5-flowered; tube of corolla ovate; lobes acute; throat naked. L. G. Native of the islands of Santa Cruz, Montserrat, ex Rohr; and of Guadaloupe, ex Bertero; but in Rohr's specimen the leaves are oblong, while in that of Vahl's they are acuminated; they are therefore two distinct species. Codonium arboreos. Vahl, act. soc. hist. hafn. 2. pt. 1. p. 206. t. 6. symb. bot. 3. p. 36. S. Schreberi, Lam. ii. 2. p. 51. S. Americana, Willd. spec. 1. p. 996. Flowers yellow.

Flexu^os^a-branched Schoepfia. Tree 10 to 12 feet.

** Tube of corolla terete, having the throat furnished with fascicles of hairs at the origin of the stamens.—Species natives of Asia.

3 S. fra^grans (Wall, in Roxb. fl. ind. 2. p. 188.) leaves lanceolate or elliptic-oblong, attenuated at both ends; racemes axillary, solitary, many-flowered; corolla infundibuliform, with a long cylindrical tube; segments of corolla lanceolate, acute. L. G. Native of Nipal, in less elevated situations from Bechenko as far as the valley, where it is rather common; it has also been found in more northern situations. Wall. tent. fl. nep. 1. p. 18. t. 9. D. Don, prod. fl. nep. 145. Symphorin^carpos? odor^ata, Ham. ex D. Don, l. c. Bark of tree thick and spongy, yellowish. Leaves deep green above. Flowers yellow,
exquisitely fragrant, even after being dried, disposed in racemes, which are about half the length of the leaves. Ovarium supported by a calyciform bractea like the rest of the species, which is divided into 2 or 3 unequal acute segments. Corolla rather fleshy; tube nearly an inch long. Drupe pale yellow, almost white, about the size of an olive, 1-seeded from abortion. The perfume of the flowers is of a most delightful kind, and may be perceived on steeping them in warm water even long after they have been dried.

*Fragrant Scheffelia.* Tree 10 to 15 feet.

4 S. *Acuminata* (Wall. cat. no. 486.) leaves ovate, acuminate, obtuse at the base; racemes axillary, many flowered; tube of corolla tetrate; lobes bluish. f. G. Native of Ni-paul, on the Ponduta mountains. Flowers yellow?

*Acuminate-leaved Scheffelia.* Tree 10 to 12 feet.

*Cult.* A mixture of loam, peat, and sand will suit these trees; and young cuttings of them will be easily rooted if planted in sand, and placed under a hand-glass.

**XV. AU'CUBA** (the Japanese name of the shrub). Thunb. *fl. jap.* p. 4. *Lam.* t. 759. D. C. *prod.* 4. p. 274.—A. *Kempf.* *Kempf.* *anc. * 5. p. 775.—Rubási, *Salisb.* *prod.* 68. Linn. *syst.* *Dietc.* *Tetrándria.* Flowers dioecious. Calyx closely adhering, with the margin a little elevated and 4-toothed; teeth obtuse, very short. Petals 4, deciduous, alternating with the calycine teeth, inserted in the margin of the elevated flesh, 4-angled disk ovate, acuminate, fleshy, with the margin truncate on one side, and minutely papillose on both surfaces, valvate in activation, induplicate at the apex. Stamina 4, opposite the petals? Ovarium cylindrical, adhering closely to the tube of the calyx, 1-celled, containing one ovulum. Style very short, thick, tetrate: stigma capitate, thick, fleshy, viscid, obsectely 2-lobed. Berry fleshy, 1-seeded, crowned by the permanent style. The rest unknown.—A small evergreen tree, native of Japan; branches dichotomous or verticillate in the manner of *Lorántthas* and *Viscum*. Leaves opposite, petiolate, broad, ovate-lanceolate, acuminate, to-thed, coriaceous, glabrous, shining, pale green, beautifully spotted with yellow, having the mid-rib rather prominent, the rest of the leaf reticulately veined. Petioles cylindrical. Flowers small, panicled. Panicles many, spike-formed, pedunculate; peduncles rather villous. Bracteae lanceolate, membranous, pale, caducous. Calyx beset with adpressed villi. Petals dark blood coloured. The buds are large, angular, imbricated from conuplicate stipulas; the leaves are large, toothed, and veiny, and the petioles are articulated with the branches and dilated at the base; hence there is some analogy in the genus to *Fréxius.* This genus was included by *Russinier in the order Rhinon.* But from its having no affinity whatever to either of the families into which that order has been since divided, its place in the natural system has remained undetermined; and perhaps also from its want of novelty, the plant has been despised by botanists, and its characters and affinities consequently overlooked. Like the *Sálx Balbylacea,* or weeping-willow, too, we possess only one sex of the tree in Europe, and that the female, which circumstance has likewise prevented its being accurately examined. The structure of the female flower agrees so exactly with that of *Viscum,* that, notwithstanding the different mode of growth of the two genera, and the absence of more accurate details respecting the male blossoms, and the ripe fruit, its arrangement among the *Lorántthas* appears fully justified. It will ultimately be found the connecting link between the *Araltiaceae* and the present family.

1 A. *Japónica* (Thunb. *fl. jap.* p. 64.) f. H. Native of Japan. Banks, *icon.* *Kempf.* t. 6. *Thunb.* *icon.* *fl.* *jap.* t. 12 and 13. *Sims,* *bot.* *mag.* 1197. *Eubásiá dichómous,* *Salisb.* *prod.* p. 68. The *Aucuba* is a well-known laurel-like evergreen shrub, having the leaves mottled with yellow; but in Japan the leaves are said to be sometimes green by Thunberg. According to *Kempf,* the fruit is a red oblong drupe, like a laurel-berry, with a white sweetish pulp, and a kernel with a bitter taste. The shrub is called in the gardens *Aucuba* or *spotted-leaved laurel.*


*Cult.* This is a showy evergreen shrub, well adapted for shrubberies and small gardens. It is easily increased by cuttings from the young wood planted in autumn under a hand-glass or by layers. The shrub will grow in any soil.

**Order CXXVIII. CHLORÁNTHACEAE (plants agreeing with Chloránthas in particular characters).** R. Br. in bot. mag. 2190. (1821) and in Parry, voy. 1824. *Cult.* 17. (1821). Blum. *fl. jap.* (1829) vol. 1.

Flowers disposed in spikes, hermaphrodite or unisexual; with a supporting tridentate calyx. Stamina lateral; if more than one connate definite; anthers 2-4-celled, bursting lengthwise, each adunate to a fleshy connective, which coheres laterally in various degrees; filaments slightly adhering to the ovarium, which is 1-celled; stigma simple, sessile; ovulum pendulous. Fruit drupaceous, indehiscent. Seed pendulous. Embryo minute, placed at the apex of a fleshy albumen; having the radicle inferior, and consequently remote from the hilum; cotyledons divaricate,—Herbaceous plants or under shrubs, with an aromatic taste. Stems jointed, tumid under the articulations. Leaves opposite, simple, with sheathing petioles, and minute intervening stipulas. Flowers disposed in terminal loose slender spikes.

This order is nearly allied to *Lorántthas,* from which it differs in the tridentate calyx, in the want of petals, in the fewer stamens, in the structure of the anthers, and in the inferior radicle, &c. It is said to be nearly allied to *Sarrácena* and *Piperácea,* from both of which it differs in the want of a sack to the embryo, and in the pendulous ovulum, and opposite leaves with intermediate stipulas. The anthers consist of a fleshy mass, upon the face of which the cell lies that bears the pollen; whether their anthers are 1 or 2-celled is a matter of doubt, one botanist considering those that have 2 cells to be double anthers, another understanding those with 1 cell to be half anthers. This order comes nearest in affinity to *Rubáceae,* tribe *Opeubáciarum.*

The whole plant of *Chloránthas officinális* has an aromatic fragrant smell, which is gradually dissipated in drying; but its roots retain a fragrant camphorated smell, and an aromatic somewhat bitter flavour. They are found to possess very nearly the properties of *Aristolóchias serpántarias,* and in a high degree. There seems to be no doubt but that it is a stimulant of the highest order.

**Synopsis of the genera.**

1 Chloránthas. Flowers hermaphrodite. Anther seated on the side of the ovarium, undivided and 2-celled, or trilobed and 4-celled. Ovarium 1-ovulate. Drupé 1-seeded.

2 *Ascarina.* Spikes dioecious. Filament short; anther oblong, 4-furrowed, and probably 4-celled. Stigma 3-lobed. Drupé 1-seeded.
3 Hedyosmum. Flowers monocious. Male aments oblong, naked; anthers numerous, closely imbricated. Female flowers in racemes, with a tridentate calyx. Drupe trigonal, 1-seeded, clothed by the baccate calyx.


LIN. SYST. Montandra, Monogyra, R. Br. Gymandra, Triandra, Spreng. Calyx tridentate or wanting. Corolla wanting. Anther seated on the side of the ovary, undivided, and 2-celled, or trilobed and 4-celled; in the latter case the middle lobe alone is perfect and 2-celled, while the 2 lateral lobes are imperfect and only 1-celled. Ovary 1-seeded; ovulum pendulous; stigma capitata. Drupe 1-seeded. Small subherbaceous shrubs; with opposite toothed leaves, and slender spikes of inconspicuous flowers.

1 C. officinalis (Blum. enum. pl. jay. 1. p. 79. fl. jay. 1. p. 10. t. 1.) stem suffrutesceous; leaves oval-oblong, lanceolate, the superior ones more acuminate than the rest; spikes branched, terminal; anther 3-lobed; middle lobe perfect and 2-celled; lateral ones imperfect and 1-celled. G. Native of Java, in high mountain woods. Strabôpha Noronha, incl. Berries white. The plant has an aromatic and fragrant smell, and is a stimulant of the highest order. It is used in medicine by the Javanese.

Official Chloranthus or Chu-Lam. Shrub 3 to 4 feet.

2 C. brachystachys (Blum. fl. jay. 1. p. 13. t. 2.) stem suffrutesceous; leaves oblong-lanceolate, acuminate at both ends; serrated; spikes branched, terminal; anther undivided, 2-celled. G. Native of Java, in the provinces of Banant and Krawang, in woods on the higher mountains. Ascara serrata, Blum. enum. pl. jay. 1. p. 180.

Short-spiked Chloranthus or Chu-Lam. Shrub 2 to 3 feet.

3 C. monostachys (R. Br. in bot. mag. t. 2190. Lindl. coll. t. 171.) stem suffrutesceous; leaves elliptic, serrated, acuminate; spikes solitary, simple; flowers alternate; anther incurved, 3-lobed; the middle lobe 2-celled and perfect, and the lateral lobes imperfect and 1-celled. G. Native of Java. Flowers yellowish.

One-spiked Chloranthus or Chu-Lam. Fl. Feb. May. Ch. 1819. Shrub 1 to 2 feet.

4 C. inconspicuous (Swartz, in phil. trans. vol. 77. p. 359. t. 15.) suffrutesceous; leaves ovate-oblong, obtuse, serrated, pale beneath; spikes axillary, branched; branches alternate; flowers opposite; anther 3-lobed; middle lobe perfect and 2-celled, the lateral ones imperfect and 1-celled. G. Native of Java and Japan. Nigrina speciata, Thumb. fl. jap. p. 65.


5 C. monandra (R. Br. in bot. mag. under no. 2190.) spikes branched; flowers opposite? anther undivided, 2-celled, perfect. G. Native of China.

Monandra Chloranthus or Chu-Lam. Fl. June. Ch. 1817. Shrub 1 to 1 1/2 foot.

6 C. elation (R. Br. l. c.) shrubby; leaves oblong-lanceolate, serrated, petiolate; spikes slender, long, reflexed, crowded, nearly terminal; anther 3-lobed, the middle lobe perfect, 2-celled, the lateral lobes imperfect and 1-celled. G. Native of China and Cochinchina. Crédous odorifer, Lour. cooh. p. 89. Flowers small, yellow, sweet-scented. Branches long, somewhat scendent. In Cochinchina this plant is grown in gardens for the sake of the scent of the flowers.

Taller Chloranthus or Chu-Lam. Shrub 6 feet.

7 C. chloranthus (Rott. & Schultes, syst. 3. p. 461.) leaves ovate-oblong, acute, doubly serrated; spikes brachiate, axillary. G. Native of Japan, in the interior of the islands. Nigrina serrata, Thumb. act. ups. t. 7. p. 142. t. 5. f. 1. Stem simple, about a foot high. Leaves a hand long, having the serratures acute.

Serrated-leaved Chloranthus or Chu-Lan. Fl. 1 foot.

Cult. A mixture of loam, sand, and a little peat, is a good soil for the species of Chloranthus; and they are easily increased by cuttings under a hand-glass, or by suckers.

II. ASCARINA (from ascopus, ascaris, ascarides, or small round worms; the name is applied to this genus because the anthers are formed like small worms). Forst. chur. gen. t. 59.

LIN. SYST. Montandra, Monogyra. Spikes filiform, dioecious. Perianthium a very short scale. Filament short; anther oblong, 4-furrowed, and probably 4-celled. Style wanting; stigma somewhat 3-lobed, adnate to the ovary.—A tree, with an oblong-serrated stalked leaves, and sheathing stipulas at the base of the petioles.

1 A. polystachya (Forst. l. c.) G. Native of the Society Islands.

Many-spiked Ascarina. Tree.

Cult. See Chloranthus above for culture and propagation.

III. HEDYOSMUM (from υδης, hedy, sweetness, and ους, ous, a smell; the plants are sweet-scented). Humb. et Bonpl. nov. gen. 7. p. 634, 635. Swartz. fl. ind. 2. p. 957. t. 8. Schreb. gen. 2. p. 1453.—Taifilla, Ruiz et Pav. fl. per.


1 H. suxi (Swartz, fl. ind. occid. 2. p. 959. prod. p. 84.) frutescens; branches lax; leaves lanceolate, acuminate; petals short, connate on both sides from stipulaceous membranaceous sheaths at the base, which are retuse and eiliate on the margins. G. Native of Jamaica, in woods, on the highest mountains. Shrub branched. Branchlets tetragonal, jointed, rising from the axils of the sheaths of the petioles. Leaves serrated, pale green. Male aments pedunculate, oblong, mutut, filiform, rising from the sheaths of the female. Female racemes terminal and axillary from the same axils as the male ones, usually tripartite. Calyx tridentate. Drupe triquetrous, hard, shining, brown, clothed by the roundish, scarlet, fleshy calyx. The whole plant has a grateful smell, and an aromatic hot taste.

Nodding-spiked Hedyosmum. Shrub 1 to 4 feet.

2 H. racemosa; leaves oblong, serrated, short-acuminated; female peduncles twin, racemose, flexuous. G. Native of Peru, at Cachero and Pillao, where it is called Carpales and Aptageia. Taifilla racemosa, Ruiz et Pav. fl. per. syst. p. 271. There is a white pellucid sweet-scented resin issues from this plant, which has the scent of gum-anime.

Raceemose-flowered Hedyosmum. Tree 15 feet.

3 H. aerocrenescens (Swartz, fl. ind. occ. 2. p. 961. prod. p. 84.) arborascens; branches straight, erect; leaves ovate-lanceolate; sheaths of petioles cucullate, bidentate; male aments oblong, usually twin; female racemes tripartite. G. Native
of Jamaica and Martinico, on the higher mountains. Branches angular near the sheaths of the petioles, knob, rather fleshy. Leaves serrated, attenuated and obtuse at the apex, brownish green, shining. Stipulaceous sheaths large, encircle, bidentate at both sides. Female flowers crowded on the racemes by threes, sessile. Scales 3-4 under the flowers. Ovarium trigonal. Style triquetrous: stigma obtuse. Fruit white, rather daunaneous. Calyx bicarinate, like that of the first species.

Arborescent Hedyosum. Shrub 12 to 16 feet.

Hairy-leaved Hedyosum. Shrub.

Hairy-leaved Hedyosum. Shrub.

S. Native of New Granada.

Hairy-leaved Hedyosum. Shrub.

Hairy-leaved Hedyosum. Shrub.

S. Native of Peru, in Pati and Muna, where it is called Agyacapi; and New Granada. Tafalla seabra, Ruiz et Pav. fl. per. syst. p. 270.

Smooth Hedyosum. Tree 20 feet.

Bomplandanum (H. B. et Kunth, nov. gen. 7. p. 164. t. 694-695.) leaves oblong, acuminate, glabrous, serrate; male peduncles twin, 3-spined; those of the female branched.

Bomplandanum. Tree 25 feet.

Cult. For culture and propagation see Chloranthus, p. 434, with the exception that the species require more heat. They are shrubs of no beauty.


Calyx having the tube adhering to the ovary (f. 77. c.), and the limb free and 5-lobed (f. 77. d. f. 78. a.). Corolla gamopetalous (f. 77. b. f. 78. b. f. 79. b.), inserted in the calyx, with the tube short (f. 77. b.), or long (f. 78. b.), and the limb 5-lobed (f. 77. b.), and sometimes irregular (f. 78. b. f. 79. b.), not valvate in estivation. Stamens inserted in the calyx, and adnate to the corolla at the base (f. 82. f. f. 79. c.), and alternating with its lobes, and equal in number to them (one of which is sometimes abortive), sometimes exerted (f. 79. c. f. 78. c.), sometimes inclosed (f. 82. f. f. 81. b.); filaments subulate; anthers ovate, 2-celled. Ovarian adnate to the calyx, while young 3-celled (f. 77. c.). Style exerted (f. 78. c.) or wanting; stigmas 3, sometimes distinct, sometimes combined into a head. Berry crowned by the limb of the calyx (f. 77. d. f. 81. g.), usually pulpy, rarely almost dry, many-celled in the adult state, but often 1-celled from the dissepiments, which are very thin, having vanished. Seeds inveted, solitary, twin, or numerous in the cells, but sometimes many of them are abortive; spermatid crustaceous. Embryo in the centre of a fleshy albumen; with a superior radicle, and 2 ovate-oblong cotyledons.—Shrubs, rarely herbs or trees. Leaves opposite, extipulate (rarely furnished with 2 small stipulas at the base of each petiole) simple, undivided, toothed, rarely pinnate, feather-nerved. Flowers terminal, corynobase, or axillary.

Taking Lonicerâ for the type of the order, there will be found a striking affinity with Rubiâceae, Tribe Cinchonaceae in the monopetalous tubular corolla, definite stamens, inferior ovary, and opposite leaves, an affinity which is confirmed by the corolla of the latter being occasionally regular or irregular. With Apeöcyne it has an intimate alliance for the same reasons, differing chiefly in their qualities, with the non-connivance of the anthers, the estivation of the corolla, and the structure of the fruit. To Loranthaceae they also approach, in the structure of the flowers and berries. Besides these points of affinity, Caprifoliaceae probably tends towards Umbelliferae through Sambucus, from the feteid divided leaves and half herbaceous habit. The genus Triostium appears to be a link between this order and Rogniâceae. The fragrance and beauty of the honeysuckle tribe have been the theme of many a poet's song. They consist either of twining or erect shrubs, with clusters of trumpet-shaped, fragrant, white, scarlet, or yellow flowers; or of fine bushes; having cymes of white blossoms. The honeysuckle is the representative of the former and the elder of the latter. Here too is found the modest and delicate Limnæa borealis, which, however inferior its attractions for the vulgar eye may be to those of its more ostentatious neighbours, yields to none of them in elegance or interest for the botanist; but independently of such recommendations, they possess properties of considerable interest. Their bark is generally astringent; that of Lonicerâ corynobas is used for dyeing black in Chili. The flowers of the elder are fragrant, soporous, and sudorific, its leaves and inner bark fetid, caustic, and a drastic purgative, qualities which are also possessed by the honeysuckle. The fruit of Viburnum is destitute of these properties, but has instead an astringe, astringent pulp, which becomes eatable after fermentation, and is made into a sort of cake by the American Indians. Triostium perforatium is a mild cathartic; in large doses it produces vomiting; and its dried or roasted berries have been used as coffee. All caprifoliaceous plants love shady and cool places in both hemispheres, but few have been found in such as endure a very severe climate.

Synopsis of the genera.

 Tribe I.

Sambuci. Corolla gamopetalous, regular, rotate (f. 74. a. f. 75. a.); petals 5, only connected a little at the base, rarely tubular. Style wanting. Stigmas 5, sessile.

1 Sambuci. Limb of calyx 5-cleft. Corolla rotate (f. 74. a.), urceolate. Berry roundish, pulpy, 1-celled, 3-4-seeded (f. 74. b.), hardly crowned (f. 74. c.).

2 Viburnum. Limb of calyx 5-cleft (f. 76. a.), permanent. Corolla rotate (f. 75. a. f. 76. b.), sub-campanulate or tubular. Berry ovate or globose, 1-seeded from abortion, crowned by the calycine teeth.

 Tribe II.

Lonicerâ. Corolla gamopetalous (f. 77. b. f. 78. b.) more (f. 78. b.) or less (f. 77. b.) tubular, usually irregular (f. 78. b. f. 79. b.). Style filiform (f. 78. c.), crowned by 3 distinct or concrete stigmas.

3 x 2
3 TRISTEM. Calyx with an ovate tube and a 5-parted permanent limb (f. 77. a.). Corolla gibbous at the base, almost equally 5-lobed (f. 77. b.). Stamens inclosed. Stigmas oblong, thick. Berry corionaceous, obovately triquetrous (f. 77. c.), crowned by the calyx (f. 77. d.), 3-celled (f. 77. e.), 3-seeded.


5 LONCHEA. Tube of calyx 5-toothed (f. 78. a.). Corolla tubular (f. 78. b. f. 79. b.), funnel-shaped (f. 79. b.), or campanulate (f. 80. a.), with a 5-parted, usually irregular limb (f. 78. b. f. 79. b.). Stigma capitate (f. 78. c.). Berry 3-celled; cells few-seeded.

6 LECYBEA. Calyx with an ovate tube, and a 5-parted irregular limb, ciliated with glands. Corolla funnel-shaped, with the tube gibbous at the base, and the limb 5-parted and campanulate. Stigma capitate. Berry roundish, 5-celled, crowned by the calyx; cells many-seeded.

7 SYMPOCARPOS. Calyx with a globose tube (f. 81. c.), and a small 4-5-toothed limb. Corolla funnel-shaped (f. 81. c.), with an almost regular 4-5-lobed limb. Stigma semi-globose. Berry crowned by the calyx (f. 81. g.), 1-celled, 2 of them empty, and the other 2 containing 1 seed each.

8 ABELEA. Calyx with oblong tube, and a 2-5-parted foliaceous limb. Corolla funnel-shaped, 5-lobed, regular. Stamens 4, somewhat didynamous. Stigma capitate. Ovarium 2-celled; cells 2-seeded. Fruit 1-seeded, crowned by the limb of the calyx.

9 LINNÆA. Calyx with an ovate tube (f. 82. a.), and a 5-parted limb (f. 82. b.). Corolla tubinate (f. 82. d.), somewhat campanulate, 5-lobed (f. 82. d.). Stamens 4, 2 long and 2 short, inclosed. Stigma globose (f. 82. c.). Berry almost dry, small, ovate-globose, 3-celled.

† Genera allied to the present order, but not sufficiently known.

10 AYERIA. Limb of calyx 5-toothed. Corolla hypocrateriform, with a woolly throat and a 5-parted limb. Anthers 5, linear, inserted into the incisures of the corolla. Style equal to the corolla; stigma ovate-oblong. Berry ovate, umbilicate, 1-seeded.


12 KARPATON. Limb of calyx 4-toothed. Corolla tubular, 4-cleft, bilabiate. Stamens 2; anthers 2-lobed. Style under the superior lip of the corolla; stigma simple. Capsule crowned by the calyx, 1-celled, 4-seeded.

Tribe 1.

SAMBUCÆS (from σαμβοκύ, which the Latins have changed to sambucus, a musical instrument, which is believed to have been made of acutely sharp wood; this wood has always been renowned for its hardness). Tourn. inst. 173. Lin. gen. no. 372. Geer. fruct. t. 27. Lam. ill. t. 216. Schlumberger. Handb. t. 83. D. C. prod. 4. p. 321.—Phyteuma, Lour. coch. p. 138. but not of Lin.

LIN. SYST. Pentandria, Tripétala. Calyx small, but divided into 5 deep segments, permanent. Corolla rotate (f. 74. a.), urceolar, 5-lobed; lobes obtuse. Stamens 5 (f. 74. b.), about the length of the corolla; filaments awl-shaped; anthers roundish, heart-shaped. Style none; stigmas 3, obtuse. Berry globose (f. 74. c.), pulp, of 1 cell, containing 3-5 seeds (f. 74. b.), which are convex on the outside and angular inside.

—Shrubs, rarely herbaceous; having a strong disagreeable scent; stems with a solid spongy pith. Leaves opposite, stalked, pinnate; leaflets toothed, pinnate, or jagged, bi-stipellate or bi-glandular at the base. Flowers white or purplish, disposed in terminal cymes, which are in some flat and in others thyrsoid. Berries purplish, cathartic. Those plants of the genus which have pinnate or jagged leaflets are not true species but only varieties, all the true species having only toothed leaflets.

* Leaves pinnate. Flowers cymose or corymbosae.

1 S. Ebulus (Lin. spec. p. 355.) rootfleshy, creeping; stems herbaceous, simple, deeply and unequally furrowed; leaflets ovate-lanceolate, with a sharp, serrated, unequal at their base; stipulas foliaceous, cut; cymes of 3 main branches; flowers all hermaphrodite. Y. H. Native of Europe, even to Caucasia, in waste ground about hedges. In Britain, in like situations, but not common either in England or Scotland. Smith, engl. bot. t. 475. Curt. lond. 3. t. 18. Woodv. med. bot. suppl. t. 260. Oed. fl. dan. t. 1156.—Mill. ill. t. 226. S. humilis, Lam. fl. fr. 3. p. 370.—Ebulus, Math. valgr. 2. p. 608. with a figure. Cam. prod. 1727. with a figure. Leaves 4-5 inches long, nearly smooth. Flowers all stalked, of a dull purplish hue, with thick white filaments, whose anthers are reddish. Berries globose, black, not always perfect, 3-4-seeded.

Our ancestors evinced a just hatred of their brutal enemies the Danes, in supposing this nauseous, fetid, and noxious plant to have sprung from their blood; hence it was formerly called Dane-wort. Its qualities are violently purgative, sometimes emetic; yet a rob of the fruit is said to have been taken with safety, as far as an ounce. The foliage is not eaten by cattle, nor will noles come where these leaves, or those of any of the species are laid. They also drive away mice from granaries, and the Silesians strew them where their pigs lie, under the persuasion that they prevent some of the diseases which waste the wheat are liable. The specific name is from vulgissant, vulgare, an eruption.

Var. 3. humilis (Mill. dict. no. 5.). Mr. Miller makes this a distinct species. He says that the roots do not creep so much; that the stems do not rise so high; that the leaves have seldom more than 7 leaflets, and towards the top only 5, and much narrower than in the common dwarf elder, deeply cut on their edges, and ending with winged acute points. Y. H. Savi collected this variety about Pisa.
Dwarf-elder or Dane-wort. Fl. July. Brit. Pl. 4 to 5 feet. 2 S. CHINE'SIS LINN. (Lindl. Hort. Trans. 6. p. 297.) root creeping; stems herbaceous, warty, with dark furrows; leaves pinnate; leaflets 7-9, oblong-lanceolate, crenately serrated, naked on both surfaces; flowers monocious: female ones cup-shaped, apetalous and fleshy. \( \gamma \). H. Native of China. A strong, rough herbaceous plant, very like S. Elatus. The male flowers are white and numerous, with brownish-purple anthers.

China Dwarf-elder. Fl. Sept. Clt. 1822. Pl. 5 to 6 feet. 3 S. PALM'ESSIS (Link. in Buch. Can. p. 151.) stems unknown; leaves pinnate; leaflets lanceolate, serrated; petioles, nerves of leaves, and peduncles, densely hairy. \( \gamma \). H. Native of the island of Palma, one of the Canaries, near Saucas.

Palm' Elder. Shrub? 4 S. ADN'ATA WALL. Cat. no. 432.) stems suffruticos; leaves pinnate; leaflets 5-7, oblong-lanceolate, sharply serrated, pubescent along the nerves, unequal at the base: the lower side decurrent; cymes trichotomous; berries ovate, striated, almost dry. \( \gamma \). H. Native of Nipal, at Goaingston. Flowers white.

Adn'at-leaflet Elder. Shrub. 5 S. JAVA'NICA (Reim. in Blum. Bijdr. p. 637.) stems suffruticos; stipulas foliaceous; leaves pinnate; leaflets oblong-lanceolate, acuminate, oblique at the base, sharply and glabrously serrated; corymb with 5-5 main branches. \( \gamma \). G. Native of Java, frequent on the mountains, where it is called Kitespom.

Java' Elder. Shrub. 6 S. GAUDICHAUD'ANA D. C. Prod. 4. p. 322.) stems suffruticos; leaves pinnate; leaflets 5-7, oblong-lanceolate, acuminate, equal at the base, sharply serrated; stipulas ovate, foliaceous, serrated; corymb pedunculate, umbellate, of 5 main rays or branches. \( \gamma \). H. Native of New Holland, at Port Jackson, where it was collected by Gaudichaud. According to the description this appears to be nearly allied to S. Jactaeica.

Gaudichaud' Elder. Shrub. 8 to 10 feet. 7 S. MEX'I'CA'NIA (Presl. in Herb. Heske, ex D. C. Prod. 4. p. 322.) stems suffruticos? leaves pinnate; leaflets 5-7, ovate or oblong-lanceolate, acute, serrated, rather hairy beneath as well as on the petioles and branches; corymb of 5 principal rays or branches. \( \gamma \). H. Native of Mexico. S. subalpina, Cham. et Schlecht. in Linnae. 5. p. 171.

Mexican Elder. Shrub 5 to 8 feet. 8 S. CANADA'SIS (Linn. Spec. 383.) frutescent, glabrous; leaves pinnate or sub-pinnate; leaflets about 4 pairs, oblong-oval, stiffish, acuminate, more or less pubescent beneath, sometimes appendiculately at the base; cymes of 5 main branches. \( \gamma \). H. Native of North America, from Carolina to Canada, in swamps and near hedges, and throughout Canada, as far as the Saskatchewan. Schmidt, A. T. 1. 142. Flowers said to be almost inodorous. Berries deep bluish-black.

Canadian Elder. Fl. Ju. Aug. Clt. 1761. Sch. 6 to 10 ft. 9 S. SIGR'A (Linn. Spec. 385.) arboreous; leaves pinnate; leaflets usually 5, smooth, deep green, ovate or oblong-oval, acuminate, the lower leaflets sometimes ternate; cymes with 5 main branches. \( \gamma \). H. Native throughout the whole of Europe, Caucasus, Siberia, and probably of Japan, in hedges, coppices, and woods, common; plentiful in Britain, in like situations; the varieties rare, except in gardens. Durnham. Arb. t. 65. ed. nov. 1. t. 55. Hayn. tert. bot. t. 32. f. 2. Smith, engl. bot. t. 476. Woolf. med. bot. t. 78. Fl. dan. t. 545. Branches, after a day or two wither, clothed with smooth grey bark, and filled with a light spongy pith. Flowers cream-coloured, with a sweet but faint smell. Berries globular, purplish black; their stalks reddish. It may be remarked that our uncertain summer is established by the time the elder is in full flower, and entirely gone when its berries are ripe. The tree is, as it were, a whole magazine of physic to rustic practitioners, nor is it quite neglected by more regular ones. The berries make a useful and agrable rob, of a slightly purgative quality, and very good for catarrhs, sore throats, &c. The inner bark is more actively cathartic, and so thought beneficial in rustic ailments and cataplasms for burns. The dried flowers serve for fomentations, and make a fragrant but debilitating tea, useful perhaps in acute inflammations, but not to be persisted in habitually.

An infusion of the leaves proves fatal to the various insects which thrive on blighted or delicate plants; nor do many of this tribe, in the caterpillar state, feed upon them: cattle scarcely touch them, and the mole is driven away by their scent. A wine is made from the berries, to be taken warm, with spices and sugar; and they are said to frequently enter into the composition of a less innocent beverage—artificial or adulterated port. An infusion of the inner green bark of the trunk in wine, or the expressed juice of the berries, in the dose of half an ounce, is said to purge moderately, and in small doses to prove debulcerant. The expressed juice of the berries, inopissated to the constitution of a rob, proves an useful aperient medicine, and if continued for a sufficient length of time, is of considerable service in various chronic disorders. The young leaf-buds are strongly purgative, and act with so much violence as to be accounted unsafe. The flowers have an agreeable aromatic flavour, like that of Frontinaeae wine, which they yield in distillation to water, and impart, by infusion, to vinous and spirituous liquors and oils.

Sydenham recommends as an effectual hydragogue diuretic 3 handfuls boiled in a quart of milk and water till only a pint remains, of which one half is to be taken night and morning, and repeated several days. Boerhavae gave its expressed juice in doses from a drachm to half an ounce. It is said also that if sheep who have the rot can get the bark they will soon cure themselves. An infusion of the leaves is useful for gardeners to sprinkle over the buds of such flowers as they wish to preserve from minute caterpillars, for few insects can bear the elder. In Scotland the tree is called Bountry.

Tar. \( \beta \). viriscens (D. C. Prod. 4. p. 322.) fruit green. \( \gamma \). H. S. viriscens, Desr. arb. fr. 1. p. 348.

Tar. \( \gamma \). leucocarpa; fruit white. \( \gamma \). H.

Tar. \( \epsilon \). laciniata; leaflets cut into five segments. \( \gamma \). H. S. laciniata, Mill. Dict. no. 2.—Lob. Icon. 2. t. 164. f. 2. Called Parsley-leaved elder.

Tar. \( \epsilon \). rouzadifolia; leaves ternate; leaflets petiolate, roundish, serrated; corymb few-flowered. \( \gamma \). H. Cultivated in Chelsea garden.

Tar. \( \epsilon \). montrousson; branches striped; flowers of from 5-15 parts, and with from 5-15 stamens; stigmas 5-12; berries irregular. \( \gamma \). H. S. montrousson, Hort.

Tar. \( \epsilon \). variegata; leaves variegated with yellow or white. \( \gamma \). H.

Common or Black-berried Elder. Fl. June. Britain. Shrub 10 to 15 ft. 10 S. PERUV'ANA (H. B. et Kunth. Nov. gen. Amer. 3. p. 429.) arboreous; leaves pinnate; leaflets 7, oblong, acuminate at the base, nearly equal; petioles glabrous; corymb somewhat trichotomous; berries usually 5-seeded. \( \gamma \). H. Native of Peru, on the Andes, in cultivated places, at the elevation of 4000 feet. S. suaveolens, Willd. in Schultes, syst. 6. p. 441. Flowers white. Berries black.

Peru' Elder. Shrub 12 to 20 feet. 11 S. AUSTR'ALIS (Cham. et Schlecht. in Linnae. 3. p. 140.) shrubby; leaves pinnate; stipulas glabrous; leaflets 11-13, ovate-lanceolate, usually unequal at the base; corymb brac-
teate; stigmas 5, sessile; berries 5-celled. \( \text{H} \). Native of Brazil, and cultivated at Talcahuanu in Chili. Flowers cream-coloured? There is a variety of this having 4 stigmas and a 4-celled berry.

*Southern Elder.* Shrub 5 to 10 feet.

** Leaves pinnate. Flowers panicked.

12 S. racemosa (Lin. spec. 386.) shrubby; leaves pinnate; leaflets 5, membranous, oblong, acuminate, serrated, unequal at the base; petioles glabrous; PANICLE ovate. \( \text{H} \). Native of middle and south Europe, and Siberia on the mountains. Jacq. icon. rar. t. p. 59. Duham. arb. t. 66. and ed. nov. t. 56. S. montana, Cam. epit. 976. S. cervini, Tabern. t. 1029. — Lob. icon. t. 163. Leaves pale green, pretty smooth. Flowers of a whitish green colour. Fruit red or scarlet when ripe.

*Var. \( \beta \), laciniata* (Koch, in D. C. fl. fr. suppl. p. 500.) leaflets jagged. \( \text{H} \). Native of the Palatinate of the Rhine.


13 S. PUBENS (Michx. fl. bor. amer. t. p. 181.) shrubby; leaves pinnate; leaflets 5, membranous, ovate-lanceolate or oblong, acuminated, serrated, pubescent, but chiefly on the under side; panicle thyrsoid. \( \text{H} \). Native from Carolina to Canada, on the highest mountains, as far as the Saskatchewan. S. racemosi, Hook. fl. bor. amer. t. p. 279, but not of Lin. Berries red. Flowers whitish. Resembles S. racemosi very much.

*Var. \( \beta \), heptaphylla*; leaves larger than those of the species; leaflets 7. \( \text{H} \). Native of North America, on the east side of the Rocky Mountains; and shores of the Columbia, near Fort Vancouver, and at its confluence with the sea. The Rocky Mountain specimens, and, more especially those from the Pacific, are remarkable for the great size and length of their leaflets, and there being almost constantly seven upon each brachis.

*Downy Elder.* Fl. May, June. Clt. 1812. Sh. 6 to 10 ft.

** Leaves bipinnate.

14 S. Euloïdes (Desv. in herb. mus. par.) suffruthicose; leaves bipinnate; leaflets lanceolate, serrated; PANICLE composed of racemes. \( \text{H} \). Native of China, in the suburbs of Canton. Phyteuma bipinnata, Lour. coch. 128. Branches angular and furrowed. Flowers white. Fruit perforated, 3-celled, many-seeded.

*Dancewort-like Elder.* Shrub 5 to 6 feet.

15 S. PHYTUEOMOSA (D. C. prod. t. 4. 323.) suffruthicose; leaves bipinnate; leaflets lanceolate, serrated, wrinkled; PANICLE many-flowered, divaricate. \( \text{H} \). Native of Cochin- china, on the mountains. Phyteuma Cochinchinensis, Lour. coch. 129. Flowers white. Berry roundish, pertuse, small, 1-celled, many-seeded. Very nearly allied to S. euloïdes.

*Phyteuma-like Elder.* Shrub 5 feet.

† Doubtful species, to be inquired into or excluded from the order.

16 S.? LOUREIRA (D. C. prod. t. 4. 323.) arboreous; leaves pinnate; leaflets 3, broad-lanceolate, quite entire, glabrous. \( \text{H} \). Native of China, on the mountains. S. nigra, Lour. coch. p. 181. but not of Lin. Cymes 5-parted and 5-parted; peduncles long, nearly equal. Fruit a round, small, reddish-brown, 3-seeded inferior berry. The berries are used by the Chinese in coldness of the extremities, as they are of a heating nature, from which quality, and the quite entire leaflets, it is not likely to be a species of Sambucus, but probably a species of Turpinia.

*Loureiro's Elder.* Shrub 5 feet.

17 S.? JAPONICA (Thunb. fl. jap. p. 125.) shrubby; leaves impari-pinnate, with 3-7 pairs of leaflets and an odd one; leaflets ovate, acute, cartilagiously serrated, glabrous; flowers disposed in panicled, trichotomous cymes. \( \text{H} \). Native of Japan. Ovarium superior and style filiform, for which reason it ought evidently to be excluded from the genus; it is probably also a species of Turpinia. Stigmas capitite, white.

*Japan Elder.* Shrub.

18 S.? THUNBERGII; shrubby; cymes 5-parted; leaves somewhat bipinnate. \( \text{H} \). Native of Japan, near Naganaki and elsewhere, where it is called by the Japanese Sokusoso and Sakiti-Teki. Shrub perishing just above the earth every year. S. Canadensis, Thunb. fl. jap. p. 126. This plant is hardly known as well as the S. nigra, Thunb. l. c.

*Thuiberg's Elder.* Shrub.

*Cult.* All the species of elder are of the most easy culture, and will thrive in any soil or situation. The perennial herbageous species creep much at the root, and are difficult to extirpate, having once got hold in the ground. The shrubby and arboreous kinds are easily increased by cuttings, stuck in the ground in autumn or spring. Those species, natives of warmer climates, will require a little protection in severe weather in winter.


**L. SYST. Pentadria. Trigynia.** Limb of calyx small, 5-leafed (f. 76. a), permanent. Corolla rotate (f. 75. a. f. 76. b.), somewhat campanulate, or tubular, with a 5-lobed limb (f. 76. b.). Stamina 5, equal (f. 75. b.). Stigmas 3, sessile. Berry ovate or globose, 1 seeded from abortion, crowned by the calycine teeth. Seeds compressed. — Shrubs. Leaves opposite, petiolate. Corymbus of flowers terminal. Flowers usually white, but sometimes veering to a rose colour.

**§ 1. Leaves quite entire or toothed. Style almost wanting; stigmas 3, sessile.**

1 V. Tinus (Lin. spec. 383.) leaves ovate-oblung, quite entire, permanent; having the ramifications of the veins beneath, as well as the branchlets, furnished with glandular hairs. \( \text{H} \). Native of the south of Europe, in the region of the olives, and of the north of Africa, as of Portugal, Spain, Italy, the south of France, and Algeria. Duh. arb. ed. nov. 2. t. 37. Curt. bot. mag. t. 38. V. lauri-förne, Lam. fl. fr. 3. p. 365. Tinus, Tourn. inst. p. 607. t. 377. Tinus laurifolius, Borkh.
in Rem. arch. 1. pt. 2. p. 20. Corymbs flat. Flowers white, but rose-coloured before expansion, and sometimes afterwards for a little time. Berries dark blue. The Laurestine or Laurestinus is one of the most ornamental of evergreen shrubs, with shining leaves and showy white flowers, which appear during the winter months. The name of Laurestinus was given to the shrub by old authors, they supposing it to be a kind of bay or laurel. The berries are very hot, and inflame the fauces violently, like those of Mizereon; and they are also violently purgative, according to Parkinson; but some kinds of birds are said to eat them greedily.

**Il. hirtum** (Ait. Hort. kew. 2. p. 166.) leaves oval-oblong, hairy beneath and on the margins.  1 H. Native of Portugal and Spain, and the country of Nice. V. Tinus, Mill. dict. no. 4.—Clus. hist. 1. p. 49. no. 1. The flowers of this variety appear in autumn and continue all the winter. It is the most hardy and most common sort, called *Hairly Laurestine.*

V. V. lucidum, Mill. Pers. and Schultes.—Clus. hist. 1. p. 49. no. 11.

**Il. l. lucidum** (Ait. l. c.) leaves ovate-oblong, glabrous on both surfaces, shining.  1 H. Native about Algiers and on Mount Atlas. The cymes as well as the flowers are larger than the common sort; these seldom appear till the spring, and when the winters are short the flowers are killed, and never open unless they are sheltered. Called *Shining Laurestine.*

**Il. g. virgatum** (Ait. l. c.) leaves oblong-lanceolate, pise on the margins as well as on the veins beneath.  1 H. Native of Italy, about Rome and Tivoli, &c.—Clus. hist. no. iii. with a figure. Called *Common Laurestine.*


**Wrinkled** or Large-leaved Laurestine. Fl. Dec. March. Shrub 4 to 6 feet.

3 V. tinoides (Lin. fil. suppl. p. 184.) leaves elliptic-glabrous, quite entire; branches terete, and are as well as the corymbs hairy.  1 G. Native of South America, where it was collected by Mutis.

*Tinus-like Laurestine.* Fl.? Clt. 1820. Sh. 4 to 6 feet.

4 V. glabratum (B. H. et Kunth, nov. gen. amer. 3. p. 428.) leaves ovate-oblong, acuminate, rounded at the base, quite entire, and very glabrous; petioles naked; branches canescent and poudrey; corymbs involucrated.  1 F. Native of South America, in woods near the Andes, about Popayan, at the altitude of 3000 or 4000 feet. V. glabrum, Wildl. in Schultes, syst. 6. p. 639. Calyx bluntly 5-toothed. Flowers white.

**Smooth Laurestine.** Tree 15 to 20 feet.

5 V. Ayavaceae (B. H. et Kunth, nov. gen. amer. 3. p. 428.) leaves ovate, acute, cordate, quite entire, glabrous, shining below, but with the axes of the veins beneath furnished with stellate hairs, as well as the branchlets and corymbs; petioles naked.  1 G. Native of Peru, near Ayavaca, in temperate places, at the elevation of 4000 or 5000 feet. Teeth of calyx roundish-ovate, acute, ciliolate. Flowers white? Perhaps the same as V. tinoides.

Ayavaca Laurestine. Shrub 4 to 6 feet.

6 V. integrifolium (Wall. cat. no. 157. D. C. prod. 4. p. 324.) leaves oval, acute at the base, acuminate, quite entire, glabrous, rather coriaceous, dotless; petioles, branchlets, and peduncles hairy; corollas loose, terminal; fruit oval, compressed.  1 S. Native of the island of Pulau-Penang. This species agrees with *V. Tinus* on the one hand and *V. punctatum* on the other. Calyx teeth erect, exceeding the berries.

**Quite-ear-leaved Laurestine.** Shrub 4 to 6 feet?

7 V. Chinese (Hook. et Arn. in Beech. voy. pt. hot. p. 190.) leaves membranous, broad-elliptic, acute, coarsely and unequally toothed, glabrous above while young, puberulous and dotless beneath; corymbs terminal, pubescent.  1 G. Native of China.

China Laurestine. Shrub.

**V. punctatum** (Hamilt. in D. Don, prod. fl. nep. p. 142.) leaves oval-oblong, quite entire, mucronulate, glabrous on both surfaces, beset with dots beneath; corymbs terminal, smooth, spreading, sessile.  1 H. Native of Nipaul, at Suenbu, where it is called *Heina-sura* by the Nawar people. Teeth of calyx obtuse. Flowers white.

**Dotted-leaved Laurestine.** Shrub.

8 V. punctatum (Wall. cat. no. 465. D. C. prod. 4. p. 325.) leaves elliptic-oblong, acuminate at both ends, glabrous, coriaceous, dotted beneath; branchlets, pedicels, and peduncles beset with scurfy dots; corymbs terminal, trichotomous, shorter than the leaves; berries oval-oblong.  1 G. Native of the East Indies, on the Nellighery Mountains, where it was collected by Notan. Very nearly allied to *V. punctatum.*

**Acuminate-leaved Laurestine.** Shrub.

9 V. Precinatum (Wall. cat. no. 461. D. C. prod. 4. p. 325.) leaves elliptic-oblong, acuminate, glabrous above and dotless beneath, and downy along the nerves, having 1-3 coarse serratures on each side; pedicels short, and are as well as the branchlets and peduncles clothed with villous tomentum; corymbs terminal, with 5 main branches, involucrated by 5 elliptic leaves.  1 G. Native of the East Indies, on the Pundha Mountains. Leaves 5-3½ inches long, and ½ inch broad, feather-nerved; but the 2 lower lateral nerves rise from the base and give the leaf the appearance of being 3-nerved.

**Preamna-like Laurestine.** Shrub 5 to 7 feet.

10 V. nervosum (Hook. et Arn. in Beech. voy. pt. bot. p. 190.) evergreen; leaves elliptic-lanceolate, glabrous, acute at the base and apex, dotless beneath, with a few serratures towards the apex on both sides; nerves impressed above, but prominent beneath, glabrous in the axils, and with numerous transverse conspicuous veins between them; peduncles and pedicels short and glabrous; corymbs terminal.  1 G. Native of China. This is closely allied to *V. precinatum,* Wall, in which plant is observed, besides the character given by D. C. that the axils of the leaves are furnished with a tuft of short hairs, which is totally absent from the present species.

**Nerced-leaved Viburnum.** Shrub.

12 V. Colebrookeanum (Wall. cat. no. 460. D. C. prod. 4. p. 325.) leaves elliptic, acuminate, hardly obtuse at the base, regularly serrate-toothed, glabrous, dotless; petioles, branches, and peduncles scurfy from stellate down; corymbs axillary, pedunculate, without any involucra.  1 G. Native of the East Indies, on the Pundha Mountains. The corymbs are not truly axillary, but are borne on short leafless, axillary branchlets or peduncles, which are furnished with 2 leaves at the base.

**Flowers white.**

13 V. Fruetum (Wall. cat. no. 456. D. C. prod. 4. p. 325.) leaves elliptic-oblong, curved at the base, coarsely and minutely toothed, glabrous above, but villous along the nerves beneath; petioles, branchlets, and peduncles villous; corymbs terminal, pedunculate, of 6 main branches, without any involucra; fruit almost sessile, oval.  1 S. Native of the Burman Empire, on Mount Taung-Dong, near Ava. Leaves 2
CAPRIFOLIACEAE. II. VIBURNUM.

inches long, and half an inch broad, on petioles 2-3 lines long. Flowers white.

*Petiolar Viburnum.* Shrub 4 to 6 feet.

14. *V. xanthanum* (Reinw. in Blum. bijdr. p. 655.) leaves elliptic-oblong, attenuated at both ends, almost quite entire, puberulous on the ribs beneath; corymbs terminal, divaricate, puberulous. *H.* Native of Carolina, among bushes on the mountains. Flowers white.

15. *V. luteum* (Blum. bijdr. p. 655.) leaves oblong, bluntly acuminate, acutely and closely serrated at the base, coriaceous, shining, paler beneath; corymbs terminal, divaricate, puberulous. *H.* Native of Java, in the provinces of Krawang and Tjanjor, among other bushes on the mountains.

*Yellowish Viburnum.* Shrub 4 to 6 feet.

16. *V. prunifolium* (Lin. spec. 383.) leaves roundish-obovate and oval, glabrous, rather membranous, crenately serrated, ending in a short acumen; petioles marginate, glabrous; cymes sessile; berries ovate or roundish. *H.* Native of North America, from New England to Carolina, in hedges and fields; also of Canada about Lake Huron. Wats. dendr. t. 23.—Plak. aln. 46. f. 3.—Duham. 2. t. 28. Flowers white as the rest of the species. Berries dark blue. This species appears to be very nearly allied to *V. nudum,* but the leaves are broader and more membranous.

*Plum-leaved Viburnum.* Fl. May, June. Clt. 1761. Shrub 8 to 10 feet.


*Pear-leaved Viburnum.* Fl. May, June. Shrub 5 to 8 feet.

18. *V. lentis* (Lin. spec. p. 384.) leaves broad-ovate, acuminate, sharply serrated, glabrous; petioles with narrow curled margins; corymbs terminal, sessile. *H.* Native of North America, from New England to Carolina, among hedges, and on the borders of woods. Throughout Canada to the Saskatchewan. Wats. dendr. t. 21. Schmidt, arb. 3. t. 176. ex Rem. et Schultes. sst. 6. p. 657. Flowers white. Fruit black. Serratures of leaves hooked a little, and somewhat cartilaginous. This species is more inclined to grow to a tree than any of the rest. The specific name is from *lentis,* to make pliant, on account of the pliable propendent branches.


19. *V. nudum* (Lin. spec. 383.) leaves oval-oblong, angular at the base, bluntish, with revolute, somewhat crenulated margins, quite glabrous; petioles beset with scale-like scurf or down; corymbs pedunculate, exinvolucrate. *H.* Native from Canada to Georgia, in swamps, particularly on a sandy soil; about Quebec, and on the banks of the Saskatchewan; and of Newfound-land. Wats. dendr. t. 20. Mill. fig. 274. *V.* squamatum, Willd. enum. 1. p. 537. ex Torrey, fl. un. st. p. 319. Wats. dendr. t. 24. Flowers whitish. Berries globose, black, or dark blue. In the southern states this shrub becomes evergreen; the young branches are ferruginous, and sometimes the under side of the leaves. According to Richard in Boot's herb. this is the same as *V. papyrifolium,* Poir.


21. *V. cassiodoides* (Lin. spec. p. 384.) leaves ovate-lanceolate, acute at both ends, crenated, glabrous above, with subvolute edges; under side of leaves, as well as the petioles, which are keeled, and branches, which are tetragonal, covered with scurfy dots; corymbs sessile; fruit ovate. *H.* Native from New York to Carolina, in swamps. *V.* punctatum, Rafin. in litt. Flowers white. Berries bluish-black.


*Shining-leaved Viburnum.* Fl. May, June. Clt. 1738. Shrub 2 to 4 feet.


Flowers white, with the scent of those of *Olea fragrans,* or sweet olive. This shrub has scarcely at all the appearance of a *Viburnum,* from which genus the presence of a style essentially distinguishes it. (f. 76.)


25. *V. lastana* (Lin. spec. p. 384.) leaves cordate, rounded, finely serrated, veiny, clothed beneath, but more sparingly on the upper side, with starry mezal pubescence, like that on the branches, petioles, and peduncles; cymes pedunculate, broad, flat, of numerous crowded white flowers; bracteas several, small, acute. *H.* Native throughout Europe, even to Caucasus, in hedges. In Britain in woods and hedges, especially on...
a chalky or limestone soil. Smith, engl. bot. t. 351. Jacq. austr. t. 341.—V. tomentosum, Lam. fl. fr. 3. p. 363.—Cam. epit. 122. with a figure.—Duhem, arb. 2. t. 103.—Lob. icon. 2. t. 106. A small tree, with copious, opposite, round, pliant, mealy branches. Under side of leaves and branches white from mealy down. Berries compressed in an early state, red on the outer side, yellow on the inner, finally black, with a little mealy astringent pulp. Seed large, flat, and furrowed. The leaves turn of a dark red in autumn. This shrub is hardly worth cultivating for ornament, nor is it of any particular use, except that the bark serves to make bird-lime; but that of the holly is much better. It is supposed to be the viburnum of Virgil. The name *Lantana* is from *lentu* to make pliant, on account of the pliant branches.


26 V. **Lantana** (Michx. fl. bor. amer. 1. p. 179.) leaves roundish-cordate, abruply acuminate, unequally serrated; serrations alvines; branches, petioles, and nerves of leaves clothed with powdery tomentum; corymb terminal, almost sessile; fruit ovate. **f.** H. Native of North America, from Florida to Carolina, principally in the forests called Beech-woods; also seen in Quebec and Lake Huron. V. Lan*ta* *b*.* grandif*ö*l*ium, Ait. hort. kew. ed. 1. vol. 1. p. 392. V. grandifö*lium, Smith, in Rees' cyc. no. 14. V. Lantana *,* Canadë*ns*æ, Pers. ench. 1. p. 327. The outer flowers of the corymbs are abortive and radiant, a circumstance noticed by few botanists. Berries at first red, but at length becoming black. In North America it is known by the name of *bobble-bush.* Very like V. Lantana, but of more humble growth, and the leaves larger and tomentose. *Lantana*-like *Viburnum* or American Way-faring Tree. Fl. June, July. Shrub.

27 V. **Dentatum** (Lin. spec. p. 384.) partly glabrous; leaves ovate, and nearly orbicular, plicate, coarsely and dentately serrated, with the nerves thick and feathered, glabrous on both surfaces; cymes or corymbs pedunculate; fruit nearly globose. **f.** H. Native of North America, from New York to Carolina, in mountain woods, and of Mexico. Jacq. hort. vind. 1. t. 36. Wats. dend. t. 25. V. dentatum *lucidum,* Ait. hort. kew. 1. p. 372. V. dentatum glabella, Michx. fl. bor. amer. 1. p. 179. Flowers white. Berries small, dark blue, crowned by the calyx. In North America the shrub is known by the name of *arrow-wood.*


29 V. **Ellipticum** (Hook. fl. bor. amer. 1. p. 280.) leaves elliptic, obtuse, on short petioles, coarsely serrated at the top, very hairy beneath, but most so on the veins, which are parallel; corymb dense, pedunculate; ovaries very hairy; berries oval-globose, deep black. **f.** H. Native of North America, common on the branches of the Columbia, near its confluence with the Pacific. Bark of branches pale brown. Leaves about 2 inches long.

**Var.** **b.** ovaries glabrous. **f.** H. Growing along with the species.

**Elliptic-leaved Viburnum.** Shrub 2 to 4 feet.

30 V. **Villosum** (Swartz, prod. fl. ind. occ. 1. p. 504.) leaves ovate, acuminate, quite entire, glabrous above in the adult state, but tomentose beneath from stellate down, as well as the petioles and branches; corymb terminal, pedunculate; fruit ovate-oblong. **f.** S. Native of the south of Jamaica, on the mountains. Peduncle and calyces rather villous. Corollas white. This species agrees with *V. Tinus* in the leaves being entire, and from the tomentum with *V. Lantana.* Petioles quadrangular and channeled.

**Villosum** *Viburnum.* Clt. 1824. Shrub 5 to 6 feet.

31 V. **Curtifolium** (D. Don, prod. fl. nep. p. 141.) leaves roundish-oval, quite entire, clothed with stellate tomentum on both surfaces, grey beneath, as well as the branches; corymb terminal, woolly. **f.** H. Native of Nipal, at Srimagur. Flowers white.

**Curtinus-leaved Viburnum.** Shrub.

32 V. **Nervosum** (D. Don, prod. fl. nep. p. 141.) leaves coriaceous, acuminate, serrated, membranous, glabrous above, clothed with stellate down on the petioles and nerves, which is at first dense, but at length scattered; corymb terminal, sessile, with 5-7 long main branches or rays; berries elliptic. **f.** H. Native of Nipal, at Srimagur, where it is called *Pocoeurn* by the natives. V. Lantana, Wall. miss.

**Nerved-leaved Viburnum.** Shrub 4 to 6 feet.

33 V. **Corfolium** (Wall. cat. no. 462. D. C. prod. 4. p. 327.) leaves heart-shaped, acuminate, dentately serrated, membranous, glabrous above, clothed with stellate down on the petioles and nerves, which is at first dense, but at length scattered; corymb terminal, sessile, with 5-7 long main branches or rays; berries elliptic. **f.** H. Native of Nipal, in Kamaon and Gosaingthun. Leaves 4 inches long, and 1/2 broad. Petioles 12-15 lines long. There are 4-6 nerves at the base of the limb of the leaf on each side, rising from the midrib.

**Heart-leaved Viburnum.** Shrub 5 to 6 feet.

34 V. **Mull*al*ia** (Hamilt. in D. Don, prod. fl. nep. p. 141.) leaves ovate, acuminate, distantly serrated, rounded at the base, densely clothed with tomentum beneath, as well as on the branches; corymb terminal, compound, spreading, tomentose; teeth of calyx short. **f.** H. Native of Nipal, at Srimagur. Nearly allied to *V. tomentosum.* Flowers white.

**Mull*al*ia** *Viburnum.*

35 V. **Glaucocarpum** (Wall. cat. no. 463. D. C. prod. 4. p. 327.) leaves ovate, coriaceous, acuminate, glabrous above, except on the middle nerve, densely clothed with stellate down beneath, as well as the branches and peduncles; the margin serrated; serratures distant, small, ciliolous; corymb terminal, with 5-7 main branches, ex involucrate. **f.** H. Native of Nipal, in the valley, and at Kamaon. Wall. pl. rar. asist. 2. p. 54. t. 169. Flowers white. Leaves roundish-cordate. Berries scarlet.

**Starry-haired Viburnum.** Shrub 12 to 20 feet.

36 V. **Involucrum** (Wall. cat. no. 458. D. C. prod. 4. p. 327.) leaves ovate, acuminate, somewhat coriaceous at the base, villous from simple hairs while young, as well as the branchlets; corymb terminal, decomposed; bracteas and bracteoles foliaceous, oval, attenuated at the base, acuminate, nearly entire, exceeding the flowers. **f.** H. Native of Nipal. Branches of corymbs and calyces villous. Flowers white.

**Involucrated Viburnum.** Shrub 4 to 6 feet.

§ 2. Leaves serrated and denticated. Flowers monogynous from the style being a little elongated, and the stigmas being from the style being a little elongated, and the stigmas being

37 V. **E*ös*um** (Thumb. fl. jap. p. 124.) leaves broad-ovate, acuminate, densely serrated, rather villous on both surfaces; 3 L.
petioles tomentose; umbels decompound, pilose; style simple. 
H. Native of Japan. Branches grey, glabrous.

Erose-toothed Viburnum. Shrub. 4 to 6 feet.

38 V. mono'eysum (Blum. bijdr. p. 655.) leaves elliptic-oblong, attenuated at both ends, glandularly denticulated above the base, paler beneath; corymb disarticulate, terminal, downy; flowers monogynous. 
§ 3. Leaves 3-lobed.

39 V. acrifori'um (Lin. spec. 383.) branchlets and petioles pilose; leaves ovate-cordate, usually 3-lobed, acuminated, sharply and loosely serrated, downy beneath; petals glandless, when young stipulate at the base, and rather tomentose; corymb terminal, pedunculate, not radiant. 


40 V. orien'ta'le (Pall. fl. ross. t. 58. f. H.) leaves 3-lobed, acuminated, coarsely and bluntly toothed; petals glandless; corymb terminal, not radiant; fruit oblong, compressed. 
H. Native of Iberia, in woods, on the mountains, &c. Bibl. fl. taur. p. 245. O'pulus orientalis folio amplissimo tridentato, Tourn. cor. p. 42. Flowers white. Seed oval, furnished with 2 channels on both sides, as in V. Lantana. Very like the preceding species.


Sect. II. O'pules (a name altered from populus, the poplar: the leaves resembling those of the poplar). Tourn. inst. t. 376. Meech, meth. p. 605. Outer flowers of the corymb radiant and sterile, much larger than the rest, which are fertile. Seed obcordate.

41 V. O'pules (Lin. spec. 384.) quite glabrous in every part; leaves broad, 3-lobed, acuminated, unequally serrated, venous; petals beset with glands towards the top, and several oblong leafy appendages below; cymes pedunculate, white, with linear bractes: with several of the marginal flowers dilated flat, radiate, and without stamens or pistils; berries elliptical, bright red, very juicy, but bitter and nauseous; seed compressed.

Var. β, stérilis (D. C. prod. p. 328) H. Cultivated in gardens. This variety is called snow-ball-tree or guelder-rose. It is commonly planted in shrubberies along with the lilac and lilifurum, grouping elegantly with the various purple hues of the former, and the golden chain of the latter, but they are all mere summer beauties; nor does any thing profitable or ornamental follow. The several marginal flowers of the corymb in the species are dilated, flat, and radiate, without stamens or pistils. In this variety the whole cyme nearly consists of radiant sterile flowers, and becomes globular. V. O'pulus rösium, Röem. et Schult. syster. 6. p. 635. Knor. del. 2. t. 5 and 6. The snow-ball has been raised from seed by accident, and has been multiplied by cuttings.

Guelder-rose. Fl. May, June. Britain. Shrub 6 to 14 feet.

42 V. ede'+/e (Pursh, fl. bor. amer. 1. p. 203.) leaves 3-lobed, bluish behind, and 3-nerved: lobes very short, denticulately serrated: serratures acuminated; petals glandular; outer flowers of corymb radiant. 
H. Native of North America, from Canada to New York, on the banks of rivers. In Canada from the Saskatchewan to Slave Lake, in lat. 66°. V. O'pulus edulis, Michx. fl. bor. amer. 1. p. 180. A smaller and more upright shrub than the preceding species. The berries of the same colour and size, but when completely ripe more agreeable to eat, and sometimes employed as a substitute for cranberries. It does not seem to differ much from V. oxyeo'coscos except in the broader base of the leaf.


43 V. oxyeo'coscos (Pursh, fl. amer. sept. 1. p. 203.) leaves 3-lobed, acute behind, 3-nerved; lobes divaricate, acuminated, coarsely and distantly serrated; petals glandular; cymes radiant. 
H. Native of North America; on the mountains of New York and New Jersey; and throughout Canada to the Arctic circle, and from Hudson's Bay to the Rocky Mountains, in swamps and shady woods. V. opoloides, Muhl. et cat. 32. V. trifolium, Marsh.arb. p. 192. V. O'pulus Pinnina, Michx. fl. 1. p. 180. V. O'pulus Americana, Ait. hort. kew. 1. p. 273. Flowers white. Berries subglobose, red, of an agreeable acid, resembling that of cranberries, for which they are a very good substitute. Very like the V. O'pulus of Europe.

Var. β, subintegri'folia (Hook. fl. bor. amer. 1. p. 281.) leaves but little cut, very pubescent beneath. 
H. Native on the banks of the Columbia.


44 V. mólle (Michx. fl. bor. amer. 1. p. 180.) leaves nearly orbicular, cordate, plicate, toothed, rather tomentose beneath from very soft down; petals rather glandular; cymes radiant; fruit oblong-ovate. 
H. Native of North America, in Kentucky, near Danville, Tennessee and Upper Carolina, in hedges. V. alnifolium, Marsh. arb. p. 162. Flowers white. Bark deciduous. Very like V. oxyeo'coscos, and perhaps only a variety of it.


45 V. microw'cru'm (Cham. et Schlecht. in Linnaea. 5. p. 170.) leaves subcordate, orbicular, or obovate, short-acute, remotely and minutely toothed, pubescent above, and clothed with hoary tomentum beneath; petals short, without glands; rays of cyme almost sessile. 
H. Native of Mexico, near Jalapa and San Megan del Soldado. Leaves like those of the filbert. Fruit black.

Small-fruitcd Guelder-rose. Shrub 6 to 8 feet.

Sect. III. Solenó'tus (from σωλην, solen, a tube, and limus, the lauraceous; i.e. reference to the corollas being tubular). D. C. prod. 4. p. 328. Corollas not radiant. Corolla obconical or cylindrical. Seeds oval-oblong. This section agrees with the tribe Lonéctrec in the corollas being tubular.

46 V. Dahu'rum (Pall. fl. ross. ed. Svo. p. 52.) leaves ovate, somewhat cordate at the base, crenately serrated, beset with stellate down, as well as the branchlets; corollas dichotomous, few-flowered; corollas tubular, somewhat funnel-shaped, bluntly 5-toothed. 
ed. 1, 1-seeded, at first red, but at length becoming black and sweet, ex Pall. ed. 2. Allied to V. Lantana. Flowers yellowish white.

_Dahurian Viburnum_. Shrub 6 to 8 feet. 47 _V. polycarpon_ (Wall. cat. no. 455.) leaves cordate, ovate, somewhat acuminate, glabrous above, and tomentose from dense stellate white down beneath, but at length rather naked; corymb terminal, 3-rayed, on short peduncles; corollas obovately tubular; berry elliptic, glabrous. ʃ. H. Native of Nipaul, at Kamaon and Sirmore. Leaves 4-5 inches long, and 3 inches broad; petioles 4 lines long.

_Many-fruited Viburnum_. Shrub 6 to 8 feet. 48 _V. cylindricum_ (Ham. in D. Don, prod. f. nep. p. 142.) leaves oval-oblong, acuminate, coriaceous, quite entire, pubescent beneath, and on the branches; corymb terminal, bracteate; corolla cylindrical. ʃ. H. Native of Nipaul, at Kamaon. Very nearly allied to _V. erubescens_, but differs in the singular hairs on the leaves. Bracteae villous, foliaceous, 4-5 lines long. Flowers white.

_Great-flowered Viburnum_. Shrub 5 to 8 feet. 50 _V. erubescens_ (Wall. pl. rar. asiat. 2. t. 134. D. C. prod. 4. p. 329.) leaves elliptic, acuminate, dentately serrated, pubescent along the nerves beneath, when young ornamented with pencilled hairs in the axils of the serratures above; corymbterminal, bracteate; corollas cylindrical. ʃ. H. Native of Nipaul, at Kamaon. Very nearly allied to _V. erubescens_, but differs in the singular hairs on the leaves. Bracteae villous, foliaceous, 4-5 lines long. Flowers white.

_Erubescent Viburnum_. Shrub 10 to 12 feet. 51 _V. coriaceum_ (Blume. bijdr. p. 656.) leaves ovate or oval-oblong, acuminate, dentilicate, coriaceous, glabrous; corymb terminal, fastigate; tube of corolla cylindrical. ʃ. H. Native of Java, in woods on the higher mountains.

_Coriaceous-leaved Viburnum_. Shrub 6 to 7 feet. ʃ. Species natives of Japan, but are not sufficiently known.


53 _V. dilatatum_ (Thunb. fl. jap. p. 124.) leaves ovate, acuminate, unequal, toothed; petioles and peduncles villous; panicule axillary, compound, but not radiant; style simple, very short. ʃ. H. Native of Japan.

_Dilatatum Viburnum_. Shrub. ʃ. 54 _V. tomentose_ (Thunb. fl. jap. 123.) leaves ovate, acuminate, serrated, veiny, tomentose beneath and on the petioles; umbels lateral, radiant. ʃ. H. Native of Japan, in woods. Sijo vulgo Adsai, Kompf. amoen. ex p. 834. Branches glabrous, reddish. Flowers blue, disposed on a dense large round head like the Snow-ball Guelder-rose; some are radiant and sterile, and others are small and pedunculose.

_Tomentose Viburnum_. Shrub. ʃ. 5-6 feet. _Cult._ The species of _Viburnum_ are all beautiful shrubs, and the hardy species are well adapted for ornamental shrubbery. They are either increased by laying in the shoots, or by cuttings under a hand-glass in a shady situation. The greenhouse and hardy kinds are early flowerers, which render them very desirable.

**CAPRIFOLIACEÆ. II. _Viburnum_. III. _Triosteum._**

**_Tribe II._**


_Lin. syst._ _Pentandra, Monoginia._ Tube of calyx ovate; limb 5-parted (f. 77. a.): lobes linear-lanceolate, permanent. Corolla tubular (f. 77. b.), almost equally 5-lobed, gibbous at the base, a little longer than the calyx. Stamens 5, inclosed. Stigma thick, oblong. Berry coriaceous (f. 77. c.), obovately trigonous, crowned by the calyx (f. 77. d.), 3-celled (f. 77. e.), but sometimes only 1-celled at maturity. Seeds 3 in each capsule, rarely 5, bony, elliptic.—Perennial herbs, rarely suffruticose. Leaves tapering into the petioles, and somewhat connate at the base. Flowers axillary, sessile, or on very short pedicels.

1 _T. perfoliatum_ (Lin. spec. 250.) leaves ovate, acuminated, abruptly narrowed at the base, and connate; flowers sessile, appearing verticillate. ʃ. H. Native of North America, in the states of New Jersey, New England, Upper Carolina, and Virginia, in rich rocky grounds, principally in a lime stone soil. Schkuhr, handb. 1. t. 41. Bigel. med. bot. 90. t. 9. _T. majus_, Michx. fl. bor. amer. 1. p. 107.—Dill. clth. p. 394. t. 293. f. 378. Flowers and berries deep purple. Leaves sometimes subasinuated. There are glabrous and pubescent varieties of this species. The roots of this species, as well as those of the following, are used in North America as an emetic for inpecuina.- It was first brought into notice by Dr. Tinkar, and hence it has been called Tinkar's root.


_Berries yellow._


3 _T. Himalaya num_ (Wall. in Roxb. fl. ind. 2. p. 180.) plant covered with long hairs; leaves obovate, acute, connate at the base; lowermost ones free; racemes terminal, bearing the flowers in whorls. ʃ. H. Native of Nipaul, on the Himalaya at Gosasingthang, where it grows on very high and exposed rocks. Stems terete. Leaves membranous, rounded at the end, with a short acumen, 6-8 inches long, about 4 fingers broad, somewhat narrow towards the base. Berries oval, about the size of a small gooseberry, 3-furrowed, 1-celled, 3-seeded, hairy, yellow.

_Himalaya Fever-wort._ Pl. 2 to 3 feet.
IV. DIERVILLA (named by Tournefort in compliment to M. Dierville, a French surgeon, who was the first to introduce D. Canadensis into Europe). "Flowers the peduncles of the Weigelia Sima 1. from—celled, —celled, not crowned by the limb of the calyx, as in most of the other genera of the present order. Seeds numerous, minute.—Erect shrubs. Leaves ovate, acuminate, serrated. Peduncles axillary, bracteate, usually dichotomous, 2-3 or 4-flowered.


Japan Diervilla. Shrub.


Corea Diervilla. Shrub.

Cult. The species of Diervilla are well fitted for the front of shrubberies; and they are easily increased by cuttings put into the ground in autumn and spring; or by suckers, which rise from the roots in plenty.

V. LONICÈRA (named after Adam Lonicer, a German who was born in 1528, and died in 1586. There was another Lonicer, John, who wrote comments on Dioscorides). Desf. fl. atl. 1. p. 183. Lam. ill. t. 150. D. C. prod. 4. p. 530.—Lonicéra species, Lin. and many other authors.—Caprifolium and Xylôsteum, Juss. gen. p. 212.—Xylôsteum, Caprifolium, Chamecerasus, and Periclymenum, Tourn. inst. t. 378 and 379.—Caprifolium and Lonicera, Rœm. et Schultes, syst. —Lonicera and Xylôsteum, Torrey, fl. un. st. L. gen. Pentândria, Monogynia. Tube of calyx 5-toothed (f. 78. a.). Corolla tubular (f. 78. b. f. 79. b.), campanulate, or funnel-shaped: with a 5-cleft, usually irregular limb (f. 78. b. f. 79. b.). Stamens 5. Style filiform; stigma capitate (f. 78. c.). Berry 3-seeded; cells few-seeded. Seeds crustaceous.—Erect or climbing shrubs. Leaves opposite, sometimes connate, entire, but sometimes somewhat runcinate (f. 79. e.) in the same species. Flowers axillary, variously disposed.


* Flowers ringent.—Caprifolium, Tourn. inst. p. 608.

1 L. Caprifolium (Lin. spec. p. 246.) branches twining; leaves deciduous, obovate, acute, glaucous: uppermost ones broader and connate; flowers ringent, terminal, disposed in capitate whorls. ï. H. Native of middle and south Europe, even to the Terek, in woods, hedges, and thickets. In England in like situations; in a wood near Elshfield, Oxfordshire, plentiful; in Chalkpit Close, Hinton, Cambridgeshire, certainly wild; also in another copice in the same parish. In several woods in the south of Scotland. Smith, engl. bot. t. 799. Jour. austr. t. 357. Eng. gard. ent. 14. t. 5.—Dodon, pempt. 411. with a figure.—Math. valg. vol. 2. p. 321. with a figure. Cam. epit. 713. with a figure.—Rivin. irrt. t. 123. Periclymenum perfoliatum, Ger. enac. p. 891. with a figure. Stein twining from left to right. Bends acute, glaucous. The lower leaves are distinct and somewhat stalked; 2 or 3 of the upper pairs united: the uppermost of all forming a concave cup. Flowers in one or more axillary whorls: the uppermost whorl terminal: with a central bud, 6 in each whorl, highly fragrant, 2 inches long, yellowish, with a bluish-coloured tube. Berries elliptical, of a tawny orange colour, each crowned by an almost entire calyx.

Cape's—leaf or Pale-perfoliate Honeysuckle. Fl. May, June. Britain. Shrubby twr.


Caprifoliaceae. E. V. Lonscera.

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sic. 1. p. 257. Caprifolium implícum, Röm. et Schultes, syst. 5. p. 261. Flowers purplish before expansion, becoming paler on the outside as they expand; white on the inside; but finally changing to yellow, as in the common woodbine. The leaves in Curtis's figure appear to be ovate and acute.


4 L. Cyrenaica (Viv. fl. lib. spec. 12. t. 8. f. 1.) quite glabrous; branches twining; leaves elliptic, glaucous beneath; lower ones sessile, distinct; upper ones truncate at the base, and confluent; flowers disposed in whorled heads. §§. H. Native of Libya, in the vicinity of Cyren, on hills. Said to be allied to L. Caprifolium, but differs in the upper leaves being much smaller, almost as in L. Periclymenum.

Cyren Honeysuckle. Shrub tw.

5 L. Periclymenum (Lin. spec. p. 247.) branches climbing; leaves all separate, deciduous, sometimes downy, glaucous beneath, ovate, obtuse, attenuated at the base: upper leaves the smallest; heads of flowers all terminal, ovate, imbriicated; flowers ringent. §§. H. Native of middle Europe, in hedges, groves, and thickets, common; plentiful in Britain, in like situations. Smith, engl. bot. t. 800. Curt. fl. lond. fasc. 1. t. 15. Oed. fl. dan. t. 998. Schmidt arb. t. 197. Svensk, bot. t. 740. Caprifolium Germanicum, Rau, syn. p. 458. engl. gard. cat. t. 5. Periclymenum, Ger. enmac. p. 891. with a figure Periclymenum Germanicum, Riv. mon. irr. t. 122. P. hor-tense, Gesm. icon. pict. fasc. 1. 38. t. 7. f. 49. Caprifolium Periclymenum, Röm. et Schultes, syst. 5. p. 262. Caprifolium sylvaticum, Lam. fl. fr. p. 365. There are varieties of this species with either smooth, pubescent, or variegated leaves; and when the plant grows by the sea-side they are occasionally more glaucous and rather succulent. Corollas externally deep red, or in the earlier flowering varieties all over buff coloured; in the maritime plant smaller and greenish. Berries nearly globular, deep red, bitter and nauseous, accompanied by permanent bractlets. The early writers attribute virtues to this shrub which are now quite given up, but the beauty and exquisite fragrance of the flowers make it a favourite plant in gardens and shrubberies. This is the true woodbine of poets, though likewise the "twisted eglantine" of Milton. Notwithstanding Curtis's imperfect quotation, Shakspeare is guiltless of this blunder. He says,

"So doth the woodbine, the sweet honeysuckle,
Gently entwist the maple."

Var. β, serotínna (Ait. hort. kew. 1. p. 378.) branches glabrous; flowers late, reddish. §§. H. Hort. angl. 14. no. 4. t. 7. Mill. fig. t. 79. Riv. mon. irr. t. 122. Periclymenum Germanicum, Mill. dict. no. 4. This, the late red honeysuckle, produces a greater number of flowers together than either the Italian or Dutch honeysuckle, and it makes a finer appearance than either of them, during the flowering. It has not been such a long inhabitant of our gardens as the Dutch honeysuckle, for about the year 1715 it was considered a great curiosity, when it was called the Flemish honeysuckle, and was probably brought over by the Flemish florists.

Var. γ, Bélgica; branches smooth, purplish; leaves oblong-oval, of a lucid green above, but pale beneath, on long petioles; flowers in terminal, verticillate heads, each flower arising out of a scaly cover, reddish on the outside, and yellowish within, of a very agreeable colour. §§. H. Periclymenum Germanicum, Mill. dict. no. 4.—Hort. angl. 15. no. 5. t. 6. This, the Dutch honeysuckle, may be trained with stems, and formed into heads, which the wild sort cannot, the branches being too weak and trailing for that purpose.

Var. δ, querofólium (Ait. hort. kew. 1. p. 378.) leaves sinuated like those of an oak. §§. H. This variety is to be found in England in a wood near Kimberley, Norfolk; and near Oxford. There is also a kind of this with variegated leaves. The flowers are like those of the species. This is called the Oak-leafed honeysuckle. Woodbine or Common Honeysuckle. Fl. June, July, Oct. Britain. Shrub tw.

6 L. Fláva (Sims, bot. mag. t. 1318.) quite glabrous; branches twining a little; leaves ovate, sometimes glaucous beneath, with carilagineous margins; upper leaves connately perfoliate; flowers in terminal verticillate heads; corollas rather ringent; with ollong, obtuse lobes. §§. H. Native of the Paris Mountains, South Carolina, or on the Catskill Mountains, New York. Torrey, fl. un. st. 1. p. 243. Caprifolium flavum, Eckl. sketch. 1. p. 271. Caprifolium Fraséri, Pursh, fl. amer. sept. 1. p. 160. Flowers bright yellow, but as they fade becoming orange-coloured, very fragrant.


7 L. Pureícens (Sweet, hort. brit. p. 194.) branches twining; leaves broad-ovate-elliptic, on short petioles, pubescent and ciliated, glaucous beneath: upper ones connately perfoliate; spikes or racemes composed of verticillate heads of flowers; corollas beset with glandular pubescence. §§. H. Native of North America, in Massachusetts, Vermont, New York, and Canada, in many places. Caprifolium pubescentes, Goldie, in edinb. phil. journ. 1822. april. p. 323. Hook, exot. fl. t. 27. L. hirsuta, Eaton, man. bot. ed. 3. p. 341. ex Torrey, fl. un. st. 1. p. 242. L. Goldii, Spreng. syst. 1. p. 758. Flowers yellow. This appears to hold the place in the more northern parts which L. Fláva does in the south; of which indeed Dr. Torrey suspects it to be a variety.


8 L. Parteíflóra (Lam. dict. 1. p. 728.) quite glabrous; branches twining; leaves elliptic, sessile; lower ones somewhat connate: upper ones connately perfoliate, glabrous, very glaucous beneath; flowers in verticillate heads; corollas glabrous; with the tube gibbous at the base on one side; filaments hairy. §§. H. Native of Northern America, or in New England to Carolinia, in rocky shady situations; frequent in Canada, and as far north as the Saskatchewan; and from Hudson's Bay to the Rocky Mountains. Caprifolium partelium, Pursh, fl. amer. sept. 1. p. 161. Lonicera dioica, Lin. syst. veg. ed. 13. p. 181. L. média, Murr. nov. comm. gett. 1776. 28. t. 3. Caprifolium bractéosum, Michx. fl. bor. amer. 1. p. 105. Caprifolium dioecum, Röm. et Schultes, syst. 5. p. 260. Caprifolium glaucum, Meunch. Flowers yellow, smaller than in any of the foregoing species; but it varies exceedingly in the colour of the flowers, for there is a variety mentioned by Michaux having purplish flowers.

Var. β; leaves pubescent or tomentose beneath. §§. H. Native of Canada, along with the species.


9 L. Douglasi (D. C. prod. 4. p. 332.) branches twining; leaves oval, acute at both ends, petiolate, glabrous, ciliated, tomentose on the outside: upper ones connate; flowers disposed in capitate whorls; stigma exerted; stamens inclosed. §§. H.
Native of the western coast of North America, on the banks of the
Leaves 4-6 inches long, dark green. Hooker in his fl. amer.
bor. 1. p. 282. considers this nothing but a variety of L. par-
risifolia.

10 L. ? MICROPHYLLA (Hook. fl. bor. amer. 1. p. 283.)
branches twining; leaves small, on short petioles, cordate, obtuse,
and pinnate, stiff, hispid from pili as well as the branches, pale
and glaucous beneath. ♂, ♀. H. Native of North-west America,
on the subalpine range of Mount Hood, in rocky, partially
shady places, abundant; sparingly at the Grand Rapids, and on
steep rocks near Oak Point, on the Columbia. The specimens
examined have no flowers, but judging from the habit of the
plant it may perhaps safely be referred to this genus, and to
the present division of it. The leaves are hardly 6 lines long,
uniform, exactly cordate, very villous as well as the stems with
brown hairs.

Small-leaved Honeysuckle. Shrub tw.
11 L. GRATIF (Ait. hort. kew. 1. p. 221.) branches twining;
leaves permanent, ovovate, rather mucronate, glaucous beneath
and reticulate veined, glabrous; upper ones connately peri-
lolate; spikes composed of approximate whorles of flowers;
corollas ringent. ♂, ♀. H. Native of North America, from
Carolina to New York, on the mountains, rambling among
rocks in shady moist situations, but rare. Hort. angl. p. 15.
no. 10. t. 8. Caprifoliyum grattum, Pursh, fl. amer. sept. 1.
p. 161. Reem. et Schultes, syst. 5. p. 262. L. Virginiacum,
Marsh, arb. 136. ? Periclymenum Americum, Mill. dict. no.
7. Branches reddish brown. Flowers inclining to scarlet on
the outside, according to Pursh. Corolla ringent, reddish
on the outside, and yellow inside. Berries red.


* * Limb of corolla nearly equal.—Periclymenum, Tourn.

12 L. SEMPERVIRENS (Ait. hort. kew. 1. p. 230.) quite gla-
bruous; leaves permanent, evergreen, ovovate or ovate, glaucous
beneath, glabrous: upper ones connately perfoliate; spikes
nearly naked, composed of whorls of flowers; tube of corolla
ventricose on the upper side; limb nearly regular, with 5
roundish lobes. ♂, ♀. H. Native of North America, from
New York to Carolina, in stony dry woods. Hort. angl. t. 7.
Knor, deU. t. 53. Caprifoliym sempervirens, Michx. fl. bor.
amer. 1. p. 105. Periclymenum Virginiacum, Mill. dict. no.
1. Altarnus sempervirens, Rehd. ex Steud. Periclymenum
Virginiacum, Riv. mon. 116. Branches brown. Leaves deep
green above, 2 inches long and an inch broad. Whorls of
flowers usually 3, at the top of each branch. Flowers of a
beautiful scarlet outside and yellow inside, about 1 inch long,
imodorous. There are several varieties of this species, particu-
larly one with an almost upright stem.

Tar. a, major (Ait. l. c.) leaves roundish. ♂, ♀. H. Curt.
bog. mag. 781. Schmidt, arb. 1. 104. Great Trumpet Honeys-
uckle.

Tart. / minor (Ait. l. c.) leaves oblong, acute at both ends:
upper ones obtuse, perfoliate. ♂, ♀. H. Sims, bog. mag.
1753. Ker. bog. reg. t. 556. L. connata, Meerb. icon. t. 11.
Small Trumpet Honeysuckle. According to the figure in bog.
mag. the flowers are scarlet both outside and inside.

Evergreen or Trumpet Honeysuckle. Fl. May, June. Clt.
1656. Shrub tw.

13 L. CILIOSA (Poir. suppl. 5. p. 612.) plant twining; upper
part of the branches hairy on one side; leaves coriaceous, reti-
culated, ovate, on short petioles, glaucous beneath, and ciliate
on the margins: upper ones connately perfoliate; spikes composed
of approximate verticillate heads of nearly sessile flowers; tube
of corolla hairy, ventricose in the middle: limb nearly equal.
♂, ♀. H. Native of North America, on the banks of the
Kooskookey. Caprifoliym ciliOum, Pursh, fl. amer. sept. 1.
p. 160. L. ciliata, Dietr. lex. suppl. 4. p. 293. Flowers dark
yellow. Peduncles beset with glandular hairs.

14 L. OCCIDENTALIS (Hook, fl. bor. amer. 1. p. 282.) twining;
leaves oval, almost sessile, glabrous, ciliate, glaucous beneath:
upper ones connately perfoliate; flowers disposed in
verticillate heads; corolla glabrous, with an elongated tube,
which is gibbous above the base: the limb nearly equal; sta-
mens almost inclosed. ♂, ♀. H. Native about Fort Van-
couver, on the Columbia. Caprifoliym occidentale, Lindl. bot.
reg. t. 1457. Caprifoliym ciliOum, Doug. mss. The flowers
are longer than any other British North American species, and
of a full orange red. Branches and peduncles glabrous.

15 L. VILLOSA (Willd. mss. ex Kunn. D. C. prod. 4. p. 332.)
leaves ovate-oblong, ending in an acute, cuspidate point, ciliate,
pilos on the nerves beneath: upper ones connately perfoliate;
flowers disposed in a verticillate terminal head; heads sessile:
tube of corolla long; limb nearly equal. ♂, ♀. H. Native of
New Spain, in frigid places. Caprifoliym pilosum, H. B. et
Kunth, nov. gen. amer. 3. p. 457. t. 298. Flowers purple.
Pilos Honeysuckle. Shrub tw.

Sect. II. Xylostilum (xylo, xylon, wood, and aor, oston, a
bone; the wood of L. xylostilum is as hard as bone). D. C.
fl. fr. ed. 3. vol. 4. p. 271. D. C. prod. 4. p. 333.—Xylostion,
Juss. gen. 212.—Lonicerœ, Rem. et Schultes, syst. 5. p. 19.
—Xylostion and Chamaecerasus, Tourn. inst. p. 609.—Xyl-
estium and Isika, Adans, fam. 2. p. 501.—Cobaœa, Neck. elem.
no. 219. Pedicels axillary, 2-flowered, bicrateate at the apex.
Berries twin, distinct, or joined together more or less, 3-celled
in the young state, rarely 2-celled in the adult state; the limb
of the calyx is generally deciduous, therefore the fruit is usu-
ally not crowned.—Climbing or erect shrubs. Leaves never con-
nate.

§ 1. Nisitao (Nin-tao or Sin-tao is the name of L. Japonica
in China). D. C. prod. 4. p. 333. Oovaria and berries altogether
different. Stems scandent. Flowers irregular.

16 L. MACRANTHIA (D. C. prod. 4. p. 333.) branches twining,
hispid; leaves oval or oblong, rather ciliate at the base, and
acuminated at the apex, except along the nerves; pedicelles axillary
and terminal, 2-flowered, longer than the petioles, the whole
forming an ample leafy raceme; calycine segments subulate,
hispid; corolla very long. ♂, ♀. H. Native of Nipanu, at
Suembaru, and of Silhet. Caprifoliym macranthum, D. Don,
nica, Wall. in litt. and in Roxb. fl. ind. 2. p. 174. Leaves 3-5
inches long, shining above, and villous along the nerves and
margins; beautifully reticulate, glaucous, villous, and hairy
beneath. The flowers are at first snow-white and gradually
changing into a beautiful yellow, acquiring thereby a peculiarly
varied appearance. Berries nearly globular, smooth, deep
purple, covered slightly with a pale bloom, crowned by the
permanent villous calyx, 3-celled; cells 4-seeded. In Nipanu
this species embellishes most of the forests, both in the valley
and on the surrounding hills.

Large-flowered Honeysuckle. Fl. April, June. Shrub tw.
17 L. CONFLNS (D. C. prod. 4. p. 333.) branches twining, pubescent;
leaves ovaee, acute, rounded at the base, downy on both
surfaces as well as on the peduncles; pedicelles axillary,
longer than the petioles, 2-flowered, opposite, disposed in some-

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hings like a thyrse at the tops of the branches; calycine segments ovate, and are as well as the corollas pubescent. 18. L. 

13 L. C. prod. 4. p. 333.) glabrous in every part; branches twining; leaves petiolate, oblong-lanceolate, shining above and pale beneath; peduncles short, 2-flowered, about the length of the pedicels; tube of corolla very long and filiform; limb bilabiata. 18. H. Native of China and Nepal. Lonicera longiflora, Sabine, ex Lindl. bot. reg. 1232. Nin-
tòoa longiflora, Sweet, hort. brit. ed. 2. Caprîfolium Japonicum, D. Don, prod. fl. nep. 140. Caprîfolium Nepalense, G. Don, in Loud. hort. brit. 79. Flowers several inches long, at first snow white, but finally changing to a golden yellow colour.


19 L. Japonica (Thumfl. jat. p. 89.) stems twining, flexuous, hairy; branchlets opposite, very hairy, bearing 2 leaves and 2 sessile flowers at the top of each; leaves petiolate, ovate, acutish, villous, pale beneath; uppermost ones the smallest; corolla tubular, irregular, villous. L. Caprifolium longiflorum, Sabine, ex Lindl. bot. reg. 1232. Nin-
tòoa longiflora, Sweet, hort. brit. ed. 2. L. Chinensis, Wats, deld. brit. 117. L. flexuosa, Loddi. bot. cab. 1037. Ker. bot. reg. 712. but not of Thumb. Leaves about an inch long. Corolla about an inch long, red, and villous on the outside and white inside, sweet-scented, equal in length to the stamens.


20 L. Java (D. C. prod. 4. p. 334.) stem twining; leaves ovate or oval-oblong, acuminate, rounded at the base, ciliated, glabrous above, glaucous and tomentose beneath; peduncles 2-flowered, axillary, solitary, but so much crowded at the tops of the branches as to appear somewhat corymbose. L. Caprifolium Javanicum, Blum. bijdr. p. 653. Java Honeysuckle. Shrub tw.

21 L. Lourei (D. C. prod. 4. p. 334.) climbing or tufting; leaves ovate-oblong, acuminate, subacute at the base, rather pilose on both surfaces; peduncles 2-flowered, axillary, solitary; those at the tops of the branches disposed in dense heads. L. Lourei, Blum. bijdr. p. 653. Flowers white?

Lourei's Honeysuckle. Shrub tw.

22 L. Cochinchinensis; climbing or tufting, much branched; leaves ovate, pubescent, small; peduncles 2-flowered, axillary; corolla 2-stamened, bilabiate. L. Native of Cochín-china, among bushes and in hedges. L. Xylosteum, Lour. coeh. p. 150. Tube of corolla very long; limb bilabiata: one of the lips 4-cleft and the other entire. Berry red. Flowers white.

Cochin-China Honeysuckle. Shrub tw.

23 L. Tsuropus (Hook. et Arn. in Beech. voy. pt. bot. p. 190.) branches twining, pubescent; leaves petiolate, oblong, acute, obtuse at the base or cordate, glabrous above in the adult state, and densely clothed with velvety pubescence beneath; peduncles bibracteate at the apex, 2-flowered, axillary, solitary, one half shorter than the pedicels: the terminal ones forming a kind of head; calyx villous: with minute, ovate, acute teeth; tube of corolla elongated, equal, villous. L. H. Native of China. Lonicera Periclymenum, Lour. coeh. p. 150. Closely allied on the one hand to L. confusum, D. C. from which it differs in the leaves being smooth above, and in the shorter peduncles, and on the other to L. Leschenaultii, Wall. which, however, is said to have ovate-subcordate ciliated leaves; and villous branches.

Telfair's Honeysuckle. Shrub tw.

24 L. Leschenaultii (Wall. in Roxb. fl. ind. 2. p. 173.) branches twining; leaves ovate, subcordate, acute, quite entire, smooth above, hoary and villous beneath: with the margins ciliated; pedicels 2-flowered, axillary, solitary, or in terminal fascicles. L. H. Native of the East Indies, on the Nelli-
gerry Mountains, where it is called Moule Gouda by the natives.

Leschenault's Honeysuckle. Shrub tw.

25 L. Glabra (Wall. in Roxb. fl. ind. 2. p. 173.) glabrous in every part; branches twining; leaves ovate, acuminate, glaucous beneath, glabrous except on the nerves beneath, which are pubescent; peduncles axillary and terminal, short, villous, bearing towards the apex several opposite, approximate, very short, 2-flowered pedicels; tube of corolla rather short, cylindrical, widening at the apex; bracteas ovate. L. H. Native of Nepaul, on the top of Sheopore, and from Kabelas in the valley. L. nigra, Thumb. jat. p. 89. and in Lin. trans. 11. p. 530. ? Bark of branches shining, brownish. Leaves 3-5 inches long, seldom obtuse at the base; the upper surfaces polished; petioles about half an inch long, surrounding the stem and branches with an elevated margin, as in L. acuminata. Flowers yellow, smooth, with a purplish bloom on the outside, supported by a common involucrem, consisting of 6 very small, ovate, ciliated bracteas. Calycine segments subulate, ciliated. Tube of corolla about an inch long, widening at the apex into a bilabiate limb, which as well as the filaments and style are rather hairy; upper lip trifid, obtuse, the intermediate lobe retuse: the under lip oblong. Berries distinct, almost black, 3-celled; cells 4-seeded.

Smooth Honeysuckle. Shrub tw.

26 L. Acuminata (Wall. in Roxb. fl. ind. 2. p. 177.) branches twining; villous; leaves ovate to oblong, cordate, acuminate, slightly hairy, membranous; peduncles axillary, longer than the pedicels, villous, 2-flowered; bracteas linear, acuminate, ciliated, longer than the ovaries; corolla not gibbous, funnelf-shaped. L. H. Native of the Himalaya, at Gossamthn.
CAPRIFOLIACEÆ.
V. LONGICERA.

Leaves 3-5 inches long; petioles half an inch long. At the apex of the peduncles there is usually an involucrem of 6 small bracteas, which are hairy. Flowers like those of L. _Xylsteum_, and about the same size; they are yellow, tinged with pale purple, slightly hairy on the outside. Calyceine segments lanceolate, ciliated, blisterish. Style and filaments hairy.

_Acuminated-leaved_ Honeysuckle. Shrub tw.

27 L. _acuminata_ (Wall. in Roxb. fl. ind. 2. p. 178.) branches twining; leaves ovate, cuspidate, acute, or acuminate, rounded or subacute at the base, pubescent above, villous beneath; peduncles axillary, shorter than the petioles, 2-flowered; calyx cup-shaped, acutely 5-lobed; corolla gibbous, funnel-shaped, villous; ovaries villous. ♂. ♂. Native of the East Indies, on Mount Gurval. Branches villous. Leaves 3 inches long, on very short petioles. Peduncles smooth. Bracteas ciliated with long hairs. Flowers resembling those of _L. Xylsteum_ both in size and colour.

_Var. β_, _Reglešina_ (Wall. cat. no. 487. D. C. prod. 4. p. 334.) leaves oval; petioles length of petioles. ♂. ♂. Native of Nipaan, on Simroore and Kamzan.

_Diverse-leaved_ Honeysuckle. Shrub tw.

28 L. _lygisiea_ (Wall. in Roxb. fl. ind. 2. p. 179.) branches slender, twining, covered with ash-grey, shining, smooth bark; young shoots villous; leaves ovate-lanceolate, hardly petiolate, shining, ciliated, obtuse at the base, acute at the apex; peduncles villous, axillary, very short, 2-flowered; limb of calyx truncate; berries distinct, and are as well as the ovaries covered by a common membrane. ♂. ♂. Native of Nipaan, on the mountains, in woods. Xylsteum ligistrinum, D. Don, prod. fl. nep. p. 140. X. Naišica, Hamilt. mss. ex D. Don. l. e. Young shoots surrounded at the base with some lanceolate, acute, quadrifidly imbricated bud-scales. Leaves dark green above, pale and reticulated beneath; petioles villous. Bracteas 2 at the apex of each peduncle. Corollas yellowish-white, funnel-shaped, half an inch long; tube gibbous and pubescent at the base, villous within; limb nearly equal, spreading, divided into 5 ovate, obtuse, ciliated segments. Filaments smooth, about the length of the limb of the corolla. Ovaries distinct, 3 celled; cells 3-seeded.

_Priet-leaved_ Honeysuckle. Shrub tw.

29 L. _lanceolata_ (Wall. in Roxb. fl. ind. 2. p. 177.) stems almost erect, bushy? leaves lanceolate, acuminate, hairy, acute at the base and glaucous beneath; peduncles axillary, longer than the petioles, and like them villous; berries distinct, globose, smooth; bracteas 2 linear and 4 ovate. ♂. ♂. Native of Nipaan, at Gosaingsthan. Stem covered with fibrous epidermis, probably erect. Branches slender, pubescent. Leaves pubescent above and shining, glaucous and hairy beneath, with somewhat repent margins. Petioles short. Berries the size and colour of black currants, smooth, crowned, 3-celled, supported by 2 linear and 4 ovate bracteas, the latter recurved and shorter.

_Lanceolate-leaved_ Honeysuckle. Shrub erect?

30 L. _cartenans_ (Schlousb. mar. 1. p. 88.) branches twining, and are as well as the leaves canescent from down; leaves petiolate, ovate, cordate, bluish; peduncles 2-flowered, longer than the petioles; bracteas and lobes of calyx oblong. ♂. ♂. Native of hedges about Mogondor, and on Mount Trara in Mauritania; and of Sicily at Palermo, ex Guss. fl. sic. 1. p. 250. L. biflora, Desf. fl. atl. 1. p. 184. t. 52. Corolla bilabiata, attenuated at the base, velvety on the outside. Berries nearly distinct.

_Canescents_ Honeysuckle. Shrub tw.

§ 2. _Chamecetra_ (The name signifies a kind of false cherry; the fruit of some of the species resemble cherries). _D. C. prod._

4. p. 335. Berries distinct, but usually connected together at the base, and diverging at the apex. Corolla hardly gibbous at the base or equal. Erect bushy shrubs.


_Var. γ_, _rubiflora_ (D. C. l. e.) flowers red. L. Sibirica, Hortul. ex Pers. encl.

_Tatarian_ Honeysuckle. Fl. April, May. Ch. 1752. Sh. 4 to 6 feet.

32 L. _cillata_ (Muhl. cat. p. 22,) erect; leaves ovate or oblong, cordate, thin, ciliated, villous beneath in the young state; peduncles elongated; bracteas 2, ovate, 3 times shorter than the ovaries, which are distinct; corolla bluntly spurred at the base: with short, nearly equal lobes; berries distinct, red, divericate. ♂. ♂. Native of North America, on mountains among rocks, in rich soil; from Canada to Virginia, and throughout Canada to the Saskatchewan, frequent. Xylsteum ciliatum, Pursh, fl. sept. amer. 1. p. 161. L. Tataica, Michx. fl. amer. 1. p. 166. but not of Lin. L. Cannalensis, Roem. et Schultes 5. p. 560. Flowers white, with a tinge of red or yellow; tube veiutrose above; limb with short, acute segments. Style exerted. The variety β of Pursh is _l'cucinium albianum_.


33 L. _Pyrenaica_ (Lin. spec. p. 248.) glabrous, erect; leaves obovate-lanceolate, acute, glaucous beneath; peduncles 2-flowered, shorter than the leaves; bracteas oblong-linear, foliaceous; flowers almost regular; berries globose, distinct. ♂. ♂. Native of the Pyrenees, on calcareous rocks, in exposed situations. Duham. arct. 2. t. 110. ed. 2. vol. 1. t. 15. Magn. hort. p. 209. with a figure.—_Caprifoliium Pyrenaicum_, Lam. fl. fr. 2. p. 366.—Xylsteum, Tourne. inst. 609. Corolla white, twice the size of those of _L. Xylsteum_, funnel-shaped; limb 2-hisp., flat; with equal, obtuse segments.

_Pyrceon_ Honeysuckle. Fl. May. Ch. 1739. Sh. 4 to 5 ft.

34 L. _punccea_ (Sim. bot. mag. t. 2469.) erect; leaves ovate, subacute at the base, of the same colour on both surfaces: peduncles axillary and almost terminal, 2-flowered, shorter than the leaves; tube of corolla rather gibbous at the base; segments of corolla nearly equal, irregularly arranged, 3 one way and 2 another; berries distinct? ♂. ♂. Native country unknown. Symphoricarpos puniceus, Sweet. Flowers deep red or crimson. Leaves sometimes 3 in a whorl on the young shoots.

_Crimson-flowered_ Honeysuckle. Fl. April, May. Ch. 1821. Shrub 2 to 4 feet.

35 L. _Xylsteum_ (Lin. spec. 248.) erect, downy; leaves
ovate, acute, petiolate, soft; peduncles 2-flowered, shorter than the leaves; bracteas hairy, double: the 2 outer ones lanceolate, spreading; inner a small conecave scale under each germ; berries oval, distinct, 1-celled, 6-seeded. \( \varphi, H. \) Native nearly throughout the whole of Europe, even to Caucasus, in thickets, hedges, and rocky places, and by the sides of woods. In Britain in like situations; in the fissures of rocks under the Roman wall near Sewing-Heads, or rather Sewing-Heads, in Northumberland, plentiful; and certainly wild, in a copiose called the Hacketts, to the east of Houghton Bridge, 4 miles from Arundel, Sussex. Smith, engl. bot. t. 916. fl. grt. t. 232. Oed. fl. dian. t. 808. —Dutch. arb. l. p. 153. t. 59.—Riv. mon. irr. t. 120.—Mill. fig. 167. f. 1. Caprifolium dumetorum. Lam. fl. fr. p. 367. Xylotolemum dumetorum. Monc. math. p. 502. Flowers small, cream-coloured, downy. Calyx of 5 obtrous lobes. Berries scarlet. A shrub of little beauty and no known utility, though common in plantations. Stammes and styles villous. The wood is extremely hard.

**Var. \( \beta, \) leucocarpa** (D. C. prod. 4. p. 335.) berries white.—Dutch. arb. ed. 2. vol. l. p. 52.

**Var. \( \gamma, \) xanthocarpa** (D. C. l. c.) berries yellow.—Duham. l. c. 

**Var. \( \epsilon, \) melanolcica** (D. C. l. c.) berries black.—Bauh. pinn. 451.

Bong-wooded or Upright Fly Honeysuckle. Fl. July. Brit. Shr. 4 to 5 ft.

36 L. xiura (Lin. spec. 247.) erect; leaves oval-oblong or elliptic, on short petioles, rather villous while young, but nearly glabrous in the adult state; peduncles 2-flowered, elongated, shorter than the leaves. \( \varphi, H. \) Native of Middle Europe, in subalpine woods, as in France, Switzerland, Austria, Silesia, Piedmont, &c. J. acq. aust. t. 314. Schmidt, arb. t. 110. Caprifolium rosemum, Lam. fl. fr. p. 368. Chamaecerasus nigra, Delarb. fl. auv. ed. 2. p. 130.—Gesn. fasc. 37. t. 8. f. 48. Corolla redish and pubescent on the outside, but whitish on the inside. Bracteas 4 under the ovaries: the 2 outer ones lanceolate: and the inner quadrilobed. Berries black, globose, joined together at the side.

**Black-fruitied Honeysuckle.** Fl. March, May. Cit. 1597. Shrub 3 to 4 ft.

37 L. hirsuta (Pall. ex Willd. Miss. Led. fl. ross. alt. ill. t. 212.) branches hirsute; leaves ovate, ciliated, petiolar, glabrous on both surfaces; peduncles 2-flowered; bracteas ovate-elliptic, exceeding the berries. \( \varphi, H. \) Native of Siberia, on the Altaiian mountains. Branches opposite, glabrous or bristly, brownish. Leaves 2 inches or 1½ inch long, and an inch broad, glabrous on both surfaces, cordate at the base. Flowers greenish white, pendulous. Berries distinct, purple.

**Hispid Honeysuckle.** Shrub 2 to 3 feet.

38 L. flexuosa (Thumb. in Lin. trans. 2. p. 330. but not of Loddd. nor Ker.) erect, branched; branches very villous at the apex; leaves ovate-oblong, acute, on short petioles, glabrous; petioles villous; nerves of leaves puberulous; flowers axillary, few, almost sessile; berries globose, glabrous. \( \varphi, H. \) Native of Japan, L. nigra, Thumb. fl. jap. p. 80. but not of Lin. L. brachypoda, D. C. prod. 4. p. 335. Stems flexuous. Leaves about an inch long; upper ones the smallest. Peduncles hardly a line long. Berries distinct, ovate, acuminated, black.

**Flexuous-stemmed Honeysuckle.** Fl. June, July. Cit. 1806. Shrub 4 to 5 feet.

§ 3. **Cupulatae** (from κοφας, κυπας, a curve, and κοφας, anthus, a flower; in reference to the flowers being gibbous on one side at the base). D. C. prod. 4. p. 336. Berries either distinct or joined together. Corollas very gibbous on one side at the base. Erect bushy shrubs.

39 L. obesa (Willd. miss. in Schultes, syst. 5. p. 257.)
cordate; peduncles thickened a little under the flowers. \( \gamma \). H. Native of Siberia. L. Sibirica, Vest. in Roem. et Schultes, syst. 5. p. 299.

**Alpine Honeysuckle.** Fl. April, May. Clt. 1596. Shrub 3 to 5 feet.

44 L. microphylla (Willd. rel. in Roem. et Schultes, syst. 5. p. 238.) leaves elliptic, acute at both ends, glaucous beneath; peduncles 2-flowered. \( \gamma \). H. Native of Eastern Siberia. L. \( \gamma \). fl. ross. alt. ill. t. 213. L. Alpigena, Sievers. The epidermis falls from the branches. Leaves rather villous on both surfaces, sometimes rounded at the base. Peduncles shorter than the leaves. Corollas greenish, yellow. Berries joined, of a reddish orange colour.

**Small-leaved Honeysuckle.** Clt. 1818. Shrub 3 to 4 feet.

45 L. Webbiana (Wall. cat. no. 476. D. C. prod. 4. p. 336.) erect; leaves ovate-oblong, acuminate, obtuse at the base, on very short petioles, pilose along the nerves, and ciliated on the margins; peduncles 2-flowered, 3 times shorter than the leaves; berries semi-concrete. \( \gamma \). H. Native of the East Indies, in Srinagar. Habit almost of L. Alpigena, but differs in the leaves being pilose and ciliated, in the peduncles being equal in length to the internodes, not longer than them, &c. Corolla unknown.

**Webb’s Honeysuckle.** Shrub 3 to 4 feet.

46 L. Giovanniana (Wall. cat. no. 481. D. C. prod. 4. p. 337.) erect; leaves elliptic or lanceolate, acute at both ends, membranous, glabrous; peduncles 2-flowered, 3 times longer than the petioles, but 3 times shorter than the leaves; bracteas linear, length of ovarium; corollas gibbous at the base; berries joined. \( \gamma \). H. Native of the East Indies, in Sirmore, where it was collected by Mr. Giovanni. Allied to L. Alpigena, but the leaves are much thinner, the petals longer, the flowers smaller and sometimes solitary by abortion.

**Gowan’s Honeysuckle.** Shrub 3 to 4 feet.

47 L. angustifolia (Wall. cat. no. 480. D. C. prod. 4. p. 337.) erect; leaves elliptic or lanceolate, acuminate, glabrous; peduncles 2-flowered, a little shorter than the leaves; bracteas linear, twice the length of the ovary; berries joined together completely; corollas nearly equal, pubescent on the outside. \( \gamma \). H. Native of Nipan, in Kassan, and of Sirmore. Branches numerous, smooth. Leaves 15 lines long and 4 lines broad, pale and glaucous beneath; petioles 2-3 lines long. Corolla pale, 4 lines long.

**Narrow-leaved Honeysuckle.** Shrub 3 to 4 feet.

48 L. oblongifolium (Hook. fl. bor. amer. 1. p. 284. t. 100.) erect; leaves oblong or oval, clothed with velvety pubescence beneath; peduncles elongated, erect; bracteas obsolete; tube of corolla hairy, gibbous at the base on one side; limb unequal, deeply bilabiate; the upper lip 4-toothed, and the lower one nearly entire; berries joined in one, which is bimucilicate at the top, bluish black in the dried state. \( \gamma \). H. Native of North America, in the island of Montreal, in the St. Lawrence; about Montreal, Lake Winnipeg, and of the western parts of the state of New York. Xylosteum oblongifolium, Goldie, in edinb. phil. journ. 6. p. 323. Corolla hairy, yellow? Berries bluish black, size of a pea.

**Oblong-leaved Honeysuckle.** Fl. April, May. Clt. 1823. Shrub 4 feet.


50 L. orientalis (Lam. dict. 1. p. 731.) erect; leaves on very short petioles, ovate-lanceolate, acute, quite entire, smoothish; peduncles 2-flowered, shorter than the leaves; bracteas 2, setulose; berries joined in one, sometimes bilobate and bimucilicate at the apex, 10-seeded. \( \gamma \). H. Native of Iberia and Asia Minor, in woods. Biebr. fl. taur. et suppl. no. 396. L. Caucasia, Pall. fl. ross. 1. p. 57. L. caerulea, Güld. itin. 1. p. 423. ex Pall. Chamaecerasus orientalis f. turificio, Tornocor. p. 42. Berries black (Lam. Biebr.), dark blue (Pall.). Leaves stiffish, veiny, larger than in L. caerulea. Flowers greenish yellow. This is perhaps nothing more than L. caerulea.

**Oriental Honeysuckle.** Fl. April, June. Clt. 1825. Shrub 3 to 5 feet.

51 L. ibérica (Biebr. fl. taur. and suppl. no. 395.) erect; leaves petioleate, cordate, roundish, tomentose or pubescent; peduncles 2-flowered, shorter than the leaves; bracteas oblong, ciliated; berries joined together to the middle, globose. \( \gamma \). H. Native of Iberia, about Tiflis and at the Derwen. Stev. mem. soc. mose. 3. p. 257. Xylosteum ibericum, Biebr. cent. pl. rar. 1. t. 13. ex suppl. Corollas lirid, form of those of L. Alpigena, Ovarium tomentose. Berries blood-coloured. Leaves like those of Cotoneaster vulgaris.

**Iberian Honeysuckle.** Fl. April, May. Clt. 1824. Shrub 3 to 4 feet.

* Species not sufficiently known.

52 L. quinquilocularis (Hardw. asiat. res. 6. p. 351. ex fl. ind. 2. p. 174.) shrub bushy; leaves petiolar, elliptic, acute, quite entire; peduncles short, 2-flowered; berries 5-celled. \( \gamma \). H. Native of the East Indies, in valleys about Shreeangar. Very like L. ligustriun, Wall. but differs in the 5-celled fruit, and is therefore probably a species of Legestertia.

**Five-celled-Fruited Honeysuckle.** Shrub.

53 L. corystoides (Lin. spec. 249.) leaves ovate, acute; corysts terminal. \( \gamma \). F. Native of Chili, near Conception, where it is called Yitu. Iitu. Feuill. obs. 2. p. 760. t. 45. Lorrainthus utii, Molina, szch. t. 139. ex Schultes, syst. 7. p. 161. Fiedrichia violacea, Sprang. syst. 1. p. 406. but the plant does not belong to Rubieae, according to Bertero, in merc. chil. 1829. may. p. 611. nor Lorrainthaceae, in consequence of the fruit being many-seeded. But from the flowers being 4-eleft, it is probably a genus of the present order. Leaves an inch broad, fine green. Corolla blood-coloured; and calyx 4-eleft to the middle. Stamens 4. Style yellow. Fruit form and colour of an olive; with sweetish flesh.

**Corystis-bowered Honeysuckle.** Shrub 12 feet.

54 L. quadrifolia (Willd. spec. 1. p. 986.) stem unknown;
leaves 4 in a whorl, ovate-lanceolate, glabrous, bluish; peduncles twin, 2-flowered, length of leaves; bracts 2, linear; berries distinct; the former much smaller than the latter. Corollas like those of *L. xiphistemon*, but having the tube narrower.

Four-leaved Honeysuckle. Shrub.

Cult. All the species of honeysuckle are truly ornamental, particularly the climbing and twining species, which are well adapted for training on trellis work or arbours, or against walls. The greenhouse twining kinds have a fine appearance, trained on the rafters. The upright hardy species are well fitted for decorating shrubberies. They all grow well in any common garden soil, and are easily increased by cuttings taken off in autumn, and planted in a sheltered situation: those of the tenderer kinds under a hand-glass.

VI. LEYCESTERIA (named by Dr. Wallich after his friend William Leycester, formerly Chief Judge of the principal native court under the Bengal Presidency, who during a long series of years and in various distant parts of Hindoostan, has pursued every branch of horticulture with a munificence and zeal and success, which abundantly entitle him to that distinction). Wall. in Roxb. fl. ind. 2. p. 181. pl. rar. asiat. 2. p. 21. t. 120.

Lin. Syst. Pentandria, Monogynia. Calyx with an ovate tube and an unequally 5-parted, permanent limb; segments unequal, small, linear, glandularly ciliated. Corolla funnel-shaped, having the tube gibbous above the base, and the limb campanulate, and divided into 5 ovate, nearly equal lobes. Stamins 5; filaments exerted. Stigma capitate. Berry roundish, crowned by the calyx, 5-celled; cells many-seeded. Seeds smooth, shining, ovate. Albumen fleshy. Embryo minute, terete, centrifetal.—A beautiful large rambling shrub, with elongated fistular branches, which rise from scaly buds. Leaves opposite, ovate-lanceolate, acuminate, petiolate, smooth, entire, membranous, glaucous, with an obtuse, subcordate base; petioles pilose. Flowers white, with a tube of purple, middle-sized and sessile, in fascicles, disposed in approximate whorls of fives and sixes, the whole forming short leafy drooping racemes, which terminate the branches and branchlets. Bracteae large, foliaceous, purplish, pubescent, and ciliated, lanceolate, acuminate, terminating the rachis with their concave bases; there are generally 6 under each whorl of flowers, of which the 2 outer ones are 2 or 3 inches long, rounded, and generally connate at the base: the 4 at the base of the racemes considerably larger than the rest. Berries deep purple, approaching to black, as large as a common-sized gooseberry; pulp very soft; cells 8-10-seeded. This genus appears to be intermediate between the present order and Rubiaceae, but from the last it is distinguished in the want of stipulas.

1 L. formosa (Wall. in Roxb. fl. ind. 2. p. 182.). H. Native on the highest mountains, surrounding the valley of Nipaul; and of the much more northerly situations towards Goaingsthan. It is also found at an elevation of seldom less than 6000 feet above the plains, among the pine and oak forests of Bishupur, as at Huttoo and Desoo in the Ttkaoorae of Koonthul, blossoming from June to August, and called by the natives Nukoro. Haméla comáta, Puerari, ms. Dr. Govan remarks, with great propriety, that this is a most beautiful shrub when in blossom, from the contrast of the deep green hue of its stem and leaves with the purple colour of the large bracteas and the berries.


Cult. This elegant shrub grows best in a light soil; and it is easily increased by cuttings planted in autumn or spring, or by seeds which ripen in abundance. It is well fitted for decorating the front of shrubberies; but being rather tender, should be protected in winter by a mat, or the hauin of herbaceous plants.


Lin. Syst. Pentandria, Monogynia. Tube of calyx globose (f. 81. c.); limb small, 4-5-toothed. Corolla funnel-shaped (f. 81. c.), almost equally 4-5-lobed. Stamina 5, hardly exerted. Stigma semi-globose. Ovarium adnate, 4-celled; fertile cells containing only one ovulm each; and the sterile ones few ovula. Berry 4-celled, crowned by the calyx (f. 81. c.), having 2 of the cells empty, and the other 2 containing one seed each. —Erect elegant bushy oppositely branched shrubs. Leaves oval, quite entire. Peduncles short, axillary, one or many flowered. Flowers lilac-cate, small, white or rose-coloured, on short pedicels.

1 S. vulgáris (Michx. fl. bor. amer. 1. p. 100.) flowers disposed in axillary cipate clusters, composed of nearly sessile racemules. H. Native of Virginia, Carolina, and Pennsylvania, in sandy dry fields. Lonicéra symphoricarpus, Lin. spec. 249. S. parviflora, Desf. cat. Symphória conglomerata, Pers. ench. 1. p. 214. Symphória glomerata, Pursh, fl. amer. sept. 1. p. 162.—Schmidt. arb. t. 115.—Dill. eth. t. 278. f. 560.—Hort. ang. 83. t. 30. Corolla white. Berries red, size of hemp seed; but according to Pursh the flowers are small, red, and yellow; and the berries purple. Branches brown, smooth. Leaves elliptic, obtuse, glaucous, and pubescent beneath. The berries are cup-shaped, and ripen in winter.


2 S. racemósus (Michx. fl. bor. amer. 1. p. 107.) flowers disposed in nearly terminal loose interrupted racemes, which are often leafy; corolla densely bearded inside; style and stamina inclosed. H. Native of North America; on mountains near Lake Mistassins; on the banks of the Missouri; of Upper Canada; also abundant in the Saskatchewan; on the banks of the Columbia, and at Puget's Sound, and Nootka Sound, north-west coast. Symphória racemósa, Pursh, fl. amer. sept. 1. p. 162. Sims, bot. mag. 2211.

Lodd. bot. cab. t. 230. S. leucocárpá, Hort. Leaves glaucous beneath. Corolla rose-coloured. Berries large, white. This is a fine shrub, very common in our gardens, easily known by its large white berries, and small red flowers. The S. elongata and S. heterophylla, Presl, in herb. Haeke, which were collected about Nootka Sound, do not differ from this species, in which the lower leaves are sometimes deeply sinuated.


3 S. occidentális (Richards, in Frankl. 1st journ. ed. 2. append. p. 6.) spikes dense, terminal, and axillary, drooping; corolla and segments densely bearded inside; style and Stamina a little exerted. H. Native of British North America, in the woody country, between lat. 54° and 64°, and known under the name of wolfberry; abundant about the Saskatchewan and Red River; and about Fort Vancouver, on the Columbia. According to Dr. Richardson this species comes very near S. racemósus, but is distinguished by the larger, less glaucous, fruit.
more rigid, and denser foliage, and by the flowers being arranged in dense drooping spikes, larger than in S. racemosa, and by the
prominent style and stamens.

Western St. Peter's-wort. Shrub 4 to 6 feet.
4 S. microphyllum (H. B. et K.) nov. gen. ancr. 3. p. 424.) flowers axillary, solitary; leaves roundish-ovate, bluntish, pubescent. F. F. Native of Mexico, in the temperate parts
near Moran, at the altitude of 4000 feet. Symphoria micro-
phylla, Wild. in Schultes, syst. 1. p. 757. Ainsitinis micro-
phyllus, Wild. in Schultes, syst. 5. p. 223. Corolla white.

Small-leaved St. Peter's-wort. Shrub 4 to 6 feet.
5 S. Glaucescens (H. B. et K.) nov. gen. 3. p. 294. t. 295.)
flowers axillary, solitary; leaves elliptic, acute, somewhat mu-
crenate, smoothish. F. F. Native of Mexico, on the moun-
tains near Santa Rosa, at the elevation of 4000 feet. Symphoria

Glansescens St. Peter's-wort. Shrub 3 to 4 feet.

Cult. Symphoricarpos is a genus of very beautiful and deli-
crate shrubs, well adapted for shrubbery or borders. They grow in any common garden soil; and are easily increased by cuttings,
which should be planted either in autumn or spring.

VIII. ABELIA (named by Mr. Brown after Clarke Abel,
M. D., physician to the embassy to China under Lord Amherst;
he collected and brought home many interesting plants). R. Br.
crat. and descrip. pl. Abel, 1818. in 4to. p. 5. with a figure.
D. C. prod. 4. p. 339.

LIN. SYST. Tetradria, Monogynia. Calyx with an oblong
tube, and a 2 or 3-parted foliaceous limb; the segments oblong.
Corolla tubular, funnel-shaped, 5-lobed: lobes ovate, nearly
equal. Stamens 4, dihyalynous or nearly equal. Stamina capitale.
Ovarium 5-celled; of the cells contain many ovules, but all be-
come abortive, and the third contains only one ovulum, which
comes to perfection. Pericarp 1-seeded, indehiscent, crowned
by the foliaceous limb of the calyx.—Decumbent or weak gla-
brous shrubs. Leaves petiolar, dentately crenated. Peduncles
axillary, trichotomous or trifid, or terminal and undivided.
Involucre 2 or many flowered, composed of 6 or more leaves.

1 A. Chinese (R. Br. l. c.) involucrem 2-flowered; pen-
duncles trichotomous; stamens exerted. F. G. Native of
China, in the province of Kiang-si at the Lake Po-yang, where
it was collected by Dr. Clarke Abel. Tube of corolla 3-nerved;
4 of the nerves approximate, and the fifth remote. Ovaryum
having one nere on one side, and 4 on the other. Leaves ovate,
finely pubescent.

China Abelia. Shrub 2 to 3 feet.

2 A. Telefora (R. Br. in Wall. pl. asiat. rar. l. p. 14. t. 15.)
flowers by thres, forming terminal corymba; lateral flowers
furnished with 3 bractes; middle one sessile, naked; calyx 5-
parted; the segments foliaceous, linear, and ciliate; leaves
ovate-lanceolate, acuminate, quite entire, ciliate, with hyaline
hairs. F. G. Native of the East Indies, on the highest moun-
tains of Northern and Western Kamaon towards the Himalaya,
where it is called Kuuki. Flowers pale red, delightfully frag-

Three-flowered Abelia. Tree small.

3 A. Uniflora (R. Br. in Wall. pl. asiat. rar. l. p. 15.) pedun-
cles 1-flowered, tribracteate. F. G. Native of China.

One-flowered Abelia. Shrub.

Cult. A mixture of loam, peat, and sand will be a good soil
for the species of Abelia; and they may be easily increased by
cuttings planted in any light soil, with a hand-glass placed over them.

IX. LINN. E A (this little northern plant, long overlooked,
depressed, abject, flowering early, Linnaeus selected to transmit
his own name to posterity). Gron in Lin. gen. no. 774. Juss.
—Campánula spec. C. B. Tourn. &c.

LIN. SYST. Didynamia, Angiosperma. Calyx double, superior
one of one leaf; in 5 deep, erect, lanceolate, acute, equal seg-
ments (f. 82. b). Corolla bell-shaped (f. 82. d.); tube cylin-
drical, gradually dilated upwards, about twice the length of the
superior calyx; limb divided into 5 deep, nearly equal, slightly
spreading segments (f. 82. d.). Stamens 4, inclosed, dihyalynous
(f. 82. f.): the 2 uppermost ones the shortest. Ovarium globu-
lar, of 3 cells. Style cylindrical, gently swelling upwards, declin-
ing longer than the corolla (f. 82. e.); stigma obtuse. Berry dry,
ovate-oblong, of 1-cell, membranous, closely invested with the
inferior calyx, and crowned with the superior one. Seed soli-
ary, filling the cavity.—A trailing, somewhat shrubby plant, of
an elegant aspect, and rendered most interesting to a botanist on
account of the name given, with the concurrence of Linnaeus, by
his friend Dr. J. F. Gronovius.

N. TERRAEVIRIDIS (Lin. spec. 880.) F. H. Native of Lapland,
Sweden, Norway, Russia, Germany, Switzerland, Savoy, Si-
beria, &c., in dry, stony, shady, mossy, fir woods, on the moun-
tains. In Scotland the plant was first found in an old fir wood at
Inglisamidie, on the borders of Mearnsire in 1795; it has
since been found in several similar situations in the highlands of
Scotland. In North America in several parts, as in the states of
New England, New Hampshire, Vermont, but more particularly
in Canada throughout the woody

country from Lake Huron to the Arctic circle; and from
Newfoundland and Labrador on the east to the Columbia, Una-
Wahl. fl. lapp. 170. t. 9. f. 3. Od. fl. dan. t. 3.—A trailing, sub-
shrub, cing, and evergreen plant, forming broad leafy
patches; the young shoots hairy and leafy. Leaves roundish
or ovate, firm, crenate in the fore part, slightly hairy, and of a full
green above, paler beneath. Peduncles axillary, about a finger
in length, bearing each 2 elegant, pendulous, flesh-coloured
flowers at the apex, which are said to be very fragrant at night.
A pair of very small leaves stand at the origin of the partial
flower-stalks, or pedicels, and there is often a larger pair or
two at the lower part of each peduncle. Corolla variegated
internally with rose colour and yellow. The American plants are
generally stronger than the European ones.


Cult. This elegant little trailing evergreen shrub will not
grow in cultivation unless in a peat border, where it will thrive
and flower freely; and most so if the border is in a shady situa-
tion. It is sometimes grown in large pots or pans, filled with
peat earth, and grows luxuriantly. It is easily increased by
separating the creeping stems when rooted.

† Genera allied to Caprifoliaceae, but are not sufficiently
known.

X. AFDIA (from afdia, afdos, to break; in reference to the
durability of the wood of this tree). Lour. inep. p. 143. D. C.
prod. 4. p. 346.

LIN. SYST. Pentaevirid, Monogynia. Tube of calyx adnate
to the ovarium; limb 3-toothed, erect. Corolla superior, salver-shaped, with a woolly throat and a 3-parted limb: the segments lanceolate. Anthers 5, linear, inserted in the recesses between the segments of the corolla. Style equal in length to the stamens: stigma ovate-oblong. Berry ovate, umbilicate, 1-seeded.—A large tree, with very durable wood and spreading branches. Leaves opposite, lanceolate, quite entire, glabrous. Racemes axillary, short, loose. Flowers white.

1 A. Cochinchinensis (Lour. l. e.) H. G. Native of Cochinchina. The wood of this tree is white and heavy, composed of thick fibres; and is used for the purpose of forming the foundation of bridges, being imperishable either by being under water or under ground.

Cochinchina Aidia. Tree large.

Cult. Any common soil will suit this tree; and cuttings will be easily rooted if planted under a hand-glass.


LIN. SYST. Tetranda, Monogynia. Tube of calyx adnate to the ovary; limb 8-sep. Corolla tubular; with 5-6 cleft nearly equal limb. Stamens 4, epipetalous, nearly equal. Style filiform: stigma 2-lobed. Fruit 2-celled?—A twining shrub. Leaves opposite, petiolate, somewhat sagittate, a little serrated, acute. Flowers axillary, solitary, birracemate; bracteas cordate, winged on the outside.—This genus is said by Rafinesque to be allied to Linn.Æa, but the plant is wholly unknown to other botanists.

1 V. volubilis (Rafin. l. c.) Æ. G. Native of Abyssinia.

Twining Valentiana. Shrubby shrub.

Cult. See Aidia, p. 432. for culture and propagation. The plant is well fitted for training up the rafter in a green-house.


LIN. SYST. Diandria, Monogynia. Tube of calyx adhering to the ovary; limb 4-toothed. Corolla tubular, 4-cleft, bilabiate. Stamens 2; anthers 2-celled; lobes remote. Style under the upper lip of the corolla: stigma simple. Capsule crowned by the calyx, 1-celled? 4-seeded. Stem hermaphroditic? angular; branches flat-lobed. Leaves opposite, sessile, oblong, hastate, unequally toothed at the base, acuminated, glabrous. Flowers small, sessile, disposed in whorls. According to the author it is allied to Diérella, but the genus is entirely unknown to any other author.


Cult. This plant will grow best in a border of peat earth, and may probably be increased by dividing at the root.


Tube of calyx adhering to the ovary (f. 94. e. f. 97. g.). limb variable, truncate (f. 93. a.), or of many lobes, usually regular; the sepals or lobes equal in number to the petals (f. 84. c.), very rarely intermixed with accessory teeth. Corolla gamopetalous, inserted in the upper part of the tube of the calyx, usually with a 4-6 lobed limb (f. 93. b. f. 84. c.), rarely with a 3 or 9-parted limb (f. 101. b.); the tube either short (f. 84. b.) or long (f. 92. c.); the lobes or segments twisted or valvate in restoration. Stamens equal in number to the segments of the corolla, alternating with them, and more or less adnate to its tube (f. 83. g. f. 91. b.). Anthers oval, 2-celled (f. 111. c.), bursting inwardly. Ovarium situated within the calyx, and adhering to it (f. 94. e. f. 103. g.), usually 2 (f. 94. c.) or many celled (f. 103. g.), rarely 1-celled by abortion: always crowned by a fleshy urceolus, or the limb of the calyx (f. 103. f). Style one, rising from the urceolus (f. 83. d.): stigmas usually 2, distinct (f. 105. c.), or more or less combined (f. 83. e.), rarely more than 2. Fruit baccate (f. 107. h.), capsular (f. 95. k.), or drupaceous (f. 103. g.), or many celled (f. 103. g.); cells 1-2 or many seeded. The seeds, where they are solitary in the cells, are sometimes fixed by the apex, but usually by the base; but where they are numerous in the cells, they are fixed to a central placenta, and are usually horizontal. Albumen large, horny or fleshy. Embryo straight, or a little curved, inclosed in the middle of the albumen; with a terete radicle turned towards the hilum; and foliaceous cotyledons.—Trees, shrubs, and herbs, with terete or tetragonal branches. Leaves simple, girded by a marginal nerve, and therefore quite entire, opposite or verticilate, always bistipulate. Stipulas variable in cohesion and form, interpetiolar or intratubolar. Flowers arranged in various ways, but usually in panicles or corysteb, rarely unisexual by abortion.

This well marked order is nearly allied to Compositæ, from which its distinct stamens, bilocular, and plurilocular ovary and inflorescence, distinguish it, and consequently it participates in all the relation of that extensive order. From Apocynaceæ in the activation of the corolla, the presence of stipulas, and the inferior ovary distinguish it, yet, according to Mr. R. Brown, there exists a genus in equinoctial Africa which has the interpetiolar stipulas and seeds of Rubiaceæ and the superior ovary of Apocynaceæ, thus connecting these two orders, Congo, p. 448. There is a striking affinity between Rubiaceæ and Caprifoliaceæ in the monopetalous tubular corolla, definite stamens, inferior ovary, and opposite leaves, which is confirmed by the corolla of the latter being occasionally regular or irregular. The tribe Operculariæ, referred to this order by Mr. R. Brown (Congo, p. 447) and others (A. Rich. ed. 4. p. 483), is remarkable for having but 1-seed, and the number of stamens unequal to the lobes of the corolla, and therefore occupies an intermediate station between the Rubiaceæ and Dipsociææ. The tribe Stelláceæ is distinguished from the rest of the order in the stipulas being as large as the leaves, and of the same form and consistence, having from 1-3 between each leaf on both sides, forming with them a kind of star or whorl, from which circumstance the name stellate is applied. The leaves in this tribe can only be distinguished from the stipulas by the axillary buds.

Powerful febrifugal or emetic qualities are the grand features of this order, the most efficient products of which in these two respects are Quinina and Ipecacuanha. The febrifugal properties depend upon the presence of a bitter tonic astrigent
principle, which exists in great abundance in the bark; those of Cinchôna are known to depend upon the presence of two alkaloids, called cinchonine and quinine, both of which are combined with kineic acid; two principles which, though very analogous, are distinctly different, standing in the same relation to each other as potass and soda. Turner, p. 648. Dr. Sertürner has obtained some other vegato-alkaloids from Cinchôna, one of which he calls cinnioidia. Brande, journ. 12. p. 417. new series. The existence of this is denied by M. M. Neury and Deloandre, ibid, July, 1820, p. 442. A detailed account of the qualities, synonyms, and commercial names of the species of Cinchôna is given in Mr. Lambert's work on the genus Cinchôna, 4to. London, 1821. In the same work is the translation of Baron Humboldt's account of the Cinchôna forests of South America. Three species of Cinchôna, the C. ferruginea, C. Veilissorsi, and C. Remigiâna, are found in Brazil, where they are used for the same purposes as the Peruvian bark, to which, however, they are altogether inferior. St. Hil. pl. usu. bras. no. 2. The French Guiana bark possesses properties analogous to those of Cinchôna, and is obtained from Portlândia hexandra the Contaéa speciosa, Aublet. Humb. cinch. forest. p. 43. The Quinquina Pitou and Quinquina des Antilles are produced by species of the genus Ezoctaënum, and are remarkable for possessing properties similar to those of the true Quinquina, but without any trace of either cinchonine or quinine. St. Hil. pl. usu. bras. no. 3. A kind of fever-bark is obtained at Sierra Leone from Roráebata ftrifigina. Besides, there are a great number of other species possess barks more or less valuable. Pincknàya pibens is the fever-bark of Carolina; Condamae cortymbosa, Isertiâ ofcinosa, Antirheà, and Morinda Rögen, are all of the same description. A lightish brown, bitter, and powerfully astringent extract, called Gambier, is obtained at Malacca by boiling the leaves of Naíceâ Glâmbr; it is sometimes substituted for gum-kino, Ainslie, 2. p. 106. A decoction of the leaves, as well as the root, of Cântium parrifórum is prescribed in India in certain kinds of flux, and the last is supposed to have anthelminthic properties, though neither has much sensible taste or smell. The bark and young shoots are also used in dysentery. Ainslie, 2. p. 63. Among the emetics, Ipecacuanha holds the first rank; it is the root of Cepheiàs Ipecaùânhà, a little creeping-rooted half-herbaceous plant, found in damp shady forests of Brazil. Similar properties are found in the roots of other Rubiaceæ plants of the same country, as in Richardâoâna rôsen and R. scébra, Bartâria ferrigínea and B. Pâuga, &c. A peculiar alkaline principle, called emetia, is found in Ipecaùânhâ, which contains 16 per cent. of it. Turner, p. 633. The Râiz ïretta, which is celebrated for its power in curing dropsy, and in destroying the dangerous consequences of bites of serpents, is said to be related to Ipecacuanha. Edinb. phil. journ. 1. p. 218. Several species of Psychôtria, as P. enêética, &c. and Gelôpida renìfórmis, are substitutes for Ipecacuanha. The spurious barks called Quinquina Pitou, are capable of exciting vomiting. The powdered fruit of Íândia dumbar, is a powerful emetic. An infusion of the bark of the root is administered to nauseate in bowel complaints. Ainslie, 2. p. 186. According to Roxburg, the root bruised and thrown into ponds where there are fish, intoxicates them, as Cœclus bidius. Ainslie, 2. p. 186. Psychôtria Názà and Palicœureen Maregraviâ, both called Erca de rata, are accounted poisonous in Brazil; but nothing very certain seems to be known of their properties. Edinb. phil. journ. 14. p. 267. The root of Morinda umbellâta in the Moluccas, and that of M. citrifólia in India, is used for dyeing red and brown; and the bark of M. Rögo for ink. The leaves of Oldenândia umbellâta are considered by the native doctors of India as expectorant; and the root is employed in India for staining neckanes. Ainslie, 2. p. 101. Coffee is the roasted seeds of a plant of this order, Cofìa Arâbica, and is supposed to owe its characters to a peculiar chemical principle called coffein. Turner, p. 689. The part roasted is the albumen, which is of a hard horny consistence; and it is probable that the seeds of most of the plants of the present order, whose albumen is of the same texture, would serve as a substitute. This would not be the case with those with fleshy albumen. The fruit of some Garînias Ñínpa and of Ñanfícrâ, the Voa Vangà and of Madagascare, and Sarcocephalus esculentus, are succulent and eatable. The root of Râbia tâtcarí is the madder, one of the most important dyes with which we are acquainted; a quality in which the roots of many other plants belonging to the tribe Stellâtâ participate in a greater or less degree. The roots of Râbia Munjîsta yield the madder of Bengal. Ainslie, 1. p. 203. The torrefied grains of Galîum are said to be a good substitute for coffee. The flowers of Galîum vèrum are used to curdle milk. An infusion of Aspërula cyanâcheia has a little astringency, and has been used as a gargle. Aspërula odorât, or Woodnuff, is remarkable for its fragrance when dried; it passes for a diuretic. Râbíà Názà is said to be poisoneous.

Opposiçe leaves, with intervening stipulas, a monopetalous corolla, with a definite number of stamens, are the great characteristics of Rubiaceæ; an order of such extent, that it embraces a very large proportion of the whole phlegomous plants, including within its limits humble weeds and lofty trees. Among them the plants of beauty or value are innumerable; of the former description the genus Ñâçu, Bouvárdia, Catesbeà, Portlándia, Cardenâia, Hamêlia, Cepheiàs, Augústea, and many others, are notable examples.

Synopsis of the genera.

A. Cells of fruit many-seeded.

TRIBE I.

CINCHÔNAŒÆ. Fruit capsular, 2-celled; cells many seeded. Seeds winged.—Trees or shrubs. Stipulas interpetiolar.

SUBTRIBE I. NAUCLEÆæ. Flowers capitate, sessile, upon a globose receptacle (f. 83. e. f. 84. k.).

1 NAUCLEA. Tube of calyx oblong; limb truncate or 5-toothed (f. 83. b.), with linear lobes. Corolla funnel-shaped (f. 83. c.), with a slender tube and naked throat. Stigma tumid, undivided (f. 83. d.). Capsules sessile, not attenuated at the base.

2 UNEA. All as in Naúcelea, but differs in the flowers being scattered on the receptacle. Calyx urceolate 5-cleft. Capsules pedicellate, clavate, attenuated at the base.
3 Adenia. Tube of calyx oblong; limb campanulate, 5-parted (f. 84. a.), permanent. Corolla funnel-shaped, 5-lobed (f. 84. b. c.), with a naked throat and valvate lobes. Anthers almost sessile (f. 84. c.), inclosed. Stigma capitate (f. 84. b.). Capsules membranous, 4-valved (f. 84. g.), pyramidal. Seeds 2-4 in each cell.

4 Breonisia. Limb of calyx 5-parted. Corolla with a terete tube, and a flat, 5-lobed, spreading limb. Stamens inserted in the throat, half-exserted. Style very long; stigma bipartite. Ovaryum 2-celled; cells 7-8-ovulate: ovula fixed to membranous placentas, and hanging from the axis.


Subtribe II. Cincnooee. Flowers more or less pedicellate, never seated on a globose receptacle.

6 Stevenisia. Calyx girded by a 4-lobed involucre; limb bipartite, deciduous. Corolla salver-shaped, with a short tube, and a bluntly 6-7-parted limb. Anthers 6-7, sessile in the throat. Capsule globose, areolate at the apex. Seeds a little winged, pubescent at the top.

7 Coutarea. Limb of calyx 6-parted. Corolla funnell-shaped, with a short tube, and a bluntly 6-lobed limb. Stamens inserted in the bottom of the throat; anthers linear, exserted. Capsule obovate, compressed; valves bifid at the apex. Wings of seeds membranous.

8 Hillia. Calyx girded by a 4-leaved involucre; limb 2-4-parted, permanent. Corolla with a long tube (f. 85. b.), and a 4-6-parted limb (f. 85. b.). Stamens 4-6, inclosed, sessile beneath the throat (f. 85. c.). Capsule elongated, crowned. Seed ending in a pencil-formed tail (f. 85. c.).

9 Hymenopogon. Limb of calyx 5-parted, permanent. Corolla salver-shaped, with a very long tube, and a 5-parted limb. Stamens 5, inclosed, inserted in the top of the tube, which is inflated. Capsule oblong, clavate, 10-merous, crowned. Seeds appendiculate at both ends.

10 Cincnoa. Calyx 5-toothed (f. 86. a.). Corolla with a terete tube, and a 5-parted limb (f. 86. b.), which is valvate in aestivation. Anthers linear, inserted in the middle of the tube (f. 86. a.), a little exserted. Capsules dehiscing at the valves, crowned. Seeds girded by a membranous lacerated wing.

11 Cosmbelea. Calyx 5-toothed. Corolla with a long tube, and a 5-lobed limb, which is valvate in aestivation. Anthers oblong, exserted. Stigma bipartite. Capsule somewhat 4-valved, dehiscing from the apex. Seeds girded by a lacerated wing.


13 Luculia. Calyx 5-toothed (f. 87. c.), deciduous; lobes foliaceous. Corolla with a longish tube, and a 5-lobed expanded limb, which is imbricate in aestivation. Stamens almost inclosed (f. 87. a.); anthers linear. Stigma 2-parted (f. 87. b.). Capsule dehiscing at the dissepiment from the apex. Wings of seed jagged.

14 Hymenolycetion. Calyx 5-toothed. Corolla tubular, with a 5-cleft limb, which is valvate in aestivation. Stamens exserted; anthers peltate. Capsule not crowned, dehiscing at the dissepiment. Wing of seeds bifid at the base.

15 Extostemma. Calyx 5-toothed. Corolla with a terete tube, and a 5-parted limb, which is plicate in aestivation. Anthers linear, exserted. Capsules crowned, dehiscing at the cells. Seeds girded by a membranous entire border.


18 Bouvardia. Limb of calyx 4-parted (f. 89. a. b.). Corolla funnel-shaped, tubular (f. 89. c.), with a 4-parted (f. 89. a.) spreading short limb. Stamens adnate at the base to the tube, but free above the middle. Anthers linear, inclosed. Capsule membranous, globose, compressed. Seeds girded (f. 89. a.) by a membranous border.

19 Pinckneya. Calyx 5-parted; the fifth lobe expanded into a coloured leaf. Corolla with a cylindrical tube, and a 5-cleft limb, which is valvate in aestivation. Stamens inserted at the base of the tube, exserted; anthers peltate. Capsule compressed, 2-celled, dehiscing at the dissepiment. Seeds surrounded by a wing, which is emarginate at the base.

20 Calycophyllum. Limb of calyx truncate or bluntly toothed; one of the teeth expanded into a membranous stalked coloured leaf. Corolla campanulate or funnel-shaped; limb 5-parted. Stamens rising from the throat; anthers oval, exserted. Style ending in 2 reflexed stigmas. Capsule oblong. Seed fixed to the linear placentas, girded by a narrow wing.

 Tribe II.

Gardeniaeae. Fruit indehiscent (f. 94. b.), fleshy, usually 2-celled, rarely 1-celled by abortion. Seeds not winged. Albumen fleshy.—Trees or shrubs, with opposite leaves, and interpetiolar stipulas.

Subtribe I. Sarcocephalae. Flowers sessile, collected into a head (f. 90. a. b.) upon the receptacle. The fruit combined together into one (f. 90. b. c.).

21 Sarcocephalus. The calyces are closely joined together into a globose fleshy head (f. 90. b.); limb of calyx with a very short margin. Corolla funnel-shaped, 5-cleft. Anthers
sessile in the throat. Stigma undivided. Berries many seeded.

Seed small, somewhat reniform.


24 Canephora. Limb of calyx 5-6 toothed. Corolla with a somewhat campanulate tube, and a 5-6-lobed limb. Anthers 5-6, oblong, almost sessile, inclosed. Stigma bifid. Fruit bacceat 

22. 2-celled, many seeded. Ovala imbricate, inserted in spongy axillary placentas; but according to Rich the fruit is peashaped, 2-seeded, and crowned by the calyx.

Subtribe II. Gardenie. Flowers distinct, not joined together into a head.

25 Burschella. Limb of calyx drawn out beyond the ovary, 5-cleft (f. 91. a.) beyond the middle. Corolla clavately funnelf-shaped (f. 91. b.); throat naked: lobes imbricated, and twisted in revivification. Filaments adnate to the tube (f. 91. b.) at the base; anthers incised. Stigma bearing 5 convex crests on the outside, and tufts of hairs. Berry crowned by the calyx, turbinate-globose. Placentas adnate to the disseminum. Seeds angular. Flowers capitate.

26 Acteopanax. Limb of calyx 6-toothed. Corolla salver-shaped, with a terete tube, which is longer than the calyx, and a 6-parted spreading limb. Anthers 6, inclosed, linear. Stigma clavate. Berry obovate-oblong, 2-3-celled. Seeds disposed in 2 rows in each cell, nearly orbicular, separated by the horizontal disseminum.

27 Mussella. Limb of calyx 5-parted, deciduous, one of the outer lobes usually drawn out into a large petiolar colored leaf. Corolla funnel-shaped, with a 5-parted limb and a villous throat. Anthers 5, sessile, linear. Stigma bifid. Fruit ovoid, fleshy, indescent, many seeded. Seeds scabrous. Placentas rising from the middle of the disseminum, pedunculate, bifid at the apex. Flowers corombose.


29 Cassia. Limb of calyx short, entire. Corolla tubular, ruged on the outside, with a villous throat, and a 6-parted limb. Anthers 6, oblong, nearly sessile, inserted among the hairs in the throat. Stigma bifid. Berry globose, crowned, many seeded. Placentas fixed to the middle of the disseminum.


32 Posoqueria. Limb of calyx short, 5-toothed. Corolla funnel-shaped, with a very long terete tube, a villous hardly dilated throat, and a 5-parted spreading limb. Stamens 5, arising from the throat, free, a little exserted. Style filiform, bifid at the apex. Berry ovate, crowned, succulent, many seeded.

33 Oxyanthus. Limb of calyx acutely 5-toothed (f. 92. a.). Corolla with a very long slender tube (f. 92. c.), a glabrous throat, and a regular 5-parted limb (f. 92. d.). Stamens 5, exserted (f. 92. f.), free at the throat; anthers acute. Style clavate at the apex (f. 92. e.). Fruit baccaet.

34 Stylocoryna. Limb of calyx 5-toothed Corolla salver-shaped or funnel-shaped, with a cylindrical tube, and a 5-parted limb. Stamens 5, inserted in the mouth of the corolla; anthers linear, very long. Stigma clavate (f. 92. g.). Berry globose, crowned by the calyx, almost dry. Placentas spongy, adnate to the middle of the disseminum on both sides. Seeds angular.

35 Ge'ni'a. Limb of calyx truncate or subdentate. Corolla salver-shaped, the tube not exceeding the calyx, and the limb large and 5-parted. Anthers linear, exserted, sessile in the throat. Stigma clavate. Berry corticate, somewhat 4-celled, attenuated at both ends, crowned by the tubular calyx. Seeds many, horizontal, imbedded in pulp.

36 Garde'nia. Limb of calyx truncate or toothed (f. 93. a.). Corolla funnel or salver-shaped (f. 93. b.), having the tube much longer than the calyx; limb twisted in revivification (f. 93. c.), 5-9-parted, spreading. Anthers 5-9, linear, nearly sessile in the throat. Stigma clavate, bifid. Berry fleshy, crowned by the calyx, incompletely 2-5-celled. Seeds minute, immersed in the fleshy parietal placentas.

37 Ra'ntia. Limb of calyx 5-lobed. Corolla salver-shaped, with a short tube, and a 5-parted limb. Anthers inclosed, sessile, within the throat. Stigmas 2. Berry nearly dry, crowned by the calyx, many seeded. Seeds fixed to the central placenta, imbedded in the pulp.

38 Chapel'fria. Limb of calyx 5-parted, permanent. Corolla with a slender tube, a 5-parted limb, and a villous throat. Stamens 5, nearly sessile, inclosed, inserted in the middle of the tube. Stigma bipartite. Fruit ovoid, rather fleshy, crowned by the erect, large, spreading limb of the calyx, many seeded. Seeds angular, and clothed with adpressed golden silky down.

2, linear. Fruit globose, crowned, dry, hard. Placentas 2, thick, adnate to the dissepiment. Seed nestling on the surfaces of the placentas.

40 Menestoria. Limb of calyx 5-parted. Corolla with a long terete tube, an almost naked throat, and a 5-lobed limb. Anthers 5, oblong, sessile within the tube. Stigma bifid, inclosed. Fruit baccate, nearly dry, not crowned. Placentas adnate to the dissepiment, many seeded.

41 Helospora. Limb of calyx campanulate, 4-toothed. Corolla with a longish tube, a naked throat, and a 4-lobed spreading limb. Anthers 4, linear, inclosed. Style 4-cleft at the apex. Berry crowned, tetragonal, not divided into cells, but having the seeds immersed in the pulp, and disposed crosswise in a double series.

42 Hypotis. Limb of calyx sheath-formed, cleft on one side, and drawn out into a mucronate uricle on the other. Corolla funnel-shaped, with the tube a little incurved, and the limb blunt and 5-lobed. Stamens inserted in the middle of the tube; anthers ovate, inclosed. Ovarium girdled by a 5-crenate urceolus. Stigma of 2 adpressed lobes. Berry ovate, crowned. Seeds numerous, minute.


45 Po'chellia. Limb of calyx small, 5-toothed. Corolla with a short obconical tube and a 5-lobed limb, which is twisted in estimation. Anthers 5, linear, sessile in the tube. Stigmas 2, exserted a little. Berry dry, obovate, crowned. Seeds 4-6 in each cell, deformed, clothed with silky down.

46 Cup'ia. Limb of calyx 5-parted, permanent. Corolla funnel-shaped, with a terete tube, which is a little longer than the calyx, and gradually widening to the throat; and a 5-parted recurved limb. Filaments very short; anthers oblong. Style 2-lobed at the apex, or 10-angled. Berry globose, crowned. Placentas spongy, central, few-seeded at maturity. Seed angular, wrinkled at the hilum.

47 Tare'enna. Limb of calyx 5-parted, permanent, reflexed. Corolla unknown. Berry globose, 8-striped, crowned. Placentas central, spongy. Seed 1-6 in each cell, horizontal, semilunate, rugged.


51 Pe'tu'nga. Limb of calyx 4-toothed, permanent. Corolla funnel-shaped, with a short obconical tube, a 4-parted limb, and a villous throat. Stamens 4, a little exserted. Style villous; stigma bidentate. Berry globose, umbilicate. Seeds 2-4 in each cell, fixed to the upper part of the dissepiment, ex Roxb.; but according to Blume scale-formed, and imbricated downwards.

52 Hig'gi'sia. Limb of calyx 4-toothed, permanent. Corolla funnel-shaped, somewhat campanulate, with a short tube, a 4-parted spreading limb, and a naked throat. Stamens inserted in the middle of the tube; anthers ovate, inclosed. Stigmas 2, exserted. Berry oblong, somewhat tetragonal, crowned, many seeded. Placentas adnate to the dissepiment.


54 Cat'es'ea. Limb of calyx 4-toothed or 4-parted. Corolla funnel-shaped, with a very long tube, which is gradually dilated to the throat; and a 4-lobed limb. Stamens 4, inserted in the bottom of the corolla; anthers linear, exserted. Stigma bidentate. Berry globose or oblong, crowned. Placentas spongy, fixed to the top of the dissepiment. Seeds numerous, scale-formed, collected into two fasicicles in each cell.

Tribe III.

Hedyoti'dee. Fruit capsular (f. 95. k.), 2-celled, dehiscing at the cells; and rather membranous and indehiscent; cells many-seeded. Seeds not winged.—Shrubs or herbs, with opposite leaves. Stipulas interpetiolar.

Subtribe I. Rondeletie'æ. Stipulas twin on both sides, combined or distinct, but neither sheathed nor divided into many bristles.—Trees or shrubs.

55 Condami'ne. Calyx campanulate (f. 95. a.), 5 crenate or 5-toothed; limb deciduous. Corolla funnel-shaped (f. 95. b.), with a somewhat curved tube, which is a little longer than the calyx, a dilated throat, and a 5-parted limb (f. 95. b.). Stamens inserted above the middle of the tube (f. 95. c.), or near the throat; anthers oblong-linear, bifid at the base (f. 95. f.), length of corolla. Stigma 2-lobed (f. 95. e.). Capsule turbinate, truncate, opening in the middle of the cells (f. 95. k.). Seeds wedge-shaped (f. 95. i.).

56 Alse'is. Limb of calyx superior, 5-parted. Corolla cupul-
shaped, with a 5-lobed limb and a bearded throat. Stamens 5, free to the base of the corolla, exserted. Stigma divided. Ovary 2-celled, many ovulate.

57 Macrosyneum. Limb of calyx minute, 5-toothed, permanent. Corolla tubular, with a widened throat and a 5-lobed limb; tube pentagonal at first. Stamens 5, free from the corolla, except at the very base, hairy above the middle; anthers oblong, inclosed. Stigma obsolete, 2-lobed. Capsule 2-valved; valves dehiscing at the sides. Seeds acute, imbricated.

58 Chimarrhia. Limb of calyx almost wanting, entire. Corolla with a short tube and a 5-cleft spreading limb: lobes hairy in the middle outside. Stamens 5, inserted at the top of the tube, hairy at the base; anthers oval. Capsule obovate or turbinate, crowned; valves semibifid. Seeds many.

59 Augoste'a. Limb of calyx 5-parted. Corolla funnelf-shaped, much longer than the limb of the calyx; tube widened at the apex, a little incurved; limb 5-parted, spreading. Anthers 5, sessile in the sinuses of the corolla, and shorter than its lobes. Style hairy at the base; stigma bifid. Capsule oblong, separable from the calyx, and naked at maturity, but crowned. Seeds many, tetragonal.

60 Portoandia. Limb of calyx 5-parted; tube 5-nerved. Corolla large, funnelf-shaped, with a short tube, a wide throat, and a bluntly 5-lobed limb. Stamens 5, inserted in the bottom of the throat; anthers long, a little exserted. Stigma univulvate. Capsule obovate, crowned, and retuse at the apex; valves dehiscing at the apex. Placentas coriaceous, central. Seeds scabrous.

61 Bikria. Calyx with an 8-ribbed tube, and a 4-parted limb. Corolla clavate, tetragonal, with a 4-cleft limb. Anthers 4, linear, not exceeding the limb. Capsule ovate, at length separating from the calyx, 2-celled or nearly 4-celled; valves bifid at the apex. Placentas narrow. Seeds small, created on the margins.

62 Isidorea. Limb of calyx 5-parted. Corolla tubular, pentagonal, with a naked throat, and a 5-cleft limb. Stamens inserted in the very base of the corolla, and equal in length to it, monadelphous and hairy at the base; anthers oblong, obtuse. Stigma bilamellate. Capsule nearly globose, pentagonal, truncate at the apex, crowned. Coecula delicient, many seeded. Seeds angular, furnished with a cup-formed membrane at the base.


64 Rondeletia. Limb of calyx 4-5-parted, permanent. Corolla with a cylindrical tube and a 4-5-lobed spreading limb. Anthers 4-5, sessile on the top of the tube, inclosed. Stigma bifid. Capsule globose, crowned; valves cleft in the middle. Placentas central. Seed angular, few in the cells at maturity.

65 Wendlandia. Limb of calyx very short, permanent, 4-5-toothed. Corolla with a terete tube, which is longer than the calyx, and a 4-5-lobed spreading limb. Stamens 4-5, rising from the top of the tube; anthers oblong, exserted. Stigma bifid. Capsule ovate-globose, crowned; dehiscing at the cells at top, many seeded.

66 Xanthophyllum. Limb of calyx 4-5-cleft. Corolla funnel-shaped, with a short tube, a villous throat, and a 4-5-cleft spreading limb. Stamens 4-5, exserted, inserted in the throat, convoluted. Style perforating the disk of the ovary. Stigma 2-lobed, gaping. Drupes dillymous, crowned, divided into 2 many seeded cells. Placentas prominent, fixed by the middle on both sides. Seeds angular, minute.

67 Carphalia. Limb of calyx 4-parted, permanent. Corolla with a long filiform tube, a ventricose hairy throat, and a 4-parted limb. Anthers oblong, almost sessile, inclosed. Stigma bifid. Capsule crowned, dehiscing at the cells; valves semiquilliferous; cells many seeded.


69 Vire'tia. Limb of calyx divided into 5 sesoecous lobes. Corolla funnel-shaped, with an obovate tube, a naked throat, and having the limb divided into 5 linear-oblong ciliolate lobes. Stamens 5, much exserted; anthers linear, oscillatory, bifid at the base. Stigma univulvate. Capsule globose, dehiscing at the cells, at first crowned. Seeds numerous, 4-5-sided, a little muriculated. Hairy half herbaceous plants.


71 Augustemma. Limb of calyx 3-4-5-toothed. Corolla rotate, spreading, 3-5, rarely 3-4-parted. Stamens alternating with the lobes of the corolla. Anthers large, exserted, cohering at the apex. Style perforating the fleshy disk; stigma globose. Capsule crowned, dehiscing radiately at the apex. Placentas convex, adnate to the disseminatum. Seeds numerous, angular.—Herbs.


73 Tel'a. Limb of calyx 5-toothed. Corolla with an oblong tube, and a 5-cleft toothed curved limb. Anthers inclosed. Capsule many seeded.—A procumbent herb.

74 Dentella. Limb of calyx 5-cleft. Corolla funnel-shaped, 5-cleft, with a hairy throat; lobes furnished with one tooth on each side. Anthers 5, inclosed, nearly sessile. Stigmas 2. Capsule or berry dry, almost indehiscent, nearly globose, crowned. Placentas fleshy, prominent on both sides within the cells. Seeds small, ovate.—Creeping herbs.

Subtribe II. Hedyotae. Stipulas formed into a sheath on each side, adnate to the pedicels, and ending in many bristles at the apex.—Herbaceous or suffruticous plants.

76 Hedyotis. Limb of calyx 4-toothed, permanent. Corolla tubular, with a bearded throat, and a 4-cleft limb. Stamens exerted a little; anthers ovate-roundish, small. Capsule ovate, crowned, dehiscing at the cells. Seed numerous, minute, angular.

77 Oldenlandia. Limb of calyx 4-toothed, permanent. Corolla with a short tube, a 4-cleft limb, and a villous or glabrous throat. Stamens a little exerted; anthers ovate or orbicular. Stigma undivided or bifid. Capsule nearly globose, crowned, dehiscing at the vertex by a loculocoidal chink. Seeds numerous, small, half immersed in a globose placenta.

78 Gonostea. Limb of calyx short, truncate, somewhat 4-toothed. Corolla having the tube inflated at the base, the throat villous, and the lobes keeled. Stamens inclosed. Stigmas 2, obtruse, sessile. Capsule compressed, furnished with a double wing on each side, which also runs down along the pedicel, crowned, dehiscing between the stigmas. Seeds numerous, small, sericoculcate.

79 Kohoutia. Limb of calyx 4-toothed. Corolla with a long terete tube, and a 4-lobed limb: lobes cuspidate. Anthers sessile within the tube, inclosed. Style bifid at the apex. Capsule globose, crowned, dehiscing at the cells. Seeds numerous, small, half immersed in pits on the globose pedicellate placenta.

80 Kaua. Limb of calyx 4-cleft or 4-toothed. Corolla salver-shaped, with a long tube and a 4-cleft limb. Anthers linear or oblong, nearly sessile within the throat. Style bifid at the apex. Capsule globose, crowned, dehiscing at the apex at the cells. Seeds numerous, small, angular, inserted on fleshy placenta, which are fixed to the middle dissepiment.

81 Asotis. Limb of calyx 4-toothed (f. 96. a.), permanent. Corolla salver-shaped (f. 96. b.), with a 4-lobed limb, and an almost glabrous throat. Anthers inclosed or exerted (f. 96. c.). Stigma somewhat 2-lobed (f. 96. c.). Capsule ovate, crowned, dehiscing at the cells at the apex. Seeds 4-8 in each cell, rather angular.

82 Rachicallis. Limb of calyx 4-lobed, furnished with 1-3 teeth between each of the lobes. Corolla with a long terete tube, a short spreading 4-lobed limb, and a beardless throat. Anthers at the throat inclosed. Stigma 2-lobed. Capsule subdidymous, dehiscing at the cells, crowned. Seeds angular, 8-20 in each cell.

83 Lu'ca. Limb of calyx divided into 4 bifid teeth, permanent. Corolla with a very short tube and a 4-lobed limb. Stamens shorter than the corolla. Style short, bifid. Capsule globose, didymous, dehiscing at the cells and near the dissepiment; hence it is somewhat 8-valved at the top. Seed 2 in each cell, ex Spreng., 5-6, ex Rich.

84 Polyprénum. Limb of calyx 4-parted. Corolla with a very short tube, a bearded throat, and a 4-lobed limb. Stamens 4, inclosed. Style undivided. Capsule ovate, compressed, dehiscing at the cells. Placentas oblong, adnate to the bottom of the dissepiment. Seeds numerous, very minute, angular.

Tribe IV.

Iseritie. Fruit drupaceous (f. 97. g.), composed of from 2 to 6 many seeded pyrene or cocciula (f. 97. f.). Albumen fleshy.—Shrubs or herbs. Leaves opposite. Stipulas interpetiolar.

85 Metabo'loos. Limb of calyx 4, rarely 5-cleft. Corolla funnel-shaped, with a 4, rarely 5-parted limb. Stamens 4-5, inserted in the throat of the corolla. Stigma bifid or quadridif. Berry dry, crowned, divisible into 2-4 cocciula. Seeds angular, fixed to the prominent placenta.—Suffrutose herbs.

86 Gonza'lea. Limb of calyx 4-lobed. Corolla funnel-shaped or salver-shaped, villous outside; with a long cylindrical tube, and a hairy or downy throat. Stamens 4, inclosed. Stigmas usually 4, adpressed to each other. Berry of 3-4 pyrene. Seeds angular, dotted, minute.

87 Isérite. Limb of calyx 4-6-toothed (f. 97. e.). Corolla with a long tube (f. 97. b.), 6-lobed at the apex (f. 97. c.), woolly inside, having the recesses between the lobes drawn out into crests. Stamens 6, inclosed (f. 97. d.). Stigmas stellate. Berry globose (f. 97. g.), crowned (f. 97. h.), composed of 6 triquetrous pyrene (f. 97. f.).

Tribe V.

Hamellie. Fruit bacca, many celled (f. 98. f. h.); cells many seeded. Albumen fleshy.—Shrubs or trees, opposite or verticillate leaves, and interpetiolar stipulas.


89 Évo'sma. Limb of calyx very short, 4-toothed (f. 98. a.). Corolla subrotate (f. 98. c.), 4-cleft. Stamens 4, inserted in the throat (f. 98. b.); anthers ovate, inclosed, or nearly so. Stigma thick or 4-lobed. Fruit crowned (f. 98. g.), 4-celled (f. 98. h.).

90 Sapi'cea. Limb of calyx 4-5-parted. Corolla salver-shaped, with a long slender tube, a 4-5-parted limb, and a hairy throat. Stamens 4-5, inclosed, or nearly so. Style 4-5-lobed at the apex. Berry globose, crowned, 4-5-celled.

91 Oló sty'la. Limb of calyx very short, 5-toothed. Corolla subrotate, with a short tube, which is pilose inside, and 4 reflexed lobes. Stamens 5, inserted in the throat; anthers linear, exerted. Style undivided. Berry crowned, 4-celled.


96 Schadea. Limb of calyx truncate or subdenticulated. Corolla funnel-shaped, with a terete tube, a dilated pilose throat, and a 5-lobed spreading limb, each lobe usually furnished on the inside with a retrograde callous tooth. Anthers 5-8, linear, nearly sessile, inserted in the throat, hardly exserted. Stigma biform or quadrifid. Berry pea-shaped, 3-4-sided, crowned, 2-4-celled. Seeds imbedded in the pulp.

97 Brignolla. Limb of calyx 4-toothed; teeth unequal. Corolla with a short tube, and a 6-lobe limb, which is very hairy inside as well as the throat. Stamens 6, inserted in the tube; anthers linear. Stigma capitate, undivided. Fruit globose, fleshy, crowned.

98 Patilla. Limb of calyx tubular, with a sinuated, very short, 5-toothed border. Corolla tubular, 5-parted, densely clothed with silky down inside. Stamens 5, inserted in the tube; anthers oblong-cordate, inclosed. Style undivided. Berry roundish, crowned, 4-6, but usually 5-celled. Seeds fixed to a fleshy, 2-lobe placenta.

99 Polyphragmum. Limb of calyx entire or 5-toothed. Corolla salver-shaped, bristly, with a terete tube, and a 10-parted limb. Stamens 10, inserted in the middle of the tube; anthers linear, inclosed. Stamens numerous. Berry globose, 10-20-celled, with 1 series of seeds in each cell.

100 Moreia. Limb of calyx erect, nearly entire. Corolla short, tubular, with a 5-parted limb, which is imbricate in resurrection. Stamens 5, inserted in the throat, exserted; anthers linear. Style fusiform towards the apex; stigma biform. Fruit fleshy, 4-5-celled; cells 2-3-seeded.

B. Cells of fruit usually 1-seeded, rarely 2-seeded.

Tribe VI.

Cordeira. Fruit baccate, of many cells; cells 1-seeded. 
Differs from the neighbouring tribes in the cells being 1-seeded. Shrubs with opposite leaves, and broad intercostal stipules.

101 Tricalydia. Flowers hermaphroditic.

102 Cordiera. Flowers unisexual.

Tribe VII.

Guettardaceae. Fruit drupaceous (f. 101. d. f. 103. f.)

composed of 2-5 1-seeded pyrenes or nuts (f. 103. g.). Seeds terete, elongated, usually erect. Alumen fleshy.—Shrubs or small trees. Leaves usually opposite, rarely 3 in a whorl, with intercostal stipules.

Subtribe I. Morindaee. Flowers and fruit congregated, or joined together into a head.

103 Morinda. Character the same as that of the subtribe.

Subtribe II. Guettedae. Flowers distinct, not concrete.

104 Myrsineodora. Limb of calyx tubular: with an entire border. Corolla funnel-shaped, 4-cleft, the throat closed from arched scales or hairs. Stigma simple (Jack.), or quadrifid (Blum.). Drupe baccate, composed of 4 triquetrous pyrenes.


106 Hyporatherum. Limb of calyx 4-toothed. Corolla small, subcampanulate, with a villous throat, and a 4-cleft spreading limb. Stamens 4, inserted in the mouth of the tube. Stigma biform. Drupe crowned, 2-celled; cells containing 2 pyrenes.

107 Nectera. Limb of calyx small, 4-toothed. Corolla funnel-shaped, sub-campanulate, 4-lobed (f. 100. b.) glabrous inside. Stamens rising from the bottom of the corolla (f. 100. c.), adnate to the tube; anthers roundish, hardly exserted. Stigmas 2 (f. 100. d.), hairy. Berry roundish, uniloculate, containing 2-4 pyrenes. Herbs creeping.

108 Mitchella. Limb of calyx large, 4-toothed. Corolla funnel-shaped, with a terete tube; having the throat as well as the lobes hairy inside. Stamens adhering to the tube almost to the throat; anthers ovate, hardly exserted. Stigmas 4, inclosed. Berry nearly globose, crowned, containing 4 pyrenes. Creeping herbs.

109 Mephitidae. Limb of calyx 3-6-parted or toothed. Corolla funnel-shaped, 4-6-cleft, usually hairy. Stamens 4-6, inserted towards the throat; anthers linear, exserted, or inclosed. Stigmas 4-9. Drupe baccate, crowned, containing 4-9 pyrenes.


111 Guettarda. Limb of calyx permanent or deciduous, truncate or irregularly toothed (f. 101. a.). Corolla salver-shaped, with a cylindrical tube (f. 101. c.), and a 4-9-lobed limb (f. 101. b.). Anthers 4-9, inserted in the throat, sessile, inclosed. Stigma capitate, rarely 2-lobed. Drupe crowned (f. 101. d.), containing a 4-9-celled angular putamen (f. 101. e.); cells 1-seeded.

112 Malanea. Limb of calyx 4-toothed. Corolla small, nearly rotate, with a very short tube, and a 4-lobed spreading limb. Stamens exserted; anthers roundish. Drupe dry, crowned, containing a 2-celled putamen; cells 1-seeded.
113 Antirrhē'a. Limb of calyx campanulate, 4-toothed. Corolla tubular, 4-cleft. Anthers nearly sessile in the throat, not exserted. Stigma bifid. Drupe sub-baccate, crowned, containing a 2-celled patamen; cells 1-seeded.


116 Timōn'ius. Limb of calyx tubular, truncate, 2-6-toothed. Corolla tubular, salver-shaped, with a 4-6-parted spreading limb, and a naked throat. Stamens 4, almost sessile, inserted in the upper part of the tube; anthers 4, oblong-heart-shaped. Stigmas 2, digitately 5-cleft. Drupe globose, crowned, containing 7-23 bony 1-seeded nuts.

117 Hamiltonia. Limb of calyx 5-parted. Corolla funnel-shaped, with a long tube (f. 102. b.), and a 5-lobed limb (f. 102. c.). Stamens 5, inserted in the throat, inclosed. Stigma 5-cleft. Capsule crowned, delising at the apex, containing 5-1-seeded pyrene.

118 Lepōter'mis. Calyx inclosed by a 2-leaved calyciform involucrem; limb 5-lobed. Corolla funnel-shaped, scabrous, with a terete tube, which is pilose inside, and a 5-lobed cuspidate limb. Stamens 5, very short, inclosed. Stigma 5-cleft. Fruit 5-celled, 5-seeded?

119 Psath'u'ra. Limb of calyx campanulate, 5-6-toothed. Corolla bearded inside, with a short tube, and a 5-6-lobed spreading limb. Anthers 5-6, nearly sessile in the throat. Stigma 5-6-lobed. Berry globose, crowned, containing 6 pyrenae.


121 Pyro'stria. Limb of calyx 4-5-toothed. Corolla subcampanulate, 4-5-cleft; throat tomentose. Stamens 4-5, hardly exserted. Stigma capitulate, bifid. Fruit pear-shaped, not crowned, containing 4-8 bony nuts.

122 Octa'viā. Limb of calyx hardly any, truncate. Corolla unknown. Ovary inclosed by a fleshy disk, which is perforated in the middle. Drupe fleshy, globose, not crowned, containing 8 pyrene.

123 Litosa'nthēs. Limb of calyx small, 4-toothed. Corolla globose, with a villous throat, and a short, spreading 4-cleft limb. Stamens 4, inclosed; anthers linear. Stigma 4-toothed. Drupe succulent, obovate, umbonate, containing 4 nuts.

124 Eryth'als. Limb of calyx short, with a 5-10-toothed border. Corolla rotate, without a tube, 5-10-parted. Stamens 5-10, hardly adnate to the corolla at the base; anthers linear. Stigma bilamellate. Drupe globose, crowned, containing 5-10 pyrene.


127 Gynōchotodes. Limb of calyx short, quite entire. Corolla 4-5-parted, villous inside; lobes connivent below and spreading above, each furnished with an inflexed point at the apex. Stamens 4-5, inclosed, inserted in the base of the corolla. Stigma bifid, warted. Drupe globose, umbilicate, containing 4 pyrene.

128 Ceilosper'mum. Limb of calyx quite entire, deciduous. Corolla with a short tube, and a 4-6-cleft, spreading limb. Stamens 4-5, exserted, inserted in the throat; anthers linear, incumbent. Stigma bifid. Drupe globose, umbilicate, containing 4 pyrene.

129 Ancylana'thus. Limb of calyx 5-parted (f. 103. a.). Corolla tubular (f. 103. b.), incurved; limb regular, 5-cleft (f. 103. c.); lobes cuspitate. Anthers 5, sessile in the throat (f. 103. c.). Stigma 5-lobed (f. 103. d.). Fruit 5-celled (f. 103. g.); cells 1-seeded.

130 Phalla'ria. Calyx with a globose tube, and an acutely 5-toothed limb. Corolla tubular, 5-cleft; lobes spreading or reflexed. Anthers 5, ovate, at the throat. Style filiform, crowned by an elongated thick stigma. Ovaryum 2-seeded.

131 Hyllactium. Limb of calyx 5-toothed. Corolla funnel-shaped, with a long tube and 5 roundish reflexed lobes. Anthers 5, almost sessile in the throat. Style thick at the base, 5-furrowed. Stigma cylindrical, 5-furrowed. Drupe dry, containing 2-celled rugged nut: one of the cells usually abortive.

132 Cuvis'era. Limb of calyx 5-parted. Corolla campanulate, 5-cleft, spinescent at the apex. Anthers 5, at the throat, inclosed. Stigma dilated, with a reflexed margin. Fruit baccate, 5-celled; cells 1-seeded.


136 Bili'o'nia. Limb of calyx 5-7-parted. Corolla salver-shaped, with a 5-7-parted limb, and the throat bearded by bristles inside. Stamens 5-7, adnate to the tube. Ovarium covered by a nectariferous nectarulus at the apex. Style 1, crowned by 4 stigmas. Drupe 1-seeded by abortion.
TRIBE VIII.

PEDERIES. Fruit 2-celled, indehiscent, hardly fleshy, the rind easily separated from the seeds or carpels. Carpels compressed, 1-seeded (f. 104. f.), hanging from a filiform axis. Albumen fleshy.—Climbing shrubs, with opposite leaves, and interpetiolar stipulas.

137 Lygodios'idea. Limb of calyx 5-toothed (f. 104. a.). Corolla having the tube much longer than the teeth of the calyx (f. 104. b.), with a hairy throat and a 5-lobed limb (f. 104. c.); lobes revolute. Anthers sessile within the tube (f. 104. c.). Stigmas 2, slender (f. 104. d.). Fruit indehiscent, crowned (f. 104. g.), containing 2 carpella.


TRIBE IX.

COFFEAE. Fruit 2-celled (f. 105. k. f. 107. c.), baccate, containing 2 1-seeded bony nuts (f. 107. d.), which are flat inside, and usually marked by a furrow on the outside; rarely only containing 1 nut from abortion. Albumen bony.—Trees or shrubs, with opposite leaves. Stipulas interpetiolar, 2 on each side, combined or distinct.

SUBTRIBE I. COFFEAE. Flowers distinct, not joined together.


142 Ca'nthium. Limb of calyx 4-5-toothed. Corolla with a short tube, a bearded throat, and a 4-5-lobed spreading limb. Stigma undivided, globose or nitriform. Berry globose or didymous, crowned.


144 Psy'dranx. Limb of calyx 5-toothed, deciduous. Corolla with a short tube, a hairy throat, and a 5-lobed reflexed limb. Stamens inclosed. Style exserted; stigma bilamellate. Berry fleshy, obovate, areolate at the apex.


146 Nes'cia. Limb of calyx hardly any, quite entire. Corolla with a short tube, a 5-cleft limb, and a naked throat.

Stamens 5, inclosed, nearly sessile, inserted in the throat; anthers linear, acute. Stigmas 2, face to face. Ovarium 2-celled.

147 Diplo'spora. Limb of calyx subcampanulate, 4-toothed. Corolla with a broad tube, a pilose throat, and a 4-lobed spreading limb. Stigma bifid. Ovarium 2-celled. Fruit unknown.


149 Sidebo'ndron. Limb of calyx hardly any, somewhat 4-toothed. Corolla with a long terete tube, a 4-lobed obulate limb, and a glabrous throat. Anthers 4, oblong, sessile at the throat. Style bifid at the apex. Berry dry, subglobose, not crowned.

150 Euma'chia. Limb of calyx 4-toothed, deciduous. Corolla funnel-shaped, with a short tube, a naked throat, and a 4-parted spreading limb. Stamens 4, inserted at the bottom of the tube; anthers oblong, inclosed. Stigma bifid. Berry globose, not crowned.

151 Declie'xuia. Limb of calyx 4-parted (f. 106. b.). Corolla funnel-shaped (f. 105. g.), with a terete tube (f. 105. f.), a bearded throat, and a 4-lobed reflexed limb. Stamens 4, inserted in the throat; anthers linear, incumbent, exserted (f. 105. e.). Stigma bifid (f. 105. c.). Berry nearly dry, somewhat didymous, compressed (f. 105. k.), crowned (f. 105. b.).

152 Tetr'ea. Limb of calyx 4-parted. Corolla short, funnel-shaped, 4-cleft; lobes spreading; throat beset with long hairs. Stamens inserted in the upper part of the tube, exserted. Style inclosed: stigmas 2. Drupe oblong, compressed, crowned.

153 Choco'e'ca. Limb of calyx 5-toothed. Corolla funnel-shaped, with an obconical tube or throat, and a 5-lobed acute limb. Stamens 5, downy, hardly adnate at the bottom of the corolla; anthers linear, inclosed. Style clavate or 2-lobed at the apex. Berry somewhat didymous, compressed, crowned.

154 Mara'nis. Limb of calyx somewhat turbine, semi-quincunx. Corolla funnel-shaped, with an obconical tube, which is bluntly 5-toothed or 5-lobed at the apex. Stamens inserted into the middle of the tube, inclosed; anthers ovate. Stigma undivided or somewhat 2-lobed. Berry globose, crowned.

155 Sal'd'nia. Limb of calyx somewhat campanulate, obliquely repand. Corolla with a short tube, an acute 4-parted limb, and a hairy throat. Stamens 4, inserted in the throat, hardly exserted; anthers oblong, nearly sessile. Fruit ovoid, compressed, crowned, drupaceous, 1-celled and 1-seeded by abortion, small.

156 Sclosa'xthus. Lobes of calyx 4, linear-lanceolate. Corolla tubular, tetragonal before expansion. Stamens adnate to the lower part of the tube, downy, not exserted; anthers linear. Stigmas 2. Drupe nearly globose, crowned, containing a 2-celled 2-seeded nut.

157 Chome'lia. Limb of calyx 4-toothed. Corolla salver-shaped, with a long slender tube, a glabrous throat, and a 4-lobed limb. Anthers 4, almost sessile in the throat. Style bifid at the apex, situated among the anthers. Drupe ovate, crowned, containing a 2-celled 2-seeded nut.

158 Bac'onta. Limb of calyx bluntly 4-cleft. Corolla fun-
nel-shaped, with a short terete tube, a bearded throat, and 4 oblong lobes, which are longer than the tube, and twisted in aestivation. Anthers 6, linear, almost sessile, exserted. Style exserted. Stigma undivided. Berry dry, 2-celled, 2-seeded.

159 *Ixora*. Limb of calyx small, 4-toothed (f. 106, a.). Corolla salver-shaped (f. 106, b.), with a slender terete tube (f. 106, d.), and a 4-parted spreading limb (f. 106, b.). Anthers 4, almost sessile in the throat. Style bifid (f. 106, e.) at the apex, equal in length to the corolla or a little longer. Berry drupaceous, crowned, nearly globose.

160 *Pave'tha*. All as in *Ixora*, but differs in the style being exserted beyond the corolla, and clavate, undivided, or hardly bifid at the apex.


162 *Coussaerea*. Limb of calyx tubular, sinuately 4-toothed. Corolla with an elongated terete tube, which is hardly subtilim under the apex, and a glabrous throat. Stamens 4, inserted in the upper part of the tube, inclosed; anthers oblong-linear. Stigma bilobate, hardly exserted. Berry ovate-globose, hardly fleshy, crowned, 1-celled, 1-seeded.

163 *Polvzus*. Limb of calyx obsoletely denticulated, deciduous. Corolla with a cylindrical tube, which is shorter than the 4-5 lobes of the limb, and a villous throat. Anthers hardly exserted. Style short; stigmas bifid. Berry drupaceous, nearly globose, not crowned.


166 *Para'mea*. Limb of calyx very short, 4-toothed, or entire. Corolla with a short terete tube, a naked throat, and 4 spreading oblong or linear lobes. Anthers 4, sessile, inclosed. Style short, bifid at the apex. Berry dry, marked by 8 crenae at the apex, 1-celled by abortion at maturity.

167 *Strep'melia*. Limb of calyx campanulately tubular, 4-5-toothed. Corolla tubular, with a 4-5-parted spreading limb, and a naked throat. Stamens inserted in the middle of the tube, pilose in the free part; anthers linear, inclosed. Fruit ovoid, crowned.

168 *Coffe'a*. Limb of calyx small, 4-5-toothed (f. 107, a.). Corolla tubular, funnel-shaped, with a 4-5-parted spreading limb (f. 107, b.). Stamens 4-5, inserted in the middle of the upper part of the tube, exserted or inclosed. Style bifid at the apex. Berry umbilicate (f. 107, h.), not crowned.

169 *Antheura*. All as in *Psychotria*, but differs in the corolla being rotate and 5-parted; in the anthers being sagitate at the base and caudate at the apex; in the style being subulate, and longer than the corolla, and in the stigma being simple.


171 *Psychotria*. Limb of calyx 5-lobed or 5-toothed. Corolla funnel-shaped, short, 5-cleft; limb spreading or recurved; throat bearded or glabrous. Stamens 5; anthers exserted or inclosed. Stigma bifid. Berry drupaceous, crowned.

172 *Antônia*. Calyx having the tube clothed with imbricate scales and a 5-cleft limb. Corolla funnel-shaped, with a bearded throat and a 5-parted limb. Stigma ovate, bifid. Berry 2-celled.

173 *Palicou'rea*. All as in *Psychotria*, except the corolla, which is tubular and cylindrical, and a little gibbous at the base or curved, 5-cleft, bearded beneath the middle inside. The teeth of the calyx, and the lobes of the corolla, sometimes rather unequal.

174 *Chara'tia*. Limb of calyx urceolate, rather tubular, entire or 5-toothed at the apex. Corolla with an elongated equal tube, and 5 short acutish erect or spreading lobes. Anthers 5, inserted in the mouth or top of the tube, inclosed or a little exserted. Stigmas 2. Berry ovate, crowned, hardly dry.

175 *Jackia*. Limb of calyx unilaterial, trifid at the apex. Corolla funnel-shaped, with a filiform tube and a campanulate 5-parted limb. Anthers a little exserted, filiform, sessile at the throat. Style exserted, pilose in the middle; stigma ovate, globose, longitudinallly furrowed.

**Subtribe II. Cephel'dear.** *Flowers disposed in heads, involucrated by bracteas.*


177 *Carapichea*. All as in *Cephe'lis*, but the anthers and stigmas are a little exserted. Berry dry, salicate, divisible into two parts, crowned. The nuts are smooth on the outside, not as in *Cephe'lis* striated on the outside.


180 *Pata'bea*. Limb of calyx very short, entire, or 4-toothed, rarely 5-6-toothed. Corolla with a short, nearly terete tube, and 4-6 spreading lobes. Anthers 4-6, sessile within the throat. Stigma bluntly bifid. Berry globose, crowned, smooth, 2-celled, 2-seeded.

181 *Saum'ania*. Limb of calyx bluntly 4-toothed or sinuated. Corolla with a short tube and a 4-lobed limb. Stamens with very short filaments, and very long linear anthers. Style undivided. Berry dry, crowned, compressed, 1-celled and 1-seeded from abortion.
Tribe X.

Spermacoceae. Stigma bilancellata (f. 189 b). Fruit dry, and rather fleshy, usually composed of 2 1-seeded mericarps, rarely of 3-4, which are sometimes joined together and sometimes separating, indehiscent, but sometimes dehiscing in various ways. Albumen between fleshy and horny.—Shrubs or herbs. Leaves opposite. Stipulas membranous at the base, and usually divided into many bristles at the apex.

Subtribe I. Cephalanthae. Flowers and fruit sessile, densely aggregate, seated on a globose receptacle. Fruit divisible into two parts. Shrubs.

182 Cephalanthus. Limb of calyx angular, 4-toothed. Corolla tubular, slender, with a 4-cleft limb. Stamens 4, short, inserted in the tube, hardly exserted. Style exserted; stigma capitate. Fruit crowned.

Subtribe II. Euspermacoceae. Flowers distinct. Fruit dry, usually divisible into 2 parts, and sometimes in 3 or 4 parts.—Usually herbs, rarely shrubs.

183 Democrita. Lobes of calyx 5, lanceolate, acute, stiff. Corolla, stamens, and style unknown. Fruit 2-celled, 2-seeded when young, but becoming 1-celled from the dissepiment having vanished at maturity. Seeds free within the pericarp.—A shrub.

184 Octodon. Limb of calyx with 8 very short teeth. Corolla campanulate, 4-cleft, beset with adpressed hairs inside, which are tipped with glands. Stamiens inserted in the bottom of the tube. Stigma globular. Capsule turbinate, oblong, 2-celled, 2-valved, dehiscing at the dissepiment.

185 Borriana. Limb of calyx 2-4-toothed. Corolla salver-shaped or funnel-shaped, 4-lobed. Stamens 4, exserted or inclosed. Stigma bifid or unidivid. Capsule crowned, 2-celled, dehiscing at the dissepiment when mature; coccula bursting by a longitudinal chink inside.

186 Spermacoe. Limb of calyx 2-4-toothed (f. 108 a.), with sometimes accessory teeth. Corolla salver-shaped or funnel-shaped, 4-lobed (f. 108 c.). Stigma bifid or unidivid. Capsule crowned (f. 108 f.), 2-celled; nuts divisible into two parts from the apex, one open and the other closed.

187 Hexaste'palum. Limb of calyx 6-parted. Corolla campanulate funnel-shaped, with an obconical tube and 4 lanceolate lobes. Stamens 4, shorter than the lobes of the corolla. Fruit oblong, dry, divisible into two parts at the dissepiment; the dissepiment being double the nuts are both closed.

188 Diaea. Calyx with a 2-4-toothed limb, rarely more. Corolla funnell-shaped, with a 4-lobed limb. Stamens 4, exserted or inclosed. Style bifid or unidivided. Fruit crowned, 2-celled, divisible into two parts: the parts indehiscent.

189 Triodon. Limb of calyx 2-4-toothed, with sometimes other accessory teeth. Corolla short, funnel-shaped, 4-cleft. Stigma bifid. Capsule papery, crowned, 2-celled: nuts 2, indehiscent, having the axis tridentate and remaining after the nuts have fallen.

190 CRUSEA. Limb of calyx constricted above the ovary, profusely cleft into 4 linear lobes, and 4 accessory small ones. Corolla salver-shaped, with a long tube, a glabrous throat, and 4-lobed limb. Stamens exerted. Style exerted, bifid at the apex. Fruit of 2 indehiscent nuts, adhering to a flat membranous permanent axis, but at length separating from it.


192 Knusia. Teeth of calyx 4, unequal. Corolla salver-shaped, with a terete tube, a usually bearded throat, and a 4-lobed limb. Anthers at the throat. Stigma 2-lobed. Fruit 2-celled: the 2 nuts usually separating from the base to the apex at the dissepiment. Seed ovate-triangular.


194 Mitracarpum. Limb of calyx 4-toothed; teeth unequal. Corolla salver-shaped, with a terete tube, having a circular line of hairs near the base inside, a glabrous throat, and a 4-lobed limb. Anthers exserted or inclosed. Stigma bifid. Capsule membranous, crowned, 2-celled, circumcised about the middle.

195 Crucksha'nsia. Limb of calyx 4-toothed: teeth usually having an accessory tooth on each side, I or 2 of which are usually expanded into roundish wings. Corolla salver-shaped, with an elongated tube, a 5-cleft spreading limb, and a glabrous throat. Stamens 5, exserted, inserted in the mouth of the corolla. Anthers linear-oblong, fixed by the base. Stigma bifid, pilose. Capsule globose, subdidymous, crowned, 2-celled, 4-valved: cells 2-seeded. Seed obovate, tubercular.


198 Gaillonia. Limb of calyx 5-7-toothed; teeth unequal. Corolla funnel-shaped, with a terete tube, and a 5-7-lobed limb. Stamens 5-7, exserted from the throat. Style filiform; stigma 2-lobed. Fruit ovoid, containing 2 separable indehiscent nuts.

199 Machaon'ia. Limb of calyx small, 5-parted. Corolla funnel-shaped, 5-cleft, with a short tube, and a villous throat. Stamens 5, inserted in the throat; anthers subcordinate, exserted. Stigma bipartite. Capsule somewhat tetragonal, crowned, containing 2 1-seeded indehiscent nuts, which are fixed to the top of a linear axis.—Shrubs or trees.
Subtribe III. Putorieae. Fruit rather fleshy, not divisible.
—Shrubs and herbs.

200 Serissa. Limb of calyx 5, rarely 4-cleft, with sometimes accessory teeth. Corolla funnel-shaped, having the tube hairy inside, and the limb 5, rarely 4-parted; lobes induplicate in abortion, hence somewhat trident at the apex. Stamens 5, rarely 4; anthers linear, exserted. Style inclosed, bifid at the apex. Berry nearly globose, 2-celled, 2-seeded.

201 Ermônea. Limb of calyx 4-6-parted, permanent. Corolla salver-shaped, with a terete subtetragonal tube, a naked throat, and 4-6 lanceolate revolute lobes. Stamens longer than the corolla; anthers acute. Style exserted; stigma emarginate. Berry roundish, crowned, 2-celled, 2-seeded.


204 Seieńhora. Limb of calyx tubular, truncate, nearly entire. Corolla funnel-shaped, with a spreading limb, having the tube hairy inside. Stamens 4, exserted; anthers incumbent. Stigma bifid. Drupe bacate, crowned, 8-furrowed, containing 2 1-seeded nuts.


Tribe XI.

Anthospermeae. Flowers sometimes dioecious. Corolla rotate or funnel-shaped; lobes valvate in abortion. Styles 2, distinct from the base, or joined together more or less; stigmas capitate. Fruit constantly of 2 indehiscent 1-seeded mericarps. Seed hardly distinct from the calyx and pericarp. Albumen horny.—Sometimes subshrubs, but usually herbs. Leaves opposite, bearing buds in the axils, having 1-2 or 3 leaf-formed stipulas, on each side, forming whorls along with them. The leaves are only to be distinguished from the stipulas by being furnished with axillary buds.

212 Sherardia. Limb of calyx 4-6-toothed, permanent. Corolla funnel-shaped, with a terete tube, and a 4-lobed limb. Stamens 4. Style one, 2-lobed. Fruit crowned, dry, bipartite.

213 Asperula. Limb very short, 4-toothed, deciduous, or obsolete. Corolla funnel-shaped, rarely campanulate, 4-cleft, rarely 3-cleft. Styles 2, joined at the base, and sometimes nearly to the apex. Fruit didymous, not crowned, almost dry.


217 CalliPeltis. Limb of calyx not perspicuous. Corolla 4-parted, campanulate. Stamens 4, very short. Stigmas 2. Fruit oblong, somewhat incurved, 1-seeded from one of the mericarps being abortive.

218 Valla'ntia. Flowers by threes: the middle one hermaphrodite and fertile, the 2 lateral ones male, and joined to the middle one. Limb of calyx denticulated, permanent.
teeth many, irregular, stiff. Corolla of the male flowers trifid, of the hermaphrodite one quadrifid. Stamens 3-4. Styles in the female flower 2. Fruit 3-horned.

**Tribe XIII.**

**OPECULARIÆ.** Fruit 1-celled, 1-seeded, joined together laterally into a head (f. 112, b.), and at length opening by 2 valves at the apex.—Herbs or subshrubs, with opposite leaves. Stipulas on each side, distinct or concretes.


220 OPECULAÆ. Limb of calyx 3-4-lobed. Corolla 3-4 cleft. Stamens 1-5. Style short; stigmas 2, slender. Seeds nearly smooth.—Herbs suffruticosæ at the base (f. 112.).

221 LIPÔSIMA. Limb of calyx 4-parted. Corolla with a tubular base, a ventricose throat, and a 4-lobed limb; tube hairy inside, bearded at the top. Stamens 4, inserted in the throat. Stigmas 2. Capsule globose, 2-celled, but usually only 1-celled from the rupturing of the disseipment, many seeded, crowned by a deciduous operculum.

† Rubiaceæ genera not sufficiently known.

222 PSILOBIUM. Limb of calyx spreading, 5-parted. Corolla with a short tube and a 5-parted limb. Stamens 5, fixed to the base of the corolla. Stigma clavate, 10-winged, exserted. Fruit cylindrical, silique-formed, crowned, 2-celled, many-seeded. Seeds fixed to the central axis, 2 series in each cell.—Shrubs.

223 PLATYÆRIUM. Limb of calyx rotate, 5-parted, rarely 4-parted. Corolla coriaceous, funnell-shaped, with a short tube, which is woolly inside, and a 5, rarely 4-parted limb, which is twisted in rotation. Anthers sessile in the tube. Style clavate, spirally 10-ribbed. Ovarium 2-celled, crowned by an epignous disk.—Shrub, very nearly allied to *Psilobium*.

224 STIPULAÆ. Calyx small, tubular, with a 5-toothed border. Corolla tubular, slender. Stamens 5? Heads of flowers axillary, nearly sessile, surrounded by a large calyceiform 5-toothed villous involucrem.


226 HIMANTHUS. Calyx with a tuberous tube, and a loose permanent 5-parted unequal limb. Corolla funnel-shaped, having the tube much longer than the calyx, and a 5-cleft limb. Stamens 5, capillary, very short, inserted in the tube. Style clavate: stigma subulate. Ovarium 2-celled, 2-seeded.—A tree. Flowers spicate, sessile, involucrated by a large deciduous bractea before expansion. Perhaps belonging to *Rubiaceæ*.


## 1. Nauclea

**Tribe I.**


**Subtribe 1. NAUCLEÆ (shrubs agreeing with the genus Nauclea in the globose flowers).** D. C. prod. 4, p. 343. Flowers capitate, sessile upon a globose receptacle (f. 85. c. f. 84. k.).


**Lin. syst.** Pentadëria, Menogynia. Calyx with an oblong tube (f. 83. a.), and a short, truncate, or 5-toothed limb (f. 83. b.); lobes linear. Corolla funnel-shaped (f. 83. c.), with a slender tube, a naked throat, and 5 spreading, oval-oblong lobes (f. 83. c.). Anthers incised (f. 83. g.), or exserted, always shorter than the lobes of the corolla. Style filiform (f. 83. e.), exserted; stigma oblong (f. 83. d.), or ovate, turbinoid, undivided. Capsules 2-celled (f. 83. h. i.), sessile upon the receptacle, not gradually attenuated to the base. Seeds numerous, imbricate, winged, fixed to oblong placentæ, which are adnate to the disseipment. Embryo inverted in a fleshy albumen.—Unarmed trees, rarely shrubs, natives of India and Africa. Leaves opposite, or 3-4 in a whorl, petiolate or sessile. Stipulas interpetiolar, deciduous. Peduncles terminal and axillary, each bearing a globose head of flowers. Bracteæ wanting at the base of the head of flowers, but with linear paleæ among the flowers. Flowers crowded, sessile. This genus differs from Cephalanthus in the parts of the flowers being quinary, and in the cells of the flowers being many-seeded; and from Sarcocéphalus in the fruit being capsular, not bacate; and from Uncaria in the capsules being sessile, not attenuated at the base.

**Sect. 1. NAUCLEÆ (altered from Nauclea).** Lobes of calyx short, acute, or wanting.

### § 1. Capsules growing together in the head.

1. **UNDULÁTA (Roxb. fl. ind. 2. p. 117.) arboreous; branches brachiate; leaves petiolate, ovate-oblong, obtuse, undulated, shining; stipulas elliptic, obtuse, almost the length of the petals; peduncles terminal, solitary; capsules united.** S. Native of the Moluccas. Peduncles drooping, each bearing a large globular head of numerous, small, most beautiful yellow fragrant flowers. Anthers seated in the 5 fissures of the corolla, with hardly any filaments.

Undulated-leaved Nauclea. Fl. May, June. C1t. 1820. Tree 20 feet.

2. **GLABÆRIMA (Bartl. in herb. Heneq ex D. C. prod. 4. p. 944.) branches tetragonal; leaves ovate, glabrous, flat; stipulas oval, length of petals; peduncles solitary; terminal; capsules united.** S. Native of the island of Luzon. This species differs from *N. undulata* in the leaves not being undulated or shining, in the petals being 1 inch long, not 2 inches. The heads are referrible to the fruit of *Plátannas*, but are smooth. Quite-glabrous Nauclea. Tree 12 to 15 feet.

3. **WALLCHIANA (R. Br. in Wall. cat. 6089.) branches quadrangular; leaves broad, roundish-elliptic, obtuse at both ends, but sometimes cuneated at the base, glabrous; peduncles terminal, solitary; stipulas elliptic, obtuse; stamens exerted;
fruit combined. ƒ. S. Native of the East Indies, on the banks of rivers.

Wallich's Nauclea.  Shrub.  
4 N. cadunda (Roxb. in Rees' cycl. vol. 24, no. 6.) arborescent; leaves petiolate, broad-ovate, cordate, obtuse, coriaceous, smooth; stipulas obovate; peduncles terminal, solitary; capsules united. ƒ. S. Native of Ceylon. N. cordata, Roxb. fl. ind. 2, p. 118. Peduncles drooping, each bearing a large beautiful globular head of very fragrant bright yellow flowers. Bracteae a small irregularly 4-toothed withering ring, round the peduncle near the base, within the stipulas. Anthers connate, on very short filaments, from the mouth of the tube just under the fissures of its border.

Conduplicate-capsuled Nauclea. Fl. May, June. Cit. 1820. Tree 20 to 30 feet.

5 N. sericea (Wall. cat. no. 6095.) branches tetragonal; leaves elliptic, obtuse at both ends, almost sessile, smooth; heads terminal by threes; middle one on the shortest peduncle; corollas clothed with silky villi. ƒ. S. Native of the Burman empire, on the banks of the Irrawaddy at Hennarava; and at Chittagong. Capsules combined.

Silky Nauclea. Shrub.
6 N. Brunonis (Wall. cat. no. 6097.) branches obscurely tetragonal; leaves broad, roundish, cordate at the base, smooth above and pubescent beneath, as well as on the petioles; peduncles terminal, trichotomously panicked; the middle ones shortest; stamens exerted; fruit combined; stipulas elliptic, obtuse, pubescent. ƒ. S. Native of the East Indies, at Ploavong.

Brown's Nauclea. Shrub.
7 N. Bartlingii (D. C. prod. 4, p. 344.) branches from compressed to terete; leaves nearly sessile, cordate at the base, oblong, acute, shining above, at length glabrous, pubescent beneath as well as on the branches; stipulas ovate, obtuse, pubescent on the outside, deciduous, longer than the petioles; peduncles terminal, solitary; fruit united, rather tomentose. ƒ. S. Native of Luzon, near Sorzogon. N. mollis, Bartl. in herb. Heneke, but not of Blume. Heads size and form of the fruit of Phellinus.

Bartling's Nauclea. Tree 20 feet.
8 N. diversifolia (Wall. cat. no. 6096.) branchlets tetragonal; leaves of various sizes and shapes, but usually elliptic, obtuse at the apex, and somewhat cordate at the base, smooth, on longish petioles; peduncles terminal, trichotomously panicked; the middle one always short; heads globose; fruit combined; stamens exerted. ƒ. S. Native of the East Indies, in various parts of the Burmese empire.

Diverse-leaved Nauclea. Shrub.
9 N. polycephala (Wall. cat. no. 6100.) leaves oblong-lanceolate, long-acuminate, glabrous; peduncles forming a terminal panicule; heads small; fruit combined. ƒ. S. Native of the East Indies, on the mountains of Silhet.

Many-headed Nauclea. Shrub.

§ 2. Capsules distinct in the heads.

10 N. macrophylla (Roxb. fl. ind. 2, p. 120.) arborescent; leaves stem-clasping, very broad, oval, obtuse, villous on the nerves beneath; stipulas linear-lanceolate; peduncles terminal, solitary, recurved; capsules distinct. ƒ. S. Native of Amboyna. Trunk of tree straight, like that of a pine or fir. Branches decussate. Leaves 8-24 inches long, and 6-8 inches broad. Peduncles length of the stipulas; each supporting a head of numerous, short, beautiful pale yellow sweet-smelling flowers, which is 3 inches in diameter. Stigmas exerted, pure white. Placentae to which the seeds are attached linear.

Long-leaved Nauclea. Tree 30 to 40 feet.

11 N. sessilifolia (Roxb. fl. ind. 2, p. 124.) arborescent; leaves oblong, sessile, rather cordate at the base and clasping the stem, rounded at the apex; heads terminal, solitary; capsules distinct, 4-valved. ƒ. S. Native of the East Indies, in the forests of Chittagong. The rest unknown.

Sessile-leaved Nauclea. Tree.

12 N. ovatifolia (Roxb. fl. ind. 2, p. 124.) arborescent; leaves sessile, oval, or elliptic; heads of flowers terminal, solitary. ƒ. S. Native of the East Indies, in the forests of Silhet, where it is called Shal by the natives. The rest unknown.

Oval-leaved Nauclea. Tree.

13 N. cadabra (Roxb. fl. ind. 2, p. 121.) arborescent, glabrous; branches brachiate; leaves petiolate, coriaceous, ovate, obtuse at the base, and acuminate at the apex; stipulas triangular; peduncles terminal, solitary, usually shorter than the heads, which are globose; lobes of calyx linear; stamens exerted, shorter than the lobes of the corolla. ƒ. S. Native of the East Indies, about Calcutta; and of Malabar. Katon-jaka, Rheed. mel. 3. t. 33. and therefore Cephalaria orientalis, Lin. spec. ed. 1. p. 95. N. citrifolia, Poir. dict. 4. p. 435. Flowers orange-coloured, collected into heads about the size of a small apple (Roxb.). Style white, exerted; stigma thickish, oblong. Capsules distinct, 4-celled at top. Seeds not winged. Leaves 5-10 inches long. Kadamba is the native name of the tree. It is common about Calcutta, where it grows to be a large tree, and is not only highly ornamental, but very useful from the extensive close shade it yields.

Cadamba Nauclea. Cit. Tree 30 to 40 feet.

14 N. barnifolia (Roxb. cor. 1. p. 40. t. 52. fl. ind. 2. p. 122.) arborescent, glabrous; branches brachiate; leaves petiolate, obovate, obtuse, or short acuminate; stipulas oval; peduncles terminal, solitary, or by threes, when 3 the middle one is shortest; heads globose, bracteate; limb of calyx truncate. ƒ. S. Native of the East Indies, almost every where; and is a native of all the coast of Coromandel, but chiefly in the mountains and south of the Philippines. Ham. in Lin. trans. 15. p. 94. N. barniflora, Pers. ench. 1. p. 202. Wall. in litt. N. orientalis, Gaertn. fruct. 1. p. 151. t. 50. exclusive of the synonymes, ex Ham. Branches numerous, spreading, forming a large oval shal y head. Heads of flowers light yellow, globose, size of a plum. Anthers on short filaments. Style much exerted. The wood is of a light chestnut colour, firm and close grained; is used for various purposes, where it can be kept dry, but exposed to wet it soon rots. (f. 83.)

Small-leaved Nauclea. Tree 30 to 40 feet.

15 N. glabra (Roxb. fl. ind. 2. p. 121.) leaves elliptic, smooth; stipulas linear; peduncles terminal by threes; lobes of calyx triangular; stigma globose; cells of capsule 3-4-seeded. ƒ. S. Native of the Moluccas. The leaves, according to Blum. bijdr. p. 1099, are oval, bluish, attenuated at the base; and the peduncles are trifid from the calyx of the leaves. Glabrae Nauclea. Tree.


17 N. excelsa (Blum. bijdr. p. 1099.) leaves oval, acute, rounded at the base, coriaceous, glabrous; stipulas oblong, obtuse, pubescent; peduncles terminal by threes (or trifid from 5 to 2
the leaves having fallen). \( N \). S. Native of Java, in the mountain woods of Scrib and Panang. Said to be allied to \( N. glabra \). Heads of flowers globose. Fruit sometimes sessile and sometimes pedicellate, but probably from abortion.

**Tall Nauclea.** Tree 30 to 40 feet.

18. *N. obtusa* (Blum. bijdr. p. 1009.) leaves ovate-oblong, obtuse, coriaceous, glabrous, downy in the axis of the veins beneath; stipules oblong, obtuse; peduncles solitary or by threes, terminal, length of pedicels. \( N. S. \) Native of Java, in the woods on Mount Tjerina.

**Obtuse-leaved Nauclea.** Tree.

19. *N. stellata* (Wall. cat. no. 6102.) branches terete, smooth; leaves lanceolate, glabrous; peduncles solitary, terminal, bearing each a globose crowded head of flowers. \( N. G. \) Native of Cochín-china. Cephalanthus stellatus, Lour. coch. Flowers apparently red.

**Stellate Nauclea.** Shrub.

20. *N. rotundifolia* (Roxb. fl. ind. 2. p. 124.) arboresous; leaves petiolate, roundish-oval, obtuse; stipulas oblong, obtuse, many-nerved; heads terminal, on short peduncles; capsules distinct. \( N. S. \) Native of the East Indies, in Chittagong; and of the Society Islands. The rest unknown.

**Round-leaved Nauclea.** Tree.


**Var. 3. Luzonicaulis** (D. C. prod. 4. p. 345.) pubescent; leaves pubescent beneath, but less so above; throat of corolla densely bearded. \( N. S. \) Native of the island of Luzon, one of the Philippines. *N. Africana*, Cham. et Schlecht. in Linnaea 4. p. 149. Perhaps a proper species.

**African Nauclea.** (Shrub 6 to 10 feet.)

22. *N. Caxion* (D. C. prod. 4. p. 345.) leaves ovate, obtuse at the base, and acutish at the apex, glabrous above, pale beneath and rather pilose on the nerves; panicule terminal, elongated; having the branchlets opposite, and each bearing a globose head of flowers, 3-5 in number; bracteae ovato-oblong, deflexed, under the branchlets of the panicule \( N. S. \) Native of South America, probably in Peru. Cinchona globifera, Pav. quin. ined. N. polycepha, A. Rich. mem. soc. hist. nat. par. 5. p. 289. Heads dense, many-flowered. Flowers velvety on the outside. Fruit unknown. Perhaps a species of *Cephalanthus*, but differs from that genus in the flowers being pentamerous.

**Cinchona Nauclea.** Shrub.

23. *N. myriocéphala* (Delile, in Caill. pl. afr. p. 67. no. 54.) shrubby, glabrous; leaves 4 in a whorl, lanceolate, tapering into the petioles; stipulas united into a 4-toothed ring; peduncles axillary, smooth, slender, longer than the petioles; heads of flowers globose; calyxes and corollas small, pubescent. \( N. S. \) Native of the north of Africa, at Singue.

**Small-leaved Nauclea.** Shrub.

24. *N. lanceolata* (Blum. bijdr. p. 1009.) leaves on short petioles, oblong-lanceolate, acuminate at both ends, coriaceous, glabrous; stipulas oblong, obtuse; peduncles terminal, solitary. \( N. S. \) Native of the west of Java, in mountain woods. Cephalanthus orientalis, Blum. cat. hort. bekannt. p. 38. Flowers varying to tetrandrous.

**Lanceolate-leaved Nauclea.** Shrub.

25. *N. grandifolia* (D. C. prod. 4. p. 345.) leaves rather large, obovate or ovate-oblong, obtuse, acute at the base, rather undulated, glabrous; stipulas oval, about equal in length to the pedicels; peduncles terminal, solitary, length of petioles. \( N. S. \) Native of Java. *N. macrophylla*, Blum. bijdr. p. 1010. but not of Roxb. There is a variety of this species in the province of Bantam, having the leaves all obovate and undulated, and another in the province of Rembang having larger and more undulated leaves.

**Great-leaved Nauclea.** Tree or shrub.

26. *N. cordata* (Blum. bijdr. p. 1011. but not of Roxb.) leaves roundish-cordate, renate at the apex, glabrous; stipulas oblong-roundish, united at the base, length of petioles; peduncles terminal, solitary. \( N. S. \) Native of Java, on Mount Salak.

**Cordate-leaved Nauclea.** Shrub or tree.

27. *N. orientalis* (Lam. ill. 153. f. 1.) arboresous; leaves oval-oblong, on short pedicles, smooth; stipulas oblong; peduncles axillary, opposite: upper ones solitary, 5 times longer than the heads of flowers, which are globose. \( N. S. \) Native of the East Indies, Java, and China. Poir. dict. 4. p. 435. Blum. bijdr. p. 1006. Ham. in Lin. trans. 15. p. 94. — Bancâuls, Rumph. amb. 3. t. 55. f. 1. Authors inclosed. Style much exserted; stigma ovate.

**Eastern Nauclea.** Tree 15 to 20 feet.

28. *N. canescens* (Barrl. in herb. Hamke, ex D. C. prod. 4. p. 346.) branches tetragonal; leaves on short petioles, elliptic, short-acuminated, glabrous above and canescent beneath; peduncles compressed; lower ones axillary, opposite: the upper ones from the falling of the leaves appear racemose, and are as well as the heads tormentose; lobes of calyx linear, obtuse. \( N. S. \) Native of the Island of Luzon. Stipulas deciduous, at the sides of the leaves, oblong-linear, twin, on both sides in the upper part of the racemes.

**Canescent Nauclea.** Shrub or tree.

29. *N. rotundifolia* (Barrl. in herb. Hamke, ex D. C. prod. 4. p. 340.) glabrous; branchlets terebrated; leaves petiolate, roundish-cordate, short-acuminated, paler beneath; peduncles axillary, opposite, solitary, compressed, articulated in the middle; heads globose, tormentose; segments of the calyx ovate. \( N. S. \) Native of the Island of Luzon. Corolla hoary from tomentum; with an elongated tube; and roundish lobes. The sterile peduncles become hardened and hooked, as in the genus *Uncaria*.

**Round-leaved Nauclea.** Tree or shrub.

**Sect. II. Pentacorysia** (from πέντε, pente, five, and κορύξ, korux, a club; in reference to the 5 club-shaped lobes of the calyx). *D. C. prod. 4. p. 346.* Segments of calyx (or bracteoles) elongated and club-shaped.

30. *N. coriifolia* (Roxb. cor. 1. p. 40. t. 53. fl. ined. 2. p. 122.) arboresous; leaves petiolate, roundish-cordate, villous beneath; stipulas ovate, peduncles 1-3 together, axillary; bearing each a globose head of flowers; lobes of calyx and stigmas clavate. \( N. S. \) Native of Coromandel and Cottala, on the mountains, in the southern peninsula of India. Petioles terete, rather villous, in length to the peduncles. Flowers yellowish. Seed 6 in each cell of the capsule, membranaceous winged, never imbricated, but bifid at the apex. Leaves 4-12 inches each way, on petioles from 2-3 inches long. Peduncles downy, from 1-4. The wood is exceedingly beautiful, its colour is like that of box-wood, but much lighter, and at the same time very close-grained. It is to be had of a large size, from 1-2 feet or more in diameter, and is used for almost every purpose, where it can be kept dry. For furniture it answers exceedingly well, being light and durable. This is probably the *N. sterculifolia*, A. Rich. mem. soc. hist. nat. par. 5. p. 289.

**Heart-leaved Nauclea.** Tree 40 to 50 feet.

*Purple-flowered Nauclea.* Tree 20 feet.

32. *N. Roxburghii,* shrub glabrous; leaves roundish, obtuse, cordate at the base, on long petioles; stipulas large, oblong, obtuse. -fly. S. Native of the East Indies. *N. stipulacea,* Roxb. herb.

*Roxburgh's Nauclea.* Shrub.

33. *N. pedunculata* (Wall. cat. no. 6091.) arborescent, smooth; leaves ovate-elliptic, coriaceous, acuminate, smooth; peduncles terminal by threes, not so long as the upper pair of leaves; heads of flowers globose. -fly. S. Native of Pulo Penang. *N. purpurea.* Roxb. herb. Flowers purplish?

*Pedunculatata Nauclea.* Shrub.

34. *N. calycina* (Bartl. in Hækne herb. ex D. C. prod. 4. p. 346.) glabrous; leaves petiolate, oblong, attenuated at both ends; stipulas deciduous; peduncles terminal, solitary, or by threes, bearing caducous bracteas under the apex; lobes of calyx 5, clavate; style not exerted. -fly. S. Native of the Island of Luzon, one of the Philippines. Very nearly allied to *N. purpurea,* and is probably the same, but the calyx is pal., not purple, and the branches are tetragonally compressed, not terete.

*Large-calyx Nauclea.* Tree 15 to 20 feet.

35. *N. stipulacea* (D. C. prod. 4. p. 346.) arborescent; leaves broad-obovate, glabrous, downy on the nerves on the under surface as well as on the petioles and branchlets; stipulas ovate, large, leafy; heads of flowers globose; corolla villous on the outside; calyx quite entire, truncate; bracteoles or lobes of calyx 5, club-shaped. -fly. S. Native of Africa, on the banks of the Gambi near Alberda. *N. macrophilla,* Perr. et Leprieur. mss. but not of Roxb. nor Blum. The dehiscence of the capsule exhibits distinct carplets within the calycine tube, which is cleft lengthwise; the segments cohering at the apex, and proped by 5 claw-like bracteoles on the outside.

*Stipulacetus Nauclea.* Tree 20 to 40 feet.

† Species not sufficiently known.

36. *N. morinda* (Blum. bijdr. p. 1011.) arborescent; leaves ovate, acute, rounded at the base, ribbed, glabrous, bearing depressed glands in the axis of the ribs on the under surface; stipulas spatulate, coloured, viscid, one half shorter than the petioles. -fly. S. Native of Java, on Mount Salak. Flowers unknown.

*Morinda-leaved Nauclea.* Tree.

37. *N. roxellana* (Blum. bijdr. p. 1010.) leaves rather large, oval, acute, rounded at the base, sometimes subcordate, glabrous above but rather villous beneath and on the branchlets; stipulas ovate, obtuse, rather villous beneath. -fly. S. Native of Java, on Mount Salak. Flowers unknown. Allied to *N. macrophilla,* Roxb.

*Soft Nauclea.* Tree.

*Cult.* All the species of this genus are of the most easy culture. A mixture of loam, sand, and peat is the best soil for them; and cuttings root readily in the same kind of earth under a hand-glass, in heat.

II. UNCARIA (from uncus, a hook; the old or inferior peduncles are converted into hooked axillary spines). Schreb.
Hard-leaved Uncaria. Shrub cl. 4 U. ovalifo'lia (Roxb. fl. ind. 2. p. 128.) leaves oval, petiolate, acute, smooth on both surfaces; peduncles axillary and terminal, compound; receptacle of flowers as well as the capsules villous. 5. Native of Pulo-Penang. Leaves sometimes obovate, from 3-6 inches long. Peduncles bearing from 1-3 heads of flowers, on pedicels which are as long as the common peduncle, and furnished with a sheathing 4-6-cleft bract in the middle of each. Pedicels short, recurved, channelled.

Oval-leaved Uncaria. Shrub cl. 5 U. pilosá (Roxb. et Wall. in fl. ind. 2. p. 130.) branches villous, obscurely tetragonal; leaves oval, acuminate, sometimes subcorporate, hairy on both surfaces, on very short pedicels; stipulas bipartite or twin; segments lanceolate, acute, longer than the pedicels; peduncles axillary, opposite, villous, divaricate, at length recurved and spinescent. 6. Native of Nipaul, in the valley of the forest in Sankoo, and at Bleempedi; and of Chittagong and Java. Wall. pl. rar. asiat. 2. p. 55. t. 170. Nauclea scándens, Smith, in Rees's cyclo. vol. 24. no. 9. Nauclea pilosa, Blum. biijdr. p. 1013.? Branches clothed with rusty hairs; young shoots silky. Leaves from 5-7 inches long. Peduncles jointed, and bear a whorl of about 6 small linear-lanceolate bracteas, which are hairy without and smooth within. Flowers hairy, whitish, forming round dense heads of 2 inches in diameter. In the Java plant there are 4-6 ovate-lanceolate, acuminate, pilose, rather membranous bracteas in a whorl at the top of each peduncle, under the head of flowers. Perhaps distinct from the plant of Roxburgh.

Filo-se Uncaria. Shrub cl. 6 U. lañósá (Wall. in Roxb. fl. ind. 2. p. 131.) every part of the plant is clothed with long rust-coloured hairs; leaves ovate-lanceolate, acuminate, smooth above, on short pedicels; stipulas twin, on both sides, ovate, membranous, recurved; peduncles axillary, opposite, short, at length converted into spinose hooks; corollas almost smooth; capsules on long pedicels. 7. Native of Pulo-Penang and Sumatra, and other East Indian islands. Nauclea lanosa, Poir suppl. 4. p. 54. Nauclea setigera, Blum. biijdr. 1013.? Branches rather quadrangular. Leaves 3-5 inches long. Stipulae hairy without, permanent. Pedicels about an inch long, surrounded by a whorl of 4 lanceolate bracteas. Capsules smooth, ash-coloured. In the Java plant, the branches are almost smooth, hardly hispid; and the upper surfaces of the leaves are glabrous, or scarcely hispid, but villous beneath on long adpressed hairs; fruit oblong, glabrous, shorter than the pedicels; lobes of calyx oblong, ciliated.

Woolly Uncaria. Shrub cl. 8 U. macrophyl'la (Wall. in Roxb. fl. ind. 2. p. 132.) branches tetragonal, pubescent, with 2 opposite furrows; leaves petiolate, broad-ovate, acuminate, smooth and shining above, villous beneath, coarsely nerved and reticulated; stipulas caducous; heads of flowers axillary, solitary, opposite, tomentose. 9. Native of the East Indies, from Silbét. Leaves from 6-7 inches long. Peduncles opposite, axillary, and terminal, 2 inches long, covered with rusty hairs, about 5 lines under the apex they are jointed and surrounded by a ring of 5-6 lanceolate, spreading, villous bracteas. Flowers covered with ash-coloured dense pubescence.

Long-leaved Uncaria. Shrub cl. 10 U. vucá (Roxb. fl. ind. 2. p. 133.) branches simple, glabrous, with 3 opposite furrows; leaves ovate-lanceolate, acuminate, smooth above, villous beneath; stipulas bipartite, opposite, and terminal, 2 inches long, covered with pilose hairs. Flowers covered with short rusty hairs; fruit oblong, glabrous, shorter than the pedicels; calyx oblong, ciliated. 11. Native of the Burman empire at Amherst. Fruit sessile.
9. U. issinensis (D. C. prod. 4. p. 348.) branches acutely tetragonal; leaves on short petioles, having a narrow cordate recess at the base, roundish-elliptic, short-acuminated, shining above, reticulately veined beneath, and cuneate from down between the veins; peduncles axillary, solitary, recurved, compressed; flowers on long pedicels. \( \text{\textbackslash n} \) Native of Java, on the mountains of Scribu. Nauclea terreja, Blum. bijdr. p. 1014.

Iron Uncaria. Shrub cl.

17. U. sessilifructus (Roxb. fl. ind. 2. p. 130.) leaves elliptic, smooth, acuminate; peduncles axillary, bearing from 1-5 heads of flowers: also terminal, bearing many heads of flowers; capsules sessile. \( \text{\textbackslash n} \) Native of the East Indies, in the forests of Chittagong. The shrub supports itself by strong spiral axillary hooks. The terminal peduncles form themselves into a kind of racemose panicle.


18. U. africana; leaves ovate-lanceolate, acuminate, on short petioles; flowers disposed in a loose globular head; terminal calyx and corolla villous on the outside; hooks axillary, twisted, or reflexed. \( \text{\textbackslash n} \) Native of Sierra Leone, on the banks of rivulets. Corolla greenish yellow.

African Uncaria. Shrub 4 to 6 feet. cl.

19. U. guianensis (Gmel. syst. 1. p. 570.) branches tetragonal; leaves petiolate, ovate, acute, glabrous; stipules solitary, on both sides, triangular; peduncles solitary, bracteolate in the middle, axillary, opposite, and terminal; lower ones sterile and converted into flat, hooked spines. \( \text{\textbackslash n} \) Native of Guiana, on the banks of rivers and rivulets. Ouroupia guianensis, Aubl. guian. 1. p. 177. t. 68. Nauclea aculeata, Lam. ill. t. 153. f. 2. Poir. dict. t. 4. p. 456. Hayn. term. bot. t. 29. f. 5. U. aculeata, Willd. in Ust. del. opusc. 2. p. 200. The flowers in the same head are variable in colour, yellow, white, green, red, russet, and blackish: they are very fragrant.

Guiana Uncaria. Shrub cl.

20. U. tomentosa (D. C. prod. 4. p. 349.) arboreous; branches somewhat quadrangular, downy; leaves ovate-elliptic, acute, clothed with fine pubescentomentum beneath, and shining above with the nerves downy; stipulas broad ovate; peduncles villous, disposed in a terminal panicle: and the lowermost ones converted into axillary hooks. \( \text{\textbackslash n} \) Native of New Granada, on the banks of the river Magdalena, near Naer. Nauclea tomentosa, Willd. in Rom. et Schultes, syst. 5. p. 221. N. aculeata, H. B. et Kuhn, nov. gen. amer. 3. p. 282. Corolla clothed with silky pubescence on the outside. Peduncles also axillary, bearing 1-3 stalked hooks.

Tomentose Uncaria. Treec.

Cult. See Nauclea, p. 469. for culture and propagation.


L. A. D. Synt. Pentandria, Monogynia. Calyx with an oblong tube, and a campanulate 5-parted, permanent limb (f. 84. a.). Corolla funnel-shaped, 5 lobed (f. 84. b, c); throat glabrous; lobes valvate in astivation. Anthers almost sessile (f. 84. e.), at the recesses between the lobes, inclosed. Style exserted (f. 84. d); stigma capitate-ovate. Capsule membranous, ob-pyramidal, 2-celled; valves 4 (f. 84. g), dehiscent from the apex; central axis permanent, bearing the calyx at the apex. Seeds 2-4 in each cell, oblong, margined (f. 84. k), inserted near the top of the cell, hanging by spongy funicles.—Glabrous shrubs, natives of China. Branches terete, opposite. Stipulas twin, on both sides, joined at the base, yellowish, lanceolate. Leaves lanceolate, glabrous. Peduncles axillary, rarely terminal, solitary. Heads of flowers glabrous, without any involucre, yellowish. Flowers sessile, crowded, intermixed with peltate. Receptacle pileous.—This genus is intermediate between Nauclea and \textit{Ophthalanthus}, and probably not distinct from the first.
RUBIACEÆ. III. ADINA. IV. BREONIA. V. LECANANTHUS. VI. STEVENSON. VII. COUTAREA.

1 A gloriolus (Salish, par.
loud, t. 115.) leaves lanceolate; peduncles shorter than the leaves.  ♀ G. Native of China. Naï-

2 A peduncula (D. C. prod. 4. p. 349.) leaves obovate-
lanceolate; peduncles twice the length of the leaves. ♀ G. Native of China. Naïcòa
Cult. The culture and propagation of the species of Adina are the same as those of Naïcòa, p. 469, but do not require so much heat.

IV. BREONIA (this name is not explained, but is perhaps so called after some botanist of the name of Breon). A. Rich. mem. soc. hist. nat. par. 5. p. 290. D. C. prod. 4. p. 620.

Lin. syst. Pentandria, Monogynia. Calyx with a 5-parted
limb, and truncate sub-cuneated lobes. Corolla with a terete
tube, and a flat, spreading, 5-lobed limb: having the lobes oval-
lanceolate. Stamens half exerted, inserted in the throat of the corolla. Style very long, exserted; stigma bipartite, with the
lobes approximate. Ovarium 2-celled; cells 7-8-ovulate; ovu-
las fixed to the membranous placentas, which hang from the axis. Fruit somewhat crustaceous, indehiscent.—A tree. Leaves opposite,
very large. Stipulas connate. Flowers disposed in axillary, solitary, globose heads, which stand on long peduncles;
each peduncle girded by a beaked involucrum, which at length
bursts on one side and falls off.—This genus is nearly allied to
Naïcòa, but probably referrible to Sarcocephàlce, by the fruit
being indehiscent.

1 B. MADAGASCARIE'SIS (A. Rich. l. c.). ♀ S. Native of Madagascar.
Madagascar Breonia. Tree.
Cult. See Naïcòa, p. 469, for culture and propagation.

V. LECANA'THUS (from lever, lancea, a bow, and
arbo, anthos, a flower; in reference to the cup-like involucrum
under the head of flowers). Jack, mal. misc. vol. 2. ex Wall.

Lin. syst. Pentandria, Monogynia. Limb of calyx cam-
panulate, dilated, coloured, divided irregularly. Corolla with a
short tube, and a 5-lobed limb, which is valvate in restitution.
Anthers large, inserted in the tube of the corolla. Style bifi-
stigma linear, thick. Ovarium 2-celled; cells many-seeded;
placentas semi-cylindrical or convex, central. The rest un-
known.—A radican shrub, with tetragonal stamens, with 2 of the
angles more prominent than the other 2. Leaves opposite, on
short pedioles. Stipulas ligulate. Flowers pale red, disposed in
terminal, dense, globular heads; each head involucrated by a
salver-shaped involucrum.—This genus is nearly allied to
Naïcòa.

1 L. eriÆscens (Jack, l. c.). ♀ S. Native of Singapore.
Leaves on short pedioles, ovate-lanceolate, acute at both ends,
about 8 inches long. The involucrum which surrounds each
head of flowers is entire and cup-shaped. Flowers sessile.
Ovarium crowned by a prominent nectareal ring.
Reddish-flowered Lecanathus. Shrub.
Cult. See Naïcòa, p. 469, for culture and propagation.

Subtribe II. CINCHO'NEEE (shrubs and trees agreeing with Cinchona in important characters). D. C. prod. 4. p. 349.
—Cinchonæce and Manettieæ, Cham. et Schlecht. in Linneæa. 4. p. 178. Flowers on longer or shorter pedicels, not seated
on a globose receptacle, as in those of the first subtribe. (f. 86.
f. 88. f. 89.)
VI. STEVENSON (in honour of Edward Stevens, who rendered important services to St. Domingo, while he was consul
but not of Neck.

Lin. syst. Petandria, Monogynia. Calyx with a sub-
globose tube, girded at the base by an unequally 4-lobed invo-
lucre; limb biformed, deciduous: having acute lobes. Corolla
salver-shaped, with a short tube and a spreading bluntly 6-
parted limb. Anthers 6-7, sessile in the throat of the tube.
Stigma bilamellate. Capsule globose, arcoleate at the apex, and
subsent in the areole, 2-celled, containing 2 coccii, which
are separable from the calyx: one of them only deliscient.
Placentas central, connecting the margins of the valves. Seeds
minute, numerous, oval, winged a little, rather subsent at the
apex.Embryo straight in the fleshy albumen: having the
radicle turned towards the hyllum.—A much branched shrub,
native of St. Domingo; having the branches clothed with resin.
Leaves oval, white beneath, finely reticulated. Stipulas joined
into a short sheath. Flowers axillary, solitary, white, on short
pedicels, girded by 4 concrete bractæ, forming a kind of invo-
lucre to each flower.

1 S. buxifolia (Poit. l. c.). ♀ S. Native of St. Domingo,
Near La Vigue du Cap Francais.
Bor-leaved Stevensia. Shrub 10 to 12 feet.
Cult. See Naïcòa, p. 469, for culture and propagation.

VII. COUT'AREA (this name is not explained by Aublet).
—Portlandia species, Schreb.

Lin. syst. Hexandria, Monogynia. Calyx with a turbinately
oblong tube, and a 6-parted limb: having the segments sub-
ulate. Corolla large, funnell-shaped, with a short tube, an obcu-
cional ventricose throat, and a bluntly 6-lobed limb. Stamens
inserted at the bottom of the throat; anthers linear, much ex-
serted. Stigma funniform. Capsule coriaceous chartaceous,
ovate, compressed, 2-celled; valves bifiid at the apex. Pla-
centas spongy, at length nearly free. Seeds compressed, erect,
girded by a membranaceous margin. Embryo long, in fleshy
albumen: having a centripetal radicle, and flat cotyledons.—
South American trees. Leaves ovate, acuminate, on short
pedicels; stipples broad, short, acute. Peduncles usually trifid,
axillary, and terminal. Flowers white, sometimes septamorous.
This genus comes very near to Portlandia.

1 C. speciosa (Aubl. guian. 1. p. 301. t. 122.) leaves gla-
ebraous on both surfaces; peduncles trifid, 3-flowered; coro-
lla broad, funnel-shaped. ♀ S. Native of Guiana, Cayenne,
Island of Trinidad, and Carthagena, and between Caracas and
La Guaya, among bushes. Lam. ill. t. 127. Portlandia hex-
andra, Jacq. amer. 63. t. 182. f. 20. Swartz, fl. ind. occid. 1.
p. 385. The tree is much branched at the top. Corolla large,
purple. ex Aubl.
2 C. campanilla (D. C. prod. 4. p. 350.) leaves glabrous above, but villous beneath as well as the calyces and peduncles; peduncles trifid, 3-flowered. 

Native to South America, about the Carolinas, where it was collected by Vargas, who says it is called Campanilla by the natives. Flowers and fruit one half smaller than those of S. speciosa, and the capsule is less compressed, and ribless.

Campanilla Coutarea. Shrubs 3 to 4 feet.

3 C. Mexicana (Zucc. et Mart. in linn. 1820. ex D. C. prod. 4. p. 350.) leaves glabrous on both surfaces; peduncles 1-flowered, biretacteolate at the base; corolla funnell-shaped, with very blunt lobes. Native to Mexico.

Mexican Coutarea. Shrub or shrub-tree.

† Species hardly known.

4 C. latifolia (Moc. et Sesse, fl. mex. icon. ined, ex D. C. prod. 4. p. 350.) pedicels 1-flowered, bracteolate; the diameter of the flower equal to its length. Native to Mexico, where it is called Copalchi by the natives. Leaves oval, attenuated at the base. Pedicels axillary, usually twin. Corolla white. Stigma bilaminellate. Capsule less compressed, ornamented with 6 ribs and scattered tubercles.

Broad-flowered Coutarea. Shrub or shrub-tree.

5 C. flavescens (Moc. et Sesse, l. c. ex D. C. l. c.) pedicels numerous, bracteolate; the diameter of the flower almost one half smaller than its length. Native to Mexico. Superior leaves sometimes by threes, oval, attenuated at the base. Pedicels 3 in a whorl, twice bifid, only bracteate under the ramifications. Flowers yellowish, smaller and narrower than in the preceding species.

Yellowish-flowered Coutarea. Shrub or shrub-tree.

Cult. For culture and propagation see Nauclea, p. 469.


Lin. syst. Tetra-Heptandria, Monogynia. Calyx with an ovate tube, girded by a 2-4-leaved involucel at the base; limb 6-parted; segments narrow, acute, permanent. Corolla with a long terete tube, a short ventricose throat, and a 6-6-parted limb (f. 85. b), with spreading flat oval lobes. Stamens 4-6, sessile beneath the mouth of the tube, inclosed (f. 85. c). Stigma thick, bifid (f. 85. d). Capsule elongated, 2-celled, crowned by the limb of the calyx; cells dehiscing from the top inside. Placentas 2, central. Seeds imbricated downwards, rather compressed, each ending in a pencil-formed tail (f. 85. e). Embryo straight, in a sparing fleshly albumen; having the radicle turned towards the hilum. Small glabrous shrubs or subshrubs. Leaves obovate, green, rather fleshy. Stipulas oval, membranous, foliaceous, deciduous, the 2 upper ones constituting an involucre. Flowers terminal, solitary, elongated, white. Fruit follicle-formed.

1 H. longiflora (Swartz. obs. p. 135. t. 5. f. 1.) flowers hexa- drous; corollas 6-cleft, with linear-lanceolate, rather revolute segments. Native to Jamaica, Guadaloupe, Martinico, Cuba, the hotter parts of Mexico, on the decayed parts of old trees, and among moss. H. parasitica, vol. iii.

Jack. amer. p. 96. t. 66. Perhaps there are two species confused under this name. Lobes of calyx, ex Jacq. 6, but according to Swartz 2-4, and in the specimens examined only 2. The involucel, according to Swartz, is 6-leaved, but according to Jacquin and the specimen examined only 2-leaved, constantly composed of the 2 superior stipulas. The branches, according to Swartz and Jacquin, are terete, but according to the figure in the fl. mex. and the specimen examined tetragonal. In the figure of bot. mag. t. 721. the branches are round, the leaves ovate, smooth; 2-leaved, limb of the corolla of 6 twisted segments, and the limb of the calyx apparently 6-cleft. The flowers are white and very fragrant.


2 H. Brasilien'ssis (Cham. et Schlecht. in Linnaea. 4. p. 201) corollas 6-cleft, hexagonal; segments ovate-lanceolate, obtuse. Native to Brazil. Leaves oval, acuminate. Tube of corolla 3 inches long.

Brazilian Hillia. Shrub.

3 H. tetandra (Swartz, fl. ind. occ. 1. p. 630. icon. t. 11.) flowers 4-cleft, tetragonal; segments ovate. Native to Jamaica, on the high mountains among the roots of bushes. Leaves obovate, pale green. Roots creeping, tuberous. Lobes of calyx 4, emu cata-oblung, of which are deciduous. Leaves of involucel 4, 2 of them smaller than the other two. Flowers yellowish-white, having the tube nearly an inch long and tetragonal. Seeds papose at the apex.—Perhaps H. Tuxtliensis. Moc. et Sesse, fl. mex. ined., which was collected about Taxulna in Mexico, is distinct from this species, in consequence of the calyx being 2-lobed, and the involucel 2-leaved.


Cult. The species of this genus delight in a mixture of turfy loam, peat, and sand; and cuttings will soon strike root in the same kind of soil, or in sand under a hand-glass, in heat.

IX. HYMENOPOGON from hymen, a membrane, and pagon, a beard; the seeds are furnished with a membranous appendage at each end. Wall. in Rosb. fl. ind. 2. p. 156. D. C. prod. 4. p. 331. but not of Beauv.


1 H. parausiticus (Wall. l. c.) Native to the East Indies, growing on trees, and sometimes on rocks, on Sheepore, Chandagiri, near Hetouna, and between that place and Chittagong. Stems rooting, as well as the branches, covered with pale ash-coloured bark. Leaves 5-7 inches long. Seeds linear, smooth, terminated by a long linear membranous, sometimes bifid appendage, measuring altogether 3 lines in length.

Parasitic Hymenopogon. Shrub.

Cult. See Hillia above for culture and propagation.

X. CINCHO'NA (said to be named in honour of the Countess de Chinchon, vice queen of Peru, who was cured of a fever 3 P


§ 1. Capsule dehiscing at the base.—Normal species.

1 C. lanceolata (Ruiz et Pav. fl. per. 3. p. 1. t. 23.) leaves oval - lanceolate, acute, nated on both surfaces, as well as the branches, shining; panicle bractiate, much branched, smooth; calyceal teeth ovate, acuminate; segments of corolla linear-lanceolate; stigma emarginate; capsule ovate, ribbed. 7. S. Native of Peru, in the mountains of Loxa, and other cold mountainous regions; as well as of New Granada, between Guaduas and Santa Fe de Bogota, where it was collected by Mutis. C. lancifolia, Mutis, period. de Santa Fe, p. 465. Humb. in mag. der. gesell. nat. fr. berl. 1807. p. 116. Alib. tract. des fleurs, p. 374. C. nitida, Ruiz et Pav. fl. per. 2. p. 50. t. 191. C. angustifolia, Ruiz et Pav. quin. suppl. p. 11, with a figure. C. glabra, Ruiz, quin. 2. p. 64. C. Cucumaeifolia, Pavon, miss. Quinquina orange, Mutis, quin. Cascarilla officinalis, Ruiz, quin. p. 56. Cascarilla Lampro, Ruiz, quin. 2. p. 64. C. Cinchona Condamine, Humb. et Bonpl. pl. equin. 1. p. 33. t. 10. Humb. in mag. der. gesell. nat. fr. berl. 1807. p. 112. nov. gen. amer. 3. p. 490. C. officinalis, Lin. syst. veg. cd. 10. p. 929. Condamine in mem. de l'Academie de Paris, 1738. p. 114. Lam. ill. t. 164. f. 1. Vahl. skrilt. af. natur. selfkob 1. t. 1. Lamb. mon. t. 1. C. stupca, Pav. miss. Cascarilla fina de Urutapinga of the Spaniards. This species varies extremely in the form of the leaves. The celebrated Mutis has, with great propriety, considered his C. lancifolia the quina Naranganda or Quinquina orange of Santa Fe, as identical with the Quina fina de Urutapinga of Humb. et Bonpl. C. Condaminea. Although it is probable that several species of this important genus afford the Peruvian bark of the shops, of these three only are admitted into our national pharmacopoeias, to which the names of C. lanceolata, C. oblongifolia, and C. cordifolia have been applied, designating respectively the pale, the red, and the yellow bark. The present species was first described and figured by the astronomer Con- damine in 1738, in the mem. de l'Academie. It is described by Humboldt as a handsome tree of from 30 to 40 feet in height, and exuding wherever it is wounded a yellow astringent juice. The stipulas are acute and silky. The flowers are of a very pale rose-colour, supported on pedicels, which are powdered and silky, as well as the calyx. The tube of the corolla is silky, and the border white and woolly above. This is the pale bark of the shops.

Lancolate-leaved Cinchona or Pale Peruvian-bark. Tree 30 to 40 feet.

2 C. cordifolia (Mutis, miss. Humb. in mag. &c. p. 117. nov. gen. amer. 3. p. 401.) leaves roundish-ovate, coriade at the base or attenuated, rather pilose beneath and on the branchlets, naked and shining above; panicule brachiate, diffuse, pubescent; teeth of calyx roundish-mucronulate; corolla silky on the outside; limb bearded; stigma 2-lobed; capsule oblong-ovate, cylindrical, ribless. 7. S. Native of Peru, on the mountains of Loxa, in the kingdom of Quito; and of New Granada. Rhode, mon. p. 58. Steph. and Church. med. bot. 3. t. 175. Quina amarilla. Genitals inclosed. Flowers pale red. This species is totally distinct from Cinchona purpurascens, hisrita, and ovata of Fl. peruv., which Humboldt and Bonpl. in their before-mentioned work have given as synonyms of Mutis's plant. It differs from C. ovata, Ruiz et Pav. the C. pubescens of Vahl, with which it has the greatest affinity in the shorter pedicels, by the broader round teeth of the calyx, by the filaments being twice longer, and, lastly, by its capsules being smooth, and without ribs. The bark of this tree is known to the natives by the name of Quina amarilla, Cascarilla de Loxa, and Cascarilla amarilla, and is the yellow or orange bark of the shops. It is described as a middle-sized tree, with a trunk of moderate thickness, and covered with smooth brownish bark; the younger branches are quadrangular. All the species of Cinchona vary very much in the shape and smoothness of their leaves, according to the altitude in which they grow, to the severity or mildness of the climate, to the trees standing single, or being closely surrounded by other plants, to the luxuriance of growth, and the greater or less humidity of the soil. Coriade leaves occur but seldom in the present species; however, almost every branch exhibits some of them.

Cinchona bark appears to have been long known as a medicine in Peru; but we have not a satisfactory account at what period, nor by what means, the febrifugal virtues of this valuable remedy were first discovered. Some say a patient had been cured of an intermittent fever by having drank the water of a lake, which had acquired a bitter taste from Cinchona trees which had lain in it; others that a lion had cured himself of the ague by instinctively chewing Cinchona bark, and had directed the attention of the Indians to this tree. “That animals,” observes Humboldt in his Dissertation on the Cinchona forests of South America, "have taught men is a very common form of the traditions of nations. The valuable antedote Bijuco del Guaco, a plant described by Mutis, which is probably a species of Milkan, and has been erroneously confounded with Agapina of Brasil, is also said to have attracted the notice of the Indians, as is affirmed of the Falco serpentaries, by the Falco Guaco of New Granada fighting with serpents. However, that the great American lion without mane (Félix concolor) should be subject to the ague is just as bold an hypothesis as the assertion of the inhabitants of the pestential valley, Gualla Bamba, near the town of Quito, that even the vultures (Fittur nitra) in their neighbourhood were subject to that disorder. Indeed in the regions of the Cinchona forests there is not a Félix concolor, so fond of warmth, to be found; but at the most the cat Puma, not yet properly described, and which we have met with in heights of 2,500 toises. The story so often copied
respecting the Countess Chinchon, vice-queen of Peru, is probably still more doubtful than it is generally supposed to be. There certainly was a Count Chinchon, Don Jeronimo Fernandez de Cabrera Bobadella y Mendoza, who was Viceroy of Lima from 1629 to 1639. It is very probable that his wife, after her return to Spain in 1640, was the first to introduce the Cinchona bark to Europe. The name of Pulvis Committitiva appears even more ancient than that of Pulvis Jesuinitca or Pulvis patrum. But I do not believe that the Corregidor of Loza, Don Juan Lopez de Cunllores, who is said to have cured the Countess of ague, received this remedy from the Indians. In Loza there is no tradition whatever of this kind, nor is it probable that the discovery of the medicinal power of the Cinchona belongs to the primitive natives of America; if it is also considered that these natives (like the Hindoos) adhere with unalterable pertinacity to their customs, to their food, and to their nostrums; and that notwithstanding all this the use of the Cinchona bark is entirely unknown to them in Loza, Guatemala, and far around. In the deep and hot valleys of the mountains of Cata-mango, Rio Calvas, and Macara, agues are extremely common. But the natives there, as well as in Loza, of whatever cast, would die rather than have recourse to Cinchona bark, which, together with opiates, they place in the class of poisons, exciting mortification. The Indians cure themselves by lemonade, by the oleaginous aromatic oil of the small green wild lemon, by infusions of Sceoparia dolicis, and by strong coffee. In Malagatica only, where many bark-peeters live, they begin to put confidence in the Cinchona bark. In Loza, there is no document to be found which can elucidate the history of the discovery of the Cinchona; an old tradition, however, is current there, that the Jesuits, at the felling of the wood, had distinguished, according to the custom of the country, the different kind of trees by chewing their barks; and that on such occasions they had taken notice of the considerable bitterness of that of the Cinchona. There being always medical practitioners among the missionaries, it is said they had tried an infusion of the Cinchona in the tertian ague, a complaint which is very common in that part of the country. This tradition is less improbable than those of the majority of European authors, and among them the late writers Ruiz and Pavon, who ascribe the discovery to the Indians. The medicinal powers of the Cinchona was likewise entirely unknown to the inhabitants of the kingdom of New Granada."

Cinchona bark is stripped from the trunk and branches in the dry season, from September to November; it is dried by exposure to the sun, and after being imported into Europe is sorted for sale. It is brought to this country in chests, each of which contains from 100 to 200 pounds weight of bark, mixed with dust and other impurities. According to Humboldt, the quantity of this drug annually exported from America is from 12,000 to 14,000 quintals. The kingdom of Santa Fe furnishes 2000 of these, which are sent from Cartagena; 110 are furnished by Loza, and the provinces of Huamanga, Cuenca, and Jean de Bراقamoros, and the thick forests of Guaneabamba and Ayavaca, furnish the rest, which is shipped from Lima, Guayaquil, Payta, and other ports on the South Sea.

The pale bark of the shops, the Quina Naranjada, and Cascarilla fina de Cuitsanga of the Spaniards, which is obtained from C. lanceolata, is preferred in South America to all the other kinds of bark. It is in pieces, 5 or 6 inches long, singly or doubly convoluted, externally of a greyish brown colour, to which crusts of lichens often adhere, and is internally when fresh broken of a bright cinnamon hue. There are often intermixed with this others of a coarser texture, thicker, and nearly flat, which appears to be obtained from the trunk and larger branches. The fracture is smooth and even; its powder is of a pale colour; its taste is bitter and astringent; its smell peculiar and aromatic.

The yellow bark, named Quina amarilla, Cascarilla de Loza, and Cascarilla amarilla, is less rolled than the pale bark, and the pieces are larger and thicker. Externally it is of a greyish brown, and covered with lichens; internally of a much deeper orange than the pale bark. It has a more bitter taste, with a less aromatic odour, and with scarcely any sensible degree of astringency.

The red bark is sometimes rolled, but more commonly in flat thick pieces, covered with rough entire reddish brown epidermis. It has a smooth fracture. It is composed of three layers; the inner one being of a dark ferruginous colour, is more bitter and astringent than the pale and yellow bark.

These three kinds of bark are only distinguished in Britain; but M. Von Bergen, a drug broker of Hamburg, who has written a valuable monograph on the Cinchonas, enumerates eight kinds as distinguished in commerce; and the drug merchants of Spain enumerate about 50 different kinds of bark: these are probably obtained from as many species of Cinchona, or several of them may be obtained from the same species—the difference depending upon the age, state, and habitats of the trees.

Qualities and chemical properties.—Few vegetable substances have undergone so many analyses, by the most eminent chemists, as the different varieties of Peruvian bark. The basis of all of them is woody fibre, combined with which are various principles capable of being abstracted by different solvents. The taste of all is more or less bitter and astringent. Boiling water extracts all their active principles, affording a solution of a pale brown colour; this infusion is transparent when hot, but on cooling becomes turbid, and a precipitate is deposited, which is soluble in alcohol. The decoction has a very astringent taste, and a deep brown colour. By long boiling the virtues are nearly destroyed, owing to the chemical change and precipitation of its active matter. Alcohol, in all its modifications, is a powerful solvent of the active principles of Cinchona. A saturated solution of ammonia is also a solvent of them, but acetate acid acts less imperfectly than even water. Vauquelin found that an infusion of the pale bark reddened litmus paper; was copiously precipitated by solution of galls, and in a smaller degree in yellowish flocculent flakes by solution of isinglass. A solution of tartar emetic was rendered turbid, and slowly precipitated by it; solution of superacetate of lead produces quickly a copious precipitate. The addition of a solution of the sulphate of iron to the infusion changed the colour to a bright olive green, but was scarcely precipitated. The powder macerated in sulphuric acid afforded a golden yellow tincture, which reddened litmus paper, and left a pellicle of bitter resin when evaporated on the surface of water, to which it gave the colour of the tincture. This coloured water did not precipitate the solution of galls and of tartar emetic, and occasioned no precipitate on the addition of the solution of sulphate of iron. With alcohol it produced a deep orange coloured tincture, which precipitated sulphate of iron, tartrated antimony, and tannin. The agency of the different menstrua on the red and yellow varieties of the Cinchona produce nearly the same results as on the common or pale bark. The filtered solution of yellow bark has a pale golden hue, with a shade of red; it is bitter, reddens litmus paper, and precipitates solution of galls. On adding a solution of isinglass, a pinkish yellow precipitate is produced; superacetate throws down a precipitate; tartrated antimony gives a precipitate in pale yellowish flakes. A solution of the sulphate of iron changes its colour to a bluish green, and slowly lets fall a precipitate of the same colour. The aldeollic tincture appears to have an affinity respect the same as that afforded by the pale bark. The red bark has a more nauseous taste than the barks of the other species.
The aqueous infusion is of a pale ruby colour; its action on the solutions of galls and of isinglass is nearly the same as those of the two former species, but it is not altered by tartarised antimony, nor by the superacetate of lead; and the solution of iron occasions a dirty yellow colour only, little being precipitated. The alcoholic tincture is of a deep brownish red colour, and precipitates the solution of the sulphates of iron and of tartarised antimony; the former of a black colour, and the latter red. From the experiments of Vaquelin, Fabroni, and others, it appears that the active principles of Cinchonas consist chiefly of cinchonine, resin, extractive gluten, a very small portion of volatile oil, and tannin. Vaquelin has determined the presence of a peculiar acid, to which he gives the name of kinic acid, in some varieties of the bark. The following are the most important results that have been obtained by MM. Pelletier and Caventon, respecting the composition of the three official species.—1st, In pale bark they found aciddulous kinate of cinchonine, a green fatty matter, which they term red cinchonine; tannin, a yellow colouring matter, kinate of lime, gum, starch, and woody fibre. 2nd, In yellow bark they found that the alkaline base differs from cinchonine in being uncrystallizable, very soluble in ether, and forming salts with the acids very different from those of cinchonine. The chemical constituents of the yellow bark are an aciddulous kinate of this salt, which they have named quinine, a deep yellow fatty matter, red cinchonine, tannin, yellow colouring matter, kinate of lime, starch, and woody fibre. 3rd, Red bark contains aciddulous kinate of cinchonine, kinate of quinine, red cinchonine, tannin, kinate of lime, yellow colouring matter, starch, and woody fibre. The difference between the pale, the red, and the yellow barks, depends principally on the quantity of the two alkaline bodies, cinchonine and quinine, found in them. The pale bark contains cinchonine, but a very small portion of quinine; the alkalii, again, which predominates in the yellow bark, is quinine; while in the red bark, and some spurious kinds, there is a combination of both these substances. The presence of cinchonine, as a distinct vegetable principle, was first discovered in Peruvian bark by Dr. Duncan, of Edinburgh. The separation of cinchonine from the pale bark, and of quinine from the yellow bark, is a very simple operation. It consists in digesting the bark, coarsely powdered, in weak sulphuric acid, and then to repeat this digestion with about half the quantity of liquid, till all the soluble matter is extracted. To this decoction a small quantity of powdered slacked lime is added, somewhat greater than is necessary to saturate the acid; the precipitate that ensues (a mixture of cinchonine and the sulphate of lime,) is collected, dried, and boiled for a few minutes in alcohol, which takes up the cinchonine, but will not dissolve the sulphate of lime; the solution is decanted off while still hot, and fresh portions successively added for the repetition of the same operation, until it ceases to act on the residuum, which is then merely sulphate of lime. The different alcoholic solutions are then put into a retort, and considerably evaporated, during which and on cooling acicular crystals of cinchonine are deposited. By repeating the solution once or twice, in boiling alcohol, and again crystallizing, the cinchonine will be obtained in a perfectly pure state. Its crystals are semi-transparent, have a pearly lustre, and are usually obtained in the form of small needles. It has but little taste, and requires 700 parts of water for its solution, but boiling alcohol dissolves it much more abundantly; it is sparingly soluble in oils and sulphuric ether. At a moderate heat it is partly volatilized, and partly decomposed. It combines with different acids, forming neutral salts. Mr. Brande found that it contained no oxygen, 100 parts consisting of about 80 parts of carbon, 13 of nitrogen, and 7 hydrogen. It has an intensely bitter taste, and exerts the same action on the animal economy as the bark itself, but it is less generally used in medicine than the other active principle of the bark, quinine, because the yellow bark from which it is procured is more plentiful; the quinine, therefore, is cheaper than cinchonine, and equally efficacious. Quinine may be obtained from the yellow bark in the same manner as cinchonine is prepared from the pale bark, or by adding an alkali to the solution of the sulphate of quinine. Quinine is not crystallizable like cinchonine, but on the application of heat it melts into a kind of paste. It has a much more bitter taste than the other, and is very sparingly soluble in water. They differ also remarkably in their chemical composition, cinchonine containing no oxygen, while in quinine there is a notable proportion of this element. According to Mr. Brande, it consists of about 5.55 parts of oxygen, 7.65 hydrogen, 13 nitrogen, 73.80 carbon. By digesting quinine in a weak solution of sulphuric acid, the sulphate of quinine is obtained, which is the salt now generally used for medicinal purposes. The most approved process for preparing this salt was pointed out by Mr. Henry. A kilogramme of bark (2 lbs. 3 oz. 5 dr.) is reduced to a coarse powder, and boiled twice for about a quarter of an hour in 1 or 1.5 pints of water, 2 ounces of sulphuric acid being added to it. In this manner the quinine, or the sulphate of quinine, are left in the solution. It is digested repeatedly in alcohol, till it no longer imparts any bitter taste to this fluid; the alcoholic solutions are then evaporated till a very bitter viscid substance is obtained, which becomes brittle as it cools. This is the quinine separated from almost all the other ingredients of the bark, and by digesting it in dilute sulphuric acid a solution of sulphate of quinine is obtained, which crystalsizes on evaporation. It is a white pulverent substance; it crystallizes in small white 4-sided prisms, which are distinguished by their pearly lustre. It is not very soluble, therefore not affording a very bitter taste; but by adding a drop or two of acid to the solution, its solubility is increased, and then it becomes intensely bitter. It is decomposed by the alkalies and earths; it volatilizes at a moderate heat, and it can unite with an excess of acid, forming a bisulphate of quinine. The sulphate of quinine is frequently adulterated with starch, pipe-clay, and various other substances. To determine its purity, the simple process of heating it is sufficient; if it evaporate entirely without charring and melting, it is pure; but if it should turn black or smell sweetish, it is probable that sugar or starch is present. Pure quinine is seldom used in medicine, but the sulphate possesses in a very eminent degree the medicinal properties of Peruvian bark, one grain, or one grain and a half, being equivalent to a draught of the bark in substance. In Paris it has superseded, in a great measure, the Peruvian bark, and is now extensively used in this country in all cases where that valuable medicine is indicated, in doses of from 2 to 5 grains.

Medical properties and uses.—Peruvian bark has been long known as one of the most powerful and valuable tonics we possess, and may be administered with great freedom in all cases where that class of remedies are indicated. The only effects of an overdose are headache and nausea. It also possesses antiseptic and astrigent powers in a very eminent degree, and is universally employed as a febrifuge in the cure of intermittent and remittent fever, in diseases of debility, such as typhus, erysipelae, in passive hemorrhages, confluent small pox, in dysentery, in some cutaneous diseases, as lichen agra, and livida, in purpura, in some varieties of erysipelas, in gangrene, in dyspepsia, and even in acute rheumatism and gout. The
decoction of yellow cinchona bark, given in large quantities, is
the best antidote to the poison of tartar-emetic.

**Cordate-leaved Cinchona** or Yellow Peruvian-bark. Tr. 30 to 40 ft.

3 C. **rotundifolia** (Pavon, miss. Lamb. cinech, p. 5.) leaves roundish, naked above and shining, pilose beneath and on the branchlets; panicle bractiate, pubescent; calycine teeth very short; corolla clothed by silky tomentum outside, with a bearded limb; style exerted; stigma bipartite; capsule linear, terete. ñ S. Native of Peru, in the forests of Loja, in the province of Cuenca. Segments of corolla ovate. Anthers shorter than the filaments. Lobes of stigma linear, flat, and obtuse. This is a very distinct species, being easily distinguished from all its congeners by its narrow cylindrical capsules, and by the narrow linear divisions of the stigma.

**Round-leaved Cinchona.** Tree 30 to 40 feet.

4 C. **ovalifolia** (Humb. et Bonpl. pl. equin. 1. p. 65. t. 19. nov. gen. 3. p. 403.) leaves oval or obovate, naked above and shining, but pilose on the veins beneath; calycine teeth ovate, acute; corolla clothed by silky tomentum outside, with a bearded limb; anthers twice longer than the filaments; stigma bipartite; capsules oval, constricted at the apex. ñ S. Native of Peru, in the forests of Loja, in the kingdom of Quito; Pavon; and on the Andes of Peru, near Cuenca; Humboldt and Bonpland. Panicle bractiate, pubescent. Flowers white. Segments of corolla linear. Lobes of stigma linear, obtuse. This species must not be confounded with the C. ovalifolia of Mutis, the C. macrocarpa de Vahl, or Quinquina blane of New Granadas, which are totally different.

**Oval-leaved Cinchona.** Tree 15 to 20 feet.

5 C. **Purpea** (Ruiz et Pav. fl. per. 2. p. 52. t. 193.) leaves oval or ovate, acute at the apex, and attenuated at the base, at length naked on both surfaces and shining; panicle corymbose, pubescent; anthers shorter than the filaments, but exceeding the throat; corolla clothed by silky tomentum outside, with a bearded limb; stigma 2-lobed, inclosed; capsules narrow, ovate-oblong, attenuated at the apex. ñ S. Native of the lower mountains of the Andes, in forests, at Chinchao, Pati, Muna, Casape, Casapillo, &c. (Pavon); and of the Andes of Peru, near the city of Jaen de Bracamoros. C. seroriculărís, Humb. et Bonpl. pl. equin. 1. p. 165. t. 47. nov. gen. 3. p. 492. Casapillo, Bracamoros and Casarcarla, Red. et Humboldt, bor. de Bogomorada, Ruiz, quinol. p. 67. Casarcarla bobo de Bogomorada. Corolla rose coloured. Capsule bisulcate, pubescent when young, but glabrous in the adult state. This is distinguished from the preceding species by its more acute smooth leaves; by its corymbic panicles; by its filaments being longer than the anthers, and their surpassing the throat of the corolla; by the capsules, which are ovate-oblong, narrowed, and without ribs; and, lastly, by the shorter and broader lobes of the stigma.

**Purple-flowered Cinchona.** Tree 40 feet.

6 C. **Fuscens** (Vahl, in act. havn. 1. p. 19. t. 2. Lamb. mon. t. 2.) leaves broad-ovate, or roundish-ovate, acute, on long petioles, rounded at the base or acutish, naked and shining above, but clothed with pilose tomentum beneath, as well as the branchlets: panicle bractiate, diffuse, clothed with rusty tomentum; corolla clothed by silky down on the outside, with a bearded limb; anthers almost sessile; stigma 2-lobed; capsule oval-oblong, obsolesly ribbed, tomentose. ñ S. Native of Peru, in forests on the lower mountains of the Andes, towards Puzuzo and Panao; and also of the forests of Huannaco, Ruiz et Pavon. C. ovata, Ruiz et Pav. fl. per. 2. p. 52. t. 195. Casarcarla pallida, Ruiz, quinol. p. 74. Casarcarla de Pato de Galgareta. Petioles 2 inches long. Teeth of calyx very short, acute. Corolla purplish outside and white inside, with ovate obtuse segments. Genitalis inclosed. Style exceeding the anthers. Lobes of stigma ovate.

**Pubescent Cinchona.** Tree 30 to 40 feet.

7 C. **morada** (Ruiz et Pav. fl. per. 2. p. 52. t. 194.) leaves broad, ovate or obovate, naked and shining above, but pilose in the axils of the veins beneath; panicle crowded, pubescent; anthers shorter than the filaments, hardly exerted; style very short; stigma 2-lobed; capsule elliptic, attenuated at the apex. ñ S. Native of the Andes of Peru, in cold elevated forests towards St. Antonio de Playa Grande, where it was first observed by John Tafalla. Corolla clothed with silky down on the outside, with a bearded limb, and ovate segments. Calycine teeth very short, acute. Lobes of stigma ovate. Capsule bisulate, ribless. This species has some affinity with C. Condamineae, but its small flowers, and elliptical ribless capsules, together with its very short style, and other marks, readily distinguish it.

**Small-flowered Cinchona.** Tree 20 to 30 feet.

8 C. **Humboldtiana** (Lamb. cinech. p. 7.) leaves lanceolate, acute at both ends, naked above, but villous beneath, as well as on the branchlets; panicle glomerate, villous; calycine teeth very short, acute; corolla clothed by silky down outside, with a bearded limb; anthers sessile, inclosed; stigma exerted, emarginate; capsules ovate, hairy, glomerate. ñ S. Native of Peru, in the kingdom of Quito, in forests near the town of Jaen de Bracamoros. Pavon. This is a strongly marked and very distinct species; there is none with which it can be confounded; it is the C. villosa, Pavon, miss.

**Humboldt’s Cinchona.** Tree 20 to 30 feet.

9 C. **Glandulifera** (Ruiz et Pav. fl. per. 3. t. 224.) leaves oval, acutish at both ends, naked and shining above, very pilose beneath, as well as on the branchlets; with undulated rather revolute margins; panicle bractiate, very pilose; corolla pilose outside, with a bearded limb; calycine teeth very short, mucronate; segments of corolla ovate; stigma emarginate; capsules ovate, drooping. ñ S. Native of Peru, in the kingdom of Quito, at Loxa, Pavon. C. microphylla, Mutis, miss. C. quercifolia, Pavon, miss. C. Mutisii, Lamb. cinech. p. 9. Anthers exerted, shorter than the filaments. Corolla white.

**Var. β**; leaves oval, obtuse, rounded at the base, and rather cordate. ñ S. C. quercifolia, var. crispa, Pavon, miss.

**Gland-bearing Cinchona.** Tree 10 to 12 feet.

10 C. **bisulca** (Ruiz et Pav. fl. per. 2. p. 51. t. 192.) leaves oval, acute at the base, base with bristly hairs, as well as the branchlets, veiny above, and at length naked; flowers glomerate, base with bristly hairs; calycine segments lanceolate, acuminate; corolla pilose outside, with a bearded limb; stigma 2-lobed; capsule ovate. ñ S. Native of Peru, on the Andes, in forests in cold elevated places, towards Piliao and Acomayo. Ruiz et Pavon. Casarcarla delgado, Ruiz, quinol. p. 60. Flowers red. Humboldt and Bonpland have confounded this with the C. cordifolia of Mutis, with which it has not the least resemblance.

**Hairy Cinchona.** Tree 20 to 30 feet.

11 C. **striocarpa** (Lamb. cinech. p. 12.) leaves lanceolate, acute at both ends, naked above, but pilose on the veins beneath; teeth of calyx ovate, acute; corolla clothed by silky tomentum outside, with a glabrous limb; anthers sessile; style very short; stigma emarginate; capsule linear, terete. ñ S. Native of Peru, in forests in the kingdom of Quito, near the city of Jaen de Bracamoros. Pavon. C. species nova, Pavon, miss. Panicle diffusely branched, pubescent. Segments of the corolla linear, obtuse. Very like C. Condamineae, but very distinct.

**Narrow-fruited Cinchona.** Tree.

12 C. **caduceiflora** (Bonpl. in pl. equin. 1. p. 167. H. B. et Kunth, nov. gen. amer. 3. p. 411.) leaves broad-obovate, acute at the base, naked and shining above, but pilose in the axils of the veins beneath; panicle bractiate, pubescent; calycine teeth ovate, obtuse; corolla clothed with silky down outside, having the limb glabrous above, and the segments linear-oblong; an-
thera a little exerted; style very short; stigma bipartite; capsulae oval-oblong. \( H \). S. Native of Peru, on the Andes, near the city of Jaen de Bracanoros. Humboldt and Bonpland. C. magnifolia, Humb. et Bonpl. pl. equin. p. 139. t. 39. exclusive of the synonyme of Flora Peruviana. Cascarilla bova of the Peruvians. Segments of corolla shorter than the tube. Lobes of stigma linear, flat. 

**Caudicaceae.** X. **Cinchona.**

§ 2. Capsule dehiscing at the apex.—*Mariana* species.

13. C. macroca BPA (Vahl, in act. harr. i. p. 26. t. 8. exclusive of the synonymes.) Lamb. mon. p. 22. t. 5.) leaves broad-elliptic, very blunt, densely clothed with rough tomentum beneath, as well as on the branches; calyx entire, with rather prominent teeth; corolla large, clothed by silky down outside, with a bearded limb, and lanceolate segments, which are recurved at the apex; genitals inclosed; stigma emarginate; capsule pear-shaped, tomentose. \( H \). S. Native of Peru, in the forests of Loxa, Guayaquil, and Cuenca; and of New Granada. C. ovalifolia, Mutis, miss. Humb. in mag. &c. p. 118. Cosminbiana species nov. Pavon, miss. Called Quina blanca, and Quinquima blane de Santa Fe. Corymb faw-flowered, Calyx unreperate, entire. Style furrowed. This species ought not to be confounded with the C. ovalifolia of Humb., to which it has not the least resemblance.

**Large-leaved Cinchona.** Tree 30 to 40 feet.

14. C. oblongifolia (Mutis, miss. Humb. in mag. &c. p. 118. Rhode, mon. p. 57, exclusive of the synonymes,) leaves oblong or cordate, densely clothed with scabrous hairs on both surfaces, as well as the branchlets; panicle bracteate, corymbose, scabrous from hairs; segments of corolla pilose outside, but glabrous inside, linear; genitals inclosed; anthers 3 times longer than the filaments; stigma bipartite; capsule ovate. \( H \). S. Native of Peru, in forests in the mountains of Loxa; and of New Granada, near Maraquia. H. B. @ Kunth, nov. gen. amer. s. p. 401. exclusive of syn. of fl. per. and Ruiz, quinol. Called Quina roga and Cinchona vulgo Azahar. Flowers white. This is a very distinct plant from C. magnifolia of Ruiz et Pav. It is distinguished from it by its leaves being rounded at the base, often coriace, covered on both sides with rough pilose tomentum, sometimes the older leaves, however, become nearly naked above; the corolla is covered on the outside with bristly pilose hairs, while that of C. magnifolia has short down, and in the shape of the capsules. 

**Oblong-leaved Cinchona.** Tree 12 to 20 feet.

15. C. magnifolia (Ruiz et Pav. fl. per. 2. p. 52. t. 196. but not of Humb. et Bonpl.) leaves broad-roundish-oval, naked and shining above, and densely clothed with tomentum beneath; panicle bracteate, corymbose, tomentose; calyx teeth short, acute; corolla clothed with silky tomentum outside, but having the limb glabrous above, and the segments lanceolate; anthers inclosed; style exserted; stigma bipartite; capsules linear, terete. \( H \). S. Native of Peru, on the Andes, in very hot places in forests, on the banks of mountain streams, at Chinecho, Cuchero, and Chacalolua. Ruiz et Pavon. C. oblongifolia, Steph. and Churchil, medi. bot. 4. t. 184. Cascarilla amarilla, Ruiz, quinol. p. 71. This species of Cinchona is regarded as yielding the red bark of the shops. Flowers white, sweet-scented.

**Large-leaved Cinchonia or Red Peruvian-bark.** Tree 40 ft.

16. C. Pavonii (Lamb. conch. p. 8.) leaves orbicular or cordate, naked above, but clothed with rusty tomentum beneath, as well as the branchlets; corymbs clothed with rusty tomentum; calyx unreperate, entire, obseletly dentilicate; tube of corolla very long, clothed by silky tomentum outside, with a bearded limb; anthers sessile; stigma deeply bipartite; capsules very long, terete. \( H \). S. Native of Peru, in the king-

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**Acute-leaved Cinchona.** Tree 20 feet.

18. C. hexandra; leaves large, oval, obtuse, clothed with ocharaceous villi beneath, as well as on the branchlets and flowers; corollas 5-6-cleft; stamens 5-6. \( H \). S. Native of Brazil, in mountain woods, in the provinces of Rio Janeiro and Minas Geraes. Bauhna hexandra, Pohl. pl. bras. i. p. 10. t. 8. China, Eschwege, Journ. bras. p. 86. Quino do Rio de Janeiro, mem. acad. Lisb. 3. pt. 2. p. 96. The bark is thin, of a bay colour on the outside, but blood-coloured within, very bitter, and is used by the Brazilians as a febrifuge, in place of Peruvian bark. Corolla purple. 

**Hexandra Cinchona.** Tree.

§ 3. Flowers disposed in interrupted elongated axillar racemes. Corollas villous on the outside. Capsules dehiscing from the apex. Seeds peltate, girded by a membranous wing.—*Remija*, C. bibl. urae, 1829. science, vol. 2. p. 185. prod. 4. p. 357. The species are called Quina de Serra or Quina de Remio throughout Brazil. 

19. C. ferruginea (St. Hil. append. voy. p. 8. pl. usuol. bras. 1. t. 3.) leaves oblong-lanceolate, rather narrow, coriaceous, clothed with rusty villi beneath, as well as the branches, with revolute margins; racemes interrupted, hardly branched; corolla tomentose outside. \( H \). S. Native of Brazil, in the province of Minas Geraes, on arid mountains. Remijia ferruginea, D. C. prod. 4. p. 357.—Macrocnemum no. 1. Velloz. in Vand. fl. 14. Leaves usually 3 in a whorl. The fascicles of flowers on the raceme are opposite. The bark is bitter and astringent, and is used in place of Peruvian bark in Brazil, under the names of Quina de Remio and Quina de Serra. 

**Rusty Cinchona.** Shrub 4 to 5 feet.

20. C. vellozii (St. Hil. pl. usuol. bras. p. 1. no. 2.) leaves ovate, coriaceous, acuminated at both ends, clothed with rusty villi beneath as well as on the branchlets; racemes interrupted, hardly branched; corolla tomentose outside. \( H \). S. Native along with the preceding. Remijia Vellozii, D. C. prod. 4. p. 357.—Macrocnemum, no. 2. Vell. in Vand. fl. p. 14. This differs from the preceding species in the flowers being on shorter pedicels, in the bracteae being less linear, and in the flowers being longer and more numerous. Fascicles of flowers on the racemes opposite. The bark of the species is used in Brazil in place of Peruvian bark, under the name of Quina de Serra. 

**Velloz's Cinchona.** Shrub 4 to 5 feet.

21. C. remijiana (St. Hil. pl. usuol. bras. p. 1. no. 2. in a note) leaves broad-elliptic, obtuse, cuspidate; the upper ones decurrent at the base, clothed with rusty villi beneath, as well as the branchlets; racemes interrupted, hardly branched; corolla
villous on the outside. ʃ. S. Native of Brazil, along with the two preceding species. C. Remyiühana, Spreng. Syst. 1. p. 705. Remújia Hilari, D. C. prod. 4. p. 357. Clusters of flowers opposite, on the raceme. The bark of this species is also used in place of Peruvian bark, under the name of Quina de Remijo.

Remijo's Cinchona. Shrub.

22 C. Candollei; leaves oblong, acute, attenuated at the base, undulated, coriaceous; panicles axillary,verticillately branched; the branches interruptedly racemose; corolla villous on the outside. ʃ. S. Native of Brazil. Remújia paniculátis, D. C. prod. 4. p. 357. Branches trigonal. Branches and branchlets of panicle angular. Leaves clothed with rusty down beneath, as well as the branchlets and panicle. Fruit unknown.

De Candolle's Cinchona. Shrub.

† Species not sufficiently known.

23 C. Pelaíeá (Pav. quinol. Incl. D. C. bibl. univ. 1829. &c.) leaves roundish, hardly apiculate, membranous, beset with velvety hairs on the petioles and on the nerves beneath, and velvety between the nerves, but puberulous above; stipulas oval, obtuse, equal in length to the petiole; panicle glabrous, much branched; fruit oblong-terete, crowned by the calyx, glabrous. ʃ. S. Native of South America, and probably of Peru. This is a very distinct species. Fruit 5-7 lines long. Stipulas an inch long.

Pelitala Cinchona. Tree.

24 C. Muzoneínsis (Goudot, in phil. mag. 1828. febr. p. 132.) leaves ovate-oblong, acute, attenuated at the base; stipulae revolute; panicle bractiále; corolla white, with a bearded limb. ʃ. S. Native of Columbia, in the extensive forests about the town of Muzo.

Muzo Cinchona. Tree.

25 C. Lambertaína (Mart. in bot. zeit. no. 7. p. 119. 1831.) leaves petiolate, oval, rather cordate, bluntish, glabrous above and shining, soft and opaque beneath, and pilose on the nerves; cymes compound, terminal; fruit cylindrical, ribbed, glabrous, dehiscing on one side; seeds girded by a narrow jugged margin. ʃ. S. Native of South America, on the banks of the Amazon.

Lambert's Cinchona. Tree.

26 C. Bergiaína (Mart. in bot. zeit. no. 7. p. 119. 1831.) branches and all the younger parts of the tree clothed with rusty hairs; leaves oblong-lanceolate, tapering into the short petioles, flat; thryse axillary, interrupted, bracteate at the base; capsule oblong-cylindrical. ʃ. S. Native of South America, on the banks of the Amazon.

Bergia's Cinchona. Tree.

 Cult. All the species of this very interesting genus are grown with great difficulty in the stoves of our gardens. The best soil for them is a mixture of turfy loam and sandy peat. Cuttings should be taken off when ripe, and planted in a pot of sand, which should be plunged under a lead-glass in a moist heat.


LIN. SYST. Pentándria, Monogyónia. Calyx 5-toothed. Corolla tubular, with a 5-toched limb, which is imbricate in aestivation. Stamens exserted; filaments bearded in the middle; anthers roundish, peltate; cells loosened at the base. Stigma 2-toched. Capsule 2-celled, dehiscing in the middle of the cells, many-seeded; having the dissepiment complete. Seeds small and narrow.—A tree, native of Peru, with pinnate inflorescence.

1 L. Es'ea (D. Don, in Lin. trans. vol. 17. incl.). ʃ. S. Native of Peru, on the Andes at Pozuzo, and in the tract of St. Antonio de Playa Grande. Cinchona rosa, Ruiz et Pav. fl. per. 2. p. 54. t. 139. Cinchona Tarantárum, Pavon, miss. Cascarilla Pardo, Ruiz, quinol. p. 77. Leaves lanceolate-ovate, acute at both ends, naked, and shining on both surfaces. Paniècle crowded. Corolla tubular, rose-coloured: segments broad-
ovate. Capsules ovate, bisulcate, glabrous. Humboldt, on the authority of Zea, has joined this with Cinchona lanceifolia of Mutis, with which it has not the least affinity. Called *Asmonich* in Peru.

Rose-coloured-flowered *Lassionema*. Tree.

*Cult.* See *Cinchona*, p. 479, for culture and propagation.

**XIII. LUCULIA (Luculi swa is the name given to the tree by the Nipaulse).** Sweet, brit. fl. gard. t. 143. D. C. prod. 4. p. 357. D. Don, in *Lin. trans.* vol. 17. *Ined.*

Lin. syst. *Pentandra*, *Monogynia*. Calyx 5-parted (f. 87. c.). *Stipulas* (f. 87. b.), segments foliaceous. Corolla tubular, with a 5-lobed limb, which is imbricate in restoration. Stamens almost inclosed (f. 87. a.). Anthers linear. Stigma bipartite (f. 87. b.). Capsule 2-celled (f. 87. b.), dehiscing at the dissection from the apex, many-seeded, crowned by the calyx. Seeds samaroid, surrounded by a jagged membranous margin.—A tree, native of Nipaul: having cyanose bracteate inflorescence.


*Cult.* A very good rich light soil will suit this tree; and cuttings may be rooted in sand under a glass-house, but with great difficulty.


Lin. syst. *Pentandra*, *Monogynia*. Calyx 5-toothed. Corolla tubular, with a 5-cleft limb, which is pleated in restoration. Anthers linear, exerted. Stigma 2-lobed. Capsule 2-celled, dehiscing at the cells, many-seeded; valves venteriose, membranous. Dissection complete. Seeds girded by a membranous, reticulated border, which is biiid at the base.—Trees, natives of the East Indies, with compressed branches: coriaceous, petiole leaves; deciduous, glandularly ciliate stipulas; and small, inconspicuous, greenish, pubescent flowers, disposed in fascicles, the whole forming racemoce panicles. Floral leaves one under each branch of the panicle, lanceolate, convex, venous, on long petioles, similar to the large calyceal teeth of *Musse-n*da, but placed in a different situation.

1 H. _exclu'sum_ (Wall. in *Roxb. fl. ind.* 2. p. 358.) leaves oblong, downy: floral ones coloured and blistered; stipulas ciliate, serrated; panicles axillary and terminal; anthers almost sessile in the mouth of the tube; partition of capsule contrary. E. S. Native of the East Indies, in the mountainous parts of the Circars, and chiefly of the valleys, where it grows to be a large tree. It is called *Bandarao* in the Tehsiga language. *Cinchona excldens*, *Roxb. cor.* 2. p. 3. t. 106. Tratt. tab. t. 170. The lower pair, or two of the ramifications of the panicle, are ornamented each with a pair of coloured floral leaves. Panicles terminal, large. Flowers fasicelled, small, greenish white. The infusion of one fresh leaf in water all night had little taste, but struck quickly a deep purplish blue with a chalybeate. The two inner coats of the bark (the outer light spongy stratum is tasteless) possess both the bitterness and astringency of Persian bark, and when fresh in a stronger degree: the bitterness is not so quickly communicated to the taste as chewing the bark, as that of the former, but is much more durable, and chiefly about the upper part of the faxes. The wood is firm, close-grained, of a pale mahogany colour, and very useful for many purposes.

**Tell Hymenodictyon.** Fl. July, Aug. Ch. 1820. Tree 20 to 50 feet.

2 H. _thyrsi-flor'um_ (Wall. in *Roxb. fl. ind.* 2. p. 151.) leaves ovate, downy, pale beneath: the floral ones coloured and reticulated; thryse terminal and axillary, drooping; stipulas oblong, fringed with coloured glands; limb of corolla urceolate; partition of capsule contrary. E. S. Native of the East Indies, in the interior parts of Bengal. *Cinchona thyrsiflora*, *Roxb.* Branches forming a large ovate head to the tree. Leaves from 2-8 or 10 inches long. Thryse very dense. Flowers small, greenish yellow, fasicelled. The floral pair or two of leaves are on longer petioles than the rest.

**Thyra-flowered Hymenodictyon.** Fl. June, July. Ch. 1819. Tree 20 to 30 feet.

3 H. _fla'cicircum_ (Wall. in *Roxb. fl. ind.* 2. p. 152.) leaves ovate-elliptic, smooth, and shining above; stipulas oblong-spata
tulate, ciliate; racemes axillary, slender, pendulous; capsules oblong. E. S. Native of the East Indies, on the north side of the preceding species, towards the bottom; and in the valley of Noakote. Leaves from 6-10 inches long: having the margins slightly waved. Common peduncle pubescent, bearing a hardly coloured, lanceolate-oblong, pubescent, reticulated floral leaf, which is convex on the upper side, and concave on the under. It comes very near the preceding species, but differs, however, in having broader, elliptic, downy leaves, and much thicker both terminal and axillary subcompound racemes; its capsules too are much broader.

**Flaccid Hymenodictyon.** Tree 20 to 30 feet.

4 H. _obovat'um_ (Wall. in *Roxb. fl. ind.* 2. p. 153.) leaves obovate, acuminated, smooth: floral ones lanceolate, acuminated, reticulated, convex, glaucous; stipulas ovate, acute, glandularly ciliate; racemes axillary and terminal, a little branched, erect. E. S. Native of the East Indies, and perhaps of Wynaad. Young shoots green, much compressed. Rachis of peduncles villous. At the apex of each peduncle there is a floral palmill leaf, 2 inches long, convex and a little rugose above: glaucous and concave, beautifully veined, and rather pubescent beneath.

**Obovate-leaved Hymenodictyon.** Tree.

*Cult.* See *Cinchona*, p. 479, for culture and propagation.


segments, which are induplicate in aestivation. Stamens exserted; anthers narrow-linear, having the cells adnate at the base. Stigma undivided. Capsule 2-celled, dehiscing at the discission from the apex, many-seeded. Seeds girded by an entire membranous border.—Trees or shrubs, usually glabrous. Leaves oval or lanceolate, on short pedioles. Stipulas solitary on each side. Peduncles axillary and terminal. Flowers white or reddish. The disks of all the species are destitute of quinine and cinchonine, according to St. Hilaire.

SECT. I. Pito'nia (the bark of some of the species is called Quinquina Piton in the Antilles). D. C. prod. 4. p. 559. Limb of calyx parted almost to the base into teeth of various lengths. Corolla glabrous; having the tube longer than the segments. Stigma undivided.—Species all natives of the Caribbean Islands. The bark is fibrifugal, somewhat emetic, and is sold in the shops under the name of Quinquina Piton of the Antilles.

1 E. Caribae'um (Rom. et Schultes, syst. 5. p. 18.) leaves ovate-lanceolate, acuminate, glabrous; pedicels axillary, 1-flowered, rather shorter than the pedioles; calyx bluntly 5-toothed; style and stamens about equal in length to the corolla. ♀. S. Native of the Caribbean Islands, Guadaloupe, St. Domingo, Jamaica, Santa Cruz, &c.; and of Mexico. Chinchona Caribae'a, Jacq. amer. t. 179. f. 65. obs. 2. t. 17. Lamb. mon. t. 4. Lamb. from Linn. 26. t. 4. Chinchona Javanica, Wright, in roy. soc. trans. Lond. p. 67. p. 504. t. 16. Andr. bot. rep. t. 481. Flowers white, sweet-scented, about the length of the leaves; but according to Jacquin they are pale flesh-coloured. Stamens, according to Andrews's figure, shorter than the segments of the corolla. Dr. Wright says that the jessuit's bark of Jamaica rises only to 20 feet, with leaves of a rusty green colour; and the young buds of a bluish green hue. The bark is generally smooth and grey on the outside, though in some rough and scabrous, when well dried, and the inside of a dark brown colour. Its flavour is at first sweet, with a mixture of the taste of horse radish and of the aromatics of the East, but when swallowed of that very bitterness and astrigency which characterises the Peruvian bark. It grows near the sea shore, and is called in Jamaica Sea-side beef.


2 E. longi'flore'num (Rom. et Schultes, syst. 5. p. 18.) leaves linear-lanceolate, attenuated at both ends, glabrous; pedicels axillary, very short; teeth of calyx long, linear-lanceolate, glabrous; corollas 3 or 4 times longer than the leaves. ♀. S. Native of St. Domingo. Chinchona longiflora, Lamb. mon. p. 38. t. 12. exclusive of the synonymes. Flowers white, 5 inches long before expansion; segments linear; tube very long.


3 E. canes'cens (Bartr. in herb. Hänke, ex D. C. prod. 4. p. 559.) leaves ovate-oblong, acuminate, canescent from villi on both surfaces as well as on the branchlets; pedicels axillary, 1-flowered. ♀. S. Native of Mexico. The canescent down on the leaves, branches, pedicels, and young fruit distinguishes it from all the other species. Flowers unknown. Capsule naked at the apex, not crowned by the calyx. Pedicels length of fruit.

Canescent Exostemma. Tree.


cinchonum, white, about the size of those of E. Caribae'um, sweet-scented.

Narrow-leaved Exostemma. Tree. 10 to 15 feet.

5 E. cori'ceum (Rom. et Schultes, syst. 5. p. 20.) leaves ovate, scarcely acute, coriaceous, glabrous on both surfaces, shining; branches and flowers glabrous; pedicules axillary, 2-3-flowered; teeth of calyx short, acute; corollas about the length of the leaves; capsules ovate, smooth. ♀. S. Native of St. Domingo. Cinchona coriacea, Poir. dict. 6. p. 38. Pedicules 2 or 3 times shorter than the leaves. Seed girded by a membranous wing. Corolla glabrous, 2 inches long, with a terete tube and narrow reflected segments. Branches of panicle dichotomous.

Coriaceous-leaved Exostemma. Tree.

6 E. lineate'um (Rom. et Schultes, syst. 5. p. 15.) leaves ovate, acuminate, and are as well as the branches and flowers glabrous; pedicules terminal, cinchobose; calyx segments linear; capsule pentagonal. ♀. S. Native of St. Domingo. Cinchona lineata, Vahl. symb. 2. p. 27. act. hist. nat. hafn. 1. p. 20. t. 4. Lamb. mon. p. 26. t. 6. Panicle cinchobose, terminal, trichotomous. Leaves marked with lines on the upper surface. Flowers an inch long, white.

Lineated-leaved Exostemma. Tree. 20 to 30 feet.

7 E. parvi'folium (Rich. in Humb. et Bonpl. pl. eqnin. 1. p. 132.) leaves ovate, mucilaginous, furnished with porose glands in the axils of the nerves; pedioles, branches, and pedicules pubescent; fascicles of flowers axillary and terminal, crowded; teeth of calyx short. ♀. S. Native of the Caribbean Islands.

Small-flowered Exostemma. Tree.

8 E. brachya'rium (Rom. et Schultes, syst. 5. p. 19.) leaves elliptic, obtuse, and are as well as the branches and flowers glabrous; pedicules terminal, cinchobose; teeth of calyx short, acute; capsules ovate or obovate, ribbed. ♀. S. Native of the eastern parts of Jamaica, in shady parts of mountains. Cinchona brachycarpa, Swartz, prod. p. 43. fl. ind. occid. 378. Lindsay, roy. soc. trans. edinhb. 1794. p. 214. t. 5. Vahl. act. soc. hist. nat. hafn. 1. p. 22. Lamb. cinch. p. 18. t. 8. Panicle terminal, cinchobose, trichotomous. Corolla 3 inches long before expansion, pale red or flesh-coloured. Leaves 5-6 inches long, deep green. The bark, when wounded, emits a whitish juice; which becomes of a brownish purple colour on drying, and is easily reduced into a greyish purple powder, which is at first sweet, but afterwards very bitter and astringent.

Short-fruited Exostemma. Tree. 20 feet.

9 E. triflo'reum; leaves lanceolate, obtuse, attenuated at the base, quire glabrous, and shining on both surfaces; branches glabrous; corynob compound; pedicules 2-3-flowered; calycin teeth subulate; corolla with a very long filament tube, and long, narrow, linear, dependent segments; capsule obovate. ♀. S. Native of Jawnaca. Cinchona triflora, Wright, in edinhb. med. journ. p. 240. Lamb. cinch. p. 15. It comes nearest to E. floribundum, but differs from it in the leaves being ovate-elliptic, acuminate, not attenuated at the base; the coryons of flowers are also much larger and closer; the teeth of the calyx are shorter and broader; the tube of the corolla is much shorter and wider; and the capsules oblong-cylindrical.

Three-flowered Exostemma. Tree. 20 feet.

10 E. floribun'da (Rom. et Schultes, syst. 5. p. 19.) leaves elliptic, acuminate, and are as well as the branches and flowers glabrous; pedicules terminal, cinchobose; teeth of calyx short, acute; capsules turbinate, smooth. ♀. S. Native of the Caribbean Islands, Jamaica, Guadaloupe, St. Domingo, St. Lucia, and Trinidad, in woods on the banks of mountain streams. Cinchona floribunda, Swartz, prod. p. 41. fl. ind. occid. p. 375. Lamb. mon. p. 17. t. 7. Cinchona montana, Badier, in journ. phys. 1789. febr. p. 129. t. 1. Cinchona, St. Lucieae, David, phil. vol. iii.

**Bundle-flowered Exostemma.** Cît. 1794. Tree 20 to 80 ft.

11 E. Capitâ'tem (Spreng. new, entd. 2. p. 143.) leaves ovate, coriaceous, glabrous; flowers capitate; calyx small, 5-toothed; corolla with a long tube, and revolute segments. S. Native of South America. Perhaps only a variety of E. floribôdum.

Specimens of this tree were received under the name of St. Lucia bark.

**Capitate-flowered Exostemma.** Tree.

**Sect. II. Brachya'nthum (from brachys, short, and anthos, a flower; in reference to the tube of the flower being shorter than the segments).** D. C. prod. 4. p. 560. Limb of calyx divided even to the base into teeth. Corolla having the tube shorter than the segments of the limb, or at the longest hardly equal in length to them. Stigma sometimes undivided, and sometimes somewhat 2-toothed. Corolla glabrous, or pubescent on the outside.

12 E. Philosophum (Roem. et Schultes, syst. 5. p. 366.) leaves oval, acute, crowded, and are as well as the branches and flowers glabrous; peduncles terminal, corymbose; teeth of calyx short, acute; tube of corolla rather shorter than the segments of the limb; filaments hairy. S. Native of the Philippine Islands, at Manila: and in Santa Cruz de la Laguna. Cinchôna Philippica, Cav. Icon. 4. t. 329. Peduncles axillary, trichotomous, coriaceous, bearing 2 leaves at the origin of the branches, about the length of the leaves. Corolla 9 lines long before expansion. Stigma elate, marked by a furrow on each side, probably from the cohesion of the lobes. Capsule turbinate, 5 lines long, crowned by the calycine limb. Bark bitter and astrangent.

**Philippine Exostemma.** Tree 10 to 15 feet.

13 E. Coryme'ferum (Roem. et Schultes, syst. 5. p. 20.) leaves oblong, acute, and are as well as the branches and flowers glabrous; peduncles axillary, corymbose, bearing 2 leaves just below the ramifications; teeth of calyx short, acute; segments of corolla hardly shorter than the tube. S. Native of the islands of Tongatabu and Ebaove, in the Pacific Ocean, where it is cultivated for the elegance and odor of its flowers. Cinchôna corymbrifera, Forst. act. nov. ups. 3. p. 176. Lin. fil. suppl. p. 144. Lamb. echin. p. 25. t. 5. Leaves deep green, size of those of Coffea Arbôrica; having the nerve purplish beneath. Corymb trichotomous. The bark is very bitter and sub-astringent, and very like Jesuits' bark. Flowers white, but reddish on the outside.

**Corymb-bearing Exostemma.** Tree 10 to 15 feet.

14 E. Peruvianum (Humb. et Bonpl. pl. equin. 1. p. 153. t. 38.) leaves ovate or oblong, acute, rounded at the base: the superior ones sessile and coriaceous; peduncles terminal, sessile; peduncles and calyces pubescent; corolla silky outside. S. Native of Peru, on the declivities of the Andes, in cold places by the sides of streams, at the altitude of 3000 feet. H. B. et Kînth, nov. gen. amer. 3. p. 404. Cinchôna Peruviâna, Poir. suppl. 4. p. 649. Flowers rose-coloured. Leaves smooth, deep green above. Segments of corolla hardly shorter than the tube. Filaments glabrous, adnate to the throat of the corolla. Stigma obsoletely 2-toothed. Teeth of calyx acute.

**Peruvian Exostemma.** Tree 10 to 12 feet.

15 E. Corymbo'sum (Spreng. syst. 1. p. 706.) leaves oblong-lanceolate, acute, and are as well as the branches and flowers glabrous; corollas terminal, bractiate; teeth of calyx almost linear, acute, spreading; segments of corolla about equal in length to the tube. S. Native of Peru, in hot places between Chaulla and Muna. Portândia corymbosa, Ruiz et Pav. fil. per. 2. p. 49. t. 190, f. a. Leaves shining above, 2-3 inches long. Corolla white; having the limb reflexed. Capsule fuscous, turbiniate. Seeds girded by a membranous wing, hence it is not a species of Portàndia.

**Corymbose-flowered Exostemma.** Tree 15 to 18 feet.

16 E. Dissimilifica'tum (Roem. et Schultes, syst. 5. p. 17.) leaves cordate-oblong, quite glabrous; limb of corolla longer than the tube; capsules almost linear, very narrow. S. Native of South America, at the altitude of 6000 or 7000 feet. Cinchôna dissimiliformus, Mutis, in Humb. berl. mag. nat. 1. p. 120.

**Dissimilar-flowered Exostemma.** Tree.

**Sect. III. Pseudoste'mma.** Limb of calyx campanulate, sub-tubular, truncate, or somewhat 5-toothed. Corolla usually villose on the outside: having the tube shorter than the segments of the limb. Stigma usually 2-toothed. Fruit unknown. Flowers disposed in panicles. Species natives of Brazil. Perhaps a proper genus.

17 E. Cupi'liatum (St. Hil. pl. usul. bras. t. 3. f. A.) leaves ovate-lanceolate, cuspidate, nerved, villous beneath; pedal terminal; limb of calyx campanulately tubular, obscurely 5-toothed, longer than the ovariun; corolla villos on the outside: with the segments longer than the tube; filaments villos in the middle; stigma bifi. S. Native of Brazil, in woods. Leaves 9-15 lines long. Corolla white, 2-4 lines long. Fruit unknown. It is called Quino do mato, and the bark is used as a substitute for Peruvian bark.

**Cuspidate-leaved Exostemma.** Tree 8 to 10 feet.

18 E. Austra'le (St. Hil. pl. usul. bras. t. 3. f. B.) leaves ovate, nerved, rather villous beneath; peduncle terminal, sessile, tripartite; limb of calyx campanulate, shorter than the ovariun, bluntly 5-toothed; corolla rather pubescent on the outside: with the segments longer than the tube; filaments glabrous; stigma undivided. S. Native of Brazil, in woods. Leaves 12-15 inches long, and 7-8 broad. Style villous. The bark of this and the preceding species is employed by the Brazilians in the cure of intermittent fevers, from the want of more efficacious remedies. It is bitter and a little astrangent.

**Southern Exostemma.** Tree 8 to 10 feet.

19 E. Roman'num (Cham. et Schlecht. in Linnaea. 4. p. 179.) leaves obovate-elliptic, acute at both ends, rather granular when examined under a lens; peduncle trichotomous, loosely pyramidal; limb of calyx quite entire; corolla glabrous on the outside, but the throat is villous, and the segments are rather pilose on the inside, and a little longer than the tube; stigma 2-toothed. S. Native of Brazil, within the tropics.

**Var. a, lepis'im (D. C. pro. 4. p. 361.) leaves large; tube of corolla shorter than the segments of the limb.

**Var. b, leve' (D. C. l. c.) leaves lanceolate; tube of corolla longer than the segments of the limb.

**Shiny Exostemma.** Tree.

20 E. Soi'zum (Mart. resis. ex Linnaea. 5. p. 45.) leaves obovate or ovate, acute, glabrous; corollas few-flowered, terminal; capsules hardly an inch long, obovate, compressed; valves usually 1-nerved; seeds transversely oblong, with a broad margin.

**Soi'zum's Exostemma.** Tree.

21 E. Macroco'mia; branches naked; leaves oblong-spatulate, acuminate, tapering into the short petioles, smooth on both
surfaces, shining; stipulas connate at the base, and running sound the petioles, and forming a callous semicircular margin to them; thyrsse axillary, panicked, loose; flowers minute, tetramerous; fruit cylindrical; seeds furnished with a quite entire rounded membrane at both ends. \* S. Native of South America, on the banks of the Amazon. Cinchona macrocénema, Mart. in bot. zeit. no. 7. p. 119. 1831.

**Long-stemmed Exostemma. Tree.**

**Cul.** See Cinchona, p. 479, for culture and propagation. The species are of freer growth than those of **Cinchona**; and the cuttings should not be too ripe when taken off.


**Lin. syst.** *Pentándria, Monogónia.* Flowers dioecious from abortion. Calyx with a short obovate tube, and a small limb, which is 5-toothed to the base. Corolla funnel-shaped, with a slender tube, a villous throat, and a 5-parted limb. Stamens exserted in the male flowers, but abortive and enclosed in the female flowers. Style exserted in the female flowers, and bifid at the apex, but abortive in the male flowers. Capsule globose, coriaceously chartaceous, marked by an areola at the apex from the fallen calyx, 2-celled, dehiscing at the cells, 2-valved. Seeds small, fixed to central placenta, imbricated downwards, girded by a membranous wing; albumen fleshy.—Smooth, climbing or straggling shrubs, natives of the Mauritius. Roots exuding a yellow juice when bruised. Leaves oblong or roundish. Stipulas solitary on each side, broad, very short. Peduncles axillary, many-flowered, coriaceous, with opposite branchlets. Flowers fragrant, orange-coloured, sometimes hexameric.


**Fragrant Danaís. Shrub cl.**

2. D. *laxiflorá* (D. C. prod. 4. p. 361.) leaves obovate, obuse, and cupuplicate; coryumbs loose, sub-panicled; capsule not furrowed, crowned by the erect permanent calyicine teeth. \* C. S. Native of Madagascar and Bourbon. Petioles 4 lines long. Panicle of female flowers 2-3 inches long, but that of the males is unknown.

**Loose-flowered Danaís. Shrub cl.**


**Round-leaved Danaís. Shrub cl.**

4. D. *sulpíca* (Pers. ench. 1. p. 198.) leaves ovate; capsule furrowed, crowned by the calycine segments, which are falcate. \* C. S. Native of the Mauritius, where it climbs over the highest trees.

**Furrowed-fruited Danaís. Shrub climbing.**

**Cult.** A mixture of loam, peat, and sand will be a good soil for the species of *Danaís*; and cuttings will be easily rooted under a hand-glass, in heat. They are well fitted for training up the rafters in a stove.


**Lin. syst.** *Tetra-Pentándria, Monogónia.* Calyx with a turbinate tube, and the limb parted into as many lobes as there are corolline segments, or double that number (f. 88. a.), and often furnished with lobules in the recesses between the segments. Corolla funnel-shaped, with a terete tube, a hairy throat (f. 88. c.) and a 4 (f. 88. b.), rarely 5-parted limb. Anter sessile in the throat. Capsule ovate, compressed, crowned by the calycine lobes (f. 88. d.), dehiscing from the apex to the base at the dissepiment (f. 88. a.); the divisions boat-shaped. Placentas somewhat exserted from the dissepiment. Seeds imbricate, almost sessile, peltate, surrounded by a winged membranous border, which is usually toothed. Embryo erect, in fleshy albumen; cotyledons foliaceous, lanceolate.—Perennials, herbaceous, or suffruticose plants: having the stems and branches twining and slender. Leaves ovate-oblong, or subcordate. Stipulas broad, short, acute, usually adhering to the petioles at the base. Peduncles axillary, 1 or many-flowered.

**Sect. 1. Lyógustum (from λυγος, a twig; in reference to the twizzy stems).** D. C. prod. 4. p. 362.—Lýgustum, P. Browne.—Manettia, Mutis, Lin. and Schreb. Lobes of calyx twice the number of those of the segments of the corolla, usually 8 (f. 88. a.), rarely 10; besides the accessory lobules.

1. M. *reclináta* (Lin. mant. p. 555.) stem herbaceous, reclinate, weak, branched; leaves ovate, acute, pubescent beneath; peduncles axillary, many-flowered, shorter than the leaves; pedicels opposite, hairy. \* C. S. Native of Mexico. Corolla white. Calyx 8-lobed; lobes linear, concave, hairy. Nacidhea *réciníata*, Poir. in Lam. dict. 4. p. 416.

2. M. *racemoosa* (Ruiz et Pav. fl. per. 1. p. 88. t. 89.) stems twining; branches tetragonal; leaves ovate or oblong, acuminate; stipulas semi-circular, acuminate, ciliated; racemes axillary, few-flowered, longer than the leaves; corollas hairy. \* C. S. Native of Peru, in groves at Cuchero and Chincho.


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**Fig. 88.**
RUBIACEÆ. XVII. MANETTIA.

Heart-leaved Manettia. Fl. Aug. Oct. Clt. 1832. Pl. tw. 9 M. glabra (Cham. et Schlecht. in Linnaea. 4. p. 159.) plant quite glabrous; stems twining; leaves cordate, acuminate; peduncles axillary, 1-flowered.  y. c. G. Native of the South of Brazil, among bushes, on the banks of rivers and rivulets, as on the Uraguay. Corolla scarlet, glabrous on the outside, but clothed with white villi above the base inside. Stigma club-shaped. Stipulas with a subulate point in the middle. Segments of calyx narrower than in M. cordifolia, which is plant very similar, and which Hook. and Arnott consider identical.

Glabrous Manettia. Pl. tw. 10 M. gracilis (Cham. et Schlecht. in Linnaea. 4. p. 169.) plant puberulous, twining; leaves petiolar, ovate-lanceolate, acuminate; peduncles axillary, 1-flowered; calyx glabrous.  y. c. S. Native of the south of Brazil. Very like M. glabra, but is distinguished by the characters given, in the flowers being smaller and slenderer, also scarlet; in the calycine lobes being narrower, and in the anthers being linear.

Slenor Manettia. Pl. tw. 11 M. pubescens (Cham. et Schlecht. l. c. p. 170.) plant cinerose from down; stems twining; leaves petiolar, ovate, obtuse at the base, and acuminate at the apex; stipulas furnished with a short acutish base and axile hairs; 1-flowered; calyx cise segments longer than the tube, but at length equal with it.  y. c. S. Native of the south of Brazil. Very like the two preceding species. Corolla scarlet, 3 times longer than the limb of the calyx.

Pubescent Manettia. Pl. tw. 12 M. villosa (Cham. et Schlecht. l. c. p. 172.) plant twining; branches cinerose tomentose from roughish down; leaves petiolar, ovate, somewhat acuminate, acutish at the base; stipulas triangular; peduncles axillary, 1-flowered; segments of the calyx linear, one half shorter than the tube of the corolla; corolla pubescent on the outside; capsule ovate, rather villous.  y. c. S. Native of the south of Brazil.

Villosa Manettia. Pl. tw. 13 M. attenuata (Nees. et Mart. in nov. act. bonn. 12. p. 14.) stem scarlet, almost terete; roughish; leaves ovate-lanceolate, attenuated at both ends, clothed with pubescent tomentum beneath; peduncles axillary, 1-flowered.  y. c. S. Native of Brazil, on the road to Felisbert, and in fields at the mountain called Grao-major, in the province of the Miness. Lobes of calyx 4, lanceolate, acuminate, erect, pubescent. Corolla glabrous, 2 inches long, crimson, with ovate atchis reflexed lobes. Upper leaves 3 in a whorl.

Attenuated-leaved Manettia. Shrub tw. 14 M. acutiflora (Ruiz et Pav. fl. per. 1. p. 58. t. 89. f. b.) plant glabrous; stems twining, terete; leaves lanceolate, very acute, petiolar; stipulas acuminate, adpressed, broad at the base; peduncles axillary, 1-flowered; tube of calyx hardly longer than the calyx.  y. c. S. Native of Peru, in groves, in the province of Pautahual. M. acutiflora, Rem. et Schultes, syst. 3. p. 203. Nacbea acutiflora, Poir. suppl. 4. p. 55. Lobes of calyx 4, lanceolate-linear, acute. Corolla purple, villous outside, as well as in the throat.

Acute-flowered Manettia. Shrub tw. 15 M. umbellata (Ruiz et Pav. fl. per. 1. p. 58. t. 90. f. a.) plant glabrous; stems scarlet, terete; leaves lanceolate, very acute, petiolar; stipulas acuminate, adpressed, broad at the base; peduncles axillary, 1-flowered; tube of calyx hardly longer than the calyx.  y. c. S. Native of Peru, in groves, at Muna. Nacbea umbellata, Poir. suppl. 4. p. 55. Bracteas 2-4, surrounding the flower from the number of an aboleron. Lobes of calyx 4, lanceolate. Corolla blue, with a bearded throat.

Unbellate-flowered Manettia. Shrub cl.

Sect. II. NACBEB (Anblet does not give the meaning of this word). D. C. prod. 4. p. 563. Lobes of calyx equal in number to the lobes of the corolla, usually 4, without any accessory lobules.

8 M. cordifolia (Marr. spec. med. bras. 1. p. 19. t. 7.) stems herbaceous, twining, terete, roughish; leaves ovate, cordate at the base, acute at the apex, finely pubescent on both surfaces; peduncles axillary, 1-flowered.  y. c. G. Native of Brazil, in the province of Minas Geraes, at Villa Rica, in hedges and on the margins of woods. Roots woolly, brown, and are an excellent remedy in dropsy and dysentery. Lobes of calyx 4, ovate-lanceolate, downy. Corolla scarlet, an inch long, glabrous outside, and villous inside.


One-flowered Manettia. Shrub cl.

guian. 1. p. 96. t. 57. f. 1. Calyx oblong, compressed; having 4 furrows on each side, and 8-lobed at the apex; lobes narrow, acute, fleshy. Corolla having a white tube, spotted with red, a throat closed by yellow hairs: and 4 oval, acute lobes, which are scarlet and villous above.

Scarlet-flowered Manettia. Fl. May, July. Clt. 1806. Shrub tw. 4 M. lyceum (Swartz, prod. 4. p. 362. fl. ind. occ. p. 325.) stem suffrutescent, flexuous, scendent; branches filiform; leaves ovate, acute, veiny, roughish on the nerves beneath; stipulas subulate, very short; peduncles axillary, longer than the leaves, many-flowered.  y. c. S. Native of the south of Jamaica, on the higher mountains. Spreng. syst. 1. p. 413. exclusive of the syn. of Kunth. Lygistum, Browne, jam. p. 142. t. 3. f. 2. but the calyx is said to be 4-lobed and the fruit baccate and 4-celled, and is therefore the Petesia Lygistum, Lin. spec. 180. the Lygistum axillare, Lam. ill. 1. p. 256. t. 67. f. 2., in which the calyx is delineated with 4 lobes, and therefore also the Cococypsilum biformum, Willd. spec. 1. p. 618.; the Fernélia bifora, Rem. et Schultes, syst. 3. p. 187. Perhaps 2 species are here confused, one with a 4-lobed calyx and the other with an 8-lobed calyx: having 4 of the lobes lanceolate, and 4 of them toothed and smaller.
16 M. rosea (Pohl, in lett D. C. prod. 4. p. 364.) stems rather twining, compressedly angular, rather pubescent; leaves oblong, acuminate, glabrous; stipules broad, short, acuminate; peduncles axillary, bifid, 2-flowered, shorter than the leaves.

7. c. S. Native of Brazil. Lobes of calyx 4, lanceolate, longer than the tube of the calyx. Corollas rose-coloured, larger than in any other species of the genus, pubescent outside, with oblong ciliated segments.

Rose-coloured-flowered Manettia. Shrub tw.

17 M. ru'tta (Willd. spec. 1. p. 625.) stems suffrutescent, twining; leaves ovate, acute, on short petioles; peduncles somewhat corymbose at the apex, longer than the leaves.


Painted-leaved Manettia. Shrub tw.

18 M. fimbria'ta (Cham. et Schlecht. in Linneea. 4. p. 173.) plant twining and quite glabrous; leaves petiolate, elliptic, acuminate, acute at the base; peduncles lateral, 1-3-flowered; lobes of calyx ovate-lanceolate, a little shorter than the tube of the corolla; lobes of corolla fringed with long hairs; stigma 4-lobed.

7. c. S. Native of the south of Brazil.

Fringed-flowered Manettia. Pl. tw.

19 M. pes-do-diö'dia (Cham. et Schlecht. l. c. p. 174.) stems twining, obscurely tetragonal, glabrous, marked by a ciliated line at the apex; leaves petiolate, broad-oval, acuminate, acute at the base; stipulas triangula, ciliated; peduncles lateral, 1-3-flowered; segments of calyx lanceolate, acuminate, ciliated; corolla clothed with smooth tomentum outside; capsule tetragonal, pear-shaped.


False-Diödia Manettia. Pl. tw.

20 M. cili'a'ta (Cham. et Schlecht. l. c. p. 176.) stems twining, tetragonal; angles winged, ciliated; leaves on short petioles, lanceolate, acuminate, ciliated, rather coriaceous; stipulas ciliated, ending each in a reflexed acumen; peduncles 1-5-flowered, pubescent; segments of calyx lanceolate, acuminate, ciliated; corolla clothed with rusty tomentum on the outside; capsule obconical.

7. c. S. Native of the south of Brazil.

Ciliated-stemmed Manettia. Pl. tw.

21 M. albi-fióra (Schott, miss. ex Pohl, in lett. D. C. prod. 4. p. 364.) stems herbaceous; branches tetragonal, rather pilose; leaves oblong, acuminate at both ends, pubescent on both surfaces; stipulas broad, short, cuneate; pedicels numerous, 1-flowered, rising imbellately from the axis of the leaves.

7. c. S. Native of Brazil. Calyx with a turbinate, rather tetragonal tube, and 4 lanceolate lobes. Corolla white. Fruit unknown.

White-flowered Manettia. Pl. tw.

† Species not sufficiently known.

22 M. Ge'rte'ri (D. C. prod. 4. p. 364.) stems and leaves unknown; capsule ovate, compressed a little, bisulate, crowned by the 4-parted limb of the calyx.—The rest unknown. Nacieba gibraba, Gaertn. fil. carp. 3. p. 102. t. 197. f. 5.

Gaertner's Manettia. Pl. tw.

23 M. secundifióra (D. C. prod. 4. p. 364.) plant herbaceous, scandent; leaves ovate-lanceolate-linear; racemes axillary, subcuneus, few-flowered; flowers on short pedicels, bracteate.


Second-flowered Manettia. Pl. cl.

Cult. All the species of Manettia are worth cultivating for the beauty and elegance of their flowers. A mixture of loan peat and sand is the best soil for them. They are easily propagated by young cuttings in the same kind of soil under a hand-glass, in a moderate heat.


LIN. Syst. Tetrandria. Monogynia. Calyx with a subglobose tube (f. 89. a.), and a 4-parted limb (f. 89. b.); lobes linear-subulate (f. 89. b.), sometimes with a tooth between each lobe. Corolla funnel-shaped (f. 89. c.), tubular, elongated, beset with velvety papillae outside, with a naked throat, and a 4-parted spreading short limb (f. 89. d.). Stamens having the filaments alinate to the tube at the base, and free from about the middle (f. 89. e.); anthers linear, inclosed. Stigma bilamellate (f. 89. f.), exserted. Superior part of the ovary naked. Capsule membranaceous, globose, a little compressed, 2-celled, and dehiscing at the cells above; valves semi-septiforous. Placentas orbicular. Seeds many in each cell, compressed, imbricated downwards according to the figure of Salisbury, but upwards according to the figure in fl. mex., girded by a membranous wing.—Shrubs, natives of Mexico. Leaves opposite or in whorles. Stipulas narrow, acute, adnate to the petioles on both sides. Peduncles terminal, 3-flowered or trichotomous and corymbose.—This genus is very nearly allied to Manettia.

§ 1. Leaves disposed in whorles. Corollas flesh-coloured or pale red, having the tube bearded inside.

1 B. linea'ris (H. B. et Kunth, nov. gen. amer. 3. p. 383.) branches terete, when young pubescent; leaves 3 in a whorl, linear, with revolute edges, scabrous above, but canescent from hairs beneath; corollas trichotomous; lobes of calyx 5 times shorter than the tube of the corolla, which is hairy.

7. G. Native of the temperate parts of Mexico, near St. Augustin de Las Cuevas, Morán, &c. Corolla 8 lines long, pale red.

Linear-leaved Bouvardia. Shrub 5 feet.

2 B. ange'strioli (H. B. et Kunth, l. c. p. 384.) branches terete, smooth; leaves 3 in a whorl, lanceolate, with revolute edges, glabrous above, but beset with fine hairs beneath; corollas somewhat trichotomous; lobes of calyx 2 or 3 times shorter than the tube of the corolla, which is hairy.

7. G. Native of temperate parts of Mexico, along with the preceding. There is a variety of this species with 5-cleft flowers. Flowers pale red.

Narrow-leaved Bouvardia. Shrub.

3 B. hirtéilla (H. B. et Kunth, l. c.) branches terete; branchlets and leaves hairy on both surfaces, lanceolate, with revolute edges; flowers corymbose; lobes of calyx 5-6 times shorter than the tube of the corolla, which is hairy.

7. G. Native about the city of Mexico. Flowers pale red or flesh-coloured.

Hairy Bouvardia. Shrub.

4 B. quattre'strioli (D. C. prod. 4. p. 365.) branches striated, rather downy; leaves 4 in a whorl, lanceolate, acuminate, rather scabrous above, and pubescent beneath; corollas trichotomous; lobes of calyx 6 times shorter than the tube of the
corolla, which is pilose. G. Native about the city of Mexico. Carphalae? pubiflora, Moc. et Sesse, fl. mex. icon. ined. Flowers scarlet, 12-14 lines long. Perhaps only a variety of B. hirtella.

**Four-leaved Bouvardia.** Shrub.


Var. r, cayena (D. C. pro. 4. p. 365.) leaves oblong-lanceolate, acuminate; style exerted. G. Cultivated in gardens.

Var. r, oxida (D. C. l. c.) leaves ovate, acute. G. Bouvardia triphylla, var. b, Salisb. Parad. t. 88. 

Jacquins’s Bouvardia. Fl. April, Nov. Clt. 1794. Shrub 2 to 3 feet.

6 B. irova (H. B. et Kunth, l. c. p. 385.) branches tetragonal, striated, and are, as well as the leaves, smoothish; leaves 4 in a whorl, obvolute; corymbs trichomous. G. Native of Mexico, between Chapaltepec and Texcoco. Herb 1-5 feet high, ex Bonpland. Perhaps this is a true species of Bouvardia, ex Kunth.

Obovate-leaved Bouvardia. Pl. 1 to 3 feet.

§ 2. Leaves opposite. Corolla with a beardless tube.

7 B. versicolor (Ker, bot. reg. t. 254.) branches terete, glabrous, velvety when young; leaves opposite, lanceolate, ciliated; corymbs 3-flowered, trichomous, drooping; lobes of calyx 8 times shorter than the tube of the corolla, which is glabrous both inside and outside. G. Native of South America, but in what place is unknown. Corolla with a scarlet tube, which is 9 lines long, but having the limb yellowish inside.


8 B. triflora (H. B. et Kunth, nov. gen. amer. 3. p. 386. t. 288.) branches terete, glabrous; branchlets rather hairy; leaves opposite, lanceolate-oblong, acute, rounded at the base, beset with fine hairs; peduncles terminal, 3-flowered; lobes of calyx 3 or 4 times shorter than the tube of the corolla, which is glabrous. G. Native of the temperate parts of Mexico. Céstrum spermacocifolium, Willd. rel. miss. in Roem. et Schultes, syst. 4. p. 808. Corolla white, with the tube 5-6 lines long.

**Three-flowered Bouvardia.** Shrub.

9 B. longiflora (H. B. et Kunth, l. c. p. 386.) branches compressedly tetragonal, glabrous; leaves opposite, oblong, acute, cuneated at the base, glabrous; flowers terminal, solitary, sessile; lobes of calyx 3 or 4 times shorter than the tube of the corolla, which is glabrous. G. Native of temperate parts of Mexico, near Santa Anita, where it is called by the natives Flor de San Juan; also near Queretaro and Huanajauto, ex Cav.; and at Pascoaro, ex Cervantes, in herb. Hanke. Aginëtia longiflora, Cav. Icon. 6. p. 51. t. 572. f. 1. Corolla white, with the tube 2 or 3 inches long. Stipulas usually cleft into 2 awns at the apex.

Long-flowered Bouvardia. Clt. 1827. Shrub 2 to 3 feet.

10 B. cavansilleii (D. C. Prod. 4. p. 366.) suffruticosum; leaves opposite, ovate-lanceolate, acuminate, rather villous beneath; peduncles terminal, trilobed, 3-flowered; capsule transversely ovate, somewhat didymous. G. Native of Mexico. Aginëtia multijlora, Cav. Icon. 6. p. 52. t. 572. f. 2. without flowers.

Cacavilles’s Bouvardia. Shrub.

11 B. cordiformi (D. C. Prod. 4. p. 366.) suffruticosum; leaves opposite, on very short petioles, cordate, acute; corymbs terminal, sessile, 8-10-flowered. G. Native of Mexico. Ixora cordifolia, Moc. et Sesse, fl. mex. icon. ined. Corolla from dirty yellow to scarlet, 6-7 lines long.

Heart-leaved Bouvardia. Shrub.

Cult. The species of this genus usually bear red or scarlet flowers, and are therefore worth cultivating in gardens. The readiest way of increasing them is by pieces of the roots, planted in a pot of good mould, and placed in a warm situation; or they may be increased by young cuttings, which root readily under a hand-glass, in a mixture of sand, peat, and loam, in heat.

XIX. PINCKNEYA. XX. CALYCOPHYLLUM.


Lin. Syst. Pentandria, Monogynia. Calyx 5-parted, having one of the segments large, coriaceous, and coloured. Corolla tubular, with a 5-selved limb, which is valvate in aestivation. Stamens 5, exserted, inserted in the base of the tube; anthers petaloid. Stigma emarginate. Capsule 2-valved, dehiscing at the diaspemnt. Seeds compressed, surrounded by a winged membranaceous margin, which is emarginate at the base.—A tree, native of North America. Branches opposite. Leaves oval, acute at both ends, tomentose beneath, as well as the branches. Stipulas deciduous. Flowers rather large, pubescent, pale red, bracteolate, disposed in cymes; the cymes rising from the axils of the upper leaves. Large calycine leaves, white, tinged with red. 

1 P. ruhen (Mich. l. c.) G. Native of North America, in Georgia, on the banks of the river St. Maria, in muddy places; and on the banks of the New river in South Carolina. Pursh, fl. amer. sep. 1. p. 158. Ell. sketch. 1. p. 368. Cinchona Cinchona, Poir. Dict. 6. p. 40. Pinkmeya pubescens, Pers. ench. 1. p. 197. The bark of this tree is used in place of Peruvian bark in Georgia and Carolina, under the name of few beating.

Downy Pinckneya. Fl. June, July. Clt. 1786. Tree 20 ft. Cult. This tree is usually treated as a greenhouse plant in Britain; but thrives much better against a south wall, with the protection of a mat in severe weather. A mixture of sand and peat is the best soil for it; and cuttings planted in sand, with a hand-glass placed over them, will strike root.

XX. CALYCOPHYLLUM (from κυλyx, calyx, a calyx, and φυλλον, phyllon, a leaf; in allusion to one of the teeth of the calyx being expanded into a large petiolate coloured leaf.) D. C. Prod. 4. p. 367.—Macrocómum, Vahl, symb. 2. p. 38. but not of Browne.—Mussaenda species, Poir.
Lin. syst. Pentandra, Monogynia. Limb of calyx truncate, or bluntly 5-toothed; one of the teeth expanded into a perianth colourless or bluish lobed, with a 5-parted limb. Stamens 5; filaments rising from the throat, free, length of corolla; anthers oval, exerted. Style ending in 2 reflexed stigmas. Capsule dehiscing at the apex, oblong, 2-angled, many seeded. Seeds fixed to the linear pascalas, imbricate, oblong, girded by a very narrow membranous wing. — Small smoothish trees, natives of the West Indies. Leaves opposite, petiolate, membranous, glabrous above, but villos on the veins beneath. stipules short, broad, deciduous. Flowers disposed in axillary and terminal trichotomous corymb; peduncles compressed. Habit of Mussaenda. 1 C. candidissimum (D. C. prod. 4. p. 367.) leaves ovate, bluntly acuminate; corymb terminal; limb of calyx truncate, except the petiole leaf; corolla campanulate, with a bearded throat. 5. S. Native of St. Martha, Vahl, and near St. Fernando de Atabapo, on the banks of the Orinoco, H. B. and Kunth; and of Cuba, about the Havana. Macrocœnum candidissimum, Vahl, symb. 2. p. 38. t. 30. Musse'nda candidissima, Rœm. et Schultes, syst. 5. p. 251. M. candida, Poir. dict. 4. p. 395. The peduncles of the corymbs are 2-edged. Calyxes villous. Flowers 3 together, the middle one bearing a petiole leaf, but the 2 lateral ones are naked. Leaves 2-3 inches long. Leaf of calyx hardly an inch long, white, sometimes ovate, and sometimes subcordate.

Very white-leaved Calycophyllum. Tree 20 feet. 2 C. coccolinum (D. C. prod. 4. p. 367.) leaves elliptic-lanceolate; corymb axillary, disposed in an elongated panicle; limb of calyx bluntly 5-toothed; corolla somewhat funnelform, glabrous. 5. S. Native of the island of Trinidad. Macrocœnum coccolinum, Vahl, symb. 2. p. 38. t. 29. Musse'nda coccolina, Poir. dict. 4. p. 395. Leaves a foot long and a hand broad. Flowers crowded, few, bearing each an ovate-oblong, purple or scarlet calyceous leaf, which is about 6 inches long.

Scarlet-leaved Calycophyllum. Clt. 1823. Tree 20 feet. 3 C. tubuloseum (D. C. prod. 4. p. 367.) leaves oval, acute at the base, acuminate at the apex, clothed with fine velvety down on both surfaces; panicles terminal; limb of calyx bluntly 5-toothed; corolla tubular, pubescent on the outside; large lobe of calyx petiolar, orbicular and pubescent on the nerves and veins. 5. S. Native of Brazil. Macrocœnum tubulosum, A. Richard, in herb. mus. par. Capsule ovate truncate, dehiscing from the apex to the base at the dissepiments. Anthers exerted. Filaments joined together beyond the middle into a tube.

Tubular-stamened Calycophyllum. Tree. Cult. Like Musse'nda this genus is remarkable for the large coloured segment of the calyx, which see for culture and propagation, p. 492.

Tribe II.

GARDENIACEÆ (this tribe agrees with the genus Gardenia in important characters). A. Rich, disse. p. 108. D. C. prod. 4. p. 367.—Gardenia and Cocoyeséleæ, Cham. et Schlecht. in Linnaen. 4. p. 138. and 197. Fruit baccate, 2-celled, or from aborted ovules only 1-celled; cells many seeded. Alumen fleshy. — Trees or shrubs, with opposite leaves, and interpetiolar stipules.

Subtribe I. SARCOCEPHALIEE (agreeing with Sarcocephalus in the fruit being combined and fleshy). D. C. prod. 4. p. 367. Flowers collected into a truss of one (f. 90. a.), sessile upon the receptacle. Fruit combined (f. 90. b.).

XXI. SARCOCEPHALUS (from σαρκός sarx, sarkos, fleshy, and κεφάλα, kephale, a head; in allusion to the fruit being combined into a fleshy head). Azf. in herb. Banks, Sabin. hort. trans. 5. p. 442. t. 18. D. C. prod. 4. p. 367.—Cephalia, Thonn. in Schum. pl. guin. p. 105.

Lin. syst. Pentandra, Monogynia. Flowers 5-6-parted, sessile upon the globose receptacle (f. 90. a.), which with the calyxes are combined into a globose fleshy mass. Limb of calyx with a very short margin. Corolla funnel-shaped, 5-lobed; lobes erect, obtuse. Anthers sessile in the throat of the corolla. Style exerted; stigma oblong, capitate, undivided. Berries 1-celled; many seceded, the whole combined into one mass (f. 90. b.), which is areolate from the margins of the calyxes. Seeds small, somewhat kidney-shaped. — A spreading branchy shrub. Leaves opposite, on short petioles, roundish-oval, acute, shining above, and pubescent in the axils of the veins beneath. Stipulas solitary on each side, triangular, undivided, almost concrete at the base. Heads terminal, on short peduncles or sessile, about the size of a peach. Flowers rose coloured or yellowish.

1 S. esculentus (Sabin. in hort. trans. 5. t. 18.) Native of Guinae, in many parts, as of Sierra Leone and Gambia. Lindl. bot. reg. t. 1827. Cephalia scandens, Thonn. in Schum. pl. guin. 105. Nafchen laterula. Smith in Rees’ cycly. 24. no. 5. The heads of fruit are edible, and by the negroes of Sierra Leone called peach; they are brown when ripe. Cephalia scandens of Schum. is probably a distinct species, as the Sierra Leone plant does not climb at all. (f. 90.)

Edible-fruitted Sarcocephalus.


Cult. A mixture of loam and peat is the best soil for this fruit, and cuttings are easily rooted in the same kind of soil under a hand-glass, in heat. The shrub requires to be kept in a strong heat, or it will neither flower nor fruit.

XXII. ZUCCARINIA (J. G. Zuccarini, a professor in the academy at Monach; author of some papers in the transactions of that academy). Blum. bijdr. (1820.) p. 1008. but not of Spreng. (1827.)


1 Z. macrophylla (Blum. l. e.) 5. S. Native of the west of Java, in woods on the mountains, where it is called Kibara. Leaves more than a foot long.


XXIII. LUCINEÁ (Lucina is one of the names of Juno or Diana). D. C. prod. 4. p. 368.

Lin. syst. Tetrandria, Monogynia. Flowers combined into a dense head. Margin of calyx entire. Corolla funnel-shaped,
RUBIAEÆ. XXIII. Lucinaea. XXIV. Canephora. XXV. Burchellia. XXVI. Amaoua.


—A glabrous somewhat dichotomous shrub. Leaves petiolate, ovate, acuminate, smooth, coriaceous. Stipulas short, interpetiolar. Axillary peduncles opposite, but the terminal ones subumbellate. Heads few-flowered. This genus differs from Burchellia, in the fruit being many-seeded, not 1-seeded.


Morinda-like Lucinaea. Shrub cl.

Cult. See Sarcocapheæ, p. 487, for culture and propagation.


L. LINNAEÆ: Flora Æxandria, Monogyna. Calyx with an obvolute tube, a 5-6-toothed limb; and triangular, leucocoele, bluish, rather concave teeth. Corolla with a campanulate tube, and a 5-6-lobed spreading limb. Anthers 5-6, oblong, almost sessile, not exserted. Stigma bifid. Fruit baccate? 2-celled? cells many seeded. Seeds compressed, inbricated, inserted in an axillary spongy receptacle. The fruit, according to A. Rich. l. c., is pea-formed, crowned, and 2-seeded.—A glabrous shrub, native of Madagascar. Leaves elliptic, coriaceous. Stipulas solitary on both sides, triangular, acute. Flowers on the top of dilated peduncles, or sessile on the top of the branches, intermixed with distinct scales, girded by a tubular toothed involucre. This genus appears to be intermediate between the subtribes Sarcocephalæ and Gardneriæ.

C. Axillaris (Lam. ill. t. 151. f. 1.) leaves elliptic, acute, on short pedioles; peduncles axillary, thickened from the base to the apex, ending in a 5-6-lobed cupula at the apex, which bears the flower. f. S. Native of Madagascar, where it is called Allou-ga-la-y by the natives. Poir. suppl. 2. p. 77, exclusive of the diagnosis.

Axillary-flowered Canephora. Shrub.

Cult. See Sarcocapheæ, p. 487, for culture and propagation.

Subtribe II. Gardneriæ (containing shrubs agreeing with the genus Gardneria in having distinct flowers). D. C. prod. 4. p. 368. Flowers distinct, never combined into a head.


L. LINN. Syst. Pentändria, Monogyna. Calyx with an obvolute tube, having the limb 5-cleft beyond the middle (f. 91. a.), and drawn out above the ovary. Corolla of a clavate funnel-shape (f. 91. b.), with a naked throat, and 5 short lobes (f. 91. c.), which are inbricated and twisted in aestivation. Stamens 5; filaments adnate to the tube, but free above the middle; anthers almost sessile, inclosed (f. 91. b.). Stigma oblong-clavate (f. 91. c.), and appearing as if it were composed of 2 concrete ones, bearing five convex crests, and a series of tufts of hairs. Berry crowned by the calyx 2-celled, turbinate, globose Placentæ adnate to the dissemine. Embryo slender.—Shrubs, native of the Cape of Good Hope. Leaves ovate, acute, a little cordate at the base, petiolate. Stipulas interpetiolar, broad, cinnatifid at the apex, deciduous. Flowers scarlet, disposed in heads at the tops of the branches, sessile upon a villous receptacle, intermixed with small distinct bracteoles; and each head is propped by the ultimate pair of leaves.

1 B. Capeïnaës (R. Brown, in Ker, bot. reg. t. 466.) leaves ovate, acute, clothed with hispid pubescence; stipulas very broad, and very crenate, capitulate at the apex; anthers adnate to the upper part of the tube of the corolla. f. G. Native of the Cape of Good Hope, where it is called from the hardness of the wood buffel-horn. Cham. et Schl. in Linnea. 4. p. 146. Lonicera Bubalina, Linn. fil. suppl. p. 146. Thumb. fl. cap. 187. Cepæ'lis Bubalina, Pers. ench. 1. p. 202. Flowers 9-10 lines long, of a deep scarlet colour. (f. 91.)


2 B. Capeïfeldra (Linn. bot. reg. t. 891.) leaves oval-lanceolate, smoothish; stipulas ovate, each ending in a short point; anthers inserted in the middle of the tube of the corolla. f. G. Native of the Cape of Good Hope. Cinchôna Capeïnaës, Burn. herb. B. Bubalina, Sims. bot. neg. t. 2599. Canéphora capitate, Lam. ill. t. 151. f. 2?. Poir. suppl. 2. p. 77, exclusive of the country. Flowers 7-8 lines long, orange coloured.


Cult. The species of Burchellia thrive well either in the warm part of a green-house, or the cold parts of a stove, and therefore may be termed hardy stove plants. Their heads, of beautiful scarlet and orange coloured flowers, make them desirable for collections. They grow well in a rich light soil, or a mixture of turfy loam, turty peat, and sand; and cuttings taken off not too ripe strike root readily, if planted in sand and placed under a glass, in a moderate heat.


L. LINN. Syst. Hexandria, Monogyna. Limb of calyx tubular, terete, 6-toothed, falling off very slowly. Corolla salver-shaped, with a terete tube, which is longer than the calyx, and a 6-parted spreading limb; lobes oblong. Anthers 6, inclosed, linear. Stigma clavate. Berry obvolute-oblong, coriaceous, areolate at the apex, 2-3-celled. Seeds disposed in 2 rows in each cell, flat, depressed, nearly orbicular, separated from each other by small horizontal disseminations.—Trees or shrubs, natives of South America. Leaves opposite or 3 in a whorl, on short pedioles, nerved, glabrous. Stipulas oblong, deciduous. Flowers almost sessile, disposed in corymb at the tops of the branches.

—Perhaps the fruit is at length 1-celled, from the dissemination having vanished, ex Aubl.

1 A. Guianaës (Aubl. guian. suppl. p. 13. t. 375) brownish trapeziform, crowned, clothed with adpressed pubescence; leaves usually 3 in a whorl, broad-elliptic, acuminate, nerved; flowers crowded, almost sessile; limb of calyx tubular, elongated. f. S. Native of Cayenne. The leaves in the specimens examined are all 3 in a whorl, but are sometimes op-
posite according to Desfontaines, mem. mus. 6. p. 12. t. 4. Hamelia sessiliflora, Willd. spec. 1. p. 981. Hamelia glabra, Lam. dict. 3. p. 65. Duhamelia glabra, Pers. ench. t. p. 208. Berry obovate, areolate at the apex, from the calyx having fallen off, 2-3-celled; cells bearing each 2 rows of seeds, and distinct sepal; hence the fruit appears 4-6-celled at first sight in the dry state.

Guiana Amaioua. Shrub appears 4 to 6 feet.

2 A. Euphória (Desf. mem. mus. 6. p. 14. t. 5.) branchlets nearly terete, smoothish; leaves opposite, obovate, acuminate, nerv'd; coryblms of flowers on short peduncles; flowers crowded, almost sessile; limb of calyx tubular, short. f. S. Native of Cayenne. Fruit unknown.

Beach-leaved Amaioua. Shrub appears 4 to 6 feet.

3 A. intermedia (Mart. in Schultes, syst. 7. p. 90.) branches terete, glabrous; leaves opposite, oblong, attenuated at both ends, ciliolate; flowers crowded, almost sessile, silky; upper 2 stipulas forming an involucre to the head of flowers. f. S. Native of Brazil, in the province of Bahia, in woods.

Intermediate Amaioua. Shrub appears 4 to 6 feet.


Corymbose-flowered Amaioua. Shrub appears 8 to 9 feet.

5 A. Perúviana (Desf. mem. mus. 6. p. 16. t. 4. f. B.) leaves opposite, elliptic, nerv'd, acuminate, shining on the upper surface; flowers aggregate, corollas. f. S. Native of Peru. Said to be nearly allied to the preceding.

Peruvian Amaioua. Shrub appears 4 to 6 feet.

6 A. Sacrogla (Mart. in Schultes, syst. 7. p. 91.) branches angular and bristly at the apex; leaves 3 in a whorl, obovate-lanceolate, attenuated at the base, saccately scrobiform, hairy, costately nerv'd; flowers terminal, crowded, on short peduncles; calyxes elongated. f. S. Native of Brazil, in woods, at Barra do Rio Negro, where it is called by the natives Folha de Cominato and Com-jurara.

Suck-bearing Amaioua. Shrub appears 4 to 6 feet.

7 A. Brasiliána (A. Rich. diss. ex D. C. prod. 4. p. 370.) p. 222. (Mart. in Schultes, syst. 7. p. 92.) leaves opposite, leaves serrate; flowers aggregate; leaves elliptic, acuminate; flowers small, disposed in crowded calyces; segments of corolla very short. f. S. Native of Brazil.

Brazilian Amaioua. Shrub creeping.

Cult. See Mussea'da, p. 492, for culture and propagation.


Lin. syst. Pentandria, Monogynia. Calyx with an oblong-turbinate tube, a 5-parted limb, and decided erect acute lobes, one of which is usually drawn out into a large peetiate, reticulately nerv'd, coloreful leaf. Corolla funnel-shaped, with a 5-parted limb, and a villous throat. Anthers 2, sessile within the tube, linear, inclosed, and sometimes a little exserted. Stigma bifid.

Fruit ovoid, fleshy, naked at the apex from the limb of the calyx being deciduous, indehiscent, 2-celled; cells many seeded. Placentas pedunculate, bifid at the apex, rising from the dissepiment, and appearing like a Burundian cross. Seeds very numerous, small, lenticularly compressed, scabrous. Embryo in fleshy albumen, with the radicle thick, and turned towards the vol. III.

SECT. I. BELLÉLLA (the name of one of the species in Malabar). Rheed. mal. and Adams. One of the calyces lobes is always drawn out into a large coloured reticulately veined bracteate-formed leaf, which has been through want of proper caution taken for and called bracteae. Anthers sessile within the tube of the corolla, inclosed. Capsule ovate.

1 M. speciósa (Poir. suppl. 4. p. 37.) leaves broad-oval, acute, rather villous at the nerves and veins above, pubescent beneath, teeth of calyx obtuse, one of which is usually petiolate, large, and coloured; corolla tubular, with obtuse lobes. f. S. Native of South America, in Caracées. Macrocérumm speciosum, Jacq. hort. schœnbru. 1. p. 19. t. 43. The bracteae-formed calyce leaves are rose coloured. Coryblms fastigate, rather villous; bractea subulate. Style exerted. Anthers inclosed. Corolla villous on the outside, an inch long, with a rose coloured limb.


2 M. aculeiúla (Bartl. in Haenze, herb. ex D. C. prod. 4. p. 370.) leaves oval, acuminate, acute at the base, glabrous, except the nerves and veins, which are pubescent on the under surface; coryblms trichotomous pubescent; teeth of calyx acute, one of which is usually large, petiolate, ovate, and coloured; corolla tubular, with acute lobes. f. S. Native of Mexico. Stipulas villous on the outside, bifid, acuminate, and deciduous. The large calyce leaf is 5-nerved and acuminate. Perhaps only a variety of M. specíosa.

Acute-flowered Mussænda. Shrub appears 5 to 6 ft.

3 M. Frondósa (Lin. spec. 251.) leaves oblong, acuminate, villous; branches and coryblms downy; stipulas subulate; coryblms terminal, dichotomous, somewhat panicked; lobes of calyx elongated, subulate, one of which is petiolate, ovate, acuminate, membranous and puberulous. f. S. Native of the East Indies, Java, Malabar, &c. Belilla, Rheed. mal. 2. p. 27. t. 157. M. zeylanica, Bum. zeyl. 165. t. 76. M. formosa, Lam. mant. p. 338. M. frondósa, Roxb. et Wall. in fl. ind. 2. p. 227. Lam. ill. t. 157. f. 1. Flowers of a deep golden colour. The bractea-formed leaf of the calyx is 2 inches long and white.


4 M. glabra (Vahl. symb. 3. p. 38.) leaves oval, acuminate at both ends, glabrous on both surfaces, as well as the branches; coryblms terminal, smoothish; segments of calyx broad-lanceolate, acute, one of which is large, petiolate, glabrous, and acute. f. S. Native of the East Indies. Lodd. bot. cab. t. 1269. Tómiun Principissimum, Rumph. amb. 4. t. 51. Flowers yellow. The bractea-formed leaf of the calyx is about 4-5 inches long, white.


5 M. calvénia (Wall. cat. no. 623.) leaves oblong or oblong, acuminate, tapering to both ends, almost glabrous, except on the nerves; stipulas villous, cuspidate at the apex; calyxes downy: segments large, ovate, cuspidate; the large foliaceous segment petiolate, ovate, elliptic, acuminate, yellow; young branches and peduncles villous; peduncles terminal and axillary, coryblm, or trichotomous, bearing a single flower in each fork; fruit turbinate. f. S. Native of the East Indies, in the Burmese empire, on Mount Taong Dong, and at Prome. Flowers yellow.

Large-calyced Mussænda. Shrub appears 5 to 6 feet.

6 M. villósa (Wall. cat. no. 624.) leaves oblong, acuminate-
ated, tapering at the base, on short pediotes, hispid from villi on both surfaces; petiotes, young branches, and peduncles very villous; stipulas linear-lanceolate, cuspitate, very villous; corymsbs trichotomous, terminal: calyx villous: segments linear: the large, foliaceous segment petiote, elliptic, yellow. \( ^{\pi} \) S. Native of Penang. Flowers yellow.

*Villons* Mussenda. Shrub 4 to 6 feet.

7 M. *samaetens* (Roth, Nov. gen. et spec. p. 152.) leaves elliptic, tomentose on the under surface, as well as the petiotes and branches; corymsbs terminal; bractea-formed leaf of calyx roundish, pubescent, reticulately veined. \( ^{\pi} \) S. Native of the East Indies.

*Sumatra* Mussenda. Shrub 5 to 6 feet.

8 M. *acuminata* (Blum, bijdr. p. 98.) leaves lanceolate, acuminate at both ends, pubescent on the mid-rib on both sides; corymsbs terminal, trichotomous, pubescent; lobes of calyx linear, acuminate: one of which is drawn out into an elliptic-oblong leaf. \( ^{\pi} \) S. Native of Java, at the head of the river Tijukundi, on Mount Gede.

*Acuminated* Mussenda. Shrub 5 to 6 feet.

9 M. *nisida* (D. Don, prod. fl. nep. p. 139.) leaves oval, acuminate, pilose; branchlets hispid; pedicels and calyces very bristy; stipulas lanceolate; segments of calyx ovate, acute: one of which is petiolate, ovate, acuminate, hispid on the petiole and villous on the nerves. \( ^{\pi} \) G. Native of Nipal, at Narainghetti. The lobes of the corolla are rounded and mucronate. It comes near to M. *frondosa*, but the leaves of that species are canescent from tomentum beneath, and the segments of the calyx are linear and elongated.

*Hispid* Mussenda. Shrub 5 to 6 feet.

10 M. *erythrophylla* (Schum. pl. guin. p. 116.) branches velvety from short soft down; leaves ovate, cuspitate, pubescent above, and villously tomentose beneath; stipulas villous, deciduous; corymsbs terminal, trichotomous, villous; calyce segments subulate: one of which is large, petiolate, ovate-acuminate, and very villous; tube of calyx hispid. \( ^{\pi} \) S. Native of Guinea, where it was collected by Thonning. The bractea-formed calyce segments are 4-5 inches long, and 2 inches broad, 5-nerved, and of a reddish colour. Corolla hardly twice the length of the calyx. Habit of M. *frondosa*, under which name it was described from Ternurri.

*Red-leaved* Mussenda. Shrub 5 to 6 feet.

11 M. *eutollea* (Delil. in Caill. pl. afr. p. 65. t. 1. f. 1. Caill. voy. t. 62.) leaves almost sessile, ovate-lanceolate, acute, nervet, and tomentose beneath; stipulas twin on each side, lanceolate-subulate; corymsbs terminal, trichotomous; calyce teeth subulate: one of which is often petiolate, oval, and acute. \( ^{\pi} \) G. Native of Arabia, on the mountains of Hadie and elsewhere; and about Singue in Nubia. Ophiorhiza lanceolata, Forsk. egyp. arab. p. 42. Manetia lanceolata, Vahl, symb. p. 1. p. 12. Mussenda lanceolata, Spreng. syst. t. 1. p. 765.; but not of Poir. The bractea-formed calyce leaf is yellowish, as well as the flowers. Corolla an inch long, slender.

*Yellow-bractea* Mussenda. Shrub 5 to 6 feet.

12 M. *isertica* (C. D. v. sch. p. 4. 1. p. 371.) leaves elliptic, on short petiotes, and are as well as the branches glabrous; flowers disposed in corymsbous panicles; peduncles and corollas clothed with canescent villi; bractea-formed calyce lobes large, roundish, and glabrous. \( ^{\pi} \) S. Native of Guinea, where it was collected by Isert. M. macrophylla, Schum. pl. guin. 118. but not of Wall.

*Isert*’s Mussenda. Shrub 5 to 6 feet.

13 M. *areli*; every part of the shrub is villous; leaves ovate-lanceolate: having the veins clothed with rusty hairs beneath, as well as the petiotes; corymsbs pilose, crowded; bractea-formed calyce segment large, white, and villous; cap-
sules villous. \( ^{\pi} \) S. Native of Sierra Leone, by the sides of rivulets, among other bushes. Flowers yellow.

*Afzelia*’s Mussenda. Shrub 4 to 6 feet.

14 M. *purebsrens* (Ait. hoc. kew. ed. 2. vol. 1. p. 372.) leaves ovate-oblong, acuminate, pubescent on the nerves; stipulas twin on each side, subulate; corymsbs terminal; calyce lobes subulate: one of which is petiolate, ovate, and acute; corolla with a slender tube, and acute lobes. \( ^{\pi} \) G. Native of China, where it is called *Cym un fa*. M. pubescens, Sims, bot. mag. 2099. Loddi. bot. cab. t. 451, but not of Humb. et Bonpl. *Corollas* small, yellow, clothed with adpressed down on the outside. The branches are rather scandent, and the bractea-formed calyce segments are white.


15 M. *variolosa* (Wall. cat. no. 6259.) branches and pediotes hispid and warted; leaves elliptic-lanceolate, hispid from stiff hairs on both surfaces, as well as on the petiotes; corymsbs trichotomous, terminal; the large foliaceous segments of the calyx roundish, mucronate, triple-nerved, somewhat cor-
date and somewhat cuneated at the base; white, fruit roundish, not crowned, warted; calyce teeth short. \( ^{\pi} \) S. Native of the East Indies, at Amherst, Chappedong, and Tavoy.

*Warted-fruit* Mussenda. Shrub 5 to 6 feet.

16 M. *corymbosa* (Roxb. fl. ind. 2. p. 290.) leaves oblong, pointed, and are as well as the branches smooth; corymsbs terminal, smooth; stipulas coriaceous at the base, and cuspitate at the apex; calycines segments sessetous: the bractea-formed one ovate-lanceolate; lobes of corolla ovate, acute. \( ^{\pi} \) S. Native of Ceylon, Malabar, and other parts of the East Indies. The bractea-formed calyce segment is white, and the border of the corolla orange-coloured, but greenish underneath. In some parts of India the white floral leaves are brought to table as an esculent herb.

*Corymbose-flowed* Mussenda. Shrub 5 to 6 feet.

17 M. *macrophylla* (Wall. in Roxb. fl. ind. 2. p. 288.) branchlets beset with soft silky hairs; leaves ovate, acuminate, pubescent; stipulas broad-ovate, bifid, acuminate and recurved at the apex; corymsbs terminal, trichotomous, very pilose, on short peduncles; calyce segments foliaceous, broad, oblong-lanceolate; bracteas large, very hairy. \( ^{\pi} \) S. Native of Nipa-

*pentium the mountains Chindaguery and Nagaroon. Branches tetragonal, brown. Leaves green above and pale villous beneath. Stipulas nearly twice as long as the petiotes. Corymsbs shorter than the uppermost pair of leaves. There are generally 3 floral leaves in each corymb, which are snow white, and 2-3 inches long. Bracteas large under each division of the inflor-

*ence. Flowers large, orange-coloured, hairy outside. Ber-

ries dark purple, hairy, size of a marrowleaf pea.

*Long-leaved* Mussenda. Shrub 5 to 6 feet.

18 M. *wallchi*; leaves long, elliptic, tapering much to

both ends, acuminate, quite glabrous; corymsbs glabrous, tri-

chotomous, terminal; the large petiolate calyce leaflets gla-

rous, triple-nerved, white, acuminate; fruit roundish, crowned by the calyce segments, which are linear. \( ^{\pi} \) S. Native of the East Indies, at Tavoy and Rangoon. M. longifolia, Wall. cat. no. 6258, but not of Lam.

*Wallich’s* Mussenda. Shrub 6 to 8 feet.

19 M. *incana* (Wall. in Roxb. fl. ind. 2. p. 299.) shrub hoary in every part from adpressed soft hairs; leaves ovate-

oblong, almost sessile, white beneath; stipulas broad at the base, lanceolate at the apex, adpressed; corymsbs terminal, ses-

sile, faciulately, feath-flowered; bracteas linear-subulate; bractea-

formed segment of the calyx large, ovate, petiolate, and acu-

minated. \( ^{\pi} \) G. Native of Nipal, towards Gosaingsthan. Root simple, slender. Stem about the thickness of a goose quill, undivided, though seldom with 1 or 2 slender alternate
brances. Leaves rather longer than the interstices, which are pretty equal, about 5–6 inches long, villous above. Stipulas about the length of the petioles, furnished with a number of glands inside on the lower part. Corynbs very hairy. Floral leaves subcordate, milk white, downy. Tube of corolla very long, hairy.

**Hoary Mussaenda.** Shrub 2 to 3 feet.

20 **M. cuneiformis** (D. Don, prod. fl. nep. p. 139.) leaves cuneate-oblong, acuminated, downy on both surfaces as well as on the branches; stipulas lanceolate, acuminated; coryms terminal; bracteas lanceolate; calycine segments linear, acute, 5 times shorter than the corolla: one of which is bractea-formed, petiolar, oval, acuminated; tube of corolla villous. H. S. Native of Nipal. The large calycine segment is probably white, and the flowers are probably yellow.

**Wedge-leaved Mussaenda.** Shrub 4 to 6 feet.

**Sec. II. La'ndia** (M. de la Land, a correspondent of the Museum of Natural History at Paris), Comm. herb. D. C. prod. 4. p. 372. Lobes of calyx equal or nearly so; having none of the segments expanded into bractea-formed leaves. Capsule naked at the apex, not crowned by the calyx. Leaves opposite.

21 **M. la'ndia** (Lam. ill. t. 157. f. 2.) Poir. dict. 4. p. 392.) leaves ovate, acuminated, clothed with villous pubescence on both surfaces; branches, petioles, coryms and corollas villous; lobes of calyx equal, triangularly lanceolate, 12 times shorter than the tube of the corolla. H. S. Native of the Mauritius, where it is called Quinquina indigene, or Indigenous Peruvian bark, and is used in the cure of fevers. M. latifolia, Poir. suppl. 4. p. 36. dict. science. nat. 33. p. 452. Rodélia Lándia, Spreng. syst. 1. p. 707. M. holosericea, Smith, in Rees' cycl. vol. 24. no. 6. Bracteas linear, acute. Corolla an inch long, hairy outside.


22 **M. uniflora** (Wall. cat. no. 6264.) young branches, tube of corolla, calyxes, and fruit villous; leaves small, rather villous, roundish, acute, running down the petioles at the base; stipulas villous, narrow; calycine segments subulate; corolla with a long tube and a spreading limb; flowers solitary, terminal. H. S. Native of the East Indies, at Tavoy. Flowers as large as those of the common jasmine, probably white.

**One-flowered Mussaenda.** Shrub 1 to 2 feet.

23 **M. staminani** (Michx. med. ex Borry in litt. D. C. prod. 4. p. 372.) leaves oval, ending in short cuspitate points, hardly pubescent, unless on the nerves; branches, coryms, and corollas pubescent; lobes of calyx equal, elongated, lanceolate, 6 times shorter than the tube of the corolla. H. S. Native of the Mauritius. Oxyanthus cymosus, Reichb. in Sieb. fl. maur. exsic. 2. no. 78. M. Lándia, Smith, in Rees' cycl. vol. 24. no. 5. Tube of corolla 1½ inch long, ss in M. Lándia. The lobes of the calyx are 3 lines long in the present plant, while in that of M. Lándia they are hardly a line and a half long.

**Stadmann's Mussaenda.** Shrub 4 to 6 feet.

24 **M. arcuata** (Lam. dict. 4. p. 392.) leaves oval-oblong, acuminated, rather pilose on the nerves beneath; branches, coryms, and corollas glabrous on the outside; lobes of calyx linear-subulate, a little unequal; tube of corolla very villous inside. H. S. Native of the Mauritius. Sieb. fl. maur. exsic. 2. no. 78. Lándia stelligera, and Lándia astrogírapha, Comm. ex herb. mus. Paris. The flowers are yellow, and when immersed in water tinge it with the same colour. Limb of corolla glabrous outside. Branches arching.

**Arch-branched Mussaenda.** Clt. 1882. Shrub 4 to 5 ft.

25 **M. tomentosa** (Wall. cat. no. 6265.) branches downy; leaves elliptic or ovate-elliptic, acute, clothed with white woolly
down on both surfaces; calyx downy, with subulate segments; stipulas subulate, twin on both sides; tube of corolla long, slender, hairy, with a broad, spreading border; berries roundish, crowned by the calyceal teeth; coryms terminal, trichotomous. H. S. Native of the East Indies, on the Ginge mountains. Flowers apparently white, as large as those of jasmine.

**Tomentose Mussaenda.** Shrub 4 to 6 feet.

26 **M. elegans** (Schum. pl. guin. p. 117.) leaves oval, ending in short cuspitate points, and are as well as the branches glabrous; coryms terminal, trichotomous, pubescent; segments of calyx linear, spreading a little; tube of corolla very hispis, but the lobes are glabrous. H. S. Native of Guinea, where it was collected by Thou., M. discolor, Thonna, in herb. Vahl, ex Peerari. Very distinct from M. discolor, Wild. **Elegant Mussaenda.** Shrub 4 to 6 feet.

27 **M. cordifolia** (Wall. cat. no. 6260.) glabrous in every part; leaves ovate-oblong, acuminated at the apex and corolate at the base, glabrous, coriaceous, on short petioles; coryms trichotomous, terminal; berries turbinate, not crowned. H. S. Native of Polo Bangan.

**Heart-leaved Mussaenda.** Shrub 5 to 6 feet?

28 **M. pæbala** (Wall. cat. no. 6261.) branches and leaves rather hispid from scattered hairs; leaves ovate-lanceolate, acuminated, tapers to both ends; stipulas subulate; coryms terminal, crowded; tube of corolla very long, slender, rather swollen near the top; calycine segments linear. H. S. Native of the East Indies, at Tavoy. M. angustifolia, Wall. miss. Apparently a rambling, small shrub.

**Small Mussaenda.** Shrub rambling.

29 **M. sericea** (Blmn. bijdr. p. 986.) leaves ovate-oblong, acuminated, attenuated at the base, glabrous, except on the veins underneath; branches silky; coryms terminal, trichotomous, silky. H. S. Native of the Moluccas. Segments of calyx linear-lanceolate, silky, all equal. Tube of corolla elongated, densely tomentose.

**Silky Mussaenda.** Shrub 4 to 6 feet.

30 **M. repens** (Wall. cat. no. 6263.) root creeping; leaves elliptic, acuminated, rather hispid; petioles, young branches, and coryms clothed with brown villi; stipulas subulate, villous; coryms terminal; calyx downy, with linear-subulate segments; corolla long, slender, swelling a little near the top. H. S. Native of Silhet. The leaves opposite each other are unequal in size.

**Creeping Mussaenda.** PI. ½ to 2 feet.

5 **Sec. III. Ca'anthie** (from ca'au, kaio, to burn or nip, and arboe, anthus, a flower; the flowers of the species are deprived of the large calyceine leaves). D. C. prod. 4. p. 372. Lobes of calyx equal, all linear or setaceous, permanent, therefore the flower is crowned. Leaves 3 in a whorl. Stipulas broad at the base, acute at the apex, alpresse, coriaceous.—Species natives of Madagascar. Perhaps a proper genus.

31 **M. citriformia** (Lam. in Poir. dict. 4. p. 393.) leaves 3 in a whorl, ovate, almost sessile, coriaceous, and are as well as the branches glabrous; stipulas broad at the base, acute, short; coryms terminal; lobes of calyx linear. H. S. Native of Madagascar. Habit of Ruanofila. Corolla small, yellow.

**Citrone-leaved Mussaenda.** Shrub 5 to 6 feet.

32 **M. longifolia** (Lam. in Poir. dict. 4. p. 393.) leaves 3 in a whorl, lanceolate-oblong, rather tomentose from short down; stipulas broad at the base, acute; coryms terminal; lobes of calyx setaceous; capsule ribbed. H. S. Native of Madagascar. Very similar to the preceding species. Leaves green above and whitish beneath. Fruit pyriform, with 8 or 10 longitudinal ribs.

**Long-leaved Mussaenda.** Shrub 5 to 6 feet.
† Species not sufficiently known.

33 M.? glomerulata (Lam. in Poir. dict. 4. p. 393.) leaves ovate, acute, smoothish beneath, but clothed with fuscous velvety down above and on the petioles; branches rather villous; flowers terminal, glomerate; calyx campanulate, with a 5-6-toothed limb. t. S. Native of French Guiana. Rodelèita glomerulata, Spreng. syst. 1. p. 707. Peduncles and calyces beset with white silky hairs. Corolla tubular, white, rather villous outside. Stamen 5-6.

Globrate-flowered Mussenda. Shrub 5 to 6 feet.

34 M. niscoton (Pet. Th. in Willd. rel. ex Schultes, syst. 5. p. 254.) hairy; leaves scabrous, strigose above, and clothed with canescent pili beneath; flowers coriaceous, permanent. t. S. Native country unknown, as well as flowers.

Two-coloured-leaved Mussenda. Shrub.

35 M.? Chinea'ssis (Lour. coeh. p. 152.) leaves in fascicles, lanceolate, glabrous; flowers solitary, terminal; berries 4-celled, many-seeded. t. G. Native of China, in the suburbs of Canton. Calyx 5-parted, with lanceolate segments. Seeds bony, almost kidney-shaped. This is certainly not a species of Mussca'nda.

China Mussenda. Shrub 5 to 6 feet.

36 M. echinolbes (Willd. rel. ex Schultes, syst. 5. p. 254.) leaves oblong, acute, glabrous; flowers coriaceous. t. S. Native country unknown. A climbing shrub. Echites-like Mussenda. Shrub cl.

37 M. tetrandra (Schultes, syst. 5. p. 254.) leaves smooth, glabrous, acute; coriaceous; petals tetrandrous. t. S. Native country unknown. Macroleuconum tetrandrum, Cav. ann. sc. ex Schultes.

Tetrandrous-flowered Mussenda. Shrub.

Cult. Some of the species of this genus are very pretty, and worth cultivating in collections. A mixture of loam and peat is the best soil for them; and cuttings are easily rooted in the same kind of mould under a hand-glass, in heat.

XXVIII. KUTCHUBE'A (named after — Koutchouba, minister of the home department of Russia; a promoter of the sciences). Fisch. in litt. ex D. C. prod. 4. p. 373.

Lin. syst. Octandria, Monogynia. Calyx with a turbinate tube, and a tubular truncate limb, which is longer than the ovary. Corolla with a cylindrical tube, much longer than the calyx, a villous throat, and an 8-parted limb, which is twisted in avastion; segments of corolla lanceolate, acuminated. Anthers 8, almost sessile, oblong, acute, inserted in the throat of the corolla among the hairs. Style filiform; stigma large, clavate, with 2 lobes, which are applied to each other, hairy and convex on the outside, but flat and smooth on the inside. Fruit unknown.—A glabrous tree, native of Guiana. Branches terete. Leaves oblong, bluntnash, on short petioles. Stipulas ovate, broad, short, combined, permanent, sometimes biform. Flowers terminal, somewhat coriaceous, pedicellate, large, bracteless. Corolla purple at the base and pale at the apex.—This genus comes very near Genipa and Cassu'pa; from the first it differs in the tube of the corolla being much longer than the calyx; and from the second in the calyx being tubular, and in the stigma being clavate; and from both in the greater number of the parts of the flower.

1 K. insigne (Fisch. l. c. with a figure). t. S. Native of French Guiana, where it was collected by Martin. A tall elegant tree. Tube of corolla 3 inches long, coriaceous. Famous Kutchubea. Tree. Cult. For culture and propagation see Muccsea'nda above.


Lin. syst. Hexandria, Monogyinia. Calyx with a globose tube and a short entire hardly perepicous limb. Corolla much longer than the calyx, tubular, wrinkled on the outside, with a villous throat, and a 6-parted short limb; lobes acutish and spreading a little. Anthers 6, almost sessile, inserted in the throat of the corolla among the villi. Stigma bifid, slender, inclosed. Berry almost globose, crowned, 2-celled, many-seeded; placenta fixed to the middle dissemination. Seeds minute.—An American tree. Leaves ovate-oblong, on long petioles, coriaceous, rather tomentose, about a foot long. Thyrse panicled, terminal, with opposite flowers. Bracteoles 2-3 under each flower, sometimes adnate to the calyx. Corolla 1-2 inches long, pale red.

1 C. verrucosa (Humb. et Bonpl. l. c.). t. S. Native of South America, in shady places on the banks of the Rio Negro, near San Carlos. H. B. et Kuntz, nov. gen. amer. 3. p. 412. Warted Cassu'pa. Tree 30 to 40 feet.

Cult. See Muccsea'nda above for culture and propagation.


Lin. syst. Pentandria, Monogyinia. Limb of calyx turbinate, urceolate, almost quite entire, deciduous. Corolla with a short tube, a 5-parted spreading limb, and a briskly throat. Stamens 5, seated in the mouth of the tube; filaments short; anthers linear, rather incumbent, exserted. Style short; stigma thick, 2-lobed, exserted. Berry globose, unoblate, crowned by the circular base of the calyx, 2-celled, many-seeded; placenta membranous, stipitate, rather fleshy, transversely lamellate. Seeds compressed. — Climbing shrubs, natives of Java. Leaves distich. Stipulas interpetiolar, individed, or twin and rather concre. Flowers rising from the axis of the leaves in dense corymb, unilateral.—This genus comes near to Canthium and Bertilia, but differs from them in the undivided limb of the calyx, and in the short tube of the corolla.

1 G. acuminata (Blum. l. c.) leaves ovate or elliptic-oblong, acuminated, almost sessile, glabrous; cymes short, indifolious; pedicels numerous, 1-flowered. t. S. Native of Java, on the west side, on the mountains. Leaves 7-8 inches long.

Acuminated-leaved Gynopachys. Shrub cl.

2 G. tomentosa (Blum. l. c.) leaves sessile, rather corymbose-oblong, acuminated, shining above, but clothed with deciduous rufous tomentum on the veins beneath and on the corymb, which are dichotomous and interfoliaceous. t. S. Native of Java, on Mount Burangrang, in woods.

Tomentosa Gynopachys. Shrub cl.

3 G. coriodya (Blum. l. c.) leaves almost sessile, elliptic-oblong, bluntnash, glabrous; corymb trichotomous, interfoliaceous, divaricate. t. S. Native of Java, on Mount Salak, in woods. Opening of corolla beset with yellowish rufous bristles. Fruit globose, the size of a pea.

Coriodya flowered Gynopachys. Shrub cl.

Cult. See Muccsea'nda above for culture and propagation.


Lin. syst. Pentandria, Monogyinia. Calyx with a turbinate tube, and a very short 5-toothed limb. Corolla with a very
long tube, a naked dilated throat, and a 5-parted spreading limb; the lobes obtuse. Anthers rising from the throat of the corolla, exerted, linear-sagitate, furnished each with a blunt appendix at the base? Style filiform, fissiform at the apex; stigma clavate, bilamellate. Berry rather fleshy, 2-celled, crowned. Seeds numerous, roundish-ovate, imbedded in soft pulp.—Unarmed shrubs or undershrubs. Leaves opposite, on short petioles. Stipulas triangular or ovate. Flowers terminal, coriaceous.

1 T. Longiflora (Aubl. guian. 1. p. 131. t. 50.) stem tetragonal, quite simple; leaves lanceolate-oblong, acuminate at both ends, glabrous; flowers almost sessile, aggregate. ♂ S. Native of French Guiana, at Araura. Lam. ill. t. 163. f. 1. Ucriana speciosa, Willd. spec. 1. p. 961. Tocoyena longifolia, Poir. dict. 7. p. 602. but not of Kuntz. Leaves a foot long, and 4-5 inches broad. Corolla 8-9 lines long, with the tube yellow, and the limb white. Stipulas triangular.

Long-flowered Tocoyena. Clt. 1826. Shrub 3 to 6 feet.


Large-leaved Tocoyena. Shrub.

3 T. Longifolia (H. B. et Kuntz, nov. gen. amer. 3. p. 411. but not of Poir.) branches terete; leaves ovate-oblong, acute, glabrous, shining, with revolute margins; stipula ovate, acuminate; flowers racemose; teeth of calyx short, acute. ♂ S. Native of New Granada, in hot places. Ucriana Humboldtii, Spreng. syst. 1. p. 761.

Long-leaved Tocoyena. Shrub.

4 T. Mutisii (H. B. et Kuntz, nov. gen. amer. 3. p. 411.) branches terete; leaves oblong, acutish, glabrous, shining, with somewhat revolute margins; stipula ovate, acuminate; flowers terminal, coriaceous; teeth of calyx short. ♂ S. Native of New Granada, in hot places. Ucriana Mutisii, Spreng. syst. 1. p. 761.

Mutis's Tocoyena. Shrub.

5 T. Hirsuta (Moricand, herb. ex D. C. prod. 4. p. 375.) leaves elliptic, ending each in a short cuspidate point, clothed with villous down above, and with soft velvety hairs beneath. ♂ S. Native of Brazil. Tube of calyx 4 inches long.

Hairly Tocoyena. Shrub.

Cult. See Özythnus, p. 494; for culture and propagation.


Linn. syst. Pentándria, Monogynia. Calyx with an ovate tube, and a short 5-toothed limb. Corolla funnel-shaped, with a very long terete tube, a villous hardly dilated throat, and a 5-parted limb; the segments spreading, obtuse, and nearly equal; the alabastra gibbons on one side. Stamens 5, rising from the throat of the corolla, free, unequal, a little exserted. Style filiform, slender, and bifid at the apex; with the lobes unequal, rather papillose and acute. Berry ovate, crowned by the calyx, succulent, 2-celled, many-seeded. Seeds unknown.

—Glabrous shrubs or small trees, natives of Guiana. Branches terete. Leaves opposite, on short petioles, coriaceous. Stipulas oblong-triangular, at length falling off. Flowers white, very long, disposed in terminal corimbos.

1 P. Longiflora (Aubl. guian. 1. p. 134. t. 51.) leaves oblong, acuminate, acute at the base; stipula oblong; calyx bluntly 5-toothed; tube of corolla very much incurved, and nutate at the apex. ♂ S. Native of French Guiana, on the banks of rivers. Lam. ill. t. 163. Solena longiflora, Willd. spec. 1. p. 961. Kyranthus longiflorus, Gmel. syst. 1. p. 163. Corolla white, with the tube very long, and green at the base; and the hairs in the throat are very long. Berry yellow, about the size of a hen's egg. Seeds 15, imbedded in the red pulp, according to Aublet. The limb of the corolla is said to be regular. Corimbos composed of about 6 flowers; and the flowers are pedicellate and scaly at the base from bractes.

Long-flowered Posoqueria. Clt. 1820. Shrub 5 to 6 feet.

2 P. Latifolia (Rœm. et Schultes, syst. 5. p. 227.) leaves ovate, acuminate, obtuse at the base, or a little coriaceous; stipula broad, triangular; calyx bluntly 5-toothed; tube of corolla straight; and the limb irregular; alabastra gibbons on one side. ♂ S. Native of French Guiana and Brazil. Solena latifolia, Rudge, guian. 1. p. 26. t. 40. Tocoyena latifolia, Lam. ill. t. 163. f. 2. Poir. dict. 7. p. 692. Corolla white, with the tube 4 inches long.

Broad-leaved Posoqueria. Clt.? Shrub 5 to 6 feet.

3 P. Decora (D. C. prod. 4. p. 375.) leaves ovate, ending each in a short cuspidate point, obtuse and rather coriaceous at the base; stipula ovate, obtuse, large, foliaceous, and coriaceous; calyx bluntly 5-toothed; tube of corolla straight; alabastra rather gibbons on one side. ♂ S. Native of French Guiana. Allied to P. latifolia, but differs from all the species in the form of the stipula. Tube of corolla 5-4 inches long. Flowers terminal, coriaceous.

Nect Posoqueria. Shrub.

4 P. Trinitatis (D. C. prod. 4. p. 375.) leaves ovate, on short petioles, ending in short cuspidate points, obtuse and rather coriaceous at the base; stipula ovate, obtuse, large, foliaceous, and coriaceous; calyx bluntly 5-toothed; tube of corolla straight; alabastra rather gibbons on one side. ♂ S. Native of the Island of Trinidad. Sieb. f. trim. exsic. no. 215. without a name. Tube of corolla slender, ½ inches long. Corollas white.

Trinidad Posoqueria. Shrub 5 to 6 feet.

5 P. Havanensis (D. C. prod. 4. p. 375.) leaves ovate, acute, membranous, bluish at the base; stipula lanceolate, acute; calyx bluntly 5-toothed; tube of corolla straight; alabastra gibbons on one side. ♂ S. Native of Cuba, about the Havana. Tube of corolla slender, ⅜ inches long. Petioles 6 lines long.

Havanah Posoqueria. Shrub 5 to 6 feet.

6 P. Gracilis (Rœm. et Schultes, syst. 5. p. 277.) leaves oval-lanceolate; stipula oblong; calyx acutely 5-toothed; tube of corolla curved, and the limb irregular. ♂ S. Native of French Guiana, in remote woods, from the river Darapa to Kaw. Solena gracilis, Rudge, pl. guian. p. 27. t. 41. It differs from P. longiflora in the character given, and in the slender nerves of the leaves. Flowers white, 4-5 in a corymb.

Slender-flowered Posoqueria. Clt. 1825. Shrub 5 to 6 ft.

7 P. Revoluta (Nees in flora, 1821. p. 328. Schrad. gott. anzi. 1851. p. 714.) leaves elliptic-ovate, each ending in a short cuspidate point, with revolute margins; stipula deciduous; corimbous dense; tube of corolla straight; throat villous, and limb irregular. ♂ S. Native of Brazil. P. insignis, Neuw. in flora. 1821. p. 301. in reis. bras. with a figure. Flowers white.

Reed-leaved Posoqueria. Shrub 5 to 6 feet.
Cult. For culture and propagation see Oxyanthus below. All the species are very pretty and propagate very rapidly in flower.


**Pentandria, Monogynia.** Calyx with an obovate tube (f. 92. a.), and a short, acutely 5-toothed limb (f. 92. a.). Corolla with a very long tube (f. 92. c.), a glabrous throat, and a 5-parted regular limb (f. 92. d.): having the segments oblong and acuminated. Stamens 5, rising from the throat of the corolla, free, exserted (f. 92. b.). Anthers very acute. Style filiform, clavate at the apex (f. 92. e.), protruding beyond the anthers. Fruit 2-celled, and probably baccate.—

Shrubs, natives of Guinea. Leaves elliptic, acuminate, on short petioles. Stipulas oblong-triangular, falling off by slowly. Peduncles axillary, racemose, corymbose.—This genus comes very near *Posoqueria*, but differs from that genus in the limb of the corolla being regular, in the throat being glabrous, and its parts being acute, and in the clavate stigmatic filaments.

1. **O. speciosus** (D. C. L. c. e. and in diss. inc. with a figure) branches, leaves, and calyces quite glabrous; calyces teeth very much acuminated; racemes many-flowered; tube of corolla one half shorter than the leaves. 

2. **O. tubiflorus** (D. C. prod. 4, p. 376.) branches, leaves, and calyces glabrous; calyces teeth bluntish; racemes very short, 3-flowered; tube of corolla longer than the leaves. 

3. S. Native of Sierra Leone on the mountains, where it was collected by Smeathmann. Flowers about 20 in each raceme, apparently red, according to the dried specimens, but are probably white or milk-coloured in their recent state.

**Showy Oxyanthus.** Shrub 3 to 4 feet.

3. **O. marantif.** (D. C. prod. 4, p. 376.) branches, petioles, and nerves of leaves on the under side as well as the calyxes beset with hairy down; calyces teeth acute; racemes few-flowered; tube of corolla much longer than the leaves. 

**Tube-flowered Oxyanthus.** Fl. July. Ch. 1789. Sh. 3 to 4 ft.

3. **O. rupestris** (D. C. prod. 4, p. 376.) branches, petioles, and nerves of leaves on the under side as well as the calyxes beset with hairy down; calyces teeth acute; racemes few-flowered; tube of corolla much longer than the leaves. 

**Hairly Oxyanthus.** Fl. July. Ch. 1789. Shrub 2 to 3 ft.

4. **O. villosus**; villous all over; leaves petiolate, obovate, acute; flowers subcapitate, terminal; tube of corolla very long; style much exerted; stigma clavate. 

**Villosus Oxyanthus.** Shrub to 3 feet.

**Cult.** This genus is easily distinguished by its very long, slender, sweet-scented flowers. All the species thrive well in a mixture of loam, sand, and peat; and cuttings are easily rooted by planting them in a pot of sand, and placing it under a hand-glass, in heat.

XXXIV. STYLOCORNYA (from στύλος, stylos, a style, and κόρυνθος, corynhe, a club; in allusion to the stigma, which is clavate). Cav. icon. 4, p. 45. t. 368. Gaertn. [cf. carp. 3, p. 100, t. 197. Blum. bijdr. p. 982. D. C. prod. 4, p. 577.—Wahlenbergia, Blum. cat. hort. but. p. 14; but not of Schrad. and Cham.—Cerisius, Nees in flora, 1826, p. 116 and perhaps of Gaertn."

**Lin. syst. Pentandria, Monogynia.** Calyx with an oavate-globose tube, and a short, tubular, 5-toothed limb. Corolla salver-shaped, with a cylindrical tube, and a 5-parted limb. Stamens 5, inserted in the mouth of the tube of the corolla; anthers linear, very long. Style exerted; stigma clavate, undivided, or the lobes are closely conffeminated. Globes globose, crowned by the calyx, dry, 2-celled; placentas spongy, adnate to the middle dissociation. Seeds numerous, wingless, angular. Albumen rather cartilaginous. Embryo long.—Trees or unarmed shrubs. Leaves opposite, oval, or oblong, petiolate. Stipulas solitary on both sides, 1-nerved in the middle, broad at the base and acuminate at the apex. Peduncles axillary, and almost terminal, bearing many flowers disposed in corymbs or cymes.

1. **S. racemosa** (Cav. l. c. t. 368.) leaves elliptic-oblong, acute at the base, acuminate at the apex, glabrous; panicels axillary, dichotomous, loose, one-half shorter than the leaves; corolla salver-shaped, having the lobes longer than the tube. 

2. **S. racemosa** (Blum. bijdr. p. 982.) leaves oblong, acuminate at both ends, glabrous, beset with minute strigile on the veins beneath; corymbs terminal, fastigate, dense-flowered; corolla salver-shaped, with the segments shorter than the tube. 


**Frangrant** Styllocoryna. Shrub 5 to 6 feet.

3. **S. laniflora** (Blum. bijdr. p. 983.) leaves oblong, acuminate at both ends, strigate on the veins beneath; corymbs terminal, trichotomous, divaricate, loose-flowered; corolla salver-shaped. 

4. **S. lonicera**; leaves oblong, acuminate at both ends, strigate on the veins beneath; corymbs terminal, fastigate, dense-flowered; corolla salver-shaped, with the segments shorter than the tube.

5. **S. lonicera**; leaves oblong, acuminate at both ends, strigate on the veins beneath; corymbs terminal, fastigate, dense-flowered; corolla salver-shaped, 5-parted.

6. **S. lonicera**; leaves oblong, acuminate at both ends, and
are, as well as the branches, glabrous; panicel terminal, fasti-
giate; flowers and pedicels pubescent on the outside. t. S. Native of the island of Manillas, near Sorzogon.

Long-leaved Stylocoryna. Shrub or tree.

7 S.? PANDAKI (D. C. prod. 4. p. 377.) glabrous; spines scattered; leaves oblong, minutely apiculate at the apex; racemes axillary, short; pedicels in fascicles, 1-flowered; tube of corolla shorter than the lobes. t. S. Native of the East Indies. Gardénia Pandaki, Vahl, erb. ex Puer. Rândia Malabárica, Lam. Branches spineous on one side. Leaves coria-

cous, an inch long, and 4 lines broad. Pedicels axillary, very short, bearing the pedicels in an umbel. Stigma oblong, un-
divided. Fruit unknown. Perhaps sufficiently distinct from the following.

Pandaki Stylocoryna. Shrub.

8 S. MALABABA (D. C. prod. 4. p. 377.) spines opposite, 3 times shorter than the leaves; leaves oblong-obovate, obtuse, cuneate at the base, glabrous, beset with glandular pili in the axils of the veins beneath; umbels 8-10-flowered, almost termi-
nating the branches; flowers on short pedicels; limb of calyx 5-toothed. t. S. Native of Coromandel and Malabar near Cochin, in arid places. Gardénia frangrans, Roxb. corom. t. 197. Posoqueria frangrans, Roxb. fl. ind. 2. p. 167. Flowers small, white, sweet-scented. Berry globose, size of a cherry, red, 2-
celled. Seeds orange coloured. Perhaps G. frangrans, Roth, nov. spec. 150. is the same. The Benkâra of Rheed, mal. cited by Lam. for this species, is a distinct plant, from the flowers being said to be purple. The shrub is well adapted for making hedges, being very well armed with thorns.

Malabar Stylocoryna. Cht. 1820. Shrub 4 to 5 feet.

Cult. For culture and propagation see Oxyanthus, p. 494.


Lin. stat. Pentandria, Monogynia. Calyx with an ovate tube, and a tubular truncate or subdenticate limb. Corolla sal-
ver-shaped, not exceeding the tube of the calyx; limb large, 5-
parted; segments ovate, acute. Anthers linear, sessile in the

throat of the corolla, exerted. Stigma clavate, obtuse, un-
divided. Berry corticate, somewhat 4-celled, crowned by the tube of the calyx, attenuated at both ends. Seeds numerous, horizontal, nesting in the pulp. Allumens cartilaginous. Embryo with a common radicle, and foliaceous cotyledons.—Trees. Leaves opposite, oval or oblong. Stipulas interpectorat, oval, acuminate, deciduous. Flowers axillary or terminal, solitary or

two, white, at length yellow. Fruit when young yielding a black juice. Genipa agrees with Stylocoryna in the undivided stigma, and with Gardénia in habit; but from both it is easily distin-
guished by the truncate limb of the calyx and fruit.

1 G. Americana (Lin. spec. 251.) leaves oblong-lanceolate, quite glabrous on both surfaces; peduncles axillary, dichomo-
cous, coriaceous. t. S. Native of the Caribbean islands, as in St. Domingo, &c., and now cultivated in many parts for the sake of the fruit, especially in Brazil and Guiana. Plm. ed. Burm. t. 136. Gärtn. fil. carp. t. 190. Gardénia Genipa, Swartz, obs. p. 84.—Sanjuanà, Maregr. bras. p. 92. with a figure. Fis. bras. 159. with a figure. Flowers small, white. Fruit large, greenish-white, full of dark purple juice; pulp edible, rather acid.

American or Common Genipa. Cht. 1779. Tree 20 to 30 ft.

2 G. CARU'TO (H. B. et Knuth, nov. gen. amer. 3. p. 407.) leaves obovate, obtuse, glabrous above, clothed with velvety to-

tementum beneath; peduncles terminal, 2-3-flowered; pedicels longer than the peduncle. t. S. Native on the banks of the Orinoco and Rio Negro, and near Caraccas and Callagheana, where it is called Caruto by the natives. Corolla white, having the tube silky both inside and outside.

Caruto Genipa. Tree 20 feet.

3 G. PUBE'SCENS (D. C. prod. 4. p. 378.) leaves obovate, ob-
tuse, glabrous above, and clothed with velvety pubescent

be

neath; flowers by threes, almost terminal, on very short pedi-
cels. t. S. Native of Cuba, about the Havana. Flowers very like those of G. Americana, but are on shorter pedicels, and fewer in number; and the leaves are broader and blunter.

Downy Genipa. Tree 20 feet.

4 G. OBLONGIFOLIA (Ruiz et Pav. fl. per. 2. p. 67. t. 220. f. a.) leaves oblong-ovate, obtuse, shining above, and downy on the nerves beneath, with rather revolute margins; flowers crowded at the tops of the branches, on short pedicels, and disposed somewhat racemously. t. S. Native of Peru, on the Andes, in groves in hot places, and at Guayaquil. The corolla is said to be yellow, but is probably white in the recent state as in the rest of the species. Fruit size of a peach. The seeds and pulp of the fruit are used by the Indians to dye their face and hands of a permanent black colour.


5 G. striatia (D. C. prod. 4. p. 378.) leaves elliptic, membranous, acuminate at both ends, glabrous, on short pe-
dicels; stipulas small, deciduous; pedicels axillary, short, 1-
flowered; limb of calyx broadly truncate, ciliated, short; tube of corolla broad, conical, striated, borne on the inside at the base, and closed in the middle inside by a circle of hairs; stigma thick, 2-lobed. t. S. Native of Brazil. Perhaps a proper genus. Leaves somewhat sinuate from some cause.

Striped-flowered Genipa. Tree.

† Species not sufficiently known.

* American.

6 G. MERIANAE (Rich. act. soc. hist. nat. par. p. 107.) hairy; leaves oblong-obovate; flowers crowded at the tops of the branches; fruit globose, very villous, crowned by the tube of the calyx. t. S. Native of Cayenne and Surinam. Poir. suppl. 2. p. 708. Durôa eriôpila, Lin. fil. suppl. p. 30, and p. 200.—Merian, sur. t. 43. The tree has the habit of Iterinia coccinea. Flowers hexamero-

uous and hexandrous, nearly sessile, very like those of Jasminum Sambac. Berry hairy, about the size of the chenched flat, umbilicate. Seeds imbedded in the pulp, which is graceful and edible.


** Asiatic.

7 G.? BUFFALINA (Lour. cooh. p. 149.) prickles long, straight, opposite; leaves ovate, glabrous, in fascicles; flowers solitary; calyx bluntly 5-cleft; berry almost dry, roundish. t. S. Native of Cochinchina. Flowers greenish-white. Berry brownish. Perhaps a species of Rândia or Gardénia, but the

berry is said to be 2-celled. Corolla rotate, 5-cleft.

Buffalo's Genipa. Shrub 6 feet.

8 G.? ESCULESTA (Lour. l. c.) stem quite simple; spines long, straight, opposite; leaves opposite, hairy, in fascicles; flowers lateral, in fascicles; calyx acutely 5-cleft; berry fleshy, roundish, 1-celled. t. S. Native of Cochinchina. Flowers greenish-white. Segments of corolla oblong, acuminate. Berry size of a cherry, edible.


9 G.? FLAVA (Lour. l. c.) prickles few, scattered, straight; leaves broad-lanceolate, glabrous; flowers solitary, terminal; corolla rather hairy. t. S. Native of China, about Canton. Corolla yellow, rotate. Fruit unknown.

Yellow-flowered Genipa. Shrub 5 feet.
Cult. For culture and propagation see Gardenia, p. 499.


Lin. syst. Pentándria, Monogynia Calyx with an ovate, usually ribbed tube, and a tubular truncate, toothed (f. 93. a.), cleft, or parted limb. Corolla funnel-shaped (f. 93. b.), or salver-shaped, having the tube much longer than the calyx; and the limb twisted in section (f. 93. c.), but afterwards spreading, from 5-9-parted. Anthers 2-5, linear, almost sessile in the throat of the corolla or exerted (f. 93. c.). Stigma clavate, bifid or bidentate; lobes thick, erect. Ovaryum 1-celled, half divided by 2-5 incomplete dissectem. Berry fleshy, crowned by the calyx, chartaceous or nucileate, inside, incompletely 2-5-celled. Seed pieces immersed in the fleshy pericarp placenta. Embryo albuminous.—Unarmed or spinosected trees or shrubs. Leaves opposite, and sometimes, though rarely, in whorls, oval or ovate. Flowers axillary or terminal, usually solitary, white, and generally sweet-scented. The fruit of the greater number of the species not being sufficiently known, they cannot be divided into proper sections.

§ 1. Shrubs without prickles. Tube of calyx or ovarium ribbed. Tube of corolla cylindrical.

1 G. florida (Lin. spec. p. 305.) shrubby, unarmed, erect; leaves elliptic, acute at both ends; flowers solitary, almost terminal, sessile, salver-shaped; calycine segments vertical, lanceolate-subulate, equaling the tube of the corolla in length; berry elongated, turbinate, ribbed. ɣ. G. Native of China, and cultivated in Japan, East Indies, the Cape of Good Hope, &c. Ker, bot. reg. t. 449. G. jasminoides, Sol. phil. trans. 52. t. 20.—Phak. amal. t. 448. f. 4. Jasmínium Capense, Mill. dict. no. 7. fig. t. 180. Ehret. pict. t. 13. Flowers white, sweet-scented, 5-9-parted. Berry 5-6-angled, 5-6-celled at the base, and 1-celled at the apex, orange coloured, size of a pigeon's egg, and the pulp is used for dyeing yellow in China and Japan. ɣ. G. florida (Roxb. flor. p. 477.) flowers white, when fully blown about the size of the middle rose. ɣ. G. This variety is very frequent in gardens. G. jasminoides, Ellis in phil. trans. vol. 51. t. 23. Jasmínium Capense, Mill. fig. t. 180.—Rumph. ambi. t. 12. f. 2.


2 G. radicans (Thunb. diss. gard. no. 1. t. 1. f. 1.) shrubby, unarmed; stems radicant; leaves lanceolate; flowers solitary, almost terminal, and nearly sessile, salver-shaped; segments of the calyx vertical, linear-subulate, equal in length to the tube of the corolla. ɣ. G. Native of Japan, and cultivated in the East Indies, and at the Cape of Good Hope. Thumb. fl. jap. t. 290. Ker, bot. reg. t. 73. Andur. bot. rep. t. 491. Flowers white, very fragrant.

Rooting Gardenia or Cape Jasmine. Fl. March, June. Cult. 1804. Pl. 1 to 2 feet.

3 G. angustifolia (Lodd. bot. cab. 513.) very like G. florída, from which it chiefly differs in being smaller, with narrower leaves. ɣ. S. Native country unknown. Flowers white, sweet-scented.


4 G. tomentosa (Blumm. fl. ex D. C. prod. 4. p. 379.) unarmed; brachyléts, leaves, and calycines clothed with velvety tomentum; leaves obovate-cuneated; flowers terminal, sessile, solitary; tube of calyx angularly ribbed: calycine teeth 10, subulate, short. ɣ. S. Native of the island of Java. Lobes of corolla 10, obovate-oblong; tube hardly longer than the calyx. Flowers white, sweet-scented. Fruit unknown.

Tomentose Gardenia. Shrub.

5 G. calyculta (Roxb. fl. ind. 2. p. 550.) arboreous, unarmed; leaves ovate, petiolate, acuminated, smooth; flowers terminal, solitary, sessile, involucrated; calycine segments ensiform; anthers inclosed within the tube of the corolla. ɣ. S. Native of the East Indies. Flowers large, white, fragrant, 5-parted.

Calyculate Gardenia. Tree.

6 G. costata (Roxb. fl. ind. 2. p. 550.) arboreous, unarmed; leaves cuneiform-oblong, smooth, ribbed; flowers terminal, salver-shaped; calycine segments resiniferous, caducous; berry drupaceous, oval, 5-ribbed, 1-celled, containing a 2-valved shell; placents 2, opposite. ɣ. S. Native of the mountainous parts of India; from those of Chittagong it has been introduced to the botanic garden of Calcutta. G coronaria, Hamilt. in Synes. emb. to Ava, p. 474. with a figure. Flowers large, white, sweet-scented, the tube being above 3 inches long, and the border above 4 in diameter; limb 5-parted. Berry yellow, containing a soft and rather fetid pulp.

Ribbed-fruited Gardenia. Tree 20 feet.

7 G. arántiá (Wall. in Roxb. fl. ind. 2. p. 560.) arboreous, unarmed, resiny on the younger leaves; leaves elliptic-oblate, ribbed, villous beneath; flowers terminal, solitary; limb of calyx truncate, broad, obscurely 3-lobed, and 5-keeled; tube of corolla very long; limb 6-8-lobed. ɣ. S. Native of Penang, where it grows on the hills. Flowers smaller than those of G. costata, at first snow white, but afterwards yellow, becoming when dry of a beautiful orange colour. Fruit precisely as in G. costata.

Kield-calycxed Gardenia. Tree.

8 G. grandiflora (Lour. coch. p. 147.) arboreous, unarmed; leaves lanceolate, shining; flowers solitary, lateral, and terminal, hexameron; segments of the calyx reflexedly-falcate; corolla salver-shaped, 6-parted; berry oblong, acute at both ends. ɣ. G. Native of Cochinchina, on the banks of rivers. Blumm. bijdr. p. 1013. Flowers large, white, sweet-scented. Berry hexagonal, 1-celled, glabrous, yellow. Seeds nesting in red pulp. Anthers 6, rarely 5-7.

Great-flowered Gardenia. Tree middle-sized.

9 G. Taíténés (D. C. prod. 4. p. 380.) unarmed, glabrous, resinous at the tops of the branches; leaves ovate, almost sessile; stipulas broad, connate, permanent, short-acuminated; flowers solitary, in the axils of the upper leaves, pedicellate; tube of calyx angular: limb 3-4-parted, with vertical-oblong foliaceous lobes; corolla with a long terete tube, and a 5-7-parted limb. ɣ. G. Native of the island of Tahiti, where it was collected by D'Urville. Lobes of calyx fewer by abortion than the lobes of the corolla. Stigma bifid, the lobes long, and acute. Fruit unknown.

Taihiti Gardenia. Shrub.

10 G. Martínkia (Siebold, in Blumm. bijdr. p. 1013.) unarmed; leaves opposite, or 3 in a whorl, obovate, coriaceous, glabrous; calyx angular, 5-cleft; segments subulate, spreading. ɣ. G. Native of Japan. The rest unknown.

Marúba Gardenia. Tree.

11 G. sulíá (Gartn. fil. carp. 3. p. 79. t. 194.) berry obovate or elliptic, attenuated at the base, angular from obtuse furrows, 1-celled; seeds imbedded in the pulp. ɣ. G. Native country unknown. Perhaps allied to G. florída.

Furrowed-fruited Gardenia. Shrub.

§ 2. Unarmed shrubs or trees. Tube of calyx or ovarium not
ribbed; having the limb equally toothed or parted, rarely truncate. Tube of corolla cylindrical.

12 G. mutabilis (Reinw. in Blum. bijdr. p. 1016.) unarmed? leaves oblong, acuminate, glabrous, but pubescent in the axis of the ribs on the under surface; flowers axillary, solitary; limb of calyx rather truncate; corolla with an elongated glabrous tube, and a 5-cleft limb. \( \gamma, S. \) Native of the island of Ceb- lebes. Said to be allied to \( G. \) carinata and \( G. \) tubiflora.

*Changeable-flowered Gardenia.* Tree.

13 G. calycina; leaves oblong-lanceolate, rather coriaceous, glabrous, on short pedicels; flowers axillary, solitary, almost sessile; corolla with a long tube, and a 5-cleft equal border; calyx 5-cleft. \( \gamma, S. \) Native of Sierra Leone, on the edges of woods. Flowers pale red, pendentulous.

*Large-calyciflorus* Gardenia. Shrub.

14 G. Reinwardtiana (Blum. bijdr. p. 1913.) unarmed? leaves oblong, attenuated at both ends, bluntish at the apex, coriaceous, glabrous; corynbs axillary, trifid, shorter than the leaves; limb of calyx obliquely 5-toothed, rather truncate; corolla with an elongated glabrous tube, and a 5-cleft limb. \( \gamma, S. \) Native of the Moluccas. Ignatia, Reinw. herb. ex Blum. Ovarium half 2-celled, many seeded.

*Reinwardt’s* Gardenia. Shrub.

15 G. latifolia (Ait. Hort. Kew. 1. p. 294.) arboreous, unarmed; leaves almost sessile, ovate or obovate: in the axis of the veins beneath are hollow glands with hairy margins; flowers terminal, 1–4-together, almost sessile, salver-shaped, 7–11-parted; limb of calyx short, subdeterminate; berry drupaceous, round, 1-celled, 5-valved. \( \gamma, S. \) Native of the East Indies, on barren rocky hills, in the Cercars and Carnatic. Roxb. Cor. 2. p. 18. t. 134. fl. ind. 2. p. 552. G. enceina, Kon. Miss. ex Roxb. Flowers very large and very fragrant, when they first open in the morning white, gradually growing yellow before night. Berry size of a puller’s egg, crowned by a small part only of the tube of the calyx. Leaves opposite or 3 in a whorl.

—G. latifolia, Gärt. fr. 5. p. 78. t. 193. is a distinct species from the fruit being crowned by the whole of the calyx, not with part of it.

*Broad-leaved Gardenia.* Ct. 1757. Tree 10 feet.

16 G. lucida (Roxb. fl. ind. 2. p. 553.) subarboreous, unarmed; with resinous buds; leaves oblong, smooth, shining, with lateral simple parallel veins; flowers almost terminal, solitary, on short pedicels; lobes of calyx 5, subulate, 3 times shorter than the tube of the corolla; berry drupaceous, containing a 2-valved shell. \( \gamma, S. \) Native of Chtitagong, and various other parts of India; and of the island of Luzon. Leaves about 6 inches long and 3 broad. Pedicels clavate, 1 to \( \frac{1}{2} \) inch long. Flowers large, pure white, fragrant, 5-parted.

*Shining-leaved Gardenia.* Ct. 1819. Shrub or tree.

17 G. arborea (Roxb. fl. ind. 2. p. 554.) arboreous, unarmed; leaves ovate-oblong; flowers terminal, almost sessile, usually by threes; corolla with a filiform tube, and a 5-parted limb; berry drupaceous, smooth, containing a 4-5-valved shell. \( \gamma, S. \) Native of the East Indies, among the Cercars. The leaves are deciduous during the cold season, and the shrub continues naked till the hot season is pretty far advanced. From the buds and wounds made in the bark there exudes a very beautiful yellow resin, like that from \( G. \) cummifera. The size, number, fragrance, mutability, and beauty of the flowers of this species render it more deserving of a place in the garden than any other species. The natives eat the fruit when ripe.

*Arborescent Gardenia.* Tree.

18 G. gummifera (Lin. fil. suppl. 1. p. 164.) shrubby, unarmed, with resinous buds; leaves oblong, bluntly acuminate, (hairy, ex Lin.) flowers sessile, solitary, almost terminal; seg-

ments of the calyx ovate, acute, very short; tube of corolla equal in length to the limb. \( \gamma, S. \) Native of Ceylon and Coromandel. Thub. diss. gard. no. 4. t. 2. f. 3. Rotuli. and Wild. in act. bonn. 4. (1803) p. 198. G. inermis, Dietr. lex. 4. p. 285. Allied to \( G. \) arborea. Flowers white, sweet-scented. From the bark of this tree exudes a yellow resin, similar to gum cemli.

*Gum-bearing Gardenia.* Shrub 3 to 4 feet.

19 G. clusiaefolia (Jacq. coll. append. 37. t. 4. f. 3.) shrubby, unarmed, glabrous; leaves obovate, retuse, and somewhat emarginate, coriaceous, on short pedicels; peduncles almost terminal, racemose; flowers on long pedicels; limb of calyx short, 5-toothed; corolla salver-shaped, with 5 linear acute segments, which are about the length of the tube. \( \gamma, S. \) Native of the Bahamas islands, where it is called by the inhabitants *seven years apple*, ex Catesb. car. 1. p. 59. t. 59. Flowers white, sweet-scented, with a greenish tube. Berry large, oval. Seeds imbedded in the pulp. The internal structure of the berry is unknown. It differs from *Gardenia* in the shape of the stigma and disposition of the flowers.

*Clusia-leaved Gardenia.* Shrub 5 feet.

20 G.? tetrasperma (Roxb. fl. ind. 2. p. 555.) shrubby, unarmed; leaves obovate-cuneate, smooth; flowers axillary, solitary, on short pedicels, pendentand; calyx segments 5, subulate; limb of corolla 5-parted; berry round, 4-seeded. \( \gamma, S. \) Native of the East Indies, in the mountains near Shnee- rugur. Gardenia, no. 5. Hardw. in asint. res. 6. p. 364. Leaves on short pedicels. Flowers greenish yellow, sweet-scented, with a long tube, which widens upwards, and partly closed about the middle by a ring of silky down.

*Four-seeded Gardenia.* Shrub 2 feet.

21 G. tubifera (Wall. in Roxb. fl. ind. 2. p. 562.) subarboreous, unarmed; leaves cuneate-oblong, petiolate, slightly scabrous above, and pubescent beneath; drupe round, uneven, crowned by the very long truncate calypine tube. \( \gamma, S. \) Native of the East Indies, in Singapore. All the young parts of the tree are resinous. Leaves 5-6 inches long. Drupe containing a putamen, which is divisible into 8 valves. Flowers unknown.

*Tube-bearing Gardenia.* Tree or shrub.

22 G.? antisaphylla (Jack, in Roxb. fl. ind. 2. p. 561.) arboreous, unarmed; leaves elliptic, those opposite each other unequal, densely clothed with vill; stipules concrete at the base, bearded inside; corynbs axillary, villous; limb of calyx 5-toothed; tube of corolla short; drupe oval, villous. \( \gamma, S. \) Native of the islands of Pulo-Penang and Singapore, on the hills. Leaves tapering to the base, 6-12 inches long. Flowers rather small, white, by threes, villous outside: limb 5-parted. Stigma clavate, 2-lobed. Drupe size of a walnut, containing a 2-valved putamen. Perhaps a species of *Génesis* or *Posoquária*. 

*Unequal-leaved Gardenia.* Tree.

23 G. forsythia (Cham. et Schlcht. in Linnaea. 4. p. 200.) unarmed; leaves on short petioles, nearly orbicular, terminating in a very short acumen each, clothed with canescentomentum along the veins on the upper surface, but clothed with hoary tomentum underneath, as well as the petals, cymes, and flowers; calyx 5-toothed; stigma bilamellate. \( \gamma, S. \) Native of Brazil. Corolla white, having the tube about 4 inches long, and the throat an inch in diameter; limb 5-parted. Fruit unknown.

*Beautiful Gardenia.* Shrub.

24 G. holdomiana (Cham. et Schlcht. l. c. p. 198.) unarmed, glabrous; leaves broad-lanceolate, on short petioles, shining above; stipulas comitate between the petioles; cymes 3-5-flowered; calyx 5-toothed; stigma bilamellate. \( \gamma, S. \) Native of Equinozial Brazil. Corolla white, hairy; the tube about 3 inches long and coriaceous, and the limb 5-parted. Fruit spher-}

ical, smooth.
Sello’s Gardenia. Shrub.

25 G. hexandra (Willd. in Raim. et Schultes, syst. 5. p. 243.) unarmed; leaves obovate, pubescent beneath; flowers usually hexandrous; corolla hairy both inside and outside, with the tube very short. §. S. Native of South America, where it was collected by Humboldt and Bonpland. The rest unknown.

Hexandrous-flowered Gardenia. Shrub.

§ 3. Unarmed shrubs. Tube of calyx or ovarium not ribbed; but the limb is tubular and ribbed, 5-6-cleft, as well as being cleft laterally. Tube of corolla cylindrical.—Pirínga, Juss.


§ 4. Unarmed shrubs. Tube of calyx ribbed or angular from the decurrent segments. Tube of corolla with a dilated obconical throat. Berry 2-celled.—Rotthúnnia, Thumb.

27 G. rotthúnnia (Lin. fl. suppl. p. 165.) arboreous, unarmed; leaves oblong, acute, glabrous, on very short pedicels, having glandular hairs in the axils of the veins underneath; flowers axillary, and almost terminal, solitary, sessile, 5-parted, and pentandrous; calyx ribbed, having the segments subulate, terete, and erect; corolla with an obconical tube, a campanulate throat, and spreading acute segments. §. G. Native of the Cape of Good Hope. Thumb. diss. gard. no. 6. Sims, bot. mag. 690. Rotthúnnia Capénis, Thumb. act. holm. 1776. p. 65. f. 2. Flowers white, spotted with red, sweet-scented; tube of corolla glabrous. Young branches downy.


§ 5. Unarmed or spinose shrubs. Leaves 3 in a whorl.

28 G. ternifolia (Thonn. in Schum. pl. guin. p. 147.) unarmed, glabrous; leaves 3 in a whorl, obovate, cuneated at the base, almost sessile; flowers solitary, almost terminal, girded at the base by a short truncate involucel; calyx with a smooth tube, and a tubular short toothed limb; corolla with a long terete tube, and a 6-7-parted limb. §. S. Native of Guinea. Flowers 3 inches long, white; lobes of corolla ovate-oblong, acutish.

Tern-leaved Gardenia. Shrub 4 to 5 feet.

29 G. trialecta (D. C. prod. 4. p. 382.) glabrous; branches 3 in a whorl, spinosecent; leaves 3 in a whorl, obovate, cuneated at the base, almost sessile; flowers solitary, terminal, sessile; calyx with a smooth tube, and a tubular semi-5-cleft limb; lobes acute; corolla with a long almost terete tube, and a 5-parted limb: lobes thick, obovate. §. S. Native of the Gambia, in woods. Leaves hardly an inch long. Corolla 2 inches long. Berry ovate-globose. Fruit size of a walnut. Spines thick, short, conical, spreading.

Three-spined Gardenia. Shrub 4 to 5 feet.

30 G. medicinalis (Vahl, in Schum. pl. guin. p. 148.) glabrous; spines stell, stiff, leafy at the apex; leaves elliptic, glabrous; flowers terminal, sessile, solitary; limb of calyx bifid, with roundish recesses, and trifold segments; corolla with the tube dilated upwards, and the lobes obovate. §. S. Native of Guinea.

Medicinal Gardenia. Shrub 4 to 5 feet.


31 G. azegna (Sims, bot. mag. t. 1904.) shrubby; spines axillary, short, straight; leaves oval, acute, glabrous, on short pedicels; flowers almost terminal, solitary, sessile, 5-parted, and pentandrous; tube of calyx with short teeth; corolla salver-shaped, with a long terete tube. §. G. Native of China. Flowers white, having the lobes purple on the outside in that part, which is exposed to the air, while the corolla is in restoration; the tube greenish.


32 G. yungida (Roxb. fl. ind. 2. p. 557.) arboreous, with swollen mealy bark, and brancheate branches; spines opposite and terminal; leaves obovate, tapering into the pedicles at the base, smooth; flowers lateral, usually solitary; limb of calyx tubular, 5-toothed; corolla smooth, salver-shaped; anthers almost inclosed. §. S. Native of the East Indies, at Botham. Leaves 1-4 inches long, and 1-3 broad. Stipulas broad at the base, and subulate at the apex. Flowers 5-6-petalled. Berry oval, scarious outside, containing a hard 5-valved pustum. Seeds imbedded in the pulp. Stigma clavate, 5-grooved.

Swollen-barked Gardenia. Tree.

33 G. montana (Roxb. fl. ind. 2. p. 556.) arboreous; spines opposite, short, acute, stiff; leaves oblong, obtuse, almost sessile, downy beneath, with revolute edges; flowers rising 3-5 in a fascicle from the buds, on short pedicels; limb of calyx usually 5-toothed; corolla 5-7-cleft; stamens inclosed; berry drupaceous, roundish, containing a 5-6-valved pustum. §. S. Native of the East Indies, among the Circar mountains. Bark white, soft, and spongy. Leaves deciduous in December, 3 inches long, and 2 broad, smooth and shining above. Flowers pretty large, fragrant, when first open white, but soon becoming more or less yellow. Corolla with a somewhat gibbous tube, and a smooth throat. Nectary a moniliform fleshy ring, surrounding the insertion of the style. Berry the size of a pullet’s egg, ash coloured, and yellow mixed. Seeds imbedded in the pulp.

Mountain Gardenia. Clt. 1819. Tree or shrub.

34 G. campanulata (Roxb. fl. ind. 2. p. 557.) shrubby; branches short, spiny at the apex; spines solitary; leaves lanceolate, smooth, acuminate at both ends; flowers on short pedicels, in terminal and lateral fascicles; limb of calyx campanulate, with a short acutely 5-toothed border; corolla subcampanulate, 5-lobed; berry roundish-ovate. §. S. Native of the East Indies, in the forests of Chittagong. Thorns generally terminating the little lateral opposite branches. Leaves 2-5 inches long. Stipulas triangular, acute. Flowers small, of a pale yellow colour, crowded at the extremities of short stiff lateral spinose branches. Stigma somewhat 5-grooved. Anthers inclosed. Berry round, the size of a golden pippin apple, smooth, 1-celled; placenta 5, parietal. Seeds imbedded in the yellow pulp.

Campanulata-calyxed Gardenia. Clt. 1815. Sh. 5 to 10 ft.
32 G. Blumeana (D. C. prod. 4. p. 383.) shrubby, spinose; leaves lanceolate, glabrous; flowers axillary, and almost terminal, usually solitary; calyx segments ovate, bluntish; corolla somewhat campanulate. \( \text{\textcopyright} \). S. Native of Java, among bushes on the mountains. G. campamulata, Blum. bijdr. p. 1917. This differs from G. campamulata, Roxb. in the figure of the calyx.

Blume's Gardenia. Shrub 5 to 6 feet.

† Species not sufficiently known.

36 G.? volvuline (Lour. coeh. p. 148.) shrubby, unarmed, twining; leaves lanceolate, acuminate, glabrous, on short pedicels; peduncles long, axillary, many flowered; calyx segments 5, acute, erect; corolla funnel-shaped, with a dilated throat; berry roundish, 2-celled. G. Native of China beyond the suburbs of Canton. Flowers pale. Stigma thick, warty, subulate at the apex. Seeds coriaceous. This shrub should be excluded from Gardenia. Segments of calyx, long, repand.

Teiwin Gardenia. Shrub tv.

37 G.? pubescens (Roth. nov. spec. 151.) unarmed; leaves roundish-ovate, acuminate at both ends, clothed with brown tomentum beneath while young, as well as on the branchlets; corollas axillary, dichotomous, divaricate; calyx minutely 5-toothed; corolla funnel-shaped, tomentose. S. Native of the East Indies. Flowers the size of those of Rhodanu frondula. Berry the size of a cherry, roughened with dots, glabrous. Pubescent Gardenia. Clt. 1824. Shrub 4 to 6 feet.

38 G.? acuminata; shrubby, branched, unarmed; leaves broad-ovate, lanceolate, long, sessile; flowers terminal and axillary, small; fruit oval, acuminate. S. Native of Sierra Leone, on the mountains in the woods. Perhaps a species of Pomatiaum.

Acuminated-fruited Gardenia. Shrub 6 to 8 feet.

39 G.? Brasiileensis (Spreng. syst. 1. p. 763.) unarmed; leaves oblong, coriaceous, opaque; branchlets hairy; peduncles axillary, 3-4-flowered, shorter than the leaves; calyx segments subulate, shorter than the tube of the corolla. S. Native of Brazil.

Brazilian Gardenia. Shrub.

40 G.? longifolia; shrubby, branched, unarmed; leaves long, broad-lanceolate, acuminate, entire, membranous, petiolate; flowers terminal, solitary, sessile; fruit large, roundish, smooth. S. Native of Sierra Leone, in the woods on the mountains.

Long-leaved Gardenia. Shrub 5 to 6 feet.

* * Spinose shrubs.

41 G.? deansa (Wall. in Roxb. fl. ind. 2. p. 559.) shrubby, stiff; branches numerous, decussate, spinose at the apex; leaves in fascicles, obovate, almost sessile, smooth; flowers solitary, sessile, terminal; limb of calyx tubular, 5-toothed: teeth subulate; corolla with a 5-parted limb, and lanceolate acuminate lobes. G. Native of Nipaul, on the southern face of Shepole, above Thoka. Branches obscurely 4-cornered. While young the thorns are pubescent, and covered by a pair of approximate stipula-like scales. Flowers small, of a yellowish white colour, fragrant. Corolla pubescent within, and closed by a circle of silky hairs about the middle. Stigma obscurely 2-lobed. Very nearly allied to G. tetraspermá. Cells of ovary 3-seeded.

Dense Gardenia. Shrub 4 to 5 feet.


Climing Gardenia. Shrub cl.

43 G.? Patula (Horsf. ex Willd. in Röem. et Schultes. syst. 5. p. 241.) spines hooked, shorter than the pedicels; leaves ovate, acute; corollas axillary. S. Native of Java. The rest unknown.

Spreading Gardenia. Shrub.

44 G.? stipulifera (Rottl. et Willd. in act. bonn. 4. (1803.) p. 182.) spines setaceous; leaves elliptic, acute at both ends, short; flowers sessile, solitary, terminal; calyx segments obtuse, and are as well as the tube glabrous. S. Native of the East Indies. Spines very short. Leaves like those of G. spinosa. Corolla with a long slender tube. The spines, according to Rottler, are stipular; hence the name.

Stipular-spined Gardenia. Shrub.

45 G.? Facifólia (Willd. rel. ex Röem. et Schultes. syst. 5. p. 243.) branchlets terminated by 4 spines; flowers solitary; leaves roundish-ovate, downy beneath, stiff, plicately veined. S. Native of South America, where it was collected by Humboldt and Bonpland. Wildenow says the leaves are acute-angled, but this is probably a mistake.

Beach-leaved Gardenia. Shrub 5 to 6 feet.

46 G.? cornifólia (D. C. prod. 4. p. 384.) shrubby, spinose; branches glabrous; leaves acuminate, ovate, rather coriaceous, and are, as well as the branches, downy; flowers 6-8-together at the tops of the branches, sessile, subcorbymbose, each furnished with a bifid involucre; calyx 4-toothed; corolla villous on the outside, with a terete tube, and a spreading 4-parted limb. S. Native of the temperate parts of New Granada, near Guadua. Gardenia parvifolia, H. B. et Kunth, nov. gen. amer. 3. p. 408. t. 293. but not of Poir. Flowers white, sweet-scented. The ovary and fruit being unknown, it is doubtful whether it belongs to the genus.

Dogwood-leaved Gardenia. Shrub 5 feet.

47 G.? Microcôta (Bartr. in herb. Hænke ex D. C. prod. 4. p. 384.) spines few, short, straight; leaves oblong, coriaceous, shining above, quite glabrous on both surfaces, as well as the branchlets; stipulas subulate acuminate; flowers 1-3-toothed, terminal, pedicellate; limb of calyx short, tubular, with subulate teeth, which are much shorter than the corolla, which is glabrous; fruit ovate, crowned. S. Native of the Philippine islands, as in Luzon, &c. Perhaps a species of Ránuida.

Small-fruited Gardenia. Shrub 5 to 6 feet.

 Cult. All the species of Gardenia bear elegant sweet-scented flowers, which in most of the species are large. They are generally free flowerers. The soil best suited for them is a mixture of loam, peat, and sand. The stové species thrive best in a moist heat; and cuttings of all root readily if taken off while not too ripe, planted in a pot of sand, which should be plunged in a moist heat under a hood-glass. The double-flowered varieties of G. florída and G. radicanus are cultivated to a considerable extent, under the name of Cape jasmine, for the beauty and fragrance of their flowers; the best manner of getting these to bloom freely is to set them in a close frame, on a little bottom heat, in spring, but the pots should not be plunged; and in winter they may be set in the greenhouse.
RUBIACEÆ.  
XXXVII. RANDIA.

ceros, Lour. coch. p. 151.—Posoquêria and Rândia species, Roxb. fl. ind.

Lin. syst. Pentândria, Monogynia. Calyx with an obovate tube, and a 5-lobed limb. Corolla salver-shaped, with a short tube, which is hardly longer than the calycine lobes in the first section, but in the second section 2 or 3 times longer, always with a 5-parted limb, which is twisted in restitution. Anthers sessile within the tube of the corolla, inclosed. Stigmas 2, thick. Berry nearly dry, crowned by the calyx, corticate, 2-celled. Seeds many in each cell, fixed to a central placenta, wingless, imbedded in the pulp, or imbricated downwards. Albuñen carilaginous. Embryo straight, with a terete radicle, and orbicular flat cotyledons.—Much branched small trees or shrubs, with axillary opposite or subverticillate thorns. Leaves sessile or on very short petioles. Stipulas solitary on each side, sometimes evidently formed from 2 being combined. Flowers almost sessile, usually solitary, rising from the axis of the leaves.—This genus is nearly allied to Posoquêria, but differs in the dry fruit, and in its being truly 2-celled.


§ 1. Flowers axillary, solitary, on short pedicels.

1 R. latifolia (Lam. dict. 3. p. 24. ill. t. 156. f. 1.) branches glabrous; leaves obovate, quite glabrous, almost sessile, cuneated at the base; flowers axillary, sessile, solitary, salver-shaped; tube of corolla twice the length of the calycine teeth, with a pilose throat. ñ. S. Native of the West India islands, in arid places among bushes; and probably of Mexico. Rândia aculeata, Lin. spec. p. 214. Gardenia aculeata, Ait. hort. kew. Gard. Rândia, Swartz. ñ. fl. ind. occ. p. 526.—Brown, J. am. t. 8. f. 1. Sloane. hist. t. 2. f. 4. Spines axillary, opposite, spreading, forming a straight angle, 4-5 lines long. Corolla white, with the tube 4-5 lines long, and green. Berry the size of a small cherry, white or yellow. Seeds 6-8 in each cell, surrounded by pulp. Brown called this species Indigo berry, because the pulp of the fruit stains paper and linen of a fine fixed blue colour. The spines at the tops of the branches are usually solitary.

Var. ñ. mitis (D. C. prod. 4. p. 385.) the larger leaves are nearly oval; the thorns are few or wanting altogether, and the flowers are fewer and larger than in the species. ñ. S. Native along with the species, but in more moist situations. Rândia mitis, Lin. spec. 216. Gardenia Rândia ñ. mitis, Swartz. ñ. fl. ind. occ. p. 528. Gard. Rândia, Sims, bot. mag. t. 1811.—Sloane, hist. t. 161. f. 1. Flowers white. The juice of the fruit is deep blue.


2 R. obovata (H. B. et Kunth, nov. gen. amer. 3. p. 409. but not of Ruiz and Pav.) branches clothed with hairy tomentum; leaves obovate, glabrous; thorns straight, spreading; flowers solitary, sessile, almost terminal; tube of corolla twice the length of the calyx, with a silky throat? ñ. S. Native of New Granada, at the mouth of the river Sinu. Flowers small, white. Very like R. latifolia, but differs in the branches being tomentose, and in the flowers being smaller.

Obovate-leaved Randia. Shrub 5 to 8 feet.

3 R. pubescens (Ruiz et Pav. fl. per. 2. t. 120. f. b.) leaves obovate, acute, downy; thorns opposite, axillary, spreading, shorter than the leaves; flowers solitary, sessile, girdled at the base by numerous short adpressed bracteae; tube of corolla equal in length to the calycine lobes. ñ. S. Native of Peru, on the Andes, in hot places among broken rocks. R. obovata, Ruiz et Pav. fl. per. syst. 2. p. 68. Roxm. et Schultes, syst. 5. p. 246. but not of Kunth. Gardenia obovata, Dietr. Spreng. Floricorns branches spinose, the rest unarmed, spreading, and somewhat tetragonal; stipulas subulate. Leaves 4-5 inches long. Corolla white, twice the length of the calyx. Berry pubescent, of a greyish yellow colour, crowned by the lobes of the calyx, which are acuminate.


4 R. rotundifolia (Ruiz et Pav. fl. per. 2. p. 68.) thorns and branches somewhat verticillate; leaves roundish and ovate, downy on both surfaces, wrinkled; flowers solitary, sessile; corolla twice as long as the calyx. ñ. S. Native of Peru, in groves about Huassa-Huassi. Gardenia rotundifolia, Dietr. ex Roxm. et Schultes, syst. 5. p. 246. Stipulas ovate, acute. Flowers solitary in the centre of the leaves. Corolla white. Berry yellowish, 1-celled, size of a filbert, when young villous, crowned by the lobes of the calyx, which are elongated and linear. Seeds compressed, imbedded in the black pulp.


5 R. echinoarpa (Moq. et Sesse, fl. mex. icon. ined. ex D. C. prod. 4. p. 385.) thorns 4 in a whorl, spreading; leaves ovate, acuminate, rather villous, crowded at the tops of the branches; flowers solitary, sessile, almost terminal; fruit globose, echinate. ñ. S. Native of Mexico. Flowers white. Limb of calyx 5-lobed; lobes linear-subulate. Allied to R. tetraëcitha, but differs in the calyx being 5-parted, not tubular and 5-toothed, and in the tube of the corolla being one-half shorter.

Hedgehog-fruited Randia. Shrub 4 to 6 feet.

6 R. dumetorum (Lam. ill. t. 156. f. 4.) thorns opposite; leaves oval, blanuish, cuneated at the base, glabrous; flowers sessile, solitary, almost terminal; limb of calyx 5-parted, with oblong lobes, which are a little shorter than the corolla, which is villous. ñ. S. Native of the East Indies, frequent on the sea shore. Câmmboon coronatum, Lam. dict. 1. p. 602. Gardenia dumetorum, Retz., obs. 2. p. 11. Roxb. cor. t. 136. Gardenia spinosa, Lin. fl. suppl. 161. Rândia spinosa, Blum. biijdr. p. 981. Posoquêria dumetorum, Roxb. fl. ind. 2. p. 564. Gardenia spinosa, Thumb. diss. gard. no. 7. t. 2. f. 4. Ceriscus Malabáricus, Gaertn. fr. 1. t. 28.—Plut. t. 98. f. 6. Flowers white, clothed on the outside with adpressed villi, sweet-scented. Branches downy while young, but afterwards glabrous. Berry almost globose, yellow, about the size of a small apple, 2-celled, and crowned; cells many seeded. This shrub is employed for fences in the places of its natural growth. The fruit bruised and thrown into ponds where fish are, they are soon intoxicated, and seen floating. Fishermen sometimes follow this mode to enable them to take the fish with more ease. They are not deemed less wholesome from the effects of the fruit. Cocculus Indicus does not grow in those parts, nor is it known or used there for this purpose.


7 R. uliginosa (D. C. prod. 4. p. 386.) thorns almost terminal, opposite; branches tetragonal; leaves oblong, somewhat cuneated, glabrous; flowers solitary, sessile, almost terminal; limb of calyx tubular, almost entire, a little shorter than the tube of the corolla, which is villous in the throat. ñ. S. Native of the East Indies, delighting in moist places, such as the banks of rivers, low lands, &c. Gardenia uliginosa, Retz., obs. 2. p. 14. Roxb. cor. t. 135. Posoquêria uliginosa, Roxb. fl. ind. 2. p. 563. Thorns 1-2 or 3 at the extremities of the branchlets. Leaves 2-3 inches long, and 1 1/2 broad. Flowers 1-2 or 3 at the tops of the branchlets, large, white, and fragrant. Berry size and shape of a pullet’s egg, ash coloured, or olive grey, 5-celled.
Seeds flattish, nesting in the pulp. The flowers of this species render it deserving of a conspicuous place in a hot-house. The uncommon appearance of the plant is also in its favour.


8. *R. longiflora* (D. C. prod. 4. p. 386.) thorns opposite or alternate, horizontal; branches long, dependent; leaves obovate-cuneated, smooth; flowers axillary, and almost terminal, solitary on short pedicles; tube of calyx cylindrical, 5-lobed; lobes ovate-cordate, permanent; corolla villous on the outside; berry obovate, smooth. H. S. Native of the coast of Coromandel. Posoquêria longiflora, Roxb. fl. ind. 2. p. 566. Link, Enum. hort. berol. 225. Thorns sharp, from 1 to 2 inches long. Leaves on the young shoots opposite, on the old ones in fascicles. Stipulas subulate. Flowers pretty large, pure white, and fragrant. Tube of corolla as long as the calyx, with a villous throat. Berry size of a nutmeg. Seeds immersed in the pulp.


9. *R. nutans* (D. C. prod. 4. p. 386.) thorns slender, opposite, spreading; branches long, dependent, pubescent while young; leaves narrow-obovate-oblong; flowers axillary, solitary, on short pedicels; corolla silky on the outside; berry globose, crowned by the tube of the calyx, which is entire. H. S. Native of the East Indies. Posoquêria nutans, Roxb. fl. ind. 2. p. 565. Ceriscus Malabaricus, Gartn. fr. 1. t. 28. Leaves on short pedicels, opposite on the young shoots, but fascicled on the old ones, from 1 to 2 inches long, by about 1 broad. Flowers solitary, under the spine, middle-sized, white, and fragrant; throat of corolla villous. Berry size of a nutmeg, 2-celled.


§ 2. *Flowers in fascicles or racemes, in the axils of the leaves, or extremities of the branches.*

10. *R. parviflora* (Lam. dict. 3. p. 25.) thorns opposite very short; leaves ovate, petiolate, glabrous; racemes villous; flowers axillary, disposed in fascicles, on short pedicels; limb of calyx with 5 short teeth. H. S. Native of the East Indies. The thorns, according to Lamareck, are arched. Gardenia Sonnerati, Spreng. syst. 1. p. 762. Perhaps Gardénia macránta, Thumb. diss. gard. no. 8. t. 1. f. 2, is referrible to this species, but the spines are said to be straight; but the fruit in both are unknown, therefore the genus to which they belong is doubtful. Flowers small, 3-together.

Small-flowered *Randia.* Fl. April, June. Ct. 1818. Shrub 4 to 5 feet.

11. *R. floribunda* (D. C. prod. 4. p. 386.) thorns axillary, stiff; leaves opposite and in fascicles, obovate-cuneated, smooth; flowers disposed in lateral fascicles, on short pedicels; tube of calyx longer than the lobes, which are lanceolate; corolla silky outside; berry ovate, cordate, polished. H. S. Native of the coast of Coromandel. Posoquêria floribunda, Roxb. fl. ind. 2. p. 569. A large stiff branched shrub, in a good soil growing to a small tree. Flowers middle-sized, white at first, but soon becoming yellow, and fragrant, produced in fascicles, from short scaly spurs. Segments of corolla obvolute. Berry size of a prune, 2-celled, many seeded, crowned.

Buddle-flowered *Randia.* Shrub or small tree.

12. *R. longiflora* (Lam. dict. 3. p. 26. ill. t. 156. f. 3, but not of Salish.) arborescent; thorns opposite, recurved; leaves lanceolate-oblong, smooth; corymbs terminal and axillary, 11-13 flowered; limb of calyx tubular, 5-lobed; lobes semilunar; tube of corolla long and slender. H. S. Native of Chitaigong, in the East Indies, where it grows to a pretty large tree. Posoquêria longiflora, Wall. in Roxb. fl. ind. 2. p. 568. Gardenia multiflora, Willd. spec. 1. p. 1231. Posoquêria multiflora, Blum. bijdr. p. 980. Branches terete, smooth. Leaves 6 inches long, and 1½ or 2 broad. Flowers large, pale, or nearly white when they first expand, becoming yellow by the second day, fragrant. Berry the size of the cherry, yellow when ripe, smooth, fleshy.


Fascicled-flowered *Randia.* Shrub 4 to 5 feet.

14. *R. nigida* (D. C. prod. 4. p. 386.) thorns opposite, supra-axillary, each having an annular joint, rarely 2 above the middle, the lower half downy, the upper smooth and shining; branches tetragonal, and, as well as the calyces, villous; leaves ovate, smooth, on short pedioles; flowers by threes, axillary, and almost terminal; tube of corolla long, slender; berry downy. H. S. Native of the valley of Nipaul, and the surrounding mountains; and also in Noakote. Posoquêria nigida, Roxb. fl. ind. 2. p. 570. A strong rigid branchy shrub. Leaves in approximate fascicles, ending each in a cuspidate point. Flowers white and fragrant. Leaves shining above, but with a few short hairs along the nerves beneath. Corolla smooth on the outside. Berry purple, 2-celled, many seeded. Perhaps a true species of Posoquêria. Said to be allied to *R. fasciculata.*

Stiff *Randia.* Shrub 6 feet.


Straight *Randia.* Shrub 5 to 10 feet.


Climbing *Randia.* Shrub cl.

17. *G. tetraëdria* (D. C. l. c.) thorns scattered, straight; leaves ovate, acuminate, narrowed at the base, rather coriaceous, and as well as the branchlets downy; stipulas ovate, acuminate; flowers 6-8 in a fascicle at the tops of the branches, sessile, tetrandrous; bracteas connate; teeth of calyx 4, subulate; corolla clothed with silky hairs outside. H. S. Native of New Granada, in temperate places near Guadua. Gardenia parviflora, H. B. et Knuth, nov. gen. amer. 3. p. 408. t. 293. Flowers small, white.

Tetrandrous-flowered *Randia.* Shrub 5 feet.

18. *R. armata* (D. C. prod. 4. p. 387.) thorns 4 together at the tops of the branchlets, short, spreading; leaves ovate, acute at both ends; flowers usually 4 on the tops of the branchlets, on short pedicels; lobes of calyx linear-cuneiform; tube of corolla long, cylindrical, glabrous. H. S. Native of Caritha.
RUBIACEÆ. XXXVII. Randia.


**Armed Randia.** Cl. 1813. Shrub 5 to 10 feet.

19 R. febric (D. C. l. c.) thorns decussate, spreading, acute; leaves ovate, or oval, glabrous above and pubescent beneath; stipulas pedicellate; flowers covered in cymose fascicles; tube of calyx tubular, but the limb is acute and 5-cleft beyond the middle; segments of corolla almost orbicular. \( \gamma \). S. Native of Brazil, at Rio Padre. Gardénia ferox, Cham. et Schlecht. in Linnæa. 4. p. 198. Flowers white, sweet-scented.

**Fierce Randia.** Shrub 4 to 5 feet.

20 R. capitata (D. C. l. c.) thorns stiff, short, 4 at the top of each branchlet; leaves ovate, acute, hairy on both surfaces as well as on the branchlets; flowers sessile, 6-8 in a capitate fascicle at the tops of the branchlets; limb of calyx tubular, with stiff, subulate teeth; tube of corolla 5 times longer than the segments, villous on the outside. \( \gamma \). G. Native of Mexico. Flowers white, sweet-scented.

**Capitate-flowered Randia.** Shrub 4 to 6 feet.

21 R. tetracantha (D. C. l. c.) branches opposite, horizontal, bearing each 4 thorns at the apex; leaves lanceolate, acuminate, tomentose; flowers sessile, 4 at the top of each branch; limb of calyx tubular, terminating in 5 subulate teeth; tube of corolla long, villous. \( \gamma \). S. Native of Mexico, about Acapulco and Regionontii. Mussae'nda tetracantha, Cav. icon. hort. 5. p. 20. t. 349. Gardénia armata, Bartl. but not of Swartz. Corolla pale yellow. Berry size of a pigeon's egg, not crowned by the calyx.

**Four-spired Randia.** Fl. Ju. Aug. Cl. 1820. Sh. 5 to 10 ft.

22 R. prophyra; branches slightly downy, armed with 4 spines at the apex, placed crosswise; leaves ovate, cordate, subulate, acuminate, downy, petiolate; flowers in terminal fascicles. \( \gamma \). S. Native country unknown. Gardénia prophyra, Lindl. bot. nov. t. 975. Thorns straight, infra-axillary. Leaves clustered at the ends of the branchlets, rather longer than the flowers. Corolla with a long cylindrical tube, and a 5-parted, spreading limb, with cordate, ovate, acute, flat segments, which are rather longer than the tube. Anthers semi-exserted, Flowers large, white.

**Alied Randia.** Fl. July. Cl. 1823. Shrub 6 to 8 feet.

23 R. Humboldtiana (D. C. l. c.) branches nearly terete, glabrous, furnished each with 2 spines at the apex; leaves elliptic, short-acuminate, pubescent, membranous; flowers 5-5 together; terminal, pedunculate; corollas pubescent. \( \gamma \). S. Native on the shores of the Pacific near Guayquil. Mussae'nda pubescens, H. B. et Kuntth. nov. gen. amer. t. 3. p. 410. Gardénia Humboldtiana, Roem. et Schultes, syst. 5. p. 243. Mussae'nda Humboldtiana, Streul. nom. Gardénia pubescens, Bartl. in herb. Haenke, but not of Roth. Flowers white, sweet-scented. Allied to R. armata. Fruit unknown.

**Humboldt's Randia.** Shrub 5 to 10 feet.

24 R. nitida (D. C. l. c.) branchlets rather angular, furnished with 2 spines at the apex; leaves ovate-elliptic, acute, glabrous; shining; flowers terminal, single, or by threes or fours, sessile; corollas glabrous. \( \gamma \). S. Native of New Granada, near Turbaco. Mussae'nda nitida, H. B. et Kuntth, nov. gen. amer. 3. p. 410. Flowers white, sweet-scented. Fruit unknown.

**Shining-leaved Randia.** Shrub 5 to 8 feet.

25 R. triefol'ta (Hamil. in D. Don. fl. rep. p. 138.) thorns opposite, subulate, adnate to the branchlets. Flowers opposite, subulate, adnate to the branches above the petioles; petioles and branchlets hairy; stipulas ovate, cuspidate; leaves ovate; peduncules axillary, 3-flowered; calyx campanulate: having the lobes ovate at the base, and linear-subulate at the apex. \( \gamma \). G. Native of Niquita, at Hetaaura. Peduncles solitary, very short, usually 3, sometimes 4-flowered. Flowers usually 6-cleft and hexandrous. Anthers semi-exserted.

**Three-flowered Randia.** Shrub.

26 R. hórida (Roem. et Schultes, syst. 5. p. 248.) branches reclinate; branchlets decussate; thorns opposite, horn-formed; leaves ovate-lanceolate, glabrous; racemes trichotomous, almost terminal. \( \gamma \). G. Native of Cochin-china, in woods. Oxýcerus hórida, Lour. coch. p. 151. Spines large, acute. Flowers white. Berry black.

**Horrid Randia.** Shrub 8 feet.

27 R. sique'ssae (Roem. et Schultes, l. c.) thorns short, opposite, rather recurved; leaves lanceolate (Lour.): superior ones ovate, nerves, glabrous; corymbs small, terminal, few-flowered; limb of calyx tubular, 3-lobed; tube of corolla long, glabrous: having the throat hardly inflated: anthers linear, exserted, about equal in length to the lobes, which are spreading. \( \gamma \). G. Native of China, about Canton. Oxýcerus Sique'ssae, Lour. coch. p. 151. Randia Chínensis, Spreng. syst. 1. p. 768. R. longifóra, Lam. ill. 156. f. 8.? Flowers white, salver-shaped, with a very long tube. Berry small, roundish, 2-celled, many-seeded.


28 R. Afri'cana; shrub spinose; fruit woody, oblong, or roundish. \( \gamma \). S. Native of Sierra Leone. Flowers small, greenish yellow.

**African Randia.** Shrub 3 to 4 feet.

Sect. II. Euclínia (from ev, eu, well, and klíno, to bend; the segments of the corolla are well bent over each other before expansion). D. C. prod. 4. p. 388. Unarmed shrubs. Tube of corolla usually dilated and obconical at the throat. Perhaps a proper genus.

29 R. Macela'na (D. C. prod. 4. p. 388.) shrubby, unarmed; branchlets rather downy; leaves oval, smooth, glandular in the axis of the nerves beneath, not pilose; flowers terminal, solitary from the axis on the ultimate leaves; tube of corolla very long, dilated at the apex. \( \gamma \). S. Native of Guinea. Rothánchezia longiflora, Salisb. par. t. 65. Limb of calyx rather villous, 5-toothed. Corolla 5 inches long, white, spotted with purple at the throat; segments ovate, spreading. Ovarium 2-celled.

**Spotted-flowered Randia.** Fl. Jul. Sept. Cl. 1696. Shrub 5 to 6 feet.

30 R. specio'sa (D. C. prod. 4. p. 388.) shrubby, unarmed, glabrous; leaves elliptic-oblong, shining above; flowers from the tops of the branchlets, solitary in the axis of the ultimate leaves; tube of corolla very long, clothed with adpressed down on the outside; the segments acuminate. \( \gamma \). S. Native of Cayenne, where it was collected by Patris. Tube of corolla 9 inches long, hardly dilated at the apex. Genitals inclosed. Berry ovate. Tube of calyx cylindrical, semi-quinquelobed; lobes subulate, erect.

**Elegant Randia.** Shrub.

31 R. Mussæ'nda (D. C. l. c.) shrubby, unarmed; leaves ovate or lanceolate, acute, downy on the veins underneath; flowers solitary, sessile, terminating the branchlets; tube of calyx semi-quinquelobed: the lobes subulate; corolla villous on the outside, with a long tube, and acuminate segments. \( \gamma \). S. Native of Carthagenia in woods (Jacquin); on the banks of the river Magdalena, near Honda (H. B. et Kuntth, nov. gen. amer. 5. p. 408.); Dutch Guiana (Meyer, esssq. p. 128.); Mexico, Demerara, French Guiana, and probably of Tobago. Mussae'nda formossa,
Jaq. Amer. p. 70. t. 48. Gardênia maritima, Vahl, herb. Gardênia Musca'nda, Thumb, diss. no. 5. Perhaps 2 or 3 allied species are here confused. The branches are glabrous in Jacquin's and De Candolle's specimens, but hairy in those of Kunth and Thunberg. Corolla with an incurved or straight tube, villous and green on the outside (ex Jacq.), but the segments are white within. Berry coriaceous, ovate, crowned by the calyx, 2-celled. Stigmas 2, acute, revolute.

**Mussonenda**-like Randia. Cit. 1829. Shrub 5 to 6 feet?

32. R. **Ruzia**'s (D. C. prod. 4. p. 358.) shrubby, unarmed; leaves lanceolate, acute, on short petioles, glabrous above, rather hairy on the veins underneath; flowers terminal, solitary, sessile; calyx hairy, with subulate, erect segments; corolla hairy on the outside, with a very long tube, an obconical villous throat, and spreading acute segments. h. S. Native of Peru, on the Andes, in groves at Pozuozu. Gardênia longiflora, Ruiz et Pav. bl. 2. t. 219. but not of Ait. Branches very long, when young rather tetragonal. Berry cylindrical, large, yellowish, striated longitudinally by 10 brown nerves, 2-celled, containing a sweet edible pulp. Flowers white. Stigmas 2, thick, reflexed.

Ruzia's Randia. Shrub 10 to 12 feet?

33. R. **Macra's** (D. C. l. c.) shrubby, unarmed; leaves oval, villous above, but villous tomentose beneath, as well as the petiole; stipules ovate, glabrous, scarious, deciduous; flowers almost terminal, in corymb, disposed in cortyosbaceous fascicles; lobes of calyx parted to the base of the limb, erect, lanceolate, ciliated. h. S. Native of Sierra Leone. Rândia longiflora, Salisb. par. t. 93. but not of Lam. Gardênia longiflora, Ait. hort. kew. ed. 2. vol. 1. p. 368. but not fl. per. Gardênia macrantha, Röm. et Schultes. syst. 5. p. 235. Flowers 6-7 inches long, cream-coloured, fragrant. Stigmas 2, thick, obtuse, flat inside and convex outside. Ovaryum 2-celled. According to Salisbury, this with others he proposes to separate into a distinct genus to be called Eunelia.


34. R. **Longôstila** (D. C. l. c.) shrubby, unarmed; leaves oval, villous above, but villous tomentose beneath, as well as the petiole; stipules ovate, glabrous, scarious, deciduous; flowers almost terminal, in corymb, disposed in cortyosbaceous fascicles; lobes of calyx parted to the base of the limb, erect, lanceolate, ciliated. h. S. Native of Guinea, on the Gambia at Albara, where it was collected by Leprieur and Perret. Flowers black, in the dried state, but probably white when recent; 1% inch long. Style much exserted; stigma thick, bipartite. Fruit nearly globose, about an inch in diameter. Seeds compressed, separated by glutinous partitions.

Long-styled Randia. Shrub 5 to 6 feet.

35. R. **Madagascariensis** (D. C. prod. 4. p. 359.) shrubby, unarmed; leaves ovate, acute, on short petioles, glabrous, coriaceous; flowers axillary, sessile, bicrateate at the base; limb of calyx 5-lobed, obtuse; corolla velutine outside from tomentum, with a terete tube, and 5 oblong obtuse lobes; petals inclosed. h. S. Native of Madagascar. Gardênia Mada- gascariensis. Lam. diss. 2. p. 608. Flowers about 3 inches long. (ex Lam.) Tube of corolla 15 lines long. (ex D. C.)

**Madagascar** Randia. Shrub 5 to 18 feet.

36. R. **Genipe**föra (D. C. l. c.) shrubby, unarmed; leaves oval-oblong, acuminate at both ends, coriaceous, glabrous, on short petioles; stipulas lanceolate; peduncles axillary, very short, divided at top into many 1-flowered pedicels, which are disposed in a corymb; limb of calyx tubular, permanent, 5-toothed, a little shorter than the corolla. h. S. Native of Sierra Leone, where it was collected by Smeathman. Tube of corolla cylindrical, hardly longer than its lobes. Anthers long, linear. Stigmas 2, slender, acute. Berry dry, 2-celled, crowned by the tubular limb of the calyx; placenta scarcely exerted. Seeds horizontal.

**Genipa**-flowered Randia. Shrub 5 to 8 feet.

37. R. **Talanogenesis** (D. C. l. c.) leaves oval-oblong, acute at the base, obtuse at the apex, coriaceous, glabrous; stipulas short, undivided; flowers axillary, solitary, a little shorter than the leaves; calyx long and tubular beyond the ovarium, with 5 short, acute teeth at the apex; corolla with a long terete tube, and is as well as the segments clothed with velvety hairs on the outside. h. S. Native of Madagascar, on the east coast, where it was collected by Chapelier, and called by him Talangninia. Berry dry, ovate, rather acuminate.

Talangninia's Randia. Shrub.

† Doubtful species.

38. R. ? **Drupa**ce (D. C. l. c.) berry ovate, drupaceous, containing a bony putamen. h. S. Native of Java. Posoquêria drupacea, Gaurin. fil. carp. 3. p. 77. t. 193. f. 1. The rest unknown.

Drupaceous-fruited Randia. Tree or shrub.

39. R. ? **Polysperma** (Roxb. bl. ind. 2. p. 146.) shrub bushy and much branched; leaves oblong, acuminate, smooth; stipulas subulate; spikes panicked, axillary. h. S. Native of the East Indies, about Chittagong.

Many-seeded Randia. Shrub 5 to 6 feet.

Cult. For culture and propagation see Gardênia, p. 499. All the species being very showy, usually bearing large, white, fragrant flowers, are therefore worth cultivating in every collection of stave plants.


**Lin. syst.** Pentandria, Monogynia. Calyx with a 5-parted limb, and erect, acute, permanent lobes. Corolla with a slender tube and a 5-parted limb: rather oblique, spreading, lanceolate, acute segments, and a villous throat. Stamens 5, almost sessile, inclosed, inserted in the middle of the tube. Style short, inclosed; stigma oblong, bipartite, with the lobes approximate. Fruit egg-shaped, fleshy, coriaceous, 2-celled, crowned by the large erect limb of the calyx; cells many-seeded. Seeds distinct, many-sided, of a golden yellow colour, and clothed with adpressed, silky down. Embryo linear, terete, in the center of a horny albumen.—A shrub. Leaves opposite, coriaceous, elliptic, acute, quite glabrous. Stipulas entire, caducous, interpetiolar. Flowers on short pedicels, crowded in the axils of the leaves. Habit almost of an apocynous plant.

1 C. **Madagascariensis** (A. Rich. l. c.). h. S. Native of Madagascar.

Madagascar Chapelieria. Shrub 2 to 4 feet.

Cult. For culture and propagation see Gardênia, p. 499.

**XXXIX. HEINSIA** (named in memory of the famous philologist Heinsius, the translator of Theophrastus's works). D. C. prod. 4. p. 390.

**Lin. syst.** Pentandria, Monogynia. Calyx with an obovate tube and a 5-parted limb; and oblong, foliaceous, permanent lobes. Corolla salver-shaped, with a terete tube, which is longer than the calycine lobes, very hairy inside in the upper part, and 5, oval, acute undulate lobes. Anthers 5, linear, acute, sessile towards the top of the tube, inclosed and hidden among the hairs. Style filiform, shorter than the tube of the corolla; stigmas 2, linear. Fruit globose, crowned by the calyx, dry, hard, indehiscent, 2-celled; placenta 2, thick, adnate to the
RUBIACEÆ. XL. Menestoria. XLI. Helospora. XLII. Hippotis. XLIII. Pomatum.

dissemped. Seeds numerous, wingless, nesting on the super-
cies of the placenta.—A much-branched, unarmled, glabrous
shrub or small tree, but there are small permanent spurs,
which look like spines. Leaves opposite, oval-oblong or ovate,
acuminated, on short petioles. Stipulas twin on each side, small,
acute. Flowers 3–4 together at the tops of the branches, ped-
dicellate, and disposed in somehing like racemes, white, about
the size of those of Ficca röse, and very similar to those of
Gardénia and Réginda.

1. H. Jasmínföa. (D. C. prod. 4. p. 290.) f. S. Native
of Sierra Leone, where it was collected by Smeetham, Afze-
lus, and G. Don. The plant we have seen at Sierra Leone
has numerous 1-flowered, terminal, and axillary pedicels; the
tube of the corolla clothed with yellow hairs; and the segments of
the corolla hispid. The shrub bears nothing like spurs or spines
that we recollect.


Cult. See Gardénia, p. 499, for culture and propagation. A
beautiful shrub, clothed with Numerous white flowers.

XL. Menestoria (Menestor was a physiologist cited by

Linn. syst. Pentandria, Monognýa. Calyx with a globose
tube, a 5-parted limb: and linear, almost subulate, acute, distant
segments. Corolla with a long terete tube, 5 oval acute short
lobes, and an almost naked throat. Anthers 5, oblong, sessile
within the tube of the corolla. Style filiform; stigma bifid,
inclosed: lobes linear. Ovarian 2-celled; placental many-
seeded, adnate to the dissemped. Fruit baccate, almost dry,
areolate at the apex, never crowned, from the lobes of the calyx
being deciduous. Seeds very small, wingless.—Unarmed shrubs,
natives of Nipaull. Leaves opposite. Stipulas solitary on each
side, at length deciduous. Corymb of flowers terminal. This
is rather a doubtful genus, differing from Muscænda in the tube
of the calyx or ovary being globose, not turbinate, and in
the stipulas being solitary on each side, not twin; and from Tocoyöna
in the limb of the calyx being parted to the base.

1. M. Tocoyöna. (D. C. prod. 4. p. 390.) leaves obvate,
obtuse, cuneated at the base, almost sessile, glabrous above, pale
beneath, and beset with adpressed villi along the nerves.

f. G. Native of Nipaull. Branches terete. Stipulas broad, short,
very blunt, membranous. Corymb terminal, trichotomous, on
short peduncles; pedicels puberulous. Corolla 15 lines long,
puberulous on the outside; segments ciliated, apiculate, clothed
with adpressed down on the outside, as well as the tube. Style
about equal in length to the tube of the corolla; stigmas 2,
linear, applied to each other in the dried state.

Tocoyöna-like Menestoria. Shrub 5 to 6 feet.

2. M. Hamélille. (D. C. l. c.) leaves ovate, acuminated
at both ends, on long petioles, rather scabrous from scattered hairs
above, and along the nerves underneath. f. G. Native of
Nipaull. Branches compressed. Leaves along with the peti-
\(\text{o} \)les an inch and more in length. Stipulas ovate, broad, short,
acutish. Peduncles numerous, spreading, disposed in loose
cymes, rising from the top of the stem and forks of the branches.
Corolla 6 lines long, scarcely puberulous. Style very short, in-
closed, hardly attaining the height of the anthers.

Hamélille-like Menestoria. Shrub 5 to 6 feet.

3. M. Musseönde. (D. C. l. c.) leaves ovate, acute, on short
petioles, pale beneath, and downy on both surfaces; petioles,
stipulas and middle nerve of the leaves clothed with rufous
hairs. f. G. Native of Nipaull. Branches rather hispid and
rufulous. Stipulas ovate. Stigmas dichotomous, with some of
the flowers sessile and solitary in the forks, and others terminal.
Calyx hispid; lobes deciduous. Berry ovate-globose, smoothish.

Musseönde-like Menestoria. Shrub 5 to 6 feet.

4. M. ? Rígida (D. C. l. c.) leaves cuneated, retuse, and mu-
cronulate, glabrous; stipulas ovate, acute. f. G. Native of
Nipaull, at Suenbu. Gardénia rigida, Hamilt. ex D. Don, prod.
fl. nep. p. 138. A much-branched depressed rigid shrub. Seg-
ments of the calyx subulate. Limb of corolla 5-lobed; lobes
attenuated at the apex.

Stiff Menestoria. Shrub 3 to 4 feet.

Cult. For culture and propagation see Gardénia, p. 499.

XLI. Helospora (from ἥλεος, helios, the sun, and σπορά, 
spora, a seed; in reference to the disposition of the seeds).
p. 391.

Linn. syst. Tetrándria, Monognýa. Calyx with a globose
terete tube, and a somewhat campanulate 4-toothed, erect,
permanent limb. Corolla tubular, much longer than the calycine
limb, with a naked throat, and 4 oblong spreading lobes, which
are valvate in restitution. Anthers 4, linear, inclosed. Style
4-furrowed, and 4-cleft at the apex; stigmas short, spreading.
Berry crowned by the calyx, tetragonal, not divided into cells
inside, but bearing the seeds disposed crosswise, in 4 double
series, immersed in pulp. Seeds linear, curved a little.—A
smoothish shrub. Leaves opposite, on short pedicels, ovate-
lanceolate. Stipulas deciduous, bearing a row of ciliate inside.
Peduncles axillary, 1-flowered, shorter than the leaves. Brac-
tecoles 2, under each ovarium.—This genus is perhaps allied to
Guettardia or Gardénia.

1. H. flaveöscens (Jack, l. c.). f. S. Native of Sinaiurr.
Leaves 3–5 inches long. Corolla yellowish, 3–4 lines long.
Yellowish-flowered Helospora. Tree small.

Cult. For culture and propagation see Gardénia, p. 499.

XLII. Hippotis (from ἰππός, hippos, a horse, and ὄνεως, 
ǒνις, oes, an ear; the form of the calyx has been compared to
hist. nat. par. 5. p. 255.

Linn. syst. Pentándria, Monognýa. Calyx with an ovate tube
and a spati-formed limb, which is cleft on one side, and drawn
out into a mucronate auricle on the other. Corolla a little longer
than the calyx, funnel-shaped, with a somewhat incurved tube,
and a bluntly 5-lobed limb. Stamens 5, inserted in the middle
of the tube; anthers ovate, inclosed. Urecolus 5-crate, seated
on the ovarium. Stigma of 2 adpressed lobes. Berry ovate,
crowned by the calyx, 2-celled. Seeds numerous, minute.—
An unarmed villous shrub. Leaves obovate-oblong, acuminated,
peloteate. Stipulas ovate, acute, caducous, villous on the out-
side and solitary on each side. Peduncles axillary, hardly one
half shorter than the leaves, 3-flowered at the apex. Corolla
and berries villous, purplish red.

1. H. trifóla (Kruiz et Pav. l. c.). f. S. Native of Peru,
in forests about Cuchero, Magora, and Marimachama. Pe-
duncles furnished with small, subulate, deciduous bractes.
Calyx reddish purple. Corolla crimson, greenish at the base:
having the tube yellowish inside.

Three-flowered Hippotis. Shrub 10 to 12 feet.

Cult. For culture and propagation see Gardénia, p. 499.

XLIII. Pomatum (from pomum, an apple; shape of

Linn. syst. Pentándria, Monognýa. Calyx with a sub-
globose tube, and a 5-toothed limb; teeth short, obtuse, deci-
uous, leaving only a membranous circle behind. Corolla small,
with a terete tube and a 5-parted limb. Anthers ovate, sessile
in the throat of the corolla, inclosed. Stigma bifid, with oblong
lobes. Berry almost dry, globose, somewhat didymous, crowned by an areola formed by the falling of the calyx, 2-celled, many-seeded. Placentas rather timid. Seeds angular. Embryo straight, in fleshy albumen, with a centripetal radicle, and flat ovate-roundish cotyledons.—African shrub. Branches terete, hispid in the young state, and glabrous in the adult state. Leaves opposite, almost sessile, oblong-lanceolate, acuminate. Stipulas foliaceous, solitary on each side, oblong, acuminated, almost an inch long. Thyrs spike-formed, terminal.—Habit of Bertiera.

1 P. speciilum (Gaertn. L. c. D. C. diss. ined. with a figure). 7. S. Native of Sierra Leone, where it was collected by Smeathman and G. Don; and in the woods of Casamancia at Iton by Perrottet and Lepicier. C. Géнька labiata, Smeathm. in herb. Lher. Flowers small, white. 

Scape-flowered Pomatum. Shrub 6 to 8 feet. 2 P. dcnum; leaves broad-lanceolate, long-acuminated, rather cordate at the base, sessile; flowers panicked, axillary, and terminal. 7. S. Native of Sierra Leone, on the mountains, in woods. Flowers small, white. 


Lin. syst. Pentandria, Monogynia. Calyx with a sub-globose tube, and a very short permanent 5-toothed limb. Corolla funnel-shaped, with a terete tube, and a 3-parted spreading limb; segments oval, very acute. Anthers 5, sessile within the throat of the corolla. Stigma bifid; the lobes acute. Berry almost dry, crowned by the calyx, umbilicate, roundish, 2-celled, many-seeded. Seeds fixed to the central placentas, angular, muricate.—Shrubs. Leaves oval-oblong, acuminate, pediote, villous. Stipulas solitary on both sides, combined at the base, acuminated. Thyrs terminal, racemosely panicked, bracteolate. Flowers small, white, and sometimes red.—Habit of Lygostatom, but differs in the flowers being 5-parted.—This genus is probably divisible into several.

Sect. I. Bertiera (see genus for derivation). D. C. prod. 4. p. 392.—Bertiera, Anb. Fruit usually striated, crowned by the calyce teeth, which are erectly convivnt and subulate. Inflorince terminal. 1 B. Guiana (Anb. guian. 1. p. 180. t. 69.) leaves ovate-oblong or elliptic, acute, with distant villous nerves; stipulas undivided on both sides, acuminated; flowers disposed in a racemose thyrs; fruit sessile, striated, hairy, disposed along the branches of the panicle, crowned by the erect subulate calyce teeth. 7. S. Native of French Guiana, in woods; and of Cayenne. Vahl, symb. 3. p. 35. Lam. ill. t. 165. Spreng. syst. 1. p. 708. exclusive of some synonomy. Branches villous. Stipulas broad at the base, and rather connate. Leaves 3-4 inches long. Flowers small, white. 

Guiana Bertiera. Shrub 6 to 7 feet. 2 B. Macronata (Gaert. fil. carp. 3. p. 71. t. 192. f. 7.) leaves and flowers unknown; fruit striated, crowned by the erectly convivnt calyce teeth, pediote, disposed along the branches of the panicle. 7. S. Native country unknown. Perhaps the same as B. Guiana. 

Macronata Bertiera. Shrub. 3 B. Psllus (A. Rich. in mem. soc. hist. nat. par. 5. p. 245.) leaves elliptic-oblong, acute, hairy, with approximate nerves; stipulas bifid on both sides; flowers almost cymose; fruit not striated, hairy, crowned by the subulate teeth of the calyx. 7. S. Native of Guiana, in marshy parts of woods. A small sub-herbaceous erect shrub, clothed with rusty down. Leaves soft, usually tapering gradually to the base. 

Marsh Bertiera. Shrub 1 to 2 feet? 

Sect. II. Zaluza (altered from Zuluzañius, an obscure Polish botanist). D. C. prod. 4. p. 392.—Zaluza, Comm. Fruits. Fruit smooth, crowned by the calyce teeth, which are spreading or erect, but not convivnt. Embryo transverse, ovate-cylindrical, in the albumen.—Inflorince terminal, racemosely thyrsid.

4 B. Boreonica (A. Rich. l. c.) smoothish; leaves elliptic-lanceolate, acuminated, pediote; stipulas undivided, drawn out into a setaceous point each, length of pedicels; racemes thyrsid, terminal; fruit glabrous, not striated, crowned by the teeth of the calyx, which are permanent, acute, and straight, but not convivnt. 7. S. Native of the Island of Bourbon. Peduncles angular. Bracteas subulate. 

Bourbon Bertiera. Shrub 3 to 4 feet.

5 B. Neutrala (A. Rich. l. c.) leaves elliptic, acute, on very short pedicels, clothed with rufous silky down; stipulas broad, connate, acute, silky inside, and smoothish on the outside; racemes elongated; pedicels silky; fruit globose and villous, crowned by the erect calyce teeth. 7. S. Native of the Island of Bourbon. 

Rufosa Bertiera. Shrub. 

6 B. Zaluza (Gaert. fil. carp. 3. p. 74. t. 192.) smoothish; leaves rather coriaceous, lanceolate-elliptic, acuminated, on short pedicels, ciliated on the edges; stipulas undivided, drawn out into an acumen, length of pedicels; racemes thyrsid, terminal, and are as well as the flowers downy; branches of racemes dichotomous, with a sessile flower in each fork; fruit crowned by the limb of the calyx, which is hardly toothed; teeth spreading. 7. S. Native of the Mauritius. Mus-saenda racemosa, Sieb. fil. manu. 3. no. 362. Stipulas short, broad, concrete. Racemes apparently drooping. Bracteas small, acute. Flowers sessile. Anthers mucronate. Calyx truncate. Corolla widening from the base, with acute segments. 

Zaluza's Bertiera. Shrub 3 to 4 feet. 

Sect. III. Mycketia (apparently after some botanist of the name of Mycket). Reinwardt. Fruits. D. C. prod. 4. p. 392.—Bertiera, Blum. bijdr. p. 987. Tube of calyx obvate or turbinate. Berry crustaceous inside, crowned by the calyce teeth, which are spreading. Racemules axillary, somewhat coribose. 

7 B. Java (Blum. bijdr. p. 987.) stem simple; leaves petiolate, cuneate-oblong, acuminated, with a few scattered hairs above, and more so on the nerves beneath; corymbs divaricate, axillary, and terminal, trichotomous, solitary, drooping; tube of corolla short. 7. S. Native of Java, in shady parts of woods. 

Java Bertiera. Shrub 2 to 3 feet. 

8 B. Fasciculata (Blum. bijdr. p. 987.) stem a little branched; leaves cuneate-oblong, acuminated, glabrous above, but somewhat strigose on the veins beneath; corymbs short, axillary, trichotomous, erect; pedicels in fascicles; tube of corolla elongated. 7. S. Native of Java, on Mount Salak, in humid places. Corymbs often lateral, hardly longer than the pedicels. Throat of corolla velvety. 

Java Bertiera. Shrub. 

9 T. macrophylla (Blum. l. c.) leaves obovate, acute. 7. S. Native of Java, on Mount Bonkok, in the province of Bantam. 

Fascicled-pedicelled Bertiera. Shrub. 

3 T.
XLIV. POUCHEDIA. Shrub 4 to 5 feet?

† A species not sufficiently known.

10 B. cocinea: shrub rambling, villous; leaves opposite, ovate, acuminate, quite entire, petiole; corymb panicked, terminal; calyx 5-cleft, hairy, with linear segments; corolla tubular, salver-shaped, with a spreading 5-cleft border, and a villous throat; stamens 5, inclosed.  h. S. Native of Sierra Leone, among bushes, in the lowlands about Freetown. Flowers about the size and form of those of lucea rosea, of a deep scarlet colour, and very showy. Scarlet Berntia. Shrub rambling.

Cult. See Musse’nda, p. 492, for culture and propagation.


LIN. SYST. Pentadria, Monogynia. Calyx with an ovate tube, and a small 5-toothed limb. Corolla with a short obconical tube, a glabrous throat, and a 5-lobed limb; lobes ovate-oblong, twisted in activation. Anthers 5, linear, sessile in the throat of the corolla. Style filiform. Stigmas 2, linear, acute, diverging a little at the apex, hardly exserted. Berry dry, closely crowned by the connivent teeth of the calyx, obovate, 5-celled. Seeds 4-6 in each cell, oblong, deformed from being pressed against each other, and clothed with adpressed silky villi. Albumen fleshy, Embryo unknown.—A glabrous African shrub, with roundish branches. Leaves ovate, acuminate, on short petioles. Stipulas solitary on both sides, ovate, ending each in a short cuspitate point. Peduncles opposite, panicked, few-flowered, axillary; but the upper ones are disposed in a terminal panicle from the leaves being gradually diminished and changed into bracteas. Flowers small, glabrous, white!—This genus differs from Gardénia in habit, in the 5-toothed calyx, in the dry 2-celled fruit, and in the cells being few-seeded; in these last characters it agrees with Cupia, but differs from it in the connivent calyx, and in the velvety seeds, and in habit.

1 P. africana (D. C. prod. 4, p. 393).  h. S. Native of Sierra Leone, where it was collected by Smeathmann; and in the woods of the Gambia, Casamance, & Ceylon, where it was collected by Leprieur and Perrottet. Gardénia parviflora, Smeathmann, but not of Poir. diet. suppl. 2, p. 708, which is according to A. Rich. Pajdrax diocéco.

African Pouchedia. Shrub 5 to 6 feet.

Cult. For culture and propagation see Musse’nda, p. 492.


Canthium, sect. Cupia, Reem. et Schultes, syst. 4, p. 306.—Zamária, Rafiu. ann. gen. sc. phys. 6, p. 85?

LIN. SYST. Pentadria, Monogynia. Calyx with a tubine tube, and a 5-parted limb; lobes erect, acute, palmate. Corolla funnel-shaped, with a terete tube, which is longer than the calyx, a gradually widened throat, and a 5-parted limb; segments ovate-oblong, recurved. Filaments very short. Anthers oblong, dehiscing at the side in the upper part of the cells. Style clavate, 10-angular or 2-lobed. Berry globose, crowned by the calyx, 2-celled. Placentas spongy, central. Seeds wrinkled at the hylum. Albenum cheesy. Embryo centripetal.—Asiatic glabrous shrubs. Leaves oblong-lanceolate. Stipulas intrafoliaceous, broad, ending each in a short acumen. Corymbs or panicles trichotomous, terminal, axillary, or opposite the leaves. Flowers white, fragrant.

§ 1. Stigma undivided.

1 C. corombbosa (D. C. prod. 4, p. 394) shrubby; leaves lanceolate-oblong, with revolute margins, shining; corynbs terminal; lobes of calyx 5, about equal in length to the tube of the corolla; mature capsule 4-seeded.  h. S. Native of the coast of Coromandel, frequent: Malabar; Pulo Penang, on hills; Ceylon, China, &c. Cupi, Rheed. Rhod. 2, p. 37, t. 23. Rondeletia Asiatica, Lin. spec. 244. Webéra corombbaya, Willd. spec. 1, p. 1224. Ker. bot. reg. t. 126. Canthium corombbosum, Pers. ench. 1, p. 200. Roxb. fl. ind. 2, p. 533. Stylocorys Cupia, A. Rich. mem. soc. hist. nat. par. 5, p. 248. Leaves 6-7 inches long and 2½ broad; having hairy glands in the axis of the large veins. Corymbs terminal. Flowers small, very numerous, at first white, but finally yellowish, faintly fragrant. Berry size of a large pea, black when ripe. Seeds 4-8 in each cell. The extremities of the young shoots are often found covered with a white resinos matter, like that on the genus of most species of Gardénia.

Corymbos—aflowered Cupia. Ct. 1759. Shrub 5 to 6 ft.

2 C. macropylla (D. C. prod. 4, p. 394) leaves broad-lanceolate, acuminate; panicle terminal, villous; tube of corolla long, slender, villous; berries 5-12-seeded.  h. S. Native of the Prince of Wales Island. Webéra macrophylla, Wall. in Roxb. fl. ind. 2, p. 534. Young shoots villous. Leaves 6-8 inches long, and from 4-5 broad. Panicle large. Flowers large, white. Anthers as long as the segments of the corolla.

Long-leaved Cupia. Shrub.

3 C. densifloра (D. C. prod. 1, c.) sub-arborescent; leaves oblong-lanceolate, acute at the base; panicle rounded, lateral, almost sessile, occupying the place of a leaf or branch, trichotomous, dense-flowered; throat of corolla bearded; ovarium many-seeded.  h. S. Native of Pulo-Penang, on hills. Webéra densiflora, Wall. in Roxb. fl. ind. 2, p. 636. Leaves coriaceous, acuminate, shining above, 5-6 inches long. Flowers numerous, by threes, white. Bracteas lanceolate, ciliated. Anthers very long.

Dense-flowered Cupia. Shrub large.

4 C. mollissima (Hook. et Arn. in Beech. bot. p. 192) leaves lanceolate, clothed with soft dense hairs on both surfaces; lobes of calyx short, very blunt; fruit pubescent, many-seeded.  h. G. Native of China. The hairs, which clothe every part of the plant are of a rusty colour. Stigma unknown.

Very-soft Cupia. Shrub.

5 C. oppostostrófia (D. C. l. c.) shrubby; leaves lanceolate-oblong, firm, and glossy; petioles opposite the leaves, composed of a few still jointed, sub-recurved spikes; corolla with a short tube and a woolly throat; stigma clavate.  h. S. Native of Chittagong. Webéra oppositostrophia, Roxb. fl. ind. 2, p. 535. Flowers white.

Opposite-leaved Cupia. Shrub.
6. C. odora'ta (D. C. l. c.) shrubby; leaves lanceolate, acuminate, polished; corymbs terminal, and are as well as the bracteas villous; calyx 5-toothed; teeth one half shorter than the tube of the corolla; cells of berries 3-4-seeded.  \( \text{S.}\) Native of Silhet, where it is called Patugrooja. Webéra odoráta, Roxb. fl. ind. 2. p. 535. Leaves 4-6 inches long and 1-2 broad. Stipulas triangular. Flowers numerous, middle-sized, white, very fragrant. Anthers about as long as the segments of the corolla.

Sweet-scented-flowered Cupia. Shrub large.

§ 2. Stigma 2-lobed.

7. C. aërículos'ta (D. C. l. c.) arboreose, smooth; leaves ovate-oblong, emarginate, and unequally 2-lobed at the base, acuminate, almost sessile, the axis of the veins glandular beneath; pedicels terminal and lateral, bractiate, on flattened peduncles; throat of corolla swollen, elevated, and bearded; ovarium many-seeded.  \( \text{S.}\) Native of Pulo-Penang. Webéra aëriculáta, Wall. in Roxb. fl. ind. 2. p. 537. Leaves contracted towards the coriaceous base, 7 inches long. Flowers white, fragrant.

Auricled-leaved Cupia. Shrub large.

8. C. trunci'ca (D. C. l. c.) shrub twining; leaves ovate, acute; pedicels terminal, on flattened peduncles; corolla with a naked throat; ovarium 4-ovulate.  \( \text{S.}\) Native of Pulo-Penang, on hills. We'bera truncića, Wall. in Roxb. fl. ind. 2. p. 538. Leaves 3-4 inches long, acute at the base, dark and shining above, coriaceous. Bracteas lanceolate, deciduous. Flowers white, fragrant, on short pedicels by threes, or in fasicles. Anthers very long.

Truncate Cupia. Shrub tw.

† Species not sufficiently known.


11. C. thyrsóidea (D. C. l. c.) branches woody, clothed with brown pubescence; leaves oblong-ovate, acuminate at both ends; thrysse dense, terminal; corolla glabrous outside and pilose inside; stigma bifid.  \( \text{S.}\) Native of the East Indies. We'bera thyrsóidea, Roth. nov. spec. p. 149. Cánthium thyrsóideum, Roem. et Schultes, syst. 6. p. 207. Flowers white. Fruit unknown.

Thyrsus-flowered Cupia. Shrub.

Cult. For culture and propagation see Ron'dellia, p. 517. All the species are very elegant when in blossom, and the flowers are very fragrant.


LIN. SYST. Pentándria, Monógynyía. Calyx with a globose tube, and a 5-parted limb; lobes linear-oblong, reflexed, permanent. Corolla, stamens, and stigma unknown. Berry globose, with 8 stripes, crowned by the limb of the calyx, 2-celled; pulp thin. Placenta central, spongy. Seeds 4-6 in each cell, horizontal, semi-immune, cuneated, compressed, wrinkled. Albumen fleshy. Embryo dorsal, with the radicle directed to the periphery, and foliaceous coryledons. This genus appears to be allied to Cupía, but the flowers and all other particulars besides those mentioned are unknown.

1. T. ZEYLÁNCIA (Gaertn. l. c.).  \( \text{S.}\) Native of Ceylon. Ceylon Tarennia. Tree or shrub.

Cult. For culture and propagation, see Ron'dellia, p. 517.


LIN. SYST. Tetra-Pentándria, Monógynyía. Calyx with a roundish tube, and a short, 4-5-toothed limb. Corolla funnel-shaped, with an equal 4-5-cleft limb. Stamens 4-5, within the tube. Berry almost globose, naked at the apex, 2-celled, many-seeded. Seeds numerous, rather angular, crustaceous.—Trees and shrubs. Leaves opposite, or 3 in a whorl, on short petioles, often coriaceous. Stipulas intrapetiolar, undivided, solitary, on both sides. Peduncales axillary, shorter than the leaves, bearing each a few flowered corymbs or cyme; rarely terminal, except in the more doubtfull species.—Petesia of Gaertn. is Emakëbia, D. C. a genus among the tribe Cofféacées. The character given by P. Browne agrees with this genus, but the species given are probably true species of Ron'dellia. Petesia of Jacq. and Swartz is very doubtful, and will probably constitute a new genus, according to Bartling.

* Flowers axillary.

1. P. CRA'N'DS (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 395.) leaves opposite, rhomboid-ovate, acuminate at both ends, villous on both surfaces while young, but in the adult state they are beset with a little scattered down above, and rather villous on the nerves and veins beneath, reticulated and radiately striated between the veins; corymbos few-flowered.  \( \text{S.}\) Native of Mexico. Limb of calyx 5-cleft, deciduous. Seeds scrobiculate. Great Petesia. Tree.

2. P. sítida (Bartl. in herb. Hænke, ex D. C. l. c.) leaves opposite, oblong, attenuated at both ends, glabrous, reticulately veined beneath, and radiately striated between the veins; peduncles axillary, 3-5-flowered, but only bearing one fruit each.  \( \text{S.}\) Native of the Philippine Islands and Marianne Island. Calyx simutely 4-toothed. Corolla tomentose, small. Berry globose, hardly the size of a pea. Seed sub-cylindrical. The leaves are striated, almost like those of the first species.

Shining-leaved Petesia. Tree.

3. P. ŕIYÍFÓILA (Bartl. in herb. Hænke, ex D. C. l. c.) leaves in a whorl, obvate-oblong and oblong, acute at both ends; peduncales axillary, bifid, 5-7-flowered, but bearing only 1 fruit each.  \( \text{S.}\) Native of the Island of Luzon.

Three-leaved Petesia. Tree.

4. P. CARNOSA (Hook et Arn. in Beech, voy. pt. bot. p. 64.) leaves opposite, oblong-obovate, obtuse, attenuated at the base, glabrous, fleshy; peduncles axillary, 1-flowered.  \( \text{S.}\) Native of the Society Islands. Corolla funnel-shaped, 4-lobed: having the anthers sessile in the throat. It differs from most Rubiaceous plants in the fleshy leaves.

Fleshy-leaved Petesia. Tree or shrub.

3 T 2
** Flowers terminal.**

5 P.? /hibition (Barl. in herb. Haenke, ex D. C. Lc. c.) leaves opposite, membranous, ovate-oblong, acuminate at both ends, having the middle nerve on both surfaces, and the veins beneath hispid from bristles; corollas terminal, short. 97. S. Native of the island of Luzon.

**Hispid-leaved Petesia.** Tree or shrub.

6 P.? /emperature (Jacq. amer. p. 18.) leaves oblong, attenuated at both ends, very soft on both surfaces from hardly conspicuous tomentum; corollas lateral and terminal. 97. S. Native of New Spain, in woods about Cartagena. Flowers tetramerous. Fruit unknown. Perhaps a species of **Rondeletia.**

**Rondeletia** Petesia. Tree.

7 P.? /pica (Swartz, fl. ind. occ. 3. p. 1945.) leaves elliptic, attenuated, glabrous, pubescent on the nerves beneath; petals hairy; racemes terminal, spicate. 97. S. Native of the south of Jamaica, among bushes. Flowers small, white, 4-parted. Berry crowned by the very minute calyx.

**Spicate**-flowered Petesia. Shrub 5 to 6 feet.

8 P.? /imple (Lour. coch. p. 77.) stem herbaceous, quite simple, tetragonal; leaves lanceolate-linear, glabrous; racemes erect, almost terminal; calyx 5-toothed. 2. G. Native of Cochinchina. The fruit is said to be baccate, 8-celled, and many seeded. Flowers white.

**Quite**-simple-stemmed Petesia. Pl. 1 foot.

9 P.? /teminalis (Hook. et Arn. in Beech, voy. pt. bot. p. 85.) leaves oblong, obtuse at the base, acutish at the apex, membranous, glabrous; panicles terminal, racemose, one-half shorter than the leaves; corolla salver-shaped, having the lobes shorter than the tube. 97. S. Native of the Sandwich Islands. Stem dichotomously branched. Leaves 6 inches long, and 1½ inch broad. Corolla funnel-shaped, 4-lobed, inclosing the anthers. Much the habit of **Stylocoryna** racemosa, Cav.

**Terminal**-flowered Petesia. Tree or shrub.

10 P.? /siana (Hook. et Arn. in Beech, voy. pt. bot. p. 85.) leaves oblong, acute at the base, and obtuse at the apex, coriaceous, glabrous; corollas terminal, dense, few-flowered, much shorter than the leaves. 97. S. Native of the Sandwich Islands.

**Coriaceous**-leaved Petesia. Tree or shrub.

**Cult.** For culture and propagation see **Rondeletia,** p. 517.


**Lin. syl.** Tetraphylla, Monoginia. Calyx with an ovate tube, and a 4-parted permanent limb (f. 94. a. b); lobes narrow. Corolla funnel-shaped (f. 94. b), with a 4-parted limb (f. 94. b.), and a glabrous throat. Stamens 4, inserted in the tube of the corolla, included (f. 94. b.); anthers oblong-heart-shaped. Stigma bident. Berry ovate, crowned (f. 94. d. c.), 2-celled (f. 94. c.); cells many-seeded. Seeds lenticularly angular, wingless. —Creeping herbs. Leaves opposite, on short petioles. Stipules subulate, solitary on both sides. Pedicels axillary, solitary, and in the alternate axes, bearing each a few-flowered head, surrounded by a short involucrem. Corollas and berries blue or purple.

1 C. repens (Swartz, fl. ind. occ. 1. p. 245.) plant prostrate, creeping; leaves ovate, pubescent on Keilis surfaces; petals very short while bearing the flowers, but afterwards becoming more elongated; heads few-flowered; bracteas subulate. 97. S. Native of Jamaica and St. Domingo, in temperate parts on the mountains. Browne, jum. 144. 6. C. herbaceum, Lam. dict. 2. p. 56. ill. t. 64. Flowers almost sessile, collected in the axils of the leaves, blue. Fruit seated on peduncles, 4-5 lines long, blue, inflated. (f. 94.)

**Creeping Coccocypseum.** Fl. May. Cit. 1793. Pl. cr.


**Umbellate**-flowered Coccocypseum. Pl. creeping.

3 C. ovatum (Cham. et Schlecht. in Linnaea. 4. p. 141.) plant ascending, rooting at the base; leaves ovate, very blunt at the base, and acute at the apex, beset with minute adpressed teeth; peduncles alternate, shorter than the leaves, clothed with strigose leaves. —Native of Brazil. Allied to C. umbellatum and C. lanceolatum.

**Ovate**-leaved Coccocypseum. Pl. cr.

4 C. lanceolatum (Pers. ench. 1. p. 132.) plant densely clothed with down; leaves lanceolate, acute; heads many flowered, pubedunculate; bracteas lanceolate; berries ovate-oblong. 2. S. Native of Peru, in shady groves at Cuchero and Chinchao, ex Ruiz et Pav.; and on the mountains about the Orieno, ex Haenke; and at Caracas, ex Vargas. Condalia lanceolata, Ruiz et Pav. fl. per. 1. p. 54. Corolla of a pale violaceous colour. Berries blue.

**Lanceolate**-leaved Coccocypseum. Pl. cr.

5 C. hispidum (Barl. in herb. Haenke, ex D. C. prod. 4. p. 386.) plant ascending, very hairy in every part; leaves ovate, acute; heads axillary when in flower, almost sessile; peduncles a little elongated when in fruit, and recurved. 2. S. Native country unknown.

**Hairy** Coccocypseum. Pl. ascending.

6 C. cunei (Wild. herb. ex Cham. et Schlecht. in Linnaea. 4. p. 139.) plant prostrate, creeping; leaves ovate, clothed with silky yellow down on both surfaces; heads axillary, and almost terminal on long peduncles; bracteas of heads 5-6, oblong, acute. 2. S. Native of South America, in temperate shady places, near Buenavista, Caracas, Popayan, and of tropical and extra-tropical Brazil. C. repens, H. B. et Kunth, nov. gen. amer. p. 465. exclusive of the synonyms. Schwienkefia astra, Spreng. neu. entd. 1. p. 288. but not of Willd. Bellardia mollis, Willd. pl. b.; ex Cham. et Schlecht. in Linnaea. vol. 4. Corolla bluish or red. Berries blue.

**Canescent** Coccocypseum. Pl. cr.

7 C. aureum (Cham. et Schlecht. in Linnaea. 4. p. 139.) leaves oblong, acute, with parallel veins, clothed with golden silky down; heads axillary, sessile, few-flowered; bracteas 4-5, narrow, acute. 2. S. Native of tropical Brazil. Schwienklefia aurea, Spreng. neu. entd. 1. p. 280. syst. 1. p. 764.
Allied to *C. canescens*, but differs in the above characters, and in the flowers being larger and slenderer, and less hairy; and in the leaves being more acute and longer.

**Golden Coccocypselum.** Pl. cr.

5. *C. kummelariifolium* (Cham. et Schlcht. in Linnaea, 4. p. 397.) plant very hairy, prostrate, creeping; leaves ovate-rotundish, very blunt at the base, obtuse at the apex, and somewhat muricate; heads on short peduncles; bracteae linear. *2.* S. Native of equinoxyal Brazil. Corolla violaceous, beset with spreading pilis at the top of the lobes. Allied to *C. campaunyliferum* and *C. cordifolium*.

**Money-wort-leaved Coccocypselum.** Pl. cr.

9. *C. cordifolium* (Nees et Mart. in nov. act. bonn. 12. p. 14.) plant creeping; leaves cordate, obtuse, hairy; peduncles at length equal in length to the pedioles; heads of flowers almost glabrous; calyces and pedioles very villous. *2.* S. Native of Brazil, on the road to Felisbert and of St. Catharine. Corolla white, pubescent. Berries glabrous, blue. Habit of *Geophila*.

**Heart-leaved Coccocypselum.** Pl. cr.

10. *C.? erythrocypelium* (Cham. et Schlcht. in Linnaea, 4. p. 144.) branches or stems simple, hairy; leaves ovate, acute, obtuse at the base, hairy on both surfaces, often puberulous beneath; heads on short peduncles, beset with purplish hairs. *2.* S. Native of equinocial Brazil. Flowers and fruit unknown.

**Red-headed Coccocypselum.** Pl. cr.

11. *C. pedunculatae* (Cham. et Schlcht. in Linnaea, 4. p. 142.) plant ascending, clothed with adpressed stirageous hairs; leaves lanceolate-oblong, with revolute edges; peduncles alternate, longer than the leaves, usually reflexed after flowering; heads 10-12-flowered. *2.* S. Native of equinoxyal Brazil.

**Peduncular Coccocypselum.** Pl. cr.


**Tontanea Coccocypselum.** Pl. cr.

13. C. glabrum (Barl. in herb. Henke, ex D. C. prod. 4. p. 397.) plant creeping, quite glabrous; leaves ovate, subcordate, acutish; heads few-flowered, axillary, when bearing the fruit on longer peduncles, which are deflexed. *2.* S. Native of Panama. Very nearly allied to *C. Tontanea*, and probably only a glabrous variety of that species, but the flowers are unknown.

**Glabrous Coccocypselum.** Pl. cr.

14. C. cauletem (Cham. et Schlcht. in Linnaea, 6. p. 414.) leaves roundish-ovate, ciliated, as well as the petioles, having the nerves furnished with long hairs on the upper surface; heads of flowers equal to about half the length of the leaves. *2.* S. Native of Mexico, between Huilulamalco and Cuapa. Very like C. umbellata. Leaves an inch and a half long and 14 lines broad.

**Ciliated Coccocypselum.** Pl. creeping.

† The generic character of the two following species is doubtful, and according to Kunth, syn. should probably be excluded from the present genus.—*Erect suffruticosus glabrous plants.*


**Obovate-leaved Coccocypselum.** Shrub 3 feet.


**Sessile-leaved Coccocypselum.** Shrub 2 to 3 feet.

**Cult.** A mixture of pot and sand is the best soil for the species; and they will be easily increased by separating the creeping stems from the main plant.


**Lin. syst. Tetradriaria, Monogynea.** Calyx with an obovate tube, and a 4-cleft limb; lobes subulate at the apex. Corolla small, with a short tube, and a 4-lobed spreading limb. Stamens 4, inserted in the tube of the corolla, tetosed, or a little exserted. Stigma bifid. Berry crowned by the limb of the calyx, 2-celled, having the dissepiment incomplete and semilunar, and elliptic. Seeds numerous, somewhat compressed. Albumen carcinogenous. Embryo almost dorsal, with a centripetal radicle, and flat roundish cotyledons.—Small glabrous branched trees, having much the habit of box. Leaves obovate, stiillis. Stipulas short, acute, solitary on each side. Pedicels axillar, very short, bracteolate, 1-flowered.

1 F. buxifolia (Lam. ill. no. 1478. but not of Gaertn.) lobes of corolla obtuse; berry obovate, crowned by the subulate lobes of the calyx. *F.* S. Native of the Mauritius, where it is called *bois de biais*. F. obovata, Gaertn. fil. carp. 3. p. 62. t. 191. but not of Lam. Coccocypselum buxifolium, Spreng. syst. 1. p. 416. Leaves 5-6 lines long, and 3-4 broad.

**Buxaceous Fernaldia.** Ch. 1816. Shrub.

2 F. obovata (Lam. ill. t. 67. f. 1.) lobes of corolla acuminate; berries nearly globose, crowned by the lobes of the calyx, which are blutnish and velvety inside. *F.* S. Native of the Mauritius, where it is called *bois Malabare and bois de ronde*. F. buxifólia, Gaertn. fil. carp. 3. p. 63. t. 197. f. 6. Coccocypselum unifólium, Willd. spec. 1. p. 618. Sieb. fl. maur. exsic. 2. no. 100. Leaves 8-10 lines long, and 6-7 broad.

**Obovate-leaved Fernaldia.** Ch. 1816. Shrub.

3 F. pedunculata (Gaertn. fil. carp. 3. p. 191. f. 3.) lobes of corolla unknown; berry obovate, tapering a long way into the stipe at the base, crowned by the lobes of the calyx, which are blutnish. *F.* S. Native of the Mauritius. Shrub and flowers unknown.

**Pedunculate-fruited Fernaldia.** Shrub.

**Cult.** For culture and propagation, see *Ruehelia*, p. 517.

**L. PETUNIA** (Peetunga is the name of *P. Roxbázhghi in the Bengalee language*). D. C. prod. 4. p. 398.—*Rándia species,* Roxb.—Higgina, Blum. bidjdr. p. 988. but not of Pers.

**Lin. syst. Tetradriaria, Monogynea.** Calyx with an ovate tube, and a permanent 4-toothed limb. Corolla funnel-shaped, with a short obconical tube, a 4-parted limb, and a very vison throat. Stamens 4; anthers a little exserted. Style filiform, villous; stigma bidentate, a little exserted. Berry globose, depressed and umbilicate at the apex, 2-celled. Seeds 2-4 in each cell, fixed to the upper part of the dissepiment, ex Roxb., scale-formd, and imbricated downwards, ex Blum. Albumen carcinogenous. Embryo inverted, with linear cotyledons.—Unarmed erect glabrous shrubs, with decussate horizontal branches. Leaves opposite, oblong, attenuated at both ends. Stipulas long-acuminated, deciduous. Spikes axillary, solitary or twi,
simple, many flowered, 3 times shorter than the leaves. Bracteas short, 1-flowered. Flowers disposed in 2 or 4 rows, sessile along the rachis of the spike, small, greenish white. This genus differs from Rândia in the flowers being tetramerous, and very much bearded in the throat, and in the spicate inflorescence and whole habit; and from Higginsia in the throat of the corolla being bearded, in the genitals being a little exerted, and in the globose depressed fruit, &c.

1 P. Raxterham (D. C. prod. 4. p. 399.) leaves elliptic-oblong, glabrous, acuminate at both ends; spikes axillary; bracteas and calyces glabrous. ꞌꞌ. S. Native of the East Indies, about Lukumscepoora, where it is called Petungia by the natives. Rândia racemosa, Roxb. fl. ind. 2. p. 144. Branches almost horizontal. Leaves drooping, 3½ inches long, and about 1 broad. Stipulas large, caducous. Spikes about one-half or one-third shorter than the leaves. Flowers small, pale, greenish white. Berries round, smooth, shining, straw-coloured, size of a pea.

Roxburgh’s Petunga. Cult. 1820. Shrub 3 to 4 feet.

2 P. Longifolia (D. C. l. c.) leaves elliptic-oblong, acuminate at both ends; branches terete; bracteas and calyces downy. ꞌꞌ. S. Native of Java. Higginsia longifolia, Blum. bijdr. p. 988. Leaves 6½ inches long, and 2 broad. Spikes about 2 inches long. Flowers small, greenish white.

Long-leaved Petunga. Shrub 3 to 4 feet.

3 P. Microcarpa (D. C. l. c.) leaves oblong-lanceolate, acuminate, finely veined; spikes short, quadriflorously imbricated; tube of corolla very short. ꞌꞌ. S. Native of Java, where it is called Ki-Ajiet by the natives. Higginsia microcarpa, Blum. bijdr. p. 988. Leaves 3 inches long, and 9½ inches broad. Spikes 5½ inches long. Flowers small, greenish white.

Small-leaved Petunga. Shrub 3 to 4 feet.

4 P. Glomerulata (D. C. prod. 4. p. 399.) leaves oblong-lanceolate, veiny; spikes densely glomerulated. ꞌꞌ. S. Native of Java, on mount Salak, and in woods on the island of Nusa-Kambangia.


L. sst. Tetrandria, Monogyânia. Calyx with a short obovate tube, and a 4-toothed limb; teeth erect, acute. Corolla salver-shaped, with a very short tube, and a 4-parted spreading limb; segments lanceolate. Anthers 4, sessile upon the tube, erectly connivent, linear, acute. Stamina obtuse, hardly emarginate. Capsule baccate, indehiscent, crowned by the calyx, 2-celled, slightly tetragonal. Placentas ovate, distinct in the cells of the fruit. Seeds numerous, minute, roundish.—A herb, which is suffruticose, and branched at the base, having the branches hairy. Leaves ovate, acuminate, rough from dots above, and hairy beneath. Stipulas very short, acute. Peduncles axillary, longer than the pediols, many flowered.

1 H. Pedunculata (Swartz. l. c.) ꞌꞌ. S. Native of the higher mountains of Jamaica, in rather humid shady places. H. Jamiacânésis, Spreng. sst. 1. p. 416. Corolla with a red tube, and the segments of the limb striped with blood-colour at the base, but they are yellow at the apex. Berries scarlet.

Pedunculata Hoffmannia. Shrub 2 to 3 feet.

Cult. See Catesbœa, p. 511. for culture and propagation.


L. sst. Tetrandria, Monogyânia. Calyx with an obovate tube, and a 4-toothed or 4-parted limb. Corolla funnel-shaped, with a very long tube, gradually widening and dilated to the throat, and a 4-parted limb. Stamens 4; filaments inserted at the base of the tube of the corolla; anthers linear, exserted. Stigma bidentate, from the lamellae being combined. Berry globose or oblong, 2-celled, crowned by the limb of the calyx; having the disseipment perforated according to Jussieu, but according to Gervatin, it is entire. Placentas spongy, fixed to the upper part of the disseipment on both sides. Seeds numerous, scale-formed, invected, imbricated downwards, collected in 2 bundles in each cell. Albumen fleshy. Embryo minute, invected.—Glabrous shrubs, bearing supra-axillary simple spines. Leaves small, oval, usually in fascicles. Stipulas solitary on each side, deciduous. Pedicels axillary. Flowers whitish, elongated,
bractless.—This genus comes very near to *Scolosánthus*, but differs in the cells of the fruit being many seeded.


1 C. *latifolia* (Lindl. bot. reg. 858.) leaves obovate, shining, convex, rather shorter than the spines; teeth of calyx subulate; tube of corolla very long, obconical at the apex. ♀. S. Native of the West Indies, particularly in Cuba near the Han- vannah. Corolla pale yellow, 4 inches long. Fruit ovate, crowned by the 4 subulate calyceal teeth.


2 C. *spinosa* (Lam. spec. p. 159.) leaves ovate, acutish at both ends, rather longer than the spines; teeth of calyx short, acute; berry oval; tube of corolla very long, cylindrical, widening at the apex. ♀. S. Native of the Bahamas Islands, but particularly of Providence, near Nassau. Lam. ill. 67. f. 1. Curt. bot. mag. t. 131. Tratt. tab. t. 259. C. longiflora, Swartz, prod. p. 30.—Catesb. ear. 2. t. 100. Corolla pale yellow, 3-6 inches long. Leaves like those of box, roundish, rising in fascicles. Berry about the size of a middling plum, yellowish, with rather tart pulp.


§ 2. *Erectiflora* (from *erectus*, erect, and *flora*; a flower; the flowers are erect, not drooping as in the first section). D. C. prod. 4. p. 401. Pedicels 1-flowered. Flowers erect, glabrous. Stamens included.—Perhaps all are species of *Catesbea*.

*Vavasseur's Lily-thorn.* Shrub 4 to 6 feet.

§ 2. *Erectiflora* (from *erectus*, erect, and *flora*; a flower; the flowers are erect, not drooping as in the first section). D. C. prod. 4. p. 401. Pedicels 1-flowered. Flowers erect, glabrous. Stamens included.—Perhaps all are species of the genus *Rúdia*.

4 C. *Parietiflora* (Swartz, prod. 20. fl. ind. occ. 1. p. 236.) leaves ovate, rather than ovate, revolute margins, mucronate, and are, as well as the branches, glabrous; teeth of calyx short, acute; flowers sessile among the leaves; tube of corolla short, tetragona; berries roundish. ♀. S. Native of the north of Ja-maica, among bushes by the sea side. Vahl, symb. 2. p. 31. eclog. 1. p. 12. t. 10. f. 1. but not of Lam. Gaertn. fil. carp. t. 192. f. 3. C. parviflora, ex Jamaica, Spreng. prod. 1. p. 416. exclusive of the diagnosis and synonyms.—Sloam. hist. t. 207. f. 1. Corolla white, with a tetragonal tube, about 4 lines long.


5 C. *Campanulata* (La Sagra, in litt. ex D. C. prod. 4. p. 401.) leaves ovate-roundish, coriaceous, and are, as well as the branches, quite glabrous; spines opposite, longer than the leaves; flowers erect, short, sessile in the axils of the leaves. ♀. S. Native of Cuba, near the Hanvannah, where it was collected by Ramón de la Sagra. Perhaps sufficiently distinct from *C. parviflora*.

*Campanulata-flowered Lily-thorn.* Shrub 4 to 5 feet.

6 C. *Parviflóia* (D. C. prod. 4. p. 401.) leaves ovate-roundish, mucronate, glabrous; spines axillary, subulate, a little longer than the leaves; branches hairy; flowers short, usually twin, axillary, on very short pedicels. ♀. S. Native of St. Domingo. *Catesbæa* parviflóra var. Dominénsis, Spreng. prod. 1. p. 416. Gardínia parviflóra, Dietr. suppl. gart. lex. 3. p. 411. ex Rem. et Schultes, syst. 5. p. 247. Rândia parviflóra, Lam. dict. 3. p. 25. (exclusive of the syn. of Sloane) ill. t. 156. f. 2. but the flowers in the figure are drawn 5-leaflet. Spines opposite, straight, about 5 lines long. Leaves like those of box, in fascicles. Berries globose, almost sessile. Flowers white, changing to yellowish.


7 C. *erecta* (Moc. et Sesse, fl. mex. icon. exed. D. C. prod. 4. p. 401.) leaves oval-oblong, acute; branches opposite, spreading, unarmed; flowers almost terminal, nearly sessile, solitary, erect; tube of corolla very long. ♀. S. Native of Mexico. Flowers white, almost like those of *C. spinosa*, but erect. Spines none in the figure given.

*Erect Lily-thorn.* Shrub 4 to 5 feet.

Cult. All the species of *Catesbæa* are very ornamental while in bloom. They grow best in a mixture of light turf or loam and peat; and cuttings will root if planted in sand plunged in heat, with a bell-glass placed over them. The plants being apt to be infested with insects, they should be kept clean or they will not thrive.

Tribe III.

**HEDYOTTIDEÆ** (this tribe contains plants agreeing with the genus *Hedyótis* in particular characters). Cham. et Schlecht. in Linnaea. 4. p. 150. D. C. prod. 4. p. 401. Fruit caperular, 2-celled, dehiscing in the middle of the cells: or rather membranous and indehiscent; cells many seeded. Seeds not winged. Albumen fleshy.—Shrubs and herbs, with opposite leaves, and interpetiolar stipulas.

Subtribe I. *Ronelleítæ* (plants agreeing with the genus *Rondeléttia* in important characters). D. C. prod. 4. p. 401. Stipulas twin on both sides, combined or distinct, neither sheathed nor ending in bristles.

**L.V. CONDAMI NÆA** (in honour of — La Condamine, a famous astronomer, and traveller in South America, and who was the first who described and figured *Cinchóna lancéolata*). D. C. prod. 4. p. 402.—Macroenénnum, Ruiz et Pav. fl. per. 2. p. 48. but not of Browne.—Macroenénnum, sect. 2. Kunth, and A. Rich.

**LY. Syst.** *Pentadviria, Monogénia*. Calyx with a cup-shaped tube, and a 5-crenated or 5-toothed limb (f. 95. a.), which at length becomes circumsiced at the base, and falls off. Corolla funnel-shaped, with a somewhat curved tube (f. 95. b.), which is a little longer than the calyx, a dilated throat, and a 5-parted limb (f. 95. c.); the segments ovate, acute, spreading, and thickened at the apex (f. 95. e.). Stamens 5, inserted above the middle of the corolline tube (f. 95. b.), or near its throat; filaments shorter than the corolla; anthers oblong-linear, bifid at the base, length of corolla. Stigmas 2-lobed (f. 95. f.). Capsule turbinate (f. 95. g.), rather compressed, truncate, umbilicate, 2-celled, dehiscing in the middle of the cells (f. 95. e.). Seeds small, numerous, cuneiform, not winged.—South American shrubs. Leaves large, opposite, on short petioles. Stipulas intrafolia- ceous, bipartite, acuminate, adpressed, usually connate. Co- rymbus or racemes terminal, many flowered.—This genus differs from *Macroenénnum* in the form of the calyx, in the stamens being inserted above the middle of the corolline tube, not at its base, as in that genus, and in the seeds being wingless; and from *Sickingia* in the stigma being double, not simple, and in the seeds not being winged, &c.

1 C. *Corimbósa* (D. C. prod. 4. p. 402.) leaves ovate-oblong,
RUBIACEÆ. LV. Condaminea.

acuminated, coriaceous, opposite; corollas large, bracteate, trichotomous; teeth of calyx broad, short, blunt. ½. S. Native of Peru, on hills towards Chinchao, Acomayo, Pilano, and Muna; ex Ruiz et Pav. and on mountains about the Guanoaco river, ex Heeneke; also as of New Granada about Marinqui, and Santa Anna, ex H. B. et Kunth. Macrocnêmum corymbosum, Ruiz et Pav. fl. per. 2. p. 48. t. 189. H. B. et Kunth, nov. gen. amer. 3. p. 399. Leaves a foot long. Calyx purple, fleshy. Corolla white inside and purplish on the outside, with a naked throat. Capsule at first purplish, but at length almost black. Seeds yellow. 

Corollas of flowers—abruptly tubular, 5-valved. 

Corynbese-flowered Condamines. 

1. Corynbese-flowered Condaminea. Tree 40 to 50 feet.

2. Corynbese-flowered Condaminea. Tree 20 to 30 feet.


5. Corynbese-flowered Condaminea. Tree 10 feet.

6. Corynbese-flowered Condaminea. Shrub with both stalks 10 feet.

LVII. Alseis. LVII. Macrocnênum.

—A middle-sized tree. Leaves oblong, acuminate, rather pilose on both surfaces. Spurs branched, terminal. Flowers small, cream-coloured.—This genus is allied to Macrocnênum and Muchunina according to the author.

1. A. floribunda (Schott, l. c.) ½. S. Native of Brazil, in groves. 

Buddle-flowered Alseis. Tree. 

Cult. For culture and propagation see Rondeléia, p. 517.


—Macrocnênum species of authors.

Lin. syst. Pentàndria, Monogynia. Calyx with a turbinate tube, and a small 5-toothed persistent limb. Corolla tubular, with a wide throat; the tube pentagonal before expansion; and the segments 5, acute, and eretic. Capsule 2-celled, 2-valved; valves deshing at the sides (see Swartz). Seeds numerous, imbricated, acute.—Small glabrous trees. Leaves approximate, oblong, short-acuminated. Stipules solitary on both sides. Pendicula terminal and subaxillary, solitary, trichotomously coriaceous above. Flowers rather large, yellowish green.

1. M. Jâmaicae (Lin. amen. 5. p. 413.) arboreous; leaves oblong-oval, petiolate, polished; stipulas ovate-triangular, much shorter than the pedicles; corollas on long peduncles. ½. S. Native of the south of Jamaica, in shady places on the banks of rivulets. Swartz, obs. p. 68, t. 3. f. 1. Lam. dict. 3. p. 670. 

Jamaica Macrocnênum. Ch. 1806. Tree 12 to 14 feet. 

4. Species not sufficiently known, and do not probably belong to the present genus. 

2. M.?? stipulae (Roxb. fl. ind. 2. p. 144.) leaves almost sessile, lanceolate, smooth; stipulas oval, very large; corollas terminal, suprarecumbent. ½. S. Native of the Moluccas. 

The mouth of the corolla is uncommonly woolly, almost hiding the stamens.

Stipulae-flowered Macrocnênum. Tree. 

3. M.?? parviflorum (Roxb. fl. ind. 2. p. 144.) shrubby; leaves on short petioles, lanceolate, entire, smooth; stipulas angular, truncate; peduncles axillary, many-flowered; corolla acutabuliform. ½. S. Native of the Moluccas. 

Small-flowered Macrocnênum. Tree. 

4. M.?? tetraénum (A. Rich. mem. soc. hist. nat. Par. 5. p. 279.) leaves elliptic-oblong, acute at both ends, discoloured, cornutose below; flowers subracemose, terminal, small, tetramerous; calyx woolly; corolla short; stamens exerted; capsule dehiscing at the discineum. ½. S. Native of Brazil. 

Tetraénum Macrocnênum. Shrub or tree. 

5. M.?? tubuliferum (A. Rich. l. c.) leaves broad-ovate, acuminate at the apex, dimidiate at the base, petiolate, downy; flowers subnervose, terminal; one of the teeth of the calyx is expanded into a large, broad, somewhat heart-shaped petiolate leaf; corolla with a long tube, and a 5-lobed limb; stamens exerted; capsule dehiscing in the middle of the cells. ½. S. Native of Brazil. 

This is probably a species of Calceolus. 

Tubular-flowered Macrocnênum. Tree or shrub. 

Cult. For culture and propagation see Catesbea, p. 511.

LIX. syl. Pentándria, Monogyinia. Calyx with an obovate or turbinate tube, and an almost obsolete entire limb. Corolla with a short tube, and a 5-cleft spreading limb; segments hairy in the middle outside. Stamens 5, inserted in the upper part of the corolline tube; filaments hairy at the base; anthers oval. Capsule obovate or turbinate, ligneous, coriaceous, crowned by the marginal limb of the calyx, 2-celled; cells dehiscing from the base to the apex, ex A. Richard, many-seeded; valves semi-bifid. Seeds pendulous.—American glabrous trees. Leaves opposite, on short petioles. Stipulas interpetiolar, solitary on both sides. Coryms or cymes terminal. Flowers white.—This genus is nearly allied to *Machairia*.

1 C. cymosa (Jacq. amer. p. 61.) leaves ovate, acuminate at both ends; branches of corymb alternate; capsules obovate, very short. \( p. S. \) Native of Martinico, along the sides of mountain streams or torrents where it is commonly called *bois de rivières*, or river woof. Macrocentrum longifolium, A. Rich. men. soc. hist. nat. Par. 5. p. 279. A lofty tree, with a handsome head. Leaves a foot long, shining, commonly 8 or 10 at the top of each branch. Flowers small, disposed in race- mose coryms, white. Capsules small. The wood is white, and used for beams and rafters.

*Cympose-flowered River-wood. Tree lofty.*

2 C. turbinata (D. C. prod. 4. p. 404.) leaves oval, obtuse at the apex, and acute at the base; branches of corymb opposite; capsules turbinate. \( p. S. \) Native of Cayenue, where it was collected by Patris. Upper leaves 3 inches long and 1½ broad, on short petioles. Stipulas triangular, acuminate. Peduncles and capsules downy.

*Turbinate-fruited River-wood. Tree.*

*Cult. For culture and propagation see Rondelétia, p. 517.*

LIX. AUGUSTEA (named in compliment to the present empress of Austria, princess Caroline Auguste of Bavaria). D. C. prod. 4. p. 404.—*Augusta, Poli. fl. bras. 2. p. 1 but not of Leand.*

LIN. Syl. Pentándria, Monogyinia. Calyx 5-cleft, with folia cousmous permanent segments. Corolla very long, tubular, incurved, 10-straited, with a spreading limb, which is valvate in aestivation. Anthers sessile, exerted. Stigma lens. Capsule 2-celled, dehiscing at the apex, 4-cleft. Seeds angular, matted, truncate at the apex, fixed to a transverse receptacle.—Middle-sized trees. Leaves on short petioles, simple, dentate, entire, oblong, stipulate. Flowers showy, bracteate, in terminal fascicles, deep red or crimson. This genus differs from *Exostemma* by the funnel-shaped corolla, with broad short segments, by the foliaceous calyce lobes, and by the angular seeds.

1 A. lanceolata (Pohl, fl. bras. 2. p. 2. t. 101.) leaves lanceolate, and are, as well as the stipulas, glabrous; flowers terminal, 3 in a fascicle; bracteas lanceolate, flat, ciliated. \( p. S. \) Native of Brazil, in the province of Goyaz, in shady places, on the banks of rivers and ditches, in Serra de Cristaes. Flowers crimson or deep red. Stem bluish red.

*Lanceolate-leaved Augusta. Shrub.*

2 A. farfífolia (Pohl, fl. bras. 2. p. 3. t. 102.) leaves lanceolate, equal at the base and apex, acutish; stipulas and brac- teas glabrous; flowers terminal, twin; calyxine segments oblong, bluish, retuse at the base, and pilose inside. \( p. S. \) Native of Brazil, in the province of Rio Janeiro, in shady places on the banks of rivers and rivulets on the road from Engenho da Varge to Agon de Serra. Stem of a greyish brown colour. Flowers bluish red.

*Small-leaved Augusta. Shrub.*

3 A. oblongifolia (Pohl, fl. bras. 2. p. 4. t. 103.) leaves oblong, acuminate at the base and apex, glabrous above, and rather pilose beneath; stipulas, bracteas, and peduncles pilously ciliate; fascicles first ternate, then bifid. \( p. S. \) Native of Brazil, in the province of Goyaz, on the mountains among bushes on the banks of rivers and rivulets. Stem greyish black. Flowers deep red or crimson. Peduncles terminal, trifid, then bifid, each ultimate division bearing 1 flower.

*Oblong-leaved Augusta. Shrub.*

4 A. attenuata (Pohl, pl. bras. 2. p. 6. t. 104.) leaves oblong, tapering into the petioles at the base, ciliate when examined by a lens, glabrous; stipulas glabrous on the outside, and pilose inside; fascicles of flowers terminal, first ternate, then bifid; bracteas lanceolate, channelled, villous inside. \( p. S. \) Native of Brazil, in the province of Rio Janeiro, on the margin of rivers and rivulets, in Serra Tinguai. Stem greyish brown. Corolla bluish red. Peduncles of flowers divided like that of the last.

*Attenuated-leaved Augusta. Shrub.*

5 A. glaucescens (Pohl, fl. bras. 2. p. 7. t. 105.) leaves crowded, oblong, tapering to both ends, therefore acute, quite glabrous; stipulas triangular, cuspidate, glabrous; fascicles of flowers terminal, trifid; bracteas lanceolate, acuminate, pilose inside. \( p. S. \) Native of Brazil, in the province of Goyaz, in shady places on the banks of rivers and rivulets at Riveira Bateiro. Stem bluish black. Corolla deep red or crimson.

*Glaucescent Augusta. Shrub.*

*Cult. The species of *Augustea* are very ornamental; the flowers being long and tubular, of a deep red or crimson colour. Their culture and propagation is the same as that recommended for *Catechu*, p. 511.*


1 P. grandiflora (Lin. spec. 244.) leaves elliptic-lanceolate; flowers axillary, pedicellate, solitary, 4 times the length of the breadth. \( p. S. \) Native of Jamaica, St. Thomas, &c. among rocks at the foot of the mountains. Smith. icon. pict. 1. t. 6. Curt. bot. mag. 286. Jacq. amer. t. 44. pict. t. 64. Flowers almost like those of *Brugmansia arborea*, white, reddish inside at the throat, 5 inches long and 1½ broad, very fragrant at night; but in the bud state they are yellowish, tipped with red. Tube with 5 hairy angles.

*Var. \( \beta \); leaves ovate, acute. \( p. S. \) Growing along with the species.*


2 P. cocinea (Swartz, fl. ind. occ. 1. p. 384.) leaves ovate-roundish, coriaceous; flowers axillary, pedicellate, solitary, hardly twice the length of the breadth. \( p. S. \) Native of the west of Jamaica, on the precipices of mountains, but rare. P. 3 U

Scardel-flowered Portlandia. Cult. 1812. Shrub 2 to 3 feet.

† A species hardly known.

3 P. acuminita (Willd. rel. in Roem. et Schultes, syst. 5. p. 23.) leaves ovate, acuminated. † S. Native of New Spain, at Caraccas. Perhaps the same as P. grandiflora. Acuminated-leaved Portlandia. Shrub.

Cult. The species of Portlända are deserving of a place in every collection of stone plants, for their large showy flowers. They thrive best in a mixture of sand loam and peat; and cuttings, not having their leaves shortened, will root freely if planted in a pot of sand, planted in, with a hand-glass over them. A strong heat is necessary for flowering the species, and without it they will not even grow freely.


LIN. SYST. Tetradria, Monogynia. Calyx with a turbinate oblong tube, which is angular from 8 filiform ribs, 4 of which are carinal, and 4 sutured: and a 4-parted limb; lobes linear-lanceolate. Corolla clavate, tetragonal, with a 4-parted limb. Anthers 4, linear, not exceeding the limb of the corolla. Stigma unknown. Capsule ovoid, dehiscing at the apex, separable from the calyx, and therefore at length becoming naked, 2-celled, but almost 4-celled from the margins of the valves being involute: valves bifid at the apex. Placentae narrow, rather prominent. Seeds innumerable, small, compressed, not winged, but ciliated along the margins from membranous crests. Albumen fleshy. — A glabrous shrub. Leaves opposite, ovate, bluntish, cuneated at the base, petioleless, veined, with the exception of the middle nerve. Stipules short, truncate, combined. Pedicles axillary, solitary, 1-flowered, naked. Flowers white.


Var. a, Forsterrhiana. † S. Native of Savage Island and Weggio in the Pacific. Leaves obovate, coriaceous, obtuse, cuneated at the base, on short petioles, 2 inches long. Corolla tubular, rather dilated at the apex; with 4 short triangular lobes, which are each terminated by a mucrone. Anthers a little longer than the corolla. Perhaps the flowers are monocious.

Var. β, Commermisiona. † S. Native at Port Prasin. Leaves broad-oboavate, very blunt, hardly coriaceous, cuneated at the base, on short petioles, 3-4 inches long and 2 or more broad. Corolla more than 2 inches long, with an oboconical tube, and ovate lobes, which are apiculated by a mucrone at the apex. Anthers shorter than the lobes of the corolla.

Var. γ, Gaudechadonia. † S. Native of the Island of Ravak. Intermediate between the two preceding varieties. Lobes of corolla triangular, acute, with the recesses broad and obtuse. Anthers equal in length to the corolla.

Southern Bikkia. Tree or shrub.

Cult. For culture and propagation see Portlända above.

LXII. ISIDOREA (isidos is the Latin name of a shrub like coral; the name has been applied to this genus because it is stiff and dry, and grows by the sea side). A. Rich. in mem. soc. hist. nat. par. 5. p. 284. t. 25. f. 1. D. C. prod. 4. p. 405.

LIN. SYST. Pentändria, Monogynia. Calyx with a turbinate pentagonal tube, and a 5-parted limb; lobes erect, keeled, lanceolate-subulate. Corolla tubular, pentagonal, with a naked throat, and a 5-cleft limb; segments triangular, acute, short. Stamens inserted in the bottom of the tube of the corolla, and about its length; filaments capillary, villous at the base, and combined together in a monadelphous manner; anthers oblong; obtuse at the apex. Style slender, length of corolla; stigma bilamellate; lamellae oblong, obtuse. Capsule almost globose, pentagonal, truncate at the apex, crowned by the segments of the calyx, 2-celled; cells dehiscnt, many-seeded. Seed angled, from being pressed against each other, girdled by a cup-shaped memhrane at the base.—A stiff shrub, with the habitat of Ereñöd. Leaves opposite, linear, stiff, with revolute margins. Stipules on the younger branches entire and subulate, but those on the older branches are bipartite. Flowers almost terminal, solitary, nearly sessile, often hexamernous.

1 I. amoena (Rich. l.c.). † S. Native of the West India Islands. Ereñöd pedunculatis, Poir. suppl. 2. p. 581. and Ereñöd pangens, Lam. ill. 1. p. 276. ex Rich. But the descriptions given do not agree.

Pleasant Isidorea. Shrub.

Cult. See Rondelétia, p. 517. for culture and propagation.

LXIII. SPALLANZANIA (named in honour of Abbe Spallanzani, an Italian celebrated for his researches in natural history, particularly in zoology). D. C. prod. 4. p. 406. but not of Neck, nor Pall.

LIN. SYST. Pentändria, Monogynia. Calyx with an obvously pyramidal tube, a 5-parted limb, and foliaceous, linear, distant, acute, erect, permanent lobes, which are longer than the tube. Corolla with a slender, terete tube, which is longer than the segments of the limb, a naked throat, and 5 oval spreading segments. Stamens 5; filaments free from the throat, exserted; anthers oblong. Style filiform; stigmas 2, slender, elongated. Capsule ovate-globose, ribbed by nerves, and crowned by the calycine lobes, 2-celled, obscurely dehiscent: having semi-bilid carpels. Placentae adnate to the dissepiment. Seeds ovate, tubercular.—A smooth shrub. Branches terete, but compressed at the apex. Leaves obovate or oval, rather coriaceous. Sti- pules solitary on both sides, ovate, bifid at the apex. Corymbs terminal, many-flowered, with angular branches, which are bracteate at the base.—Very nearly allied to Ñádiä a section of Muscæta.

1 S. Corymbosa (D. C. l. c.). † S. Native of Madagascara, where it is called Tamburach'aka by the natives.

Corymbosus-flowered Spallanzania. Shrub.

Cult. For culture and propagation see Rondelétia, p. 517.


LIN. SYST. Tetra-Pentändria, Monogynia. Calyx with a subglobose tube, and a 4-5-parted limb; lobes oblong-linear, acute, permanent. Corolla with a cylindrical tube, which is hardly ventricose at the apex, and a 4-5-lobed spreading limb; lobes roundish. Anthers 4-5, sessile at the top of the tube, inclosed. Stigma bifid. Capsule globose, crowned by the calyx, 2-celled, dehiscent from the apex into 2 valves, which
are usually chief at the apex, whence it sometimes appears 4-valved; but usually debasing at the cells, rarely at the disposition. Placentas central. Seeds numerous, small, ovate, angular, usually only 2 in each cell at maturity.—Small trees or shrubs, mostly natives of America. Leaves almost sessile, or more or less petiolate. Stipulas deltoid, or linear-lanceolate, solitary on both sides, undivided, sometimes hairy inside. Peduncles axillary, usually trichotomous, sometimes disposed in a terminal corymbose panicule, rarely 3 or 1-flowered.—All the Asiatic plants referred to this genus are species of *Wendlandia*.


* Tube of corolla hardly longer than the calyx.

1 R. *laurifólia* (Swartz, fl. ind. occ. p. 363.) leaves lanceolate-oblong, acute, glabrous on both surfaces; stipulas deltoid, glabrous on the outside, with ciliate margins, and villous at top; racemes compound, axillary, erect; tube of corolla very short, clothed with adpressed villi. Ἡ. S. Native of Jamaica and Guadaloupe, among bushes. Petésia, no. 2. P. Browne, jam. p. 143, t. 2, f. 2. Tube of calyx turbinate, clothed with adpressed down; limb 5-parted, smoothish; lobes acute, about equal in length to the tube of the corolla. Flowers small, dusky yellow. Capsules about the size of hemp-seed. Leaves 3-4 inches long, on petioles about an inch long.


2 R. *racemósa* (Swartz, fl. ind. occ. p. 360.) leaves lanceolate-ovate, acuminate, petiolate, glabrous on both surfaces; stipulas almost deltoid, with somewhat ciliate margins; racemes axillary, trichotomous, spreading. Ἡ. S. Native of Jamaica, in woods on the mountains. Petésia, P. Browne, jam. p. 143, t. 2, f. 3. Leaves opposite and 3 in a whorl. Tube of corolla short, clothed with silky hairy down on the outside, a little longer than the calycine teeth, which are very short. Very nearly allied to R. laurifólia, but the petioles are longer, the racemes shorter, the calycine teeth shorter, and probably the stigma is undivided, as mentioned by Swartz. Branches covered with hoary bark: branchlets tetragonal. Corolla hoary.


* * Tube of corolla cylindrical, 2-3 or 4 times longer than the calycine lobes.

3 R. *thrysóidea* (Swartz, prod. p. 41. fl. ind. occ. 1. p. 358.) leaves oblong, acute, petiolate, membranous, glabrous on the upper surface as well as the branches, but downy beneath; stipulas broad ovate, acute, glabrous, stiff; thyrses axillary, shorter than the leaves. Ἡ. S. Native of Jamaica, on the driest hills in the western parts of the island. Branches bluntly tetragonal. Leaves 3 inches long. Calyx minute, 5-toothed. Flowers small, dull whitish yellow or rust-coloured, with an elongated tube, which swells below the limb, and clothed with silky pubescence on the outside. Capsules roundish, size of coriander seeds. Seeds 2 in each cell at maturity.


4 R. *umbelluláta* (Swartz, prod. p. 41. fl. ind. occ. 1. p. 367.) leaves lanceolate-ovate, acute, rather hairy, petiolate; stipulas hairy, ending each in a bristly acumen; peduncles axillary, trichotomous at the apex, somewhat umbelliferous, shorter than the leaves. Ἡ. S. Native of Jamaica, on rocks near streams. Petésia, no. 3. P. Browne, jam. p. 144, & there-fore Petésia villósa, Smith, in Rees’s cyclo. no. 4. Calyx very villous, with linear teeth. Corolla larger than in the rest of the species, downy, of a dusky yellow colour; tube elongated. Capsule roundish; having 2 seeds in each cell at maturity.

* Umbellate-flowered Rondeletia. Shrub 2 feet.

5 R. *tomentósá* (Swartz, prod. p. 41. fl. ind. occ. 1. p. 365.) leaves ovate, acuminated, petiolate, membranous, hairy above, but clothed with hoary villous tomentum beneath; peduncles axillary, tripartite, short. Ἡ. S. Native of Jamaica, near Spanish Town, on rocky hills. Petésia stipuláris, Lin. spec. p. 160. Ἡ ex Swartz. Stipulas ovate, downy, with a short point. Branchlets villous at the ends. Flowers small, whitish, or dusky yellow, villous outside. Capsules roundish, size of coriander seeds, containing 1 seed in each cell at maturity.

Var. ß, *Dominígésis* (D. C. prod. p. 407.) leaves oval-oblong, cuneated at the base, downy or villous above, but clothed with soft hoary tomentum beneath. Ἡ. S. Native of St. Domingo, where it was collected by Bertero. R. tomentósa, ex Hispaniola, Spreng. syst. 1. p. 708. This plant is probably referrible to *Petésia tomentósa*.


* Hoary* Rondeletia. Shrub 2 to 3 feet.


Var. p, *atlántica* (C. C. prod. p. 408.) leaves ovate-oblong, acute, pilose; capsules many-seeded. Ἡ. S. Native of Jamaica. Rondeletia hírta, Ait. hort. kew. 1. p. 227. This differs from the plant of Swartz, in the leaves being shorter, broader, and less acuminated, and in the fruit being dehiscent, and containing a great number of small seeds.


8 R. *panaménésia* (D. C. prod. p. 408.) leaves oval-oblong, acuminated at both ends, glabrous above, white beneath, and villous on the nerves and veins; stipulas triangular, acute, villous outside; peduncles axillary, opposite, shorter than the leaves, trifid and densely corymbose at the apex; ultimate ones collected into a short thyrsè; calyx villous, with lanceolate segments. Ἡ. S. Native of Panama. R. hírta, Bartl. in herb. Hanke. Tube of corolla villous; limb of 5 roundish lobes. Capsules almost globose. Seeds numerous, and of 2 forms, appendiculate.

Panama Rondeletia. Shrub 4 to 5 feet.

9 R. *hirsúta* (Swartz, prod. p. 41. fl. ind. occ. 1. p. 371.) leaves oblong, acuminated, hairy on both surfaces, pale beneath, on short petioles; stipulas ovate-lanceolate, hairy; branchlets, peduncles, and flowers hairy; peduncles axillary, trichotomous, loose, about the length of the leaves. Ἡ. S. Native of the south of Jamaica, among bushes on the mountains near Bath.
Petioles clothed with rufescent villi. Calyx villos. Corolla yellowish, tomentose outside, with a narrow throat. Seeds girded by a wing, according to A. Rich: if this be the case it is referrible to the genus Bowdaria.

Rubiaceæ. LXIV. Rondeletia.

10 R. trifoliata (Jacq. amer. p. 60. t. 43. pict. t. 62.) leaves oblong-lanceolate, 3 in a whorl, on short petioles, glabrous above but tomentose beneath; pedicels and branches hairy; pedicels axillary, shorter than the leaves. ½ S. Native of Jamaica, at the foot of the mountains. Flowers reddish, small. Leaves 3 inches long. Teeth of calyx acuminate. Corolla with a very long tube. Capsule many-seeded.

Trifoliate Rondeletia. Tree 12 to 14 feet.
11 R. levigata (Alt. hort. Kew. ed. 2. vol. 1. p. 366.) leaves oblong or elliptic, acuminate at both ends, glabrous, paler beneath, petiole, stipulas deltoid, glabrous on the outside, but bearded inside; pedicels axillary, trichotomous, rather panicked, 3 times longer than the petiole, but one half shorter than the leaves. ½ S. Native of Cuba, about the Havana; and of Trinidad. Anonyma, Sicib. fl. trin. no. 574. Tube of calyx downy; limb of 3-5 linear lobes, which 3-5 times shorter than the tube of the corolla. Capsule downy, smaller than a pea.

12 R. americana (Lin. spec. 243.) leaves lanceolate or elliptic, acuminate at both ends, glabrous, hardly petiolate, paler beneath; stipulas deltoid, downy; pedicels opposite, axillary, a little longer than the leaves, dichotomously cymose at the apex. ½ S. Native of Cuba, about the Havana; and many other West India islands, ex Plum. ed. Burm. t. 242. f. 1. Flowers white, hibracteolate, with a little scent. Tube of calyx clothed with adpressed villi; lobes of limb oblong-linear, 4 times shorter than the tube of the corolla. Capsule many-seeded.

13 R. cumanaeensis (H. B. et Kunth, nov. gen. amer. 3. p. 394.) leaves oblong, acuminate, almost sessile, glabrous, paler beneath; stipulas rather deltoid, with dilated silky margins; petals terminal, sessile. ½ S. Native of New Andalusia, near Cumana. Panicle sessile, and the peduncles opposite, dichotomously cymose, and 1-flowered, ex Kunth. Lobes of calyx ovate-oblong. Flowers white.

Cumana Rondeletia. Shrub 8 to 10 feet.
14 R. microdon (D. C. prod. 4. p. 408.) glabrous; leaves oval or oblong, acute at both ends, on very short petioles; stipulas bipartite, obtuse, permanent; corollas pedunculate, rising from the forks of the branches; calyx truncate, with 5 very short teeth. ½ S. Native of Cuba, about the Havana, where it was collected by De la Ossa. Flowers white in the dried state, form of those of the other pentameric species of Rondeletia, but the calyx is hardly 5-toothed.

Small-toothed-calyx Rondeletia. Shrub.
15 R. ozonisata (Jacq. amer. p. 59. t. 42. pict. t. 61.) leaves hardly petiolate, ovate, or subcordate, acutish, subcaurorous, abovely and beneath rather scabrous on the nerves; corollas terminal. ½ S. Native of Cuba, on rocks by the sea-side, at the Havana; and of Mexico. Lin. spec. 1671. H. B. et Kunth, nov. gen. amer. 3. p. 394. R. coccinca, Moc. et Sesse, fl. mex. icon. ined. R. obovata, Lin. syst. veg. Branchlets villos. Stipulas wide, acute. Peduncles triechotomous. Flowers handsome scarlet, with the projecting rim of the tube orangecoloured, having the scent of violets, downy on the outside, either pentameric or hexameric. Lobes of calyx linear, erect, one half shorter than the tube of the corolla. Capsule containing many angular seeds.

Sweet-scented Rondeletia. Shrub 5 to 6 feet.

* * * African species, with pentameric flowers.

16 R. ferrugina (Ait.) leaves oval coriaceous, deep green, glabrous, petiole; corollas terminal. ½ S. Native of Sierra Leone, in the low lands about Freetown. A branched spreading shrub, with the habit of Lauristina. Flowers pale red. Stamens 5, a little longer than the tube of the corolla. Calyx 5-cleft.

Febrifugal Rondeletia. Shrub 4 to 5 feet.
17 R. floribunda; leaves ovate, acuminate, membranous, petiole; corollas lateral and terminal, numerous; stamens 5, exerted. ½ S. Native of Sierra Leone, in woods on the mountains. Corolla tubular, 5-cleft, white. Calyx 5-cleft.

Bunodel-flowered Rondeletia. Shrub 5 to 6 feet.
18 R. loniceroides; shrub twining; leaves roundish, ovate, coriaceous, glabrous, petiole; corollas panicked; corolla with a long tube and a 5-cleft border; stamens 5, longer than the tube. ½ S. Native of Sierra Leone, among bushes in the low lands. A branched twining shrub.

Honey-suckle-like Rondeletia. Shrub tw.


* Unarmed. Panièles terminal.


Twiggy Rondeletia. Shrub 5 to 6 feet.
20 R. discolor (H. B. et Kunth, nov. gen. amer. 3. p. 396. t. 291.) leaves ovate-oblong, acuminate, petiolate, with revolute edges, glabrous above and on the branches, but clothed with white tomentum beneath; stipulas linear-subulate; panièles terminal, sessile. ½ S. Native of New Granada, between Maraquito and Honda. Hedyotis discolor, Spreng. syst. 1. p. 411. Flowers pedicellate, sweet-scented, red on the outside. Lobes of calyx ovate-lanceolate. Capsule dehiscing at the dissepiment; valves bifid at the apex.

Discoloured-leaved Rondeletia. Shrub 4 to 6 feet.
21 R. pubescens (H. B. et Kunth, nov. gen. amer. 3. p. 396. t. 291.) leaves oblong, acute, petiolate, clothed with fine down above, and with canescent pubescence beneath, as well as on the branches; stipulas lanceolate-subulate; panièles terminal, sessile, triplicate. ½ S. Native of New Granada, between Maraquito and Honda. Lobes of calyx lanceolate, 5-times shorter than the tube of the corolla. Corolla tomentose, outside. Fruit unknown.

Downy Rondeletia. Shrub 4 to 6 feet.
22 R. elongata (Bartl. in herb. Henke, ex D. C. prod. 4. p. 409.) leaves elliptic-oblong, acuminate at both ends, pubescent above, but clothed with white tomentum beneath, but they at length become glabrous from the down being deciduous; stipulas lanceolate, equal in length to the petals; panièles terminal, on long pedicels; flowers crowded; lobes of calyx linear, 3 times shorter than the tube of the corolla. ½ S. Native of Mexico, about Acapulco. An intermediate species, between R. pubescens and R. leucophyllum.

Elongate Rondeletia. Shrub.
23 R. leucophyllum (H. B. et Kunth, nov. gen. amer. 3.
p. 395. t. 290.) leaves linear-lanceolate, acuminate, almost sessile; pubescent above; white from woollyomentum beneath as well as the branches; panicles terminal, on long peduncles, usually formed into a kind of capitulum. 1. S. Na-

tive of Mexico, between Alto del Peregrino, and the river Papagallo. 

Hedyotis leucophylla, Spreng. syst. 1. p. 411. Flowers red, sessile, or on short pedicles. Lobes of calyx linear-lanceolate, 3 times shorter than the tube of the corolla. 

**White-leaved Rondeletia.** Shrub 3 to 4 feet.

24. R. Berteriana (D. C. prod. 4. p. 409.) leaves oval, acute, somewhat cuneate at the base, petiolate, clothed with villous pubescence above, but hoary from soft villousomentum beneath; branches clothed with velvety tomentum; stipulas lanceolate, acuminate, villous; racemes axillary, shorter than the leaves, many-flowered. 2. S. Native of St. Domingo, where it was collected by Bertero. R. hirsuta, Spreng, in herb. Balb. but not of Swartz. Calyx villous; lobes linear, 3 times shorter than the tube of the corolla, which is clothed with adpressed villi on the outside. 

**Pilose Rondeletia.** Shrub 4 to 6 feet.

25. R. pilosa (Swartz, prod. p. 41. fl. ind. occ. 1. p. 356.) leaves ovate-lanceolate, or oblance, almost sessile, veiny, roughish above, pale and villous beneath; stipulas deltoid, broad, villous; peduncles axillary, 3-flowered; almost the length of the leaves, and are as well as the calyxes pilose. 3. S. Native of the West India islands, as in Santa Cruz, Montserrat, and Martinico. 


Leaves 2-3 inches long. Lobes of calyx length of the tube of the corolla. Capsule many-seeded. Tube of corolla silky outside.

**Unarmed. Pedicels axillary, 1-flowered.**

26. R. buxifolia (Vahl. eel. amer. 2. p. 11. t. 12.) leaves obovate-oblong, on very short petioles, mucronate at the apex, glibrous on both surfaces, and shining above; stipulas small, deltoid; pedicels axillary, very short, 1-flowered. 4. S. Native of the islands of Montserrat and Porto-Rico. 


**Box-leaved Rondeletia.** Shrub 3 to 3 feet?

27. R. Royenii (D. C. prod. 4. p. 410.) leaves obovate-oblong, obtuse, on very short petioles, somewhat mucronate, hoary on both surfaces from short down; stipulas lanceolate, acute; pedicels axillary, very short, 1-flowered. 5. S. Native of St. Domingo, where it was collected by Bertero. R. incana, ex Hispaniola, Spreng. syst. 1. p. 707. ex herb. Balb. Allied to R. buxifolia, but quite distinct from R. incana.

Royena-leaved Rondeletia. Shrub.

**Shrubs with axillary thorns. Perhaps the spines are either rameal or peduncular. Fruit unknown, and therefore the genus to which they properly belong.**

28. R. Leptaca'ntha (D. C. prod. 4. p. 410.) spines opposiute; leaves broad-oval, acutish, glibrous on both surfaces, but rather pilose when young as well as the branches; peduncles slender, equal in length to the leaves, or longer than them, bearing 3-5 flowers at the apex. 6. S. Native of Cuba, about the Havana, where it was collected by De la Osa. Branches slender, glabrous. Spines axillary, long, bearing rudiments of leaves on one side. Peduncles an inch long. Segments of the calyx subulate. Corolla 5 lines long.

**Pilose Rondeletia.** Shrub.

29. R. brachiaca'ntha (D. C. L. c.) spines opposite; leaves elliptic-oblong, acute at the base, and acuminate at the apex, glabrous above, but villous beneath, as well as the branchlets, peduncles, and flowers; peduncles one half shorter than the leaves, 3-4-flowered at the apex. 7. S. Native of Brazil. 

Branches dotted by linear-oblong crowded warts. Spines conical, stiff, forming a straight angle, spreading, 4-5 lines long. Segments of the calyx subulate. Antlers inserted at the throat.

**Short-flowered Rondeletia.** Shrub.

† Species not sufficiently known.


**Two-seeded Rondeletia.** Tree 15 feet.

33. R. ? coriacea (Spreng. syst. 1. p. 707. but not of Wall.) leaves oval-oblong, coriaceous, shining above, but clothed with very short velvety down beneath as well as on the branchlets; stipulas semi-orbicular, furnished with a pungent tooth in the middle; cymes terminal; calyxes and corollas 5-parted, rather hispid; stamens exerted. 9. S. Native of equinoval Brazil. Mosa'nda coriaceae, Spreng. nev. entd. 2. p. 113. It is probable that the plant is neither a Mosa'nda nor a Rondeletia, according to Cham. et Schlecht. in Linneua. vol. 4. p. 165., but the structure of the fruit is entirely unknown. 

**Coriaceous-leaved Rondeletia.** Shrub.

Cult. The species thrive well in a mixture of sand, loam, and peat; and cuttings of them are easily rooted if planted in a pot of sand, plunged in heat under a hand-glass. All are shrubs of very little beauty or interest.

LXV. WENDLANDIA (Henry Ludov. Wendland, Curator of the botanical garden at Hanover, and author of Commentario de Accasis Aphyllis). Bartl, ined. ex D. C. prod. 4. p. 411.
RUBIACEÆ.  LXV. WENDLANDIA.

not of Willd.  Rondelletia, Roxb. and Wall. fl. ind. 2. p. 133. but not of Plummer.

LIN. SYST.  *Tetra-Pentandra*, *Monogynia*. Calyx with an almost globose tube, which is often striated, and a very short permanent limb, which is 4-5-toothed to the base. Corolla with a terete tube, which is longer than the calyx, and a spreading 4-5-lobed limb; lobes ovate, acutish. Stamens 4-5; filaments rising from the top of the tube; anthers oblong, exserted. Style exerted; stigma bifid, with the lobes thickish. Capsule ovate-globose, 2-celled, crowned by the calyx, dehiscing at the cells into 2 valves at the apex. Seeds small, numerous in each cell.—Trees and shrubs, all natives of the East Indies. Leaves opposite, coriaceous, oval, petiolate. Stipulas broad at the base, acuminate. Panicles axillary and terminal, many-flowered. Flowers small.—This genus differs from *Rondelletia* as *Exostémena* does from *Cinchona*.


* Indian species.


2 W. tinctória (D. C. l. c.) arboreous; leaves petiolate, oblong-lanceolate, smooth above, but pubescent on the nerves beneath, as well as on the branches, petioles, peduncles, and calyxes; stipulas triangular, cuspidate; panicles terminal, decussate; flowers by threes.  *Rondeletia tinctória*, Roxb. fl. ind. 2. p. 134. Leaves 4-6 inches long and 1-2 broad, Branches of panicule 4-sided, hairy. Bracteas numerous, hairy, those of the ultimate divisions of the panicule eniform, with a hastate base. Flowers numerous, small, white, almost sessile, fascicled. Segments of corolla spreading. The bark is employed as a dye by the natives in some of their dyes, and is called by them Teela-ladh.

Dyers' Wendlandia.  Tree.

3 W. notoniána (Wall. cat. no. 2673.) shrub downy in every part, except the corollas; leaves elliptic or obovate-oblong, acuminate, pale beneath; peduncles axillary and terminal, disposed in terminal racemose thyrsoid panicles; corolla with a slender tube, much longer than the calyx, which is woolly; stipulas broad, rounded at the apex.  *Rondeletia notoniána*, Roxb. Cat. no. 3. Flowers white, in clusters? Leaves numerous.

Note:*s Wendlandia.  Shrub or tree.

4 W. glibra*ta* (D. C. l. c.) arboreous; leaves petiolate, oblong-lanceolate, glabrous on both surfaces, as well as the petioles, branches, peduncles, and calyxes; stipulas triangular, cuspidate; panicles terminal, decussate; flowers by threes.  *Rondeletia glibra*ta, Roxb. Cat. no. 139. Native of Java, on the mountains in woods.  *Calyx* reniform, Blum. bijdr. p. 974. but differs from the plant under the same name by Roxburgh, in its smoothness, and by the flowers being distinctly pedicellate.

Glabrous Wendlandia.  Tree.

5 W. nítens (Wall. cat. no. 6271.) branches downy; leaves glabrous, elliptic-lanceolate, tapering to both ends, pale beneath; stipulas broad at the base, and cuspidate at the apex; panicles terminal, downy; flowers almost sessile, in fascicules.  *Rondeletia* Native of Martaban, on the banks of the Attram. Flowers very small.

Shining Wendlandia.  Shrub or tree.


Exserted-stamen Wendlandia.  Tree 20 to 30 feet.

7 W. próxia (D. C. l. c.) arboreous; leaves elliptic, acuminate, clothed with tomentum beneath, as well as on the branchlets; panicles very hairy; flowers very much crowded; limb of corolla one half shorter than the tube; calycine teeth obtuse, pilose.  *Rondeletia próxia*, D. Don, prod. fl. nep. p. 150. Nearly allied to *W. exsé*ka, but in that species the leaves are silky beneath, and the branchlets are more conicent; the limb of the corolla is about equal in length to the tube; the stigma is bipartite, and the calycine teeth are ovate and acute.

Allied Wendlandia.  Tree.

8 W. ilustrína (Wall. cat. no. 6272.) shrub glabrous in every part; leaves elliptic, tapering to both ends, shining above; stipulas broad at the base, and cuspidate at the apex; teeth of calyx subulate, much shorter than the tube, which is terete and slender; bracteas to the flowers linear.  *Rondeletia ilustrína*, Roxb. Cat. no. 3. Native of the Burmese empire, on Mount Taong-Dong. Flowers pedicellate, white, disposed in terminal racemose panicles; pedicels solitary. Capsules hardly the size of coriander seeds.

Privet-like Wendlandia.  Tree.


10 W. cine*rea* (D. C. prod. 4. p. 412.) arboreous; the upper parts clothed with ash-coloured dense tomentum; leaves lanceolate, petiolate, villous above and tomentose beneath; stipulas recurved at the apex; panicles terminal, much branched, tomentose; flowers in dense fascicles; corolla with a very short tube.  *Rondeletia cine*reus, Roxb. Cat. no. 3. and from Noakote and Shreenagar; and is called in the Newar language *Gothina*.  *Rondeletia cinerea*, Wall. in Roxb. fl. ind. 2. p. 141. Branches quadrangular, with rounded corners. Leaves 4-6 inches long, smooth above, glabrous beneath. Stipulas reniform, emarginate. Bracteas oblong, caducous, sometimes lobed or sub-hastate at the base. the lowermost ones very long, linear. Flowers numerous, small, white. Teests of calyx small, triangular. Segments of corolla spreading; throat furnished with 5 tubercles. Capsule globular, villous. The wood is brownish, close-grained, and seems well adapted for furniture.

Grey Wendlandia.  Tree 12 to 14 feet.

11 W. luzeoni*sis* (D. C. l. c.) branches, petioles, and
nerves of leaves hairy; leaves oval-oblong, acuminate at both ends; stipular semi-elliptic, obtuse, permanent, coriaceous; panicle much branched, many-flowered, rather villous; anthers hardly exerted; stigma bifid. S. Native of the island of Luzon. Wendlandia multiflora, Bartl. in Herb. Hance. Allied to R. puberula. Fruit hardly larger than turnip seed. Flowers small, white. 

**Wendlandia. Tree.**

12 W. coriacea (D. C. I. c.) arborescent, smooth in every part; leaves oblong-lanceolate, acuminate, tapering at the base, petiolate, coriaceous, shining; stipulas broad, short, rounded, ending each in a cuspidate point; panicles dense, terminal, many-flowered; flowers opposite, very numerous. S. Native of Nipaul, in the valley, common in the forest of Thoka, and other places; and from Noakote. The tree is called Kongeera in the Parbatteeyan language, and Jalsi in that of Newar. Rondelia coriacea, Wall. in Roxb. fl. ind. 2, p. 142. D. Don, fl. nep. p. 138. Leaves 5-7 inches long. Flowers white, fragrant. Bracteas lanceolate, coriaceous, those of the flowers capillary. Corolla with a cylindrical tube, and a spreading border. The inhabitants of Nipaul use the wood of this tree for various purposes, such as rafters, tools, &c.; it is close grained, and becomes of a brownish colour soon after being cut, not unlike mahogany. A red dye is likewise prepared from it. The leaves and flowers attain a bluish colour on being dried.

**Coriaceous-leaved Wendlandia. Tree.**

13 W. puberula (D. C. I. c.) branches, petioles, nerves of leaves underneat, and panicles hairy; leaves petiolate, oval-oblong, acute at both ends, glabrous above; stipulas adpressed, broad at the base, cuspidate at the apex; panicle terminal, branched, many-flowered; corollas glabrous; stigma clavate. S. Native of Nipaul. Allied to W. pendula, but differs in the stipules being 4 times shorter, in the corolla being glabrous, &c.

**Puberula Wendlandia. Tree.**

14 W. pendula (D. C. I. c.) fruticeae; branches pendulous; leaves lanceolate-ovate, acuminated, smooth above and rough underneath; stipulas lanceolate, adpressed, deciduous, rather shorter than the petioles; corymb terminal, oblong, panicked; tube of corolla filiform, smooth without and pubescent within; segments of corolla recurved. S. Native of Nipaul, between Hetaura and Rheumphdi, also on Shepole, Rondelia pendula, Wall. in Roxb. fl. ind. 2, p. 140. A very elegant shrub. Branches obscurely quadrangular; new shoots downy. Leaves 3-5 inches long, and disposed 3 in a whorl on the robust shoots. Peduncles villous. Flowers fascicled, green, fragrant. Stigma clavate.

**Pendulous-branched Wendlandia. Shrub.**

5 to 6 feet.

15 W. malaya; branches somewhat tetragonal; leaves elliptic-lanceolate, acuminated, downy on the nerves, tapering to the base, membranous; stipulas broad; calyx with a roundish tube and a 5-cleft rib; corolla with a very slender tube, and a spreading border; panicles terminal, coriaceous, hardly longer than the petioles. S. Native of the Malay islands. Anderosacme Malayana, Wall. cat. no. 6282.

**Malay Wendlandia. Shrub or tree.**

16 W. longifolia (D. C. I. c.) fruticoae; epidermis falling from the branches; leaves elliptic-oblong, acuminated, tapering at the base, villous underneath; stipulas lanceolate, erect, acute, often bidentate, furnished within their broad base with a series of subulate glands; panicle many times trichotomous, downy; calyx downy, with a yellow gland on each margin of the segments, and sometimes at the points; bracteas villous, glandular. S. Native of Hille; and of Nipaul, on Chun dagiri, Nagurjoun, and at the foot of Shepole near Thoka. The Bengalie name of the plant is Soopari. Rondelia longifolia Wall. in Roxb. fl. ind. 2, p. 137. D. Don, prod. fl. nep. p. 138. Anderosacme longifolia, Wall. cat. no. 6280. Leaves 6-14 inches long, dark green above. Bracteas with an entire or 3-lobed base, their margins marked with yellow subulate fleshy glands. Flowers large, fleshy, yellow, scentless, with a valvate stivation. Segments of corolla spreading. Stamens inserted in the bottom of the tube. Capsules round, smooth. All the species of this genus vary considerably in the size of the leaves, the degree of their pubescence, and in their inflorescence, which renders their specific discrimination difficult.

**Long-leaved Wendlandia. Shrub.**

**Afican species, not sufficiently known.**

17 W. sulcata; leaves oblong-lanceolate, acuminated, glabrous, on short petioles; stipulas sheathed-formed, supra-foliaceous; racemes panicled, terminal; capsule round, sulcate. S. Native of Sierra Leone, in woods on the margins of rivers. Shrub branched.

**Furrowed-flowered Wendlandia. Shrub.**

5 to 6 feet.

18 W. pilea; leaves broad, ovate-lanceolate, acuminated, cordate at the base, almost sessile; stipulas large, sheath-formed, supra-foliaceous, and are as well as the leaves plose; racemes panicled, terminal; capsules round. S. Native of Sierra Leone, in woods on the banks of rivulets.

**Hairly Wendlandia. Shrub.**

5 to 6 feet.

19 W. racemo-sa; glabrous in every part; leaves elliptic, very long, acuminated, coriaceous, on short petioles; stipulas large, sheath-formed, supra-foliaceous; racemes panicled, terminal; capsules ovate. S. Native of Sierra Leone, in woods on the banks of rivulets.

**Racemose-flowered Wendlandia. Shrub.**

20 W. virgata; leaves oval, acuminated, petiolated; panicles axillary and terminal. S. Native of Sierra Leone, on the edges of woods. A branched twiggy shrub. Stamens 5, longer than the corolla. Capsule 1-celled, many-seeded. Corolla funnel-shaped.

**Twigg Wendlandia. Shrub.**


21 W. spicata (D. C. prod. 4, p. 412.) leaves elliptic, tapering downwards, villous, as also the panicle; stipulas oblong, acute, smooth, except the elevated rib, which is villous; panicle large, terminal, almost sessile, with opposite compressed peduncles; the secondary divisions of the penduncle dichotomous, terminating in cylindrical slender, twin, or ternate spikes, which are 2 inches long; flowers disposed in one row along one side of the rachis of the spike; corolla pubescent, with a slender tube, widening at the apex; stigma of 2 recurved lobes. S. Native of Pulo-Penang. Rondelia spicata, Wall. in Roxb. fl. ind. 2, p. 139. Leaves 6-12 inches long. Bracteas lanceolate, sub-hastate, acute. Flowers small. Capsule small, round, villous. Seeds angular. Inflorescence like that of Tournerforla. Perhaps a proper genus.

**Spicate-flowered Wendlandia. Shrub or tree.**


**Tetrandrous-flowered Wendlandia. Shrub.**
23 W. corymbosa (D. C. prod. 4. p. 413.) leaves obovate-lanceolate; peduncles for the most part terminal, dichotomously corymbose; flowers unilateral, tetrandrous. ♀. S. Native of Pulo-Penang. Rondelitia corymbosa, Jack, in mal. misc. 1. no. 1. p. 4. Corolla white, tinged with red. Perhaps a separate genus.

Corymbose-flowered Wendlandia. Tree.

24 W. Wightiana (Wall. cat. no. 6277.) young branches downy; leaves obovate-oblong, rather acuminate at the apex, tapering much to the base, glabrous; panicle trichotomous; flowers small, with pedicels, filaments native, segments lobes X. valves S. flowers bearded flowers capsules ovate to brachiate corymbosa. Genus. Mément, of the Indies. Wendlandia. Shrubby Raceme, herb. Wight. Leaves 1 to 1 ½ foot long. Stipulas broad, membranous. Very like W. corymbosa.

Wight's Wendlandia. Shrub or tree.

25 W. ? Lawsonii (D. C. l. c.) sub-arborescent; branchlets quadrangular; leaves lanceolate, acuminate, glabrous; corymb terminal, trichotomous; fruit oblong. ♀. S. Native of Madag. Poultatejle, Rheed. mal. 4. t. 57. Petesia species, ex Juss. Ligustrium species, ex Comm. Lawsonia purpurea, Lam. dict. 5. p. 107. Barroti, anc. encylcl, where the fruit is said to be baccate, but in the figure the fruit is drawn capular and many-seeded, it is therefore more likely to be a species of Wendlandia than Petesia. Lawson's Wendlandia. Tree.

* A species hardly known.

26 W. ? scandens; shrubby, scandent, smooth; leaves opposite, petiolate, oblong, entire; panicles axillar, small, brachiate; capsules globular; seeds small, numerous. ♀. S. Native of the Mauritius. Rondelitia scandens, Roxb. fl. ind. 2. p. 137.

Climbing Wendlandia. Shrub cl.

 Cult. See Rondelitia, p. 517, for culture and propagation.

LVXI. XANTHOPHYTUM (from ἕλαιος, xanthos, yellow, and φύτων, phyton, a plant; so called from the first species being clothed with rufous villi.) Blum. bipdr. p. 989. A. Rich. mem. soc. hist. nat. par. 5. p. 275. D. C. prod. 4. p. 413.

Lin. syst. Tetra-Pentandria, Monogynia. Calyx with an ovate tube and a 4-5-cleft limb. Corolla funnel-shaped, with a short tube, a villous throat, and a 4-5-cleft limb. Stamens 4-5, exserted; filaments inserted in the throat, connivent. Style sub-clavate, perforating the disk of the ovarium; stigma thick, 2-lobeid, in the throat. Drupe diodymous, crowned by the calyx, divisible into 2 many-seeded parts or cells. Placenta prominent, fixed to the middle discinnipment on both sides. Seeds minute, angular, wingless.—This genus is nearly allied to Wendlandia, but differs in the fruit not being dehiscent.


Lin. syst. Tetra-Pentandria, Monogynia. Calyx with an ovate tube and a 4-5-cleft limb. Corolla funnel-shaped, with a short tube, a villous throat, and a 4-5-cleft limb. Stamens 4-5, exserted; filaments inserted in the throat, connivent. Style sub-clavate, perforating the disk of the ovarium; stigma thick, 2-lobeid, in the throat. Drupe diodymous, crowned by the calyx, divisible into 2 many-seeded parts or cells. Placenta prominent, fixed to the middle discinnipment on both sides. Seeds minute, angular, wingless.—This genus is nearly allied to Wendlandia, but differs in the fruit not being dehiscent.


Sphyric-flowered Xanthophyllum. Shrub.

2 X. spicatum (Blum. in latt. ex D. C. prod. 4. p. 413.) suffrutescent, glabrous, erect; leaves oblong, acuminate at both ends; spikes axillary and terminal, nutant; flowers in heads. ♀. S. Native of Java, especially on calcareous mountains. Chiococca spicata, Blum. bipdr. p. 988. Berries small, indehiscent, dry, didymous, striated. Seeds small, not winged. Stipulas twin on both sides, subulate at the apex, combined into a short sheath at the base. Spikes slender, elongated.
3 S. glomerata (H. B. et K. nov., gen. anec. 3. p. 398.) stems unknown; leaves oblong-lanceolate, clothed with silky tomentum on both surfaces, with undulated margins; flowers glomerate, terminal, and axillary. ½. S. Native on the banks of the Orinoco, between Atures and Carichana, in inundated places. Viireta glomerata, Spreng. syst. 1. p. 702. Psychodora sessiliflora, Willd. herb. ex Cham. et Schlecht. L. c. Corolla yellow, with a silky tube, which is 4 times longer than the calyx.

Glomerate-flowered Sipanea. Pl. creeping?

4 S. biflora (Lin. fil. suppl. p. 154.) stem creeping; leaves ovate, obtuse; peduncles terminal, rising from the forks of the branches, 2-flowered. ½. S. Native of Surinam and Brazil, in humid places. Cham. et Schlecht. in Linneâs. 4. p. 168. Rondédéa biflora, Rottb. pl. sur. 7. t. 2. f. 2. A. Rich. mem. soc. hist. nat. par. 5. p. 271. Viireta virens, Vahl. symb. 2. p. 28. Gertrn. fil. carp. t. 184. There is a tooth between each of the calyce line tubes, according to Lin. fil., but according to Gertrn. there are none; but in the specimens examined there are 3 subulate teeth, and 5 minute ones between these.

Two-flowered Sipanea. Pl. creeping.

Cult. The species of this genus possess no beauty, and are therefore only worth cultivating in botanical gardens. The seeds should be sown in spring, on a hot-bed, and the plants, when of sufficient size, should be planted into separate pots, and shifted from size to size of pots as they grow.

LXIX. VIRECTA (from viréctum, a green place; from the agreeable greenness of the leaves). D. C. prod. 4. p. 414.—Viireta species, Smith, but not of Lin. fil.—Sipanea species, A. Rich.—Phytemulodes, Smeathm., in herb. L'Herr.

Lin. syst. Pentándria, Monogynia. Calyx with an ovate short tube, and 5 linear-sectaceous lobes. Corolla funnel-shaped, with an obconical tube, about equal in length to the lobes of the calyx, a naked throat, and 5 linear-oblong ciliated lobes. Stamina 5: having the filaments much exserted beyond the throat; anthers linear, oscillatory, bifid at the base. Style filiform, equal in length to the stamens. Stigma hardly thickened, undivided. Capsule globose, crowned by the calyce line lobes in the young state, but almost naked in the adult state, 2-celled, and at length decieving at the cells. Seeds innumerable, 4-5-sided, and a little carinated.—Hairy herbs, with opposite branches. Leaves opposite, oval-oblong. Stipulas twin on each side, lanceolate. Flowers white or yellow, disposed in dense cymose corymbs; branchlets of cyme elongated after flowering.

This genus is nearly allied to Sipâneac, but differs in the genitals being exserted; it differs also from Hedysélinus in the quinary number of the floral parts, and in the exserted stamens, &c.

1 V. multiflora (Smith, in Rees's cyc. no. 4.) stem erect; leaves ovate-lanceolate, almost sessile.—Native of Sierra Leone, where it was collected by Smeatmth. Phyteumulodes hirsuta, Smeathm. in herb. L'Herr. Perhaps Sipanea angustifolia, A. Rich. mem. soc. hist. nat. par. 5. p. 276. is the same as the present plant. Flowers white.

Many-flowered Viireta. Pl. 2 to 3 feet.

2 V. procumbens (Smith, l. c. no. 2.) stem procumbent; leaves ovate, 3 times longer than the petioles. ½. S. Native of Sierra Leone.

Procumbent Viireta. Pl. procumbent.

3 V. lutea; leaves ovate-lanceolate, acuminated, hairy; pedicles aggregate; axillary; calyx 5-toothed; corolla tubular, 5-cleft, hairy. ½. S. Native of Sierra Leone, in cultivated places. Flowers yellow. Habit of Lithopsérmum. Perhaps the same as V. procumbens.

Yellow-flowered Viireta. Pl. rambling.


5 V. paniculata; suffruticose, branched, clothed with brown or copper-coloured hairs; leaves oval-lanceolate; corollas panicked, axillary, and terminal. ½. S. Native of Sierra Leone, on the mountains. Flowers small, greenish.

Panicolâ-flowered Viireta. Shrub.

Cult. For culture and propagation see Sipanea above.


Lin. syst. Pentándria, Monogynia. Calyx with a short tubinate tube, which is adrate to the ovary at the base, and a 5-cleft permanent limb. Corolla tubularly funnel-shaped, 5-times longer than the limb of the calyx, hairy inside; with 5 ovate segments. Stamina 5, inclosed. Style filiform, girded by an urceolus at the base; stigma 2-lobed, shorter than the corolla. Capsule broad, compressed, 2-lobed, almost mitre-formed, crowned by the calyce line teeth, internally divided into 2 cells by a transverse partition, opening between the remains of the 2 fleshy nectarlips, or by a transverse chink round the apex. Seeds numerous, small, hexagonal. Embryo straight, slender, in fleshy or rather horny albumen.—Dwarf perennial herbs, natives of the East Indies. Leaves opposite, petiolate, membranous, those opposite each other often unequal in size. Stipulas twin on each side, small. Peduncles axillary and terminal, solitary, cymose at the apex, with sub-umbellate branches. Flowers disposed along the branches of the peduncles in a single unilateral row.

1 O. Mû′noos (Lin. amem. 2. p. 117. spec. 213. mat. med. 27. with a bad figure, but not of Bum.) suffruticose; leaves elliptic-lanceolate, acuminiated at both ends, glabrous, papyry; stipulas small, truncate; cymes pedunculate, terminal, branched; tube of corolla short, funnel-shaped. ½. S. Native of Java, Ceylon, Sumatra, Palo Penang, &c. Blum. bijdr. p. 976. Roxb. fl. ind. 2. p. 544. Gertrn. fr. 1. t. 55.? A. Rich. l. c. t. 2. Radix. Mungo. Kommp. amem. 573. and 577. Stipulas a slight connecting membrane. Nectary a 2-terminated body, surrounding the base of the style. Flowers white. The root is very bitter, and is celebrated as an alexiteric, the trunk of which is horizontal, and the fibres perpendicular. The plant is called in Ceylon Ekanerta and Naghowalla, from nagha, the riband snake, for the bite of which it is accounted a specific.


2 O. bracteolâta (Wall. cat. no. 6228.) stem ascending, villous above, simple, or a little branched; leaves unequal in size in each pair, as is the case in most of the species; stipulas ensiform, pubescent; common peduncles slender, villous, from 3-5 inches long. ½. S. Native of the valley of Nipanl, in damp moist situations.

Bracteolate Snake-root. Pl. 1 foot.

3 O. olibongófolia (D. C. prod. 4. p. 415.) suffruticose, downy at the apex as well as on the peduncles; leaves oblong, bluish, attenuated at the base, glabrous above, pale and rather velvety beneath; stipulas small, triangular, acute; cymes pedunculate, branched; tube of corolla short. ½. S. 27 X
Native of the Island of Luzon, one of the Philippines. O. Míngos, Bartl. in herb. Hanke. Herb hardly a hand high, erect, suffrutescent at the base, and throwing out a few roots from the lower part.

**Oblong-lobed Snake-root.** Shrub $\frac{1}{2}$ foot. 4 O. *Villosa* (Roxb. fl. ind. 2. p. 546.) stem suffrutescent, erect, villous; leaves oblong-oblongate, villous on the veins beneath; stipulas eniform, villous; cymes or corymbs terminal, on long peduncles, villous; corolla funnel-shaped. 2. S. Native of Chittagong and Silhet, on the hills in shaded moist places. O. Míngos, Gaertn. fruct. 1. p. 264. t. 53.? ex Roxb. Corymbs almost globular, with numerous white almost sessile flowers, and recurved branches. Urecolus bilabiatus, surrounding the base of the style. Capsule opening round the apex.

**Villos Snake-root.** Pl. $\frac{1}{2}$ foot. 5 O. *Argentea* (Wall. cat. no. 6239.) suffrutescent; stem liliaceous; leaves ovate, acuminate, tapering at the base, glabrous, green above and white beneath; peduncles axillary and terminal, trichotomously at the apex; tube of corolla longer than in *O. villosa*. 1. S. Native of Silhet and Chittagong. O. villoso Wall. but not of Roxb. Peduncles downy.

**Silvery Snake-root.** Pl. $\frac{1}{2}$ to 1 foot. 6 O. *Marginata* (Blum. bijdr. p. 976.) stem suffrutescent, erect; leaves lanceolate, acuminate at both ends, glabrous, except the margins, which are scabrous; stipulas semi-lanceolate, small, acuminate; cymes or corymbs pedunculate, terminal, almost trifid; corolla funnel-shaped, with an angular tube. 2. S. Native of Java, on Mount Tjeriman. Allied to *O. Míngos*, but differs in the flowers being larger and in the stipulas being subulate at the apex.

**Margined-leaved Snake-root.** Pl. $\frac{1}{2}$ to 1 foot. 7 O. *Fasciculata* (D. Don. prod. fl. nep. p. 136.) stem suffrutescent, erect, branched; leaves elliptic, acuminate, glabrous above and downy beneath; flowers in terminal fascicles; calyces (segments ovate, acute. 1. S. Native of Nipal, in moist shaded places, near Suembu. Virécta fasciculata, and O. suffrutescens, Hamilt. nss. Differs from O. Míngos in the leaves being downy beneath, and in the flowers being in terminal fascicles.

**Fascicled-flowed Snake-root.** Pl. $\frac{1}{2}$ foot. 8 O. *Rugosa* (Wall. in Roxb. fl. ind. 2. p. 547.) stems herbaceous, creeping at the base, and ascending at the apex, villous; leaves elliptic-lanceolate, attenuated at both ends, shining, rugose and rather scabrous above, paler beneath and rather downy along the veins; stipulas semi-lanceolate, acuminate; cymes or terminal corymbs pedunculate, bifid or trifid, equalling the uppermost pair of leaves. 2. S. Native of Nipal, in forests, on Shivaopore and other high mountains near the valley; and of Java, on Mount Gede in woods. Blum. bijdr. p. 976. Root consisting of a number of long pink-coloured fibres. Petioles villous. Peduncles furnished with 2 subulate bracteas about the middle, villous. Flowers white, downy, twin, the one sessile, and the other pedicellate. Urecolus 2-lobed.

**Wrinkled-leaved Ophiobiza.** Pl. $\frac{1}{2}$ to 2 feet. 9 O. *Discolor* (R. Br. in Wall. cat. no. 6332.) leaves elliptic-oblong, much acuminated, tapering to the base, glabrous, green above, and reddish beneath; stems and peduncles downy; peduncles terminal, corolla base, trichotomously branched. 1. S. Native of Penang. O. Míngos, Wall. in Roxb. fl. ind. 2. p. 547. O. corymbosa, Hamilt. herb.

**Discoloured-leaved Snake-root.** Shrub 1 to 2 feet. 10 O. *Canescens* (Blum. bijdr. p. 977.) stems herbaceous; leaves oblong-lanceolate, attenuated at both ends, whitish beneath, and rather downy along the veins; stipulas broad, short, subulate at the apex; cymes on short peduncles, terminal, and

axillary, naked, usually quadrand; stamens about equal in length to the tube of the corolla. 2. S. Native of Java, on the mountains of Seribu, in shady places. Allied to *O. rugosa*, but is distinguished from it in the cymes being naked.

**Caneck Snake-root.** Pl. $\frac{1}{2}$ to 1 foot. 11 O. *Trichoera* (Blum. bijdr. p. 977.) stems herbaceous, tomentose; leaves on short petioles, ovate-lanceolate, acutish, rather downy on the veins beneath; stipulas downy; cymes subulate; cymes pedunculate, axillary, and terminal, dichotomous. 2. H. Native of the islands of Java and Nusa-Kambanga. Said to be nearly allied to *O. villosa*.

**Hair-fretted Snake-root.** Pl. $\frac{1}{2}$ to 1 foot. 12 O. *Longiflora* (Blum. bijdr. p. 977.) stem suffrutescent; leaves oblong-lanceolate, acuminated at both ends, hairy beneath; stipulas semi-lanceolate, acuminiated; cymes pedunculate, terminal, loose-flowered; tube of corolla very long, velvety. 1. S. Native of Java, on Mount Gede, in woods near the top.

**Long-flowered Snake-root.** Shrub $\frac{1}{2}$ to 1 foot. 13 O. *Sanguinea* (Blum. bijdr. p. 977.) stem herbaceous; leaves ovate or elliptic-lanceolate, acuminated, rather oblique at the base, glabrous; stipulas foliaceous, ovate-oblong, bifid; cymes pedunculate, terminal. 2. S. Native of Java, on the mountains in shady places. Leaves reticulately veined in the dry state; the veins blood-coloured.

**Bridy-veined Snake-root.** Pl. $\frac{1}{2}$ to 1 foot. 14 O. *Nelleggra* (Blum. herb. ex D. C. prod. 4. p. 416.) stem herbaceous, erect, dark purple, glabrous; leaves oblong-lanceolate, acuminated, pale beneath; peduncles axillary, clothed with rusty down; cymes bifid or quadrijrid, having the bractlets elongated. 2.? S. Native of Java. Nerves of leaves purplish beneath. Stipulas deciduous.

**Neglected Snake-root.** Pl. $\frac{1}{2}$ to 1 foot. 15 O. *Quadrifida* (Blum. bijdr. p. 977.) stem herbaceous; leaves ovate or oblong, acute at both ends, smooth, with simple veins; stipulas linear, obtuse; cymes pedunculate, axillary, and terminal, usually quadrijrid. 2.? S. Native of Java, in shady mountain woods.

**Quadrijrid-cymed Snake-root.** Pl. $\frac{1}{2}$ to 1 foot. 16 O. *Japanica* (Blum. bijdr. p. 977.) stem herbaceous, radiant; leaves ovate or oblong-lanceolate, roughish above, and downy on the veins beneath; corymbs terminal, pedunculate, dichotomous; corolla funnel-shaped, with a very long tube, and having the segments hairy inside. 2. G. Native of Japan, where it was collected by Siebold. 17 O. *Prostrata* (D. Don. prod. fl. nep. p. 136.) stem prostrate, radiant, downy; leaves ovate or elliptic, rough above, and downy beneath; calyces segments oblong. 2. G. Native of Nipal, at Narainhetty. Virécta? prostrata, Hamilt. nss. Differs from O. Míngos in the plant being smaller, and more pubescent, and in the stems being radiant.

**Prostrate Snake-root.** Pl. prostrate. 18 O. *Tomentosa* (Jack, in Roxb. fl. ind. 2. p. 546.) the whole plant is clothed with very soft villi; stem herbaceous, erect, branched; leaves lanceolate-oblong, finely acuminated, on longish petioles, villous and hoary underneath, with reddish veins; stipulas subulate; cymes pedunculate, terminal. 1. S. Native of the islands of Pulo-Penang and Sumatra, on the hills. Stem reddish. Petioles villous. Flowers almost sessile. Peduncles and calyces tomentose. Corollas white. Urecolus bilabiatus, glandular. Very like O. bracteolata.

**Tomentose Snake-root.** Pl. 1 foot. 19 O. *Erubescens* (Wall. cat. no. 6233.) stem clothed with rusty down at the top; leaves elliptic-lanceolate, acuminated, tapering at the base, glabrous above, and downy beneath; stipulas broad at the base, and cuspidate at the apex; flowers ter-
minal, coriaceous. ½ S. Native of the East Indies, at Cheppadong.

Reddish Snake-root. Shrub 1 foot.

20 O. hispidula (Wall. cat. no. 6234.) stem and petioles downy; leaves elliptic, tapering to both ends; peduncles terminal, downy, coriaceous, dichotomously branched; capsules downy. ½ S. Native of the East Indies, at Tajovy.

Hispid Snake-root. Shrub ½ to 2 foot.

21 O. heterophylla (Jack, mal. misc. 2. no. 7. p. 85. Wall. in Roxb. fl. ind. 2. p. 547.) stem erect, tomentose; leaves roundish-ovate, those opposite each other very unequal in size; cymes small, terminal. ½ S. Native of Sumatra, in the interior of the island. Leaves with a bluntish acumens, smooth, pale, and whitish beneath. Capsules compressed, obcordate.

Variable-leaved Snake-root. Pl. ½ to 1 foot.

22 O. acumina ta (D. C. prod. 4. p. 416.) stem suffruticosum, clothed with rufous velvety down, as well as the pedicels; leaves lanceolate, acuminated, glabrous, velvety on the nerves beneath; stipulas broad at the base, and awned by a bristle at the apex; cymes pedunculate, of 5 velvety branches. ½ S. Native of the island of Luzon, at Sorzogon. O. subumbellata, Baril. in herb. Hamke. Perhaps the same as O. subumbellata, Forst.

Acuminated-leaved Snake-root. Shrub.

23 O. Richar'diana (Gaud. in Freyc. voy. p. 473. t. 97.) plant suffruticosum, quite glabrous; leaves oblong, much acuminate at both ends, petiolate, with smooth margins; corymbs terminal, on short peduncles, trifid or quadrifid; tube of corolla short; calyces teeth very short. ½ S. Native of the Moluccas.

Richard's Snake-root. Shrub ½ to 1 foot.

24 O. festu'cilla (Blum. herb. ex D. C. prod. 4. p. 417.) stem erect, dwarf, simple; leaves elliptic, glabrous; flower terminal, solitary, nutant, on a short pedicel; corolla funnel-shaped, glabrous; calyces teeth obsolete. ½ S. Native of Java. Herb hardly an inch long. Fruit unknown.

Smallest Snake-root. Pl. 1 inch.

25 O. Ha'risonii (Heyne, ex Wall. cat. no. 6236.) stem, petioles, peduncles, and nerves of leaves on the under side downy; leaves ovate or roundish-ovate, acutish, glabrous and green above, and pale beneath; peduncles terminal, coriaceous, and dichotomously branched at the apex. ½ S. Native of the East Indies. Root creeping much.

Harrison's Snake-root. Pl. ½ to 1 foot.

26 O. ? geminata (Wall. cat. no. 6237.) stem, petioles, peduncles, and nerves on the under surface of the leaves, downy; leaves large, obovate-oblanceolate, tapering much at the base, and running down the pedicels, and acute at the apex, glabrous and green above, but pale or reddish beneath; peduncles long, terminal, racemose. ½ S. Native of the East Indies, in Silhet and Gualpara. Dentella? geminata, Herb. Ham. Root creeping. Stem dwarf. Racemes numerous, crowded, secund, alternate, short, recurved, on each peduncle. Perhaps a proper genus.

Twin Snake-root. Pl. ½ to 1 foot.

† A doubtful species.

27 O. ? subumbellata (Forst. prod. no. 66.) stem shrubby; leaves lanceolate, acute; umbels axillary, trifid. ½ S. Native of the island of Otabhi.

Subumbellata-flowered Snake-root. Shrub.

Cult. The species of Snake-root will grow in a mixture of loam, sand, and peat; and they may either be increased by cuttings under a hand-glass in heat, or by seeds.

LXXI. ARGSTOME MAMA (from argos, argos, white, and στώμα, stoma, a crown; in reference to the terminal racemes or umbels of snow white flowers). Wall. in Roxb. fl. ind. 2. p. 324. Blum. misc. ex D. C. prod. 4. p. 417. —Pomagnium, Reinw. ex Blum.

LIN. SYST. Tri-Pentándria, Monogynia. Calyx with a short obconical tube, and a 3-4-5-cleft limb: lobes acute, valvate in aestivation. Corolla rotate, spreading, with a 3-5, rarely with a 3-4-parted limb. Stamens alternating with the lobes of the corolla. Anthers large, exerted, cohering at the apex. Style perforating a fleshy disk; stigma globose. Capsule crowned by the calyx and an opercular disk, 2-celled, dehiscing in a radiant manner at the apex; receptacles convex, adnate to the depression. Seeds numerous, angular.—Herbs, for the most part hairy from short down. Leaves quite entire, opposite, one usually smaller than the other, rarely verticillate. Stipulas foliaceous, ovate, solitary on both sides. Peduncles terminal, and almost axillary, bearing fascicled umbels of flowers at the apex, very rarely only one flower. Flowers white. The species of this genus have the habit of those of Ophiorhiza.

1 A. sarmentosum (Wall. in Roxb. fl. ind. 2. p. 324.) plant rather villous, creeping at the base, and stoloniferous, the upper part of the stem erect; leaves ovate, obtuse, almost sessile, downy above, and villous on the nerves beneath, in two approximately pairs; flowers 3 or 4-parted, disposed in a terminal umbel or corimb-formed raceme. ½ S. Native of the East Indies, on rocks on the hills at Schukragiri, near Rujmahal; and of Nipaul, on the mountains to the northward of the valley on the route to Gosingothan. Stem and leaves rather pubescent. Flowers snow white. Corolla 5 times longer than the calyx. Leaves at end of stem.

Sarmentosum Argostemma. Pl. ½ foot.

2 A. verticillataum (Wall. l. c. p. 322.) plant erect, downy, and tufted; leaves 4 in a whorl, linear-lanceolate, rather falcate; peduncles 2-3, rarely solitary, bearing a few umbellate flowers each; flowers 4-5-parted. ½ S. Native of Nipaul, on rocks at Moreko in the valley. Root fleshy, and almost tuberous. Stems furnished with a pair or two of lanceolate connate scales. Leaves ciliate. Flowers snow white, rather smaller than those of the preceding species. The mouth of the corolla is marked with 10 minute tubercles, alternately receiving the basis of the filaments. Ovarium smooth. Wall. pl. rar. asiat. 2. p. 80. t. 185.

Whorled-leaved Argostemma. Pl. 4 inches.

3 A. rostra'tum (Wall. l. c. p. 326.) plant erect, smooth; leaves in 2-4 approximate pairs, narrow-lanceolate, acuminated, pubescent at the point, recurved, permanent; umbels pedunculate, terminal, many flowered; segments of corolla and tube of the anthers acuminated. ½ S. Native of the East Indies, on the Pundha mountains near Silhet. Stem furnished with several remote pairs of lanceolate-ciliated stipulas; the upper ones becoming enlarged and foliaceous. Pedicels an inch long, clavate, a little ventricose above the middle. Corollas white, nearly an inch in diameter. Habit of Trientalis Europae'a.

Beaked-anthered Argostemma. Pl. ½ to 2 foot.

4 A. rictum (Wall. l. c. p. 327.) plant glabrous; stem short; leaves smooth, ovate, subcordate, painted with reteculated white nerves, on very short petioles; umbels terminal, pedunculate, many flowered; flowers pentandrous. ½ S. Native of Pulo-Penang, growing on rocks near the water-fall. Leaves only 2, or in 2 remote pairs, slightly ciliate. Peduncle simple, or having 2 opposite branches, each bearing a round umbel of many small flowers. Unripe berry as large as a coriander seed, smooth.

Painted-leaved Argostemma. Pl. 1 to 2 inches.

5 A. borragi'neum (Blum. misc. ex D. C. prod. 4. p. 417.) stem creeping at the base, but erect above, and scabrous at the apex; leaves elliptic, acute at both ends, petiolate, with a few 3 x 2.
scattered hairs above, but more crowded on the nerves beneath, and on the petioles; umbels pedunculate, terminal, subtrifid; flowers pentamerous, at length second. O. S. Native of Java, in mountain woods in humid places. Stem 4-6 inches long. Leaves 4-6 along each stem.

**BORAGE-Like Argostemma.** Pl. 3/2 foot.

6 A. MONTANUM (Blum. s. ex D. C. prod. 4. p. 418.) stem tomentose hairy, ascending; leaves ovate, acuminate, ciliata, petiole, beset with scattered hairs above, and with bristle-like hairs on the nerves beneath; umbel terminal, pedunculate, bracteosed, 5-6-flowered.—Native of Java. Peduncle of Hydnora is long, 3-4 inches long. Leaves 10-12 on each stem, disposed in nearly equal distant pairs. Peduncle hardly longer than the leaves.

**Mountan Argostemma.** Pl. 3/2 foot.

7 A. FAUCIFOLIUM (Blum. s. ex D. C. prod. 4. p. 418.) stem creeping at the bottom, but branched, and rather scabrous above; leaves petiolate, ovate, acute, tapering a little at the base, hairy; umbels pedunculate, shorter than the leaves, terminal, subtrifid, few-flowered. P. S. Native of Java, on Mount Salak in shady places. Leaves 16-20 on each plant, membranous, pale beneath. Flowers white, smaller than those of the preceding species.

**Few-flowered Argostemma.** Pl. 3/4 foot.

8 A. caricifolium (Blum. s. ex D. C. prod. 4. p. 418.) stem creeping below, clothed with hairy pubescence; leaves opposite, very unequal, one of which in each pair hardly exceeds a stipula in size, the other is lanceolate, with an unequal base, rather ploso; peduncle terminal, 1-flowered. O. S. Native of Java, in woods on the higher mountains.

**One-flowered Argostemma.** Pl. creeping.

**Cult.** For culture and propagation, see Ophiopanax, p. 523. The species are all remarkable in their appearance.

**LXXII. SPIRADEI’CLIS** (from σπέρα, a spire, and κέλις, valves with folding doors; in allusion to the valves being divided into 2 parts, and also twisted at the apex). Blum. bijdr. p. 975. D. C. prod. 4. p. 418.

**Linn. syst. Periandria, Monogynia.** Calyx with an oblong turbinate tube, and a 5-toothed limb. Corolla with a short tube, and a 5-parted spreading limb. Stamens 5, included. Style girded by 4 glands; stigma 2-lobed in the throat. Capsule oblong, crowned by the calyx, 2-celled, 2-valved; valves biserite, at length twisted. Seeds numerous, angular.—This genus is nearly allied to Tula, with the tufted habit of Nertéra. Leaves opposite, ovate, rather undulated, glabrous. Spikes terminal and lateral, few-flowered. Flowers small, second, each furnished with one bractea.

1 S. castróss (Blum. l. c.)—Native of Java, at the foot of Mount Salak in humid places.

**Tutfed Spiradichsis.** Pl. tutfed.

**Cult.** For culture and propagation see Tula below.


—A small procumbent branched tufted herb. Leaves reniform, petiolate. Pedicels axillary, short, 1-flowered. This genus was alone known to Feuillée, and is therefore very doubtful. Habit of Nertérea, but differing in the flowers being pentamerous, and in the cells of the fruit being many seeded; it is perhaps, however, or that genus badly described.

1 T. ADANSION (Röm. et Schultes, syst. 4. p. 355.) Y. G. Native of Peru, on rocks by the sea-side. Soldanella facie, Feuill. obs. 3. pt. 2. p. 63. t. 44.

**Adanson’s Tula.** Pl. tutfed.

**Cult.** A mixture of loam, peat, and sand will be a good soil for this little plant; and it may either be increased by cuttings planted in sand under a hand-glass, or by seeds. The pot in which it is grown should be half filled with sherds.


**Linn. syst. Periandria, Monogynia.** Calyx with an ovate-globose tube, and a 5-clawed limb. Corolla funnel-shaped, 5-clawed; lobes furnished with a small tooth on each side; throat hairy. Anther 5, included, almost sessile. Style short; stigmas 2, thick. Capsule almost indehiscent, nearly globular, 2-celled, crowned by the limb of the calyx. Placentae fleshy, prominent on both sides within the cells. Seeds small, ovate.—A creeping tufted marsh annual herb. Stems filiform, glabrous. Leaves oblong, glabrous, ciliate at the base, with the petiole. Stipulas small, acute. Pedicels axillary, alternate, 1-flowered, short. Fruit bi-pap. Flowers small, white.


**Cult.** The seeds require to be sown on a gentle hot-bed in spring; and the plants when of sufficient size may be lifted out into a moist shady situation in the open ground.

**LXXV. DEPPEA** (named after M. Deppe, who has collected and sent home many plants from Mexico). Cham. et Schlecht. in Linnaea. 5. p. 167. D. C. prod. 4. p. 618.

**Linn. syst. Tetrandria, Monogynia.** Teeth of calyx 4, triangular. Corolla somewhat rotate, quite glabrous; lobes elliptic. Anthers 4, linear, exserted; filaments very short. Style longer than the stamens; stigma thicker than the style. Capsule membranous, elliptic, crowned by the calycine teeth beneath the vertex, 2-celled; cells 1-seeded, with a loculicidal dehiscence. Seeds fixed to the middle dispermous.—A small shrubby plant, with a woody root, and reddish inner bark. Leaves petiolate, elliptic, acuminate at both ends, rather pilose above and on the margins. Stipulas triangular, deciduous. Cymes terminal and axillary, pedunculate, of 3 or 4 branches. Flowers yellow. Habit, fruit, and capsule of Hedyotis, but the cells are 1-seeded as in the tribe Spermacoceae.

1 D. ERYTHROPA (Cham. et Schlecht. l. c. p. 168.)—Native of Mexico, in shady places near the Hacienda de la Laguna. D. hydrotélica, D. C. prod. 4. p. 618.

**Red-rooted Deppia.** Shrub 1 to 2 feet.

**Cult.** For culture and propagation see Dentella above.

**SUBTRIBE II. HEDYOjTIE.E.** (this tribe contains plants agreeing with Hedyotis in important characters). D. C. prod. 4. p. 419. Stipulas resembling a sheath on both sides, and ending in many bristles at the apex.

**LXXVI. HEDYOTIS** (from ἡδύς, hedge, sweet, and ὀξίς, oxis, an ear; the leaves are oval, soft, and firm, from
which circumstance they have been compared to ears). Roxb. fl. ind. 1. p. 368. Clunie et Schlecht. in Linnaea. 5. p. 153. D. C. prod. 4. p. 419.—Hedyotis species of Lin. and all authors.

Lin. syst. Tetrándria, Monogynia. Calyx with an ovate tube, and a 4-toothed limb: teeth erect, permanent, also separated on the fruit by acute narrow recesses. Corolla with a short tube, a bearded throat, and a 4-lobed limb. Stamens exerted a little; anthers ovate or roundish, small. Capsule ovate, somewhat attenuated at the apex, crowned by the calycine teeth, which are coniform, but separate, 2-celled, and delising in the middle of the cells. Seeds minute, angular, many in each cell.

—Herbs, sometimes suffruticose at the base, with a habit like that of Spermacoce. Stems tetragonal or nearly terete. Leaves opposite. Stipulas adhering to the petioles on both sides, ending in many bristles. Flowers axillary, usually glomerate.—This genus differs from Houslinia, to which St. Hil. pl. rem. bras. p. 281, has joined it, in the calyx being adnate to the fruit the whole length. It differs from Oldenlandia in the teeth of the calyx being separated on the fruit by narrow recesses, not by broad ones.

* Pedicels axillary, 1-flowered, solitary, and sometimes twin.

1 H. gracilis (D. C. prod. 4. p. 419.) plant decumbent and elongated, scabrous from hairs; leaves linear, acute; stipulasOVATE, opposite.

2. H. Adscetnionis (D. C. t. c.) stem suffruticose, branched, glabrous; leaves linear, acute, with revolute margins, and are, as well as the calyces, rather scabrous; pedicels axillary, solitary, 1-flowered, shorter than the flowers. 1. S. Native of the island of Ascension, where it was collected by Lesson, G. Don, &c. Herb becoming black on drying. Capsule compressed. Seeds very minute. Corolla white. Lobes of calyx long, linear.

Ascension Hedyotis. Pl. 1 1/2 foot.

3 H. pauciflora (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 419.) plant suffruticose, glabrous; branches tetragonal, smooth; leaves linear, very acute, with revolute margins; stipulas with many stiff erect bristles; flowers solitary, axillary, hardly pedicellate. 1. S. Native of the island of Luzon, one of the Philippines. Leaves 1 or 1 1/2 inch long, and a line broad. Fruit unknown, but the lobes of the calyx are separated by narrow recesses, indicating it to belong to this genus.

Few-flowered Hedyotis. Pl.

* * Flowers axillary, almost sessile, disposed in glomerate whorles.

4 H. tenelliflora (Blum. bijdr. p. 971.) stems suffruticose, kneed, procumbent; leaves on short petioles, lanceolate, veinless beneath, with scabrous margins; bristles of stipules long and setaceous; flowers usually twin, axillary, sessile. 1. S. Native of the island of Nusa Kambanga, near Java.

Slender-flowered Hedyotis. Shrub procumbent.

5 H. angustifolia (Cham. et Schlecht. in Linnaea. 4. p. 153.) stems branched a little, tetragonal, when young the angles are hairy; leaves linear, very narrow, acute, with revolute scabrous margins; stipulas hairy, membranaceous fringed; flowers 3-5-together, axillary, almost sessile, glomerate. 1. S. Native of the island of Luzon, one of the Philippines.

Narrow-leaved Hedyotis. Pl. 1/2 foot.

6 H. Bösch (D. C. prod. 4. p. 420.) plant glabrous; stems herbaceous, ascending, branched, slender, tetragonal; leaves linear; bristles of stipulas shorter than the fruit; flowers few, axillary, somewhat verticillate; fruit ovate, crowned by the teeth of the calyx, which are acute. 1. H. Native of Carolina, where it was collected by Bosc, and sent home under the name of Diodia. Leaves almost an inch long, and a line broad. Seeds very minute.

Boae's Hedyotis. Pl. ascending.

7 H. auriculata (Lin. spec. 147.) stem almost simple, tetragonal, rather hairy at the apex; leaves lanceolate-ovate, nerved; stipulas ciliated with bristles; flowers glomerate, axillary, somewhat verticillate. 1. S. Native of Ceylon, Malabar, also of Silhet and Nipan, ex Roxb. fl. ind. 1. p. 369. Rheem. mal. 10. t. 32.—Burn. fl. zey. t. 108. f. 1.? H. nervosa, Lam. dict. 3. p. 78.? Flowers white, sessile.

Asribed Hedyotis. Pl. 1/2 foot, procumbent.

8 H. genev*icula* (Roxb. fl. ind. 1. p. 368.) plant weak, decumbent; stems nodose, terete, smooth; leaves almost sessile, lanceolate, smooth; flowers on short pedunules, disposed in whorles.—Native of the Malay Islands. The rest unknown.

Kneed-stemmed Hedyotis. Pl. decumbent.

9 H. Lafeyroushi (D. C. prod. 4. p. 420.) stem erect, glabrous, terete, rather angular at the apex, and hardly branched; leaves oblong-lanceolate, acuminate at both ends, glabrous; stipulas of many bristles; flowers few, axillary, almost sessile, verticillate; capsules globose. 1. S. Native of the island of Vanikoro, where it was collected by Lesson. Stem 1 1/2 foot high. Leaves 4 inches long, and 8-10 lines broad, lined with 5-6 oblique nerves on each side.

La Peyrouse's Hedyotis. Pl. 1 1/2 foot.

10 H. crust*is*folia (Blum. bijdr. p. 971.) stems diffuse, rather hairy; leaves lanceolate, capitulate, almost veinless, except the middle nerve, scabrous beneath and on the margins, on very short petioles; stipulas setigerous; flowers disposed in dense whorles; filaments exserted.—Native of the west of Java, in humid shady places. Said to be allied to H. hispida. Bristles of the stipula long. Teeth of calyx very acute. Perhaps the same as H. crataegophyllum.

Thick-leaved Hedyotis. Pl. 2 to 3 feet.

11 H. crat*ase*g*om*um* (Spreng. pug. 2. p. 35.) stems terete, glabrous, articulated; leaves lanceolate, acuminate, veinless, scabrous; stipulas setaceous jugled; flowers sessile, disposed in glomerate whorles.—Native of Ambon, ex Rumph. amb. 6. p. 25. t. 10.; and of Java, ex Lin. not in Jamaica, as said by Roum. et Schultes, syst. 3. p. 199. Oldenlandia verticillata, Lin. mant. 46.

Strong-jointed Hedyotis. Pl. 1 foot.

12 H. hispida (Retz. obs. 1. p. 23. but not of Roth.) stems diffuse, branched, tetragonal, rooting at the nodi; leaves sessile, lanceolate, with hispid margins; stipulas with many bristles; flowers axillary, almost sessile, disposed in glomerate whorles; filaments inclosed.—Native of China, ex Retz.; of the Moluccs, ex Roxb. fl. ind. 1. p. 368.; of Java, Blum. bijdr. p. 971. Oldenlandia hi-pida, Poir. dict. 4. p. 536. Stamens shorter than the style, which is clavate, ex Retz. Capsule hispid, ex Spreng. pug. 2. p. 32.

Hispid Hedyotis. Pl. 1/2 foot, procumbent.

13 H. unc*il* ella (Hook. et Arn. in Beech. voy. pt. bot. pot. 19.2) plant suffruticose, glabrous; branches simple; leaves ovate-oblong-lanceolate, with almost simple longitudinal veins; flowers axillary, sessile terminal, numerous, almost sessile, disposed in glomerate whorles; capsules tubinate, glabrous, crowned, bipartite at the dissepiment; tube of calyx contracted, and the lobes subulate and recurvedly uncinate, long, and ciliated. 1. G. Native of China. This may be the type of a new genus, and is probably the H. cephalophora, R. Br. in Wall. cat. no. 842.

Hooked-calyx Hedyotis. Shrub.
14 H. rotundifolia (Sprague, lag. 3. p. 197.) plant decum- 
ben, branched a little; leaves petiolate, broad-ovate, somewhat
3-nerved; stipules scarious, ciliated; flowers axillary, almost
sessile, disposed in whorles; capsules hispid.—Native of
the East Indies, in humid places. Oldenlandia trinervia, Retz. obs.
4. p. 23.
Round-leaved Hedyotis. Pl. decumbent.
15 H. perfusilla (Hook. et Arn. in bot. misc. 3. p. 259.)
glabrous; stems tufted, diffuse, branched, weak; leaves olong;
stipules minute, not setigerous; pedicels terminal, and from
the forks of the branches, 1-flowered, about equal in length to
the leaves; tube of calyx glbose, hispid from bristles; teeth of
calyx erect, ovate, obtuse.—Occasionally found in inundated
places by the shores of La Plata, near Buenos Ayres. Stem 1
2 inches long, branched; the branches are furnished with
several short lateral ramuli, from the axils of which springs
a peduncle, which after flowering becomes reflexed. Very closely
allied to II. uniflora, but seems to differ from the genus by the
stipules not being furnished with bristles.
Least Hedyotis. Pl. tufted.
16 H. sodiflora (Wall. cat. no. 855.) glabrous; stems quad-
angular; petioles downy; leaves ovate-elliptic, acuminate,
veined; flowers much crowded, axillary, subverticillate, sessile.

L. S. Native of the East Indies, in Tavoy.
Knot-flowered Hedyotis. Pl. 1 to 2 feet.
17 H. argentea (Wall. cat. no. 858.) glabrous; stem quad-
angular; leaves broad-ovate, acuminated, whitish above, and
rusty beneath; flowers in axillary heads. \( \mathcal{L}. \) S. Native of
the Burmese Empire, on the banks of the Irrawaddy.
Silvery Hedyotis. Pl. 2 to 3 feet.
18 H. costata (R. Br. in Wall. cat. no. 849.) stem downy,
quadraangular; leaves lanceolate, tapering to both ends, glabrous,
with many parallel veins; flowers disposed in crowded axillary
heads, subverticillate; teeth of calyx separated by distant recesses.

L. S. Native of Pulo-Penang and Silhet.
ribbed Hedyotis. Pl. 2 to 3 feet.
19 H. pinifolia (Wall. cat. no. 850.) plant much branched;
branches quadrangular; leaves linear, with revolute edges;
flowers disposed in axillary and terminal verticillate heads. \( \mathcal{L} ).
S. Native of Pulo-Penang, and of the Burmese Empire, at
Prome and Amarast. Perhaps a species of Oldenlandia.
Pin-leaved Hedyotis. Pl. 3 to 4 feet.
20 H. conceps (R. Br. in Wall. cat. no. 844.) herbaceous, glo-
bose; stem and branches quadrangular; leaves ovate-lanceo-
late, acuminate, pale beneath; flowers crowded, axillary; stip-
ules somewhat pinnatifid; lobes of calyx rounded, separated
by narrow blunt recesses. \( \mathcal{L}. \) F. Native of Pulo-Penang.
Crowded-flowered Hedyotis. Pl. 3 to 4 feet.
21 H. macrophylla (Wall. cat. no. 841.) stem and branches
quadraangular; leaves large, roughish, veined, tapering to both
ends; stipulas pinnatifid; flowers much crowded, axillary, for-
ming glomerate whorles. \( \mathcal{L}. \) S. Native of Pulo-Penang. Calyx
downy, with the lobes separated by narrow recesses.
Large-leaved Hedyotis. Pl. 2 to 3 feet.
** ** Peduncles axillary, many-flowered; flowers crowded.
** ** **
22 H. capitatea (Lam. dict. 3. p. 80.) stem terete, almost
simple, downy; leaves almost petiolate, ovate-lanceolate, acute,
nerved, glabrous above, velvety on the nerves beneath; stipulas
setaceously jagged; peduncles axillary, solitary, much shorter
than the leaves, bearing each a dense head of flowers.—Native
of the East Indies, particularly in Java, in moist parts of moun-
Capitate-flowered Hedyotis. Pl. ½ foot.
23 H. lineata (Hook. fl. ind. 1. p. 369.) plant diffuse, pil-
ose; leaves sessile, ovate-lanceolate, with longitudinal simple
parallel veins; peduncles axillary, many flowered, rather long,
2-3-together; capsules round, pilose. \( \mathcal{L}. \) F. Native of the
East Indies, in Chittagong. The rest unknown.
Lined-leaved Hedyotis. Pl. diffusae.
24 H. ulmifolia (Wall. in Roxb. fl. ind. 1. p. 370.) plant
ascending, clothed with soft hairs; leaves oval-lanceolate, acute,
nerved, very villous on the nerves on both surfaces; stipulas
cup-shaped, acuminate at both ends, joined to both sides of
the petioles; peduncles axillary, much shorter than the leaves,
bearing many subcorymbose flowers; flowers usually by threes;
calyx villous, with acute lobes. \( \mathcal{L}. \) G. Native of Nipal. H.
lineata, D. Don, fl. nep. p. 194. but not of Roxb. Specimen
linen, Hamilton, mess. Stipulas coriaceous, acuminated in the
middle. Stems many from the same root, woody, simple. Cally-
cine segments lanceolate, spreading.

Elongated Hedyotis. Pl. 1 to 2 feet.
25 H. vestita (R. Br. in Wall. cat. no. 847.) stems, peduncles,
and petioles villous; stem quadrangular; leaves ovate-lanceo-
late, much acuminated, tapering at the base, downy, particu-
larly on the veins beneath; stipulas villous, bearing 3 long bris-
tles each; peduncles axillary, trichotonous, each division bear-
ing a head of flowers. \( \mathcal{L}. \) S. Native of Pulo-Penang and
Silhet. Leaves with parallel veins.
Clothed Hedyotis. Pl. 2 to 3 feet.
26 H. macrostemon (Hook. et Arn. in Beech. voy. pt. bot.
p. 192.) plant suffruticose, branched; branches pubescent; leaves
on short petioles, ovate-lanceolate, clothed with soft down be-
neath, rather spongy and shining above, with longitudinal
simple parallel veins; peduncles axillary, solitary, shorter than
the leaves, many flowered; flowers capitulate; stamens much ex-
serted; capsules hairy, free at the apex. \( \mathcal{L}. \) G. Native of
China. Closely allied to the two preceding species.

Long-stamened Hedyotis. Pl. ½ foot.
27 H. seryllifolia (Poir. suppl. 3. p. 14.) stem herbaceous,
branched, rather angular; leaves ovate, acuminate mucronate,
somewhat ciliated; stipulas bipartite, acuminated; flowers 2-4
in each head, axillary and terminal, on short peduncles; tube of
calyx downy.—Native of the island of Bourbon, where it was
collected by Bory de St. Vincent. Corolla white, shorter than
the calyx. Seeds innumerable, very minute. Stem hispid.

With Rhyme-leaved Hedyotis. Pl. 2 to 3 feet.
28 H. ensata: stem suberose, filiform, branched, rooting at
every joint; leaves small, oval or obovate, linear-lanceolate, ex
Lour, smooth; flowers axillary, solitary, on very short pedicels;
capsule nearly globular, covered with hollow pellucid hairs. \( \mathcal{L}.
S. Native of the East Indies and China. Oldenlandia rupens,
Burm. fl. ind. 38. t. 15. f. 2. Lour. coch. p. 78. Corolla bell-
shaped, white.
Creeping Hedyotis. Pl. creeping.
29 H. uniflora (D. C. prod. 4. p. 421.) plant herbaceous;
stems creeping, branched, weak; leaves ovate-roundish, obtuse;
stipulas small; pedicels terminal, 1-flowered, longer than the
leaves; tube of calyx rather hispid. \( \mathcal{L}. \) F. Native of Chili,
in sandy places along the banks of streams. Oldenlandia uni-
flora. Hook. et Pav. fl. iso. p. 57. Corolla with a broad tube,
which is bearded inside. Lobes of calyx ovate, acutish.
One-flowered Hedyotis. Pl. creeping.
30 H. geomerata (Ell. schiz. 1. p. 185.) stem nearly erect,
herbaceous, downy, branched; leaves lanceolate, attenuated at
the base, downy; stipulas acutely bidentate; flowers almost ses-
sile, capitulate, axillary and terminal, rarely almost solitary;
tube of calyx hispid. \( \mathcal{L}. \) ex Torrey. \( \mathcal{L}. \) ex Ell. Native of North
America, in humid places, from Carolina to New York. Torr.
amer. 1. p. 83. H. auriculata, Walt. car. p. 85. but not of
Lin. Oldenlandia uniflora, Lin. ex Willd. spec. 1. p. 674. H.
uniflora, Lam. iv. p. 271. H. Virginica and H. glomerata, Spreng. syst. 1. p 412, 413. Lobes of calyx 4, ovate, acuminate. Corolla subrotate, shorter than the calyx; with the lobes rather spinose. Stamens short, opposite the lobes of the corolla, ex Torrey. Style almost wanting; stigma thick, undivided. Seeds innumerable, very minute, as in the genus Oldenlandia.

Glomerate-flowered Hedyotis. Pl. 3. creping.

31 H. Gorensisis (D. C. prod. 4. p. 421.) plant diffuse, many stemmed; stems rather angular, glabrous, except at the nodi, where they are downy; leaves lanceolate, acute, glabrous; peduncles axillary and on the tops of the branches, disposed in umbellate heaps, a little shorter than the fruit; fruit downy, crowned by the calycine teeth, which are subulate, and somewhat involutely uncinate at the apex. O. F. Native of the coast of Africa, in the island of Goree. Habit of Chickweed. Leaves ovate-oblong or lanceolate. Capsule disheveling but slowly. Seeds very minute. Corolla not seen.

Var. β, erecta (D. C. l. c.) stems erect, much shorter than those of the species; heads of flowers solitary, terminal, umbellate. O. S. Native in humid parts of woods.

Goree Hedyotis. Pl. diffuse.

***** Panicles or coriynba terminal, loose, rarely axillary. The species are very different from each other, and from the rest of the genus.

32 H. latixa (D. Don, prod. fl. nep. p. 155.) stem herbaceous, weak, dichotomously branched, angular, glabrous; leaves ovate, acute, rather hairy on both surfaces, ciliated; stipules divided into bristles; peduncules axillaries, dichotomous; flowers usually by threes. O. G. Native of Nipal. Habit of a species of Ophiopoa. Anthers in some specimens examined exerted, and in others almost imlosed. Teeth of calyx acutely mucronate, 3 times shorter than the corolla. Capsule somewhat cylindrom, free at top, and dehiscing in the middle of the cells. Seeds ovate-roundish.

Loose-flowered Hedyotis. Pl. 1 1/2 feet.

33 H. Polyscenna (Wall. catt. 828.) branches tetragonal; leaves elliptic-lanceolate, acuminate, tapering to the base; stipules joined to the petioles, and forming a sheath with them, furnished with a tooth on each side; pedicle terminal, coriaceous, trichotomous; lobes of calyx separated by broad recesses. O. S. Native of Silhet. Perhaps a species of Oldenlandia.

Many-fruited Hedyotis. Pl. 2 to 3 feet.

34 H. mollis (Wall. catt. no. 859.) plant clothed with soft white down in every part, but particularly so on the under side of the leaves; peduncles axillary and terminal, panicled; pedicels coriaceous; stipules with 3 bristles. O. S. Native of Pulo-Penang.

Soft Hedyotis. Pl. 1 to 2 feet.

35 H. vaginata (Blum. herb. and mss. ex D. C. prod. 4. p. 421.) plant suffruticoso, glabrous; leaves lanceolate, much acuminated, nervled; stipules long, sheathing, drawn out on both sides into one puberulous bristle; coriaceous terminal, trichomes; throat of corolla bearded; samens exerted. O. S. Native of the island of Ternate, one of the Moluccas.

Sheathed-stipuled Hedyotis. Shrub.

36 H. elongata (R. Br. in Wall. catt. no. 865.) plant puberulous; leaves lanceolate or linear; stipules jagged; pedicules terminal, elongated, dichotomously branched; flowers distant on the branches of the peduncle, usually by two, and one in each fork, almost sessile. O. S. Native of the East Indies. Perhaps a species of Oldenlandia.

Elongated-stipuled Hedyotis. Pl. 1 to 2 feet.

37 H. scandens (Roxb. fl. ind. 1. p. 368.) stem terete, scandent, glabrous; leaves on short petioles, broad-lanceolate, acuminate, glabrous, shining; stipulas entire, joined to the pedioles, furnished with a short mucron on both sides; corymbs paniced, axillary, and terminal, with the bractlets rather villos; lobes of corolla and throat hairy inside; style villous at the apex; stigma bilamellate. O. S. Native of Nipaul and Silhet, where it is called Goeue. Petesia Hita, Hamilt. mss. ex D. Don, fl. nep. p. 134.

Climbing Hedyotis. Pl. cl.

38 H. capitella (Wall. catt. 837.) glabrous; leaves elliptic, acuminate, tapering at the base; stipulas joined to the pedicels, furnished with a tooth on both sides; pedicel terminal, composed of round heads of flowers. O. S. Native of Pulo-Penang, and Tavoy.

Headed-flowered Hedyotis. Shrub cl.

39 H. leschenaulti (D. C. prod. 4. p. 422.) suffruticoso; branches glabrous, tetragonal at the apex; leaves lanceolate, pliose beneath; stipulas combined with the petioles, forming a kind of cupula, and furnished with 3 bristles on both sides; pedicel terminal, with glabrous branches; limb of calyx with 4 short teeth; lobes of corolla hairy above; style shorter than the corolla. O. S. Native of the East Indies, on the Nelliglerry mountains, where it was collected by Leschenault. Allied to H. seddens, and with it will probably form a distinct genus.

Var. β, Wallichii (D. C. prod. 4. p. 422.) branches compressedly angular; leaves acuminate; limb of calyx 4-cleft to the middle; lobes oblong-linear; limb of corolla very hairy above. O. G. Native of Nipal, at Katmandu. Perhaps the same as H. seddens, Roxb. ex Wall. fl. ind. 1. p. 369, but it does not exactly agree with the description given of that plant by Roxburgh.

Leschenault's Hedyotis. Shrub cl.

40 H. articulata (R. Br. in Wall. catt. no. 854.) plant dense and dwarf; leaves much crowded, lanceolate, veiny; stipulas jagged; peduncle terminal and axillary, forming panicles. O. G. Native of the Nelliglerry mountains.

Jointed Hedyotis. Pl. 2 foot.

41 H. arborea (Roxb. in Beatta, voy. append. p. 310.) arborescent; leaves on short petioles, oblong, acuminate, shining, recurved at the apex; stipular sheath cylindrical, furnished with 1-3 unequal teeth; corymbs terminal, brachiately, almost globular; capsules globose. O. G. Native of the island of St. Helena, in woods towards the tops of the mountains, where it is called dogwood by the inhabitants. Lobes of calyx oval. Corolla short, glabrous. Perhaps a proper genus.

Tree Hedyotis. Shrub.

42 H. stylosa (R. Br. in Wall. catt. no. 853.) stems quadrangular; leaves glabrous, elliptic-lanceolate, tapering to both ends, cortaceous; stipulas pinnaed; peduncles axillary and terminal, trichotomous, forming paniced corymbs; corolla very hairy inside. O. G. Native of the Nelliglerry mountains.

Long-styled Hedyotis. Shrub 1 to 2 feet.

† Doubtful species.

43 H. crassifolia and H. rosea, Rafin. fl. lud. 77. are very doubtful plants, and are probably species of Anatis. Cult. None of the species of this genus are worth cultivating except in botanic gardens. Any light soil will suit them; and cuttings of the shrubby and herbaceous perennial species will root in the same kind of soil, with a hand-glass over them, in a little heat. The annual kinds require the same treatment as other tender annuals. All are easily increased by seeds.

LXXVII. OLDENLIA/NDIA (named by Plunier in memory of Henry Bernh. Oldenland, a Dane, who collected plants at the Cape of Good Hope in 1695. They came into the possession of Burmann, and there is an account of them in the 6th volume of Linnaeus's Annales Botanici). Lin. gen. no. 154.

2. **—Hedyotis species, Spreng. Smith, and Blume.**—Hedyotis and Oldenlandia, Gertr. fr. 1. t. 90.—Oldenlandia and Listeria, Neck. elem. no. 345 and 346.—Listeria, Rafin. ann. gen. sc. phys. 6. p. 81, but not of R. Br.

3. **L. s. Tetrandria, Meagoygium.** Calyx with a sub-globose tube, and 4 sub-approximate teeth, which remain on the fruit and are separated by very wide recesses. Corolla with a short tube, a 4-cleft limb, and a villous or glabrous throat. Stamens a little exserted; anthers ovate or orbicular. Stigma divided or bifid. Capsule almost globose, crowned by the small distant teeth of the calyx, 2-celled, dehiscing at top by a loculicolal chink. Seed small, innumerable, fixed to sub-globose placenta, and as if they were half immersed in them. —Small, herbaceous, or suffruticose plants, with the habit of chickweed. Leaves opposite, with the stipulas adhering to both sides of the petioles. Peduncles axillary and terminal, bearing 2-5 or many flowers, usually elongated and slender. Flowers usually white. This genus hardly differs from Hedyotis, except in the teeth of calyx being separated by wide recesses on the fruit instead of narrow ones, which character we think would scarcely constitute a sectional distinction. The species, however, have a different habit, and are more readily distinguished by it, than by any other character.

* Pedicels axillary, 1-flowered, usually solitary, rarely by twos or threes.

1. **O. Brachy'poda (D. C. prod. 4. p. 424.)** plant glabrous and decumbent; leaves linear; stipulas furnished with 2 bristles on both sides; pedicels axillary, 1-flowered, shorter than the flowers, solitary or twain; corolla tubular: anthers exserted to the length of the lobes of the corolla. 

2. **—Ramosissima (Fisch. mss. in Spreng. mant. 1. p. 35.** stems herbaceous, diffuse; leaves lanceolate, blunted; stipulas toothed; fruit almost solitary, axillary, sessile. 

3. **—Sabelo'sa (D. C. prod. 4. p. 424.)** on herbaceous, tufted, diffuse, much-branched plant, which is rough from short scattered hairs in every part; leaves linear, acute; stipulas membranous, furnished with many bristles; pedicels 2-3 together, axillary, 1-flowered, much shorter than the leaves, deflexed in the fruitiferous state; corolla length of the lobes of the calyx. 

4. **O. anglica (D. C. prod. 4. p. 424.)** stem branched, erectish, tetragonal, smoothish; leaves linear, acute, rather scabrous; pedicels axillary, 1-flowered, twain, 3 times shorter than the leaves; corolla tubular, about the length of the calyx. 

5. **O. Cape'nsis (Thumb. prod. p. 29. fl. cap. 1. p. 537.)** stem decumbent, branched, villous; leaves linear, acute, glabrous; pedicels numerous, 1-flowered, shorter than the leaves; lobes of calyx ciliated; throat of corolla villous. 

6. **—F. Native of the Cape of Good Hope, in sandy places by the margins of rivers. **Hedyotis Capensis, Lam. ill. no. 1425. Stigma clavate (ex Thunb.). Capsule ovate, didymous.

**Cape Oldenlandia.** Pl. decumbent.

7. **O. lanceo'folia (D. C. I. c.)** stem simple, weak, somewhat dichotomous, creeping; glabrous; leaves linear-lanceolate, glabrous, with rather scabrous margins; bristles of the stipulas distant; pedicules axillary, solitary, rarely twin. 

8. **Lanceo-leaved Oldenlandia.** Pl. ½ foot.

9. **O. herba'cea (D. C. I. c.)** plant glabrous, decumbent; leaves linear or linear-lanceolate; stipules of many bristles; pedicels axillary, 1-flowered, solitary or twin, shorter than the leaves, but 2-3 times longer than the flowers; tube of corolla cylindrical; anthers hardly exserted from the throat. 

10. **F. Native of the East Indies, Madagascar, Senegal, St. Domingo, Mexico, &c. O. Madagascariensis, Desf. cat. hor. p. 1815.**

11. **—Rhed. mal. 10. t. 23. and 35. Hedyotis herba'cea, Lin. fl. zeyl. p. 63. H. herba'cea, var. β, Blum. bijdr. p. 970.**


13. **O. tenuo'folia, Blum. bijdr. p. 970.** 


15. **O. scandi'brida (D. C. I. c.)** stem erect, branched, tetragonal, hairs along the angles; leaves linear, acute; pedicels axillary, 1-flowered, a little shorter than the leaves; corolla tubular, hardly longer than the calyx. 

16. **F. Native of N. Africa.** Oldenlandia tenuo'folia, Blum. fl. ind. 38. t. 14, f. 1. is referrible to this species, as the figure given agrees very well with it.

17. **Scabrous Oldenlandia.** Pl. ½ foot.

18. **O. Gram'miphora (D. C. I. c.)** plant decumbent, much branched, smoothish; leaves linear; stipulas of 2-3 setaceous divisions; pedicels axillary, 1-flowered, about equal in length to the leaves, twin or crowded; corolla hardly longer than the calyx. 

19. **F. Native of the East Indies and Arabia.** Hedyotis grammiphora, Lin. fl. suppl. p. 119. Vahl. symb. 2. p. 27. Spreng. prod. 2. p. 29, exclusive of the syn. of Pluk, which is referrible to Molíggo Cerváena. 

20. **F. Native of Senegal.** Oldenlandia grammiphora, Lin. fl. suppl. p. 119. Vahl. symb. 2. p. 27. Spreng. prod. 2. p. 29, exclusive of the syn. of Pluk, which is referrible to Molíggo Cerváena. 

21. **F. Native of Senegal.** Oldenlandia grammiphora, Lin. fl. suppl. p. 119. Vahl. symb. 2. p. 27. Spreng. prod. 2. p. 29, exclusive of the syn. of Pluk, which is referrible to Molíggo Cerváena. 

22. **F. Native of Senegal.** Oldenlandia grammiphora, Lin. fl. suppl. p. 119. Vahl. symb. 2. p. 27. Spreng. prod. 2. p. 29, exclusive of the syn. of Pluk, which is referrible to Molíggo Cerváena.
to the leaves. O. F. Native of Tranquebar and Java. He-
dyotis pinnata. Lin. fil. suppl. 119. Spreng. pg. 2. p. 34. 
bijdr. p. 971. Flowers white.

Dwarf Oldenlandia. Pl. decumbent.

13 O. LINIFOLIA (D. C. l. c.) leaves linear, attenuated at both 
ends; peduncles 1-flowered, longer than the leaves. O. F. 
Native of the East Indies. Hedyotis linifolia, Willd. mss. in 
Rom. et Schultes, syst. 3. p. 526. The rest unknown.

Flax-leaved Oldenlandia. Pl. decumbent.

14 O. VIRGATA (D. C. l. c.) plant very slender, glabrous; 
stems tetragonal; leaves linear; stipulas furnished with very 
short bristles, at length truncate; peduncles twin, 1-flowered, 
elongated: the ultimate ones disposed into a kind of terminal 
pinnacle; pedicels opposite, from the axis of the bracts, longer 
than them, and about equal in length to the internodes. O. F. 
Native of Guinea (ex Willd.), in the rice-fields of Casamance 
and Gambia (ex Perrottet and Leptier), and Sierra Leone (ex 
Schum. pl. guin. p. 69. Flowers and fruit very small. Leaves 
8-9 inches long. Stamens a little exerted.

Twiggly Oldenlandia. Pl. ¾ foot.

15 O. ASPERULE (D. C. l. c.) plant glabrous; stem erect, 
branched, tetragonal; leaves distant, linear, ciliated at the 
base; stipulas entire, cupular, truncate; pedicels straight, 1-flowered, 
rising from the axis of the upper leaves, which are almost 
aborted. O. F. Native of Ceylon, where it was collected by 
Leschenault. Habit almost of the species of Aspérula. 
Corolla greenish in the dried state, also glabrous in the throat, 
4-cleft. Anthers pedicellate, shorter than the lobes of the coro-
Lobes of calyx short, distant. Perhaps this plant ought to be 
removed from the genus.

Woodroof-like Oldenlandia. Pl. ¾ foot.

16 O. DIFFUSA (Roxb. fl. ind. 1. p. 444) stem terete, flaccid, 
spreading, scabrous; leaves linear-lanceolate, acute, smooth; 
spatulas at length of many bristles; peduncles axillary, 1-flow-
ered, 4-times shorter than the leaves. O. F. Native of the 
East Indies, at Banda. Corolla smooth, white. Stigma pro-
fusely bilab. Capsule roundish. Perhaps only a variety of 
O. biflora.


* * Peduncles 2-3 or many-flowered.

17 O. BIFLORA (Lin. spec. 174.) stems erect, weak, scabrous; 
leaves linear-lanceolate, rather scabrous while young; stipulas 
membranous, lanceolate, with ciliated fringed edges; peduncles 
axillary, shorter than the leaves, 2-3-flowered; corolla glabrous 
inside; anthers length of the lobes of the corolla. O. F. 
Native of the East Indies, Philippine Islands; and of Guinea, at 
Cape Coast, plentiful in the rainy season. Roxb. fl. ind. 1. p. 
445. Hedyotis biflora, Smith, in Rees’s cycly. 17. no. 15. Spreng. 
pug. 2. p. 31. Horn. Hort. hafn. 1. p. 130. Gerontogea 
biflora, Cham. et Schlecht. in Linnaea. 4. p. 155. Hedyotis 
diffusa, Willd. spec. 1. p. 566. Old. dichótoma, Willd. herb. ex 
Cham. et Schlecht. Burm. fl. zeyl. t. 11. Flowers small, white.


18 O. ALSINIFOLIA; glabrous; leaves membranous, lanceo-
late, tapering to both ends; peduncles axillary, few-flowered; 
spatula bristly at top; teeth of calyx distant. O. F. Native 
of Pulo-Penang. Hedyotis alsinifolia, R. Br. in Wall. cat. no. 
873. Plant diffuse.

Chickweed-leaved Oldenlandia. Pl. ½ to ¾ foot.

19 O. BRACHÝYODA; plant glabrous, diffusely branched; 
leaves linear, with revolute edges; peduncles short, axillary, 
bearing at the top an umbel of short pedicellate flowers, or the
white and tasteless; it is the bark only that is possessed of the colouring principle; when fresh it is orange-coloured, tingles the spicy yellow, and leaves a slight degree of acrimony on the point of the tongue, for some hours after chewing; to appearance it loses its yellow colour on drying, but still retains the above property on being chewed. It impregnates cold water or spirits with a straw-colour, and to boiling water it gives a brownish porter colour. The watery infusions and spirituous tinctures are changed into a bright and deep red by alkaline substances, and are rendered paler or nearly destroyed by acids. The colouring powers of this root are said to improve by keeping 2 or 4 years. When the wild sort can be had in any quantity, it is esteemed one-third or fourth stronger, and yields a better colour; and when these roots can be had of two years' growth they are reckoned still better. This plant is the Tseri-vello of the Telingas; and the Saya-ver or Imburel of the Tamuls. The Telunga physicians do not give any part of the plant a place in their Materia Medica; but the Malabar physicians say that the roots cure poisonous bites, colds, and cutaneous disorders, and warm the constitution.


26 O. **fune'cula**; downy in every part; leaves linear-lanceolate, mucronate; peduncles axillary or from the forks of the stems, bearing each a simple umbel of flowers, or 3 pedunculate umbels of flowers, rising from 2 leaves. O. H. Native of the East Indies. O. pubérula, R. Br. in Wall. cat. no. 884.

**Downy Oldenlandia.** Pl. ² foot.

27 O. **capilla'ris** (D. C. prod. 4. p. 426.) stem ascending, teretely tetragonal, and rather scabrous along the angles, much branched; leaves linear-lanceolate, rather scabrous; stipulas small, with setaceous bristles; peduncles axillary and terminal, loosely panicked, longer than the leaves, very slender, 2-4-6-flowered; flowers opposite, on long pedicels. O. F. Native of Madras. Corolla small, tubular. Capsule globose, glabrous.

**Capillary Oldenlandia.** Pl. ² foot.

28 O. **panicula'ta** (Lin. spec. p. 1667.) plant glabrous, erectish, branched; branches tetragonial; leaves ovate-lanceolate; stipulas small, undivided; racemes axillary and terminal, almost naked; pedicels longer than the leaves; corolla with a gibbous tube and a villous throat. O. F. Native of the East Indies, Moluccas, and Philippines.—Burm. fl. ind. 28. t. 15. f. 1. Hedyotis racemosa, Lam. dict. 3. p. 76. ill. 62. f. 2. Leaves smooth. Flowers small. Hedyotis dichotoma, Cav. icon. 6. p. 573. f. 2. and H. média, Cav. icon. 6. p. 574. f. 1. according to Bartling is probably distinct from this. Flowers small, red, on long pedicles.


**Panicled Oldenlandia.** Pl. creeping.


**Pentanodors Oldenlandia.** Pl. procumbent.

30 O. **multil'o'a** (Cav. icon. 6. p. 53. t. 574. f. 2.) glabrous; stem branched, furrowed, ascending; leaves sessile, ovate-oblong; stipulas small, undivided; peduncles axillary, opposite, and terminal, many-flowered; peduncles 3-flowered, elongated.—Native of the Philippine Islands, about Manilla, not of the Friendly Islands, as said by Poiré and Ramer. Very nearly allied to O. paniculata.

**Many-flowered Oldenlandia.** Pl. 15 foot.

31 O. **cras'sispi'lia** (Bartl. in herb. Henke, under Hedyotis) plant glabrous, suffruticosse, diffuse; branches tetragonal; leaves ovate or oblanceolate, oblong, fleshy; peduncles axillary and terminal, 3-flowered, usually shorter than the leaves; pedicels shorter than the flowers; segments of calyx lanceolate, short. —Native of the Island of Luzon, one of the Philippines.

**Thick-leaved Oldenlandia.** Pl. diffuse.

32 O. **strigulo'sa** (Bartl. in herb. Henke, under Hedyotis, ex D. C. l. c.) plant herbaceous, branched, erectish; leaves ovate-oblong, beset with very minute ciliates dots above, and with adpressed stipules beneath; stipulifrons, linear-subulate; peduncles axillary and terminal, longer than the leaves, 3-flowered; pedicels hardly any; calyx segments ovate-triangular. —Native of the Island of Mariane.

**Stri'gulose Oldenlandia.** Pl. ½ foot.

33 O. **ovati'folia** (D. C. prod. 4. p. 427.) plant almost stemless, villous; stem short, simple; leaves ovate, ciliated, on short petioles, white beneath; peduncles 3-4 together, rising from the top of the stem, trichotomous, slender, twice the length of the leaves. O. F. Native of the Philippine Islands at Manila. Hedyotis ovatifolia, Cav. icon. 6. p. 537. f. 1. Spreng. sys. 1. p. 414. Corolla pale red, hardly a line long. Stamens exerted.

**Ovate-leaved Oldenlandia.** Pl. ½ foot.

34 O. **al'ata** (Kom. in Röxh. fl. ind. 1. p. 442.) plant glabrous, erect; stem tetragonial, branched, leaves almost sessile, elliptic-oblong, smooth, rather fleshy; stipulas broad, crenately toothed, obtuse; panicule terminal, leafy; corolla ventricose, with the throat closed by villi; capsule somewhat compressed, furnished with a somewhat winged nerve on both sides. O. F. Native of the East Indies, Java, Timor, &c. on the edges of rice-fields. Old. alata, Wall. in herb. Puer. Hedyotis ramosissima, Blum. bijdr. p. 972. but not of Fisch. Perhaps Hedyotis paniculata, Lam. ill. 1412. but the figure in Burm. ind. t. 71. f. 2. cited for this plant has 5-clawed flowers, and is consequently not it. From the capsules being furnished with a somewhat winged nerve on each side, it comes very near to the genus Gonotheca. Flowers small, white.

**Wingel-nerved-capsulate Oldenlandia.** Pl. ½ foot.

35 O. **macrophyl'la** (Lepr. et Perr. miss. under Hedyotis, ex D. C. prod. 4. p. 427.) plant glabrous, erect, branched; leaves sessile, lanceolate, acuminate; stipulas undivided; peduncles axillary, racemose, longer than the leaves; pedicels in 4-5 opposite pairs.—Native of the Gambia, in rice-fields at Albreda, where it was collected by Leprieur and Perrottet. Allied to O. alata. Capsule somewhat turbinate, and probably furnished with a nervèd wing on each side.

**Long-leaved Oldenlandia.** Pl. ½ foot.

36 O. **læc'tea** (Cham. et Schlecht. in Linnaea. 4. p. 159. under Gerontogea) stem terete, pubescent; leaves linear-lanceolate, acute at both ends, flat; stipulas bidentate, scarious; peduncles terminal; corollas villous inside; anthers oblong, exerted. O. F. Native of the East Indies. Hedyotis lactea, Wight in ann. hort. t. 35. p. 3. H. cymosa, Spreng. sys. 1. p. 413? Flowers cream-coloured.

**Milk-coloured-flowered Oldenlandia.** Pl. ½ foot.

37 O. **fe'tida** (Forst. prod. p. 55.) plant suffruticosse; leaves spathulate; stipulas almost entire; corynbs trichotomous. O. F. Native of the Island of Tongatabu. Hedyotis fa'tida, Spreng. pug. 2. p. 28. Gerontogea fa'tida, Cham. et Schlecht. in Linnaea. 4. p. 154. The leaves in Forster's specimen are elliptic and acute.

**Fetid Oldenlandia.** Pl. ½ foot.

38 O. **micro'tica** (Cham. et Schlecht. in Linnaea. 4. p. 169. under Gerontogea) plant herbaceous, erect, much branched;
leaves petiolate, ovate-lanceolate, acuminate, scabrous above; stigmas small, downy, dentately ciliated; flowers disposed in loose cyme terminal panicles. O. F. Native of Mexico, at Baranca de Tioscolos, in shady places, where it was collected by Deppe and Schlecht.—Chichin-tzontapatico de Ocoptelayeche. Hern. mex. p. 366. Corolla funnel-shaped, a line or more long. Capsules small. A larger variety of this is found about Taxmico, ex Cham. et Schlecht. in Linnaea. 6. p. 414.

Small-sheathed Oldenlandia. Pl. 1 to 1½ foot.

39 O. DEPEPAN A (Cham. et Schlecht, in Linnaea. 5. p. 169. under Gerontogea) plant shrubby, much branched, erect, glabrous; leaves petiolate, ovate-lanceolate, tapering into the petiole, firm, much acuminate, rather revolute, and scabrous on the margins; stigmas white, beset with glandular down, sessily jagged: the bristles thickened and glandular at the apex; flowers disposed in loose panicles at the ends of the branches. P. S. Native of Mexico, at San Andres, where it was collected by Schiede and Deppe. Gerontogea Deppeana, Link and Otto, neu abhild. t. 36. Leaves large, but hardly an inch long. Corolla about 3 lines long. Anthers bluish. Flowers sometimes only 3-parted.

Deppe's Oldenlandia. Shrub 1 foot.

40 O. SPERGULCEAE (D. C. prod. 4. p. 428.) plant erect, almost simple, hairy; leaves oval-oblong; stipulas cupulate, mucronate; peduncles almost terminal, elongated, many-flowered, naked, calyx glabrous; corolla tubular; anthers sessile; style at length bipartite to the base. O. H. Native of Nipaul. Herb a finger in height, with the habit of Sparganium. Upper leaves usually 4 in a whorl. Peduncles glabrous. From the dehiscence of the capsule it agrees with O. conoida; but is very different in habit.

Spurrey-like Oldenlandia. Pl. ½ foot.

41 O. BOTUNDOPIA (Ham. ex Wall. cat. no. 6190. under Hedyotis) leaves elliptic-ovate, rounded at the apex, downy, but most particularly so on the veins beneath, close together; peduncles long, axillary, and terminal, panied. O. H. Native of the East Indies, at Golaepara. Hedyotis scapigera, R. Br. in Wall. cat. no. 881.

Round-leaved Oldenlandia. Pl. ½ to 1½ foot.

42 O. MARITIMA; plant glabrous; stems erect; leaves linear or lanceolate, acute, with revolute edges; panicles terminal, erect; peduncles swelling toward the top, angular, erect; teeth of calyx distant. O. S. Native of the East Indies, by the sea-side. Hedyotis maritima, Wall. cat. no. 6192. Old, gramminifolia, Wall. Old, stricta, herb. Russ. Sea-side Oldenlandia. Pl. 1 foot.

43 O. OXYPHYLLA; glabrous; leaves linear-lanceolate, tapering to both ends; peduncles terminal and axillary, dichotomous, panied; pedicels short, bracteate; teeth of calyx distant. O. S. Native of the mountains of Silhet. Hedyotis oxyphylla, Wall. cat. no. 6193. Leaves like those of the weeping willow. Stipulas broad at the base, ending in 2 subulate points at the apex, and a small tooth on each side. Sharp-leaved Oldenlandia. Pl. 2 to 3 feet.

44 O. HEYNEI; glabrous; leaves linear; stems diffusely branched, panied; pedicels slender, 2-6 together; stipulas bifid, short; teeth of calyx distant. O. P. Native of the East Indies. Hedyotis Heynei, R. Br. in Wall. cat. no. 867. Oldenlandia herbacea, Heyne and Roxb. but not of Lim. Flowers white.

Heyne's Oldenlandia. Pl. 1 foot, diffuse.

45 O. TUBULOSA; glabrous, erect; leaves ovate, acute; peduncles terminal and axillary, umbrellate or capitiate; flowers crowded, almost sessile; tube of corolla long, slender. O. F. Native of the East Indies. Hedyotis tubularis, R. Br. in Wall. cat. no. 876. Hedyotis minima, Heyne, in Wall. cat. no. 857.

Table 1-flowered Oldenlandia. Pl. ½ to 1½ foot.

46 O. MYSORENSIS; downy; stems quadrangular; leaves ovate, acute, clothed with rusty down on the nerves and veins beneath, and on the petioles, ciliated on the margins; peduncles terminal and axillary, racemose, branched; flowers almost sessile. O. F. Native of Mysore. Hedyotis Mysorenensis, Heyne ex Wall. cat. no. 882.

Mysore Oldenlandia. Pl. 1 foot.

Species not sufficiently known.

47 O. VSIPDA (Roth, nov. spec. p. 93. under Hedyotis) the whole plant is hispid from bristles; stem ascending, dichotomous, terete; leaves petiolate, ovate-lanceolate; stigmas sessily toothed; peduncles axillary, bearing few-flowered umbels; corolla twice the length of the calyx lobes.—Native of the East Indies. Anthers linear, length of corolla. Hedyotis indica. Rox. et Schultes, syst. 3. p. 195.

Hispid Oldenlandia. Pl. ½ foot, procumbent.

48 O. ASPERA (Roth, nov. spec. p. 94. under Hedyotis) the whole plant is roughish from papillae; stem straight, filiform, terete; leaves linear-subulate; stipulas linear-subulate, a little toothed; raceme terminal, pedunculate, sub-fassiculate, naked; teeth of calyx linear, 4-times shorter than the tube of the corolla.—Native of the East Indies. Hedyotis asperta, Spreng. syst. 1. p. 415. The stamens being inclosed, it is very doubtful whether it belongs to this genus.

Rough Oldenlandia. Pl. ½ foot.

49 O. AFFINIS (Roxb. et Schultes, syst. 3. p. 194. under Hedyotis) plant erect, much branched; branches rather tetragonal, scabrous at the angles; leaves linear, acuminate, finely ciliated; stipulas tridentate; peduncles disposed in a loose, divaricate, dichotomous panicle; corolla twice the length of the calyx.—Native of the East Indies. Hedyotis dichotoma, Roth. nov. spec. p. 93. but the Oldenlandia dichotoma of Spreng, now called Vahlia dichotoma, is a very distinct plant. Corolla blue. Anthers inclosed, and therefore it ought to be excluded from the present genus, but it is said to be nearly allied to O. biflora and O. herbacea.

Allied Oldenlandia. Pl. ½ foot.

50 O. HISIRUTA (Lin. fil. suppl. p. 127.) stem herbaceous, diffuse, and are as well as the calyces hispid; leaves ovate, acute, petiolate, veiny; peduncles axillary, bearing few-flowered umbels.—Native of Java. Hedyotis hisiruta, Spreng. pug. 2. p. 35.

Hairy Oldenlandia. Pl. diffuse.

51 O. PUSILLA (Roth, in Wildl. act. amœn. nat. cur. berol. 4. p. 216.) stem branched, tetragonal, rough; leaves linear, acuminate; racemes axillary, simple, few-flowered.—Native of the East Indies. Hedyotis attenuata, Wildl. l. c. Said to be allied to O. grammisifolia.

Small Oldenlandia. Pl. ½ foot.

52 O. NEILLII (Forst. prod. no. 56.) leaves ovate, sessile; umbels axillary, pedunculate, few-flowered.—Native of the Island of Tongatabu. The rest unknown.

Weak Oldenlandia. Pl?.


Zanquebar Oldenlandia. Pl. ½ foot.

54 O. DEPRESSA (Willd. spec. 1. p. 675.) stem diffuse; leaves elliptic, petiolate, glabrous; peduncles axillary, twin, 1-flowered.—Native of the East Indies. Hedyotis depressa, 3 y 2
RUBIACEÆ.  LXXVIII. GONOTHECA.  LXXIX. KOHAUTIA.

N. B. Oldenlândia nudicáulis, Roth, nov. spec. p. 96, and Old. maritima, exclusive perhaps of the synonyme of Lin., differs from this genus in the flowers being of 4 distinct petals, and in the word of stipulas; they therefore even do not belong to Rubiaceæ, but are probably Caryophyllaceous plants.

Cult. The species are not worth cultivating, unless in botanic gardens. A very sandy soil suits them best, and cuttings of the shrubby kinds will root in sand, under a hand-glass, or by seeds. The annual kinds should be treated like other tender annuals, by being raised on a hot-bed, and afterwards planted out. All the species require a considerable degree of moisture.

LXXVIII. GONOTHECA (from γωνία, gonia, an angle, and ἄφθρον, theke, a sheath; in reference to the capsule, which is furnished with a double wing on each side). Blum. non ex D. C. prod. 4. p. 429. but not of Rafin.—Hedyótis species, Blum. bijdr.

LIN. SYST. Tetrandria, Monogynia. Calyx with a somewhat compressed tube, and a short truncate somewhat 4-toothed limb. Corolla having the tube inflatet at the base, the throat villons, and the lobes keeled. Stamens inclosed. Style wanting; stigmas 2, obtuse. Capsule compressed, margined by a double wing on both sides, which runs down the pedicel, crowned by the tube and short limb of the calyx, and decorralling between the stigmas, membranous, 2-celled. Seeds numerous, ovate, small, scrobicular. —A glabrous, erect herb, with the habit of Oldenlândia. Stem divaricate, quadrangular. Leaves lanceolate, almost sessile. Stipulas toothed. Cymes pedunculate, axillary, and terminal, and flowered, few-flowered.


Blume’s Gonotheca. Pl. ½ foot.

Cult. See Kédua, p. 533. for culture and propagation.

LXXIX. KOHAUTIA (in memory of Francis Kohaut, who collected many plants and other objects of natural history in Senegal). Cham. et Schlecht. in Linnaea. 4. p. 156. D. C. prod. 4. p. 429.—Knóxia and Hedyótis species of authors.

LIN. SYST. Tetrandria, Monogynia. Calyx with an obovate tube; teeth acute, separated by acute recesses while in flower, but at last by very broad ones. Corolla with a long terete tube, and oval-lanceolate lobes, which are usually cuspitate by a mucron. Anters sessile, within the tube, inclosed under the throat. Style shorter than the anthers, bifid at the apex. Capsule globose, membranous, crowned by the teeth of the calyx, 2-celled, dehiscing at the cells. Seeds innumerable, small, half immersed in pits on the placentas, which are globose and stand on short pedicels. —Erect, twiggy, glabrous, branched herbs, with the habit of Aspérula. Leaves opposite, linear, or linear-lanceolate. Stipulas joined to the petioles, furnished with one or few bristles. Cymes terminal, corymbose, or loosely spicate.

1 K. GRANDIFLORA (D. C. prod. 4. p. 430.) leaves linear, lower ones the broadest, and nearly lanceolate; uppermost ones very slender and subulate; stipulas membranous, connecting the petioles; lower ones cuspidate in the middle, the rest furnished with 2 bristles on both sides; flowers trichotomously corymbose; lobes of corolla oval, mucronate. ♀ S. Native of Senegal, from which place it was sent by Bacle, under the name of Hedyótis herbaceæ; and in sandy places at Kounonn, where it was collected by Perrotet and Leprieur. Tube of corolla 6 lines long, and the lobes 3 lines long and 1½ broad.

Great-flowered Kohautia. Shrub ½ to 1 foot.

2 K. SÈNGGALÈNSIS (Cham. et Schlecht. in Linnaea. 4. p. 156.) leaves linear; floral ones subulate; stipulas with very narrow margins, joining the petioles, furnished with 2 bristles; flowers on short pedicels along the branches and at their tops, distant; lobes of corolla lanceolate. ♀ S. Native of Senegal. Knóxia Senegalensis, Reichh. in Sieb. fl. seneg. exsic. no. 9. Tube of corolla 4½ lines long; and the lobes 2½ lines long.

Senegal Kohautia. Shrub ½ to 1 foot.

3 K. STRÎCTA (D. C. prod. 4. p. 430.) leaves linear, with sub-revolute margins; stipulas joined to the petioles by a very narrow margin, furnished each with 2 short bristles; flowers trichotomously corymbose; lobes of corolla oblong-linear. ♂ S. Native of Senegal at Walo and Lampar, where it was collected by Leprieur and Perrotet; and at Sierra Leone by Afzelius. Hedyótis stricta, Smith, in Rees’s cyc. vol. 17, no. 21, but not of Wall. Root simple, perpendicular, white. Tube of corolla 5 lines long; and the lobes 2½ lines long and hardly a line broad.

Straight Kohautia. Pl. ½ foot.

4 K. Longiflóra (D. C. prod. 4. p. 430.) leaves linear, hardly acute; stipulas short, with many bristles; bristles spreading a little, length of membrane; flowers pedicellate along the branches on one side; corolla with a very long tube, and linear, hardly acute lobes. ♀ G. Native of the south of Africa, where it was collected by Burchell, ex cat. geogr. no. 1987. Tube of corolla 7 lines long; and the lobes 3 lines long, and scarcely a line in breadth. Teeth of calyx short. Pedicels 2½ lines long.

Long-flowered Kohautia. Pl. ½ foot.

5 K. CYNÁNCHICA (D. C. prod. 4. p. 430.) leaves linear, acute; stipulas membranous, joining the petioles; bristles reflexed, twin on both sides, at last deciduous; corybas few-flowered; lobes of corolla linear, hardly acute. ♀ G. Native of the south of Africa, where it was collected by Burchell, ex cat. geogr. no. 772. Capsule turbinate. Teeth of calyx short. Tube of corolla 3 lines long; with the lobes a little shorter than the tube.

Cyananchica-like Kohautia. Shrub ½ to 1 foot.

6 K. Setîfera (D. C. prod. 4. p. 430.) leaves linear, cuspidately mucronate, with somewhat revolute edges; stipulas membranous, joining the petioles, cleft into 4 spreading bristles on both sides, which are longer than the membrane; corybas few-flowered; lobes of corolla short, oval. ♀ G. Native of the south of Africa, where it was collected by Burchell, ex cat. geogr. no. 2392. Plant hardly a hand high. Bracteas stipulaceous, membranous, multifid. Tube of corolla hardly 2 lines long.

Bristle-bearing Kohautia. Pl. ½ foot.

7 K. GRÀCIALIS (D. C. l. c.) leaves linear; branches and peduncles compressed; stipulas truncate, fringed, at length naked; flowers on long peduncles, rising from the forks and from the tops of the branches; lobes of corolla linear-lanceolate, blunting, a little shorter than the tube. ♂ F. Native of Niaoul. Hedyótis stricta, Wall. act. soc. asiât. 13. p. 369, but not of Smith. Hedyórís gràciælis, Wall. in Roxb. fl. ind. p. 377. Hed. ìäs, Hamilt. ex D. Don, prod. fl. nep. p. 134. Tube of corolla 4 lines long; and the lobes 3 lines long, and hardly a line broad.

Slender Kohautia. Pl. ½ to 1 foot.

Cult. For culture and propagation see Oldenlândia above.
LXXII. KADUA. LXXIII. ANOTIS.


Linn. Syst. Tetradria, Monogynia. Calyx with a hemispherical tube, and a 4-creft or 4-toothed limb. Corolla coriaceous, glabrous inside, salver-shaped: with a long tube and a 4-creft limb. Genitalis inclosed. Anthers linear or oblong, almost sessile within the tube. Style filiform, thickest at the apex and bident: lobes bearing papillae inside. Capsule globose or elliptic, 2-celled, half adnate to the calyx, which is sometimes dry and sometimes fleshy, usually crowned by the segments of the calyx, dehiscing at the cells at the apex. Seeds immeasurable, small, angular, inserted in the placenta, which are spongy, and fixed to the middle dissepiment.—Smooth Australian sub-shrubs. Leaves opposite. Stipula soliaty on each side, acute, entire. Flowers in terminal cymes or solitary and axillary, pedunculate.

1. K. Cookiana (Cham. et Schlecht. in Linnaea. 4. p. 158.) branches opposite, terete; leaves linear, acute, with revolute margins; flowers few, terminal; capsule beaked at the apex. &. G. Native of the Island of O-Wahu. The beak of the capsule having both a loculichal and septicidal dehiscence at the same time, hence the capsule is at length apparently 4-beaked.

Cook's Kadua. Shrub ½ to 1 foot.

2. K. cordata (Cham. et Schlecht. l. c. p. 160.) branches almost terete; leaves sessile; upper ones coriaceous, acuminated, coriaceous; cymes dichotomous and trichotomous, leafy; capsule turbinate hemispherical, beakless. &. G. Native of the Island of O-Wahu. Lower leaves oblong-lanceolate.

Cordate-leaved Kadua. Shrub ½ to 1 foot.

3. K. glamera (Hook. et Arn. in Beech. voy. pt. bot. p. 85.) lower parts of branches almost terete, upper part compressed; leaves oblong-lanceolate, suddenly contracted at the base into a very short pedicel; pedicels terminal, with elongated opposite branches, bearing each 2 falcate bracteas at the apex, and glomerate flowers; calyx and corolla downy. &. G. Native of the Sandwich Islands. The flowers may be said to be axillary, pedunculate, capitate, if the axis of the pedicle be viewed as a continuation of the branch. Teeth of calyx linear, stiff.

Glomerated-flowered Kadua. Shrub ½ to 1 foot.

4. K. Arnottii: plant erect, glabrous, branched; leaves oblong, on short pedicles; stipulae undivided, triangular; flowers disposed in fssicles in the axils of the superior leaves, the whole forming interrupted racemes; calyces downy; tube of corolla very long, terete: lobes obtuse, revolute; style bipartite to the base. &. G. Native of the Sandwich Islands, where it is called by the natives Kire. Hedychium conostyla, Gaud. in Freyc. voy. pt. bot. p. 471, t. 91. Oldenlandia conostyla, D. C..prod. 4. p. 428. Nearly allied to the preceding species, according to Arnott. Arnott's Kadua. Shrub ½ to 1 foot.

5. K. Menziesiana (Cham. et Schlecht. l. c. p. 160.) branches tetragonal; leaves elliptic, petiolar, bluntly acuminate, downy beneath at the base; stipulae glandular, truncate; cymes terminal, few-flowered; peduncles compressed, downy; drupe rather convex at the apex. &. G. Native of the Island of O-Wahu.

Menzie's Kadua. Shrub ½ to 1 foot.

6. K. Smithii (Hook. et Arn. in Beech. voy. pt. bot. p. 86.) branches terete, but compressed towards the tops; leaves coriaceous, ovate-elliptic, glabrous, petiolar; stipulae triangular, bluntly apiculate; pedicel terminal, trichotomous, decuse; calyces and corollas downy. &. G. Native of the Sandwich Islands. Hedychium coriaceum. Smith, in Rees's cycl. vol. 17. no. 11. The tube of the corolla is long, and the segments of the limb are deflexed, with long-acuminated recurved points.

Smith's Kadua. Shrub ½ to 1 foot.

7. K. centranthoides (Hook. et Arn. in Beech. voy. pt. bot. p. 85.) branches tetragonal, densely leafy; leaves ovate-oblong, obtuse, or somewhat acuminate, on short pedicels, rather coriaceous; stipulae furnished with a sub-glandular mucron; flowers terminal, 1-3 together, pedicellate; drupe obovate. &. G. Native of the coral island, called Romanzoff's Island.

Romanzoff Island Kadua. Shrub ½ to 1 foot.

8. K. acuminata (Cham. et Schlecht. l. c. p. 163.) branches terete, compressed towards the tops; leaves lanceolate, long-acuminated, distinctly petiolate, rather coriaceous; stipulae triangular, acuminate; flowers axillary, usually twin, pedicellate; the teeth of calyx narrow-lanceolate, equal in length to the tube of the corolla; capsule globose. &. G. Native of the Sandwich islands, particularly of O-Wahu.

Acuminated-Leaved Kadua. Shrub ½ to 1 foot.

9. K. bordentia (Cham. et Schlecht. l. c. p. 164.) branches tetragonal, wrinkled transversely; leaves elliptic-lanceolate, acute, obtuse at the base, on short pedicels; stipulae membranous, deciduous, toothed a little on both sides; corolla thiroid, terminal; drupe nearly globose, crowned by the remaining part of the calyx, indehiscent. &. G. Native of the Island of O-Wahu. Flowers unknown.

Allied Kadua. Shrub ½ to 1 foot.

Cult. None of the species are worth cultivating, except in botanic gardens. They will grow in any light soil; and will be easily increased by cuttings planted under a glass-house, or by seed, which latter mode will be preferable.

LXXIII. ANOTIS (from a priv. awc wroc, qux olos, an ear; there are no accessory teeth to the calyx). D. C. prod. 4. p. 431.

Hedychium specios, Ruiz et Pav. et Cav.—Houstonia species, Lin. and others.

Linn. Syst. Tetradria, Monogynia. Calyx with an obovate tube, and a 4-toothed limb (f. 96. a.) teeth acute, separated by acute recesses, with no accessory ones. Corolla salver-shaped (f. 96. b.), having the tube a little longer than the lobes; limb 4-creft; throat almost glabrous. Anthers inclosed or a little exserted (f. 96. c.). Stigma somewhat 2-lobed (f. 96. c.). Capsule ovate, crowned by the calyx, 2-celled, with a loculichal dehiscence at the apex. Seeds 4-8 in each cell, ovate, and rather angular.—Subshrubs and herbs, natives of America. Leaves opposite, linear, mucronate or oval. Stipulas undivided or toothed. Flowers terminal, solitary or corymbose. This genus is nearly allied to Ruchiedillas, but differs from that genus in the want of accessory teeth to the calyx, whence the generic name. The genus probably contains the types of 3 different genera, which it may hereafter be necessary to separate.

Sect. 1. Erichtio. (this name has been given to this section on account of the plants contained in it having the habit of heaths). D. C. prod. 4. p. 431. Heath-like small shrubs, rarely herbs. Leaves linear, mucronate. Corolla salver-shaped, having the tube longer than the lobes (f. 96. d.). Tube of calyx almost adnate with the ovary to the apex.
1 A. filiformis D. C. prod. 4. p. 431.) stems herbaceous, creeping, much branched, tetragonal, glabrous; leaves sessile, linear, apiculate, rather ciliate; stipules small, ciliate; flowers solitary, terminal, almost sessile; anthers exerted. 2. F. Native of Peru, on the Andes, in frigid places. Hedyotis filiformis, Ruiz et Pav. fl. per. 1. p. 67. t. 87. f. b. Habit of a species of Galium. Corolla white; limb spreading at first, but reflexed at last. Lobes of calyx lanceolate, acute. Capsule ovate. (f. 96.)

Filiform Anotis. Pl. proc.

2 A. conferta (D. C. prod. 4. p. 431.) stem creeping, much branched; branches ascending, tetragonal; leaves linear, apiculated, flat, glabrous; stipulas subulate; flowers terminal, solitary; anthers at the throat. 2. F. Native of Peru, on the Andes of Tarma and Cantun. Hedyotis conferta, Ruiz et Pav. fl. per. 1. p. 57. t. 87. f. a. Leaves 2-3 lines long. Corolla white. Capsule glabrous, emarginate.

Crowded Anotis. Pl. climbing.

3 A. hypnoides (D. C. prod. 4. p. 432.) stems suffruticos, creeping, tufted; branches tetragonal; leaves sessile, linear-lanceolate, glabrous, piliiferous at the apex; stipulas subulate at the apex; flowers terminal, solitary, sessile; anthers exerted. 2. F. Native of the province of Quito, in very cold places of the Andes, about Assnaya. Houstonia bryoides, Willd. herb. ex Kunt. Hedyotis hypnoides, H. B. et Kunt, nov. gen. amer. 3. p. 389. Leaves hardly a line long. Corollas white.

Hypanum-like Anotis. Pl. creeping.

4 A. juniperifolia (D. C. prod. 4. p. 432.) plant suffruticos, procumbent, much branched; branches tetragonal; leaves linear, apiculated, sessile, with revolute edges; stipulas ovate, acute; flowers terminal, tern, pedicellate. 2. F. Native of Peru, in high frigid places of the Andes, of Tarma, and Cantun. Hedyotis juniperifolia, Ruiz et Pav. fl. per. 1. p. 57. t. 87. f. c. Corollas unknown.

Juniper-leaved Anotis. Pl. proc.

5 A. microphylla (D. C. l. c.) stems suffruticos, creeping; branches nearly terete; leaves oblong, glabrous on short pedicels, piliferous at the apex; stipulas tridentate at the apex; flowers solitary, sessile, terminal, but at length lateral; anthers exerted; cells of capsule 4-5-seeded. 2. F. Native of Peru, near the mines of Guanayaco, and the city of Minijampa. Hedyotis microphylla, H. B. et Kunt, nov. gen. amer. 3. p. 389. Willd. in Schultes, syst. 3. p. 526.

Small-leaved Anotis. Pl. creeping.


Cervantes’s Anotis. Shrub diffuse and tufted.

7 A. thyoides (D. C. l. c.) plant shrubby, erect, much branched; branches hairy; leaves sessile, linear, glabrous, with revolute margins; stipulas acutely bilab; corymbs terminal, trichotomous; cells of capsule 8-seeded. 2. F. Native of Peru, on high hills in the provinces of Tarma and Caxtambo. Hedyotis thyoides, Ruiz et Pav. 1. p. 56. t. 88. f. a. Leaves 5-6 lines long. Corollas white. Capsule obovate. Branchlets subtetragonal.


Var. γ. hyssopifolia (D. C. l. c.) plant suffruticosse; leaves an inch long; corymbs terminal, trichotomous. 2. F. Native of Chili, near Coquimbo; and of Peru, at Guamantanta and St. Bonaventura. Hedyotis hyssopifolia, Cav. icon. 6. p. 54. t. 575. f. 2. Corolla as in var. β. Branchlets bluntly tetragonal. Seeds larger than in any of its congeners, and is perhaps a proper species.

Thyme-leaved Anotis. Shrub 1 to 2 feet.

8 A. lariciofolia (D. C. l. c.) plant suffruticos, erect, branched, glabrous; leaves sessile, linear, acute, with hardly revolute margins; stipulas acute; peduncles 3-5-flowered, rising from the forks of the branches; anthers exerted. 2. F. Native of the Cordillera of Chili, on the highest mountains. Hed. lariciofolia, Cav. icon. 6. p. 54. t. 575. f. 1. Corolla of a redish brown colour, funnel-shaped. Capsule ovate, truncate.

Larch-leaved Anotis. Shrub ¾ to 1 foot.

9 A. setosa (D. C. l. c.) plant shrubby, erect, much branched; leaves on short petioles, ovate, acute, ciliately serrated, glabrous; stipulas connate, ovate, furnished with many bristles at the apex; flowers terminal, usually by threes. 2. F. Native of Peru, on the Andes at Churupallana and Huassa-Huassi. Hed. setosa, Ruiz et Pav. fl. per. 1. p. 56. t. 88. f. a. Corolla large, purple, with a broad terete tube, and having the lobes almost one-half shorter than the tube. Habit of Rachicädites nitida, but differs from it in the calyx being 4-lobed, without any accessory teeth. Anthers inclosed.

Bristly Anotis. Shrub 2 to 4 feet.

10 A. ericoides (D. C. prod. 4. p. 433.) leaves linear, in fascicles, furrowed; flowers terminal, subcorymbose. 2. F. Native of Peru, ex Rem. ex Schultes; and of New Granada, in icy places on the Andes, between Oma and Paramo de Sarragu, ex Kunt. The rest unknown. Hed. ericoides, Willd. herb. in Schultes, syst. 3. p. 527. and in Kunt, nov. gen. amer. 3. p. 393.

Heath-like Anotis. Shrub ½ to ¾ foot.

Sector II. Asphiodéités (asphi, amphhi, on both sides, and o vs oto, ovs oto, on ear). D. C. prod. 4. p. 433. Herbs erect. Leaves ovate, or lanceolate. Corymbs trichotomous. Corolla salver-shaped. Calyx drawn out to half the length of the ovarium only; the capsule is therefore naked at the apex.

11 A. lanceolátula (D. C. diss. ined. with a figure, ex prod. 4. p. 433.) plant glabrous; stem erect, tetragonal, with the angles a little winged; leaves sessile, lanceolate, acute, glabrous; stipulas lanceolate, membranous; corymbs trichotomous, terminal; corolla funnel-shaped; anthers exerted; capsule globose, half-adnate to the calyx. 2. F. Native of the south of Carolina, where it was detected by Bosc. Hed. lanceolátula, Poir. suppl. 3. p. 14. Genus novum, Fraser, mss. in herb. L’Her. Seeds nearly globose, 4-5 in each cell. Lobes of calyx linear, permanent, exceeding the capsule a little. Corolla purplish.
Lanceolate-leaved Anotis. Pl. 1/2 to 1/2 foot.


13 A. citrofolia; radical leaves ovate, obtuse, attenuated at the base, with ciliated edges: cauline ones ovate-spatulate, sessile; flowers corymbose, terminal, pedicellate; peduncles trichotomous; calyx segments linear-lanceolate; stem glabrous, branched at the top. 2. H. Native of North America, in Goat Island, and at the Falls of Niagara. Houstonia citroides, Torrey, fl. un. st. 1 p. 174. Hedyotis citroides, Hook. fl. amer. bor. 1 p. 286.

Ciliated-leaved Anotis. Pl. 1 foot.

14 A. purpurea; stems erect, branched at the top, and downy at the joints; leaves ovate-lanceolate or linear-lanceolate, sessile; corynbs terminal. 2. H. Native from Pennsylvania to Carolina, in dry woods. Knoxia purpurea, Lam. ill. p. 239. Houstonia purpurea, Lam. ill. 251. Hedyotis umbellata, Walt. fl. car. 85. Hed. varianis, Michx. fl. amer. bor. 1 p. 80. Flowers purple.


Sect. III. PANETOS (the plants flower all the year round). Rafin., in ann. gen. prod. phys. 5. p. 227. D. C. prod. 4. p. 433. Prostrate or creeping plants, with the habit of Anagallis. Leaves ovate-roundish. Flowers axillary and terminal, solitary. Calyx not adnate to the ovary at the apex, and therefore the capsule is naked at the top.

15 A. rotundifolia (D. C. prod. 4. p. 433.) stems herbarious, prostrate, branched; branches tetragonal; leaves nearly orbicular, on short petioles, glabrous, hardly ciliated; stipulas small; flowers axillary, solitary, on short pedicels; corolla salver-shaped, having the tube 3 times longer than the calyx; capsule half-adnate to the calyx. 2. H. Native of Carolina and Florinda, in dry exposed places by the sea side. Houstonia rotundifolia, Michx. fl. bor. amer. 1 p. 85. Ell. sketch. 1 p. 195. Anonymos procumbens, Walt. car. p. 86. Poirèia procumbens, Gmel. syst. 263. Habit of Verónica nummulariifolia. Flowers white.

Round-leaved Anotis. Pl. prostrate.

16 A. Salzmanni (D. C. l. c.) stems herbaceous, prostrate, branched; leaves nearly orbicular, on short petioles, glabrous, hardly ciliated; stipulas hardly any; flowers axillary, solitary, having the pedicels exceeding the leaves; corolla campanulate, twice the length of the lobes of the calyx, which are oval. 2. S. Native of Brazil, about Bahia frequent. Intermediate between the preceding and following species. Corollas pale red.

Salzmanni's Anotis. Pl. prostrate.

17 A. serpens (D. C. prod. 4. p. 433.) stems suffruticose, creeping, much branched; branches tetragonal; leaves roundish-ovate or elliptic, petiolate, entire, glabrous, with spinulose ciliated edges; stipulas dentately ciliated; flowers axillary, solitary, pedunculate; corolla subulate, ciliated a little; anthers a little exerted. 3. F. Native of Quino, on the burning Mount Antisana. Hedyotis sérpens, H. B. et Kunth, nov. gen. amer. 3. p. 390. t. 289. Hed. microphylla, Willd. herb. in Roem. et Schultes, syst. 3. p. 527. Houstonia microphylla, Willd. herb. 3. Corolla white, with a very short tube, and the lobes of the calyx distant as in Oldenlandia. Seeds usually 5 in each cell.

Creeping Anotis. Pl. creeping.

18 A. cærulea; plant tufted; stems erect, dichotomous; leaves ovalate-lanceolate, attenuated at the base: radical ones spatulate, and a little hairy; peduncles elongated, 1-flowered; corollas salver-shaped, with acute lobes. 2. H. Native of Virginia; and of Canada, about Quebec. Houstonia cærulea, Lin. spec. p. 152. Pursh. fl. amer. sept. 1. p. 106. Sims, bot. mag. t. 370. Houstonia Linnæi a, Michx. fl. bor. amer. 1 p. 84. Hedyotis coriacea, Hook. fl. bor. amer. 1 p. 286. A small tufted plant, with the habit of Anagallis tenuiflora, with light blue flowers. The first peduncles are 2-flowered. There is also a variety of this with white flowers.


20 A. tenella; stems creeping, filiform; leaves orbicular, acute, nerved; peduncles terminal, one-flowered, very long. 2. H. Native of North Carolina, on high mountains. Houstonia tenuella, Pursh. fl. amer. sept. 1. p. 106. Flowers purple. Very like A. serpyllifolia.

Slender Anotis. Pl. creeping.

Cult. This is a genus of pretty little plants. All the species require to be grown in small pots, well drained with sherds, in a mixture of peat and sand. They are increased by dividing at the root. Those natives of warm climates require protection in winter, by placing them in a frame or greenhouse.

LXXII. RACHICALLIS (from ράχις, rachia, a cag by the sea side, and καλλος, kallos, beauty; because the plants ornament the rocks by the sea side). D. C. prod. 4. p. 433.—Hedyotis species, Swartz, Knuth, &c.

Lin. syst. Tetrandria, Monogynia. Calyx with a hemispherical tube, and a 4-lobed limb, furnished with from 1-3 accessory teeth between each of the lobes. Corolla with a long terete tube, a short spreading bluntly 4-lobed limb, and a beardless throat. Anthers at the throat, inclosed. Stigma 2-lobed. Capsule rather dilynous, dehiscing by 2 valves at the cells, and crowned by the teeth of the calyx. Seeds 8-20 in each cell.

—Small shrubby South American plants, inhabitants of rocks by the sea side, with the habit of Passerina. Leaves oblong, fleshy, with revolute edges, sessile. Stipulas connate, unidentid or tridentate. Flowers solitary, sessile.

1 R. nitida (D. C. prod. 4. p. 433.) plant shrubby, much branched; branches crowded, densely leafy; leaves linear, acute, fleshy, with revolute margins, glabrous, and shining on both surfaces; stipulas connate, short, trifid at the apex; flowers solitary, terminal, sessile; corolla glabrous. 2. S. Native near Santa Fe de Bogotá. Hedyotis nitida, H. B. et Kunth, nov. gen. amer. 3. p. 592. Lobes of calyx 4, linear-lanceolate, fur-
nished with 2-3 linear accessory teeth between each. Anthers exerted. Capsule globose, turbinate at the base. Seeds ovate, angular, 8-9 in each cell.

**Shining Rockrascal** Shrubs 2 to 3 feet.

2 **R. repumatica** (D. C. pro. 4. p. 434.) plant shrubby, much branched; branches twisted, corky; leaves crowded in stellate fascicles, oblong, fleshy, with revolute edges, shining above; stipules connate, pubescent inside; flowers axillary, solitary, sessile; corollas villous, with a curved tube.  "Native of the Caribbean Islands, on rocks by the sea side; as of Cuba, Jamaica, &c. Hedýytis repústri, Swartz, prod. p. 29. H. B. et Kunth, nov. gen. amer. 3. p. 391. Hed. Americana, Jacq. am. p. 20. Oldenlándia repústri, Lam. dict. 4. p. 535. —Slone, Jam. t. 202. f. 1. Habit of Passerina. Corolla yellow. Calyx 4-cleft; lobes woolly inside, with 4 accessory teeth between each. Seeds ovate, angular, about 20 in each cell. This plant has been incertae sedis to the genus *Buchaea* by Smith in Reeve's cyc. vol. 17.

**Rockrascal** Shrubs 2 to 3 feet.

3 **R. Caracačana** (D. C. l. c.) plant suffrutescent, much branched; branches leafy at top; leaves oblong, acute, fleshy, with revolute margins, spreading, glabrous, and shining; flowers terminal and axillary, solitary, sessile.  "Native of South America, on the southern declivities of the mountains called Silla de Caracás. Hedýytis Caracasán, H. B. et Kunth, nov. gen. amer. 3. p. 393. Corolla violaceous.

**Caracaschi Rascaliss.** Shrubs 8 feet.

**Cult.** Elegant shrubby plants of difficult culture. A mixture of peat and sand will probably be the best soil for them, and they should be grown in pots half filled with pot-sherds. They may either be increased by seeds or by cuttings planted in sand, with a bell-glass over them. They should be placed on shelves in a green-house.

**LXXXIII. LUCYA (named by De Candolle after the late Lucy Dunal, who made many observations upon the Rubiaceae plants growing in the neighbourhood of Montpellier, as may be seen by comparing the fl. fr. ed. 3. vol. 5. p. 499., sister to Michel Felix Dunal, professor of botany at Montpellier.) D. C. prod. 4. p. 434.—Dunália, Spreng. but not of Kunth.—Hedýytis species, Swartz and A. Rich.—Peplis species, Lin.

**L. syst.** Tetrádria, Monogynía. Calyx with a hemispheric and the limb of 4 bifid ones, permanent. Corolla with a very short tube, and a 4-loved limb; lobes obtuse. Stamens shorter than the corolla. Style short, bifid. Capsule globose, dilynum, 2-celled, with a loculicidal and half septicidal dehiscence; hence the capsule appears 8-valved at the apex. Seed 2 in each cell, ex Spreng., 5-6, ex Rich.—A small herb, with the habitat of Péptis. Roots fibrous and tuberous. Stems short, glabrous. Leaves almost sessile, cordate-ovate, downy beneath; upper ones usually by fours. Flowers axillary, and nearly terminal, solitary on very short pedicels, small, white.


**Tuberous-rooted Lucy.** Herb small.

**Cult.** This plant should be treated like other tender annuals. It is not worth growing except in botanic gardens.


**L. syst.** Tetrádria, Monogynía. Calyx with a very short tube, adnate to the bottom of the ovarium, and a 4-parted limb; lobes subulate. Corolla with a very short tube, a bearded throat, and a 4-parted limb; lobes or segments oval. Stamens 4, with very short filaments, and inclosed anthers. Style 1, undivided. Capsule ovate, compressed, 2-celled, with a loculicidal dehiscence. Placentas oblong, ascending, adnate to the bottom of the dissepiment. Seeds numerous, very minute, angular, diaphanous. Embryo straight, slender, in fleshy albumen.—A glabrous herb, with the habit of *Gilium* or *Baffonia*. Leaves opposite, linear-subulate, having their bases connate from the almost entire stipular sheaths. Cymulus terminal, dichotomous, cymose, with small sessile flowers in the forks and tops of the branchlets, each flower propped by 2-4 bracteas. Corolla white.


**Procumbent Polypremium.** Pl. procumbent. **Cult.** This plant should be treated as other tender annuals.

**Tribe IV.**

**ISERTIEÆ (this tribe contains plants agreeing with the genus *létria*, in having a drupaceous fruit, containing many seeded pyrene or nuts). A. Rich. mem. soc. hist. nat. Par. 5. p. 108. and 235. D. C. prod. 4. p. 435. Fruit drupaceous (f. 97. g.), composed of numerous many-seeded pyrene (f. 97. c.). Albumen of seeds fleshy.—Shrubs or herbs. Leaves opposite. Stipulas interiofiliar.

**LXXV. META*B*OLOS (from μεταβόλος, metabolos, changeable; but the application is not evident). Blum. bijdr. p. 990. D. C. prod. 4. p. 435.—Sclerococcus, Burd. in herb. Haenke.

**L. syst.** Tetra-Pentándria, Monogynía. Calyx with an obovate roundish tube, and a 4, rarely 5-parted limb. Corolla funnelf-shaped, with a 4, rarely 5-cleft or parted limb. Stamens 4-5, inserted in the throat of the corolla. Style filiform; stigma thickened, 2-4-parted. Berry dry, crowned by the calyx, divisible into 2-4 many-seeded pyrene or nuts. Seeds angular, fixed to prominent placenitates.—Suffruticoso herbes. Stems tetragonal. Leaves opposite, with parallel veins. Stipulas twin on both sides, cut. Flowers disposed in whorles or axillary heads. This genus is evidently very distinct from *Hedýytis* in the fruit being indehiscent (ex Blum), and in the cells being usually 4 or 5.

1 **M. beenus** (Blum. bijdr. p. 991.) stem suffrutescente, prostrate; leaves on short petioles, ovato-lanceolate, acuminate, lined with veins, rather scabrous; whorls of flowers glomerate, axillary.  "Native of Java, in the province of Buitenzorg, in shady places.

**Veiny-leaved Metabolos.** Shrub prostrate.

2 **M. latifolius** (Blum. l. c.) stem suffrutescente, divericato; leaves on longish petioles, elliptic-lanceolate, acuminate at both ends, rather scabrous; flowers disposed in dense axillary glomerate whorles.  "Native of Java, on the mountains.

**Broad-leaved Metabolos.** Shrub diffuse.

3 **M. rugosus** (Blum. l. c.) stem shrubby, decumbent; leaves
oblong-lanceolate, acuminate, wrinkled, a little ciliated, downy beneath; flowers in dense axillary heaps; fruit containing 4 pyrenae. F. S. Native of Java, on the top of Mount Gede. Stigma exerted, 4-cleft.

Wrinkled Metabolos. Shrub procumbent.

4 M. prostratus (Blum. l. c.) stem suffruticoso, prostrate; leaves oblong-lanceolate, glabrous; heads of flowers axillary, sessile or pedunculate. F. S. Native of Java, in woods on the mountains.

Prostrate Metabolos. Shrub prostrate.

5 M. rigidus (Blum. l. c.) stem suffruticoso, erect; leaves elliptic-oblong, acuminate at both ends, stiff, glabrous; heaps of flowers axillary, bibracteate; calyx campanulate, quadrinerved. F. S. Native of Java, on Mount Seribu, and on Mount Bonok, in the province of Bantam. Leaves 6 inches long.

Stiff Metabolos. Shrub.

6 M. lineatus (Bartl. in herb. Haenke, ex D. C. prod. 4. p. 435. under the name of Sclerococcus) stem herbaceous, erect, and are, as well as the branches, beset with hairs; leaves on short petioles, ovate-lanceolate, acuminate, downy, lined with veins; heads of flowers somewhat corymbose, axillary, on short peduncles. F. S. Native of Mexico, according to Haenke, herb.; but probably of the Philippine Islands. Very like the following species, and probably only a variety of it. Stipulas membranaceous, and connate at the base, ending in long subulate bristles, as in M. centurica. Flowers small. Stamens a little exerted.

Lined-leaved Metabolos. Pl. erect.

7 M. cerulea (Blum. bijdr. p. 991.) stem suffruticoso, procumbent, and is, as well as the branches, beset with soft hairs; leaves lanceolate, on short petioles, acuminate, downy, lined with veins; heads of flowers subcorymbose, axillary. F. S. Native of Java, about Buitenzorg, in humid shady places.

Blue-flowered Metabolos. Shrub procumbent.

8 M. radiicans (Bartl. in herb. Haenke, under the name of Sclerococcus) stem herbaceous, radicant at the base, glabrous, having 2 downy lines at the apex; leaves lanceolate, petiolate, glabrous, pale beneath; teeth of stipulas setaceous; pedicels axillary, very short, disposed in a kind of half whorls, very short.—Native of the island of Luzon, one of the Philippines.

Rooting Metabolos. Pl. creeping.

9 M. angustifolius (Bartl. in herb. Haenke, under the generic name of Sclerococcus) stems shrubby; leaves linear-lanceolate, almost sessile, lined with veins, downy on the nerves beneath, as well as the branchlets; stipulas ovate-lanceolate, cuspidate, downy, a little toothed at the apex; flowers on short pedicels, disposed in axillary and terminal heaps. F. S. Native of the island of Manilla, near Sorzogon.

Narrow-leaved Metabolos. Shrub.

10 M. pterocercus (Bartl. in herb. Haenke, under the generic name of Sclerococcus, ex D. C. prod. 4. p. 436.) plant shrubby; leaves linear-oblong, attenuated at the base, glabrous above in the adult state, and clothed with rusty wool beneath, particularly on the nerves, as well as the branchlets; stipulas ovate, acute, quite entire; flowers axillary, glomerate, almost sessile. F. S. Native of Luzon, one of the Philippines, at Sorzogon. Some of the fruit examined have 3 cells only.

Rustic Metabolos. Shrub.

11 M. lewicatus (Bartl. in herb. Haenke, under the generic name of Sclerococcus, ex D. C. 1. c.) plant shrubby, smoothish; leaves ovate-lanceolate, petiolate, glabrous above, rather scabrous on the nerves beneath, as well as on the petioles and branchlets; stipulas lanceolate, pectinately ciliolate; flowers axillary, glomerate, almost sessile. F. S. Native of the island of Luzon, one of the Philippines.

Smooth Metabolos. Shrub.

Cult. For culture and propagation see Hamelia, p. 542.
Pondery Gonzalea. Shrub 8 to 9 feet.

G. Panameana (Pers. ench. 1. p. 132.) leaves oblong, acuminate, acute at the base, petiolate, hairy from very short down above, and whitish from shortomentum beneath; stipulas broad at the base, and subulate at the apex, length of the petioles, ½. S. Native of Panama and Mexico. Buena Panaménésia, Cav. icon. 6. p. 571. Branches sub-tetragonal. Corollas reddish yellow.

Panama Gonzalea. Shrub 5 to 7 feet.

G. cornifolia (H. B. et Kunth, nov. gen. amer. 3. p. 416.) leaves oblong or ovate-oblong, acuminate, downy on both surfaces; stipulas subulate at the apex; spikes terminal, elongated; calyceous lobes linear; fruit almost always 2-celled. ½. S. Native of Cuba, near Havannah, Porto-Rico, and Guadaloupe. Lygismum spicatum, Lam. ill. no. 1477. Gonzáles Panaménies, ex Guadalupe, Spreng. syst. 1. p. 417. ex herb. Balb. Barlieria hisnuta, Jacq. obs. with a good figure.


Spike-flowered Gonzalea. Shrub. 8 to 10 feet.

9 G. incanescens (D. C. prod. 4. p. 437.) leaves pubescent above, and canescent from adpressed silky villi beneath; lobes of calyx oblong. ½. S. Native of Tobago?

I. S. Gonzalea. Shrub.

Cult. For culture and propagation see Hamélia, p. 542.


Lin. syst. Hevéa. Monoïgía. Calyx with a subglobose tube, and a short permanent 4-6-toothed limb (f. 97. a.). Rich. Corolla with a long tube (f. 97. b.), which is more slender in the middle than anywhere else (f. 97. b.); and with 6 short obtuse erect lobes at the apex (f. 97. c.), which appear a little twisted before expansion, densely clothed with yellow down inside, having the recesses or sinuses between the lobes drawn out into little crests. Stamens 6, inclosed (f. 97. d.). Stigmas linear, erectly stellate (f. 97. e.). Berries globose (f. 97. f.), crowned by the calyx (f. 97. h.), containing 6 brittle many-seeded triquetrous pyriform (f. 97. c.), which are furrowed inside. Seeds subglobose, truncate at the base. Albumen fleshy.—South American trees, shrubs, or striated or quadrangular branches. Leaves oval, acuminate at both ends, on short petioles, clothed with short down beneath. Stipulas twin on each side, lanceolate-subulate. Thyrs terminal, many-flowered, spike-formed or panicle-formed; peduncles opposite. Flowers scarlet.

1 I. spiciflórum (D. C. prod. 4. p. 487.) leaves ovate-oblong, acuminate, acute at the base; thyrses spike-formed; flowers on very long pedicels along the axis. ½. S. Native of Guiana or Cayenne, where it was collected by Patris. Leaves and flowers like those of I. coecínea, but differing in the in florescence.

FIG. 97. Spike cylindrical, having the flowers on the lower part remote and opposite, and those at the top crowded. Corollas scarlet.

Spike-formed Isertia. Shrub 10 to 12 feet.

2 I. coccifera (Vahl. ecol. 2. p. 27.) leaves oval, acuminate, acute at the base; thyrs oblong, panicled. ½. S. Native of Guiana, Cayenne, and Maranham, as also on the banks of the Magdalena, among bushes. Guettardia cocchina, Aubl. guian. 1. p. 317. t. 125. Lam. ill. t. 259. Corolla an inch long, velvety on the outside, scarlet. Berries red. There is a variety of this plant, according to Kunth, having the leaves disposed 3 in a whorl. The wood is bitter. A decoction of the leaves is used by the Creoles in fomentations.


3 I. Henkeana (D. C. prod. 4. p. 437.) leaves oval, acuminate at both ends; thyrs ovate, panicle-formed, with verticillate branches. ½. S. Native of Mexico. Isertia cocicina, Bartl. in herb. Henke, ex D. C. 1. c. Calyxes as in I. parviflóra. Corolla unisetulate; a little smaller than those of the preceding, but one-half larger than those of the following, clothed with fine velvety down on the outside.

Henke’s Isertia. Shrub 8 to 10 feet.

4 I. parviflóra (Vahl. ecol. 2. p. 28. t. 15.) upper leaves oblong; lower ones cordsate at the base; thyrs ovate, panicle-formed, with opposite branches. ½. S. Native of Trinidad. Leaves almost glabrous, except on the nerves. Teeth of calyx 4, and of these are larger than the rest, and are probably formed of 2 combined ones each. Corolla scarlet, uniglular, glabrous on the outside. Fruit unknown.

Small-flowered Isertia. Shrub 8 to 10 feet.

Cult. The species are worth cultivating in every collection of stone plants, for the beauty of their leaves and panicles of showy scarlet blossoms; their culture and propagation are the same as that recommended for Hamélia, p. 542.

Tribe V.


Lin. syst. Pentadántria, Monoïgía. Calyx with an oblong tube, and a 5-toothed limb, 2 of the teeth opposite each other, larger than the rest, outer ones erect, incurved, the 2 smaller teeth convinient. Corolla and stamens unknown. Berry oblong, crowned by the limb of the calyx, 4-celled. Seeds many, nestling in the pulp. Albumen fleshy.—Perhaps this genus is distinct from Gonzáles or Evosómia, but it is hardly known.

1 T. du’bria (Gärtn. 1. c.) ½. G. Native of Chili. Nothing is known of this plant except the fruit.

Doubtful Tepesia. Shrub.

Cult. For culture and propagation see Hamélia, p. 542.

LXXXIX. EVO’SÓMIA (from ev, ev, well, and oσμη, smell).

**Lin. syst. Tetra-Pentádria, Monogynía.** Calyx with an ovate tube, and a very short 4-toothed limb (f. 98 a). Corolla subrotate, 4-cleft beyond the middle (f. 98 b). Stamens 4, inserted in the throat (f. 98 b), a little exerted or inclosed; anthers ovate. Style filiform; stigma thick or 4 lobed. Fruit ovate (f. 98 f), crowned by the calyx (f. 98 g), 4-celled (f. 98 h); cells many seeded.—Glabrous shrubs or small trees, with terete branches, natives of South America. Leaves petiolate, oval, acute at both ends, membranous. Stipulas ovate, acute, short, deciduous. Racemes short, by two or threes from the axils of the lower leaves; pedicels elongated, capillary. Flowers red. The young fruit in *E. Caripénis* is sweet-scented; hence the generic name.

1 E. *Caripénis* (Humb. et Bonpl. 1. c.) leaves oval, acuminate at both ends; racemes loose, a little longer than the pedi
telos; pedicels slender, elongated. F. S. Native of South America, in the province of Cumana, near Caripé. Flowers red (f. 98).

**Caripe Evosmia.** Tree 20 ft.

2 E. *aggregata* (Spreng. syst. 1. p. 417) leaves lanceolate, acuminate; flowers in fascicles; pedicels shorter than the calyx. F. S. Native of Peru, in groves on the Andes at Chucnero, Chinchao, and Muna.

O-Higginásía aggregátæ, Ruiz et Pav. fl. per. 1. p. 55. t. 83. f. b. Higginássia aggregata, Pers. ench. 1. p. 133. According to Jussieu, this plant is referable to *Sabicea*, but according to Kunth to *Gonzalezia*. But it certainly differs from all the other species of O-Higginásia of the fl. per. in the fruit being 4-celled and many-seeded. Flowers red.

**Aggregate-flowered Evosmia.** Shrub.

Cult. For culture and propagation see *Hamelía*, p. 542.


**Lin. syst. Tetra-Pentádria, Monogynía.** Calyx with an oblong or turbinate tube, and a 4-5-parted permanent limb. Corolla salver-shaped, with a long slender tube, a hairy throat, and a 4-5-parted limb; with the lobes acute. Stamens 4-5, inclosed or hardly exerted. Style filiform, clavate at the apex, 4-5-lobed. Berry almost globose, crowned by the calyx, 4-5-celled; cells many seeded. Seeds minute, angular.—Climbing shrubs or subshrubs. Leaves oval, acute, on short pedi
tels. Stipulas solitary on both sides. Flowers white, axillary, in sessile fascicles, or corymbose and pedunculate. Corollas pilose.

§ 1. **Parts of flowers quinary.**

1 S. *cinerea* (Aubl. guian. 1. p. 192, t. 75.) leaves ovate, acutish, villous above in the young state, but at length becoming glabrous, and clothed with dense white tomentum beneath; stipulas broad-ovate, acutish; flowers bracteate, disposed in axillary fascicles. F. S. Native of Guiana and Cayenne, in hedges and among bushes. Schwenkfeldia cinerea, Swartz, fl.


**Grey Sabicea.** Shrub cl.

2 S. *hirata* (Swartz, prod. 1. p. 46.) leaves ovate-lanceolate, acuminate, hairy on both surfaces; stipulas coriádate-ovate, large, membranous at the base, flowers peduncled, in short peduncles; inflorescence of 4 leaves. F. S. Native of Jamaica, and probably of Trinidad, if the specimen in Sibb. fl. trin. no. 327. be the same; of Porto-Rico, according to specimens from Bertero; and of Mexico, ex icon. fl. mex. ined. Flowers white. Berries snow white when ripe, ex Swartz; but in the figure in fl. mex. they are painted reddish, and is therefore probably a distinct species. Branches striated, hairy.

**Hairy Sabicea.** Shrub cl.


**Hirsute Sabicea.** Shrub cl.

4 S. *eríántha* (D. C. prod. 4. p. 439.) leaves elliptic-oblong, acuminate, pilose above, and clothed with hoary tomen
tum beneath; branches very hairy; stipulas ovate, acute, glabrous inside; flowers numerous, axillary, sessile; lobes of calyx linear; tube of corolla very pilose on the outside. F. S. Native of Brazil, in Bahia, in hedges, where it was collected by Salzmann, G. Don, &c.

**Woolly-flowered Sabicea.** Shrub cl.

5 S. *tirúlora* (D. C. prod. 4. p. 439.) stems twirly, velvety; leaves on short pedi
tels, oblong-lanceolate, acuminate, pale and villous beneath; stipulas lanceolate-subulate, undivided; flowers axillary, 1-3-together, rising from a short peduncle; bracteoles ciliated; ovarium long, glabrous, crowned by the elongated linear-subulate calycine teeth. F. S. Native of Madagascar. Triosteum tirúlora, Vahl, symb. 3. p. 37.

**Three-flowered Sabicea.** Shrub cl.

6 S.? *diversifóllia* (Pers. ench. 1. p. 203.) under side of leaves and branchlets hoary; the opposite leaves very unequal among themselves, the larger one broad, elliptic or ovate, obtuse, glabrous above, and hoary beneath; the smaller one brac

**Diverse-leaved Sabicea.** Shrub cl.

§ 2. **Parts of flowers usually or always quinary.**

7 S. *áspéra* (Aubl. guian. 1. p. 194. t. 76.) leaves elliptic, acuminate, rough above, and villous beneath; stipulas oblong-oblong, acute; flowers sessile, disposed in subverticillate fascicles. F. S. Native of Guiana, on the banks of the river Sine-

**Rough Sabicea.** Shrub cl.

8 S. *umbellátã* (Pers. ench. 1. p. 203.) leaves oval, acuminate, acute at the base, scabrous on both surfaces from adpressed down, pale beneath; stipulas ovate, spreading; corymba many-flowered, pedunculate. F. S. Native of Peru, in groves on the Andes at Cuchero, Macora, and Chinchao.
Flowers white. Berries white, roundish.

**Umbellifer-flowered Sabicea.** Shrub cl. 9 S. *Argillaria* (Bartl. in herb. Hanke, ex D. C. prod. 4. p. 440.), stem herbaceous, glabrous; leaves oblong-lanceolate, glabrous, ciliated with silky down; stipulas subulate; heads pedunculate, axillary, few-flowered, glabrous.—Native of Peru, on the mountains about the Guanoco.

**Dwarf Sabicea.** Pl. cl. ?

Cult. For culture and propagation see *Olosyta* below.

**XCI. OLOSTYLA** (from olos, holos, entire, and *στυλος, stylos*, a style; the style is undivided). D. C. prod. 4. p. 440.—Stylocoria, Labill. sert. calep. p. 47, but not of Cav.

**Lin. syst. Pentandria, Monogyyna.** Calyx with an ovate tube, and a very short 5-toothed limb. Corolla sub-rotate, with a short tube, which is pilose inside, and a 5-lobed limb; lobes valvate in ostivation, linear-lanceolate, with inflexed edges. Stamens 5, inserted in the throat of the corolla; anthers linear, exserted. Style clavate, undivided. Berry glabrous, crowned by the teeth of the calyx and urceolus, 4-celled; cells many-seeded. Seeds minute, elliptic, nesting in the pulp.—A glabrous unarmed shrub. Leaves opposite, ovate-oblong, coriaceous, on short petioles. Stipulas broad, short, apiculate. Flowers disposed in a terminal somewhat thyrsoid corymb.—

This genus differs from *Stylocarpina* in the fruit being 4-celled, not 2-celled as in that genus.


**Corolla-flowered Olostyla.** Shrub 5 to 6 feet. Cult. A mixture of loam, peat, and sand will suit this shrub; and cuttings will root in sand under a hand-glass. It is a very pretty shrub, and therefore worth cultivating.

**XCVII. AXANTHES** (from axon, axon, an axile-tree, and *άνθος, anthos*, a flower; the flowers are disposed in axillary heads or corymb). Blum. bijdr. p. 1002. D. C. prod. 4. p. 440.—Wallichia, Reinw. cat. hort. jum. fl. ex flora. 1822. p. 107. but not of Roxb. nor D. C.—Meeskühauthe, Blume. herb. ex D. C. l. c.

**Lin. syst. Pentandria, Monogyyna.** Flowers hermaphrodite, or dioecious but abortion. Calyx with an urceolate tube and an entire limb. Corolla rotate, with a short cylindrical tube, which is furnished with 5 fascicles of hairs in the throat, and spreading lobes. Stamens 5 in the hermaphrodite flowers, inserted in the throat of the corolla, hardly exserted. Ovarium and style wanting in the male flowers, but the ovarium in the female flowers is covered by a sulate disk. Style short; stigma 5-lobed: lobes at first connivent. Berry globose, crowned by the permanent calyx, 5-celled, many-seeded; placenta flabby. Seeds minute, beset with depressed dots.—Shrubs or trees. Leaves opposite. Flowers disposed in axillary heads or cymes, rarely in corymb.

* *Flowers dioecious by abortion.*

1 A. macrophylla (Blum. bijdr. p. 1002.) stem shrubby; ultimate branches rather tetragonal; leaves oblong, much acuminate, acutish at the base, shining above, but clothed with adpressed silky down beneath; heads of flowers axillary, sessile, involucrated. *S*. Native of Java, in mountain woods.

**Long-leaved Axanthes.** Shrub.

2 A. tomentosa (Blum. herb. and mss. ex D. C. prod. 4. p. 440.) stem unknown; branches geniculate, clothed with velvety tomentum; leaves oblong, much acuminate, glabrous above, but clothed with velvety tomentum on the nerves beneath as well as on the petioles; cymes pedunculate, axillary. *S*. Native of Polo Penang.

**Tomentose Axanthes.** Shrub.

3 A. strigosa (Blum. bijdr. p. 1002.) stem arborescent; ultimate branches geniculate, strigose; leaves oblong, attenuated at both ends, glabrous above, but rather strigose on the veins beneath; flowers on short peduncles, crowded, axillary. *S*. Native of Java, on the mountains of Seribu.

**Strigose Axanthes.** Tree small.

4 A. arborea (Blum. l. c.) stem arborescent; branches terete, glabrous; leaves oblong-lanceolate, acuminate at both ends, glabrous; cymes pedunculate, axillary. *S*. Native of Java, on the higher mountains, in woods. Wallichia arborea, Reinw. cat. hort. jum. fl. p. 11. ex Blume.

**Arborescent Axanthes.** Tree.

5 A. Timorensis (D. C. prod. 4. p. 441.) stem unknown; branchlets terete, and are as well as the petioles villous; leaves oblong, acuminate at both ends, glabrous above, but clothed with adpressed villi beneath on the veins; cymes axillary, pedunculate, bifid. *S*. Native of the Island of Timor. Calyx downy. Corolla clothed with strigose villi on the outside.

**Timor Axanthes.** Tree.

* *Flowers hermaphrodite.*

6 A. corystosa (Blum. l. c.) stem arborescent; ultimate branches somewhat tetragonal, puberulous; leaves glabrous, oblong-lanceolate, much acuminate at both ends, shining above, but downy beneath as well as the corymb, which are axillary. *S*. Native of Java, on the top of Mount Burangrang.

**Corymbose-flowered Axanthes.** Tree.

Cult. See *Hamelia*, p. 542. for culture and propagation.

**XCVIII. UROPHYLLUM** (from υρος, oura, a tail, and φυλλον, phyllon, a leaf; the leaves terminate in very long taper points). Jack and Wall. in Roxb. fl. ind. 2. p. 184. D. C. prod. 4. p. 441.—Wallichia, Roxb. nec. but not of others.

**Lin. syst. Pentandria, Monogyyna.** Calyx with an ovate tube, and a short, campanulate rather 5-cleft limb. Corolla funnel-shaped, with a bearded throat and a 5-parted limb; the lobes oblate, and valvate in abstation. Stamens 5, shorter than the limb; anthers linear. Stigma thick, 5-lobed. Ovarium crowned by a glandular disk. Berry globose, 5-celled; cells many-seeded. Seeds minute, shining, marked by pentagonal pores, as in *Pomatinum*. Erect shrubs. Leaves on short petioles, oblong-lanceolate, ending each in a very long taper point. Stipulas oblong, acute, deciduous. Peduncles axillary, short, bearing verticillate heads of flowers. Bracteas numerous, acute, surrounding the heads of flowers. Corollas greenish.

1 U. villifera (Jack and Wall. l. c.) shrub villous; branches terete; calyx 5-lobed. *S*. Native of Polo Penang. Branches as well as the veins of the leaves densely clothed with soft hairs. Leaves shining above and villous beneath, 10 inches long.

**Villos Urophyllum.** Shrub.

2 U. glabrum (Jack and Wall. l. c.) shrub glabrous; branches tetragonal; calyx almost entire. *S*. Native of Polo Penang, where it is called *Loda Utan* by the Malays. Leaves about 6 inches long.

**Glabrous Urophyllum.** Shrub. Cult. See *Hamelia*, p. 542. for culture and propagation.

**XCIV. HAMELIA** (so named in honour of Henry Louis du Hamel du Monceau, the celebrated author of several valuable

Linn. syst. Pentadactyla, Monogynia. Calyx with an oval tube, and a 5-toothed limb (f. 99. a.); teeth erect, short, acute, permanent. Corolla with a somewhat pentagonal tube (f. 99. b.), and a small, 5-lobed equal limb (f. 99. c.), which hardly spreads at all. Stamens 5, inserted in the middle of the tube (f. 99. b.) of the corolla, inclosed; anthers oblong-linear (f. 99. f.). Stigma obtuse, somewhat pentagonal (f. 99. c.). Berry oval, 5-furrowed, 5-celled (f. 99. d.), crowned by the calyx; cells membranous, many-seeded. Seeds small, compressed. Albumin fleshy.—American shrubs. Leaves opposite, or 3 or 4 in a whorl, petiolate, ovate-oblong, acute at both ends. Stipulas lanceolate-subulate, solitary on both sides. Cymes dichotomous or trichotomous, disposed usually in terminal panicles or corymbus. Bracteas small. Flowers of a crozaceous red colour.

* Leaves verticillate.

1 H. patens (Jacq. amer. p. 72. t. 50. pict. t. 72.) leaves 3 in a whorl, ovate-oblong, acuminate at both ends, clothed with villous pubescence; cymes di-trichotomous, coloured, disposed in a terminal pedunculate umbel; corolla cylindrical. § S. Native of Jamaica, Cuba, Mexico, Brazil, Peru, &c. in hedges on the mountains. Lin. spec. 246. Smith, exot. bot. t. 24. Garrn. fl. carp. 3. p. 196. f. 3. H. coecinea, Swartz, prod. p. 46. Duhamélia páterns, Pers. ench. 1. p. 203. H. páterns, Ruiz et Pav. fl. per. 2. p. 221. f. a.? Flowers almost scarlet. Berries black. Branches villous at top. There are varieties of this species with velvety, villous, or downy leaves, always most so on the under surface.

Var. b. crêta (Lam. dict. 3. p. 68.) racemes erect. § S. Native of Cuba, in woods; and of Mango Island. H. crêta, Jacq. amer. p. 71.

Var. γ. quinquiflora; leaves and branches of cymes 5 in a whorl. § S. Native of Mexico, on the mountains of Matatlano. H. páterns, Moc. et Sesse, fl. mex. icon. incl. H. verticillata, fl. mex. mass. incl. Perhaps a proper species.


2 II. Xorulleensis (H. B. et Kunth, nov. gen. amer. 3. p. 414) leaves 3 in a whorl, elliptic-oblong, acuminate, acute at the base, glabrous above and downy beneath; cymes composed of 5-6 spikes, terminal; corollas campanulately ventricose. § S. Native of Mexico, on the burning Mount Xorullo. Flowers of a yellowish red colour.

Xorullo Hamelia. Shrub 4 to 5 feet.

3 H. Christi (Ruiz et Pav. fl. per. 2. p. 69. t. 221. f. b.) leaves 3 in a whorl, oblong, hairy on both surfaces; cymes coloured, disposed in a terminal panicle; corollas cylindrically pentagonal. § S. Native of Peru, in groves. Duhamélia phacocarpa, Pers. Petioles and peduncles red. Flowers unisulateral, pedicellate. Corollas of a reddish coppery colour. Berry dark purple, globose, hispid.


4 H. latifolia (Rich. in Sieb. fl. trim. no. 32.) leaves 3 in a whorl, ovate-lanceolate, acuminate, acute at the base, glabrous on both surfaces; cymes dichotomous, few-flowered, disposed in a terminal pedunculate umbel; corollas cylindrical. § S. Native of Trinidad. Flowers smaller than those of H. patens, but similar in colour.


5 H. ventricosa (Swartz, prod. p. 46. fl. ind. occ. 1. p. 445.) leaves 3 in a whorl, quite glabrous, ovate-oblong, acuminate; racemes terminal (rarely axillary); flowers on long pedicles; corollas tubularly campanulate, ventricose. § S. Native of Jamaica, on hills, and among bushes in arid places, where we have seen it in great abundance from Kingston to the bottom of the Port Royal mountains, by the road side, and about Spanish Town; and of Mexico, about Real del Monte. Lindl. bot. reg. t. 1195. Sims, bot. mag. t. 1894. H. grandiflora, L'HEr. sert. ang. 4. t. 7. Salis. par. t. 55. Duhamélia ventricosa, Pers. ench. 1. p. 203.—Sloane, hist. jam. 2. no. 63. t. 183. f. 2. Margins of leaves at length becoming reddish. Flowers yellow, almost an inch long. Berries oblong, scarlet. This species grows to a considerable sized tree, affording boards for tables and cabinets, of the softness and grain of elm, whence its name Spanish elm. The cabinet makers, who use it much, call it Prince-wood. Perhaps H. pauciflora, Willd. rel. in Reem. et Schultes, syst. 5. p. 267. Stipulas linear-subulate, not pinnatifid, as said by Wildenow. Corollas glabrous, purple. There is a variety of this species having a 6-cleft corolla and 6 stamens.


** Leaves opposite.

7 H. chrysanthha (Swartz, prod. p. 46. fl. ind. occ. 1. p. 444.) leaves opposite, ovate-oblong, cuneate, acuminate, quite glabrous; racemes terminal; flowers pedicellate; corollas cylin.

drical; cymes of 1-3 flowers, generally in clusters; stems of small bushes, and according to Hawke, herb, of Mexico; and at Caracas, according to Vargas.—Browne, jam. 166. t. 14. f. 1. —Plum. amer. ed Burm. t. 218. f. 1.—Duhamélia chrysanthha, Pers. ench. 1. p. 203. exclusive of the syn. of Jacq. H. páterns, West. St. Croix. p. 200. Flowers yellow, almost an inch long, inflated in the middle.


8 H. lutea (Rohr ex Smith, in Rees's cyc. vol. 17. no. 4.) leaves opposite, ovate, acuminate, acute at the base, glabrous; cymes terminal; flowers almost sessile; corolla short, with a ventricose throat. § S. Native of Santa Cruz, and at Caracas. H. chrysanthha, Jacq. coll. 3. p. 204. icon. rar. 28. 533. but not of Swartz. Hamelia's species, no. 2 without a name.


Yellow-flowered Hamelia. Shrub 4 to 5 feet.

9 H. axillaris (Swartz, prod. p. 46. fl. ind. occ. 1. p. 443.) leaves opposite, ovate-lanceolate, glabrous; stem suffrutescent; cymes bifid or trifid, pedunculate, rising from the forks of the branches; flowers secund, sessile; corollas tubular, pentagonal; berry ovate-oblong, crowned by the 5 distant subulate teeth of the calyx. § S. Native of Jamaica, in rocky places among
bushes; and of St. Domingo near rivers. Branches sub-herbaceous. Flowers pale yellow. Berries small.

Var. \( b \), *appendiculata* (D. C. prod. 4. p. 442.) leaves on longer petioles, and more distinctly acuminate. H. S. Native of Porto Rico. H. *appendiculata*, Gaertn. fil. carp. 3. p. 64. t. 91. f. 1. H. lúcida, Desf.


10 H. *rostrata* (Barlt. in herb. Hanke, ex D. C. prod. 4. p. 412.) leaves usually opposite, rarely 3 in a whorl, ovate, acuminate, downy beneath, as well as the petioles and branch-lets; cymes terminal, 3-4-parted, downy; corollas glabrous; berries ovate-globose, glabrous, beaked. H. S. Native of Mexico, at Acapulco. Branches terete or trigonal.

*Beaked*-berried Hamelia. Shrub 4 to 5 feet.

**Cult.** All the species of this genus are very ornamental while in blossom. They are free flowerers and of easy culture. A mixture of loam and peat is the best soil for them; cuttings strike root freely in the same kind of soil, under a hand-glass, in a moist heat.


**Lin. syst.** *Pentéântria, Monogynia*. Flowers incompletely unisexual by abortion. Limb of calyx tubular, 5-toothed. Corolla tubular, longer than the calyx; limb spreading, 5-parted: segments oval, acute. Stamina 5, almost sessile, inserted in the tube; anthers linear, inclosed. Style simple, in the male flower it is exserted, staminate, and terminating by a long, acute, simple stigma: in the female and hermaphrodite flowers the anthers are shorter than in the males, and the stigmas are 5 and linear. Berry somewhat coriaceous, globose, depressed, crowned by the tubular limb of the calyx, 5-celled; cells many-seeded. Seeds wrapped in thin pulp.—A small tree. Leaves opposite, coriaceous, oblong, acuminate. Stipulas rather connate, entire, acute. Flowers solitary or in fascicles, terminating the branches, cream-coloured, almost sessile.—Habit of *Géupa*.


**Cult.** See *Hamelia* above for culture and propagation.


**Lin. syst.** *Penta-Octântria, Monogynia*. Calyx with an obovate tube, and a short truncate or sub-dentilicate limb. Corolla funnel-shaped, with a terete tube, and a rather dilated pilose throat; lobes or segments 5-8, spreading, thickened inside, and sometimes furnished with a retrograde callosis toothlet. Anthers 5-8, sessile, linear, inserted in the throat of the corolla, hardly exserted. Style short; stigma bifid (ex Vahl and Rich.), quadrifid (ex Swartz). Berries pea-formed, 5-4-sided, crowned by the limb of the calyx, 2-4-celled; cells many-seeded. Seeds very minute, nesting in the pulp.—Glabrous radicant shrubs, growing on tree. Leaves petiolate, oval or lanceolate, coriaceous. Stipulas oval-oblong, falling off at length, but those at the base of the peduncles are more permanent, and may be called bracteas. Peduncle solitary or numerous, longer than the petioles. Flowers 4-12 together, sessile, capitate, girdled by an orbicular, entire, or rather lobed involucrem, which is formed from two combined bracteas.

1 S. *capitâta* (Vahl, ccl. 1. p. 35. t. 5. exclusive of the syn. of *Swartz*) leaves elliptic, bluish, but more acute at the base; peduncles solitary, terminal, head of flowers girdled by a sub-lobate involucrem; limb of calyx truncate, quite entire; corolla 5-6-lobed. H. S. Native of Mont-Serrat, on the higher mountains. *Ureçória* exótica, Gmel. syst. 2. p. 390. Branches square. A climbing sub-parasitical shrub.

*Capitate*-flowered Schradera. Shrub cl.

2 S. *Basilil'khis* (Mart. in Schultes, syst. 7. p. 164.) leaves elliptic, obtuse; peduncle terminal, solitary; head of flowers surrounded by an entire involucrem; limb of calyx quite entire; corolla 5-6-lobed: the segments reflexed. H. S. Native of Brazil, in woods at Lake d’Almada, in the province of Bahia.

*Brazilian* Schradera. Shrub cl.

3 S. *cæphalotes* (Wild. spec. 2. p. 238.) leaves oblong, acuminate; peduncle terminal, solitary, short; head of flowers surrounded by an entire involucrem; limb of calyx somewhat dentilicate; corolla 7-8-lobed. H. S. Native of Brazil in woods on the mountains. *Fichisia involucreata*, Swartz, prod. p. 62. fl. ind. occ. 2. p. 674. Flowers 4-8, within the involucrem, white. Stigma quadrifid. Berry 4-celled, ex *Swartz*.


4 S. *polyc'pha'la* (D. C. prod. 4. p. 444.) leaves oval, acuminate; peduncles numerous, terminal; heads surrounded by entire involucrem; limb of calyx quite entire; corolla 5-6-lobed. H. S. Native of French Guiana, where it was collected by Patris. Berries ovate, crowned by the entire limb of the calyx, 3-5-celled; cells many-seeded.

Many-headed Schradera. Shrub cl.

**Cult.** The species of this genus are elegant when in flower. Vegetable mould is the best soil for them; and they will be easily increased by separating the rooted branches.

**XCVII. BRIGNOLIA** (in honour of J. L. Brignoli, a professor of Verona, author of Fasciculus rarium plantarum Forajasisenium, 4to. Urbia, 1810.) D. C. diss. ined. with a figure, prod. 4. p. 444. but not of Bertol.

**Lin. syst.** *Hexándria, Monogynia*. Calyx with a short roundish tube, and a 4-toothed limb; 2 of the teeth larger than the other 2, and probably made up of 2 combined ones each. Corolla with a short tube, and a 6-lobed limb; lobes linear-oblong, bluish, longer than the tube, very hairy inside as well as the throat. Stamina 6, inserted in the tube, alternating with the lobes; filaments very short; anthers linear. Style filiform; stigma capitulate, undivided. Fruit globose, fleshy, many-seeded, crowned by the calyx. The rest not sufficiently known. A shrub or tree. Branches terete, villous. Leaves opposite, petiolate, oval-oblong, obtuse at the base, acuminate at the apex, downy on the petioles and nerves, the rest glabrous. Stipulas twin on both sides, lanceolate, acuminate, but when young combined into an inter-petiolar stipula, but at length separating from the base to the apex into 2 parts each. Corysts terminal, pedunculate, with a short hairy rachis, and downy crowned, trichotomous branches. Bracteas ciliate. Flowers sessile in the forks of the corysts, and at the tops of the pedicels.—This genus is nearly allied to *Isérita*, but from the fruit not being sufficiently known, its place in the order is very doubtful.

1 B. *acuminâta* (D. C. prod. 4. p. 444.). H. S. Native of Trinidad, where it was collected by Lockhart. Leaves almost
a foot long and 3 inches broad, pale beneath. Petioles 8-12 long, a little longer than the stipulas. Corymb much shorter than the leaves.

**Acuminated**-leaved Brignolia. Shrub.

**Cult.** For culture and propagation see *Hamelia*, p. 542.


**Lin. syst. Dentadria, Monogynia.** Calyx with an ovate tube, and a short, permanent, entire, or 5-toothed limb. Corolla salver-shaped, brisly, with a terete tube, and a 10-parted limb: lobes elliptic-oblong. Stamens 10, inserted in the middle of the tube of the corolla; anthers linear, followed. Style 1, thickened, furrowed lengthwise; stigma 6-7 or more. Berry globose, 10-20-celled. Seeds oblong, disposed in 1 row in each cell, and as if they were imbricated, separated by small transverse disseminations.—Shrubs. Leaves opposite, ovate, lanceolate, acuminated at both ends, clothed with adpressed silken down beneath. Stipulas deciduous. Peduncles short, 1-flowered, 1-flowered.

1 P. *sericeum* (Desf. mem. mus. 6. p. 6. t. 2) calyx quite entire. ♂ S. Native of the Island of Timor.

**Silky Polyphragmon.** Shrub.

**Cult.** For culture and propagation see *Hamelia*, p. 542.


**Lin. syst. Pentandria, Monogynia.** Limb of calyx marginal, erect, nearly entire. Corolla short, tubular, with a 5-parted limb; segments lanceolate, spreading, imbricate in evagination. Stamens 5, inserted in the throat, exserted; anthers linear. Style simple, thickened and fusiform towards the apex; stigma bifi: lobes approximate. Ovarium 4-5-celled; cells 3-5-ovulate; ovula fixed to the inner angle of the cell. Fruit rather fleshy, 4-5-celled; cells 2-3-seeded, crowned by the short neck of calyx.—A small glabrous tree, native of Senegal, with the habit of *Bacouia*. Branches terete, cuneous, glabrous. Leaves opposite, elliptic, coriaceous, glabrous. Stipulas interpetiolar, deciduous. Flowers axillary, racemose; racemes sometimes trichotomous.

1 M. *Senegalensis* (A. Rich. l. c.). ♂ S. Native of Senegal, where it was collected by Leprieur and Perrottet. *Senegal* Morelia. Shrub.

**Cult.** For culture and propagation see *Hamelia*, p. 542.

**Tribe VI.**

**CORDIEREE** (this tribe contains plants agreeing with the genus *Coridieria* in having baccate many-celled fruit, and in the cells being 1-seeded). A. Rich. mem. soc. hist. nat. par. 5. p. 107. and 222. D. C. prod. 4. p. 445. Fruit baccate, of many 1-seeded cells. This differs from Tribe *Guettardioae* in the fruit not containing pyræae, but true cells; and from Tribe *Haméliae* in the cells being 1-seeded, not many-seeded.


**Lin. syst. Penta-Hezandria, Monogynia.** Limb of calyx 5-6-toothed, wide. Corolla with a shortish tube, a naked throat, and a 5-6-parted limb; segments narrow, spreading. Stamens 5-6, inserted in the throat of the corolla, exserted; filaments short; anthers linear. Stigmas 2, linear, shorter, somewhat recurved, exserted. Ovarium 2-celled; cells biovulate; ovula collateral.—Shrub. Leaves opposite, linear-lanceolate, gradually tapering at the base, and joined by the broad, acuminated, entire stipulas. Flowers downy, almost sessile, crowded in the axis of the leaves.


**Cult.** For culture and propagation see *Hamelia*, p. 542.


**Lin. syst. Monocodia, Pentandria.** Flowers unisexual. With the sexes on different branches. Male flower. Calyx cup-shaped, solid, with an entire limb. Corolla salver-shaped, with a long tube, which gradually tapers to the apex, and is a little incurved, coriaceous, shining, and as if it werehorny; with a 5-parted limb; having oblong acute lobes, and a very narrow naked throat. Stamens 4-5, inclosed, inserted in the middle of the tube; anthers rising from the bottom of the calyx. Styles only vestigies.—Female flower. Calyx sub-globose, adnate to the ovary, with an entire marginal limb. Corolla straight, less attenuated at the apex than in the male flowers, with a 4-5-parted limb. Stamens small, abortive. Disk depressed in the middle. Stigmas 4-5, subulate. Berry globose, depressed, umbilicate, fleshy, 4-8-celled; cells 1-seeded. Seeds black, smooth. Amblumen fleshy. Embryo parallel with the hyalum, having a terete radicle, and subordinate cotyledons, which are the length of the radicle.—Bushy shrubs, 4-5 ft high. Leaves opposite, elliptic, acuminated, glabrous; stipulas very acute, combined at the base. Flowers white, occupying the tops of the branches: male ones by threes, sessile, girdled by 4 scale-formed bracteas.
tess: the female ones solitary, and furnished with 4 bracteas each.

1 C. trilfolia (D. C. prod. 4. p. 445.). ½. S. Native of Guiana, on the banks of the river Kourou.

Three-flowered Cordiera. Shrub 4 to 5 feet.

Cult. For culture and propagation see Hamelia, p. 542.

Tribe VII.


Sub-tr. I. Morindaæ (this sub-tr. contains the genus Morinda). D. C. prod. 4. p. 446. Flowers and fruit collected into heads and combined.


LIN. Syst. Pentandria, Monogyna. Tube of calyx obovate, usually combined with those nearest it; limb short, hardly toothed. Corolla funnel-shaped, with a nearly terete tube, and a spreading, 5-lobed, rarely 4-lobed limb. Stamens 5, rarely 4; filaments short; anthers incised, except in one species. Style filiform, usually exserted; stigma bifid, except in one or two species, in which it is entire. Berries containing 2-4 1-seeded pyrenae each, usually combined, compressed or angular from being so close together, areolate from the vestiges of the calyx. Embryo terete, in fleshy albumen.—Shrubs or small trees, natives within the tropics. Leaves opposite, rarely 3-4 in a whorl. Stipulas intrapetiolar, usually obtuse and membranous. Peduncles solitary or numerous, axillary or terminal, sometimes combined at the base, when this is the case they are said to be branched. Flowers aggregate, sessile, upon a sub-glabrous naked receptacle, forming dense, globose, or ovate heads; having the berries at length combined into a spurious fruit or compound berry. The bark of the roots is styptic, and is used by dyers.

SECT. I. Roöic (Roöic is the American name of M. Roöic). Plum. gen. 11. t. 26. D. C. prod. 4. p. 446.—Morinda of most authors. Flowers pentamemous, pentandrous. Stigma bifid. Berries containing 2-4 1-seeded pyrenae each.

* Peduncles terminal, twin, or lateral and opposite the leaves, in the latter case one of the opposite leaves is deficient or half abortive.

1 M. citrifolia (Lin. spec. 250.) plant glabrous, almost arboraceous; branchlets tetragonal; leaves oblong, attenuated at both ends, shining; stipules semi-lunar, membranous, obtuse; heads on short peduncles, opposite the leaves, bracteas; berries combined into an ovate mass. ½. S. Native of the East Indies, as in Malabar and Pegu, &c. as well as of the Society Islands. Geert. fruct. 1. p. 144. t. 29. Roxb. fl. ind. 2. p. 196. Ham. in Lin. trans. 13. p. 533. Lour. coch. p. 140.—Rheed. mal. 1. p. 97. t. 52.—Rumph. amb. 3. p. 158. t. 99. Peduncles opposite to a solitary leaf, on the upper side of the

RUBIACEÆ. CHI. MORNINDA.

branchlets, each supporting a small head of small white flowers. Anthers half hid in the tube of the corolla. Berries combined in the head, white and polished. The root of this species is employed by the natives of India to dye red.

2 Par. β. papparæcea (D. C. prod. 4. p. 446.) leaves oblong, acuminated at both ends, on long petioles, papery; stipules triangular. ½. S. Native of the East Indies, where it was collected by Labillardiere.

3 Par. γ. latifolia (D. C. l.c.) leaves oblong, blunt at the base, hardly acute; stipulas broad, membranous, very blunt. ½. G. Native of the Islands of O-Wahu and Radak, where it was collected by Chamisso. M. citrifolia, Cham. et Schlecht. in Linnaea, 4. p. 149.


2 M. tinctoria (Roxb. fl. ind. 2. p. 197.) glabrous and somewhat arborescent; leaves oblong, almost sessile, smooth, but not shining; peduncles opposite the leaves, solitary, much longer than the petioles; heads ovate; stamens incised. ½. S. Native of the East Indies, almost everywhere. M. citrifolia, Hunt. in asiat. res. 4. p. 35. Trunk seldom above a few feet in height, but supporting a pretty large shaly head of branches. Leaves pale beneath, from 6-10 inches long. Peduncles supporting each an oval head of pure white jasmine-like sweet-scented flowers. Fruit like that of M. citrifolia. The bark of the root is used to dye red; the colour is fixed with alum, but it is neither bright nor durable. In some parts of India it is cultivated for the sake of its roots. In the Circars the dyers use the bark of the fresh roots bruised and gently boiled in water for a short time. The cloth or yarn is prepared in a cold infusion of the powdered galls of Terminalia Chebula, in milk and water; it is then dried and moistened with alum water, and again dried, and receives from the above decoction a pretty bright but fugitive red. The green fruit are picked by the Hindoos, and eaten with their curries. The wood is hard and very durable, variegated with red and white, and is employed for gun-stocks in preference to all other kinds.

Dyers! Indian-mulberry. Tree small.

3 M. breacæata (Roxb. fl. ind. 2. p. 198.) glabrous and sub-arborescent, stiff; leaves oblong, shining, on short petioles; stipulas large, semi-circular at the apex; peduncles solitary, opposite the leaves, bracteate. ½. S. Native of the East Indies, in the Ganjam district; also of the Moluccas and Philosophes. Cham. et Schlecht. in Linnaea, 4. p. 149. Ham. in Lin. trans. 13. p. 533. Blum. bijdr. p. 1006.—Rumph. amb. 5. p. 157. t. 98. Leaves deep green and polished on both sides. The crown of the germ has frequently a small portion of it growing to be a long linear-lanceolate leaf. The anthers are incised, and the stigmas exserted, as in most of the other species of the genus. Peduncles supporting each a small head of small pure white jasmine-like flowers. Berries 4-seeded, combined. Corolla with a very villous throat.

Bracteata! Indian-mulberry. Tree small.

4 M. exsæta (Roxb. fl. ind. 2. p. 199.) arborescent; branches somewhat tetragonal, sometimes villous; leaves on short petioles, oval, acute, smooth, or downy beneath; stipulas emarginate; peduncles opposite the leaves, generally solitary, but sometimes rising by two or threes; heads roundish; stigma incised; stamens exserted. ½. S. Native of Bengal. Branches spreading in every direction. Peduncles supporting each a head of many pure white jasmine-like flowers. Berries 4-seeded, combined.

Exserted-stamened Indian-mulberry. Shrub 6 to 12 feet.

5 M. geminisata (D. C. prod. 4. p. 447.) branches tetragonal, puberulous; leaves ovate or oval, cuneated at the base, hardly petiolate, rather downy beneath; peduncles twin, opposite the leaves; stigma and anthers at the throat. ½. S. Native of
Gambia and Casamance, among bushes, where it was collected by Leprieur and Perrottet. Flowers white.

_Twin-_peduncled Indian-mulberry. Shrub.

6 M. _multiflora_ (Roxb. fl. ind. 2. p. 200.) sub-arborescent; leaves oval-oblong, acute, with undulated margins, downy on both sides, but particularly so beneath; peduncles terminal and opposite the leaves, solitary or twin or tern, villous, usually compound; heads nearly globose, many-flowered. Œ. S. Native of the South Indies, in Berar. Stamens inclosed. Style exerted. Berries combined in a head, about the size of a mulberry, each containing 4 seeds. This plant is cultivated about Nagpore for the sake of its roots, as the other species are in various other parts of India, and for the same purpose.

Many-flowereel Indian Mulberry. Tree small.

7 M. _furensens_ (Smith, in Rees's cycle. vol. 24. no. 3.) young branches tomentose; leaves elliptic-lanceolate, acuminate at both ends, scabrous, but with villous veins; peduncles hairy, opposite the leaves, and terminal; heads globose, few-flowered; corollas elongated, almost glabrous. Œ. S. Native of the Mauritius.

Downy Indian-mulberry. Tree or shrub.

8 M. _squarrosa_ (Ham. in Linn. trans. 13. p. 535.) shrubby, erect, glabrous; leaves elliptic or lanceolate, undulated; peduncles naked, opposite the leaves, solitary, twice the length of the pedicels; heads ovate, nodose in the fructiferous state from the berries being prominent. Œ. S. Native of the East Indies, among bushes at Campoura. Berries of a livid whitish colour: having the pulp white and diaphanous; each containing 4 seeds never combined or confounded, many of them abortive.

_Squarrosa_ Indian-mulberry. Shrub.

9 M. _angustifolia_ (Roxb. fl. ind. 2. p. 201. but not of Roth.) shrubby, erect, glabrous; leaves elliptic or lanceolate, blistered, almost sessile; stipulas somewhat cordate, united into a ring; peduncles short, solitary, almost terminal, but usually opposite the leaves; heads globose, many-flowered; berries distinct in the head. Œ. S. Native of the East Indies, at Chittagong. Roxb. cor. 3. t. 257. Peduncles seemingly-terminal when they begin to blossom, but soon afterwards a branch shoots out from between each peduncle and its respective opposite leaf, which marks their proper situation to be opposite the leaves, supporting each a head of pure white jasmine-like flowers. Anthers hid in the middle of the tube; stamens 4; filaments succulent, of a deep shining black, with very dark-coloured pumice, containing 4 seeds each. The root of this species is used by the natives of India for dyeing, where the plant is in plenty.

_Narrow-leaved_ Indian-mulberry. Fl. April, July. Clt. 1816. Shrubs 4 to 5 feet.

10 M. _persicifolia_ (Ham. in Linn. trans. 13. p. 535.) sulphur-ticose, diffuse, glabrous; branches tetragonal; leaves elliptic, acute, on short pedicels; stipulas subulate, longer than the pedicels; heads sessile, solitary, opposite the leaves, usually containing about 10 flowers, and sometimes bracteate by a leaf. Œ. S. Native of Pegn and Ava, in woods. Corolla incurved, much longer than the head.

_Peach-leaved_ Indian-mulberry. Shrub 1 to 2 feet.

11 M. _Turbacensis_ (H. B. et Kunth, nov. gen. amer. 3. p. 380.) shrub downy, twining; leaves obovate-oblong, acute; stipulas conate at the base, acute, downy; heads terminal and opposite the leaves, on very short peduncles; corollas villous on the outside. Œ. S. Native of New Granada, between Turbaco and Carthagena. Flowers white.

_Turbaco_ Indian-mulberry. Shrub er.

** Terminal peduncles twin, but the lateral and axillary ones are solitary.

12 M. _Roto_ (Lin. spec. 250.) glabrous, procumbent at the vol. iii.

lead; leaves lanceolate, acuminate at both ends, on short pedicels; stipulas broad, very short, mucronate; heads small, axillary, and nearly terminal, on short peduncles. Œ. S. Native of St. Domingo, Cuba, and Mexico. Jacq. hort. vind. t. 16. Lin. hort. clff. p. 73. _Roioe rosaceum_ fructu Cupres-sino. Plum. gen. p. 11. t. 26. Plak. alm. t. 212. f. 4. Flowers white. Berries 1-seeded, ex Plum., but 2-seeded, ex Linin, combined into a globose head. The roots dye linen of a dark colour.


13 M. _longiflora_; a branched rather climbing shrub; leaves elliptic-lanceolate, acuminate; peduncles short, axillary, bearing each a head of 6-7 flowers. Œ. S. Native of Sierra Leone, among bushes, Corolla white, with a very long tube.

_Long-flowereel_ Morinda. Shrub er.

14 M. _quadrangularis_; shrubby; branches rather quadrangular; leaves broad, oblong, acute, membranous, veins; peduncles axillary, bearing each a head of 9-10 flowers. Œ. S. Native of Sierra Leone, among bushes on the mountains, and in the lowlands. (V. S. in herb. Lamb.)

_Quadranigular_ -branched Indian-mulberry. Shrub 3 to 4 ft.

15 M. _peduncularis_ (H. B. et Kunth, nov. gen. amer. 3. p. 380.) glabrous, erect; leaves elliptic-oblong, acuminate, shining; stipulas short, connate, acuminate; heads axillary, on long peduncles; bracteas ovate, acuminate. Œ. S. Native of South America, in woods on the banks of the Orinoco, near San Domingo. Bracteas tetragonal. Corollas white, glabrous. Tube of calyx downy.

_Peduncular-flowereel_ Indian-mulberry. Shrub 4 to 5 feet.

16 M. _retusa_ (Lam. and Poir. dict. 4. p. 316.) arborescent, glabrous; leaves obovate-obtuse, attenuated at the base, on short pedicels, shining above; stipulas connate, membranous, obtuse; heads globose, on short peduncles, terminal. Œ. S. Native of Madagascar, where it is called Lingo. Poirot says, in his diagnosis of this species, that the heads are lateral, but in his description he says they are exactly terminal.

_Retuse_ -leaved Indian-mulberry. Tree.

17 M. _Palmetorum_ (D. C. prod. 4. p. 448.) shrubby, glabrous; leaves oval-lanceolate, acuminate, on short pedicels; stipulas broad-ovate, cuspitate, membranous, foliaceous; heads almost terminal, altemate, glabrous, on peduncles, which are shorter than the leaves. Œ. S. Native of Africa, in Cayor and Gambia at the roots of palm-trees, where it was collected by Leprieur and Perrottet. Peduncles variable in length, from 3 to 5 inches long. Limb of calyx campanulate, hardly 5-toothed. Corolla villous on the outside. Style short. Anthers almost exerted.

_Palm_ Indian-mulberry. Shrub.

18 M. _stenophylla_ (Spreng. syst. 1. p. 749.) branches nearly terete, glabrous, but when young rather tetragonal, and clothed with greyomentum; leaves elliptic-lanceolate, acuminate at both ends, on short pedicels, grey from very short tomentum; stipulas lanceolate, at length reflexed; peduncles axillary, solitary, tomentose. Œ. S. Native of the East Indies, near Callidir, where it is cultivated for its roots, which are used for dyeing. M. angustifolia, Roth, nov. spec. p. 147. but not of Roxb. The figure in Rumph. amb. 3. t. 98. is sometimes referred to for this species, but is probably distinct.

_Narrow leaved_ Indian-mulberry. Shrub or tree.

19 M. _tomentosa_ (Hcyn. in Roth, nov. spec. 147.) branches angular, glabrous; leaves sub-cordate, ovate, acuminate, clothed with grey tomentum beneath, and on the veins above; pedicels long, channelled; peduncles axillary, solitary. Œ. S. Native of the East Indies. Perhaps the same as the following, but it differs in the glabrous branches and long pedicels.
**CIII. MORINDA.**

**Tomentosum** Indian-mulberry. Shrub.

20 M. *mu'ria* (Ham. in Lin. trans. 13. p. 556.) sub-arbores; branches tetragonal, tomentose; leaves cordate-elliptic, acuminate, tomentose on both surfaces, on very short pedi·oles; stipulas usually bifid; peduncles axillary, solitary, brace-tless, shorter than the pedi·oles. _HT. S. Native of the coast of Coromandel, in the woods of Carnata, where it is called *Mudi*. Each head contains 5-6 flowers.

**Mudi** Indian-mulberry. Tree small.

21 M. *cha chuca* (Ham. l. c.) sub-arbores; branches hexagonal; leaves elliptic, acute, often 3 in a whorl, scabrous above, pubescent beneath, and bearded at the axes of the ribs; stipulas semi-circular, often 2-lobed; peduncles axillary, solitary, naked, a little longer than the peti·oles. _HT. S. Native of Bengal, in woods at Matisia and Magadha, where it is called *Chakhuca*, i. e. six eyes, from the heads containing only 6 flowers. The bark of the root is used in dyeing red, like others of the species.

**Chakhuca** Indian-mulberry. Shrub.

22 M. *novosa* (Ham. l. c.) sub-arbores; branches obtuse-angled; leaves opposite, or 3-4 in a whorl, glabrous, elliptic, acute, on very short peti·oles; stipulas marcescent; heads axillary and terminal, pedunculate, egg-shaped, nodose from many of the berries being abortive. _HT. S. Native of the East Indies, in the woods of Magadha. Very like M. *Coriæa*.

**Novosa** Indian-mulberry. Tree.

23 M. *coriæa* (Ham. l. c.) arbores; branches with obtuse angles, glabrous; leaves elliptic, acute, undulate, glabrous, on very short peti·oles; stipulas marcescent; pedi·uncles axillary, and terminal, much longer than the peti·oles, glabrous, bracteate at the apex; heads roundish. _HT. S. Native of the East Indies, in the woods of Mithila, where it is called by the natives *koreæa*. Flowers white, large, sweet-scented, 10-12 in each head.

**Coriæa** Indian-mulberry. Tree.

*** Peduncules crowded, umbellate.

24 M. *umbellата* (Lin. spec. 250.) arbores; erect; leaves petiolate, lanceolate-ovate; peduncles crowded, terminating the branches. _HT. S. Native of Ceylon. This plant is unknown at the present day, and probably the same as *M. microcephala*. Umbellate-flowered Indian-mulberry. Ct. 1809. Tr. or shr.

25 M. *microce phala* (Bartl. in herb. Henke, ex D. C. prod. 4. p. 449.) shrub glabrous, climbing a little; branches terete; leaves ovate-oblanceolate; stipulas ovate-triangular, acuminate, 3 times shorter than the peti·oles: heads pedunculate, 4 together, forming umbels at the tops of the branches. _HT. S. Native of the Island of Luzon. Flowers white.

**Small-headed Indian-mulberry. Shrub ct.**


**Cochin-chine** Indian-mulberry. Tree.

27 M. *se'ndens* (Roxb. ft. ind. 2. p. 202.) shrubby, climbing; leaves oblong-lanceolate, acuminate at both ends, on short peti·oles; stipulas membranous, obtuse; peduncles numerous, umbellate, terminal. _HT. S. Native of the East Indies, on the east side of Point de Galée Bay. Leaves 6 inches long, and an inch broad. Peti·oles hardly longer than the stipulas. Peduncles 7-8, short. Fruit-bearing heads glabrous, about the size of a pea. Flowers white, few in each head.

**Scandent Indian-mulberry. Shrub ct.**

28 M. *sarmen tosa* (Blum. bijdr. p. 1006.) climbing; leaves oblong-lanceolate, acuminate, glabrous; peduncles terminal by two or three, and twin and axillary, concrete at the base, or they may be said to be solitary and bifid; heads usually containing only 4 flowers. _HT. S. Native of Java, on Mount Burangrang in the province of Krawang. Allied to *M. sciodens*.

**Twiggly Indian-mulberry. Shrub ct.**

29 M. *la'xa* (Bartl. in herb. Henke, ex D. C. prod. 4. p. 449.) leaves oblong, acuminate at both ends, membranous, downy beneath as well as on the branches; stipulas semi-circular, cuspitate; floriferous branches rising from the axes of the superior leaves, opposite, bearing each 2 leaves, and numerous small peduncled heads, which are disposed in an umbel·late manner. _HT. S. Native of Mexico.

**Loose Indian-mulberry. Shrub.**

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**SECT. II. PADAV'AA (Pada-cara is the Malabar name of *M. tetrandra*). D. C. prod. 4. p. 449. Flowers tetramerous, tetrads. Style bifid at the apex. Berries containing each 4 1-seeded pyrene. Perhaps a proper genus.


**Tetrandrous Indian-mulberry. Shrub diffuse.**

31 M. *parvîfolia* (Bartl. in herb. Henke, ex D. C. prod. 4. p. 449.) shrubby, glabrous; sterile branches twining; leaves linear-oblong, cuspitate, glabrous, as well as in the axes of the veins; stipulas combined into a truncate sheath; heads terminal, 4-5 together in an umbel, pedunculate. _HT. S. Native of the Island of Luzon. Very like the last species, but the number of the parts of the flower is unknown.

**Small-leaved Indian-mulberry. Shrub.**

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**SECT. III. PHYLIRÉ'A*STH*UM (from Phyllirēa and astrum, an affixed signification, like; the shrub contained in this section has much the habit of *Phyllirēa*). D. C. prod. 4. p. 449. Flowers tetramerous, tetrads. Style clavate, unbidv. Berries containing each 4 1-seeded pyrene. Perhaps a proper genus.

32 M. ? PHYLIRÉE'OIDS (Labill. nov. caled. p. 49. t. 49.) shrubby, glabrous, erect; leaves elliptic-oblong, acute, on short peti·oles; stipulas short, membranous, marcescent; heads axillary, opposite, almost sessile, few-flowered. _HT. S. Native of New Caledonia. Leaves rather sulphur-coloured beneath when dry. Heads smaller than a pea. Calyx nearly entire. Corolla 4-cleft short. Style clavate. Berry 4-celled; cells 1-seeded.

**Phyllirēa-like Indian-mulberry. Shrub 5 feet.**

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**SECT. IV. CHRYSORHIZA (from χρυσός, chryos, gold, and ρίζα, rizâ, a root; the roots are yellow). D. C. prod. 4. p. 450. Flowers pentamerous, pentadands. Berries 2-celled, 2-seeded, Heads of flowers opposite the leaves. Habit of the other species of *Morinda*, but probably a proper genus.

33 M. *chrysorhizā* (D. C. prod. 4. p. 450.) shrub much branched; branches glabrous, bluntly tetragonal; leaves oblong-elliptic, on short peti·oles, pubescent in the axes of the veins beneath; stipulas roundish, foliaceous, entire; heads pedunculate, opposite the leaves. _HT. S. Native of Guiana, where it is called by the natives *Boj-tégi-tjo*. Psychotria? chrysorhiza, Schum. pl. guin. p. 111. Corolla salver-shaped, white. Stigma bipartite.

**Golden-rooted Indian-mulberry. Shrub.**
CULT. For culture and propagation see Hamelia, p. 542.

Subtribe II. Guettardieae (this sub-tribe contains shrubs agreeing with Guettardia in the flowers being distinct). D. C. prod. 4. p. 450. Flowers distinct, never combined.


Lin. syst. Tetrandria, Monogyina. Limb of calyx tubular, with an entire border. Corolla funnel-shaped, 4-cren, having the throat closed by arched scales or hairs. Stamens 4, inclosed. Ovaryurum with a fleshy disk. Style 1. Stigma simple (ex Jack.), quadrifid (ex Blum.). Drupe baccate, crowned by the annular base of the calyx, containing each 4 triquetrous, 1-seeded, chartaceously arillate pyrene. Embryo erect.—Half parasitical suffruticose plants, tuberos at the base. Leaves opposite, crowded, petiolar, glabrous. Stipulas petiolat, ciliolate. Flowers sessile. The germinating plant has a tubum (ex Blum.).


2 M. araita (D. C. prod. 4. p. 450.) tubers covered with rows of prickles; leaves oblong-crenate; limb of calyx quite entire; throat of corolla closed with arched scales; stigma quadrid. S. Native of the western provinces of Java, in the mountains, upon trees, where it is called by the natives Tankuroh. M. tuberosa, Blum. bijdr. p. 1001.—M. echinata, Gaud. in Freyc. voy. pt. bot. t. 96. has the stem beset with rows of prickles; stipulas twin on both sides, connected by their bases within the petioles into a bilif limb; leaves petiolar, elliptic, acute at both ends; but perhaps both plants are the same. Armed Myrmecodia. Shrub.

Cult. For culture and propagation see Schraderia, p. 542.


Lin. syst. Tetrandria, Monogyina. Limb of calyx short, entire. Corolla with a short tube, which is hairy inside, and a flat, 4-lobed limb. Stamens 4, inserted in the throat; filaments short. Style filiform; stigma 2-lobed. Drupe juicy, containing 2 1-seeded pyrene, which are flat inside, and convex on the back, coriaceous. Embryo erect, in the center of the albumen.—Falsely parasitical shrubs, growing upon trees, tuberos at the base. Leaves oval, on short petioles. Stipulas small, linear. Flowers axillary, sessile, white.—Habit of the Myrmecodia.

1 H. fornicatum (Jack. l. c. Blum. l. c.) leaves almost sessile, oval, rounded at the apex. S. Native of the Moluccas, Sumatra, and Nusa-Kambangs, upon trees in the woods. Lasistoma fornicatum, Spreng. syst. 1. p. 428. Nidus germaniis, formicatum nigraurrum. Rumpl. amb. 6. p. 119. t. 55. The trunk of this plant is an irregular tuber, fixed to trees by fibres like the stems of ivy; it is hollow inside, and becomes the nest of black ants.

Ants' Hydnophytum. Shrub parasitical.

2 H. montanum (Blum. bijdr. p. 956.) leaves on short petioles, oblong, obtuse. S. Native of Java, on the mountains, in the province of Buiten zombie, upon trees. The base of the stem is swollen, as in the first species. Mountain Hydnophytum. Shrub parasitical.

Cult. For culture and propagation see Schraderia, p. 542.


Lin. syst. Tetrandria, Monogyina. Limb of calyx small, 4-toothed. Corolla small, sub-campanulate, with a villous throat, and a 4-cren spreading limb. Stamens 4, inserted in the mouth of the tube; filaments very short. Style short, perforating the disk; stigma bifi in the throat. Drupe crowned by the calyx, 2-celled; cells containing each 2 1-seeded pyrene. Embryo inverted in the albumen.—A shrub, having the habit of Coffea, with divaricate branches. Leaves distich. Flowers densely crowded on sessile hemispherical, axillary receptacles, sessile, bracteate, umbellate; but the fruit is pedicellate.

1 H. frutescens (Blum. l. c.) S. Native of Java, in woods on Mount Burungang. Shrubby Hypophyrum. Shrub 4 to 5 feet.

Cult. For culture and propagation see Hamelia, p. 542.


Lin. syst. Tetrandria, Monogyina. Calyx with an ovate tube and a small 4-toothed limb. Corolla funnel-shaped, subcampanulate, 4-cren (f. 100. b.), glabrous inside. Filaments rising from the bottom of the corolla (f. 100. c.), but not adnate to its tube; anthers roundish, hardly exerted. Style filiform; stigma 2, hairy (f. 100. d.). Berry roundish (f. 100. f.), umbilicate, containing 2-4 1-seeded, coriaceous pyreene. Seeds semi-ovate, convex on the outside, flat and furrowed inside. Albumen horny. Embryo dorsal, straight, inverted (ex Gauertia), erect (ex Pet. Th. and Blum.).—Creeping herbs, with the habit of Michelia. Leaves opposite, rather fleshy, oval. Stipulas small. Flowers terminal, sessile, solitary, white. Berries red.—Perhaps this genus is sufficiently distinct from Michelia.

1 H. depressa (Banks, in Gærtn. l. c.) stems low, creeping; leaves petiolar, flat, sub- appressed. S. Native of New Granada on Silla de Caracas, Peru, Chile, Falkland Islands, Tristan d'Acuna, Java, &c. in humid or marshy places. N. deprimus, Smith, icon. ined. 2. p. 28. Tratt. arch. 3. p. 129. D'Urv. fl. mal. p. 45. Gaud. fl. mal. p. 16. Erythrodonanum alsineformé, Pet. Th. fl. trist. p. 42. t. 10.—Gomozia Granetiana, Mat. in Lin. fil. suppl. 4. 2.

Rising Nertera. Fl. creeping.

Cult. The species of *Nertéa* are small creeping suffrutescent evergreen plants, of little beauty even when in flower; they grow best in a mixture of turfy peat and sand; and are increased easily by separating the rooted creeping stems. They may be placed among the alpine plants in summer, but in winter they will require the protection of a green-house. They should be grown in pots well drained with sherds, placed in pans of water.


Linn. syst. Tetradria, Monogynia. Calyx with an ovato-globose tube, and a large 4-toothed limb. Corolla funnel-shaped, with a terete tube, and a 4-lobed spreading limb, having the throat and lobes of the limb hairy inside. Filaments adnate to the tube, almost to the throat; anthers ovate, hardly exerted. Style filiform; stigmas 4, inclosed. Berries almost globose, crowned by the teeth of the calyx, containing 4 horny 1-seeded pyrenes each; and sometimes containing 8, when 2 berries are combined. Albumen somewhat cartilaginous. Embryo minute, erect, with very short cotyledons.—American globrous creeping evergreen herbs, with the habit of *Lianca* or *Nertéa*. Leaves roundish or ovate. Stipulas small, solitary on each side. Flowers axillary and terminal, sometimes combined by twos at the tops of the peduncle, and sometimes solitary and sessile.

1. *M. repens* (Lin. spec. p. 161.) leaves roundish; flowers 2 on the top of each peduncle, combined; berries combined. 2. H. Native of North America, from Boston to Carolina; Upper Canada; and of Mexico between Puebbo-Viejo and Real del Monte, in slidy woods at the roots of trees, and among mosses. —Huds. alim. t. 444. f. 2.—Cat. ear. t. 20.—Pult. gaz. t. 1. f. 13. Corollas white, tinged with purple, usually 2 together on the top of each peduncle, and seated on two combined ovaries; the flowers are sometimes also combined, and therefore 8-cleft, according to the obs. of Torrey. Berries red, insipid.


Ovate-leafed Mitchellia. Fl. cr.

Cult. These are small creeping evergreen plants of very little beauty; they will grow very well in a peat border, or in pots filled with a mixture of peat and sand, placed among other alpine plants; they are easily increased by separating the creeping stems.


Linn. syst. Tetra-Hezadria, Monogynia. Limb of calyx 3-6-parted or toothed. Corolla funnel-shaped, regular, 4-6-cleft, for the most part hairy. Stamens 4-6, inserted towards the throat; filaments very short; anthers linear, exerted or inclosed. Stigmas 4-9, linear, thick. Drupe baccate, crowned by the permanent calyx, containing 4-9 triquetrous coriaceous 1-seeded pyrenes.—Shrubs or subshrubs, natives of India, usually with an ungrateful smell. Flowers crowded or in dense heads, axillary and terminal, baccate. Drupes usually blue.—This genus, according to Blume, is nearly allied to *Ancylosanthus* and *Pauliaura*.

* Limb of calyx 3-6-parted.


Blue-fruited Mephitidia. Fl. shrub.

2. *M. attenauata* (Jack, l. c. p. 126. under *Lasianthus*,) plant suffrutescent, villous; leaves oblong, attenuated at the apex, but roundly cordate at the base, glabrous above; flowers axillary, 8-4-together, almost sessile, involucreted by lanceolate bracteas. 2. F. Native of the interior of Bencoolen. Calyx 4-parted. Corolla yellow, pilose. Berries deep blue, smaller than those of the preceding species.

Attenuated-leafed Mephitidia. Fl. shrub.

3. *M. inaequata* (Blum. bijdr. p. 996. under *Lasianthus*, as well as all the following species,) shrub, hairy; leaves oblong, acuminate, unequally rounded at the base; flowers axillary, crowded, involucreted by bracteas. 2. F. Native of Java, on mountains Saka and Seribu. Corolla white.

Unequal-leafed Mephitidia. Fl. shrub.

4. *M. rhinocerotis* (Blum. bijdr. p. 996.) shrub; leaves oblong, acuminate, rounded at the base, glabrous above, but hairy beneath, as well as the branches and calyces; flowers crowded, axillary. 2. F. Native of Java, in the higher woods on mounts Saka; Gede, &c. Corollas white.

Horn-scented Mephitidia. Fl. shrub.

5. *M. capitata* (Blum. bijdr. p. 996.) shrub; leaves oblong-lanceolate, acuminate, attenuated at the base, glabrous above, and hairy beneath, as well as the branches, peduncles, and calyces; heads of flowers pedunculate, axillary. 2. F. Native of Java, in woods on the mountains. Flowers white.

Capitiate-flowered Mephitidia. Fl. shrub.

6. *M. tomentosa* (Blum. bijdr. p. 997.) shrub; leaves oblong, long-acuminate, acute at the base, glabrous above, but...
tomentose on the veins beneath, as well as on the branches; flowers axillary, solitary or twin, sessile. \( h \). S. Native of Java, in woods on Mounts Salak, Gede, &c. Corollas white.

Tomentosa Mephitidia. Shrub.

7 M. \( \text{obscera}^{3} \) (Blum. mss. ex D. C. prod. 4. p. 453.) shrubby; leaves oblong, acuminate, rather obliquely attenuated at the base, clothed with tomentum beneath, as well as on the rib above and the branches; heads of flowers axillary, almost sessile. \( h \). S. Native of Java, in the western parts on the mountains. Corollas white. This species differs from \( M. \text{toncosa} \) in the stipules being larger, and in the flowers being more numerous, &c.

Obscura Mephitidia. Shrub.

8 M. \( \text{luctida}^{2} \) (Blum. bijdr. p. 997.) shrubby; branches glabrous; leaves ovate-oblong or lanceolate, cuspitate, shining above, rather pubescent beneath at the margins, and on the veins; flowers crowded, axillary, rarely solitary. \( h \). S. Native of Java, in the more elevated woods. Flowers white.

Shining-leaved Mephitidia. Shrub.

9 M. \( \text{tomentosa}^{1} \) (Blum. bijdr. p. 997.) shrubby; branches glabrous; leaves oblong, acuminate, attenuated at the base, and are as well as the branches glabrous, but ciliated at the apex; stipules large, roundish, rather membranous; flowers crowded, axillary; calyx hairy. \( h \). S. Native of Java, on Mount Salak. Corollas white.

Stipular Mephitidia. Shrub.

10 M. \( \text{levigata}^{1} \) (Blum. bijdr. p. 998.) shrubby; leaves oblong, acuminate, acutish at the base, and are as well as the branches glabrous; fascicles of flowers axillary; calyx 5-parted. \( h \). S. Native of Java, in mountain woods. Flowers white. There is a variety of this with lanceolate leaves.

Smooth Mephitidia. Shrub.

11 M. \( \text{latusuullu} \) (Blum. mss. ex D. C. prod. 4. p. 453.) shrubby; leaves oval, acute at both ends, reticulately veined, and are as well as the branches glabrous; flowers crowded, axillary, on short peduncles. \( h \). S. Native of Java, on Mount Salak in shady parts of woods. Corollas white. Fruit globose, orange coloured. Lobes of calyx lanceolate, parted to the base, at length becoming conic.

Broad-leaved Mephitidia. Shrub.

** Limb of calyx with short lobes.

12 M. \( \text{inoobara} \) (Blum. bijdr. p. 998.) shrubby; branches glabrous; leaves oblong or oblong-lanceolate, acuminate at both ends, glabrous, downy on the veins beneath; flowers crowded, axillary, girded by blunt bracteas. \( h \). S. Native of Java, in woods on Mount Gede. The leaves of this species are without any ungrateful smell.

Scentless Mephitidia. Shrub.

13 M. \( \text{hexandra} \) (Blum. bijdr. p. 998.) shrubby; leaves lanceolate, long-acuminate, clothed with strigose down on the rib above, and on the veins beneath, as well as the branches; flowers axillary, usually solitary, hexandrous. \( h \). S. Native of Java, in the more elevated woods on Mount Salak. Corollas white.

Hexandrous Mephitidia. Shrub.

** Limb of calyx with short teeth.

14 M. \( \text{verosa} \) (Blum. bijdr. p. 999.) shrubby; leaves on short pedicles, oblong, acuminate, obliquely attenuated at the base, very veiny, glabrous above, downy on the veins beneath, as well as on the branches; flowers crowded, axillary, sessile. \( h \). S. Native of Java, in woods on the Seribu mountains. Corollas white.

Veiny Mephitidia. Shrub.

15 M. \( \text{stilvestrus} \) (Blum. bijdr. p. 999.) shrubby; leaves on short pedicels, oblong-lanceolate, acuminated at both ends, glabrous, veiny, clothed with adpressed down on the veins beneath, as well as on the branches; flowers crowded, axillary, sessile; fruit containing 4-5 pyrenes. \( h \). S. Native of Java, along with the preceding, from which it differs in the smaller leaves, which are unequally narrowed at the base, in the fewer and remoter veins, and in the more obsoletely toothed calyx.

Wild Mephitidia. Shrub.

16 M. \( \text{reticulata} \) (Blum. bijdr. p. 1000.) shrubby; leaves large, on short pedicles, oblong, acuminated, acute at the base, glabrous above, and reticulately veined, rather tomentose on the veins and branches; flowers crowded, axillary, almost sessile. \( h \). S. Native of Java, on the Seribu mountains. Flowers white.

Reticulated-leaved Mephitidia. Shrub.

17 M. \( \text{purpurea} \) (Blum. bijdr. p. 1000.) shrubby; leaves lanceolate, long-acuminated, and are as well as the branches glabrous; peduncles crowded, 1-flowered, axillary, or lateral from the leaves having fallen. \( h \). S. Native of Java, on mounts Salak, Gede, &c. in shady places. Flowers purple.

Purple-flowered Mephitidia. Shrub.

18 M. \( \text{stercoraaria} \) (Blum. bijdr. p. 1000.) shrubby; leaves lanceolate, long-acuminated, acute at the base, glabrous except the veines beneath, which are clothed with adpressed down, as well as the branches; flowers crowded, axillary, sessile; fruit globose, containing 7-9 pyrenes. \( h \). S. Native of Java, on the mountains. Allied to \( M. \text{stillestris} \); but the fruit is evidently distinct. Flowers white.

Stinking Mephitidia. Shrub.

Cult. See \( M. \text{amelia} \), p. 542, for culture and propagation.


LIN. SYST. Pentandria, Monogynia. Calyx with a short oblong tube, and a small spreading 5-toothed deciduous limb. Corolla campanulately globose, 5-cleft, hairy inside at the throat; lobes lanceolate, acute, reflexed. Stamens 5, with very short filaments, and exerted anthers. Stigma capitate, (bilamellate, ex Vaill.) 4-5 lobed (ex Roxb.). Berry apple-shaped, not crowned at the apex by the calyx, but marked by a sinuated areola, indicating the place from which the limb of the calyx had fallen off, containing 5 bony 1-seeded pyrenee, which are obtuse at the base, and acute at the apex. Seed oblong, fixed to the inner angle of the cell, near the middle. Albumen fleshy. Embryo large, inverted, with long plano-convex cotyledons, and a bluntly cordate compressed superior radicle,—Small trees. Leaves petiolate, ovate. Stipulas solitary on both sides, lanceolate. Cymes branched, subpaniculate, axillary, or rising beneath the leaves from the cicatrices, occasioned by the folding of the old leaves. Flowers white.—This genus is anomalous in the order, from the structure and situation of the seeds; it is allied to \( Cántium \), but differs from that genus in the ovary being 5-celled, not 2-celled.

1 V. \( \text{edulis} \) (Vaill. symb. 3. p. 36.) unarm'd; leaves ovate, membranous, glabrous; cymes rising beneath the leaves. \( h \). S. Native of Madagascar, from whence it has been introduced to China and the Mauritius. Lam. ill. t. 159. Sieb. fl. murr. exs. 2. no. 77. and no. 138. V. \( \text{cymo-4} \), Guett. fil. earp. 5. p. 73. t. 193. V. Madagascariensis, Gmel. syst. 1. p. 307. V. Connor'soni, Desf. ex Steud. Jaqc. hort. vind. 1. t. 44. Vavanga, Chienemis, Rohr, and Vavanga edulis, Vaill. act. soc. hist. nat. hafn. 2. pt. 1. p. 297, and p. 298. t. 7. The habit of the tree
is much like that of Callicarpa. The fruit is eaten by the natives of Madagascar and the Mauritius under the names of Vao-tanga and Vao-vanguer. Flowers white.

**Edible-fruit** Vangueria. Cilt. 1809. Tree 10 to 15 feet.

2 V. spinosa (Roxb. fl. ind. 2. p. 172.) spines decussate; leaves ovate-oblong, smooth; cymes axillary, in fascicles. S. Native of Bengal and China; in Bengal it is called *Magya*. Meynea spinosa, Link, Jahrb. 1-3. H. p. 32. Rôm. et Schultes, mant. 1. p. 67. and 84. Leaves opposite or three in a whorl, 3-4 inches long. Flowers axillary, fascicled on a short peduncle, with proper longer pedicels, small, of a pale greenish colour. Antlers small, cordate. Stigma 4-lobed. Berry size of a cherry, turbinate, smooth, yellow when ripe, succulent, and edible. The flowers and habit of the whole plant are exceedingly like *Céanthium purpureum*.

**Spinosa Vangueria.** Fl. June, July. Cilt. 1816. Shrub large. 3 V. infassa (Burch. cat. geogr. pl. afr. austr. No. 2029. trav. 2. p. 258, and 259. with a figure,) unarmed; leaves tomentose, roundish-ovate, usually acuminate; cymes axillary. S. Native of the south of Africa, without the tropic, in the territory of Bachapin, where it is considered unlucky by the inhabitants. Fruit round, an inch in diameter, but not edible.

**Unlucky Vangueria.** Shrub 5 to 10 feet.

N. B. Vangnéria verrucosa, Sieb. f. mar, does not belong to the present order, but is probably a species of *Logania* or *Solidum*.

**Cult.** For culture and propagation see *Hamelia*, p. 542.


**Lin. syn. Tetra-Eméandria, Monogynia.** Calyx with ovate or globose tube; and a tubular permanent or deciduous limb, which is either truncate or irregularly toothed (f. 101. a). Corolla salver-shaped, with a cylindrical tube (f. 101. c), and from 4-9 oval-lobed lobes (f. 101. b). Anthers 4-9, sessile in the throat of the corolla, inclosed. Stigma capitate, rarely 2-lobed. Drupes roundish or ovate, crowned by the tube of the calyx (f. 101. d), commonly blunted and 4-celled pustules (f. 101. c), having the cells straight or curved, 1-seeded. Seeds erect, nearly terete.—Small trees or shrubs, natives of South America, and a few of India. Leaves ovate or lanceolate, rarely cordate. Stipulas lanceolate, deciduous, except in one species in which they are sheathing and truncate. Peduncles axillary, bifid, rarely twice bifid. Flowers sessile and mulilateral along the branches of the peduncles, and solitary in the forks.


1 G. speciosa (Lin. spec. 1498.) leaves broad, ovate or oval-obovate, usually subacrate at the base, obtuse and apiculated at the apex, downy beneath; stipulas ovate or lanceolate, acuminate, deciduous; cymes pedunculate, velvety, much shorter than the leaves; flowers of from 4 to 9 parts; fruit depressed, marked by an areola at the apex. S. Native of the East India islands; coast of Coromandel and Malabar, &c. Lam. ill. t. 154. f. 2. Roxb. fl. ind. 2. p. 521. Lindl. bot. reg. t. 1393. Cadamba jasminiflora, Sonn. trav. 2. p. 128. Rava-Pou, Rheed.

mal. 4. p. 47. and 48. Leaves canescent from villi in the young state, but the adult ones only along the nerves. Branches horizontal, forming a large shady head. Peduncles twice bifid. Flowers unisexual, large, white, exquisitely fragrant, partaking much of the scent of cloves. Seeds much curved, with the concave part of the curve outwards. Leaves sometimes downy on both surfaces. (f. 101.)

V. var., *glabra* (D. C. prod. 4. p. 455.) young leaves downy along the nerves and veins, but the adult ones are glabrous. S. Native of Mexico, but probably only cultivated in gardens. There are varieties of this with the leaves either subcorolate or subattenuated at the base.

**Shorey Guettarda.** Fl. June, July. Cilt. 1771. Tree 30 ft.

**Sect. II. Guettardaria** (altered from the generic name). D. C. prod. 4. p. 455. Limb of calyx usually permanent, truncate or irregularly subdentate. Corolla silky on the outside, with the lobes flat. Drupes having the cells of the pustule straight.

§ 1. Tube of corolla silky, villous or downy. Drupes containing a 4- or 5-celled pustule.

2 G. arge'stea (Lam. dict. 3. p. 54. ill. t. 154.) leaves ovate, acuminate, on short peduncles, glabrous and smooth above, but clothed with silky velvety down below, with the transverse nerves parallel; stipulas villous on the outside, ovate, terminating in a subulate point; cymes pedunculate, bifid, velvety; flowers hexameric, with a villous tube, which is 10 times longer than the ovary. S. Native of Cayenne. G. speciosa, Aubl. guian. i. p. 320. but not of Lin. Peduncles about the length of the leaves. Leaves 5 inches long and 3 broad. Pericarp 5-6 lines long. Corolla 15 lines long, white. Ovarium 6-celled, 6-ovulate.

**Silcry Guettarda.** Tree 20 feet.

3 G. Hayase'snis (D. C. prod. 4. p. 455.) leaves obovate, acuminate on the base, and mucronate at the apex, scabrous above, and tomentose beneath; stipulas acuminate, 3 times shorter than the pedilae; peduncles hairy, about the length of the leaves; cymes tripartite; tube of corolla 4 times longer than the ovary, and the limb 5-6-cleft. S. Native of Cuba, about the Havana. Allied to *G. ambigua*. Flowers white.

**Havanahavanna** Guettarda. Tree.

4 G. Messinia (Wall. cat. no. 6221.) leaves oblong, acuminate, paler beneath, glabrous in every part, except on the mid-rib beneath; cymes pedunculate, axillary, dichotomous; calyx 5-parted, permanent; corolla villous on the outside; fruit roundish, crowned by the calyx. S. Native of the East Indies. Stipulas ovate. Flowers white, not so large as those of *G. speciosa*.

**Mission Guettarda.** Shrub or tree.

5 G. americana (D. C. prod. 4. p. 455.) leaves ovate or obovate, cordate at the base, and rather mucronate at the apex, scabrous above, but clothed with downlike tomentum beneath; stipulas acuminate, one-half shorter than the pedilae; peduncles hairy, about the length of the leaves; cymes bifid; fruit globose, reticulated, crowned by the tubular calyx. S. Native of Guadaloupe, and also of Jamaica, if, as is suspected, this be the *Halepsia, P. Browne*, jam. p. 205. t. 20. f. 1. Flowers white.

**Ambigous Guettarda.** Shrub 8 to 10 feet.

6 G. cordata (H. B. et Kunth, nov. gen. amer. 3. p. 430.) leaves ovate-elliptic, deeply cordate, rounded at the apex, rather pilose above, and clothed with white tomentum beneath; stipulas ovate, acute, length of pedilae; peduncles 3 or 4 times longer than the pedilae; cymes 3-flowered; flowers hexameric, with a downy tube, which is 4 times longer than the ovary. S.
Native of New Granada, near Ibagué and Cuesta de Tolima, in hot places. Said to be nearly allied to *G. scabra*.

**Cordate-leaved Guettarda.** Tree or shrub.

7 G. *rugo*sa (Swartz. prod. p. 59. fl. ind. occ. 1. p. 632.) leaves ovate-subulate, mucronate, scabrous above, and tomentose beneath; peduncles 3 or 4 times longer than the leaves, compressed, villous; cyanes bifid: flowers hexameric, with a villous tube, which is 3 times longer than the ovary.  S. Native of the Caribbee islands, as of Santa Cruz, Antigua, and Dominica. Vahl, symb. 3. p. 59. Tube of corolla an inch and a half long, silky. Very nearly allied to *G. scabra*, but differs in the nervules of the leaves being less prominent and straight, not reticulate. Drupe purplish, containing a 6-seeded putamen.

**Wrinkled Guettarda.** Clt. 1793. Tree.

8 G. *scabra* (Lam. ill. t. 154. f. 3.) leaves obovate, mucronate, coriaceous, scabrous above, reticulated and pubescent beneath; stipulas lanceolate, acuminate, caducous; peduncles compressed, villous, almost 4 times longer than the pediote; cyanes bifid: limb of corolla 6-7-parted; stannens 6-7; tube of corolla villous, 3 times longer than the ovary.  S. Native of the West Indies, as of Porto-Rico. Vent. choix. t. 1. Mathiola scabra, Lin. spec. 1661. Mathiola, Plun. ed. Burm. t. 173. f. 2. Flowers white. Drupe containing an angular 4-7 celled putamen, and crowned by the somewhat crenate limb of the calyx.

**Scabrous Guettarda.** Clt. 1818. Tree.

9 G. *piluliformes* (Cham. et Schlecht. in Linnea. 4. p. 182.) leaves ovate, acute, on long petioles, smoothish above, but not scabrous, and clothed with silkyomentum beneath, as well as the branches and inflorescence; stipulas elongated, triangular, very soon falling off; peduncles shorter than the leaves, twice bifid, with the branches expanded; limb of calyx very short, somewhat truncate; drupe globose, depressed.  S. Native of Brazil within the tropic. Leaves 4 inches long and 2½ broad, on petioles about 15 lines long. Corolla densely clothed with down, having the leaf almost an inch long, and the limb 4-6-parted.

**Filiforme-like Guettarda.** Shrub 10 feet.

10 G. *Pedunculare* (Wall. cat. no. 6222.) leaves ovate-oblong, acuminate, glabrous; peduncles axillary, solitary, 1-flowered, girded by a ring just under the fruit, which is extended into 2 opposite subulate points; fruit oblong, crowned by the 4 permanent teeth of the calyx.  S. Native of Sirinagur.

**Peduncular-flowered Guettarda.** Shrub or tree.

11 G. *Platy*roda (D. C. prod. 4. p. 456.) leaves oval, mucronulate, acute at the base, on short petioles, glabrous and smooth above, but hoary beneath; stipulas triangular, acute; peduncles compressed, smoothish, length of the leaves, cyane at the apex, and bearing 5-7 flowers; limb of calyx short, tubular, a little toothed; fruit globose, depressed.  S. Native of Brazil, in the sand by the sea side at Bahia, where it was collected by Salzmann.

**Broad-peduncled Guettarda.** Shrub.

12 G. *Mollis* (D. C. prod. 4. p. 456.) leaves elliptic, somewhat mucronate, downy above and villous beneath; peduncles 5 times longer than the pediote; cyanes capitulate, villous; flowers hexameric, with a villous tube, which is 2 or 3 times longer than the ovary.  S. Native of St. Domingo. G. elliptica, ex Hispaniola, Spreng. syst. 1. p. 789.

**Soft Guettarda.** Tree or shrub.

13 G. *Xylolotoide* (H. B. et Kunth, nov. gen. amer. 3. p. 420.) leaves oblong, acute, rounded at the base, glabrous above, and downy beneath, but hairy on the veins, as well as on the branches; stipulas lanceolate, length of the pediote; peduncles 6 times longer than the pediote; cyanes 3-7-flowered; flowers hexameric, having the tube 8 times longer than the ovary.  S. Native on the banks of the Orinoco, between Angustura and Ferreras. Dierobotryum divaricatum, Willdl. in Schultes, syst. 5. p. 221. Flowers white. Fruit globose, downy, containing a 5-6-seeded putamen.

**Fly-Honeysuckle-like Guettarda.** Tree 20 feet.

14 G. *fumivflora* (Vahl. ecol. amer. 2. p. 26.) leaves oblong, polished, and glabrous on both surfaces, but having the middle nerve rather downy; stipulas small, subulate; peduncles crowded at the tops of the branches, rather shorter than the leaves, 3-flowered, rarely bifid, each branch bearing 3 flowers; flowers smaller, either pentamerous or hexameric; ovary striated; tube of calyx often obscurely bifid; tube of corolla villous.  S. Native of Santa Cruz, Montserrat; and of Mexico, at Acapulco. Edechi, Loefl. trav. 259. and p. 371. ex Rohr. *Ibora* pentandra, West. ms. Fruit globose, about the size of a pea, not crowned.

**Small-flowered Guettarda.** Shrub 6 to 8 feet.

15 G. *odorata* (Lam. ill. t. 154. f. 4.) leaves oval, acute at both ends, glabrous above, but rather villous on the nerve beneath, as well as on the pediote and branches; stipulas subulate, deciduous; peduncles almost one-half shorter than the leaves, villous, as well as the cyanes, which are bifid; flowers pentamerous; tube of calyx unequal, 7 times longer than the ovary.  S. Native about Carthagena and Havannah, among bushes by the sea side. Laugertia odorata. Jacq. amer. p. 64. t. 177. f. 21. pict. t. 259.

f. 16. Drupes containing a roundish 5-furrowed 5-celled putamen. Flowers of a dirty reddish colour, 9-10 lines long, villous on the outside, very sweet-scented at night. Fruit black, size of a pea. There is a spinosecent variety of this species according to Jacquin.

**Sweet-scented-flowered Guettarda.** Clt. 1818. Sh. 6 to 10 ft.

16 G. *Membranacea* (Swartz. prod. p. 59. fl. ind. occ. 1. p. 635.) leaves ovate, acuminate, membranaceous, rather hispid on both surfaces; down very minute, curved; peduncles length of the pediote, dichotomous; flowers secund, tetramerous; limb of calyx rather bifid, truncate; tube of corolla downy.  S. Native of Hispaniola, among bushes on the mountains. Corolla white, half an inch long. Drupe oblong, 4-seeded.

**Membranous Guettarda.** Shrub.

17 G. *Elliptica* (Swartz. prod. p. 59. fl. ind. occ. 1. p. 634.) leaves elliptic, obtuse, smoothish above, and downy beneath, as well as on the branches; peduncles shorter than the leaves; cyanes bifid; flowers tetramerous, with a silky tube, which is 5 times longer than the calyx.  S. Native of Jamaica, in dry fields. Drupe roundish, 4-seeded. Stigmata 2, blunt. Flowers small. This species is easily distinguished from *G. mollis*, with which it has been confused by Sprengel in his *Syst*.

**Elliptic-leaved Guettarda.** Tree 20 feet.

18 G. *Microphylla* (Barbl. in herb. Heineke, ex D. C. prod. 4. p. 457.) leaves ovate-oblong and oblong, smoothish above, and rather downy beneath; peduncles 3 or 4 times shorter than the leaves, 3-flowered; calyx quadrifid, with acute segments; corolla silky on the outside, with rounded lobes.  S. Native of Luzon, one of the Philippines. Very like *G. parviflora*.

**Small-leaved Guettarda.** Shrub.

19 G. *Uruguensis* (Cham. et Schlecht. in Linnea. 4. p. 183.) leaves elliptic-oblong, acuminate, rather pilose above,
canescent from thementum beneath, as well as the petioles, branchlets, and inflorescence; stipulas lanceolate, triangular, caducous; peduncles twice bifid, shorter than the leaves; limb of calyx very short, somewhat truncate; corolla silky; drupe oblong, 3-4-seeded. ° S. Native of the south of Brazil, on the banks of the Uruguay. Leaves 2 inches long, and an inch broad, on petioles 1-2 lines long. Tube of corolla 2-3 lines long; lobes 5, roundish.

**Uruguay Guettarda.** Shrub 10 feet.

20. G. FINLAYSONIÁ (Wall, cat. no. 6223.) leaves obovate-oblong, obtuse at the apex; calyx truncate; pedicels solitary, axillary, 1-flowered, much shorter than the leaves; corolla villous outside. ° S. Native of the East Indies. **Finlayson’s Guettarda.** Shrub.

21. G. WALLICHIA (Wall.); leaves oblong, acuminate, glabrous; pedicels 1-flowered, rising in numbers from short axillary peduncles; calyx truncate; corolla glabrous, apparently purple, ½ inch long. ° S. Native of the East Indies; fruit roundish, not crowned. Perhaps belonging to the first section. **Wallich’s Guettarda.** Shrub.

§ 2. Doubtful species, having 4-cleft silky corollas, and the drupes containing a 2-3-celled putamen. Perhaps species of the genus Steinitzianum.

22. G. PROTRACTÁ (Bartl. in herb. Hennke, ex D. C. prod. 4. p. 457.) leaves ovate or ovate-lanceolate, acuminate, rather villous on both surfaces, silky on the nerves and veins beneath; peduncles cymose, bifid, having the branches recurved. ° S. Native of Mexico. Perhaps a species of Steinitzianum.

Var. a, brevipes (D. C. prod. 4. p. 457.) leaves ovate, with 9 very prominent nerves on each side of the mid-rib; peduncles twice the length of the petioles; limb of calyx truncate, irregularly subulate; corolla 4-cleft, clothed with silky tomentum outside. ° S. Native of Mexico.

Var. b, longipes (D. C. l. c.) leaves ovate-lanceolate, with 7-8 rather prominent nerves on each side of the mid-rib; peduncles 4 times longer than the petioles; drupes ovate-oblong, acute, 2, sometimes 3-celled. ° S. Native of Mexico, at Acapulco.

**Protracted Guettarda.** Shrub.

23. G. ARMÁCA (Bartl. in herb. Hennke, ex D. C. prod. 4. p. 457.) armed with opposite spines; leaves ovate, acuminate, smoothish above, but clefted with hairy tomentum on the nerve and veins beneath, as well as on the branchlets; peduncles cymose, bifid, 3 or 4 times longer than the petals; segments of calyx 4, narrow-lanceolate, acute; corolla silky, with acute lobes; drupe ovate-oblong, (ex Bartl.) 2-3-celled. ° S. Native of Mexico. Very nearly allied to G. protracta. **Armed Guettarda.** Shrub 6 to 8 feet.

24. G. PANÇULA (Bartl. in herb. Hennke, ex D. C. l. c.) leaves ovate, acuminate, glabrous above, clothed with silky tomentum on the nerve and veins beneath, as well as on the branchlets; cymes dichotomous, many-flowered, on long peduncles, axillary, but the ultimate ones are disposed in a panicle; corolla clothed with silky tomentum outside, with ovate-oblong lobes. ° S. Native of Peru, on the mountains. Corolla 6 lines long. Teeth of calyx acute, smoothish. Fruit unknown. **Panicled-flowered Guettarda.** Shrub 6 to 8 feet.

**Sect. III. ULOLOBUS** (from oulder, oulder, curled, and kofs, leaf, a leaf in reference to the curled lobes of corolla), D. C. prod. 4. p. 457.—Laugéria, Ruiz et Pav. fl. per. 2. p. 22, but not of Jacq. Limb of calyx short, 5-parted almost to the base, permanent. Corolla silky on the outside, with 5 lobes, which are curled on the margins.

25. G. CRISPISOÓRA (Vahl, eclog. 1. p. 36. t. 6.) leaves broad-ovate, acuminate, obtuse at the base, having the lower lateral nerves approximate. ° S. Native of the Island of Montserrat, towards the tops of the mountains, ex Vahl; and of St. Vincent, on the edges of mountains, in inundated places, ex Forsyth; and about Santa Fe de Bogota, ex Mutis, in H. B. et Kunth, nov. gen. amer. 3. p. 420. G. crispoóora var. a, Pers. Roem. et Schultes. Stipulas large, undulate, foliaceous, ovate, acuminate. Guettardia membranacea, Sieb. et ex Dec. mart. no. 57, from Martinico, is the same, or a very nearly allied species. **Crispiled-flowered Guettarda.** Tree or shrub.


27. G. DEPENDENS (D. C. prod. 4. p. 458.) leaves oval-oblong, acuminate, acute at the base; stipulas shorter than the petioles; drupes oblong, 3-4-celled. ° S. Native of Peru, in groves about Mana. Laugéria dependens, Ruiz et Pav. fl. per. 2. p. 23. t. 145. f. b. Branches of cyme spreading, usually dependent. G. crispoóora var. b, Pers. and Roem. et Schultes, but is more nearly allied to hirsuta than to G. crispoóora. **Dependent-cymed Guettarda.** Tree 20 feet.


28. G. CORACÉA (Pers. ench. 1. p. 200.) quite glabrous; leaves elliptic-ovate, rather coriaceous, bluish, almost nervesless, rather paler beneath; stipulas acuminated, deciduous; peduncles about equal in length to the leaves, compressed, bifid or twice bifid; flowers tetramerous, glabrous, unilateral, and distant along the branches of the peduncle; tube of calyx bluntly 4-toothed. ° S. Native of the Island of Montserrat, ex Vahl; and Guadaloupe, at Pointe-a-Pitre. Laugéria coracéa, Vahl, eclog. 1. p. 26. Laugéria tubulosa, Fors. in herb. L’Her. Drupe oblong, ex Vahl, containing a 4-celled putamen. Corolla 6-7 lines long. Perhaps Viviania Dominigena, Rafin. speech. 1. p. 117. **Coriaceous-leaved Guettarda.** Tree or shrub.

29. G. RESISTÓSA (Pers. ench. 2. p. 200.) leaves lanceolate, attenuated at both ends, glabrous, glaucous beneath; stipulas combined into a somewhat truncate ciliated sheath; branchlets and cymes clothed with glaucous resin; peduncles a little shorter than the leaves; cymes bifid, crowded with flowers; flowers pentameric, glabrous; limb of calyx short, truncate, or hardly 5-toothed. ° S. Native of Montserrat, on the mountains, ex Vahl; of Guadaloupe, where it was collected by Perrottet; of Porto Rico, Riedley; of Trinidad, ex Sieber, f. lin. no. 112; and of Mexico, ex herb. Puerari. Laugéria resistósa, Vahl, eclog. 1. p. 27. t. 10. f. 6. with a figure. Terebrária, Sesse, fl. mex. icon. incd. Drupe oblong, containing a 4-celled, 4-seeded putamen, ex Vahl, but in the specimen examined the drupe contains a 4-5-celled 4-5-seeded putamen; there are therefore 2 species confused under this name. **Resistant Guettarda.** Shrub 8 to 10 feet.

30. G. BANONIX (Wall, cat. no. 6220.) leaves elliptic, acuminate, coriaceous, quite glabrous; peduncles axillary, solitary, or twin; cymes dichotomous; stipulas ovate, acuminated. ° S. Native of the East Indies, in Sirinagar. Flowers small. Calyx a little twisted. **Brown’s Guettarda.** Shrub.
† Species not sufficiently known.

31 G. Fontanei (D. C. prod. 4, p. 458.) stem arboreous; leaves broad-ovate, acuminate, and are, as well as the divaricate branches, villous; stipulas ovate, acute, deciduous. f. S. Native country unknown. G. hirsuta, Desf. cat. hort. par. ed. 3. p. 404, but not of Pers. Habit of G. argentea.

Desfontaines' Guettarda. Shrub.

32 G.? umbellata (Spreng. neu endt. 3. p. 48.) leaves oblong, quite glabrous on both surfaces; branches tubercular, compressed, dilated at the top; peduncles axillary, aggregate; flowers pentamerosus, glabrous. f. S. Native of Brazil. The calyx is said to be 5-toothed, and the drupe 6-celled. This plant ought probably to be excluded from the order.

Umbellata-flowered Guettarda. Shrub or tree.

Cult. For culture and propagation see Hamiltonia, p. 555. The species bear very fine leaves and flowers, and are therefore worth cultivating.


Lin. syst. Tetrandra, Monogyina. Calyx with a very short tube, and a 4-toothed limb. Corolla small, almost rotate, with a very short tube, and a 4-lobed spreading stem. Stamens 4, with exerted filaments, which are about equal in length to the limb of the corolla, and roundish anthers. Drupe dry, thin, ovate, crowned by the calyx, containing a 2-celled nut; cells 1-seeded.—A sarmentose shrub, native of Guiana, climbing among bushes. Leaves opposite, petiolate, ovate, acute. Stipulas oval, obtuse, deciduous, interpetiolar. Peduncles axillary, 3 times shorter than the leaves, racemously panicled: having the branches opposite, the lower ones the longest. Flowers small, sessile along the branches, bluish.

1 M. sarmentosa (Aubl. guian. 1. p. 106. t. 41.) f. S. Native of French Guiana, upon trees on the banks of rivers. Lam. ill. t. 66. f. 2. Cunninghamia sarmentosa, Willd. spec. 1. p. 615. Stipulas acute, ex Aubl., and the leaves tormentose beneath; but in the specimens examined the stipulas are obtuse, and the leaves are rather villous beneath, and at length glabrous. Perhaps there are two distinct species, Aublet's and Patris's.

Cult. See Pederia, p. 561. for culture and propagation.


Lin. syst. Tetrandra, Monogyina. Calyx with an ovate or oblong tube, and a short campanulate 4-toothed limb. Corolla tubular, 4-cleft, with acutish lobes, which are shorter than the tube. Anthers oblong, almost sessile in the throat, not exserted. Stigma bifid. Drupe somewhat baccate, ovate or oblong, crowned, containing a 2-celled nut: cells 1-seeded. Seeds erecte. Small trees, natives of the Mauritius. Leaves petiolate, opposite, or 3 in a whorl, oblong or obovate, glabrous, usually beset with glandular hairs in the axils of the veins. Stipulas interpetiolar, acute, deciduous. Peduncles axillary, shorter than the leaves, bifid. Flowers small, white, sometimes dioecious from abortion, unialateral, and sessile along the branches of the peduncles. This genus has the inflorescence of Stenostomum, but differs in the parts of the flowers being quaternary, not quinary. The flowers are nearly like those of Malanea, but the inflorescence is different; the tube of the corolla is longer, and the anthers almost sessile.

1 A. anthirhoca (D. C. prod. 4. p. 459.) leaves 3 in a whorl, obovate-oblong, cuneated at the base, acuminate at the apex, glabrous on both surfaces; flowers hermaphrodite; drupes oblong. f. S. Native of the island of Bourbon, and probably of the Mauritius, where it is called bois de Loutte. A. Losanna, Comm. in herb. Juss. Malanea verticillata, Lam. ill. t. 66. f. 1. Desr. in Lam. dict. 3. p. 688. Antirhoea Borbonica, Gmel syst. 1. t. 244. Cunninghamia verticillata, Willd. spec. 1. p. 615. Drupe the size of a grain of wheat. Flowers small, white.

Whorled-leaved Antirhoea. Tree 20 feet?

2 A. dioica (Bory, in litt. ex D. C. prod. 4. p. 459.) leaves opposite, and 3 in a whorl, obovate, cuneated at the base, short-acuminate, smoothish, beset with glandular pili in the axils of the veins; flowers dioecious from abortion; drupes oblong; f. S. Native of the Mauritius. Pet. Th. mel. obs. p. 56. Malanea neuroropa, Comm. in herb. Thouin. Flowers small, whitish.


Var. γ, acuminata (D. C. l. c.) leaves almost smooth, long-acuminate. f. S. Native of the Mauritius. Guettarda acuminata. Sieb. fl. maup. 1. no. 60.

Dioecious Antirhoea. Tree 20 feet?

A. frangulacea (D. C. prod. 4. p. 460.) leaves opposite, ovate, acute, at the base, and rather acuminate at the apex, smoothish, with the axils of the veins glandless; flowers hermaphrodite; drupes ovate. f. S. Native of the Mauritius. Guettarda frangulacea, Sieb. fl. maup. exsicc. 2. no. 59. Drupe one half shorter than in the first species, sometimes 3-celled and 3-seeded, which shows its affinity with Guettarda. Flowers small, whitish.

Frangula-like Antirhoea. Tree.

Cult. For culture and propagation see Hamiltonia, p. 555.


Lin. syst. Tetrandra, Monogyina. Calyx with an ovate tube, and a small 5-toothed limb; teeth permanent, connivent, rather unequal. Corolla funnel-shaped, having the tube a little wider at the throat, and a 5-lobed limb: lobes lanceolate, bluntish. Anthers 5, oblong, hardly exserted. Stigma 2-lobed. Drupe ovate-oblong, crowned, containing a 2-celled nut. Seeds terete, solitary in the cells, inverted. Embryo central, in the fleshy albumen. West Indian trees. Leaves opposite, oval or oblong, on short petioles. Stipulas at length deciduous. Peduncles axillary, divided into a bident cyme. Flowers small, white, sessile and unialateral along the branches of the cyme, and one in each fork.—Inflorescence of Antirhoea, but differs from that genus in the parts of the flowers being quinary; and from Guettarda in the putamen of the fruit being 2-celled, not many celled.

§ 1. Corollas glabrous.

1 S. lucidus (Gérard. fil. carp. 3. p. 69.) leaves oblong, obtuse, shining above, glabrous on both surfaces; teeth of calyx short, obtuse. f. S. Native of the West Indies, as in Jamaica, Santa Cruz, St. Lucia, Porto-Rico, Trinidad, &c. Stürmiana luci...
RUBIACEÆ. CXIV. STENOSTOMUM. CXV. CHIONE. CXVI. TIMONIUS. CXVII. HAMILTONIA.

1 C. glabra (Rich. l. c. under Crúcea.) ñ. S. Native of Tortoise island. Psychérita megapòspérra, Vahl, eclog. amer. 3. p. 3. t. 21. ex herb. Jass, but neither the description nor the figure agree well with it, and it is therefore Jacquinia venosa, Swartz, prod. p. 47. Reem. et Schultes, syst. 4. p. 401.

Glabrous Chione. Cít. 1824. Tree 40 feet?

Cult. For culture and propagation see Hamiltoniana, p. 555.

CXVI. TIMONIUS (Timon or Aytimon is the name of the first species in Amboyna.) Rumph. amb. 3. p. 216. t. 140. D. C. prod. 4. p. 461.—Boëba, Gand. voy. uran. t. 93.—Boëba's, A. Rich. mem. soc. hist. nat. Par. 5. p. 215.—Buréné, Cham. et Schlecte. in Linnaea. 4. p. 188.—Erithalis, Forst. but not of Lin.

LIN. SYST. Tetrándria, Monogynária. Calyx with an ovate tube, and a tubular truncate 2-6-toothed limb. Corolla tubular, salver-shaped, with a 4-5-parted spreading limb, a naked throat, and oval obtuse lobes. Stamens 4, almost sessile, inserted in the upper part of the tube of the corolla. Anthers oblong-heart-shaped, sessile in the throat. Stigma 2, exerted, digitately 5-crenate, with the lobes linear. Drupes globose, smooth, crowned by the limb of the calyx, containing from 7-25 bony distinct 1-seeded indesinable pyrenees. Seeds inverted, linear. Albumen fleshy. Embryo terete.—Glaborous trees. Leaves opposite. Stipulæ interpetiolar, acute, entire. Peduncles axillary, shorter than the leaves, bearing each 3 flowers at the apex, the middle flower sessile, and the lateral ones pedicellate, each girdled by a cup-shaped 2-lobed permanent bracteae at the base. Allied to Guettardia, but differs in the pyrene being distinct, not combined.


Rumphii's Timoniús. Tree.

2 T. Forsteri (Cham. et Schlecte. in Linnaea. 4. p. 189, under Buréné) leaves opposite; flowers axillary; male ones disposed in cymes, bearing 4-5 anthophoric ones or 5 corollaries roundish. ñ. S. Native of the Society Islands; and in Romanzoff's Island. Erithalis polygama, var. a. Forst. prod. 1. p. 101. Erith. cymósa, Spreng. pag. 1. p. 17. Erith. polygama a. Willd. spec. 1. p. 997. Fruit containing usually 25 pyrenees. The flowers are described by Chamiso and Schlecte, as quaternary and quinary, but they are also sometimes senary.

Forster's Timoniús. Tree.

3 T. Gaedichardii (Cham. et Schlecte. in Linnaea. 4. p. 190, under Buréné) leaves elliptic, bluntest, acute at the base; cymes on long peduncles; fertile ones 3-flowered; but the sterile ones are twice bífida and 7-flowered. ñ. S. Native of the Island of O-Wahu, and of a number of the Sandwich Islands. Böeoa elátior, Gand. in Freyc. voy. p. 473. t. 93. Fruit containing usually 12 bony pyrenees.

Gaedichard's Timoniús. Tree.

Cult. For culture and propagation see Hamiltoniana, p. 555.

CXVII. HAMILTONIA (so named after William Hamilton of Woodlands, near Philadelphia, in North America, an eminent botanist, and the first who was at the expense of erecting a conservatory in that country for the preservation of plants of hot climates). Roxb. hort. beng. (1814.) p. 15. fl. ind. 2. p. 223, but not of Mulh. nor Willd.—Spermacetiobyn, Roxb. cor. 3. (1819.) p. 32.

LIN. SYST. Pentándria, Monogynária. Calyx with an ovate tube, a 5-parted limb, and subulate permanent segments.
Corolla funnel-shaped, with a long straight tube (f. 102. b.), and 5 oblong lobes (f. 102. c.). Stamens 5, inserted in the throat of the corolla, inclosed. Stigma 5-cleft. Capsule crowned by the calyx, deliquescent at the apex, 1-celled, containing 5 triquetrous 1-seeded pyrenes. Seeds inserted by the base, erect, covered by a dry reticulated membrane or epidermis. Albumen very sparing. Embryo erect, with an oblong radicle, and cotyledones foliaceous—East Indian shrubs. Leaves lanceolate, on short pedicels. Stamens short, acute, broad, and adpressed at the base. Flowers disposed in fascicles or umbels, sweet-scented.—This genus has been joined with Ankylostachys by Jussieu, but is sufficiently distinct from that genus.


Sweet-scented Hamiltonia. Fl. Oct. Clt. 1818. Sh. 4 to 6 ft. 2 H. scabra (D. Don, prod. fl. nep. p. 137.) leaves ovate-lanceolate, short-acuminate, scabrous on both surfaces, rounded at the base; calycine segments linear, villous. S. Native of Nipaul, at Narainhetti, and between Betourrna and Bempedli, chiefly between Bhindsabon, and the last-mentioned village, forming the most extensive thickets. Dr. Wallich has also met with it about the village near Cheeasnageree, and on several mountains in the valley. Hamiltonia Dilina and Nonatelia filamentosa, Hamilt. mas. Hamilton azureum, Wall. in Rosb. fl. ind. 2. p. 225. Spermatocitum azureum, Lindbl. bot. reg. 1235. Flowers azure blue, perfuming the air by their delicious fragrance, from November until March, during which time they are very beautiful. Indeforrescence ample, densely villous, especially the corollas. The tender parts of the plant emit a fetid smell, like those of Pezonia and Serissa.

Scabrous Hamiltonia. Fl. Jan. Clt. 1823. Sh. 4 to 6 ft. 3 H. vilosa (Rosb. fl. ind. 2. p. 226.) shrub stiff, very pilose; leaves lanceolate; fascicles of flowers axillary, intermixed with hairy bracteas. S. Native of the Moluccas.

Pilose Hamiltonia. Shrub 4 to 6 feet.

Cult. The species are desirable for every collection of vote plants, being free flowerers, very fragrant, and of easy culture. They succeed best in a mixture of loam and peat; and cuttions strike root readily in sand, with a hand-glass over them, in a moist heat.

CXVIII. LEPTODERMIS (from λεπτος, leptos, slender, and δέρμα, derma, the skin; the branches are covered with separating fibrous bark). Wall. in Rosb. fl. ind. 2. p. 191. A. Rich, mem. soc. hist. nat. par. 5. p. 221. D. C. prod. 4. p. 462.—Hamiltonia species, D. Don, prod. fl. nep. p. 137.

Lin. Syst. Pentandria, Monogyna. Involucre calyxiform, of 2 leaves, closely girding the ovary. Tube of calyx inclosed within the involucrum; limb of calyx short, permanent, 5-lobed; lobes roundish, adpressed. Corolla funnel-shaped, scabrous from minute papilla, with a terete tube, which is hairy inside, and 5 ovate cuspulate lobes which are involute and valvate in ovation. Stamens 5, with very short filaments and inclosed anthers. Ovarium 5-celled; cells 1-seeded. Style filiform; stigma quadrate. Fruit oblong, 5-celled? 5-valved? 5-seeded.—Shrubs, with decussate, tetragonal branches. Leaves lanceolate or oblong, on short pedicels, membranous. Stipulas length of petioles, adpressed, permanent, acute. Flowers sessile, scentless, white.—Perhaps sufficiently distinct from Hamiltonia.

1 L. lanceolata (Wall. in Rosb. fl. ind. 2. p. 191.) leaves lanceolate, attenuated, acute, membranous, villous; flowers sessile by threes at the ends of the branches; stipulas triangular, villous; branches quadrangular, downy while young. G. Native of Nipaul, 3 the mountains, though it is among the less common plants. Hamiltonia fruticosa, D. Don, prod. fl. nep. p. 137. Flowers white, scentless. According to the description in fl. nep. the flowers are said to be hexameric and hexandrous.

Lanceolate-leaved Leptodermis. Shrub 3 to 4 feet. 2 L. ort捐款 (Bunge, in mem. acad. sc. Petersb. 2. p. 108.) leaves oblong, glabrous; flowers terminal, aggregate. G. Native of China, on the mountains.


Lin. Syst. Penta-Hexandria, Monogyna. Calyx with an ovate tube, and a campanulate 5-6-toothed permanent limb. Corolla bearded inside, with a short tube, and a 5-6-lobed spreading limb; lobes acute, rather longer than the tube, valvate in estimation. Anthers 5-6, almost sessile at the throat. Stigmas 5-6-hamellate. Berry globose, furrowed, crowned by the limb of the calyx, containing 4-6 1-seeded pyrene. Seeds erect. Albumen fleshy. Embryo erect.—Small glabrous trees, with knotted fragile branches. Leaves petiolate, smooth. Stipulas ovate, caducous, with an elevated zone, which is joined to the petioles. Peduncles rising from the axils of the upper leaves, loosely panicked, shorter than the leaves.

1 P. Borbonica (Gmel. syst. 1. p. 577.) leaves oblong-lanceolate; peduncles 7-8-flowered. S. Native of the Island of Bourbon, on the mountains, where it is called Bois cassaut. P. corymbosa, Gaertn. fl. capp. 3. p. 82. P. Borbonica, Rosb. fl. ind. 2. p. 158. Flowers minute, pendent, disordered in axillary and terminal trichotomous corymb. Stigma 3-lobed. Drupe containing 3 pyreens.

Bourbon Psathura. Tree small.

2 P. Myrtilloides (A. Rich, diss. 1. c.) leaves oblong, bluntish; peduncles usually 5-6-flowered, lateral flowers sterile and deciduous; limb of calyx 5-parted; lobes lanceolate. S. Native of the Mauritius. Perhaps sufficiently distinct from the preceding.

Myrtle-leaved Psathura. Tree small.

3 P. terniflora (A. Rich, diss. 1. c.) leaves elliptic-lanceolate, acute; peduncles at the tops of the branchlets, usually by threes, 1-flowered; limb of calyx wide, obliquely 5-7-toothed. S. Native of the Mauritius.

Three-flowered Psathura. Tree small.

Cult. For culture and propagation see Hamiltonia above.
§ 1. Fruit containing 4 pyrene. Myouinia virae.

1 M. obovata (Lam. ill. no. 1482. t. 68. f. 1. dict. 4. p. 397.) leaves obovate, obtuse, on short pedioles; pedicels 1-3-flowered; berries bluntly tetragonal. 8 s. Native of the Island of Bourbon, where it is called Bois de rat, from the fruit being grateful to rats. M. Bordéenca, Ramb. nom. Berries red, size of grapes.

Obovate-leaved Myouinia. Shrub 4 to 6 feet.

2 M. MYRTIFOLIA (Lam. ill. no. 1483. t. 58. f. 2. dict. 4. p. 385.) leaves ovate-lanceolate, acute, on short pedioles; pedicels 1-3-flowered; berries spherical. 8 s. Native of the Island of Bourbon. M. lanceolata, Willd. spec. 1. p. 614. Rubiaceae, no. 103. Sieb. fl. major. fasc. 2.

Myrtle-leaved Myouinia. Shrub 4 to 5 feet.

3 M. MULTIFLORA (A. Rich, diss. p. 132.) leaves nearly sessile, rather cordate at the base, ovate-oblong, acute, shining above, reticulately veined, very minute; corollas terminal. 8 s. Native of the Mauritian. Ixora parviflora, Lam. ill. no. 1470. t. 66. f. 2. exclusive of the syn. of Rhed. Ixora micrantha, Roum. et Schults, syst. 3. p. 179. Faramea corimbosa, Sieb. fl. major. no. 2. no. 2. but not of Aubl.

Var. B, oblongifolia (D. C. prod. 4. p. 465.) leaves oblong, obtuse; corollas more crowded.

Tar. a, ovata (D. C. I. c. 1.) leaves ovate. 8 s. Ixora parviflora, Poir. suppl. 3. p. 207. Engénia violacea, Lam. dict. 3. p. 200. Myrtus androsaemoides, Poir. dict. 4. p. 409. Faramea, Sieb. fl. major. no. 6. no. 3. Perhaps a proper species.

Many-flowered Myouinia. Shrub 4 to 5 feet.


4 M. UMBELLATA (Barrl. in herb. Hanke, ex D. C. prod. 4. p. 463.) leaves obovate or obovate-oblong, coriaceous; pedicels axillary, many-flowered at the apex; pedicels 7-8, umbellate; berries roundish; calyces teeth very short, acutish. 8 s. Native of the Island of Luzon, one of the Philippines. Segments of corolla valvate in restitution. Genital not exerted. Seeds narrow, cylindrical, as in Guttātā, ex Barb. Perhaps a section of Myouinia, as Langbergia of Guttātā. Umbellate-leaved Myouinia. Tree small or shrub.

Cult. For culture and propagation see Hamiltonia, p. 555.


LIN. SYST. Tetra-Pentandria, Monogynia. Calyx with an obovate tube, and a small 4-5-toothed limb. Corolla subcampanulate, spreading, 4-5-cleft, with lanceolate acute lobes, and a tomentose throat. Stamens 4-5, hardly exerted. Stigma capitate, bifid: having the lobes approximate (ex Rich.). Fruit pear-shaped, 6-8-striped, but not crowned, containing 4-5 1-seeded, bony, combined pyrene. Embryo inverted. Alburnum fleshy.—Small glabrous trees, natives of the Mauritian. Leaves on short pedioles. Stipulas lanceolate, acuminate, rather longer than the pedioles. Pedicels axillary, 1-3-flowered. The number of the cells of the fruit is variable.

1 P. oleoides (Lam. ill. no. 1484. t. 65. f. 3.) leaves oblong, obtuse; stipulas glabrous; pedicels 1-3-flowered; drupes 8-seeded. 8 s. Native of the Island of Bourbon, where it is called Bois Mussard. P. Commersoni, Gmel. syst. 1. p. 247. P. salicifolia, Willd. spec. 1. p. 614. Olive-like Pyrostria. Tree 20 feet.

2 P. hexaspermum (Rosxb. fl. ind. 1. p. 403.) leaves oblong, acute; stipulas plicate; corollas axillary, dichotomous, with recurved branches; drupes 6-seeded. 8 s. Native of the East Indies in the Island of Huminah.

Six-seeded Pyrostria. Tree.

3 P. ORBICULARIS (A. Rich, l. c.) leaves oval-ornicular, sessile at the base and rather coruate, obtuse at the apex; stipulas glabrous; pedicels 1-flowered, furnished each with an involucre composed of 2 keeled leaves, which give the flower. 8 s. Native of the Island of Bourbon.

Orbicular-leaved Pyrostria. Shrub.

4 P. CORPUSCULA (A. Rich, l. c.) leaves oval, acute, rather coruate at the base, on very short pedioles; stipulas combined, sheath-formed, obtuse, and permanent; flowers pedicellate, solitary, girded by scales, which are combined into the form of an involucre; lobes of corolla oval, acute. 8 s. Native of the Mauritian.

Heart-leaved Pyrostria. Tree small.

5 P. POLYMORPHA (A. Rich, l. c.) leaves sometimes linear-lanceolate, sessile, variegated: sometimes orbicular and obtuse, petiolate: sometimes oblong-cordate, acute: stipulas acute, hardly combined at the base, caducous; flowers solitary, girded each by a 3-4-toothed tomentose involucre; lobes of corolla lanceolate. 8 s. Native of the Mauritian.

Variable Pyrostria. Tree small.

6 P. MACKERELLA (A. Rich, l. c.) leaves oval-oblong, somewhat coruate, on short pedioles, serobiculate in the axils of the veins beneath; stipulas glabrous; flowers sessile, solitary, axillary, girded each by a 2-leaved involucre. 8 s. Native of the Mauritius.

Frut egg-shaped, ribbed, crowned by the calyx.

Long-leaved Pyrostria. Tree small.

Cult. For culture and propagation see Hamiltonia, p. 555.

CXII. OCTAVIA (from Octavus, the eighth; in reference to the drupe containing 8 pyrene). D. C. prod. 4. p. 464.

LIN. SYST. Tetra-Pentandria, Monogynia? Calyx with a glabrose tube, and a truncate hardly conspicuous limb. Corolla, stamina, and style unknown. Ovarium crowned by a fleshy shining permanent disk, which is perforated in the middle. Drupe fleshy, glabrous, smooth, not crowned by the calyx, containing 8 1-seeded pyrene, which are disposed in a whorl. Alburnum fleshy. Embryo unknown.—A glabrous shrub, native of Guiana. Leaves petiolate, oval, long-acuminated, membranous, shining above. Bracteas ovate-oblong, acuminate, erect, much shorter than the pedioles, falling off very slowly. Flowers sessile, solitary, bractless, in the axils of the superior leaves, or on the tops of the branchlets.—This genus is not sufficiently known from the want
of the flowers; but it appears to come nearest to Pyrostria, but differs from that genus in the truncate calyx and florecence.

1 O. sessiliflora (D.C. l.c.) ]._S. Native of French Guiana, where it was collected by Patris.

Sessile-flowered Octavia. Shrub.

Cult. — See Hamiltonia, p. 555. for culture and propagation.


Lin. syst. Tetradria, Monogynia. Lint of calyx small, 4-toothed. Corolla globose, with a villous throat, and a short spreading 4-leaflet limb. Stamens 4, included; filaments very short, inserted beneath the throat; anthers linear. Style included, perforating the fleshy disk; stigma subulate, 4-toothed at the apex. Drupes succulent, obovate, umbonate, inflated, when young 4-celled, but in the adult state usually 1-celled, containing generally 4 1-seeded pyrene, which are furnished with papery aril at the base, and fixed to the central axis, which is incomplete. Embryo incurved. — A shrub, with the habit of Fennelia. Leaves small, trapexiform, almost sessile. Peduncles axillary, filiform, usually bearing 2 flowers at the apex. — This genus is nearly allied to Pyrostria.

1 L. riffoi (Blum. l.c.) ]._S. Native of the western parts of Java, on the mountains in woods.

Two-flowered Litosantes. Shrub 4 to 6 feet.

Cult. — For culture and propagation see Hamiltonia, p. 555.


Lin. syst. Peta-Decemberia, Monogynia. Calyx with an ovate tube, a short permanent subtruncate limb, having its border hardly 5-10-toothed. Corolla rotate, almost without a tube, 5-10-parted; lobes linear-oblong, spreading. Stamens 5-10, scarcely adnate at the bottom of the corolla; filaments subulate; anthers linear. Stigma appearing simple at first sight, but on more close examination it will be found to be bilamellate. Drupes globose, furrowed, crowned by the calyx, containing 5-10 1-seeded pyrene. Seeds pendulous. Alloemen fleshy. — Glabrous shrubs.

Leaves petioled, having the lateral nerves hardly evident. Stipules broad, short, mucronate, sheathing, permanent. Peduncles axillary, panicked, rather longer than the leaves. Flowers small, white.

1 E. fruiticosa (Lin. spec. 251.) leaves obovate; panicles pedunculate; berries 8-10-furrowed, crowned by the truncate limb of the calyx. ]._S. Native of Martinico, Guadaloupe, Jamaica, St. Thomas, Porto-Rico, Cuba, &c. in woods on the mountains. Swartz, obs. p. 80.-Browne, jan. t. 17. f. 3. — Plum. ed. Burm. t. 249. f. 2. — Erithalidae odorifera, Jacq. amer. 72. t. 173. f. 23. Flowers white, sweet-scented, usually hexadromous. Berries purplish.

Var. 3. inodora (Jacq. amer. p. 72.) shrubby; branches procumbent; flowers inodorous; berries white. ]._S. Native of Curacoa, on rocks by the sea side. E. inodora, Rem. et Schultes, syst. 5. p. 268. This is a shrub about 2 feet high.


2 E. angustifolia (D. C. prod. 4. p. 465.) leaves oblanceolate, acuminate at both ends; panicles pedunculate, few-flowered; berry 5-9-furrowed, crowned by the 5-toothed limb of the calyx. ]._S. Native of Cuba, about the Havana.

Teeh of calyx 5-6, more conspicuous than those of the first species. The tube of the corolla is a little longer. Berry nearly dry, containing 5-7 pyrene.

Narrow-leaved Erithalis. Shrub.

3 E. ? pentagonia (D. C. prod. 4. p. 465.) leaves oval-lanceolate, acute; panicles terminal; fruit deeply 5-furrowed, not crowned by the calyx; style very short, crowned by 5 reflexed stigmas. ]._S. Native of Cuba. Fruit the size of a pea, containing 5 chartaceous compressed narrow pyrene. Style permanent. Corolla and stamens unknown. Habit of the other species of Erithalis, but is probably a distinct genus.

Five-angled-fruited Erithalis. Shrub 4 to 6 feet.

Cult. — For culture and propagation see Hamiltonia, p. 555.


Lin. syst. Pentandria, Monogynia. Calyx with a subglobose tube, a 5-leaflet limb, and acute lobes. Corolla salver-shaped, with a terete tube, and 5 spreading linear obtuse lobes. Stamens 5; filaments exserted from the throat of the corolla; anthers oblong. Stigma thick, undivided. Drupes globose, crowned by the calyx, furrowed, containing 5 bony 1-seeded pyrene. — Small glabrous trees. Leaves obovate, obtuse or emarginate at the apex, emeuted at the base, coriaceous, downy beneath. Stipulas sheathing. Spikes of flowers axillary, at the tops of the branches, pedunculate. Flowers seceded, 2-4 in a cluster, flesh-coloured, propped by 3-5 coloured bracteas.

1 R. secundiflorum (Humb. et Bonpl. l.c.) ]._S. Native of South America, on the shady banks of the Orinoco and Atapapo, near St. Balthasar. Nonatelia secundiflora, Spreng. syst. 1. p. 751. The leaves and branches are covered by a kind of yellow resinous matter. Berries size of a pea, brownish.

Secondary-flowered Retiniphillum. Shrub 10 to 12 feet.

Cult. — For culture and propagation see Hamiltonia, p. 555.


Lin. syst. Pentandria, Monogynia. Calyx with an ovate tube, and a 5-toothed permanent limb. Corolla tubular, funnel-shaped, having the tube as if it was gibbous, and a 5-lobed limb. Stamens 5, almost inclosed. Stigmas 2 obtuse. Drupes globose, furrowed, containing 5 coriaceous 1-seeded pyrene. Alloemen horny. — Shrubs or small trees. Leaves glabrous or downy, oval-oblong. Stipulas combined together more or less, or free. Thyrs terminal, panicle-formed or corymbose-formed. Flowers often bracteolate, white.

1 N. racemosa (Aubl. guian. 1. p. 187. t. 72.) leaves elliptic-oblong, acuminate at both ends, petiolate; stipulas twin on both sides, 3 times shorter than the petioles; thyrses panicked, a little longer than the petioles; flowers bracteolate at the base.


2 N. Panameæsia (D. C. prod. 4. p. 466.) leaves oblong, acuminate at both ends, petiolate; stipulas twin on both sides,
connected at the base by a ligula, linear-subulate, longer than the pedioles; thyrse terminal, panicked, divaricate, sessile, short.  
5. Native of Panama. N. divaricata, Bartl. in herb.  

Panama Nonatelia. Shrub 3 to 4 feet.  
5 N. violacea (Aubl. guian. 1. p. 185. t. 73.) leaves elliptic, acuminate, tapering into the short pedioles at the base; stipulas solitary on both sides, ovate, obtuse, deciduous; thyrse many-flowered, about half the length of the leaves; flowers bracteate.  
53. Native of French Guiana, in woods.  

The flowers are 5-fused, of a violaceous color, about the size of currants.  

Shrub 4 to 5 feet.  
4 N. officinalis (Aubl. guian. 1. p. 182. t. 73.) leaves ovate, acute, glabrous; stipulas combined into a 4-toothed sheath; panicles corymbose; involucrum small, 3-leaved under each flower.  
7. Native of Cayenne, in sterile places. Lam. dict. 1. p. 342. Stems nodose. Flowers white. Berry 5-celled and 5-seeded, according to Aublet. Psychotria involucrata, Swartz. f. ind. occ. p. 413. a native of Jamaica, is certainly distinct from the plant of Aubl. in the fruit being 5-celled and 2-seeded.  

Officinal Nonatelia. Fl. June, July. Cl. 1827. Shrub 2 to 3 feet.  
5 N. lutea (Aubl. guian. 1. p. 190. t. 74.) leaves broad-ovate, acuminate; stipulas bluntly 2-lobed; panicles erect; tube of corolla narrow at the base, long, and with the segments of the limb acute.  

Yellow-flowered Nonatelia. Fl. June, July. Cl. 1823. Shrub 1 foot.  
6 N. longifolia (Aubl. guian. 1. p. 185. t. 71.) leaves lanceolate, acuminate, acute at the base, glabrous; stipulas combined into a sheath, furnished with 2 acute lokes on each side; thyrse panicle, few-flowered, pedunculate, one-half shorter than the leaves; tube of corolla incurved, and with the segments of the limb blunted.  

Long-flowered Nonatelia. Shrub 2 to 3 feet.  
7 N. grandiflora (H. B. et Kunth, nov. gen. amer. 3. p. 423.) leaves elliptic-oblong, acuminate, acute at the base, glabrous; stipulas connate, bifid; corollas pedunculate, terminal.  
73. Native of South America, on the banks of the Orinoco and the Tumacai, near Yavita. Flowers rose-coloured. Fruit oval, furrowed, 5-celled, ex Bonpl.  

Great-flowered Nonatelia. Shrub.  
8 N. Macrophylla (H. B. et Kunth, l. c. p. 423.) leaves ovate, acuminate, membranous, glabrous above, and clothed with fine down beneath; panicles terminal, pedunculate.  

Great-leaved Nonatelia. Shrub.  
9 N. Formosa (A. Rich. in mem. soc. hist. nat. Par. 5. p. 307.) leaves elliptic, long-acuminated, abruptly petiolate, glabrous above, and rugged from tomentum beneath; spikes terminal, simple, erect, length of leaves; flowers tetramerous; fruit 4-celled; corolla with a long tube, which is very villous inside.  
73. Native of French Guiana. Allied to N. longiflora.  

Beautiful Nonatelia. Shrub.  
10 N. divaricata (A. Rich. l. c.) leaves elliptic, acuminate, tapering into the petioles at the base; flowers 5-fused together, on the top of a common peduncle; fruit globose, 4-furrowed, containing 4 pyrene.  
73. Native of French Guiana, in woods. Flowers unknown.  

Divaricate Nonatelia. Shrub.  
11 N. hisenda (Wall. in Roxb. fl. ind. 2. p. 157.) leaves oblanceolate, acuminate at the base, villose beneath; stipulas linear-lanceolate, broad at the base; flowers sessile, axillary, verticillate, with hispid bracteas; stigma 5-lobed.  

Hispid Nonatelia. Shrub 3 to 4 feet.  

Cult. For culture and propagation see Hamiltonia, p. 555.


L. syst. Tetra- Pentandria, Monogynia. Limb of calyx short, quite entire. Corolla 4-5-parted, villous inside, with the segments of the limb coning at the base, and spreading at the apex, each tipped by a short inflated claw. Stamens 4-5, inserted in the base of the corolla. Stigma bifid, warded. Drupe globose, baccate, umbilicate, containing 4 1-seeded triquetrous pyrene, which are furnished with papery aril. Embryo albuminous, erect.—A climbing glabrous shrub. Leaves opposite, oblanceolate, acute, coriaceous, glabrous. Stipulas permanent, twin on both sides, approximate, erect, at length marcescent. Flowers crowded, axillary. This genus is nearly allied to Nonatelia according to the author.  
1 G. coriacea (Blum. l. c.).  

Coriaceous-leaved Gynochthodes. Shrub cl.  

Cult. For culture and propagation see Paradella, p. 561.


L. syst. Tetra-Pentandria, Monogynia. Limb of calyx urceolate, quite entire, deciduous. Corolla with a short tube, and a spreading 4-5 cleft limb; lobes oblong-linear. Stamens 4-5, exserted; filaments inserted in the throat; anthers long, linear, incumbent. Style perforating the disk. Stigma bifid, exserted. Drupe globose, umbilicate, containing 4 1-seeded chartaceous arillate pyrene, which are hollow inside, and gibbous on the outside. Embryo albuminous, erect.—Glabrous climbing shrubs, with terete branches. Leaves opposite, petiolate. Stipulas broad, short, truncate. Coryms or umbels axillary and terminal, simple or compound. This genus is nearly allied to Gynochthodes, but differs from it in the stamens being exserted.  
1 C. scasdens (Blum. bijdr. p. 468.) leaves oval, acute; flowers subumbellate, exceeding the upper leaves.  
73. Native of Java and the island of Nusa-Kambanga, on the moutains, climbing upon trees, where it is called Sambon and Tjionkankan.  

Climbing Celespernum. Shrub cl.  
2 C. Corinebousum (Blum. herb. ex D. C. prod. 4. p. 468.) leaves oblong, acuminate at both ends; flowers subumbellate, 3 times shorter than the upper leaves.  
73. Native of Java.
Corymbosa-flowered Celospernum. Shrub el.  
Cult. See Poedéria, p. 561. for culture and propagation.

Lin. syst. Pentandria, Monogynia. Calyx with an ovate tube, and a 5-parted limb (f. 103. d.); lobes acute. Corolla tubular, incurved (f. 103. b.), with the tube widened at the apex, and an irregular 5-lobed limb (f. 103. c.). The 2 superior lobes the longest, all ending in callous points. Anthers 6, sessile at the throat (f. 103. c.). Stigma thick, terete, 5-lobed at the apex (f. 103. d. e.). Ovarium 5-lobed (f. 103. g.); cells 1-seeded.  
—A shrub, with villous branchlets. Leaves elliptic, obtuse, puberulous, on short pedioles, reticulate beneath. Stipulas coriaceous, acute, spreading at the base. Flowers 1-3 together, on short pedicels, axillary, spreading, bracteolate, hairy.—From the stigma and lobes of the corolla this genus agrees with Cucuria.  
1 P. Rubiginosa (Desf. l.c.) f. S. Native of Angola, on the western coast of Africa. (f. 103.)  
Rusty Ancylanthus. Shrub 2 to 3 feet.  
Cult. For culture and propagation see Hamiltioni, p. 555.

—Nearly allied to Cucuria.  
1 P. horizontalis (Schum. pl. guin. p. 112.) branches horizontal, unarmed; peduncles umbellate. f. S. Native of Guiana. Stigma conical, and as if it was furnished with a reflexed membrane from the very loose margin, truncate at the apex.  
Horizontal-branched Phallaria. Shrub.

2 P. Spirosha (Schum. pl. guin. p. 113.) branches spinose; peduncles racemose. f. S. Native of Guiana. Stigma of a capitate conical form, bident at the apex, ex Schum.  
Spinose Phallaria. Shrub.  
Cult. See Hamiltioni, p. 555, for culture and propagation.

Lin. syst. Pentandria, Monogyina. Calyx with a short hemispherical tube, and a 5-toothed limb. Corolla funnel-shaped, with a long tube, and 5 roundish reflexed lobes. Anthers 5, almost sessile in the throat. Style thick at the base, 5-furrowed; stigma cylindrical, truncate at the base and apex, 5-furrowed. Drupes dry, containing a 2-celled rugose nucleus; cells 1-seeded, but one of them is usually abortive.—A shrub. Leaves opposite, on short pedioles, ovate-oblong, attenuated at both ends, glabrous. Stipulas unknown. Corymb terminal; pedicels 2-3-flowered. Flowers white. This genus is nearly allied to Paliciera, if the fruit be 2-celled, but if it be 5-celled it is more nearly allied to Nonaelia; but in the form of the stigma it agrees with Cucuria.  
1 H. Ovarianese (Beauv. l.c.) f. S. Native of Western Africa, in the kingdom of Warce in deserts.  
Warce Hyalacium. Shrub.  
Cult. For culture and propagation see Hamiltioni, p. 555.

Lin. syst. Pentandria, Monogyina. Calyx with a short tube, and a 5-parted limb: lobes linear, acute, foliaceous, spreading, 3 times longer than broad. Corolla campanulate, 5-cleft: lobes linear, very acute, hardened, and therefore spinaceous? Anthers 5, inclosed in the throat; filaments very short. Stigma large, dilated, cup-formed, obtuse, and somewhat pentagonal, with reflexed edges. Fruit baccate, 5-celled; cells 1-seeded.—A glabrous shrub, with diverging branches. Leaves oval-oblong, acute, almost sessile. Stipulas combined into a short bidentate sheath. Panicles terminal, corymbosus. The corolla has a membrane which is separable from it, and this membrane is probably furnished with the stamens. Ovarium destitute of the urceolus at the apex.  
1 C. Acutiflora (D. C. l. c.) f. S. Native of Sierra Leone, where it was collected by Smeathman. Cuviera Africana, Spreng. syst. 1. p. 760.  
Aeoe-flowered Cuviera. Shrub 3 to 4 feet.  
Cult. For culture and propagation see Hamiltioni, p. 555.

CXXXIII. DONDISIA (named after James de Dondis, who was among the first who illustrated the descriptions of plants by figures). D. C. prod. 4. p. 469. but not of Adans. nor Scop. nor Rebb.  
Lin. syst. Pentandria, Monogyina. Calyx with a turbinate tube, which is adnate to the ovary, and a very short hardly 5-toothed limb. Corolla with a short broad tube, furnished with one series of retrograde scarious stiff hairs inside, which is perhaps the loose jagged part of a membrane inside the tube; lobes 5, acuminate, valvate in restitution, but at length spreading. Stamens 5, inserted in the throat of the corolla between the lobes; filaments short, slender. Style filiform, tumid in the middle, and hispid. Stigma ovate, truncate at the base, almost cup-shaped. Ovarium 1-celled? many seeded? Fruit unknown.—A glabrous shrub, native of India, with slender branches. Leaves oblong, acuminate, acute at the base, on very short pedioles. Stipulas acute, short, deciduous. Racemes 5-4-flowered, short, axillary or rising from very short branchlets, bracteolate, much shorter than the leaves.—This genus is nearly allied to Cucuria and Stigmantis, but differs both from both in the truncate calyx, which is 5-parted in those genera; from Cucuria in the limb of the corolla being unarmed, in the tube being plose inside, not clothed by a membrane, in the form of the stigma, and perhaps of the fruit; and from Stigmantis in the tube of the corolla being short, not long, in the style being tumid in the middle, and in the ovary being turbinate, not roundish.  
1 D. Leschenaultii (D. C. prod. 4. p. 469.) f. S. Native of the East Indies, on mountains, where it was collected by Leschenault.  
Leschenault's Dondisia. Shrub 4 to 5 feet.  
Cult. For culture and propagation see Hamiltioni, p. 555.

LIN. SYST. Pennandria, Monogynia. Calyx with a short tube, a 5-parted limb, and filiform segments. Corolla funnel-shaped, with a long tube, and 5 ovate-oblong spreading lobes. Stamens 5; filaments very short; anthers reflexed. Style filiform, longer than the corolla; stigma ovate, furrowed, large. Berry dry, tubercular, compressed, 1-celled. Seeds many, bony.—A climbing shrub, with glabrous lanceolate leaves. Cymes large, axillary, and terminal. Flowers white.—This genus is not sufficiently known; it differs from Cuviera in the 1-celled fruit; and from Donisia in the 5-parted calyx. Perhaps both this genus and Donisia are referrible to Tribe Gar- deniaceae, subtribe Gardenieae.

1 S. cy'ssosus (Lour. l. c.). G. Native of Cochín-china, in woods on the mountains. Cuvieriana Asiatica, Spreng. syst. 1. p. 760.


LIN. SYST. Pentandria, Dicy'nia. Limb of calyx campanulate, cleft in 5 parts beyond the middle; lobes acuminate. Corolla sub-campanulate, deeply 5-parted, with hardly any tube, but with erectish lanceolate lobes or segments, which are somewhat reflexed at the apex. Stamens 5; filaments very short, inserted in the bottom of the corolla, connate; anthers combined into an ovate-oblong somewhat pentagonal tube, which is 5-celled inside; cells regularly disposed, 3 external and 2 internal. Style length of stamens. Stigma bifid; with the lobes erect and obtuse. Ovarium 2-celled; cells 1-ovulate. Drupe pea-formed, umbilicate, containing a 2-celled globose nucleus, rarely 1-celled from abortion.—A small shrub with a short stem. Leaves fleshy, 5 in a whorl, linear, obtuse, with revolute margins. Stipulas interdeltiolar. Flowers small, disposed in short, nearly simple axillary racemes: having 2 opposite scale-formed bracts under each flower.

1 S. marita'ma (Jacq. l. c.). G. Native of Curacoa, on rocks by the coast. The leaves resemble those of rosemary, and the stipulas are blackish. Flowers small. The whole plant has a disagreeable smell.

Sea-side Strumpfia. Shrub 3 feet. Cult. For culture and propagation see Hamiltonia, p. 555.

CXXXVI. BILLO'TIA (named by Aloysia Colla, of Turin, after his daughter, Madame Teofila Billioti, a famous botanical artist). D. C. prod. 4. p. 618. but not of Colla.—Viviania, Colla. ann. soc. lin. par. 1825. but not of Cav. nor Raddi nor Rafin.—Melanolipodium, Cels. hort. but not of Poit. LIN. SYST. Penta-Hy'pantria, Monogynia. Calyx with the tube adhering to the ovary, and a 5-7-parted limb. Corolla salver-shaped: having the tube bearded with bristles inside, and a 5-7-parted limb. Stamens 5-7, adnate to the tube. Ovarium crowned by a nectiferous ureculus. Style 1; stigmas 4. Drupe 1-seeded by abortion.—A smoothish shrub. Leaves ovulate, with ciliate villous on the pe- tioles, margins, and the nerves on the under side of the leaves, the rest glabrous. Stipulas solitary at each of the nodi, probably formed of 4, which are combined into a sheath, which is cleft on one side, and denticulated at the apex, downy when young, brown in the adult state, falling off at length in a circular manner at the base.


Tribe VIII.

PEDERIE'E (this tribe agrees with Pederia in important characters). D. C. prod. 4. p. 470.—Lygodysodeae, Bartl. in herb. Hanke, ex D. C. prod. 4. p. 470. Fruit 2-celled, indehiscent, hardly fleshy, and the rind is easily separated from the carpels or nuts, which are compressed, 1-seeded (f. 104. f.), and hanging from the central filiform axis, Albumen fleshy.—Climbing shrubs, with opposite leaves and interpetiolar stipulas.


LIN. SYST. Pentandria, Monogynia. Calyx with an ovate globose tube, and a 5-toothed acute, permanent limb (f. 104. a.). Corolla having the tube much longer than the teeth of the calyx (f. 104. b.), with a hairy throat, and 5 somewhat revolute lobes (f. 104. c.). Anthers oblong, sessile within the tube (f. 104. c.). Style equal in length to the tube; stigmas 2, slender (f. 104. d.), exserted. Fruit indehiscent, oval, somewhat compressed, shining, crowned by the calycine teeth (f. 104. g.); the rind is crustaceous, and at length becomes brittle and breaks irregularly, and therefore is easily separated from the carpels or seeds. Carpels or seeds 2 in each fruit, indehiscent, oval, applied together, girded by a nerve-formed winged margin, hanging by a thread from the base of the fruit, and when the rind has been separated from them appear pendulous. Albumen a thin fleshy membrane, combined with the tegument of the carpella or wanting altogether. Embryo straight, with an inferior terete radicle, corydace foliaceous flat cotyledons, and an inconsiderable plumule.—Smoothish twining shrubs, holding the same station in America as the genus Pederia does in Asia. Stems terete or compressed. Leaves opposite, petiolate, cordate or ovate, acuminate. Stipulas very short, rather truncate, combined with the petioles. Panicles few-flowered, loose, terminating in few-leaved, axillary branchlets, or axillary and leaf.—This genus comes very near Pederia, and might probably form a distinct order with it from the distinct calyx and carpels.

Lin. syst. Pentandria, Monogynia. Limb of calyx 5-parted; lobes subulate, spreading. Corolla with a longish terete tube, and a 5-parted limb. Stamens 5, inserted in the throat, which is naked, almost sessile; anthers oblong, exerted. Style simple; stigma 2, linear, recurved. Ovary 2-celled, 2-seeded. Fruit compressed, crowned, a little striated; rind coriaceous, membranous, bursting from the carpel or seeds at the base. Carpels compressed, 1-seeded, with winged margins, hanging each from the top of a thread, which rises from the base of the fruit. Seeds erect. Embryo straight, in fleshy albumen, with a short radicle, and longer obtuse cotyledons.—Small climbing shrubs, natives of Madagascar. Leaves opposite, petiolate, tomentose. Stipulas undivided. Flowers almost sessile, disposed in spikes; spikes in fascicles, erect, or incurved, rising from the top of a common axillary peduncle.

1 L. Arge studenta (A. Rich, l.c.) leaves oval, abruptly acuminated, obtuse at the base, clothed with silvery tomentum beneath; spikes erect, in fascicles, elongated; flowers distant; fruit oblong-ovate. h. \(\_\) S. Native of Madagascar.

Silvery-leaved Lecontea. Shrub cl.

2 L. bojeriana (A. Rich, l.c.) leaves heart-shaped, tomentose, abruptly acuminated at the apex; spikes in fascicles, very short, recurved; flowers approximate; fruit nearly orbicular. h. \(\_\) S. Native of Madagascar. Lygodysidea Lingun, Bojer?


Cult. For culture and propagation see Pededia, p. 562.


Lin. syst. Pentandria, Monogynia. Calyx with an ovate tube, and a small 5-toothed persistent limb. Corolla funnel-shaped, hairy inside, 5-lobed, plicate in aestivation. Stamens 5, sometimes abortive; anthers oblong, almost sessile in the middle of the tube. Style not exerted; stigma bifid. Berry small, ovate-globose, 2-celled, 2-seeded; the rind at length becoming brittle, and easily separated. Albumen fleshy. Embryo straight, with a terete inferior radicle; flat, foliaceous, large cotyledons, and an inconspicuous placenta.—Sarmentose shrubs, rarely erect. Leaves opposite, petiolate, lanceolate, ovate or cordate, acute. Stipulas solitary on both sides. Peduncles terminal and axillary, branched, somewhat corymbose. Flowers small, white, usually unisexual.

* Climing shrubs.*

1 P. FÆTIDA (Lin. mant. p. 52.) leaves oblong or lanceolate, cordate at the base, glabrous; panicles axillary, opposite, short, few-flowered, rarely terminal; bracteoles minute; anthers inclosed; berry ovate, a little compressed. h. \(\_\) S. Native of the East Indies, very common in many places, as well as of Japan, and the Moluccas, among bushes. Lam. dict. 2. p. 257. ill. t. 166, f. 1. Thunb. jap. 107. Roxb. in Wall. fl. ind. 2. p. 517. Sieb. flan. mar. 2. no. 82. Apocynum foetidum, Burm. fl. ind. p. 71.—Rumph. amb. 5. p. 160.—Kumpf. icon. sel. t. 9.—Somarajj. asiat. res. 4. p. 261. Stipulas broad, cordate. Panicles axillary, bractiuate. Flowers numerous of a deep pink colour. Seeds compressed, bordered by a membranous wing. The leaves vary much in form. The whole herb has a fetid smell, when bruised. The roots are used as an emetic by the Hindoos.


2 P. Recurvâ (Roxb. fl. ind. 2. p. 518.) leaves lanceolate, acuminate, glabrous; corymbs terminal, recurved, villous; anthers inclosed; berries globose, dry, striated a little. h. \(\_\) S. Native of the East Indies, at Chittagong. Leaves 6 inches long and from 2-3 broad. Stipulas with a subulate hairy point. Stigma simple, linear, clavate. Berry size and colour of a black currant.

Recurved-corymbed Pederia. Shrub cl.

3 P. MACROCARPA (Wall. cat. no. 7392.) leaves broad, cordate, acuminate, downy above and woolly beneath; racemes long, axillary, panicled, downy; fruit oblong, compressed, with a polished rind. h. \(\_\) S. Native of the Burmese Empire, at Rangoon.

Large-fruited Pederia. Shrub tw.

4 B. LANIGOSA (Wall. pl. asiat. rar. 2. p. 52. t. 165.) leaves broad-obovate, and acute-lanceolate, acuminate, sagittately cordate at the base, downy above and woolly beneath; stamens long, axillary and terminal, panicled, downy or pilose as well as the petals; fruit roundish, compressed. h. \(\_\) S. Native of the Burman Empire, on the banks of the river Abran. Flowers green and purple.

Woolly-leaved Pederia. Shrub tw.

5 P. Tomentosa (Blum. bijdr. p. 968.) leaves ovate-cordate, acute, tomentose beneath; panicles axillary and terminal, elongated, leafy. h. \(\_\) S. Native of Java, among bushes on the mountains, common.

Tomentose-leaved Pederia. Shrub tw.

6 P. VERTICILLATA (Blum. bijdr. p. 968.) leaves 3 in a whorl, elliptic-oblong, acuminate, glabrous; panicles axillary and terminal, elongated, leafy. h. \(\_\) S. Native of Java, on Mount Salak.

Wheeled-leaved Pederia. Shrub tw.

* Erect shrubs, which probably do not rightly belong to the genus.*

7 P. ERECA (Roxb. fl. ind. 2. p. 519. but not of Spreng.) erect; leaves almost sessile, broad-lanceolate, smooth; panicles terminal, erect, in the forks of the branches; stamens exerted a little. h. \(\_\) S. Native of the East Indies, in Silhet. Leaves 4 inches long and 1½ broad. Flowers numerous, small, white, inodorous. Berries the size of a pea, when ripe highly polished, black, smooth.

Erect Pederia. Shrub 2 to 3 feet.

8 P. TIRANA (Wall. in Roxb. fl. ind. 2. p. 520.) erect, trichotomous, smooth: with triangular branchlets; leaves 3 in a whorl, oblong-lanceolate; corymbs axillary, trichotomous, erect, shorter than the leaves; limb of calyx campanulate, obscurely 5-toothed. h. \(\_\) S. Native of the East Indies, on the Juyuntiappoara mountains bordering on Silhet. Flowers rather large, large-leaved, white, on long filiform pedicels, each pedicel having a pair of linear ciliated bracteas above the middle. The flowers are said to be fragrant when quite fresh, but they emit a very offensive smell on being steeped in water after they have been dried. Corolla fleshy, half an inch long, with a 5-cleft, rarely 4-cleft border. Fruit unknown.

4C
Ternate-leaved Pæderia. Tree small.

Species not sufficiently known.

9 P. V al’11i-kâ’ra (Juss. mem. mus. 6. p. 381.) climbing; branches terete, villously tomentose; leaves broad-ovate, acute, somewhat cordate, rather pilose above, and rather woolly beneath; corollas axillary, many-flowered. h. . S. Native of Maha-

Rhee. Field. mal. 7. p. 35. t. 18. Holmbesben, Adams, fam. 2. p. 155. Berry globose, green, probably 1-seeded. Flowers 5-cleft, according to the figure, but tetraandrous according to the description.

T’ali-kara Pæderia. Shrub cl.

10 P. sessiliflora (Poir. suppl. 2. p. 440.) stems ascending; leaves lanceolate, glabrous; petioles geniculated at the base; racemes rather longer than the leaves, brachiate, pilose; flowers sessile, sub-second. h. S. Native of the Mauritian. Said to be allied to P. jectida, but is probably a species of Laugeria.

Seissile-flowered Pæderia. Shrub ascending.

11 P. Brazili’ana (D. C. prod. 4. p. 472.) leaves cordate-ovate, pilose beneath and on the branches; panicles terminal, much branched; flowers pedunculate. h. S. Native of Brazil in the province of Minas Geraes. Anthers included. Berry dry, containing 2 pyrenees. Pæderia ereta, Spreng. neun. entd. 3. p. 34. but not of Roxb. 

Brazilian Pæderia. Shrub 3 to 4 feet.

Cult. The species of Pæderia are free growers, and will thrive in any kind of rich light soil; and cuttings strike root readily in the same kind of soil, under a hand-glass.

Tribe IX.

COFFEA’CEAE (this tribe agrees with the genus Coffea in the fruit being baccate, and in containing 2 hard 1-seeded nuts). D. C. diss. 1806. H. B. et Kunth, nov. gen. amer. 3. p. 352. exclusive of some genera. A. Rich, ex D. C. prod. 4. p. 472.—Psychotriacæe and Cephalacæe, Cham. et Schlécht. in Linnea, 4. p. 4. and p. 133. Fruit 2-celled (f. 105. k. f. 107. c.), baccate, containing 2 bony or crustaceous nuts (f. 107. d.), which are flat inside and usually marked by a furrow on the outside; rarely containing only 1 nut from abortion. Nuts adhering by the inner sides. Albumen horny.—Trees or shrubs. Leaves opposite. Stipulas inter-petiolare, with 2 on each side, which are either combined or distinct.

Sub-tribe I. Coffeaceae (this sub-tribe contains shrubs agreeing with the genus Coffea in having distinct flowers). D. C. prod. 4. p. 472.—Psychotriacæe, Cham. et Schlécht. 4. p. 4. Flowers distinct, not combined.


Lin. syst. Tetraandria, Monogy’nia. Calyx with an ovate tube, and a short 4-5-toothed limb. Corolla with a short tube, a bearded throat, and 4-5 spreading lobes. Anthers 4-5, inserted at the throat, hardly exserted. Style filiform, exserted; stigma undivided, thick, ovate-globose, or mitre-formed. Berry globose, or didymous, fleshy, crowned by the calycine teeth, 2-celled. Seeds solitary in each cell, inserted towards the apex, incurved, incurved. Albumen fleshy. Embryo central, with a long superior radicle.—Asiatic or African shrubs, with spinose or unarmed branches. Leaves opposite, rather coriaceous. Stipulas interpetiolate, solitary on both sides. Peduncles axillary, short, many-flowered.

Sect. I. Eucanthum (from eu, well or good, and canthum; this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 473. Mature fruit 2-celled, terminated by an umbilicus.

* Unarmed shrubs, with pentandraous flowers.

1 C. Corne’lia (Cham. et Schlécht. in Linnea 4. p. 14.) branches unarmed; peduncles, calyces, and petioles villous; leaves ovate, obtuse at the base, acute at the apex, rather villous on both surfaces; peduncles biform; cymes dense, many-flowered. h. S. Native of Senegal. Pavetta Cornelia, Reichb. in Sieb. fl. seneg. exsic. no. 21. Fruit unknown. Flowers white. Corne’lia Canthium. Shrub 4 to 5 feet.

2 C. Juc’cubana (D. C. prod. 4. p. 473.) unarmed; leaves ovate, rather cordate, acutish, downy beneath, as well as on the branches; peduncles biform, cyme, many-flowered; fruit a little compressed and rather cordate. h. S. Native of Senegal, in...
humid places; and of Gambis, near Albreda, where it was collected by Leprieur and Perrotte. Flowers smaller than in any other species of the genus. Stigma ovate. Fruit almost like that of the following.

**Subcordate-leaved Canthium.** Tree.

3 C. *didymum* (Gartn. fil. carp. 3. p. 94. t. 196. exclusive of the syn. of Rheed.) shrubby, unarmed, glabrous, and smooth; leaves on short petioles, obtuse, and oval, glandular in the axils of the veins beneath; cymes axillary, on short peduncles; fruit didymous.  S. Native of Coromandel, the Rest unknown.

*Didymous*-fruited Canthium. Shrub.

4 C. *moluccanum* (Ronb. fl. ind. 2. p. 172.) shrubby, unarmed; leaves oblong; tube of corolla gibbous, length of style; stigma turbinate.  S. Native of the Moluccas. The Rest unknown.

**Holoca Canthium.** Shrub.

5 C. *fasciculatum* (Blm. bijdr. p. 967.) arboreous, unarmed; leaves elliptic-lanceolate, glabrous; flowers in axillary fascicles.  S. Native of the west of Java, in mountain woods. Said to be allied to C. *didymum*.

**Fascicled**-flowered Canthium. Tree.

6 C. *glabrum* (Blm. bijdr. p. 967.) arboreous, unarmed; leaves ovate, or elliptic-oblong, obtuse, acutish at the base, glabrous; cymes axillary, branched, many-flowered.  S. Native of Java, in woods on the mountains.

Var.  β, *puberulum* (Blm. l. c.) leaves roughish above and puberulous beneath.  S. Native of Java, at the foot of Mount Salak.

**Glabrous Canthium.** Tree.

7 C. *nive* (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 474.) unarmed, glabrous; leaves petiolate, ovate, acuminate, glabrously, in the axils of the veins beneath; cymes axillary, loose, 3 times shorter than the leaves.  S. Native of the Island of Luzon, one of the Philippines. Stipulas acuminate. Cymes bipartite, with diverging branches, and many-flowered branches. Calyx 5 short, acute teeth.

**Mild Canthium.** Shrub.

8 C. *lepiño* (Hook. et Arn. in Beech, voy. pt. bot. p. 65.) branches unarmed; leaves on short petioles, elliptic, obtuse, attenuated a little at the base, coriaceous, shining above, pale beneath; cymes petiolate, ovate, nearly globose.  S. Native of the Society Islands. Calyx 4-5-toothed. Corolla 4-5-lobed. Stamens 4-5. Closely allied to C. *glabrum* and C. *niten*.

**Lucid-leaved Canthium.** Shrub.

**Unarmed shrubs, with tetrandrous flowers.**

9 C. *niten* (D. C. prod. 4. p. 474.) unarmed, glabrous; leaves petiolate, broad-ovate, bluntish, shining and glossy above; racemes compound, axillary, many-flowered, a little longer than the pedicels.  S. Native of the East Indies, where it was collected by Lechenault. Petioles 8 lines long. Stirpulas triangular, deciduous. Peduncles disposed in dense panicules. Tube of corolla a little longer than the lobes, which are oval and obtuse. Stigma thick, ovate, much exserted.

**Shining-leaved Canthium.** Shrub.

**Spinose shrubs, with tetrandrous flowers.**

10 C. *parviflorum* (Lam. dict. 1. p. 602.) shrubby; branches glabrous; spines opposite, horizontal, supra-axillary; leaves ovate, on short petioles, smooth, longer than the spines, usually in fascicles; racemes rising beneath the spines at the axils; berries nearly globose.  S. Native of Coromandel, frequent. Ronb. cor. 1. p. 39. t. 51. fl. ind. 2. p. 170. Gartn. fil. carp. 2. p. 196. f. 3?; Webéra tetráandra, Wild. spec. 1. p. 1224. Kandem-kara, Rheed. mal. 5. p. 71. t. 36. When the plant is in luxuriance, the spines are sometimes threefold. Flowers small, yellow. Berries yellow, obcordate, compressed laterally, size of a cherry. The bush makes excellent fences. The leaves are universally eaten in curries; on this account the plant has the name of Balusoo-kura, which latter word means esculent.

**Small-flowered Canthium.** Shrub 5 to 6 feet.

11 C. *herbulaeum* (D. C. prod. 4. p. 474.) shrubby; branchlets velvety; spines opposite, rising from an acute angle; leaves obovate, glabrous, hardly longer than the spines; pedicels numerous, 1-flowered, axillary.  S. Native of the Island of Luzon, one of the Philippines. C. *parviflorum*, Bartl. in herb. Hænke, but not of Lam.

**Downy-branched Canthium.** Shrub 5 to 6 feet.

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**Spinose shrubs, with pentandrous flowers.**

12 C. *Mundita* (Cham. et Schlcht. in Lam. 4. p. 131.) a small erect shrub; with opposite spinaceous branches; leaves ovate-oblong, of the same colour on both surfaces, membranous; petioles downy inside; cymes axillary, pedunculate.  S. G. Native of the Cape of Good Hope, at Plittenberg's Bay. Habit of *Plectinia cortiandá*, but the cymes are on longer peduncles; the flowers are smaller, and the stipulas are glabrous inside, not leaving a margin of white wool on falling, as in that.

**Var.** β, *pubé-cens* (D. C. prod. 4. p. 474.) leaves downy on both surfaces.  S. G. Growing along with the species.

**Mundita Canthium.** Shrub 4 to 5 feet.

13 C. *horsildium* (Blm. bijdr. p. 966.) shrubbery, erect; spines spreading, straight; leaves small, almost sessile, ovate-oblong, acutish, downy on both surfaces, as well as the branches and stipulas; flowers twin or tern, axillary, on very short peduncles.  S. Native of Java, among bushes about Putienzorg. Branches spreading, opposite.

**Horrid Canthium.** Shrub 5 to 6 feet.

14 C. *parviflorum* (Ronb. fl. ind. 2. p. 170.) shrub thorny and hairy; leaves oval, hairy beneath; flowers axillary, crowded; tube of corolla gibbous.  S. Native of the East Indies. The inside of the tube of the corolla is surrounded by a circle of straight white bristles of its own length, inserted round its mouth, and pointing to its bottom. The figure in Pluk. alm. 27. t. 133. f. 3. so often referred to as this plant, has nothing to do with it; consequently it is neither Manétia dicéantia, Wildd. spec. 1. p. 670, nor Azima dicéantia, Lam. dict. 1. p. 343.

**Small-leaved Canthium.** Shrub 5 to 6 feet.

15 C. *angustiflórum* (Ronb. fl. ind. 2. p. 169.) shrub thorny; leaves lanceolate, glabrous, and shining, on short petioles; flowers numerous, axillary, on short pedicels; berries roundish, retuse.  S. Native of the East Indies, on hills, in the vicinity of Chittagong, Silhet, and the whole eastern frontier of Bengal. Branches glabrous. Flowers small, greenish-yellow. Corolla with a short gibbous tube, and 5 lanceolate segments. Drupes roundish, when ripe yellow.

**Narrow-leaved Canthium.** Shrub.

16 C. *Rheed* (D. C. prod. 4. p. 474.) shrub thorny; leaves ovate-lanceolate, acuminate, on very short petioles; shining; flowers numerous, axillary, on short pedicels; berries roundish-ovate, compressed.  S. Native of Malabar, where the Brachmanns called it *Cauti*, hence the generic name. Tsjeron-kara, Rheed. mal. 5. p. 73. t. 37. Root reddish, bitter. Flowers small, greenish. Berries green. It differs from *C. pareflórum* in the flowers being 5-cleft and pentandrous.

**Rheed's Canthium.** Shrub.

17 C. *pedunculáre* (Cav. icon. 5. p. 21. t. 436.) shrub thorny; leaves ovate, acute, almost sessile, downy; peduncles
axillary, solitary, longer than the leaves. Ę. S. Native of the Island of Luzon, one of the Philippines. Teeth of calyx subulate. Corolla pale purple, with a woolly throat, and 5 lanceolate, very acute segments. Filaments shorter than the corolla. Berry ovate, sub-compressed. This shrub is perhaps generically distinct from Caithium.

Peduncular Caithium. Shrub 8 to 10 feet.

18 C. lycochle (A. Rich. disb. p. 108.) Spines supra-axillary; simple; leaves small, oblong-oval, acuminate, rather hairy; stipulas broad, ending in a long abrupt point at the apex; flowers axillary, pedunculate, solitary. Ę. S. Native of Manila. Habit of a species of Lycium. The rest unknown.

Lycium-like Caithium. Shrub.

19 C. C:`hin`e`cke (Pers. ench. 1. p. 200.) shurb thorny; leaves obovate; flowers sessile, hairy. Ę. G. Native of China, at Macao; and of Madras. Gardénia spinosa, Thumb. disb. gard. no. 7. t. 2. f. 4. exclusive of the synonyms. Wild. spec. 1. p. 1289. Rándia spinosa, Poir. dict. 2. p. 829. Leaves many from the buds under the spines, glabrous, Corolla white, a little longer than the calyx, with ovate, obtuse, spreading segments. Stigma clavate. This plant does not probably belong to Caithium.


20 C. scändens (Blum. beijd. p. 966.) climbing; spines divaricate or recurved; leaves on short petioles, oblong, acuminate, downy beneath as well as on the branches; flowers disposed in axillary fascicles; fruit divided. Ę. S. Native of the Island of Nusa-Kambang, near Java, among bushes. Thorns much shorter than the leaves, straight, or a little recurved, but sometimes wanting on the branchlets. Fruit rather rugose, like that of Psy'draxis.

Climbing Caithium. Shrub cl.

Sect. II. Pleuroga'ster (from πλευρός, pleuron, a side, and γάστρα, gaster, a belly; the cicatrice occasioned by the falling of the flower is left at one side of the fruit). D. C. diss. med. acad. sc. par. 1806. prod. 4. p. 475. Mature fruit 1-celled, furnished with the floral cicatrice on one side at the base.

21 C. anoma`co`rum (D. C. prod. 4. p. 475.) glabrous; branches divaricate, and probably at length becoming spinescent; leaves oval, acuminate, on short petioles; pedicels slender, elongated, 1-flowered, corymbose, usually deflexed, rising from the axis of the superior leaves. Ę. S. Native of Sierra Leone, where it was collected by Smeathmann; and of the Gambia, at Alhreda. This plant comes near to Plectrónia ven'tósa, from the singularity of the fruit.

Anomalous-fruited Caithium. Shrub.

Cult. For culture and propagation see Chióco'ca, p. 569.


Lin. syst. Tetrádria, Monógy'nia. Calyx with an obo vate or oblong tube, and a 5-toothed limb. Teeth very short, acutish. Corolla short, rather funnel-shaped, with a 5-parted limb, and a bearded throat; segments acute. Stamens 5, inserted in the throat, a little exserted. Style short; stigma sub-capitate, of 2 approximate lamelae. Berry dry, naked at the apex, emarginate, obovate-oblong, compressed, duallynose, containing 2 chartaceous coriaceous, 1-seeded, indeliscent pyrene, which are flat inside. —Small African trees, with opposite, sub-obsessive branches. Leaves opposite, petiolarate, elliptic, acute at both ends, rather coriaceous, pale beneath. Stipulas solitary on each side, apicululate. Pedicels axillary, short, solitary, racemose, or coriaceous; pedicels about equal in length to the fruit, slender.—This genus, along with Damna'cántus, Psy'draxis, and Caithium ought probably to be united.


Windy Plectrónia. Cir. 1816. Tree.

2 P. Ma'dagascari'è'nsis (A. Rich. in mem. soc. hist. nat. Par. 5. p. 189.) branches glabrous, compressed; pedicels axillary, 1-flowered. Ę. S. Native of Madagascar, where it was collected by M. Clapiéler. The whole shrub is glabrous. Leaves oval, attenuated at the base, petiolate. Stipulas short, acuminate, deciduous. Flowers unknown. Fruit obovate, emarginate at the apex, and probably obovate and compressed, usually 1-celled by abortion.

Madagascar Plectrónia. Shrub or tree.

3 P. hi'su'uta (D. C. prod. 4. p. 476.) branches villous; leaves villous beneath; stipulas length of petioles. Ę. S. Native of Senegal, by the sides of woods near Dagana, where it was collected by Leprieur and Perrottet. Caithium Senegalisense, A. Rich. l. c. p. 188. Branches terete, divaricate, spreading, forming straight angles. Peduncles axillary, villous, compressed, coriaceous at the apex. Berry 2-celled, emarginate at the apex; but one of the cells is usually abortive, in this case the fruit becomes 1-celled, and the umbilicus lateral, which is indicated by the permanent 5-toothed calyx.

Hairly Plectrónia. Shrub 4 to 6 feet.

Cult. See Chióco'ca, p. 569, for culture and propagation.


Lin. syst. Pe'tánt`dría, Monógy'nia. Calyx with an obovate tube, and a 5-toothed deciduous limb. Corolla with a short tube, a hairy throat, and 5 oval acute reflexed lobes. Stamens included, inserted at the throat. Style much exserted; stigma bilamellate. Berries fleshy, areolate at the apex, obovate, compressed, wrinkled from tubercles, marked by a furrow on both sides, 2-celled, containing usually 2, rarely 3 pyrenes; pyrene oblong, scarious from wrinkles, 1-seeded, marked by a linear furrow, and an umbilicus in the middle. Seeds bony, filling the pyrene. Alburnum amygdalaceous, scrobiculate. Embryo inverted, filiform, curved into the form of a Greek sigma, with linear cotyledons. —Shrubs, with opposite ovate leaves, and axillary racemes of small flowers. This genus, from the hard fruit being often 5-celled, and from the form of the embryo, almost agrees with the tribe Guettárdáceae.

1 P. dic'co'cos (Gaertn. fruct. 1. p. 125. t. 26. f. 29.) leaves elliptic, long-acuminated, gradually tapering into the short petioles at the base; stipulas lanceolate, acute, permanent; cymes pedunculate, branched; fruit rather heart-shaped. Ę. S. Native of Ceylon.

Two-seeded Psy'draxis. Shrub.

2 P. ma'jór (A. Rich. l. c. p. 191.) leaves elliptic, on short petioles, short-acuminate; stipulas semi-oval, blunish; cymes pedunculate, simple; fruit heart-shaped. Ę. S. Native of Madagascar. Very like the preceding species, but differs in the broader leaves with shorter points, caducous stipulas, simple cymes, and larger fruit.

Larger Psy'draxis. Shrub.
CXLVII. Diplospora. CXLVIII. Epithinia, &c.

with a wide tube, which is shorter than the lobes, a pilose throat, and 4 ovate fleshy spreading lobes. Anthers 4, sessile at the throat, semi-exserted. Style length of the tube; stigma bifid. Ovarium 2-celled; cells 2-seeded; ovula collateral, ascending. Fruit and seeds unknown.—A glabrous shrub, native of China, with tetragonal branches. Leaves opposite, petiolate, oblong-lanceolate, acuminate at both ends. Stipulas solitary on both sides, ovate, acuminate, persistent. Flowers axillary, crowded, almost sessile, yellowish-green, calcareous by combined bracteae at the base. This genus agrees with Epithinia in the cells of the ovarium being bicellular, but differs in the ovula being collateral, not one on the top of the other.


Cult. See Chiococca, p. 569. for culture and propagation.

CXLVII. Epithinia (from ἐπίθεν, upon, and θυάν, the seashore; the shrub grows among mangroves on the seashore). Jack, in mal. misc. 1. no. 2. p. 12. D. C. prod. 4. p. 477.


Peduncles axillary, dichotomous, many flowered, with a solitary flower in the fork. Flowers white.—This genus is said to be allied to Mallotus, but differs in the cells of the fruit being 2-seeded, and from all other Rubiaceae plants in the want of stipulas.

1 E. Malaya'na (Jack, l. c.) t. S. Native of the islands of Malacca, Singapore, in marshes among mangroves.

Malay Epithinia. Shrub.

Cult. For culture and propagation see Chiococca, p. 569.

CXLVIII. Epithinia, &c.


Lin. syst. Tetrandria, Monogyânia. Calyx with a subglobose tetragonal tube, and a very small 4-toothed limb. Corolla with a long terete tube, which is hardly widened at the apex, a glabrous shrub, 4 oval roundish bluish spreading lobes. Anthers 4, sessile in the throat of the corolla, oblong, hardly exserted, one-half shorter than the lobes of the corolla. Stylo biform at the apex, length of the corolla. Berry dry, nearly globose, naked at the apex, 2-celled, 2-seeded. Seeds convex on the outside, concave inside, and furnished with a circular areola as in Bacchus. Albulum cartilaginous. Embryo unknown.—Glabrous hard-wooded trees, natives of South America. Branches terete, but tetragonal when young, as well as the pedicels. Leaves opposite, oval-oblong, acute, rather coriaceous, petiolate. Stipulas solitary on both sides, apiculate by a short point. Peduncles axillary, trifid or trichotomous. Flowers rose coloured on the outside, and white inside. This genus is nearly allied to Coffea.

1 S. trifo'rum (Vahl, eel. 1. p. 10.) peduncles twin, axillary, 3-flowered. t. S. Native of the islands of Montserrat and Martinique, where it is called bois de fer or iron-wood. S. fereum, Lam. ill. p. 282. Sideroxylonoides féreum, Jacq. amer.
Cl. EUMACHIA (Eumachus, an author cited by Theophras-

**LIN. SYST.** Tetrandria, Monogyinia. Calyx with an obovate tube, and a 4-toothed deciduous limb. Corolla funnel-shaped, with a short tube, a naked throat, and a 4-parted limb; lobes roundish, spreadingly reflexed. Stamens inserted in the bottom of the tube; filaments short; anthers oblong in the throat. Stigma bifid, having the lobes long and acute. Berry globose, naked at the apex, 2-celled; cells 1-seeded. Seeds convex on the back, and flattish in front, with a moon-shaped umbilicus. Albumen cartilaginous. Embryo unknown.—A glabrous Australian tree. Branches terete. Leaves opposite, petiolate, smooth, oblong-lanceolate. Cymes terminal and axillary, tridif. Corolla flesh colored. Embryo unknown.—S. Native of the island of Namoka, one of the Friendly Islands. Petésia carnea, Forst. 2. no. 51.

**Flesh-coloured-flowered Eumachia. Tree. Cult.** For culture and propagation see Chioécœa, p. 569.


**LIN. SYST.** Tetrandria, Monogyinia. Calyx with an obovate tube, and a 4-parted limb (f. 105. b.). Corolla funnel-shaped (f. 105. g.), with a terete tube (f. 105. f.), a bearded throat, and 4 spreadingly reflexed lobes. Stamens 4, inserted in the throat; filaments filiform; anthers linear, fixed by the middle, exserted (f. 105. c.); stigma bifid (f. 105. c.). Berry nearly dry, 2-celled, subdibitary, compressed (f. 105. h.), crowned by the permanent calyx (f. 105. b.), containing 2 chartaceous coriaceous 1-seeded pyrenes. Albumen horny. Embryo unknown.—Shrubs, rarely herbs, natives of America. Stems erect, tetragonal when young. Leaves opposite or in whorls, nearly sessile. Stipulas small, interpetiolar. Corymb terminal, tripartite, bracteate, with dichotomous branches. Flowers white, lateral and sessile, or terminal and pedunculate, bihulate.

1 D. chiococcoides (H. B. et Kunth, nov. gen. amer. 3. p. 355. t. 281.) shrubby, glabrous; leaves opposite, sessile, oblong-lanceolate, acute, cuneated at the base, with rather revolute edges; corollas sessile, tripartite; stamens about equal in length to the lobes of the corolla. & S. Native of New Andalusia, on the banks of the Orinoco, near the monastery of Caripé: and of Rio Janeiro, ex Cham. et Schlecht. in Linnaea. 4. p. 112. Houstrônia fruticosa, Wild. miss. in Röem. et Schultes, syst. 3. p. 327. Shrub 4 feet high. Flowers white. (f. 105. c.)

**Chiococcoid-like Declieuxia. Shrub.**

2 D. MEXICANA (D. C. prod. 4. p. 479.) suffrutficose, glabrous; leaves opposite or 3 in a whorl, sessile, oblong-lanceolate, obtuse at the base, acute at the apex; corollas pedunculate, 4-5-parted; stamens about equal in length to the lobes of the corolla. & S. Native of Mexico. D. chiococcoides, Bartl. in herb. Hanke. Flowers white.

**Mexican Declieuxia. Shrub 1 ½ foot.**

3 D. THYMBOIDEA (Mart. et Zucc. in Röem. et Schultes, mant. 3. p. 111.) shrub much branched; leaves disposed in verticillate fascicles, sessile, linear, acute, attimated at both ends, and are, as well as the branches, roughish; flowers solitary or few together on the tops of the branches. & S. Native of Brazil.

**Thymbro-like Declieuxia. Shrub.**

4 D. SATURIOIDEA (Mart. et Zucc. in Röem. et Schultes, mant. 3. p. 111.) shrub much branched; leaves linear-lanceolate, attenuated at the base, sessile, opposite or 6 in a whorl, and are, as well as the branches, scabrous from hairs; flowers axillary, solitary. & S. Native of Brazil. The rest unknown.

**Savory-like Declieuxia. Shrub.**

5 D. GALIÓIDES (Pohl, in litt. under the name of Psylocárpus) plant subherbaceous, glabrous; branches terete; leaves 3 in a whorl, linear; whorles distant; panicles terminal, having the branches disposed 3 in a whorl, cymose. & S. Native of Brazil, where it was collected by Pohl.

**Galian-like Declieuxia. Shrub 1 foot.**

6 D. SPARGÜLÍDÆA (Mart. et Zucc. t. c.) shrubby, glabrous; leaves linear-subulate, opposite, sessile; racemes dichotomous; terminal. & S. Native of the south of Brazil. Cham. et Schlecht. in Linnaea. 4. p. 6. Panicle terminal, dichotomously compound from cymes; having the branchlets capillary, elongated, and erect, with alternate flowers. Flowers twin, one of each pair sessile. Staminodes inclosed. Cham. et Schlecht.

**Spurry-like Declieuxia. Shrub.**

7 D. MARIÓIDES (Mart. et Zucc. t. c.) shrubby; stem and branches clothed with soft down; leaves 3 in a whorl, rarely 4, ovate-lanceolate, almost sessile, glabrous, with revolute edges; flowers axillary, almost terminal. & S. Native of Brazil.

**Cat-thyme-like Declieuxia. Shrub.**

8 D. CENANTHOIDES (Mart. et Zucc. t. c.) plant herbaceous, glabrous; stem nearly simple; leaves 4 in a whorl, sessile, remote, linear-lanceolate, acute; racemes bifid, forming a terminal panicle. & S. Native of the south of Brazil. Panicle, ex Cham. et Schlecht. in Linnaea. 4. p. 5. terminal, from whorles
of branches, usually twin, and forming a terminal umbel, with a central flower. Flowers sessile.

**Ginanche-like Declieuxia.** Shrub. 9. S. rodriguezii (Pohl, in litt. under the *Psyllocarpus*) shrubby, scabrous in every part; branches tetragonal; leaves opposite, linear-oblung, acuminate at both ends, revolute at the margin while young; cymes terminal, few-flowered. 5. S. Native of Brazil, where it was collected by Pohl. In the axils of the leaves there are two young leaves, and therefore at first sight appear 6 in a whorl.

**Leafy Declieuxia.** Shrub. 10. D. cordifera (Mart. et Zucc. l. c.) suffrutescent, nearly simple, clothed with roughish pubescence; leaves opposite, decussate, approximate, sessile, ovate-cordate, acute, concave on the back; racemes bifid, terminal, crowded into a dense panicle. 5. S. Native of Brazil within the tropic. V. S. Native of Brazil within the tropic. Very nearly allied to the preceding species.

**Glaucous Declieuxia.** Shrub. 12. D. passerina (Mart. et Zucc. in Rœm. et Schultes, mant. 3. p. 112.) shrubby, glabrous, pruinously glaucous; leaves opposite, sessile, ovate, very acute, crenately serrate, coriaceous; peduncle terminal, erect, nearly globose, dense. 5. S. Native of Brazil within the tropic.

**Passerina-like Declieuxia.** Shrub. 13. D. dahnioides (Mart. et Zucc. l. c.) shrubby; branches twiggy; leaves opposite, decussate, somewhat imbricating in 4 rows, sessile, ovate-cordate, acute, rather concave above, scabrous from hairs beneath, 7-9-nerved; peduncles axillary, few-flowered. 5. S. Native of Brazil. The rest unknown.

**Daphne-like Declieuxia.** Shrub. 14. D. imbricata (Pohl, in litt. under the name of *Psyllocarpus*) shrubby, glabrous; branches terete; leaves opposite, decussate, erect, ovate, hardly subcordate, cuspidate, stiff, having 4 small ribs on each side of the midrib; peduncles axillary, few-flowered. 5. S. Native of Brazil.

**Imbricated-leaved Declieuxia.** Shrub. 15. D. rhexioides (Mart. et Zucc. l. c.) shrubby, glabrous; young branches subumbellate, twiggy; leaves opposite, decussate, sessile, crenately spreading, imbricating in 4 rows, orbicularly ovate, acute, 5-nerved; flowers axillary, almost solitary. 5. S. Native of Brazil.

**Rhexia-like Declieuxia.** Shrub. 16. D. origanooides (Zucc. l. c.) shrubby, clothed with roughish hairs; branches dichotomous, terete; leaves opposite, rather remote, on short petioles, nearly orbicular, acute, many nerved; flowers terminal, thyroidea. 5. S. Native of Brazil. Leaves like those of *Origana Dictamnus*.

**Origanos-like Declieuxia.** Shrub. 17. D. rosea (Zucc.) shrubby; leaves opposite, ovate-lanceolate, somewhat rhomboid, acute, tapering into the short petiole at the base, with ribbed veins, clothed with villi; flowers terminal, disposed in dichotomous panicles. 5. S. Native of Brazil.

**Soft Declieuxia.** Shrub. 18. D. lysiachoides (Zucc. l. c.) plant herbaceous or suffrutescent, downy; branches simple, erect; leaves 3 in a whorl, ovate, attenuated at both ends, acute; flowers terminal, dichotomously panicled. 5. S. Native of Brazil.

**Lysimachia-like Declieuxia.** Shrub. 19. D. rubioides (Zucc. l. c.) shrubby, glabrous; leaves opposite, decussate, ovate, acute, rounded and cordate at the base, shining above; flowers terminal, disposed in dichotomous panicles. 5. S. Native of Brazil.

**Rubia-like Declieuxia.** Shrub. 20. D. alba (Zucc. l. c.) shrubby, scabrous; leaves opposite, decussate, ovate, acute, sessile, rounded at the base; racemes terminal, bifid, disposed in dichotomous cymes. 5. S. Native of Brazil.

**White Declieuxia.** Shrub. 21. D. divergentiflora (Pohl, in litt. under *Psyllocarpus*) suffrutescent; branches terete, clothed with velvety hairs; leaves opposite, sessile, ovate, acutish, nerves, clothed with fine velvety down on both surfaces; cyme terminal, on short peduncles, of 6 diverging rays; corollas glabrous. 5. S. Native of Brazil, where it was collected by Pohl.

**Diverging-flowered Declieuxia.** Shrub. 22. D. pulvrella (Mart. et Schlecht. in Linn. 4. p. 7.) shrubby, glabrous, clothed with short dense hairs in every part except the corollas; leaves usually 3 in a whorl, rarely opposite, sessile, ovate, acute or acuminate; cymes terminal, of many rays, subruficent. 5. S. Native of Brazil within the tropic.

**Powdery Declieuxia.** Shrub. 23. D. polygaloides (Zucc. in Schultes, mant. 3. p. 113.) suffrutescent; branches twiggy, erect; leaves 3 or 4 in a whorl, sessile, lanceolate, acute, erect, smoothish; flowers terminal, panicled. 5. S. Native of Brazil. The rest unknown.

**Polygaloid-like Declieuxia.** Shrub. 24. D. vincooides (Mart. et Zucc. l. c.) shrubby, glabrous; leaves opposite or 3 in a whorl, ovate, attenuated at both ends, acute, sessile, shining; flowers terminal, disposed in dichotomous panicles. 5. S. Native of Brazil.

**Vincelike Declieuxia.** Shrub. 25. D. trunca (Pohl, in litt. under *Psyllocarpus*, D. C. prod. 4. p. 481.) suffrutescent, glabrous, glaucous; branches terete; leaves opposite, sessile, orbiculary ovate, mucronate; cymes terminal, trichotomous, on short peduncles, fastigate. 5. S. Native of Brazil.

**Frosted Declieuxia.** Shrub. 26. D. mucronulata (Mart. et Schlecht. in Linnaea. 4. p. 110.) shrubby, glabrous; leaves opposite, sessile, elliptic or obovate, cuneate at the base, mucronate at the apex; the mucrone usually reflexed; cymes terminal, on short peduncles, somewhat fastigate. 5. S. Native of Brazil within the tropic. Stem and branches terete, furnished with 2 slight wings. *Psyllocarpus* trichotomus, Pohl, in litt. may be referrible to this, but the mucrones of the leaves are not reflected in the specimens of that plant collected by Pohl.

**Mucronate-leaved Declieuxia.** Shrub. 27. D. glabra (D. C. prod. 4. p. 481.) plant suffrutescent, glabrous; stem somewhat tetragonal; leaves opposite, petiolar, elliptic-oblung, acuminate at both ends, but not mucronate; cymes terminal, of many rays, subumbellate. 5. S. Native of Brazil, Pohl; about Caracas, Vargas. *Psyllocarpus* glaber, Pohl, in litt. Very similar to the preceding.

**Glabrous Declieuxia.** Shrub. 28. D. ? psychotroides (D. C. prod. 4. p. 481.) suffrutescent, glabrous; leaves opposite, on short petioles, elliptic, long-acuminated, acute at the base; cymes terminal, on short peduncles, trichotomous, one-half shorter than the leaves. 5. ? S. Native of Cayenne, where it was collected by Patris; and of Panama and Mexico, according to Hamke. herb. Coffea didy-
Rubia. Barb. in herb. Hanke. Flowers unknown. Stipulas

**Rubiaceae.** shrub.

D. **Herráza** (Cham. et Schlecht. in Linna. 4. p. 11.) plant herbaceous, glabrous; branches straight, glabrous, terete, a little winged; leaves opposite, petiolate, ovate-lanceolate, attenuated, acute; cymes axillary, on long peduncles, of 5 spreading rays. 2. S. Native of Brazil, about Rio Janeiro. Knöxia Brasiliensis, Spreng. syst. 1. p. 406. Habit of *Borriéria laxa*. Corolla a long line. Fruit nearly dry. This plant ought probably to be excluded from the present genus, according to Martinus in Linnaea. 1. e.

**Herbaeous Dechlieuxia.** shrub.

**Cult.** For culture and propagation see *Chicóecca*, p. 569.

**Cl. II. Tertrea** (named after J. B. du Tertre, a traveller in the French West Indian Islands, and who has written a general history of them). D. C. prod. 4. p. 481.—Schiéuda, A. Rich. mem. soc. hist. nat. Par. 5. pt. 1. p. 186 (1830) but not of Schlecht. in 1826.


1 T. Martincinensis (A. Rich. l. c.) 2. S. Native of Martinico.

**Martincino Tertrea.** shrub 1 to 2 feet.

**Cult.** For culture and propagation see *Chicóecca*, p. 569.


Lin. syst. *Pentándria, Monogynia.* Calyx with an ovate tube, and an acutely 5-toothed permanent limb. Corolla funnel-shaped, with an obtcolcal tube or throat, and 5 acute lobes. Stamens with the filaments hardly adnate to the bottom of the corolla, downy, and shorter than the anthers, which are inclosed and linear. Style rather chavate at the apex, entire or slightly 2-lobed. Berry somewhat dailyums, compressed, crowned by the teeth of the calyx, containing 2 chartaceous 1-seeded pyrene. Seeds pendulous. Embryo with a long superdural radicle. Albumen cartilaginous.—Shrubs generally with a somewhat climbing habit. Leaves opposite, ovate or oblong, acute, glabrous. Stipulas broad at the base, permanent, more or less apiculate. Racemes axillary, opposite, simple or panicked. Flowers pedicellate, of a yellowish white colour. Roots emetic and alexiteric.

1 C. racemosa (Jacq. amer. p. 68. Lin. spec. 246.) leaves ovate, acuminate at both ends, smooth; stipulas broad at the base, and apiculated by a long point at the apex; racemes many flowered; corolla much longer than the teeth of the calyx; filaments of stamens downy. 2. S. Native of the West India islands, Mexico, and Carthagena, on hills. Swartz, obs. p. 76. Andr. bot. rep. t. 284. Tratt. tab. t. 631. Hook. fl. exot. t. 93.—Sloane, hist. t. 188. f. 3.—Dill. Hort. elth. t. 228. f. 295. and therefore the Lonicéa alba, Lin. spec. ed. 1. p. 175. A very variable shrub. Corollas at first white and scentless, but at length becoming yellowish and sweet-scented. Leaves shining on the upper surface. Berries snow white, hence the English name snow-berry, and the Greek one *Chicóecca*. The stamens are glabrous in the figure given by Hooker, and the stigma is tridit in that given by Andrews, variations which have never been seen in nature. The root has much the same acrid bitter taste as snake-root, and has been long used as a strong resolutive or anties. it is administered with great success in obstinate rheumatisms, and old syphilitic taints. It is best given in decoction; it is also an excellent emetic, and may be used as ipecacuanha.

**Var. β, scándiosa** (Pers. ench. 1. p. 209.) branches very slender, and evidently climbing; leaves oblong; racemes shorter than the leaves, simple. 2. S. Native of Jamaica, and the island of Santa Cruz.—Browne, jam. p. 164. no. 2. Swartz, obs. 76. var. β.

**Var. γ, laziófora** (D. C. prod. 4. p. 482.) climbing; leaves oblong; racemes panicked, longer than the leaves. 2. S. H. Cultivated in the botanical garden at Calcutta.

**Var. e, longifóra** (D. C. prod. 4. p. 482.) leaves oblong, long-acuminate; racemes simple, equal in length to the leaves. 2. S. Native of Guadaloupé, where it was collected by Badier.

**Var. α, florídanus** (D. C. l. c.) leaves elliptic, hardly acuminate; racemes simple, a little longer than the leaves. 2. S. Native of Florida and Mexico by the sea side. Chicóecca race-

**Musa,** Michx. fl. bor. amer. 1. p. 103.


2 C. densíflóra (Mart. spec. med. bras. p. 17. t. 6.) leaves ovate, rather coriaceous; stipulas broad at the base, apiculated by a longish point; racemes many flowered; corolla much longer than the teeth of the calyx; filaments densely bearded. 2. S. Native of Brazil, in woods at Almadas and Ferradas, on the mountains of Bahia; and at the Port of St. Catharine, ex Cham. et Schlecht. in Linnaea. 4. p. 13. Racemes simple. Flowers white, sweet-scented. This species grows plentiful about Bahia, where we have seen it either with loose or crowded branches and leaves.

**Var. β, Cubeníus** (D. C. prod. 4. p. 482.) leaves ovate, subcordate; racemes rather compound; filaments bearded. 2. S. Native of Cuba.

**Dense-flowered Snow-berry.** Shrub 3 to 4 feet.

3 C. angúflóga (Mart. spec. med. bras. p. 17. t. 5.) leaves ovate, acuminate; stipulas very broad, short, each ending in a short point; racemes panicked; corolla hardly 3 times longer than the calycine teeth. 2. S. Native of Brazil in woods, French Guiana, Trinidad, Peru, Cobo, and about Cutmana; on the Spanish Main. Cham. et Schlecht. in Linnaea. 4. p. 13. C. brachiáta, Ruiz et Pav. fl. per. 2. p. 67. t. 219. f. 3. C. racemosa, H. B. et Kunth, nov. gen. amer. 3. p. 352. Sieb. fl. lin. exsic. no. 38. C. parviflóra and C. paniculáta, Wildk. in Rom. et Schultes. syst. 5. p. 203. Pedicels and branchlets glabrous. Flowers white. Root diuretic, and is called by the Brazilians Cainca.


4 C. omoana (Hook. et Arn. in Beech. voy. pt. bot. p. 65.) leaves broad-oval, rather coriaceous, very blunt, acute at the base, and running down the short petioles; peduncles axillary, solitary, 3-4-flowered; corolla with a bearded throat. 2. S.
Native of Elizabeth Island, one of the Society Islands. Coffea odorata, Forst. prod. 1. p. 94. The flowers are described as fragrant, and smelling like cows' milk. Sugar-scented Snow-berry. Shrub.


6 C. JAY'ANA (Blum. bijdr. p. 968.) shrub parasitical; leaves oblong-lanceolate, acuminated at both ends, glabrous, velvety and shining above; corymbs terminal, trichotomous. S. Native of Java, in woods on the mountains upon trees. Coffea Javanica, Blum. cat. hort. but. p. 46. Perhaps a species of Psychotria.

Jayae Snow-berry. Shrub parasitical. Cult. A mixture of loam, peat, and sand is the best soil for the species of Chiococca; and cuttings strike root freely in sand under a glass in heat.

CLIV. MARGARIS (from παχύς, margaron, a pearl; the berries are white and shining in M. nudiflora, and are called perlitas, or pearls, by the Mexicans). D. C. prod. 4. p. 483.—Desclia'a, Moc. et Sesse, fl. mex. icon. ined. ex D. C. l. c.

Lin. syst. Pentandria, Monogyna. Calyx with a globose tube, and a somewhat turbinate semi-5-clet limb; teeth acute, permanent. Corolla funnel-shaped, with an obconical tube, which is 5-toothed or with 5 short lobes at the apex. Stamens 5, inserted in the middle of the tube; filaments a little shorter than the corolla; anthers ovate. Stigma capitato, uniliaved or slightly 2-lobed. Berry globose, crowned by the calyx, 2-celled, 2-seeded. Seeds semi-ovate, acute at one end.—Shrubs, with slender branches. Leaves opposite, ovate, glabrous, about the size of those of the common myrtles. Stipulas small, solitary on both sides. Pedicels axillary, opposite, short, 1-flowered. Flowers white, usually second, bibracteolate under the calyx. Berries white.


2 M. NUDIFLORA (D. C. prod. 4. p. 483.) leaves mucronate; corolla glabrous inside. S. Native of Mexico, about Tapelja. Chiococca axillaris, Moc. et Sesse, fl. mex. icon. ined. Desclia'a margaritaria, Moc. et Sesse, fl. mex. icon. ined. Shrub 8 feet high. Berries ovate, globose, a little smaller than a pea, white and shining, hence they are called perlitas by the Mexicans. Naked-flowered Pearl-berry. Shrub 8 feet. Cult. See Chiococca above for culture and propagation.


Lin. syst. Tetrandria, Monogynia. Calyx with a short ovate tube, and 4 linear-lanceolate acute lobes. Corolla tubular, somewhat tetragonal before expansion; the tube somewhat quadranular at the apex; lobes 4, ovate, acute, revolute. Stamens having the filaments downy and adnate to the tube at the base; anthers linear, not exserted. Stigma 2, ovate, hardly longer than the tube. Drupes nearly globose, crowned by the calyx, containing a 2-celled, 2-seeded nucleus, ex Rich., or very often 1-celled and 1-seeded by abortion.—West Indian shrubs, with the habit of Catesbaea or Justicea spinosa. Leaves small, almost sessile, oblong or obovate, coriaceous, opposite, usually disposed in fasicles in the axils. Stipulas small, interpetiolar. Peduncles 1-flowered, axillary, 4-1-together, and sometimes they are hardened into simple bifid or trifid spines, which are usually naked, rarely floriferous. Flowers small, purple or saffron coloured.

1 S. versa'color (Vahl, ckl. amer. 1. p. 11. t. 10.) leaves obovate, shining above; spines simple, bipartite or twin. S. Native of Santa Cruz and Porto Rico. Chimélia versicolor, Spreng. syst. l. p. 110. Catesbaea parviflora, Lam. ill. t. 67. f. 2. Leaves 3 lines long. Spines commonly in pairs from each alternate axil, combined at the base, for the most part a little longer than the leaves, stiff, purplish, often bearing a flower at one of the points; they are the peduncles which have hardened, and keep growing on after the flowers have fallen. Flowers on short peduncles; those from the tops of the spines solitary, usually drooping, purple and abortive; others are axillary, solitary, or more rarely 2-4-together, erect, saffron coloured, and fertile. Fruit snow white. Party-coloured-flowered Scolosanthus. Shrub 3 to 4 feet. 2 S. triaca'nthus (D. C. prod. 4. p. 484.) leaves oblong, rather glaucous; spines for the most part trifid. S. Native of St. Domingo, where it was collected by Bertero. Catesbaea triacanthus, Spreng. syst. l. p. 416. Leaves 4-5 lines long. Flowers and fruit not sufficiently known, but the habit is that of Catesbaea. Three-spined Scolosanthus. Shrub. Cult. See Ixora, p. 574. for culture and propagation.


Lin. syst. Tetrandria, Monogynia. Calyx with a turbinate tube, and a permanent limb, which is 4-toothed to the middle. Corolla salver-shaped, with a long slender tube, a glabrous throat, and 4 spreading lobes, which are shorter than the tube. Antlers 4, sessile, or on short filaments, inserted at the throat of the corolla. Style bifid at the apex, situated among the anthers. Drupes ovate, crowned, containing a 2-celled (or 1-4 D

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celled from abortion) nucleus; cells 1-seeded. Seeds pendulous in the cells, oblong.—American shrubs, usually spineless, glabrous or downy. Leaves opposite on short petioles, stiff, coriaceous. Stipulas short, interpetiolar. Pedicels peduncles and pedicels and style of corolla acute. \( S. \) Native of South America, in woods, and probably of St. Domingo. \( S. \) floribunda, Lam. dict. 3, p. 344. Flowers white, fragrant at night, 11/2 inch long.

**Spring** Chomelia. Clt. 1793. Shrub 8 to 12 feet.


3. C. **obtusa** (Cham. et Schlecht. in Linnaea. 4. p. 185.) leaves elliptic, acute, at the base, glabrous, on short petioles; peduncles axillary, 1-3-flowered; lobes of calyx and corolla obtuse. \( S. \) Native of the south of Brazil. Flowers white.

**Blunt-calyxed** Chomelia. Shrub 4 to 5 feet.

4. C. **pericicums** (Cham. et Schlecht. in Linnaea. 4. p. 187.) leaves ovate, acute, on short petioles, plicate on the nerves above, and silky beneath; peduncles axillary, 1-flowered. \( S. \) Native of Brazil within the tropic. Perhaps the same as C. brasiliensis. A. Rich. short. loc. hist. nat. Par. 5. p. 183.

**Downy** Chomelia. Shrub. Cult. See \( S. \) mus, p. 574. for culture and propagation.


**LIN. SYST.** Tetradria, Monogynia. Calyx with a very short tube, adnate to the ovary at the base, and a bluntly 4-cleft limb. Corolla funnel-shaped, with a short terete tube, a bearded throat, and 4 oblong acute lobes, which are longer than the tube, and twisted in ascription. Anthers 4, linear, almost sessile, erect, situated at the throat between the lobes, and a little shorter than them, at length twisted spirally. Style filiform, exserted; stigma undivided, or hardly 2-lobed. Disk thick, crowning the ovary. Berry dry, 2-celled, 2-seeded. Seeds globaceous. Albumen cartilaginous. Embryo erect, nearly terete. A glabrous African shrub. Leaves opposite, petiolate, oval, acuminate at both ends. Stipulas connate, sheathing, short. Corymb terminal, triatomic. Flowers white.

**This genus is nearly allied to \( S. \) ixora, but differs in the tube of the corolla being shorter; and to Polygosia, but differs in the stigma being undivided.**

1. B. **corymbosa** (D. C. diss. ind. t. 1. ann. mus. 9, p. 219.) \( S. \) Native of Sierra Leone, where it was collected by Smeathman. Verulamia corymbosa, Poir. dict. 8. p. 543. \( S. \) mus, Schum. pl. guin. p. 77.

**Var. \( \beta \), augustifolia** (D. C. prod. 4. p. 485.) leaves narrower than in the species, and more acuminate at both ends. \( S. \) Native of Gambia and Cayor, in humid places, where it was collected by Leprieur and Perrottet.

**CLIX. IXORA.** (The name of a Malabar idol, to which flowers of the same species are offered.) Lin. gen. no. 131. Juss. gen. p. 203. mem. mus. 6. p. 375. Gaertn. fruit. p. 1. p. 117. t. 25. D. C. prod. 4. p. 485.—Pavetta sect. IXORA. Blum. bijdr.—IXORA species of Lam, and Roxb.—Pavetta species, A. Rich. LIN. SYST. Tetradria, Monogynia. Calyx with an ovate tube, and a small 4-toothed limb (f. 106. a.). Corolla salver-shaped (f. 106. b.), with a slender terete tube (f. 106. d.), and a 4-parted spreading limb (f. 106. b.); tube longer than the lobes. Anthers 4, almost sessile in the throat, exserted a little. Style equal in length to the tube of the corolla, or a little longer, but shorter than the corolline lobes, bifid at the apex (f. 106. e.); lobes of stigma diverging or revolute. Berry drupaceous, nearly globose, crowned by the permanent calyx, 2-celled, containing 2 carthayas 1-seeded pyriform, which are flat or hollow inside, and gibbous on the back. Albumen cartilaginous. Embryo dorsal, erect, incurved, with foliaceous cotyledons, and a long radicle.

—Shrubs, sometimes rising to the height of small trees, natives of Asia, rarely of Africa. Leaves opposite. Stipulas broad at the base, acute at the apex, or ending in a bristle-like awn. Corymb terminal, usually trichotomous. Flowers scarlet, rose-coloured, flame-coloured or white, usually fragrant.

* Flowers scarlet, flame-coloured, rose-coloured, or flesh-coloured.

1. I. **grandiflora** (Ker. bot. reg. t. 154.) leaves sessile, coriaceous, oblong, acute, shining; lobes of calyx acute; lobes of corolla ovate-lanceolate, acute; corymb umbellate; style hardly exserted; berry crowned by the lobes of the calyx. \( S. \) Native of the East Indies, at Tannore; and of China and Ceylon. —Burnm. fl. zeyl. t. 57.—Pluk. alm. t. 59. f. 2. I. coccinea, Lin. spec. 159. exclusive of the synonyms. Roxb. fl. ind. 1. p. 355. Smith in Rees' cyc. no. 1. Pavetta coccinea, ex Blum. bijdr. 950. An elegant shrub. Flowers scarlet, disposed in ample corymb. Tube of corolla almost 2 inches long.

**Great-flowed** IXORA. Fl. Aug. Clt. 1814. Sh. 3 to 4 feet.


**Bandhüca IXORA.** Fl. July. Clt. 1815. Shrub 2 to 4 feet.

3. I. **PROPQUIA** (R. Br. in Wall. cat. 6119.) leaves almost sessile, ovate or oblong, coriaceous at the base, coriaceous, glabrous, mucronate or acuminate; corymb compound, sessile, 1

**Aliiced Ixora.** Shrub.


6 I. coccinea (Lindl. bot. reg. 782.) leaves firm, rather coriaceous, oval-lanceolate, much attenuated; corymb many-flowered, decomposed, crowded, fastigate; teeth of calyx ovate, acute, short; lobes of corolla obvolute-curved, 3 times or more shorter than the tube; style a little exserted, rather hairy in the middle. *S.* Native of China. I. Chinensis, Lam. dict. 3. p. 344. Flowers orange coloured. Tube of corolla 15 lines long. The species is very nearly allied to *I.* stricta; but differs in the leaves being straight, and in the tube of the corolla being twice the length.


7 I. amenz (Wall. cat. no. 6121.) leaves oblong-lanceolate, glabrous, petiolate; stipulas cruspatid at the apex; corymb on short peduncles; lobes of calyx acute; lobes of corolla oval-oblong, acute. *S.* Native of the Moluccas, and now cultivated in Java. Lodg. bot. cab. t. 1048. Pavetta incarnata, Blum. bijdr. p. 950. The flowers are either pale rose-coloured, flesh-coloured or white; but in the British gardens there is only the pale red variety to be found. Tube of corolla 10–11 lines long.

** Flesh-coloured-flowered Ixora.** Shrub 2 to 3 feet.

7 I. pulchra (Roxb. fl. ind. 1. p. 387.) leaves almost sessile, lanceolate, acute; corymb terminal, compound; lobes of calyx obtuse, lobes of corolla lancedolate, acute; berry 2-lobed. *S.* Native of the Moluccas. I. lanceolata, Lam. dict. 3. p. 343. I. longifolia, Curt. bot. mag.—Rumph. amb. 4. t. 46.? and therefore I. longifolia, Smith in Rees' cycl. no. 3. ? Branches weak. Flowers deep scarlet. Berries deep purple. Perhaps the Bem-Schetti, Rheed. mal. 2. t. 57. is a paler variety of this or a nearly allied species.

**Fulgent Ixora.** Fl. June, Aug. Clt. 1825. Shrub 2 to 5 ft.

9 I. notonia (Wall. cat. no. 6182.) leaves ovate-oblong or oblong, acuminate, coriaceous, glabrous; panicles terminal, with the branches coriaceous and dense; lobes of corolla obtuse; stigma exserted, undivided; stipulas much acuminate. *S.* Native of the East Indies, on the Nelligherry mountains. Flowers apparently red or scarlet.

**Nutan's Ixora.** Shrub.

10 I. tenueflora (Roxb. fl. ind. 1. p. 397.) leaves on short petioles, oblong, obtuse, smooth; panicules terminal, corymbose, contracted; lobes of calyx oblong, obtuse; corolla with a long slender tube, and oblong-obtuse lobes, which are longer than the erect style or stamens. *S.* Native of the Moluccas. Flowers scarlet. Allied to *I.* fulgens.

**Slender-flowered Ixora.** Shrub 2 to 4 feet.

11 I. coccinea (Roxb. fl. ind. 1. p. 397.) leaves on short petioles, oblong, coriaceous, acuminate, with coarse parallel veins; corymb terminal, short; flowers almost sessile; teeth of calyx bluntnish; lobes of corolla oblong, obtuse; stigma exserted. *S.* Native of the Moluccas. Flowers scarlet. Allied to *I.* fulgens.

**Crowed-flowered Ixora.** Shrub 2 to 4 feet.

12 I. penuculata (Jack, mal. misc. no. 2. p. 11.) leaves broad-lanceolate, quite glabrous, pale beneath; branches compressed; corymb on long trichotomous peduncles, pendulous; lobes of calyx small, acutish; lobes of corolla narrow; stigma exserted. *S.* Native of Pulo-Penang, where the most of the Malay Ixoras are called Ixora jenavam, Flowers red.

**Pendulous Ixora.** Shrub 2 to 4 feet.

13 I. elongata (Heyne, ex Wall. cat. no. 6131.) leaves petiolate, broad-ovate, tapering much to the base, glabrous; floral ones ovate, sessile, coriaceous of the base, and clasping the stem; peduncles terminal, trichotomous, with the branches corymbose; corymb hairy; corolla with a smooth tube, but the segments are downy on the outside, particularly in aestivation; lobes of corolla acute; stigma exserted. *S.* Native of the East Indies. Flowers apparently red or scarlet.

**Elongated-peduncled Ixora.** Shrub.

14 I. rosea (Wall. in Roxb. fl. ind. 1. p. 398.) leaves almost sessile, oblong, acute, acuminate, contracted at the base and somewhat emarginate, rather downy on the nerves beneath, as well as the branches; corymb terminal, decomposed, large, loose; lobes of calyx acute, rather ciliated; lobes of corolla oblong-cuneated, acute; stigma exserted. *S.* Native of Bengsl, on the hills of Silhet. Ker, bot. reg. t. 540. Sims, bot. mag. 2428. Lodg. bot. cab. t. 729. Flowers rose coloured. Tube of corolla about an inch long. There is a variety of this plant having the leaves glabrous beneath.


15 I. parviflora (Vahl, symb. 3. p. 11. t. 52. but not of Lam.) leaves on short petioles, coriaceous, lanceolate-oblong, obtuse, coriaceous of the base, glabrous; stipulas triangular, acute; corymb compound, trichotomous, divaricate; lobes of calyx and corolla acute. *S.* Native of Amboyna. Pavetta Ambonica, Blum. bijdr. p. 949. Leaves larger than any other of the genus.

**Ambonica Ixora.** Shrub.


**Ambonya Ixora.** Shrub 4 feet.

17 I. eubreokens (Wall. cat. no. 6143.) leaves oblong, blunt at both ends, glabrous, on short petioles: upper ones sessile; corymbes long; lobes of corolla linear; stigma exserted. *S.* Native of the Burmese empire, on the banks of the Atrace. Flowers reddish. I. affinis, Wall. cat. no. 6143. does not ap-
pear to differ from this species, except in the more acuminate leaves.

Reddish-flowered Ixora. Shrub.
18 I. Javatica (D. C. prodr. 4. p. 487.) leaves on short petioles, oblong, acuminate, acute at the base, glabrous; cymes on short peduncles, trichotomous, divaricate; segments of the calyx oblong, of the corolla oval and rounded. 5. S. Native of Java, on the mountains in woods. Pavetta javanica, Blum. bijdr. p. 949. Flowers of a deep vermillion colour. Habit of I. coriacea and I. incarnata.

Java Ixora. Shrub 3 to 4 feet.
19 I. PAECIFLORA (D. C. l. c.) leaves on short petioles, oblong, acuminate, acute at the base, glabrous; cymes on short peduncles, tripartite, few-flowered; teeth of calyx acute; lobes of corolla oval, acute. 5. S. Native of the west of Java, on Mount Pangaranga, in woods. Pavetta paeciflora, Blum. Flowers of a vermilion colour. Allied to I. Javatica, but differs in the cymes being fewer-flowered, and on shorter peduncles; and in the teeth of the calyx being acute.

Few-flowered Ixora. Shrub.
20 I. SALICIFOLIA (D. C. prodr. 4. p. 487.) leaves on short petioles, linear-lanceolate, acuminate, glabrous; cymes bracteate; calyce segments acute; segments of corolla lanceolate, acuminate. 5. S. Native of Java, on the mountains. Pavetta salicifolia, Blum. bijdr. p. 951. Flowers scarlet. A very beautiful species. Leaves 9-10 inches long, and 6 lines broad.

Willow-leaved Ixora. Shrub 3 to 4 feet.
21 I. FINLASONYA (Wall. cat. no. 6166.) leaves obovate-lanceolate, glabrous, tapering much to the base, obtuse, and mucronate at the apex, petiolate; cymes terminal, compound; lobes of calyx membranous; lobes of corolla obtuse; stigma exerted. 5. S. Native of the East Indies. Flowers apparently red.

Finlayson’s Ixora. Shrub.

* * * Flowers white.

22 I. BLANDA (Ker. bot. reg. t. 100.) leaves oval or ovate-lanceolate, almost sessile; cymes trichotomous, compound, contracted, many-flowered; teeth of calyx short, bluntish; lobes of corolla obovate, reflexed; style a little exserted. 5. S. Native of the East Indies. 1. alba, Roxb. fl. ind. 1. p. 389. but not of Lin. Nearly allied to I. stricla, but differs in the corolla being white. Peduncles and calyces red. Stigma exserted, but shorter than the lobes of the corolla. Tube of corolla 10 lines long. Flowers at first white, but becoming yellow as they fade. Stipulas broad at the base, and ending in an awn.


23 I. MACROPHYLLA (Bard. in herb. Haenke, ex D. C. prodr. 4. p. 487.) glabrous; leaves cuneate-obovate, or oblong-oblanceolate, acute, on short petioles; pedicels elongated, bracteolate at the base, and trichotomously corymbose at the apex; teeth of calyx acute, hardly perspicuous; stigma exerted, with reflexed lobes; fruit nearly globose. 5. S. Native of the Island of Manilla. Allied to I. cuneifolia. Flowers blackish in the dried state, but probably white in the recent state.

Large-leaved Ixora. Shrub.

24 I. SESSILLIS (Wall. cat. no. 6139.) leaves oblanceolate, tapering to both ends, petiolate, glabrous; corymbs almost sessile, dense; lobes of calyx subulate; lobes of corolla acute; stigma exserted. 5. S. Native of Silhet, on the mountains. Stipulas subulate at the apex. Flowers apparently white.

Almost-sessile-corymbed Ixora. Shrub.

25 I. CUNEIFOLIA (Roxb. fl. ind. 1. p. 396.) leaves broadly ovate-lanceolate, acuminate, glabrous; corymbs terminal, on long peduncles, panicled; flowers crowded; lobes of calyx oblong, conical; lobes of corolla oblong, obtuse; stigma exerted. 5. S. Native of the East Indies, about Dacca and Scaramore. Ker. bot. reg. 648. Lodg. bot. cab. t. 1215. Corolla white, with the tube about 6-7 lines long. Berries turbinate, red. Down very minute on the peduncles, branchlets, and usually on the nerves of the leaves underneath.


26 I. BARVATA (Roxb. fl. ind. 1. p. 394.) leaves oblong, on short petioles, shining; upper ones almost sessile, and roundly cordate at the base; panicle spreading, loose, sub-corymbose; lobes of calyx acutish; lobes of corolla oblong, bearded with long white hairs at the throat; stigma exerted. 5. S. Native of the East Indies. Smith, in Rees’ cycl. no. 6. Sims, bot. mag. 2505. Brem. Schett. Rheed. mal. 2. t. 13. ? Flowers white. Stigma, according to Roxb. almost at the throat, but in the specimens examined it is exerted. Berries red.

Bearded Ixora. Fl. June, July. Clt. 1823. Sh. 5 to 12 ft.

27 I. OXYPHYLLA (Wall. cat. no. 6159.) leaves elliptic-lanceolate, long-acuminate, glabrous, on short peduncles; stipulas subulate at the apex; lobes of calyx subulate; stigma exerted. 5. S. Native of Silhet, on the mountains. Flowers apparently white.

Sharp-leaved Ixora. Shrub.


29 I. SPECTABILIS (Wall. cat. no. 6133.) leaves broad, elliptic-lanceolate, petiolate, glabrous; upper ones oblong, cordate at the base and stem clasping; pedicelles elongated, trichotomous, having the branches corymbose; teeth of calyx small, acute; lobes of corolla narrow. 5. S. Native of the Burmese Empire, near Martaban. Flowers apparently white.

Shiny Ixora. Shrub.

30 I. LANCEOLARIA (Colebr. in Roxb. fl. ind. 1. p. 397.) leaves approximate, very long, ovate-lanceolate, acuminate, on short petioles, glabrous; corymbs terminal, almost sessile, small; bracteoles coloured; corolla with a filiform tube, and linear-oblong lobes; anthers linear, bifid at the base; style exserted. 5. S. Native of the East Indies, in Travancore. Branches twigg, pendulous, somewhat dichotomous. Stipulas subulate at the apex, rather longer than the petioles. Corolla white, having the tube 9 lines long. Berries red, globose.

Lanceolar-leaved Ixora. Shrub 4 to 6 feet.

31 I. LEUCANTHA (Wall. cat. no. 6148.) leaves ovate-lanceolate, acuminate on short petioles; pedicules and corymbs downy; stipulas subulate at the apex; lobes of calyx, and bracteas subulate; lobes of corolla long and narrow; stigma much exerted; corymbs loose. 5. S. Native of the East Indies, near Travancore. Flowers white.

White-flowered Ixora. Shrub.

33 I. Brachypoda (D. C. prod. 4, p. 488.) glabrous leaves, on very short petioles, elliptic-oblong, bluntly acuminate; stipulas intrapetiolate, combined, truncate, and mucronated on both sides; corymbs terminal, pedunculate, shorter than the leaves; limb of calyx very short, bluntly 5-toothed. \( ^7 \). S. Native of equinoctial Africa, in the woods of Casamancia, where it was collected by Leprieur and Perrottet. Leaves 6 inches long, and 2 broad, and the petioles about 2 lines long. Tube of corolla, almost an inch long. Bracteas small. Flowers pale in the dried specimens, but are probably white in the recent state.

Short-petioled Ixora. Shrub 4 to 5 feet.

34 I. Acuminata (Roxb. fl. ind. 1. p. 393.) leaves petiolate, broad-lanceolate, acuminate, smooth, glaucous: floral leaves stem-clasping, and broader; corymbs supra-decompound, crowded, almost sessile; lobes of calyx ensiform; lobes of corolla ovate-oblong, obtuse; stigma exserted, undivided. \( ^7 \). S. Native of the East Indies, in the province of Silhet, in woods. Flowers large, white, with the tube \( \frac{1}{2} \) inch long. Calyxes white.

Acuminated-leaved Ixora. Shrub 3 to 5 feet.

35 I. Stameensis (Wall. cat. no. 6162.) leaves ovate-oblong, mucronate, coriaceous at the base; upper ones attenuate at both ends; corymbs terminal; lobes of corolla acute; stigma exserted. \( ^7 \). S. Native of Siam, in the East Indies. Flowers white.

Siam Ixora. Shrub.

36 I. Opaca (R. Br. in Wall. cat. no. 6141.) leaves long-lanceolate, acuminate, petiolate, glabrous; corymbs downy; teeth of calyx small; lobes of corolla obtuse; stigma exserted. \( ^7 \). S. Native of Pulo-Penang. Flowers apparently white.

Opaque-leaved Ixora. Shrub.

37 I. Brachialata (Roxb. fl. ind. 1. p. 391.) leaves on short petioles, broad-lanceolate, obtuse, glabrous; panicle brachiate, with remote diverging corymbose branches; tube of corolla filiform, and the lobes are obovate and emarginate; anthers sessile at the throat; stigma exserted. \( ^7 \). S. Native of Bengal, in woods. Flowers small, white. Nearly allied to I. parviflora, Vahl, but differs in the flowers being white. Berries deep purple, rather larger than peas. Petioles about half an inch long.

Brachialata-leaved Ixora. Clt. 1823. Shrub 2 to 4 feet.

38 I. Decipiens (D. C. prod. 4. p. 488.) glabrous; leaves on short petioles, oblong-lanceolate, acutish at the base, acute or obcordate at the apex; stipulas broad at the base, and ending in a subulate awn at the apex; corymbs terminal, tripartite at the base, sessile, with pedicellate branches; lobes of calyx short, bluntish; corolla with a slender tube, and oval, bluntish lobes; style pilose. \( ^7 \). S. Native of Coromandel, on the mountains. I. parviflora, Roxb. fl. ind. 1. p. 393. but not of Vahl, nor Lam. Flowers white, sweet-scented. Tube of the corolla 4 lines long, twice the length of the lobes. Berries roundish, black.


39 I. Brunonis (Wall. cat. no. 6136.) leaves obovate-lanceolate, sessile, coriaceous at the base, acuminate at the apex, downy beneath, but villous on the nerves; peduncles and corymbs villous, as well as the calyxes and corollas outside; bractees and teeth of calyx subulate; lobes of the corolla narrow, acute; stigma exserted. \( ^7 \). S. Native of Pulo-Penang. Flowers apparently white. Allied to I. villosa.

Brown's Ixora. Shrub.

40 I. Villosa (Roxb. fl. ind. 1. p. 392.) leaves broad-cuneate-lanceolate, acuminate, sessile or subulate, on short petioles; corymbs trichotomous, or 6 to 7 times divided, with the branches trichotomous and villous; lobes of calyx oblong, ciliata; corolla with a very long slender tube, and oblong obtuse lobes. \( ^7 \). S. Native of the East Indies, in Silhet. Flowers white, fragrant. Stipulas and branches villous.

Villosa Ixora. Shrub 4 to 5 feet.

41 Puriflora (D. C. prod. 4. p. 489.) leaves sessile, obovate-oblong, cuneate, and somewhat coriaceous at the base, acuminate at the apex, downy on the nerves on both surfaces, as well as the branches, corymbs, and corollas; stipulas long, subulate at the apex; corymbs terminal, dense, sessile; teeth of calyx and alabastra, very acute. \( ^7 \). S. Native of the East Indies. A very distinct species. Leaves 8 inches long and 3 broad. Corolla having the tube about 9 to 10 lines long, and the lobes linear and acute, about 3 lines long.

Downy-flowered Ixora. Shrub.

42 I. Longifolia; leaves broad, elliptic-lanceolate, tapering to both ends, glabrous above, and villous beneath, particularly on the nerves, as well as the branches, petioles, peduncles, panicles and fruit; segments of the calyx subulate. \( ^7 \). S. Native of Pulo-Penang. I. macrophylla, R. Br. in Wall. cat. no. 6105.

Long-leaved Ixora. Shrub.

† Species not sufficiently known.

43 I. Alba (Lin. spec. 160. but not of Roxb.) leaves ovate-lanceolate; flowers fasciculate. \( ^7 \). S. Native of the East Indies, but is a very obscure species, and probably fictitious; the description taken from the figure in Phil. alm. t. 109. f. 2. and Bem.—Schett. Rhed. mal. 2. t. 14. Plukene's plant belongs to I. incarnata, and Rheedle's probably to I. jutigena. The flowers are said to be terminating in small clusters, white, and without scent.

White-flowered Ixora. Shrub 6 to 7 feet.

44 I. Leureiri; leaves ovate-oblong, acute, smooth, nearly sessile; cymes or corimb fasciculate. \( ^7 \). G. Native of Cochin China. I. alba, Lour. coch. 76. Flowers white. Berries red.

Loureiri's Ixora. Shrub 3 to 4 feet.

45 I. Montana (Lour. coch. p. 76.) leaves oblong, broadest at the apex, obtuse, cuneated and coriaceous at the base, nearly sessile, glabrous; corymbs terminal, fastigate. \( ^7 \). G. Native of Cochin China, on the mountains. Flowers scarlet.

Mountian Ixora. Shrub 3 to 4 feet.

46 I. Novemervia (Lour. coch. p. 76.) climbing; leaves ovate-lanceolate, almost sessile, 9-nerved, rough; cymes terminal, hemispherical. \( ^7 \). G. Native of Cochin China, in uncultivated places. Flowers white, terminating in hemispherical cymes. Tube of the corolla very long and slender. Stigma ovate, bifid. Berry 1-seeded.

Nine-nerved-leaved Ixora. Shrub cl.

47 I. Violacea (Lour. coch. p. 76.) climbing; leaves lanceolate, almost sessile, pilose, 9-nerved; cymes axillary. \( ^7 \). G. Native of Cochin China, in uncultivated places, climbing over trees. Flowers violaceous. Berry 1-seeded. Seed ovate, rough.

Violaceous-flowered Ixora. Shrub cl.

48 I. Thrysiandra (Poir. suppl. 3. p. 203.) leaves almost sessile, ovate-cuneated, obtuse, glabrous on both surfaces, hoary beneath; stipulas ovate, acute; thyrses terminal, crowded; teeth of calyx acute, somewhat setaceous; corolla with a slender tube, and oval obtuse lobes, which are shorter than the tube. \( ^7 \). G. Native of the Cape of Good Hope.

Thyrsce-flowered Ixora. Shrub.

49 I. Laxiflora (Smith, in Rees' cyclo. vol. 19. no. 8.) leaves elliptic-oblong, acute, tapering into the petioles at the base: upper ones rounded at the base, almost sessile; panicles corymbose, loose, longer than the leaves; lobes of the corolla convex, spreading, bearded in the disk above; style nearly the length of
the limb. l. S. Native of Sierra Leone. This plant does not probably belong to the genus.

Loose-flowered *Ixora*. Shrub.

N. B. C. *multiflora* (Schwartz, prod. 30. fl. ind. oce. p. 240.) should be excluded from the order altogether, from the leaves being alternate, and crowded into fascicles; in the want of stig-}

Cult. Most of the species of this genus are truly beautiful when in blossom, and are therefore worth cultivating in every collection. They require to be kept in a moist heat, but the pots should never be plunged in the mouth of the tube of the corolla, even exceeding the segments of its limb, elevate at the apex, nearly entire, or the lobes of the stigma are so close as scarcely to be distinguished. Flowers white.—All the species are either natives of Africa or Asia.

* Asiatic species, especially from India and Arabia.*

1 P. *Indica* (Lin. spec. 160.) leaves oval-oblong, acuminate at both ends, petiolar; stipular broad, acute, somewhat concrete; panicule terminal, suberosembose, with opposite branches; teeth of calyx acute; lobes of corolla one-half shorter than the tube; style very long. l. S. Native of the East Indies, frequent in hedges, and among bushes. Gartn. fr. 1. t. 25. P. álba, Vahl, symb. 3. p. 11. *Ixora paniculátum*, Lam. dict. 5. p. 344. *Ixora Pavetta*, Roxb. fl. ind. 1. p. 395. *Pavetta* polynamhos, Washington, 11. cat. no. 6176. *Pavetta*, Rheed. mad. 5. p. 10. —Burmb. ind. t. 13. f. 3. Paváté, Rain, hist. 1581. Flowers white. There are varieties of this species with either glabrous branches and leaves, or the branches and under surfaces of the leaves are downy.


2 P. *arenósa* (Lour. coch. p. 73.) branches brachiate; leaves lancelolate, tabular, shining; flowers terminal, fasti-

3 P. *tomentosa* (Roxb. ex Smith in Rees' cyc. vol. 26. but not of Rich.) leaves petiolar, oblong, villous on both surfaces, but particularly beneath; panicles terminal, broad, tomentose, with trifid branches. l. S. Native of the East Indies. Ixora mentóstósa, Roxb. fl. ind. 1. p. 396. *Pavetta* tomentósa, Roth, nov. spec. p. 89. *Pavetta* velutina, Wall. cat. no. 6174. Flowers numerous, white, fragrant. Style twice the length of the tube of the corolla; stigma clavate, undivided. Berry globose.

Tomentose Pavetta. Shrub.

4 P. *montana* (Reinw. in Blum. bid. p. 952.) leaves on long petioles, oblong-lanceolate, much acuminate at both ends, downy, as well as the corollas, which are terminal, trichotomous, and bracteate; calcicorne teeth acute; segments of corolla acutish. l. S. Native of Java, in woods on the mountains. Very nearly allied to *P. Indica*. Flowers white, having the segments tipped with green.

*Mountain Pavetta*. Shrub 4 to 5 feet.

5 P. *odoráta* (Blum. bid. p. 952.) arboreous; leaves on short petioles, oblong, acute at both ends, but usually bluntish at the apex, coriaceous, glabrous; corollas terminal, trichoto-

6 P. *macrophylía* (Blum. bid. p. 953.) leaves on short petioles, oblong, very blunt, attenuated at the base, coriaceous, glabrous; corollas axillary and terminal, downy, trichotomously fastigate; segments of calyx and corolla blunt. l. S. Native of Java, in mountain woods. Flowers white.

Long-leaved Pavetta. Shrub 4 to 5 feet.

7 P. *reticulátum* (Blum. bid. p. 953.) leaves oblong, acuminate at both ends, coriaceous, glabrous, reticulated beneath; corollas terminal, trichotomous, loose, on long peduncles; segments of calyx acute; segments of corolla lanceolate, acuminate. l. S. Native of Java, on Mount Salak. Flowers white. Stem 4 feet high. Young branches compressed. Fruit didymously globose.

Reticulated-leaved Pavetta. Shrub 4 feet.

8 P. *lóngipes* (D. C. prod. 4. p. 490.) leaves oval-oblong, acuminate, petiolate, glabrous; stipular short, acuminate; peduncles terminal, longer than the leaves, coriaceous at the apex, few-flowered; fruit ovate, didymous, naked at the apex. l. S. Native of the island of Timor. Upper leaves 4-5 inches long, 1½ to 2 broad. Peduncles slender, 6 inches long. Corolla with a slender tube, and 4 oblong spreading reflexed lobes. Anthers linear. Style a little exserted; stigma thick, biseri-

Long-peduncled Pavetta. Shrub 4 to 5 feet.

9 P. *fallúdósa* (Blum. bid. p. 954.) leaves on short petioles, oblong, bluntish, membranous, glabrous; the upper ones oblong-cordate, sessile; corollas terminal, on long peduncles, trichotomous, coloured; teeth of calyx obtuse; segments of corolla oblong, acute. l. S. Native about Batavia, in marshes. Flowers white. Allied to *Ixora barbátá*.

Marsh Pavetta. Shrub 4 to 5 feet.

10 P. *sylväc* (Blum. bid. p. 955.) leaves oblong-lan-

11 P. *breveílio* (D. C. prod. 4. p. 491.) leaves oval, acute, acuminate at the base, on short petioles, rather membran-

Short-petioled Pavetta. Shrub 4 to 5 feet.

12 P. *rotána* (D. C. prod. 4. p. 491.) branchlets and calyces clothed with hoary villi; leaves elliptic, petiolar, rather hairy, but while young clothed with hoary tomentum; stipula-
triangular, glabrous inside; flowers disposed in panicked corymb, bearded; corolla with a long terete tube, which is beard ed at the throat, and oblong obtuse lobes; style setaceous, glabrous. h. s. Native of the East Indies. P. villiosa, Roth, nov. spec. p. 88, but not of Vahl.

Roth's Pavetta. Shrubs 3 to 4 feet.

13 P. SCLEROPHYLLOSA (N. B. in Wall. cat. no. 6171.) villous in every part; leaves oblong-lanceolate, acuminate; corymb terminal; teeth of calyx short, acute; lobes of corolla oblong. h. s. Native of Pulo Penang. Fruit round.

Nauclea-flowered Pavetta. Shrubs.

14 P. BRUNONIS (Wall. cat. no. 6172.) soft and villous all over; leaves obovate; stipulas and bracteas broad, membranous; peduncles trichotomous, having the branches dense and corymbose; lobes of calyx subulate. h. s. Native of the East Indies, on the Nelligbery mountains. Pavetta mollis, Wall. cat. no. 6179. Leaves smoothish above in the adult state.

Bronzi's Pavetta. Shrubs.

15 P. WEDERERIANA (Wall. cat. no. 6182.) leaves broad-lanceolate, glabrous, tapering to both ends; corymbs downy; fruit spherical. h. s. Native of Pulo-Penang and Chittagong.

Weberra-leaved Pavetta. Shrubs.

16 P. SUMATRENsis (Roth, nov. spec. p. 88, and in Roem. et Schultes, syn. p. 176.) leaves petiolate, oblong-elliptic, glabrous, striose on the ribs beneath; corymbis trichotomous; flowers pentandrous, clothed with white tomentum; corolla with a filiform tube, and oblong obtuse lobes; style much exserted; stigma oblong, glabrous. h. s. Native of Sumatra. Flowers white.

Sumatra Pavetta. Shrubs 3 to 4 feet.

17 P. LONGIFLORA (Vahl, symb. p. 13.) leaves lanceolate-elliptic, and are as well as the branches glabrous; stipula pilose inside; flowers disposed in fascicles; teeth of calyx rather long, acute. h. s. Native of Arabia Felix. Ixora occidentalis, Forsk. cat. p. 419. Ixora longiflora, Poir. suppl. 3. p. 208. Flowers white. Berries black. Corolla an inch and a half in diameter.

Far. β, Javeina (D. C. prod. 4. p. 491.) leaves on short petioles, oblong, acute at both ends, coriaceous; corymb terminal, fastigate, trichotomous, downy; tube of corolla very long; lobes of calyx and corolla acute. h. s. Native of Java, in woods on the mountains. Pavetta longiflora, Blum. bijdr. p. 952.

Long-flowered Pavetta. Shrubs.

18 P. Villiosa (Vahl, symb. p. 13.) branches and calyces villos, loamy; leaves on short petioles, elliptic-lanceolate, clothed with canescent villi white; flowers in fascicles. h. g. Native of Arabia Felix. Ixora villiosa, Poir. suppl. 3. p. 208. Leaves smooth on the upper surface in the adult state. Branches 4-cornered. Flowers white. Stipulas, style, and stigma as in P. radula.

Villous Pavetta. Shrubs.

* * African species.

19 P. Owarensis (Beauv. fl. d'ouv. 1. p. 87. t. 52.) leaves on long petioles, ovate-oblong, attenuated at both ends, membranous, glabrous; corymb terminal; lobes of calyx oval, acute; lobes of corolla linear, oblong, almost the length of the tube; style twice as long as the tube, clavate at the apex. h. g. Native of the west coast of Africa, between Warea and Buonopozzo. Ixora Owarensis, Poir. suppl. 3. p. 207. Flowers white. Throat of corolla very villos. Stipulas short, stem-clasping, apiculated by a short point at the apex.

Warea Pavetta. Shrubs 4 to 5 feet.

20 P. Caffra (Thunb. prod. p. 22. fl. cap. 1. p. 555.) leaves obovate, almost sessile, glabrous; stipulas membranous, compate; flowers subumbellate; teeth of calyx setaceous; lobes of corolla oblong, acute, shorter than the tube. h. g. Native of the Cape of Good Hope, in the woods of Krakokamma. Ixora Caffra, Poir. suppl. 3. p. 209. Pavetta corymbosa, Hioutt. ed. 1. p. 11. t. 40. and Cunita Capensis, Hiout. pl. syst. 5. p. 357. t. 40. f. 1. ex. Thumb. and Rehn. syst. 3. p. 175. Ixora albica, Bearn, Herb. Pav. thyrsiflora, Thumb. Herb. Corollas of flowers terminating in shorter branches. Flowers white. Style much exserted, clavate at the apex in flower. This is a beautiful shrub when in flower.


21 P. Parviflora (Afz. rem. guin. p. 47.) leaves oblong, attenuated at both ends; stipulas acute; peduncles dichotomously umbulate; calyces and corollas villous. h. s. Native of Guiana. Flowers white.

Small-flowered Pavetta. Shrubs 4 to 5 feet.

22 P. SMETHVIANI (D. C. prod. 4. p. 492.) leaves oval, short-acuminate, coriaceous, smooth, on short petioles; corymb axillary, on short peduncles; teeth of calyx oblong, ciliated; corolla with a terete tube, and the limb glabrose before expansion. h. s. Native of Sierra Leone. Pavetta parviflora, Smeathman. Perhaps this plant belongs to a different genus.

Smeathman's Pavetta. Shrubs 3 to 4 feet.

23 P. SUBDIAE (Schum. pl. guin. p. 78.) branches terete, nearly glabrous; leaves ovate, acuminate, rather ciliated at the base; petioles rather hairy; stipulas ciliated on the inside, ovate, mucronate; coryms fuscitate, terminal; lobes of calyx lanceolate, acute. h. s. Native of Guinea. Flowers white. Stigma glabrous.

Nearly-glabrous Pavetta. Shrubs 4 to 5' feet.

24 P. Geniephilia (Schum. pl. guin. p. 78.) branches terete, downy; leaves oblong-lanceolate, acuminate, shining, glabrous, downy beneath and on the petioles; stipulas setaceous acuminate; coryms terminal, glabrose; peduncles and calyx hairy. h. s. Native of Guinea. Flowers white.

Genipa-leaved Pavetta. Shrubs 4 to 5 feet.

25 P. Lateriflora; leaves oblong-lanceolate, coriaceous, acuminate, almost sessile, disposed in 2 rows; peduncles axillary, subcorymbose. h. s. Native of Sierra Leone. Flowers white. Berry roundish, containing a 1-seeded nut. Cotyledons long, twisted. Perhaps the same as P. Smeathmanni.

Side-flowered Pavetta. Shrubs 4 to 6 feet.

26 P. Canecephala (D. C. prod. 4. p. 492.) branches clathred with white hairs; leaves elliptic, attenuated at the base, on short petioles, reticulated veined, downy above, and clothed with canescent villi beneath; corymb lateral, many-flowered, almost sessile; pedicels and calyces hairy; corolla with a downy tube, and a glabrous limb; style much exserted, rather clavate at the apex. h. s. Native of the South Western Coast of Africa, in Angola. Pavetta tomentosa, A. Rich. mem. soc. hist. nat. par. 5. p. 181. but not of Roxb. Flowers white.

Canaescent Pavetta. Shrubs.

* * Species natives of Madagascar.

27 P.? Antiochyla (A. Rich. in mem. soc. hist. nat. par. 5. p. 181.) quite glabrous; leaves short, oval, acute, rather fleshy; stipulas broad, short, acuminate, permanent; flowers cymose, terminal, pentamorous; one of the calyces lobes is drawn out into a leaf; anthers inclosed; style much exserted. h. s. Native of Madagascar. Perhaps a proper genus.

Leaf-flowered Pavetta. Shrubs.

28 P. Cineraria (A. Rich. l. c.) shrub clothed with grey tomentum; leaves rather oval, acute, gradually narrowed at the base, clothed with cinereous tomentum, especially beneath; stipulas connate, lanceolate, permanent; cymes terminal, peduncu-
late, branched; flowers tonementose. 1 S. Native of Madagascar.

*Cineraria* Pavetta. Shrub.

29. *P. ora* clis (A. Rich. l. c.) quite glabrous; leaves elliptic-oblong, very acute, almost sessile; stipulas connate, narrow-lanceolate; cymes few-flowered, terminal; flowers very long, slender; stamens exerted; style hardly exserted beyond the tube. 1 S. Native of Madagascar. Perhaps a proper genus.

_**Species natives of the South Sea Islands.**_


*Guilder-rose-like Pavetta*. Shrub.


_Elder-like Pavetta_. Shrub.


_Three-flowered Pavetta_. Shrub.

† *Species not sufficiently known.*

33. *P. angustifolia* (Rœem. et Schultes, syst. 3. p. 175.) leaves linear-lanceolate, attenuated at both ends; cymes terminal, trichotomous, subumbellate; teeth of calyx acute; corolla with a slender tube, and oblong acute lobes. 1 S. Native of the East Indies. Pavetta Índica, Burn. fl. ind. p. 35. t. 13. f. 3. exclusive of the synonyms. Ixora angustifolia, Lam. dict. 3. p. 45. Flowers white. Stigma nearly entire as in Pavetta, and about equal in length to the lobes of the corolla, as in Ixora. _Narrow-leaved Pavetta_. Shrub 3 to 4 feet.

34. *P. amplifolius* (Pers. ench. 1. p. 131.) glabrous; leaves stem-clasping, ovate; segments of corolla acute, lanceolate. 1 S. Native of the East Indies; and is often mixed with _P. Indica_ according to Persoon.

_Stock-clasping-leaved Pavetta_. Shrub 3 to 4 feet.

35. *P. paraútica* (Lour. coch. p. 73.) stem parasitical, much branched; leaves verticillate, ovate, tomentose; clusters of flowers axillary; calyx tetragonal, truncate, villous, corolla with a long tube, and 4 oblong inflexed lobes; style equal in length to the corolla; berry 1-seeded. 1 S. Native of Cochin-china, in gardens, growing upon trees. Flowers small, dusky yellow. This plant should probably be removed from the genus.

_Parasitical Pavetta_. Shrub 1 foot.

_Cult. For culture and propagation see Ixora_, p. 574.


_Lin. syst. Tetrandria, Monogónia_. Calyx with an oval tube, and a small 4-toothed terminal limb. Corolla 4-clét, with a hairy throat. Stamens 4, inserted in the throat of the corolla; filaments short; stigma bifid. Berry oval, smooth, umbilicate, 1-seeded, crowded by the oblong-linear calyx. Embryo erect, in fleshy albumen.—Trees or shrubs, natives of Java. Leaves opposite, glabrous, acuminated at both ends. Flowers crowded, terminal, rarely axillary, sessile. Berry and wood very fetid.—This genus comes very near the following.

1. *S. arborea* (Blum. bijdr. p. 956.) arboreous; leaves pediolate, elliptic-oblong; flowers crowded, terminal, and sometimes axillary. 1 S. Native of Java, in mountain woods.

_TREE SAPRO'SMA_.

2. *S. fruticosum* (Blum. bijdr. p. 956.) shrubby; leaves almost sessile, oblong-lanceolate; flowers crowded, terminal. 1 S. Native of Java, on Mount Parang.

_Shrubby Saprosma_. Shrub.

_Cult. See Ixora_, p. 574. for culture and propagation.


_Lin. syst. Tetrandria, Monogónia_. Calyx with an ovate tube, and a short tubular sinutately 4-toothed limb. Corolla with an elongated terete tube, which is hardly tumin at the apex, and a glabrous throat. Stamens 4, inserted in the upper part of the tube, included; anthers oblong-linear. Style filiform; stigma bipartite, with the lobes linear, and hardly exerted. Berry ovate-globose, hardly fleshy, crowned by the tubular limb of the calyx, 1-celled, 1-seeded. Seed rather globose, fixed to the sides of the parietes. Embryo small, in a pit at the bottom of the albumen, which is horny, with a thick coriaceous radicle, which is longer than the small cotyledons.—Glabrous shrubs, natives of America. Leaves opposite, coriaceous, on short pedi- toles. Stipulas solitary on both sides, acute. Flowers terminal, few, rather crowded, on short pedicels, white.


_Violaceous-berry Coussarea_. Shrub 7 to 8 feet.

2. *C. racemosa* (A. Rich. in mem. soc. hist. nat. Par. 5. p. 177.) leaves elliptic, acuminate; stipulas caducous; flowers small, disposed in terminal pedunculate racemes; fruit ovoid, compressed, white. 1 S. Native of French Guiana.

_Racemose-berry Coussarea_. Shrub.

3. *C. macéoca'ipa* (A. Rich. l. c.) leaves elliptic, acuminate; stipulas caducous; flowers disposed in terminal and axillary, hardly pedunculate racemes; fruit ovoid, black. 1 S. Native of French Guiana. Very like the preceding species.

_Long-fruited Coussarea_. Shrub.

4. *C. squamo'sa* (Lam. ill. p. 281. no. 1462.) leaves ovate-oblong; cymes corymbose, terminal pedunculate; peduncles compressedly angular. 1 S. Native of the island of Trinidad, ex Vahl; and of Porto Rico, where it was collected by Ryan. Frelichia paniculata, Vahl. cefl. pref. 3. Billardiéria paniculata, Vahl. cefl. 1. p. 13. 10. f. 3.
Sipulas very short, rounded, acuminated on both sides, ex Vahl; but in the specimen collected at Porto-Rico by Ryan, the sipulas are conic a little way at the base, and bidentate at the apex; both are, however, probably the same species.

Frodlich's Consarea. Shrub.

Cult. For culture and propagation see "Isora, p. 574.


Lin. Syst. Tetra-Pentandria, Monogynia. Calyx with an ovate tube, and a 4-toothed limb. Corolla, stamens, and style unknown. Berry crowned by the calyx, ovate-oblung, rather coriaceous, 2-celled, rarely 3-celled. Seeds solitary in each cell, plano-convex or angular. Alumnæ rather caralinugous, grossme from chinks and fissures. Embryo erect, small, rather curved, and nearly dorsal, with lanceolate cotyledons.—This genus is hardly known, but from the alumnæ it comes very near to Rutidea; and to Psychotria from the form of the fruit.

1 G. siora (Gärtn. fruct. 1. p. 138. t. 28. f. 2.) berry smooth; teeth of calyx on the top of the fruit, conving and rounded. b. S. Native of Ceylon, where it is called Hogalota. Berries black.

Black-berried Grumilea. Shrub.

2 G. rüctervriatrix (D. C. prod. 4. p. 495.) berry striated lengthwise, crowned by the short tubular truncate limb of the calyx. b. S. Native of the western coast of Africa in Casamania at Iton, where it was collected by Leprieur and Perrottet. Shrub glabrous. Leaves petiole, elliptic, cuneate at the base, acute at the apex, shining. Stipulas solitary on both sides, lanceolate, deciduous. Flowers unknown. Fruit 5-6 together at the tops of the branches, sessile, almost capitake, black, ovate, 2-celled. Seeds ruminated as in Annóna.

Psychotria-like Grumilea. Shrub 4 to 5 feet.

Cult. For culture and propagation see "Isóra, p. 574.


Lin. Syst. Pentandria, Monogynia. Calyx with a globose tube, and a small 5-parted limb; lobes ovate. Corolla funnell-shaped, with a terete tube, which is dilated at the apex, and 5 spreading oval lobes. Anthers 5, sessile in the throat of the corolla, exserted, oblong, but shorter than the lobes of the corolla. Style clavate at the apex; stigmas 5, combined, indiited only by a furrow. Berry nearly dry, globose, crowned by the vestiges of the calyx, 1-celled, 1-seeded. Seed globose, pubescent, at the base, wrinkled on the out-side. Alumnæ large, brown, caralinugous. Embryo oblique, terete.—Shrubs, natives of India and Africa. Branches terete, hispid while young. Leaves opposite, on short petioles, hispid on the nerves and petioles. Stipulas twin on both sides, combined to the middle, subulate at the apex. Spikes raceemose, interrupted, terminal; flowers disposed in almost sessile opposite fascicles. Bracteas and calyxes hispid. Corollas glabrous, becoming black on drying, but probably white in the recent state.

1 R. Firmuloba (D. C. l. c.) branches, petioles, and nerves of leaves on the under surface, rather hispid; leaves elliptic-oblong; spikes terminal, formed of interrupted fascicles of flowers; fruit glabrous. b. S. Native of Sierra Leone, where it was collected by Smeathmann; and of Casamania near Iton, where it was collected by Leprieur and Perrottet.

Small-flowered Rutidea. Shrub 3 to 4 feet.

2 R. moellies (Blum, ex D. C. prod. 4. p. 495.) every part of the plant is clothed with soft hairy tomentum; leaves elliptic.

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oblong, clothed with soft hairs on both surfaces, but most so beneath; coryms terminal, dichotomous; fruit rather villous, globose, 1-seeded. \( S \). Native of the island of Pulo-Penang. The fabric of the seed is unknown.

Soft Rutidean. Shrub.

Cult. For culture and propagation see Isora, p. 574.

CLXVI. FARAMEA (A member does not give the meaning of this name). A. Rich. mem. soc. hist. nat. Par. 5. p. 175. t. 17. f. 1 and 2. D. C. prod. 4. p. 496.—Faramea and Tetramerenium, Juss. mem. mus. 6. p. 376.

LIN. SIST. Tetramerium, Monogyni. Calyx with a turbinate glabrous tube, and a very short 4-toothed or entire limb. Corolla with a short terete tube, a naked throat, and 4 spreading oblong or linear acute lobes, which are longer than the tube. Anthers 4, sessile, inclosed. Style short, bifid at the apex. Berry dry, 2-celled while young, but in the adult state it is glabrous, depressed, 1-celled, and 1-seeded, marked by 8 crenulations at the cicatrice. Seeds fixed to the bottom of the cell, umbilicate at the base, glabrously depressed. Alphanum horný, Embryo lateral, small, horizontal.—Glabbrous, dichotomously branched shrubs, natives of America. Leaves petiolate, oval or oblong-acuminate. Stipules interpetal, solitary on each side, broad at the base, and securately cuspitate at the apex. Flowers corymbose or umbellate, on the tops of the branches or peduncles. Corollas white.

SECT. I. Eufaramea (this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 496.—Faramea, Aubl. guian. 1. p. 102. t. 40. Lam. dict. 2. p. 460. ill. t. 63.—Faramea, Vittm. summ. pl. 1. p. 537. Peduncles terminal, 1-3 together, bearing each a simple umbel of flowers at the apex. Flowers involucrated by caducous bracteae. Stipulas ending in an awn.

1 F. sessile-Flora (Aubl. guian. 1. p. 104. t. 40. f. 2.) umbels terminal, solitary, simple, sessile; calyx 4-toothed. \( S \). Native of Guiana, in the woods called Canwood. Leaves oblong-obovate. Flowers white.

Sessile-flowered Faramea. Shrub 7 to 6 feet.

2 F. sessiliflora (D. C. prod. 4. p. 496.) peduncles terminal, solitary, nearly terete, bearing a simple umbel of flowers at the apex; calyx truncate. \( S \). Native of Cuba, about the Havana. Branches slender, dichotomous. Leaves oblong, acuminate at both ends.

Gardenia-bearing Faramea. Shrub.

3 F. truncata (D. C. prod. 4. p. 496.) peduncles terminal by threes, compressed at the apex, bearing each a simple umbel of flowers; calyx truncate. \( S \). Native of French Guiana. Very like the following species, but differs in the calyx being truncate. Corolla marcescent. Fruit pale, but exactly like those of F. odoratissima.

Truncate-calycyed Faramea. Shrub 4 to 6 feet.

4 F. corolea (Aubl. guian. 1. p. 102. t. 40. f. 1.) peduncles terminal by threes, compressed at the apex, each bearing a simple umbel of flowers; calyx 4-toothed. \( S \). Native of French Guiana, in the woods called Canwood. Lam. ill. t. 63. Flowers white.

Corolea-flowered Faramea. Shrub 7 to 5 feet.

Stipulae ending in an awn.

5 F. odoratissima (D. C. prod. 4. p. 496.) leaves oblong-oblong, acute at the base, and abruptly acuminate at the apex; stipulas broad, ending in a subdorsal awn; coryms terminal; limb of calyx very short, truncate, ten times shorter than the tube of the corolla; berry crowned by the very short bluntly 4-toothed limb of the calyx. \( S \). Native of the West Indian islands, as in St. Domingo, Jamaica, Porto-Rico, Guadaloupe, Cayenne, Panama, and probably of Mexico. Plum. ed. Burm. t. 156. f. 2. P. Brown, Jam. t. 6. f. 1. but not fig. 2.—Coiffsia occidentalis, Jacq. amer. t. 47. Lin. spec. p. 246. Isora Americana, Lin. amerc. acad. 5. p. 593. ex Swartz. Tetramerenium odoratissimum, Gurt. fil. carp. 3. p. 90. t. 196. Tetramerenium deciduale, Nees et Mart. nov. act. nat. cur. 12. p. 13. Flowers white, sweet-scented, about the size of those of the jamine; hence it is called jamina in Jamaica.

Very-sweet-scented-flowered Faramea. Ch. 1793. Sh. 6 ft.

6 F. latifolia (D. C. prod. 4. p. 497.) leaves oval, abruptly acuminate; stipulas broad, ending in a subdorsal awn; coryms terminal; tube of calyx slightly tetragonal, somewhat 4-toothed, 5 times shorter than the tube of the corolla. \( S \). Native of Brazil, in the province of Rio Janeiro. Tetramerenium latifolium, Cham. et Schlecht. in Linnaea. 4. p. 30. Flowers white. Leaves and indorecence almost like those of F. odoratissima; but the limb of the calyx on the fruit is very different.

Mocote-Video Faramea. Shrub 6 to 7 feet.

7 F. montevideensis (D. C. prod. 4. p. 497.) leaves oblong, acuminate at both ends; stipulas broadish at the base, ending in a subdorsal awn at the apex; coryms terminal; berries crowned by the limb of the calyx, which is tubularly cup-shaped and subtruncate. \( S \). Native of Brazil, about Monte-Video; and of Porto-Rico. Tetramerenium Montevideense, Cham. et Schlecht. in Linnaea. 4. p. 29. Flowers white. Leaves and indorecence almost like those of F. odoratissima; but the limb of the calyx on the fruit is very different.

Tetramerium Faramea. Shrub 4 to 6 feet.

8 F. stipulacea (D. C. prod. 4. p. 497.) leaves oblong, attenuated at the base, and acute at the apex; stipulas broad at the base, and ending in a dorsal awn at the apex; coryms terminal; limb of calyx acutely 4-toothed; berry globose, crowned by the short limb of the calyx. \( S \). Native of Brazil, within the tropic. Tetramerenium stipulaceum, Cham. et Schlecht. in Linnaea. 4. p. 31. Flowers white. Habit of F. jasminoïdes, but differs in the dorsal awn to the stipulas.

Stipulaceous Faramea. Shrub 4 to 6 feet.

9 F. corolea (D. C. l. c.) leaves ovate-elliptic, acute at both ends; stipulas dilated at the base, and ending in a short awn at the apex; peduncles axillary, usually 3-flowered; limb of calyx acutely 5-toothed, 6 times shorter than the tube of the corolla. \( S \). Native of Brazil. Tetramerenium coroleum, Nees et Mart. nov. act. bann. 12. p. 12. Peduncles and branches 2-edged. Corolla of an amethyst colour, with lanceolate segments.

Blue-flowered Faramea. Shrub 5 to 6 feet.

10 F. axillariflora (D. C. prod. 4. p. 673.) leaves sessile, ovate-oblong, cordate at the base, acuminate at the apex; stipulas ending in a long-awned aceamen; branches much compressed; flowers on short pedicles, in fascicled coryms from the axils of the leaves. \( S \). Native of Brazil, about Bahia, where it was collected by Salzmann, G. Don, &c. Flowers white. Fruit exactly like that of F. odoratissima. Leaves 7-8 inches long, and about 3 broad.

Azathy-flowered Faramea. Shrub 4 to 6 feet.
minal, trichotomous, divaricate. \( S. \) Native of Guayaquil. Tetranérium multiflorum, Bartl. in herb. Henke. Flowers white? Stipulas different in form from any other species.

Guayaquil Farama. Shrub 4 to 6 feet.

** Stipulas never ending in an ann.

12 F. Jasmaioïdes (D. C. prod. 4. p. 497.) leaves elliptic-oblong, acuminate at both ends; stipulas ovate, large, acute; coryms terminal; calyx urceolate, with 4 long teeth; berry globose, crowned by the short limb of the calyx. \( S. \) Native of New Granada, near Ibagué. Tetranérium jasmaioïdes, H. B. et Kunth, nov. gen. ann. 3. p. 373. t. 287. Coffèa flavicans, Wild. mss. in Roem. et Schult., syst. 5. p. 201. Branches tetragonally. Leaves pale green, yellowish beneath. Lobes of corolla one-half shorter than the tube. Flowers white.

Jasmine-like Faramea. Shrub.

13 F. ? sessilifolïa (D. C. l. c.) leaves oblong, acuminate, cordate, sessile; stipulas ovate, acuminate subulate; coryms terminal, trichotomous; limb of calyx urceolate, 4-toothed. \( S. \) Native in woods on the banks of the Orinoco, between Maypure and St. Fernando de Atabapo. Tetranérium sessilifolium, H. B. et Kunth, nov. gen. ann. 3. p. 374. Ixora sessilifolia, Sprøng. syst. 1. p. 409. Flowers white. Anthers probably exserted. From the fruit being unknown, it is doubtful whether it belongs to the present genus.

Sessile-leaved Faramea. Shrub.

14 F. Multiflora (A. Rich. in mem. soc. hist. nat. Par. 5. p. 176.) leaves oval-elliptic, acuminate, abruptly petiolate; stipulas interpetiolar, connate, sheath-formed, acuminate; flowers corymbose, terminal. \( S. \) Native of French Guiana.

Many-flowered Faramea. Shrub.

15 F. Calyciflua (A. Rich. l. c.) leaves elliptic, acuminate; stipulas interpetiolar, accuminated; flowers spicate; spikes terminal, pedunculate; limb of calyx tubular, large, permanent. \( S. \) Native of French Guiana. From the calyx being permanent, it does not probably belong to the present genus.

Calyx-flowered Faramea. Shrub.

Sect. III. Faramedoïdes (from faramea, and, idea, like; but is meant only as an alteration of the generic name). D. C. prod. 4. p. 498. Panicles thyrsoidal, terminal.

16 F. Alleæcens (D. C. prod. 4. p. 498.) panicle terminal, pedunculate, having its branches bearing umbels of flowers at the apex; calyx truncate. \( S. \) Native of French Guiana. Branchlets compressively angular. Leaves oblong, acuminate at both ends, shining on both surfaces, pale green. Stipulas acute, deciduous while young. Peduncles 2-edged, furnished with 3-4 pairs of branches. Panicles white, one-half shorter than the leaves. Corollas elongated, very like those of F. truncata.

Whitish-paniced Faramea. Shrub 4 to 6 feet.

17 F. Martini (D. C. l. c.) panicles terminal, on short peduncles, shorter than the leaves; branches corymbose at the apex; calyx hardly toothed: leaves large, oval; anthers exserted at the throat. \( S. \) Native of Guiana, at Mount Kaw, where it was collected by Martin. Branchlets compressed. Stipulas broad, short, permanent. Leaves glabrous, membranous, attenuated at the base. Lobes of corolla 4, a little longer than the tube. Calyx urceolate. Fruit unknown.

Martin's Faramea. Shrub 4 to 6 feet.

Cult. For culture and propagation see Coffèa, p. 584.


Lin. syst. Tetra-Pentandria, Monogynia. Calyx with an obovate-globose tube, and a campanulately tubular 4-5-toothed limb. Corolla tubular, terete, with a 4-5-parted spreading limb, lanceolate acute segments, and a naked throat. Stamens inserted in the middle of the tube; filaments beset with short hairs in the free part; anthers linear, inclosed. Fruit ovoid, striated, fleshy, crowned by the tubular limb of the calyx, containing 2 many 1-seeded indischent nuts, which are flat on the inside, and furrowed in the middle. Seed erect. Embryo nearly terete.—A Guiana shrub. Leaves opposite, elliptic. Stipulas fringed. Flowers sessile, umbellate on the tops of the peduncles.

1 S. Guianæensis (A. Rich. l. c.) \( S. \) Native of French Guiana.

Guiana Strempelia. Shrub.

Cult. For culture and propagation see Coffèa, p. 584.


Lin. syst. Tetra-Pentandria, Monogynia. Calyx with an ovate, globose or turbinate tube, and a small 4-5-toothed limb (f. 107. a.). Corolla tubular, funnel-shaped, with a spreading 4-5-parted limb (f. 107. b.), and oblong lobes. Stamens 4-5, rising from the middle of the tube of the corolla, or from its apex, exserted or inclosed. Style bident at the apex, having the lobes rarely combined. Berry umbilicate (f. 107. A), naked or crowned, containing 2 1-seeded nuts of the persistence of parchment, which are convex on the outside, and flat inside, and marked by a longitudinal furrow. Embryo erect, in horny albumen with a terete, radicle, and foliaceous cotyledons.—Trees and shrubs. Leaves opposite. Stipulas interpetiolar. This genus is probably divisible into several genera, but that has not been attempted on account of specimens of the greater number of the species being rare in European collections.


** Peduncles axillary. Flowers 5-7-cleft, pentandrous or hesperandrous.

1 C. Ara’ica (Lin. spec. p. 245.) leaves oval-oblong, acuminate, glabrous, shining on the upper surface; peduncles axillary, short, aggregate; corolla 5-cleft: anthers exserted; berries ovate. \( S. \) Native of Arabia Felix and Ethiopía, from whence it has been carried to almost all parts of the world within the tropics. Gaertn. fruct. 1. t. 25. Sims, bot. mag. 1303. Tratt. tab. t. 400. Tuss. ant. t. 18. Deulam. herb. amat. t. 285. Church. ad Steph. med. bot. 4. t. 182. C. laurifolia, Salisb. prod. p. 692. 2 cleft. Juss. act. nov. par. 1713. t. 7. Ellis, mon. 1774. in 4to. Till. pis. t. 32. Pluk. aln. t. 272. f. 1. Alp. egyp. t. 36. Blackw. 4 f 2
RUBIACEÆ. CLXVIII. COFFEA.

herb. t. 337. Plench. icon. t. 130. Stipulas awl-shaped, undivided. Leaves wavy, dark-green and shining above, paler beneath. Flowers white, sweet-scented, disposed in axillary clusters of 4-5. Berries red, cherry-formed. The seeds or nuts are involved in a thin elastic pellucid aril. The coffee-tree is frequently cultivated in the hot-houses of our gardens for ornament, where it both flowers and ripens its fruit. It is propagated by the berries, which must be sown soon after they are gathered, or they will not vegetate. Cotyledons transversely ovate, 3-nerved at the base, and emarginate at the apex.

Few vegetable substances have been more generally esteemed for their medicinal and dietetic properties than the berries of the coffee-tree. The plant is fully described by Ellis and several other writers. The coffee-tree is generally regarded as a native of Arabia, but Bruce says it derives its name from Coffee, a province of Narea, in Africa, where it grows spontaneously in great abundance. The plant does not appear to have been known by the Greeks or Romans, nor are there any facts respecting its origin in the East. It has been well ascertained, however, that the berries were imported into every part of Europe, and used as a favourite beverage, long before it was known of as a plant; they were the product. Prosper Alpinus has seen the coffee-tree, without fruitication, in some gardens in Egypt; but the first intelligible botanical account was published by Ant. de Jussieu, in the Mem. Acad. Scienc. Paris, in 1713. We are informed by Borrhave, in his Index to the Leyden Garden, that it was first introduced into Europe by Nicholas Wisten, a burgomaster of Amsterdam, and chairman of the Dutch East India Company, who gave directions to the governor of Batavia to procure seed from Mocha, in Arabia Felix. These seed were sown in the Island of Java, several plants were procured, and one was transmitted by Wisten, about the year 1610, to the botanic garden at Amsterdam. From the progeny of this plant, not only the principal botanic gardens in Europe, but also the West India Islands, were supplied with this valuable tree. Soon after its introduction into Holland, it was cultivated by Bishop Compton, at Fulham.

In Arabia the fruit is dried in the sun upon mats, and the outer coat is separated by means of a large stone cylinder. It is again placed in the sun, winnowed, and packed up in bales. In the West India Islands, as soon as the fruit is of a deep red colour, it is reckoned to be ready for being gathered. Large linen bags, kept open by means of hoops round their mouths, is suspended by the negroes from their necks, who pull the berries with their hands, and, after filling the bags, empty them into a large basket. A single negro can easily collect three bushels in a day. As the berries do not ripen together, they are collected at three different gatherings. One thousand pounds of good coffee are produced from one hundred bushels of the berries just from the tree. The coffee-berries may now be dried in two different ways. The first method is to place them in the sun, in layers of four inches thick, on inclined planes. In a few days the pulp is discharged by fermentation, and in about three weeks the coffee is completely dry. The skin of the berries, already broken, is removed by mills, or in wooden mortars. The second method is to separate the grain from the pulp at once, by means of a mill, and the grains are then left to soak in water for twenty-four hours. They are afterwards dried, and then stripped of the pellicle, or parchment, as it is called, by means of appropriate mills. The grains of coffee are afterwards winnowed, and mingled with the grindings and dust of the parchment, in which state they are put up into bags for sale.

Culture.—The coffee-tree is less cultivated in Jamaica than in Barbadoes, St. Domingo, and some other islands in the West Indies. Richness of soil lessens the flavour of the seeds; on this account, coffee produced in the dry, hot, arid climate of Arabia is always better than that from the West India Islands. In cultivating the coffee in the West Indies, the berries are sown immediately after being gathered, as they are found to retain their vegetative quality only a few weeks. In three months the seeds so sown produce plants fit for transplanting to the final plantation. In the low lands they are planted five feet apart, and in the mountains ten feet or more. In three years the plants will produce a crop, and continue bearing a number of years. The berries are gathered when they are just about to drop.

Qualities and chemical properties.—When the seeds of coffee are roasted, a portion is converted into tannin by the action of heat, and an agreeable aromatic substance is developed, the nature of which has not been ascertained. The same principle is also developed by roasting barley, beans, and many other vegetables, which, on that account, are occasionally employed as substitutes for coffee, and suit some stomachs better. The infusion of unroasted coffee in boiling water is of a yellowish green colour; but the decoction, by continuing the boiling, becomes brown, and turbid on cooling. From experiments made chiefly by Cadet, it appears that coffee contains an aromatic principle, a little oil, gallic acid, mucilage, extractive and bitter principle. Other analyses have been made by chemists. M. Grindel found it to contain kinic acid, and M. Paysses has discovered what he has endeavoured to show as a peculiar acid, to which he has given the name of coffee acid. More recently, M. Robiquet is said to have demonstrated another principle, which he names Caffeine. It is in silk-like acicular crystals, bearing a resemblance to Benzoic acid. It liquefies by the aid of a gentle heat; in close vessels it volatilizes, and sublimes in needles. Caffeine is neither acid nor alkaline; it furnishes a great quantity of azote; it dissolves with difficulty in ether, but quickly in water and alcohol.

Medical properties and uses.—It is evident that we are indebted to the Arabians for our use of this pleasant beverage, as the first rite of Eastern hospitality is the presentation of a bowl of coffee. In Europe it is said to have been first used in Italy, in the year 1650; and, according to Dalaine, was introduced at the court of Paris, in 1669, by Soliman Aga, ambassador from the Porte. An Armenian, named Pascil, opened the first Café, and Procope the second, in "Rue des Fossés, Saint Germain des Prés." Nearly at the same time coffee was introduced into London.

By some, coffee is supposed to be best suited to the aged; and its abuse, as when taken too strong, is said to impair digestion, instead of promoting it; and it stimulates, heats, and produces watchfulness in certain constitutions. The Mahometans of India, who use a great deal of coffee in the same way as we do, with the exception of combining milk with it, believe it to have the effect of soothing and allaying nervous irritations, and prescribe it to stop the vomiting in cholera morbus. Dr. Ainslie also states, that it is often employed for the same purposes by the Spaniards at Manilla. It is said that Sir John Floyer, during his residence in Lichfield, found great benefit in his own person by the use of coffee in asthma. Sir John confirms its success in a letter to Dr. Percival; "On reading the section of coffee," says he, "in the second volume of your essays, one quality occurred to me which I had observed of that liquor, confirming what you had said of its sedative powers. It is the best abater of periodic asthma that I have seen. The coffee ought to be the best Mocha, newly burnt, and made very strong immediately after grinding it. I have commonly ordered an ounce for one dish, which is to be repeated afresh after the interval of a quarter of an hour, without milk or sugar." Percival's Essays, vol. iii.

As a general palliative, strong coffee is often serviceable in various kinds of head-ache; and where its own sedative power
is unavailing, it forms one of the best vehicles for the administration of laudanum. It diminishes in some degree the hypnotic power of the latter, but counteracts its distressing secondary effects. When laudanum is intermixed with strong coffee for the cure of many modifications of head-ache, tranquility and ease are produced, though there may be no sleep; when laudanum, on the contrary, is taken alone, sleep will, perhaps, follow, but is mostly succeeded by nausea and a return of pain. Hence the Turks and Arabsians make strong coffee their common vehicle for opium, from its tendency to counteract the narcotic principle of the latter; and on the same account it is plentifully administered, after the stomach has been evacuated of its contents, in cases of poisoning by opium.

For common purposes, infusion of coffee is the most agreeable method of preparing it, as the aromatic and volatile principles are dissipated by boiling.

Coffee is named by the Persians Coleha and Coho, by the Turks, Chauhe and Cahye, by the Arabsians, Cacahu, Cauoa, Caffiaye, and Cahowah; and by the Egyptians, Elecre. In Germany it is called Arabische Kaffeebaum, in Cochín China, Cay-caphe.

The Gallá, a wandering nation of Africa, in their incursions in Abyssinia, being obliged to traverse immense deserts, and being also desirous of falling on the Abyssinians without warning, that they may be encumbered as little as possible with baggage, carry nothing with them to eat, but coffee roasted till it can be pulverized, and then mixed with butter into balls, and put into a leathern bag; one of these, about the size of a billiard-ball, keeps them, they say, in strength and spirits during a whole day's fatigue, better than a loaf of bread, or a meal of meat.


2 C. Mauritia'na (Lam. dict. 1. p. 550. ill. t. 160. f. 2.) leaves oval, acute at both ends, reticulately veined; peduncles axillary, solitary, 1-flowered, very short; berries oblong, acute at the base, native of the Island of Bourbon, in the woods. C. Arábiga β, Wildl. spec. 1. p. 974. C. sylvéstris, Wildl. msn. in Reem et Schultzs, syst. 5. p. 201. "Flowers white.

This species is known in the Island of Bourbon under the name of Café-Marron, but should not be confounded with the variety of C. Arábiga, known in commerce under the name of Café Bourbon, or Bourbon Coffee.

Mauritian Coffee-tree. Shrub 4 to 5 feet.

3 C. Bengale'nsis (Roxb. hort. beng. p. 15. fl. ind. 2. p. 194.) leaves oval-oblong, acuminate at both ends; flowers axillary, rather aggregate, sessile; stipulas undivided, subulate, much acuminate; corolla 5-cleft, with oblong lobes; anthers inclosed. S. Native of Bengal, but chiefly about Silhet; and of Nipaul. Roth. nov. spec. 148. Reem et Schults, syst. 5. p. 206. Branches so placed as to form a bush of a pyramidal form. Leaves from ovate to oblong, glabrous. Flowers 1-3 together or more, axillary, white, sweet-scented. Berry black, size of a small cherry. It was for some time much cultivated in Bengal, under the idea of its being the Arabian Coffee; it is now neglected, being of inferior quality, and not productive; however, the number of its flowers entitle it to a conspicuous place in the flower-garden.

Bengal Coffee-tree. Shrub 4 to 6 feet.

4 C. Shtenyphüllal leaves oblong-lanceolate, acuminate; peduncles almost sessile, axillary, 2-3-flowered. S. Native of Sierra Leone, where it is cultivated. Flowers white. Berries oblong, black. The seeds of this species are roasted and used as the common coffee, and are even considered superior to it.

Narrow-leaved Coffee-tree. Shrub 4 to 6 feet.

5 C. hisruf'tus; leaves ovate, acuminate, on short peduncles; young branches, petioles, and veins of leaves hairy; peduncles axillary, 3-flowered. S. Native of Sierra Leone, in the low lands. Flowers white.

Hairy Coffee-tree. Shrub 4 to 5 feet.

6 C. ? microcarpap (D. C. prod. 4. p. 499.) leaves elliptic-oblong, short-acuminate, and are, as well as the branches, quite glabrous; flowers in fascicles along the branches, after the falling of the leaves, and therefore they appear as if they were disposed in interrupted racemes, but in fact the flowers are merely in fascicles from the axils of the fallen leaves; fruit elliptic, 3 times longer than their pedicels, and crowned by the cup-shaped limb of the calyx. S. Native of Africa in Casamannia, in woods, at Cape Rouge, where it was collected by Perrotet and Leprieur. Leaves 2½ inches long, and 8-9 broad. Stipulas solitary, undivided, acuminate subulate, deciduous. Flowers white.

Small-fruited Coffee-tree. Shrub 4 to 5 feet.

7 C. laurina (Sneath. in herb. L'Her. et D. C. prod. 4. p. 499.) leaves oblong-lanceolate, mucronate, cuneated at the base, coriaceous, quite glabrous; racemes axillary, crowded with flowers, much shorter than the leaves; corolla 5-cleft, with a villous throat; anthers exerted, but rather shorter than the lobes of the corolla; berries glabrous. S. Native of Sierra Leone. P. Laurina. 2 p. 14. Leaves yellowish in the dried state. Calyx truncate. Corollas white.

Laurel-like Coffee-tree. Shrub 4 to 5 feet.

8 C. stipulacea (D. C. prod. 4. p. 492.) leaves elliptic or oblong, petiolate, acuminate at both ends; stipulas foliaceous, oblong, acute, striated lengthwise, deciduous; peduncles axillary, very long, coriaceous at the apex, trichotomous. S. Native of French Guiana, where it was collected by Patris. Limb of calyx obscurely but acutely 5-toothed. Flowers unknown. Berries ovate, not crowned. Peduncles 6 inches long.

Stipulacea Coffee-tree. Shrub 4 to 6 feet.

9 C. pedunculatap (Roxb. fl. ind. 2. p. 195.) leaves elliptic, almost sessile, smooth; peduncles terminal and axillary, in fascicles, long, 1-flowered; tube of the corolla slender, smooth; stamens inclosed. S. Native of the Moluccas.

Pedunculated Coffee-tree. Shrub.

** Peduncles axillary. Flowers tetramerous and tetraandrois.

—Leôra species, Spreng.

10 C. Guiananeps (Abul. guian. 1. p. 150. t. 57.) leaves ovate-oblong, bluntly acuminate, quite glabrous; peduncles axillary, aggregate, very short, 1-flowered; corollas 4-cleft, with acute lobes; anthers inclosed; berries glabrous, small. S. Native of French Guiana, and of the Island of Trinidad, ex Sieb. fl. trin. no. 44. Léôra Guianasén, Spreng. syst. 1. p. 409. Flowers small, white. Berries violaceous.

Guiana Coffee-tree. Shrub 1 to 3 feet.

11 C. rôsêa (Moc. et Sesó, fl. mex. icon. ind. ex D. C. prod. 4. p. 499.) leaves ovate-oblong, acuminate at both ends; glabrous; peduncles axillary, 5-flowered, much shorter than the leaves; corollas 4-cleft, with revolute lobes; anthers exerted; berries glabrous. S. Native of Mexico. Corollas rose-coloured. Berries reddish, size of a pea.

Rose-coloured-flowered Coffee-tree. Shrub 4 to 6 feet.

12 C. obovatap (Cham. et Schleich. in Linnaea. 6. p. 412.) glabrous; leaves obovate, cuneated, acuminate, acute, feather-veined; cymes axillary, almost sessile, aggregate, short, many-flowered; stipulas ovate-triangular, caducous. S. Native of Mexico, in shady places, near Masaule. Leaves half a foot long. Tube of the calyx ovate, with short acute teeth. Corolla with a short tube and a naked throat. Anthers linear, exerted.
Obovate-leaved Coffee-tree. Shrub.
13 C. lanceolata (Cham. et Schlcht. in Linn. 6. p. 412.) stems, petioles, nerves, and primary veins of leaves underneath downy; leaves lanceolate, glaucous beneath, feather-veined; cymes axillary, usually solitary, few-flowered, on short peduncles; stipula small, ovate-triangular, caducous. ½. S. Native of Mexico, near Jalapa. Leaves 2-3 inches long, acuminate. Calyx with a clavate tube, and small acute teeth. Anthers linear, exerted.
14 C. tetraérra (Roxb. fl. ind. 2. p. 198.) leaves broad-lanceolate, acute, shining; stipulas bifid; peduncles axillary and terminal, in fascicles, long, slender, 1-flowered; corolla usually 4-cleft, with a long slender tube; anthers inclosed; berries globose. ½. S. Native of Silhet and Chattagong, and the whole east border of Bengal. Leaves 4-5 inches long, and hardly 2 broad. Corolla with a 4-5-cleft border. Stamens 4-5. Berries size of a small cherry, blackish-purple when ripe, 1 or 2-seeded. An erect slender-branched Shrub.
Tetrandra-flowered Coffee-tree. Shrub.
15 C. densiflora (Blum. bijdr. p. 965.) leaves oval-oblong, acuminate, clothed with fine down on the veins beneath; flowers crowded, axillary; corollas 5-cleft. ½. S. Native of Java, on Mount Salak. There are varieties of this with smaller and larger flowers.
Dense-flowered Coffee-tree. Shrub.
16 C. Angustifolia (Roxb. fl. ind. 2. p. 198.) leaves lanceolate, stiff, shining; panicles axillary; throat of corolla bearded; lobes of corolla linear, longer than the tube, but equal to the anthers, which are filiform and exerted. ½. S. Native of Pigeon Island, one of the Malay Archipelago.
Narrow-leaved Coffee-tree. Shrub.
17 C. racemosa (Ruiz et Pav. fl. per. 2. p. 64. t. 214. f. a. but not of Lour.) leaves oblance-oblong, acuminate, glabrous; stipula bifid; racemes axillary and terminal, drooping while in flower, but erect in the fruit-bearing stage; flowers almost sessile, 5-cleft; anthers exerted; berry oval. ½. S. Native of Peru, in groves at Patai and Macora, where it is called Café. Rúdiga racemosa, Spreng. syst. 1. p. 755. Flowers white.
Raceenose Coffee-tree. Shrub 4 to 6 feet.
18 C. Zanquebarica (Lour. coch. p. 145.) leaves ovate-lanceolate, glabrous; peduncles axillary, many-together, short, 1-flowered; corolla 6-7-cleft; berries oblong-ovate, angularly serrated. ½. S. Native of Africa, on the coast of Zanquebar, in woods. Amajoga Africana, Spreng. syst. 2. p. 126. Flowers white. This species is cultivated near Mozambique in gardens along with C. Árboica, and where the seeds are used as a substitute for the common coffee.
Zanquebar Coffee-tree. Shrub 5 to 6 feet.
19 C. Índica (Poir. suppl. 2. p. 14.) leaves ovate-oblong, acuminate, glabrous; stipula very short, undivided; panicles short, divaricate, terminal; pedicels elongated; fruit small, obovate, not crowned by the calyx. ½. S. Native of Java. Flowers unknown.
Indian Coffee-tree. Shrub.
* * * Panicles terminal. Flowers 4-5-parted, tetradraous or pentadraous.
20 C. paniculata (Aubl. guian. 1. p. 152. t. 58.) leaves ovate-oblong, acuminate, shining; branches tetragonal; stipulae acute, caducous; panicles terminal, divaricate; flowers 4-cleft; anthers inclosed. ½. S. Native of Guiana, in woods. Tetramérium paniculatum, Spreng. syst. 1. p. 409. Flowers white, sweet-scented. Berries ovate-globose, bluish, containing 2 seeds or nuts, one of which is usually abortive.
Panicled-flowered Coffee-tree. Clt. 1822. Sh. 6 to 8 feet.

Mozambique Coffee-tree. Shrub 4 feet.
22 C. semisséssilis (Colebr. in Roxb. fl. ind. 2. p. 195.) leaves oblong-lanceolate, acuminate; corysts terminal. ½. S. Native of Bengal, in Silhet. Berries purple, size of large peas.

Sect. II. Hórnia (named after M. Van Horn, who, in the year 1690, carried coffee from Arabia to Batavie, and in the year 1710 to the gardens of Amsterdam). D. C. prod. 4. p. 500. Tube of calyx increasing after the flowers have fallen, and crowning the berry by a neck, having the teeth almost obsolete. Flowers 5-cleft. Stigma bifid. Throat of corolla glabrous. Berry ovate or globose, usually 1-seeded from abortion.—Shrubs, natives of Peru. Inflorescence axillary or terminal. Stipulas solitary on both sides, undivided, never toothed nor ciliated.
23 C. susse'ssislis (Ruiz et Pav. fl. per. 2. p. 64. t. 215. lower figure,) leaves glabrous, coriaceous, sessile, oblong-lanceolate, acuminate, excavated at the base; stipulas ovate; racemes axillary, trichotomous, shorter than the leaves. ½. S. Native of Peru, on the Andes in forests at Chinchao, Quebrada, and Pati. Coffea macrophylla, Dietr. nacchr. 2. p. 544. Leaves a foot long, shining above. Peduncles quadrangular. Berries ovate, at first red, but at last becoming purplish, ovate, 1-seeded, size of cherries. Probably a species of Parâmea.
Sessile-leaved Coffee-tree. Shrub 5 to 6 feet.
24 C. umbellata (Ruiz et Pav. fl. per. 2. p. 64. t. 215. upper figure,) leaves glabrous, coriaceous, petiolate, oblong, acuminate, nervled by transverse veins; stipulas roundish; peduncles terminal, usually by three; flowers crowded, umbellate, involucrated. ½. S. Native of Peru, on the Andes in forests. Branches dichotomous, rather tetragonal. Involucrum 4-leaved, and involucels 7-leaved. Berries red, ovate.
Umbellate-flowered Coffee-tree. Shrub 10 to 12 feet.
25 C. ? acuminata (Ruiz et Pav. fl. per. 2. p. 64. t. 214. f. b.) leaves petiolate, oval, acuminate, glabrous, villous in the axils of the veins; stipulas ovate, deciduous; racemes terminal, 4-flowered. Flowers white. This species is cultivated on the Andes in forests. Branches tetragonal, a little compressed. Corollas white, 5-cleft (ex descript.), with revolute segments. Berries oval, red, 1-seeded, size of cherries, blunt at the apex, crowned by the tubular limb of the calyx.
Acuminated-leaved Coffee-tree. Shrub 5 to 6 feet.

Sect. III. Pancra'sia (named after M. Pancras, who first transmitted the coffee-tree from the gardens of Amsterdam to those of Paris, in the year 1713). D. C. prod. 4. p. 501. Throat of corolla bearded. Berries crowned by the vestiges of the calyx. Racemes or corymbs terminal. Stipulas usually fringed or ciliate toothy, as in Rúdiga, but differs from that genus in the calyx not being parted, and in the lobes of the corolla not being horizod. Flowers 5-cleft.—Glabrous Peruvian shrubs.
* Stipulas ciliated.
26 C. cilia'ta (Ruiz et Pav. fl. per. 2. p. 65. t. 216. f. a.) leaves oblong, acuminate; stipulas truncate, ciliated; racemes subpandial, terminal; flowers aggregate, sessile, 4-5-cleft;
anthers exerted. ñ. S. Native of Peru, in forests on the Andes. Rudgea ciliata, Spreng. syst. 1. p. 755. Branches thickened at the nodi. Bracteas small, subulate, at the ramifications of the panicle. Corollas white, with reflexed segments. Berries red, globose. Perhaps the same as C. ciliata of Brazil, which was collected on the road to Felisbert, by the Prince de Neuwied, but according to Nees and Martius, in nov. act. bon. 12. p. 13., it differs from the Peruvian plant in the racemes being shorter.


Pitted-leaved Coffee-tree. Shrub. 28 C. MEXICANA (D. C. prod. 4. p. 501.) leaves oblong, acuminate, reticulately veined beneath; stipulas ciliate; coryms terminal, trifid; limb of calyx truncate, obtuse. ñ. S. Native of Mexico. Rudgea Mexicana, Bartl. in herb. Hænke. Branches dichotomous. Fruit dry, indiscernible, chartaceous, the nuts separating at length from each other. Seeds hemispherical, having a very narrow furrow in front. It differs from R. dégea in the limb of the calyx not being 5-parted, but quite entire.


Shining-leaved Coffee-tree. Shrub 5 to 6 feet. 30 C. LAURIFOLIA (H. B. et Kunth, nov. gen. amer. 3. p. 372. but not of Salisb.) leaves oblong, somewhat acuminate, coriaceous, shining; stipulas ciliately multilobed; coryms terminal; berries elliptic. ñ. S. Native of South America, in shady humid places at the Missions of the Orinoco. Coffea coriacea, Willd. ms. in Roem. et Schultes, syst. 5. p. 201. ex Kunth. Corolla and stamens unknown. Perhaps a species of Psychotria, ex A. Rich.?


Whorled-panicle Coffee-tree. Shrub 4 to 6 feet. ** Stipulas undivided or bidentate, but never ciliated. 32 C. LONGIFOLIA (Ruiz et Pav. fl. per. 2. p. 66. t. 218. f. a.) leaves oblong-lanceolate, repandely undulated; stipulas ovate, undivided; panicles terminal; anthers exerted. ñ. S. Native of Peru, in forests on the Andes. Leaves shining above, a foot long. Corolla white with reflexed segments. Berries globose, red.

Long-leaved Coffee-tree. Shrub. 33 C. MICROarpa (Ruiz et Pav. fl. per. 2. p. 66. t. 218. f. b.) leaves lanceolate, acute; stipulas bidentate on both sides; cymes axillary and terminal, spreading; anthers hardly exerted. ñ. S. Native of Peru, on the Andes in forests. Branches a little compressed at the apex. Bracteas subulate. Corollas white, downy on the outside. Berries reddish, globose, size of black pepper. Perhaps belonging to a different section.


SECT. IV. STRAUSSIA (named after Laurence Strauss, who was the first, in 1666, to recommend coffee as a beverage). D. C. prod. 4. p. 502. Berries turbinate or acuminate at the base. Stipulas ovate, deciduous, ciliate on the lower margin of the cincinni. Flowers 4-6-cleft. Stamens 4-6. Stigma bifid. Berries globose or oval.—Shrubs, natives of the islands in the South sea. Cymes terminal.

36 C. LUZONIENSIS (Cham. et Schlecht. 4. p. 32.) leaves lanceolate, acute at both ends, with rather reflexed margins; stipulas ovate-oblong, rather scarce, deciduous, with the cincinni rather ciliate at the margins; cymes terminal, sessile, contracted while young; flowers 4-6-cleft; throat of corolla bearded. ñ. S. Native of the Island of Luzon. Corolla white, glabrous. Anthers exerted a little. The central flower is 5-cleft, and the rest either 4 or 5-cleft. Berries almost globose, acute at the base, sometimes 1-seeded by abortion. Branches fistular.

Luzon Coffee-tree. Shrub 5 to 6 feet. 37 C. KARUANA (Cham. et Schlecht. in Linnaea. 4. p. 33.) leaves cuneate-obovate, somewhat scrobiculate in the axils of the veins, with reflexed margins, usually clothed with rufous down beneath; stipulas ovate, acute, caducous, the inner margins of the cincinni ciliate; cymes terminal, on long peduncles, of 5 rays, 4 of which are disposed in a whorl around the other, which is central; corolla 5-cleft, with a naked throat. ñ. S. Native of the Sandwich Islands, particularly in O-Wahu. Berry elliptic, attenuated at the base, rarely 1-seeded by abortion. Branches compressed. Mr. Arnott remarked, that the segments of the calyx are not ciliate as stated by the authors, although the bracteas are.

Kauai's Coffee-tree. Shrub 4 to 5 feet. 38 C. CHAMISSONI (Hook. et Arn. in Beech. voy. pt. bot. p. 86.) leaves elliptic-oblong, scrobiculate in the axils of the veins, with reflexed margins, quite glabrous on both surfaces; stipulas ovate, caducous, having the inner margins of the cincinni glabrous; cymes on long peduncles of 5 rays, which are disposed in a whorl; corolla 5-cleft, with a naked throat. ñ. S. Native of the Sandwich Islands. Very like the preceding.

Chamissoni's Coffee-tree. Shrub 4 to 6 feet. 39 C. MARINANA (Cham. et Schlecht. in Linnaea. 4. p. 55.) leaves elliptic, acute at both ends, scrobiculate in the axils of the veins; stipulas ovate, deciduous, with the inner margins of the cincinni ciliate; cymes terminal, pedunculate, with the branchlets decussate; corolla 5-cleft, with a bearded throat.
Native of the Island of O-Wahu, in forests on the mountains. Branches and branchlets of panicle compressed.

Marina's Coffee-tree. Shrub 4 to 6 feet.

Cult. All the species of Coffea thrive well in a mixture of turfy loam, turfy peat, and sand. They require to be watered a good deal, and to have plenty of pot-room to thrive well. Ripe cuttings strike root freely in sand under a hand-glass in a moist heat; and the young plants so raised, produce flowers and fruit more readily than those raised from seed. As the plants are apt to be infested by insects, particularly the mealy bug, they should be examined often, and the insects rubbed off with a brush, otherwise the plants will look unsightly.


LIN. SYST. Pentandria, Monogynia. Calyx with an ovate-globose tube, and a 5-parted limb; lobes acute. Corolla with a long slender terete tube, 5 linear spreadingly recurved segments, which are hooked on the back and acute, and a naked throat. Anthers sessile, within the throat, inclosed. Stigma bilamellate. Fruit 2-celled, 2-seeded. — Trees or shrubs, natives of Guiana. Branchlets and petioles clothed with cinereous down. Leaves opposite, large, smoothish. Stipulas intercalar, large, ovate, fringed, deciduous. Panicles terminal, dense, baccateolate, with the branches opposite. Flowers blackish in the dried state, but most probably white in the recent state. Fruit not sufficiently known.

1 R. lanceolata (Salis. l. c. t. 18.) leaves lanceolate, acuminate; tube of corolla 10 times longer than the lobes of the calyx. S. Native of French Guiana. Leaves 10 inches long, and about 3 broad. Corolla downy outside.

Lance-leaved Rudgea. Shrub or tree.

2 R. ovalifolia (Salis. l. c. t. 19.) leaves oval, acuminate; tube of corolla 6 times longer than the lobes of the calyx. S. Native of French Guiana. Leaves 4-5 inches broad, and 7-8 long. Corolla downy outside.

Oval-leaved Rudgea. Shrub or tree.

Cult. See Coffea above for culture and propagation.

CLXIX. ANTHEURRA (from arbo's, anthera, an anther, and e'o ra, a tail; the anthers end in a long tail each). Lour. coch. p. 144. D. C. prod. 4. p. 503.—Psychotria species, Wild. Poir.

LIN. SYST. Pentandria, Monogynia. All as in Psychotria, but the corolla is rotate and 5-parted; the anthers sagitate at the base, and furnished with a long reflexed tail at the apex; the style subulate, and longer than the corolla, and the stigma simple.—A glabrous shrub, with reddish diffuse branches. Leaves opposite, ovate-lanceolate, on short petioles. Panicles terminal, erect, loose, racemose. Flowers white, with red filaments. Berries ovate, brownish red. Stipulas unknown.


Cult. For culture and propagation see Coffea above.


LIN. SYST. Pentandria, Monogynia. Calyx with an ovate tube, and a small 5-toothed limb. Corolla oblong, rather funnel-shaped, with 5 spreading acute lobes, and a naked throat. Anthers 5, oblong, inclosed. Stigma bilamellate. Berry ovate, umbilicate, containing 2 1-seeded nuts, which are flat inside, and convex outside.—Glabrous shrubs, natives of Guiana. Leaves ovate, acute, on short petioles. Stipulas solitary on both sides. Peduncles axillary, 2-6-flowered, shorter than the petioles. Flowers small, white. Bracteoles 2 under each flower.—Allied to Psychotria, but differs in the berries not being ribbed. Perhaps the species of Psychotria with axillary peduncles ought to be joined to this genus.


Bread-leaved Ronabea. Shrub 2 to 3 feet.


Erect Ronabea. Shrub 1 to 2 feet.

3 R. myode'ndron (A. Rich. in mem. soc. hist. nat. 5. p. 270.) leaves linear-lanceolate, very acute, petiolate; flowers disposed in few-flowered terminal corymbs; fruit didymous, hardly umbilicate. S. Native of Brazil, where it is called Herba de raio. Flowers white.

Rat-tree Ronabea. Shrub.

4 R. moringoides (A. Rich. l. c.) leaves elliptic, acuminate, petiolate; flowers small, crowded into many terminal pedunculate pea-formed heads; fruit pea-formed, rather umbilicate at the apex; seeds chinky outside. S. Native of French Guiana. Flowers white.

Moringa-like Ronabea. Shrub.

57 R. didymocarinus (A. Rich. l. c.) leaves elliptic, acuminate, on short petioles; stipulas connate inappreciably truncate, furnished each with 2 bristles; flowers disposed in a terminal cyme; fruit didymous, umbilicated by a terminal dot. S. Native of French Guiana. This and the two preceding are very doubtful species of Ronabea, from the flowers being terminal, and ought perhaps on that account to be joined with Psychotria.

Twin-fruited Ronabea. Shrub.

Cult. For culture and propagation see Coffea above.


LIN. SYST. Pentandria, Monogynia. Psychotria with an ovate tube, and a short 5-lobed 5-toothed or nearly entire limb. Corolla short, funnel-shaped, 5-cleft, regular; limb spreading or reflexed; throat bearded or glabrous. Stamens 5; anthers exerted or inclosed in the throat. Stigma bifid. Berry drupaceous, crowned by the limb of the calyx, furnished with 10 blunt ribs in the dried state, containing 2 1-seeded chartaceous-coriaceous ribbed pyræae. Seed erect, with cartilaginous alburnum, and a small basilar embryo. — Small trees or shrubs, rarely
of the tropics. Leaves opposite, petiolate. Stipulas variable. Peduncles sometimes axillary, but usually terminal. Flowers disposed in panicles or corymbbs, rarely tetramerous, but almost always pentamemrous; sometimes, however, there are tetramerous and pentamemrous flowers to be found at the same time, and on the same plant. The species are very numerous and truly intricate, therefore difficult to define.

§ 1. Peduncles axillary.—Perhaps all the species belonging to the present section belong to the genus *Rombea*.

* Species natives of South America.*

1 P. *exclamans* (H. B. et Kunt. nov. gen. amer. 3. p. 355. t. 281.) arboreous; branchlets terete, downy; leaves oblong, acuminate, narrowed at the base, membranous, glabrous; stipulas deciduous; peduncles axillary, few-flowered; flowers tetramerous and tetraronds.  

2 P. *emeticus* (Muts, in Linn. fil. suppl. p. 144. exclusive of the synonyms of Maregrave and *Ps. B.)* plant suffrutescent, erect, simple, pinnately tomentose; leaves oblong, acuminate, narrowed at the base, membranous, ciliated, rather pilose beneath; stipulas ovate, acuminated, very short; peduncles axillary, few-flowered, sublaeosterrae.  

3 P. *Native of New Granada, near Nares on the banks of the Magdalena, and in the province of Girone.*  

4 P. *emeticus* (Mutis, Pers. ench. 1. p. 203. Ipecacuanha noir, Rich. dict. sc. med. 26. p. 4. with a figure. Ipecacuanha, fl. med. 4. p. 201. Flowers white. Berries bluish, ovate-globose, smooth, not furrowed; hence it is probably a species of *Rombea.* Throat of corolla closed by villi. Root perpendicular, knotted, branched, ciliate, with a slender axis and thick friable bark; and it is the *Ipecacuanha* supplied by Spanish America, but not that supplied by Brazil, which is *Cephalis Ipecacuanha.*

**Emetic Psychotria** or Spanish American *Ipecacuanha.* Sh. 1 to 1½ foot.

3 P. *hetera* (Wild. in Rom. et Schultes, syst. 5. p. 191.) branches, peduncles, petioles, and under side of leaves hairy; leaves ovato-oblong, acuminate at both ends; stipulas ovate, obtuse; peduncles axillary, 3-flowered.  

4 P. *macrophylla* (Ruiz et Pav. fl. per. 2. p. 56. t. 202. f. a.) plant herbaceous, glabrous; branches terete; leaves ovate-lanceolate, acuminated, large, membranous; stipulas broad-ovate, unidentate, short-acuminate; panicles axillary, on short peduncles, with opposite dichotomous branches; fruit oval.  

5 P. *willdenoii* (D. C. prod. 4. p. 505.) leaves oblong, attenuated at the base and apex, petiolate, coriaceous, shining, downy beneath; stipulas 2-lobed; panicles axillary, very short, sessile.  

6 P. *liginosa* (Swarz, prod. p. 43. fl. ind. occ. p. 421.) plant subherbaceous, simple, erect, glabrous; leaves lanceolate-oblong, acuminate, shining; stipulas connate, acute, convex; cymes pedunculata, tripartite, opposite on the axils of the upper leaves; flowers sessile; corolla with a villous tiorut; berries spherical; seeds erect on the outside.  

7 P. *levis* (D. C. prod. 4. p. 505.) glabrous; leaves oval, acute at the base, and ending in a short cuspidate point at the apex, smooth above, almost nerveless; stipulas thick, with a reflexed auricule; peduncles axillary, compressed, shorter than the leaves, trifid at the apex, and each of the branchlets bearing few-flowered sessile flowers; fruit nearly globose, not crowned.  

8 P. *Native of Porto-Rico, where it was collected by Bertero.*  

9 P. *hookei*; shrubby, glabrous; branches tetragonal; leaves lanceolate, tapering into the short pedicles, coriaceous, membranous, with finely reflexed margins, pale and reticulated beneath; stipulas oval, acute, deciduous; peduncles axillary, short; flowers on short pedicels, bracteate at the base; bracteas small, convolute, toothed; flowers dioecious; fruit oval, crowned by the limb of the calyx, which is tubular, and minutely 5-toothed at the apex.  

10 P. *Native of Juan Fernandez.*  

11 P. *triflora.*  

12 P. *Trichocentron.*  

13 P. *Native of Porto-Rico.*

Some of the species become more or less difficult to place in the same genus according to Arnott.

**Leaves:**

1 P. *agriata* (D. C. prod. 4. p. 505.) leaves narrow, oblong, attenuated at both ends, shining above, hairy beneath, and bearded on the mid-rib on both surfaces; stipulas acutely bidentate; peduncles axillary, coriaceous at the apex, downy; flowers crowded on the tops of the branches of the peduncles; fruit nearly globose.  


**Kindred Psychotria.** Shrub.

1 P. *neurotrichia.* (D. C. 1. c.) leaves elliptic-oblong, acuminate at both ends, glabrous, except the middle nerve, which is beget with a series of hairs on both surfaces; stipulas acutely bidentate, permanent; panicles axillary, rather deflexed, racemose, and rather pilose; flowers sessile, crowded on the tops of the lateral short branches of the panicle; fruit subobovate.  

2 P. *Native of Porto-Rico.*

3 P. *Trichocentron.* Bracteas broad, ovate, permanent, under the flowers. Berries glabrous. Flowers unknown.

**Hair-colored-leaved Psychotria.** Shrub.

* * Species natives of Africa.*

12 P. *triflora.* (Schum. pl. gein. p. 108.) shrubby; branches brachiate; branchlets rather tetragonal, pilose; leaves ovate; 4 F
bluntly acuminate, downy beneath; stipulas reniformly cordate, acute, entire; peduncles very short, axillary, 3-flowered. ½. S. Native of Guinea. Flowers white.

*Three-flowered Psychotria.* Shrubs 3 to 4 feet.

13 P. multiflora (Schum. pl. guin. p. 108.) plant shaggy, decumbent or scendent, quite glabrous; branches rather tetragonal; leaves oblong-ovate, attenuated at the apex, on short petioles; stipulas entire, acuminate; panicles axillary, subcapitate; peduncles length of the petioles. ½. S. Native of Guinea, at Asiana. Corolla white, downy inside.

*Multi-flowered Psychotria.* Shrub decumbent.

14 P. umbellata (Schum. pl. guin. p. 108.) shrub much branched, glabrous; branches alternately compressed; leaves hardly petiolate, lanceolate; stipulas acuminate, cleft at the apex, deciduous; peduncles axillary, angular, trillid at the apex, umbelliferous; berries globose, umbilicate at the apex. ½. S. Native of Guinea. Leaves 2-4 inches long. Peduncles 2 inches long. Corolla white.

*Umblellate-Flowered Psychotria.* Shrub 3 to 4 feet.

15 P. Kolly-Tjo (Schum. pl. guin. p. 110.) shrubby, glabrous; branches compressed; leaves petiolate, ovate-elliptic, acute, of a different colour beneath; stipulas ovate, acutish; corymbs axillary and terminal, fastigate; tube of corolla cylindrical. ½. S. Native of Guiana, where it is called Kolly-Tjo by the natives.

*Kolly-Tjo Psychotria.* Shrub 3 to 4 feet.

16 P. evallata (Schum. pl. guin. p. 111.) plant herbaceous, creeping; petioles elongated, rather hairy at the apex; leaves oblong, cordate, obtuse, glabrous; stipulas ovate, acutish; peduncles almost axillary, usually 5-flowered; flowers girdled by a foliaceous 4-leaved involucre. ½. S. Native of Guinea, at Aquapim.

*Evallate-Flowered Psychotria.* Flowers white.

**Species natives of Asia.**

17 P. philippensis (Cham. et Schlecht. in Linnaeus. 4. p. 21.) glabrous and resinous; branches tetragonal; leaves ovate, very blunt, petiolate, coriaceous; stipulas very short, inflato-foliaceous, permanent; cymes opposite, axillary or supra-axillary, 3 times shorter than the leaves, dichotomous; ovary cylindrical, crowned by the truncate limb of the calyx. ½. S. Native of the Island of Luzon, about Tierra Alta by the sea side.

*Philippine Psychotria.* Shrub.

§ 2. Peduncules terminal.

*Species natives of Peru.*

18 P. reticulata (Ruiz et Pav. 2. p. 56. t. 212. f. b.) plant herbaceous, downy; branches tetragonal, glabrous; leaves ovate-lanceolate, acuminate, reticulately veined, rather coriaceous; stipulas subconcrete at the base, bifid beyond the middle, with the lobes linear-lanceolate and acuminate; panicles terminal, longer than the leaves, with opposite spreading hairy-velvety branches, and crowded flowers. ½. S. Native of Peru, on the Andes in groves. Leaves a foot long, downy beneath, and having the nerves purplish. Corolla small, yellow, downy outside, with a villous throat.

*Reticulated-leaved Psychotria.* Pl. 7 to 8 feet.

19 P. acutiflora (D. C. prod. 4. p. 506.) leaves oblong, acuminate, dilated, downy beneath, rather scabrous above, clothed with hairy tomentum on the mid-rib on both surfaces, as well as the branches; panicles terminal, erect, rather hairy, longer than the leaves, with cymosely bifid branches; segments of corolla mucronately cuspidate. ½. S. Native of Guayaquil, where it was collected by Haecke. Guettardà acutiflora, Bartl. in herb. Haeke. Nearly allied to P. deflexa. Stipulas connate, sheathing, ending each in a subapiculate acumen.

*Acute-flowered Psychotria.* Shrub.

20 P. pilosa (Ruiz et Pav. fl. per. 2. p. 60. t. 208. f. a.) suffruticosae, pilose; branches tetragonal; leaves oblong, acuminate at both ends; stipulas bifid, with lanceolate acute lobes, which are about the length of the petioles; panicles short, terminal, on short peduncles, with opposite branches; bracteae lanceolate, acute, ciliolate; teeth of calyx acute. ½. S. Native of Peru, on the Andes in humid parts of forests. Leaves 4 inches long. Inflorescence as in Aspirata. Bracteas bluish. Peduncules hairy. Berries blue, about the size of peas.

*Pilose Psychotria.* Shrub 2 feet.

21 P. cymosa (Ruiz et Pav. fl. per. 2. p. 59. t. 206. f. b.) suffruticosae, glabrous; branches compressedly tetragonal; leaves oblong-lanceolate, acute, shining above; stipulas bipartite, with the lobes linear-subulate and distant; cymes terminal, on short peduncles, of 5 rays; segments of the calyx long, subulate; tube of corolla villous at the base; berries oval. ½. S. Native of Peru, in groves on the Andes. Leaves 6 inches long. Peduncles compressed. Corolla purplish. Berries violaceous. Calyx almost as in Gréphilà.

*Cymose-flowered Psychotria.* Shrub 3 to 4 feet.

22 P. magnolifolia (H. B. et Kunth, nov. gen. amer. 3. p. 360. but not of Willd.) glabrous; branches compressed; leaves elliptic, blunting at both ends, rather membranous; stipulas oblong, obtuse, length of the pedicels; cymes pedunculate, of 4 spreading rays; flowers sessile, usually by threes. ½. S. Native about Quito. Fruit unknown. Said to be allied to P. aridifolia. Leaves 7-8 inches long and 4-5 broad, on pedioles 8-9 inches long. ½. S. Native of the temperate parts of Peru.

*Wrinkled-leaved Psychotria.* Shrub.

23 P. glomerata (H. B. et Kunth, nov. gen. amer. 3. p. 362.) glabrous; branches compressed; leaves lanceolate, long-acuminated, rather coriaceous, narrowed at the base, a little wrinkled, foveolate in the axils of the veins beneath; stipulas lanceolate, acuminate; panicles pedunculate, having the lower branches 4 in a whorl, and spreading; fruit nearly globose, dillymous. ½. S. Native of the temperate parts of Peru.

*Glomerate Psychotria.* Shrub.

24 P. ruggosa (H. B. et Kunth, nov. gen. amer. 3. p. 556.) glabrous, branches compressed; leaves lanceolate, long-acuminated, rather coriaceous, narrowed at the base, a little wrinkled, foveolate in the axils of the veins beneath; stipulas lanceolate, acuminate; panicles pedunculate, terminal, with opposite branches; flowers crowded, sessile; berry globose. ½. S. Native of Peru, in groves on the Andes. Palicuriæ viridis, Rom. et Schultes, syst. 5. p. 195. Corollas small, green, with a hairy throat. Anthers inclosed. This has nothing to do with Palicuriæ tinctoria, with which it has been confounded by Sprengel.

Leaves 3-4 inches long. ½. S. Native of the temperate parts of Peru.

*Green-flowered Psychotria.* Shrub 6 to 7 feet.
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RUBIACEÆ. CLXXI. PSYCHOTRIA.

S. Native of Peru, on the Andes in groves. Corolla small, yellow, with a villous throat. Berries size of pepper-corns, purple.

Repetund-leaved Psychotria. Shrub 4 to 6 feet.

27 P. foveola (Ruiz et Pav. fl. per. 2, p. 59. t. 207. f. b.) leaves narrow-lanceolate, acuminate at both ends, hardly petiolate, with the axis of the upper veins often glandularly foveolate, but downy on the veins beneath, as well as the branchlets and peduncles; stipulas ovate, deciduous; panicles pedunculate, having the branchlets dropping while bearing the fruit; flowers 3-5, sessile at the top of each branch of the panicle. S. Native of Peru, on the Andes in groves, at Chinchao and Cachero, ex Ruiz et Pav.; and on the mountains about the Guanoco, ex Herb. Hauke. P. foveola, Spreng. syst. 1. p. 743. no. 39. exclusive of the synonyms. Branches rather tetragonal. Corolla small, cream-coloured. Berries ovate, purplish-green, ex Bartl, globose and rufous, and about the size of pepper berries.

Foveolate-leaved Psychotria. Tree 18 feet.

28 P. divaricata (H. B. et Kunth, nov. gen. amer. 3. p. 362. but not of Willd.) glabrous; branchlets terete; leaves lanceolate-oblong, acute, narrowed at the base, membranous, foveolate in the axis of the veins beneath; panicles pedunculate, rather ovate, with opposite spreading branches; flowers pedicellate. S. Native of Peru, on the Andes in temperate places about Quito. Very nearly allied to P. foveola. There is a variety of this with tetramerous tetrandrous flowers.

Divaricate Psychotria. Shrub.

29 P. virgata (Ruiz et Pav. fl. per. 2, p. 60. t. 209. f. a.) glabrous; leaves oblong or elliptic, acuminate, coriaceous, reticulately-veined beneath; stipulas bluntly bifid, length of the petioles; cymes on short peduncles, trichotomously, crowded with flowers; flowers almost sessile, on the tops of the branches of the cyme; fruit ovate. S. Native of Peru, on the Andes in cold mountain forests. Leaves 4 inches long, with red nerves, and reflexed margins, bitter, and supplying a yellow colour when dried. Corollas sulphur-coloured, with a villous throat. Berries ovate, deep blue, size of peas. P. virgata Jamaicaensis. Spreng. syst. 1. p. 742. is perhaps a very distinct species from the present.

Triggy Psychotria. Shrub. 9 to 10 feet.

30 P. cuneifolia (D. C. prod. 4. p. 507.) glabrous; leaves obovate, cuneate at the base, and ending in a short cuspitate point at the apex; stipulas small, deciduous; panicles erect, shorter than the leaves, with opposite branches. S. Native of Peru, at Guayaquil. P. glabra, Bartl. in herb. Hauke, but not of Swartz. Flowers unknown. Berries ovate-globose, 10-striped in the dried state. Seeds semi-ovate.

Wedge-leaved Psychotria. Shrub.

31 P. Henkea (D. C. prod. 4. p. 507.) glabrous; leaves oval-oblong, acuminate at both ends; stipulas bifid on both sides, acuminate; peduncles a little shorter than the leaves; cymes contracted. S. Native of Guayaquil, and probably of Mexico. P. pedunculata, Bartl. in herb. Hauke. Allied to P. pedunculata, Swartz, but differs in the stipulas being much more acuminate, in the leaves being narrower, and more acuminate at both ends. Cymes obconical. Flowers and fruit unknown.

Henke’s Psychotria. Shrub.

32 P. rufina (Ruiz et Pav. fl. per. 2, p. 60. t. 209. f. b.) smoothish; branchlets bluntly tetragonal; leaves lanceolate, acuminate, shining above, but downy along the nerves and veins beneath; stipulas cuneate at the base, acutely bifid at the apex; cymes sessile, tripartite, with the branches again trifid; flowers sessile, by threes at the tops of the branchlets of the cyme; corollas downy; berries roundish-turbinate. S. Native of the Andes of Peru, in mountain groves. Leaves 3 inches long. Throat of corolla villous. Berries black.

Triplet-cyned Psychotria. Tree 18 feet.

33 P. capitata (Ruiz et Pav. fl. per. 2, p. 59. t. 206. f. a,) smoothish; branchlets slightly tetragonal; leaves oblong, acuminate, very veiny, downy beneath; stipulas bifid, obtuse; panicles shorter than the leaves, ovate, terminal, on short peduncles; peduncles bracteate, opposite; flowers crowded. S. Native of Peru, on the Andes in groves. Cephalis Peruviana, Spreng. syst. 1. p. 719. Stipulas hispid, glabular on the inner side at the base. Bracteae lancelate; bracteoles ovate, acute. Berries ovate, blackish, umbilicate.

Capitate-flowered Psychotria. Shrub. 9 to 10 feet.

34 P. villosa (Ruiz et Pav. fl. per. 2, p. 59. t. 207. f. a.) branchlets, peduncles, petioles, and nerves of leaves clothed with rufous villi; leaves attenuated at both ends, glabrous above in the adult state, downy on the nerves beneath; stipulas ovate-oblong, acute, caducous; panicles pedunculate, with the branches and branchlets opposite; flowers by threes, glabrous. S. Native of the Andes of Peru, in mountain groves. Bartl. in herb. Hauke. Knots of branches pilose. Leaves 4-5 inches long. Bracteae small, acuminate. Berries red, globose, rather compressed, size of small peas. Allied to P. micrantha and P. kirula.

Villosa Psychotria. Shrub. 9 to 10 feet.

35 P. Meraantha (H. B. et Kunth, nov. gen. amer. 3. p. 363. t. 284.) hairy from rufescent villi; branchlets terete; leaves obovate-elliptic, acuminate, cuneate at the base, rather coriaceous; stipulas oblong, awnedly bidentate; cymes pedunculate, of 6 rays, diffuse; flowers glomerate; corollas hairy on the outside; fruit globose-elliptic, hairy. S. Native of Peru, ex Kunth; or at the river Magdalena, ex Willd. P. rufescent, Willd. in Rœm. et Schultes, syst. 5. p. 192. but not of Kunth.

Small-flowered Psychotria. Shrub.


Submexicana Psychotria. Shrub. 4 to 6 feet.

** Species natives of Brazil.

37 P. Alba (Ruiz et Pav. fl. per. 2, p. 58. t. 205. f. a,) smoothish; branchlets compressed; leaves elliptic-oblong, acute at both ends, beset with rows of hairs along the nerves beneath, and often foveolate in the axes of the nerves; stipulas ovate-oblong, undivided, rather crenate; panicles pedunculate, terminal, shorter than the leaves, with the branches opposite; calyx short, truncate; berries ovate. S. Native of South America, especially in tropical Brazil, Guayaquil, and Andes of Peru. Cham. et Schlecht. in Linnæa. 4. p. 19. P. ardisiefolia, H. B. et Kunth, nov. gen. amer. 3. p. 359. Bartl. in herb. Hauke. P. densiflora. Willd. in Rœm. et Schultes, syst. 5. p. 189. P. pâtula, Willd. in Rœm. et Schultes, syst. 5. p. 189. P. ardisiefolia, P. pâtula, and P. alba, Spreng. Leaves 6-8 inches long. Stipulas obovate, hairy at the base. Bracteae conning, ovate, acute. Flowers and berries white.

Var. p. tona (Cham. et Schlecht. in Linnæa. 1. p. 19.) leaves glabrous, nearly obovate, few-veined. S. Native of Brazil, near Rio Janeiro.

White-herbed Psychotria. Shrub 12 feet.

38 P. Lucaca (Cham. et Schlecht. in Linnæa. 4. p. 22.)
smoothish; leaves narrow-lanceolate, acuminate at both ends, membranous; stipulas rather concrete, bidentate on both sides; cymes pedunculate, terminal; with the branchlets slender, opposite or verticillate, downy; flowers tetrandrous, rarely pentandrous; calyx 5-lobed; fruit globose, ribless.  

$\frac{1}{2}$. Native of tropical Brazil.

**Corymbose** (Cham. et Schlecht. in Linnaea. 4. p. 22.) quite glabrous; flowers triandrous or tetrandrous; calyx-cine teeth unequal.  

$\frac{1}{2}$. Native of tropical Brazil. Leaves 3-4 inches long, and 10-18 lines broad. Flowers small, pedicellate. Fruit unknown.

**Bearded-leaved Psychotria.** Shrub 4 to 6 feet.

40 P. *fornosensis* (Cham. et Schlecht. in Linnaea. 4. p. 21.) leaves glabrous, obovate or elliptic, short-acuminated, cuneate at the base, the consistency of parchment; stigmas ovate, acute, small, deciduous; pedicels terminal, pedunculate, loose, longer than the leaves, downy or hairy; lobes of the corolla acute, bearded at the apex.  

$\frac{1}{2}$. Native of tropical Brazil. Very like *P. alba*, and the cicatrizes of the stipules are best with rufous villi, as in it.

**Beautiful Psychotria.** Shrub 6 to 8 feet.

41 P. *cuspidata* (Bred. ex Willd. in Rom. et Schultes. syst. 5. p. 192.) smooth and glabrous; leaves oval, acuminate at the base, acuminate at the apex, scrobiculately villous in the axis when old; stipulas bidentate, truncate; pedicels terminal, pedunculate, 3 times shorter than the leaves, with compressed branches, which are dilated at the ramifications.  

$\frac{1}{2}$. Native of tropical Brazil, and at Caracas. Allied to *P. nonatetlioides* and *P. cornifolia*.

**Cuspidate-leaved Psychotria.** Shrub 5 to 6 feet.

42 P. *nonatetlioides* (Cham. et Schlecht. in Linnaea. 4. p. 26.) smooth and glabrous; branchlets compressed; leaves lanceolate, acute at the base, and long-acuminate at the apex, membranous; stipulas 2-lobed, permanent; cymes racemose, terminal, one-half shorter than the leaves; pedicels 3-flowered; middle flower and one of the lateral ones tribracteate.  

$\frac{1}{2}$. Native of tropical Brazil, and at Caracas. P. involucrata, Willd. herb. Fruit unknown. Habit of *P. cornifolia*.

**Novatetlioid-like Psychotria.** Shrub.

43 P. *novia* (St. Hil. pl. rem. bras. p. 234. t. 21. f. a.) branchlets compressed, furnished with 2 rows of hairs; leaves lanceolate, acuminate, on short petioles, approximate, glabrous; stipulas short, bipartite; flowers 2-4 in a fascicle, sessile, bracteate, terminal, and axillary; bracteas acuminate, ciliolate; fruit elliptic.  

$\frac{1}{2}$. Native of Brazil, in the province of Minas Geraes. This species is supposed to be hurtful to animals who eat it.

**Hurtful Psychotria.** Shrub 5 to 6 feet.

44 P. *elliptica* (Ker. bot. reg. t. 607. but not of Willd.) glabrous; leaves elliptic, attenuated at both ends, shining, membranous; stipulas sheathing, ovate, rather erosely fringed, deciduous; cymes terminal, sessile, tripartite, with trichotomously panicked branches, shorter than the leaves.  

$\frac{1}{2}$. Native of Brazil. Flowers short, white. Calyx cup-shaped, slightly toothed.

**Elliptic-leaved Psychotria.** Fl. May, June. Clt. 1821. Sh. 3-4 feet.

45 P. *chenochricha* (D. C. prod. 4. p. 509.) quite glabrous; branchlets compressed; leaves elliptic, acuminate at both ends, smooth; stipulas short, bifid at both sides; corymbs terminal, sessile, with umbellate branches, much shorter than the leaves, each branch bearing 4-5 flowers at the apex; corollas glabrous on the outside, but villous in the throat.  

$\frac{1}{2}$. Native of Brazil, at Bahia, in sand by the sea-side, where it was collected by Salzmann. Flowers cream-coloured. Anthers copper-coloured, sessile in the throat of the corolla among the villi. Style a little exerted.

**Gaping-haired Psychotria.** Shrub.

46 P. *barbilora* (D. C. prod. 4. p. 509.) quite glabrous; branchlets compressed; leaves oval-ovate, acute at the base, acuminate at the apex, shining above; stipulas combined at the base, biauriculate; peduncles terminal, very short, densely corymbose at the apex, bracteate under the flowers; corolla glabrous outside, with the lobes of the limb hairy above.  

$\frac{1}{2}$. Native of Brazil, on hills about Bahia, where it was collected by Salzmann. Shrub 3 feet high. Flowers white, probably dioecious. Branches compressed.

**Var. a**, *stylosa* (D. C. l. c.) style exerted; anthers inclosed; fruit globose, sub-didymous, hardly furrowed.

**Var. b**, *stamina* (D. C. l. c.) style inclosed; anthers exerted. Perhaps a proper species, or the male variety of the preceding.

**Bahia Psychotria.** Shrub 3 feet.

48 P. *sambulina* (Link, in Rom. et Schultes. syst. 5. p. 188.) glabrous; leaves ovate-lanceolate, acuminate, petiolate; stipulas deciduous; branches of the pedicle glabrous, verticillate.  

3 times shorter than the leaves.  

$\frac{1}{2}$. Native of Brazil. Leaves a span long, and 3-4 inches broad, of a livid black colour in the dried state.

**Elder-like Psychotria.** Shrub.

49 P. *longifolia* (Hoffmanns, ex Willd. in Rom. et Schultes. syst. 5. p. 190.) leaves ovate-oblong, acuminate, catlyately attenuated at the base; stipulas bifid; pedicels terminal.  

$\frac{1}{2}$. Native of Brazil. Leaves a foot long. Perhaps the same as *P. racemosa*.

**Long-leaved Psychotria.** Shrub.

50 P. *grandifolia* (Hoffmanns, ex Willd. in Rom. et Schultes. syst. 5. p. 190.) leaves ovate, acute; stipulas bifid, obtuse; flowers panicked.  

$\frac{1}{2}$. Native of Brazil. Leaves half a foot long. Corollas yellow. Very like *P. latifolia*, but differs in the form of the stipules.

**Great-leaved Psychotria.** Shrub.

**Species natives of Guiana.**

51 P. *mapuaria* (Rom. et Schultes, syst. 5. p. 187.) glabrous; leaves ovate-oblong, each ending in a short blaut acumem, acuminate at the base; stipulas ovate-roundish, deciduous; pedicels terminal, shorter than the leaves; fruit ovate-globose, striated.  


**Mapuria Psychotria.** Shrub 7 to 8 feet.
52. **Psilodendron** (D. C. prod. 4. p. 509.) glabrous; leaves elliptic, cuneate at the base, short-acuminated at the apex; stipulas obovate, foliaceous, deciduous, length of the petioles; panicles rising from the forks of the branches, pedunculate, hardly shorter than the leaves; fruit ovate, striated. ụ S. Native of French Guiana, where it was collected by Patris. Very nearly allied to *P. Mapórée*, but differs from that species in the above characteristics, besides in the longer leaves, larger stipulas, and in the peduncle of the fruitiferous panicle being 4 inches long.

*Mapouria*-like Psychotria. Shrub 5 to 6 feet.

53. **P. Simira** (Reem. et Schultes, syst. 5. p. 187.) glabrous; leaves elliptic-oblong, abruptly acuminate, with parallel veins, paler beneath; stipulas ovate, acuminate, deciduous; panicles erect, on short peduncles, one-half shorter than the leaves; berries oval. ụ S. Native of French Guiana, in humid parts of woods. *Simira* tinctorea, Aubl. guian. 1. p. 170. t. 65. P. parviflora, Wildl. spec. 1. p. 962. Bark red on the inside. Leaves 14 inches long, and 6 broad, with the nerves red beneath. Branches of the panicle short. Corolla white, with rounded segments, ex Aubl., but acute segments, ex Rich., shorter than the stamens. The bark of this shrub is used to dye silk and cotton of a red colour. *Simira* is the Guiana name of the tree.

*Simira* Psychotria. Shrub 10 to 12 feet.

54. **P. Patrisii** (D. C. prod. 4. p. 510.) glabrous; leaves elliptic-oblong, acuminate at both ends; stipulas elliptic, acutish, deciduous; panicles pedunculate, a little shorter than the leaves, having the branches and branchlets opposite; fruit ovate, striated, terminated by a short conical horn. ụ S. Native of French Guiana, where it was collected by Patris, along with many other species. Branches terete. Leaves 5-6 inches long, and 2 or 2½ broad. From the stipulas and habit, this species comes near to *P. Mapórée*.

*Patris's* Psychotria. Shrub 6 to 8 feet.

55. **P. sorória** (D. C. l. c.) glabrous; leaves elliptic-oblong, acuminate at both ends; stipulas triangularly-elliptic, acute, deciduous; panicles terminal, pedunculate, hardly shorter than the leaves, with the branches and branchlets opposite; fruit nearly globose, striated, truncate at the apex. ụ S. Native of French Guiana, where it was collected by Patris. Very nearly allied to *P. Patrisii*, but the berries are fewer, and larger round, without horns, and crowned by the 5 small teeth of the calyx.

*Sister* Psychotria. Shrub 6 to 8 feet.

56. **P. ficée'ma** (D. C. prod. 4. p. 510.) glabrous; leaves oval, acuminate at both ends; stipulas oblong, acuminate, deciduous; panicles pedunculate, longer than the leaves, having the branches and branchlets opposite; fruit ovate, striated. ụ S. Native of French Guiana, where it was collected by Patris. The buds and stipulas are oblong and acute, and very much like those of the fig-tree. Peduncle of the panicle 3 inches long. Fruit small. Allied to *P. Simira*.

*Fig-budded* Psychotria. Shrub 5 to 6 feet.

57. **P. racemosa** (A. Rich. act. soc. hist. nat. par. 1792. p. 107.) glabrous; leaves elliptic-oblong, acuminate at both ends, shining beneath; stipulas bidentif, with the lobes acuminate; racemes terminal, pedunculate, straight, one-half shorter than the leaves; rachis of the raceme angular, downy; fruit compressed, coarsely ribbed. ụ S. Native of French Guiana. Leaves 10 inches long and 3 broad, on petioles which are nearly an inch long. Flowers unknown.

* Racemose-flowered Psychotria. Shrub.

58. **P. flexuosa** (Wildl. spec. 1. p. 966.) glabrous, subherbaceous; branches compressed; leaves oval, acuminate, on short petioles, membranous; stipulas bipartite, acuminated, equal in length to the petioles; panicles terminal, racemose, pedunculate, shorter than the leaves; berries globose, compressed, rather didymous. ụ S. Native of Cayenne, in sterile places. *Nonatella paniculata*, Aubl. guian. 1. p. 181. t. 70. f. 2. Flowers white. Berries violaceous.

*Flexuous* Psychotria. Shrub 2 feet.

59. **P. deflexa** (D. C. prod. 4. p. 510.) glabrous; branches and peduncles compressed; leaves ovate-lanceolate, or ovallanceolate, acuminate at the apex, and acute at the base, membranous; stipulas on both sides, lanceolate, hardly joined at the base; panicles pedunculate, shorter than the leaves, with reflexed compressed branchlets, which are bearded in the axils; flowers small, tetraneous. ụ S. Native of French Guiana, where it was collected by Patris. Very nearly allied to *P. flexuosa*, but differs in the flowers being tetraneous and tetransom.

*Deflexed*-peduncled Psychotria. Shrub 1 to 2 feet.

60. **P. paniculata** (Wildl. spec. 1. p. 970.) glabrous; leaves ovate, acuminate at both ends, veiny; stipulas connate, bidentate; panicles terminal, erect; berries globose, compressed, subdidymous. ụ S. Native of Surinam and other parts of South America.

*Panicled-flowered* Psychotria. Tree, tall.

61. **P. bracteata** (D. C. prod. 4. p. 510.) glabrous; leaves oblong, acuminate, almost sessile, stiff, shining above, with revolute margins; stipulas with both sides, linear, acuminate, longer than the petioles, which are very short; cymes trichotomous, on short peduncles; bracteae oblong, many, under the flowers; fruit nearly globose, striated. ụ S. Native of French Guiana, where it was collected by Patris. This is a very distinct species. Leaves 3 inches long, and 5-9 lines broad. Petioles 1-2 lines long. Peduncle of the cyme compressed, 9-10 lines long.

*Bracteate*-flowered Psychotria. Shrub 4 to 6 feet.

62. **P. flaty'oda** (D. C. l. c.) glabrous; leaves oval or oblong, acuminate, with parallel nerves; stipulas connate, short, bidentate on both sides; cymes terminal, 4 parted, on very short peduncles, girded by 4 large ovate bracteae, the branches compressed so much as to be 2-edged, the secondary branches bearing the flowers at their tops; fruit round, depressed, coarsely ribbed. ụ S. Native of French Guiana, where it was collected by Patris. The leaves and peduncles become yellowish on drying. Leaves 3-6 inches long, and 2-3 broad. Petioles 0-6 lines long.

*Braconed*-flowered Psychotria. Shrub 6 to 8 feet.

63. **P. bre'lipes** (D. C. prod. 4. p. 511.) glabrous; branchlets compressed; leaves elliptic, acuminate at both ends, shining above; stipulas on both sides, linear, acuminate, hardly joined at the base; cymes irregularly branched, on short peduncles, rather bracteate; fruit roundish, compressed, profoundly ribbed. ụ S. Native of French Guiana. Fructiferous cymes equal in length to the attenuated part of the base of the leaves. Leaves 5 inches long, and 2 broad. Petioles 1-3 lines long.

*Short-peduncled* Psychotria. Shrub.

** ** ** Species natives of Colombia.

64. **P. Carthagenensis** (Jacq. amer. p. 65. t. 174. f. 22.) glabrous; leaves obovate or elliptic, rather coriaceous, acuminate at both ends; stipulas ovate, rather membranous, rufous, deciduous; peduncles elongated, corymbose, trichotomous, rising from the forks of the branches; throat of the corolla villous;
berries ovate.  $\gamma$. S. Native of Carthagea, among bushes, ex Jacq.; and of St. Domingo, ex Bertero.  P. Carthagenensis, Spreng. ex Balf. Corollas white, having the tube much exceeding the limb, which is said to be 6-7-eleft, and the stamens are 6-7, according to Jacquin. Berries red, crowned by the calyx, which is of the same colour. Wildenow says that the stipulas are emarginate; but they are probably entire and obtuse.

Carthagea Psychotria. Shrub 5 to 6 feet.

65 P. calyglona (H. B. et Kunth, nov. gen. amer. 3. p. 356.) glabrous; branchlets compressed; leaves lanceolate or oblong, long-acuminate, narrow at the base, membranous; stipulas oblong, obtuse; corymb pedunculate, trichotomous, spreading; calyxes cuneate spathaceous, cleft on one side. $\beta$. S. Native of New Granada. Calyx campanulate, 5-toothed, one half shorter than the corolla. On account of the form of the calyx, this plant does not agree with the present genus, but the fruit is unknown.

Two-edgedPsychotria. Shrub.

66 P. saltatio (H. B. et Kunth, nov. gen. amer. 3. p. 360.) but not of Willd.) glabrous; branchlets compressed; leaves lanceolate, acuminate at both ends, membranous; stipulas oblong, acute, fasiccinate; panicles pedunculate, with opposite, much-spreading branchlets; fruit spherical. $\gamma$. S. Native of New Granada.

Willow-leafed Psychotria. Shrub.

67 P. acrs (H. B. et Kunth, nov. gen. amer. 3. p. 360.) glabrous; branchlets 2-edged; leaves oblong, acuminate at both ends, shining above, scrobiculate in the axils of the veins beneath; stipulas ovate, acutish; cymes pedunculate, trichotomous, spreading; flowers sessile, usually by threes; fruit ovate. $\beta$. S. Native of New Granada, in temperate places, near the escarpment of Tequendama.

Two-edged-branched Psychotria. Shrub.

68 P. lucida (H. B. et Kunth, nov. gen. amer. 3. p. 361. t. 288. but not of Willd.) glabrous; branchlets 2-edged; leaves lanceolate-oblong, acuminate at both ends, coriaceous, shining above; stipulas ovate, acute, deciduous; corymb pedunculate, dichotomous, spreading; bracteoles and teeth of the calyx ciliated; fruit nearly globose. $\gamma$. S. Native of New Granada, on the banks of the river Magdalena, near Honda. P. viburnoides, in Roem. et Schultes, syst. 5. p. 189. but not of Kunth. Flowers usually by threes, sessile, about the size of those of the privet.

Shining-leaved Psychotria. Tree 29 feet.

69 P. cornifolia (H. B. et Kunth, nov. gen. amer. 3. p. 362.) glabrous; branchlets terete; leaves almost sessile, ovate-rhomboid, acuminate, cuneated at the base, membranous; corymb pedunculate, terminal, bifid, divaricate; fruit roundish, compressed. $\gamma$. S. Native on the banks of the Orinoco, near Maypures. Stipulas and flowers unknown. Perhaps a distinct genus.

Dogwood-leaved Psychotria. Shrub.

70 P. viburnoides (H. B. et Kunth, nov. gen. amer. 3. p. 361. but not of Willd.) glabrous; branchlets compressed; leaves oblong, acuminate at both ends, coriaceous, shining above; stipulas ovate, acute, deciduous; cymes pedunculate, of 4 rays, spreading; bracteoles and teeth of the calyx ciliated. $\gamma$. S. Native on the banks of the Orinoco, near the escarpment of Atraves. Very like P. lacida.

Viburnum-like Psychotria. Shrub.

71 P. borjessii (H. B. et Kunth, nov. gen. amer. 3. p. 537.) smoothish; branchlets compressed; leaves lanceolate, acuminate at both ends, membranous, with undulated margins, shining a little; stipulas ovate, acute; cymes pedunculate of 5 rays, spreading, the rays clothed with powdery down. $\gamma$. S. Native in woods, on the banks of the Orinoco, near San-Borja. P. ligustrina, Willd. in Roem. et Schultes, syst. 5. p. 188. Nearly allied to P. rugulosa, but the flowers are smaller, &c. Leaves glabrous on both surfaces according to Kunth, but according to Willdenow the leaves are downy underneath.

San-Borja Psychotria. Shrub.

72 P. glucosecentes (H. B. et Kunth, nov. gen. amer. 3. p. 558.) branchlet terete, hairy; leaves oblong or lanceolate-oblong, acuminate, acute at the base, with sub-undulated margins, rather coriaceous, glabrous, glaucescent beneath, foveolate in the axils of the veins beneath, and downy on the veins; stipulas ovate, acuminate; cymes pedunculate of 5 spreading rays; pedicels hairy; fruit nearly globose-elliptic. $\gamma$. S. Native on the banks of the Orinoco, and near the city of Angostura. P. divaricata, Willd. in Roem. et Schultes, syst. 3. p. 191.

Glaucescent Psychotria. Shrub 10 to 15 feet.

73 P. rufo'scens (Spreng. syst. 1. p. 741.) branchlets, stipulas, peduncles, petioles, and nerves of the leaves clothed with rusty hairs; leaves obovate-oblong, acuminate, narrow at the base; stipulas oval, obtuse; cymes sessile, of 3-4 rays or branches, the rays bearing almost sessile, crowded flowers at their tops. $\beta$. S. Native of South America.

Var. a. ferruginea (D. C. pro. 4. p. 512.) branches subtrifolious; flowers congestorate; stipulas acutish, half an inch long. $\beta$. S. Native of New Andalusia, near Caripe. The corolla is said to be white, with a villous throat and reflexed lobes. Fruit unknown. P. rufo'scens, H. B. et Kunth, nov. gen. amer. 3. p. 364. but not of Willd. Bertiéra ferruginea, Willd. in Roem. et Schultes, syst. 5. p. 237.


Var. c. Haenkeana (D. C. l. c.) branchlets compressed; stipulas obtuse, hairy in the young state, and glabrous in the adult state; flowers congestorate; corolla hairy outside; berries ovate-oblong. $\beta$. S. Native of Mexico. P. rufo'scens, Bartd. Rufescens Psychotria. Shrub.

74 P. diervilloides (H. B. et Kunth, nov. gen. amer. 3. p. 358.) clothed with fine hairy tomentum; branchlets compressed; leaves obovate-acuminate, rounded at the base, membranous, glabrous above; stipulas oblong, obtuse; cymes pedunculate of 4 rays; panicle cylindrical. $\gamma$. S. Native of South America, near Angostura. Petioles glabrous. Stipulas equal. Lobes of the corolla revolutely reflexed. Fruit unknown.

Diervillo-like Psychotria. Shrub.

75 P. orinocensis (D. C. prod. 4. p. 512) leaves on short petioles, roundish-ovate, acute, shining; stipulas 2-lobe; corymb divaricate. $\gamma$. S. Native on the banks of the Orinoco. P. cornifolia, Willd. in Roem. et Schultes, syst. 5. p. 191. but not of Kunth.

Orinoco Psychotria. Shrub.

76 P. latifolia (Willd. in Roem. et Schultes, syst. 5. p. 189.) leaves ovate, acute at both ends, ribbed; stipulas acutely bidentate; panicles terminal, elongated. $\gamma$. S. Native on the banks of the Orinoco, in shady places. Kunth, et Bomp. Leaves a foot long, very broad, shining on both surfaces, downy on the veins beneath. Branches of the panicle crowded, erect, ex Spreng. syst. 1. p. 745.

Broad-leaved Psychotria. Shrub.

77 P. levigata (Willd. in Roem. et Schultes, syst. 5. p. 190.) leaves obovate-ovate, petiole, tapering at the base, glabrous; stipulas bidentate; panicle terminal. $\gamma$. S. Native of South
America, at the river Atabapo. *Humb. et Bonpl.* This is said to be the same as *Pallocéara speciosa*, by *Spreng*.

**Smooth Psychotria.** Shrubs.

78 P. Hundens**is** (Wildl. in *Rom. et Schultes*, syst. 5. p. 189.) leaves oblong, acuminate at both ends, rather membranous; stipulas oblong, obuse; panicle trichotomously corymbose. ą S. Native of New Granada, on the banks of the Magdalena, near Honda, or Hunda. *Palicóeara mitis* is joined with this by *Spreng*. but for what reason we know not.

**Honda Psychotria.** Shrubs.

79 **Camunánsis** (Wildl. in *Rom. et Schultes*, syst. 5. p. 191.) leaves oblong; stipulas ovate, acute; cymes few-flowered. ą S. Native of Camuná, Humb. et Bonpl.; and Trinidad, G. Don. Flowers yellow.

*Camuná Psychotria.* Clt. 1824. Shrubs 10 feet.

80 P. **séssili-föra** (Wildl. in *Rom. et Schultes*, syst. 5. p. 191.) herbaceous; leaves oblong, acuminate at both ends; stipulas emarginately bidentate; flowers terminal, crowded, sessile.

2. S. Native on the banks of the Orinoco, Humb. et Bonpl. Herb half a foot high. Flowers white.

**Séssile-flowered Psychotria.** Pl. half a foot.

• • • • • **A species native of Panama.**

81 P. **fúrca-ta** (D. C. prod. 4. p. 512.) smoothish; branches bifurcate, terete; branchlets compressed; peduncles, pedioles, and nerves of the leaves roughish; leaves ovate-oblong, acuminate; stipulas bidentate, small, acute; heads on short peduncles; pedicels thick, very short; bracteas 4, linear, spreading. ą S. Native of Panama, where it was collected by *Haenke*. *Céphélis fúrca-ta*, Bartl. in herb. *Haenke*. Fruit ovate-globose, compressed, furrowed. Flowers unknown. Habit of *Céphélis oblonga*, but the inflorescence and fruit are like that of *P. platypoda*.

**Forked-branched Psychotria.** Shrubs.

• • • • • **Species natives of Mexico.**

82 P. **biaristáta** (Bartl. in herb. *Haenke*, ex D. C. prod. 4. p. 513.) glabrous; branchlets a little compressed; leaves oblong, or ovate-oblong, atteminated at both ends, coriaceous; stipulas short, broadly ovate, bidentate, deciduous; cymes on short peduncles of 3-4 rays, much shorter than the leaves; fruit nearly globose. ą S. Native of Mexico. Leaves 2 inches long, and 9 lines broad. Petioles 1-2 lines long.

**Two-awned-stipulated Psychotria.** Shrubs 1 to 2 feet.

83 P. **mollis** (Poir. dict. 5. p. 702.) Bartl. in herb. *Haenke*, ex D. C. prod. 4. p. 513.) branchlets nearly terete; peduncles and nerves of leaves downy; leaves elliptic-oblong, acuminate at both ends, membranous, when young downy, but in the adult state glabrous above; stipulas ovate, acutely bidentate; panicle corymbose, crowded, pedunculate, shorter than the leaves; corolla with a short tube, blunt erect lobes, and a hairy throat. ą S. Native of Mexico, Allied to *P. horizontalis var. B*. *P. mollis*, Spreng. in herb. *Baill.* should be excluded from the present order.

The plant of *Poir* is probably distinct from that of *Bartl*.

**Soft Psychotria.** Shrubs.

84 P. **herbáclada** (D. C. prod. 4. p. 513.) branchlets, pedioles, panicles, and nerves of leaves downy; leaves elliptic-oblong, acuminate at both ends; stipulas acutely bifid; panicules erect, ovate, with the rachi compacted, and the branches opposite. ą S. Native of Mexico. P. pubescens, Bartl. in herb. *Haenke*. It differs from *P. pubescens* in the stipulas being more acute, in the panicules not being corymbose, in the rachi of the panicules being compressed, and in the bracteoles being shorter. Flowers unknown. Berries globose, compressed, downy, crowned, striated in the dry state.

**Hairy-branched Psychotria.** Shrubs.

85 P. **aureóla** (Bartl. in herb. *Haenke*, ex D. C. prod. 4. p. 513.) clothed with velvety down; branchlets from compressed to terete; leaves oblong-lanceolate, attenuated at both ends; veins parallel, and are as well as the nerve yellowish; stipulas broad, ovate, drawn out each into a setaceous acumen at the apex, which is sometimes undivided, and sometimes bibractitate; corolms pedunculate, trichotomous; calyx 5-toothed, and are, as well as the corollas, downy. ą S. Native of Mexico. Branches and leaves yellowish in the dried state. Leaves 2 or 2½ inches long, and 9-10 lines broad. Pedioles a line long.

**Golden Psychotria.** Shrubs.

86 P. **scabriuscula** (Bartl. in herb. *Haenke*, ex D. C. prod. 4. p. 513.) branchlets a little compressed; young leaves and peduncles clothed with very fine down; leaves oblong-lanceolate, attenuated at both ends, at length glabrous on the upper surface; stipulas ovate, bibractitate, shorter than the pedioles; corolms trichotomous, pedunculate, shorter than the leaves; fruit globose, dilychnous. ą S. Native of Mexico, about Acapulco. Allied to *P. auróla*. Pedioles often changed into lateral elongated pseudo-axillary branches.

**Roughish Psychotria.** Shrubs.

87 P. **Mexicaná** (Wildl. in *Rom. et Schultes*, syst. 5. p. 192.) leaves oblong, acuminate at both ends, rather membranous; stipulas bipartite, acute; panicles narrow, terminal. ą S. Native of Mexico, Humb. et Bonpl. This plant is referred to *Palicóeara fastigiata* by *Sprengel*, who is probably correct.

**Mexican Psychotria.** Shrubs.

88 P. **padifölia** (Wildl. in *Rom. et Schultes*, syst. 5. p. 189.) leaves oblong, acuminate, pilose on the veins beneath; stipulas bipartite, linear-subulate; panicles corymbose, terminal. ą S. Native of Mexico, about Xalapapa, Humb. et Bonpl. **Bird-cherry-leaved Psychotria.** Shrubs.

• • • • • **A species native of Florida.**

89 P. **lanceoláta** (Nutt. in Sill. amer. journ. 5. p. 290.) branches and under sides of leaves clothed with rusty down; leaves lanceolate, acuminate at both ends; stipulas stem-clasping, roundish, deciduous, sphaerulate; corollas terminal, trichotomous from the base. ą S. Native of Eastern Florida. Leaves 2-3 inches long. Berries ovate, red.

**Lanceolate-leaved Psychotria.** Shrubs.

• • • • • **A species native of the Bahamas.**

90 P. **undáta** (Jacq. hort. schönbr. 3. p. 5. t. 260. fragm. 101.) glabrous; leaves oval-lanceolate or oblong, acuminate at both ends, undulate; stipulas connate, ovate, deciduous, a little shorter than the pedioles; cymes terminal, sessile, tripartite, with trichotomous branches; corolla with a naked throat, but the tube is villous at the origin of the filaments. ą S. Native of the Bahama Islands. Leaves acute at both ends, wavy, shining above, 3-4 inches long. Corollas white, with reflexed segments. Berries small, roundish, red.

**Wavy-leaved Psychotria.** Pl. May, June. Clt. 1823. Shrubs 3 to 4 feet.

• • • • • **Species natives of the West India Islands.**

91 P. **florífunda** (H. B. et Kunth, nov. gen. amer. 3. p. 359.) glabrous; branchlets compressed; leaves elliptic-oblong, acuminate at both ends, coriaceous; stipulas oblong, obtuse; cymes pedunculate, of 6 rays, much branched, diffuse; the rays again divided into 4-5 rays; bracteas and calyceal teeth hairy; stamens length of the lobes of the corolla. ą S. Native of South America, in the province of Carthagea near Turbaco? ex
RUBIACEÆ. CLX. PSYCHOTRIA.

Kunth; in the Island of Martinico, ex Sieb.; and of Guadaloupe, ex Perrottet.

**Buddle-flowered Psychotria.** Shrub.

92. *P. tenuifolia* (Swartz, prod. p. 45. fl. ind. occ. 1. p. 403.) glabrous; leaves oblong, acuminate at both ends, membranous; stipules ovate, deciduous, bifid, with acuminate lobes; panicles erect, almost sessile, shorter than the leaves; throat of corolla villous. *T. S.* Native of Hispaniola, among bushes. Leaves with an obtuse acumen, ex Swartz. Panicles trichotomous. Flowers small, white. Berries oblong, glabrous. — *P. glabrata,* Sieb. fl. mart. no. 73, does not differ from the plant of Swartz, unless in the leaves being acutely acuminate. *P. laurifoia,* Bertero, collected in Hispaniola, has the leaves acute at the apex, and the nerves of the leaves beset with rusty down underneath. In both, however, there are rufous cilia in the axils of the leaves and stipulas.

**Thin-leaved Psychotria.** Shrub 3 to 4 feet.

93. *P. nervosa* (Swartz, prod. p. 45. fl. ind. occ. 1. p. 403.) glabrous; leaves ovate, acute at the base, and acuminate at the apex, veined, a little undulated; stipulas oblong, acuminate, emarginate, deciduous; corymb triangular, with trichotomously panicked branches; throat of corolla villous; berries oblong. *T. S.* Native of Jamaica, among bushes. *P. stipulacea,* Swartz, in herb. L'Her. Branches a little compressed. Panicles terminal and axillary, shorter than the leaves. Stipulae large, rusty.

**Nerved-leaved Psychotria.** Shrub 5 to 6 feet.

94. *P. laxa* (Swartz, fl. ind. occ. p. 407, but not of Ruiz et Pav.) glabrous; leaves ovate, acuminate, hardly nerves, very short petioles; stipulas ovate, acuminate, deciduous; corymb terminal, triplicate from the base, trichotomously having the branches and pedicles rather capillary and loose; berries oblong; *T. S.* Native of Jamaica, among bushes on the mountains. Stipula small, subelliptic. Fruit oblong, acuminate at both ends. Branches terete. Leaves 1-2 inches long.

**Loose-corymbosed Psychotria.** Shrub 4 to 6 feet.

95. *P. oligothrichia* (D. C. prod. 4. p. 514.) glabrous; leaves elliptic, acuminate at both ends, membranous, hairy in the axils of the veins; stipulas ovate, membranous, rufous, deciduous; corymb sessile, triplicate, having the branches trichotomous; throat of corolla bearded. *T. S.* Native of Jamaica, Porto-Rico, Martinique, &c. *P. horizontalis,* Spreng. in herb. Balb. It differs from *P. horizontalis* in the nerves of the leaves being glabrous, in the throat of the corolla bearded, not naked; and in the corymb being sessile, not pedunculate. Very nearly allied to *P. undulata* and *P. chimarrhoids.

**Few-haired Psychotria.** Shrub 4 to 6 feet.

96. *P. chimarrhoids* (D. C. prod. 4. p. 514.) glabrous; leaves oblong-lanceolate, acuminate at both ends, membranous; stipulas ovate, obtuse, rusty, deciduous, length of the petioles; cymes terminal, sessile, triplicate; with the branches 3 times shorter than the leaves. *T. S.* Native of Guadaloupe and Trinidad, ex Sieb. fl. trin. no. 256; and of Cuba. Fruit oval, striated, crowned by the 5-toothed calyx. Leaves 3 or 3½ inches long, and 7-9 lines broad. Very nearly allied to *P. undulata,* but differs in the leaves being flat, and one-half narrower; and in the fruit being oval, not spherical.

**Chimarrhis-like Psychotria.** Shrub 5 to 6 feet.

97. *P. capitella* (D. C. prod. 4. p. 514.) branches compressed, glabrous; leaves elliptic, a little cuneate at the base, and acuminate at the apex, membranous, glabrous; stipulas drawn out into 2 setaceous ligulae; peduncles terminal, hairy, bearing three nearly sessile downy bracteate leads of flowers, one-half shorter than the leaves. *T. S.* Native of Trinidad. Sieb. fl. trin. no. 256. Habit different from any other species.

**Capitellate-flowered Psychotria.** Shrub.


**Few-flowered Psychotria.** Shrub 4 to 6 feet.

99. *P. portoricensis* (D. C. prod. 4. p. 515.) branches, pedicles, nerves of leaves, and peduncles clothed with rusty hairs; leaves elliptic, acuminate at both ends, and clothed with velvety down on both surfaces; stipulas ovate, large, membranous, rufous, deciduous; cymes terminal, sessile, tripartite, with the branches trichotomous; throat of corolla villous. *T. S.* Native of Porto-Rico, in woods by the sea-side, where it was collected by Bertero. *P. hirsuta* from Porto-Rico, Spreng. syst. 1. p. 744. It differs from *P. villosa* and *P. hirsuta* in the inflorescence being a sessile cyme, not a pedunculate panicle.

**Porto-Rico Psychotria.** Shrub 5 to 6 feet.

100. *P. berteriana* (D. C. prod. 4. p. 515.) leaves ovate-oblong, acuminate at both ends, glabrous above, downy on the nerves beneath, and branches of the panicle; stipulas twin on both sides, ovate, acute, hardly joined at the base; branches and branchlets of panicle opposite; tube of corolla short. *T. S.* Native of St. Domingo and Porto-Rico. Nonatella pubescens, Spreng. syst. 1. p. 751. Leaves membranous, 7 inches long, and 5 inches broad. Pedicles 9-10 lines long; axils of leaves somewhat ciliated. Fruit globose, furrowed.

**Bertero’s Psychotria.** Shrub.

101. *P. brachiatæ* (Swartz, prod. 45. fl. ind. occ. p. 415.) leaves ovate-oblong, acuminate at both ends, glabrous; stipulas ovate-oblong, bluntly bidentate; branches tetragonal; branches and branchlets of panicle opposite, spreadingly divaricate, downy; ultimate flowers by threes, girdled by a double bracteae. *T. S.* Native of the south of Jamaica, on high mountains, ex Swartz; and of St. Domingo, ex Bertero. Nonatelia officinalis, Spreng. in herb. Balb. Leaves downy on the veins beneath. Flowers dirty white. Fruit deep blue, oblong.

**Brachiate-panicked Psychotria.** Chit. 1793. Sh. 6 to 7 feet.

102. *P. pubescens* (Swartz, prod. 44. fl. ind. occ. 1. p. 424.) branches, pedicles, leaves (especially underneath), and panicles downy; leaves ovate, acuminate at both ends; stipulas with 2 short acute teeth; panicles cymose, spreading, length of leaves. *T. S.* Native of Jamaica and St. Domingo, in hedges and waste places. Psychotriophum, P. Browne, jarn. 161. no. 5. Panicles trichotomous, with usually a sessile flower in each fork. Pedicles furnished with linear opposite bracteae. Flowers greenish yellow, downy outside; throat of corolla villos. Berries downy, roundish, didymous, black, containing bluish juice.

**Downy Psychotria.** Chit. 1812. Shrub 5 to 6 feet.

103. *P. horizontalis* (Swartz, prod. p. 44. fl. ind. occ. p. 410.) branches terete, horizontal, smooth; leaves ovate-lanceolate, acute, downy beneath on the nerves, as well as the pedicles and panicles; stipulas small, ovate, deciduous, minute; peduncles shorter than the leaves; panicles erect, with the branches horizontal, and tripartite at the apex; throat of corolla naked. *T. S.* Native of St. Domingo, in chalky dry places. The leaves are said by Swartz to be downy beneath, and villous on the pedicles and nerves. Flowers small, dirty white; anthers white. Berries oblong.

**Fur. β. cuspizata** (D. C. prod. 4. p. 515.) stipulas broad, short, cuspitate, marcescent; throat of corolla hairy. *T. S.*
Native of St. Domingo, where it was collected by Bertero. Perhaps a proper species.

**Horizontal-leaved Psychotria.** Shrub 3 to 4 feet.

104 P. coriódosa (Swartz, prod. p. 44. fl. ind. occ. 1. p. 423.) glabrous; leaves ovate-lanceolate, acuminate, shining; stipula bidentate; teeth lanceolate; coryms trichotomous, erect, shorter than the leaves; peduncles and pedicels coloured; throat of corolla naked. \( R. \) S. Native of Jamaica, on the mountains, ex Swartz; Hispiola, ex Spreng; and Guadaloupe, ex herb. Balb. Branches terete. Peduncles purple, as well as the bracteas, which are subulate. Corolla purplish, tubular, with a naked white throat. Berries glbose, reddish. Perhaps a species of *Palicóeora*. In the specimen collected by Bertero the tube of the corolla is 4 lines long, and the berries are roundish, didymous, and rather compressed, and crowned by the acute teeth of the calyx.

**Corymbose-flowered Psychotria.** Shrub 6 to 7 feet.

105 P. \( n \)ut\( n \) (Swartz, prod. p. 4. p. 515.) glabrous; leaves lanceolate, acute, nerved; stipulas bidentate, marcescent, deciduous, acute; coryms terminal, pedunculate, trichotomous, shorter than the leaves, erect when bearing the flowers, but nutate when bearing the fruit. \( R. \) S. Native of Hispiola, on arid cretaceous hills. Corollas small, white, with acute segments; anthers yellow. Berries round, scarlet, size of red currants.

**Nodding-corymbed Psychotria.** Shrub.

106 P. corégis\( \text{t}a\) (Spreng. in herb. Balb. ex D. C. prod. 4. p. 515.) glabrous; leaves lanceolate, acute at the base, and acuminate at the apex; stipulas deciduous; panicles pedunculate, trichotomous, loose; ultimate branches of the panicle bearing 3+4 flowers in a head; throat of the corolla bearded; anthers inclosed. \( R. \) S. Native of Jamaica. Leaves 2½ lines long, and 9-10 lines broad. Petioles 2 lines long. In the axils of the leaves and stipules there are rufous ciliate. Panicles longer than the leaves. Flowers small.

**Crowded Psychotria.** Shrub.

107 P. \( f \)ax\( \text{t}e\) (Swartz, prod. p. 45. fl. ind. occ. 1. p. 419.) glabrous; leaves ovate-lanceolate, acuminate, roughish, membranous, distich; stipulas bidentate; peduncles shorter than the leaves; panicles second, with spreading branches; throat of the corolla naked. \( R. \) S. Native of Jamaica, on the higher mountains, and probably of St. Domingo, ex Spreng. syst. 1. p. 746. Young branches compressed. Flowers small, white, with a reflexed limb. Berries roundish, black.

**Spreading-peduncled Psychotria.** Shrub 4 to 5 feet.

108 P. myr\( \text{i}t\)ph\( \text{y} \)l\( \text{u} \)m\( \text{i} \)m\( \text{u} \) (Swartz, prod. p. 44. fl. ind. occ. 1. p. 405.) glabrous; leaves lanceolate-ovate, nerveless, shining, stiff; stipulas ovate, deciduous; branches second; racemes compound, terminal; throat of the corolla villous; berries oblong. \( R. \) S. Native of the north of Jamaica, in logwood forests. Myrtiphyllum, P. Browne, jam. p. 152.—Sloane. jam. hist. 2. p. 102. t. 100. f. 2. The shrub has a habit like the myrtle. Leaves an inch long, deep green, grey beneath from numerous small dots. Branches of racemes trifid. Flowers white. Berries scarlet, with the disepiments usually vanished at maturity.

**Myrtle-leaved Psychotria.** Clt. 1826. Shrub 3 feet.

109 P. para\( \text{r}\)s\( \text{i} \)t\( \text{i} \)ca (Swartz, prod. p. 44. fl. ind. occ. 1. p. 408.) plant sermencose, radicant, and glabrous; leaves ovate, acuminate, veinless, rather succulent; stipulas stem-clasping, retuse, permanent; cymes terminal and axillary, pedunculate; throat of the corolla downy; berries nearly globose. \( R. \) S. Native of Martinique, Menisarrat, St. Christopher, Dominica, Guadalupe, being parasitical upon trees. Viscoles pendulum, Jacq. amer. p. 73. t. 51. f. 1. Branches pendulous. Cymes trichotomous. Flowers small, white, pedicellate. Berries round, scarlet.


110 P. mar\( \text{g\text{.i}n\text{.a}t\text{a}}\) (Swartz, prod. p. 43. fl. ind. occ. p. 404.) glabrous; leaves lanceolate-ovate, acute, margined with cartilaginous bristles; stipulas ovate, acuminate, entire, deciduous, length of pedicels; panicles loose, pedunculate; anthers inclosed; berries ovate. \( R. \) S. Native of the south of Jamaica, in woods; and of Panama and Mexico. B. t. herb. Hauke. Psychotria. P. Browne, jam. 161. no. 6. Leaves shining above, and glabrescent beneath. Branches of panicle opposite, slender, 3-6-flowered. Corollas small, white, glabrous, with a reflexed limb. Berries black.

**Marginate-leaved Psychotria.** Fl. May, June. Clt. 1816. Shrub 3 to 4 feet.

111 P. his\( \text{r\text{.u\text{.t}}\text{a}}\) (Swartz, prod. p. 43. fl. ind. occ. 1. p. 396.) branches, panicles, pedicels, and leaves clothed with rusty hairs; leaves lanceolate-ovate, acute; stipulas lanceolate, undivided, deciduous; panicles pedunculate, spreading; throat of corolla villous; berries ovate, downy. \( R. \) S. Native of the south of Jamaica, in woods of long standing. Branches of panicles trichotomous. Flowers white. Berries red.

**Daisy Psychotria.** Clt. 1826. Shrub 5 to 6 feet.

112 P. r\( \text{a\text{.t\text{.e}}\text{.n\text{.s}}\text{.e}}\) (Swartz, prod. p. 43. fl. ind. occ. 1. p. 396.) glabrous; leaves lanceolate-ovate, acute; stipulas ovate, acuminate, deciduous, entire; panicles pedunculate, much spreading, with reflexed filiform divisions; throat of corolla villous; anthers oblong, among the villi in the throat; berries oblong. \( R. \) S. Native of the south of Jamaica, in woods on the mountains. Panicle of 4 main branches, the ultimate branches bearing 3 flowers. Flowers small, white. Berries small, oblong, scarlet.

**Stinking Psychotria.** Shrub.

113 P. w\( \text{e\text{.s\text{.t\text{.i}}}}\) (D. C. prod. p. 4. p. 516.) glabrous; branches terete; leaves oblong-elliptic, attenuated at both ends, membranous; stipulas deciduous; coryms pedunculate, trichotomous, loose, diverging; having the ultimate branches 3-flowered; throat of corolla naked; corolla oblong; anthers linear; fruit nearly globose, crowned by the calyx. \( R. \) S. Native of Porto-Rico, where it was collected by West. Leaves 4-5 inches long, and 1-2 broad. Petioles 7-8 lines long. Branches of corybium 2 inches long, but the first branches are diverging, and about an inch long. Calyx 5-toothed. Lobes of corolla acute.

**West's Psychotria.** Shrub.

114 P. f\( \text{\text{.o\text{.l\text{.y\text{.a}t\text{.i}t\text{.h}}}a}}\) (D. C. prod. p. 4. p. 516.) glabrous; stipulas ovate, acuminate; leaves elliptic, acuminated at both ends, stiff, membranous; panicles on long peduncles, trichotonously branched; throat of corolla bearded; stamens glabrous; anthers exserted. \( R. \) S. Native of St. Domingo, where it was collected by Bertero. P. laurifolia, Spreng., in herb. Balb. Superior leaves 10 inches long, and 4 broad, pale beneath. Pe- taleis an inch long. Common peduncle of pedicile 6 inches long. Flowers very numerous, glabrous, except in the throat. Fruit unknown.

**Many-flowered Psychotria.** Shrub.

115 P. citr\( \text{r\text{.i\text{.f\text{.o\text{.l}}}a}}\) (Swartz, prod. p. 43. fl. ind. occ. 1. p. 398.) glabrous; leaves elliptic, acuminated, rather coriaceous; stipulas ovate, acuminated, permanent; peduncles short; branches of panicle opposite, trichotonous; throat of corolla villous; berries oblong. \( R. \) S. Native of the West Indies Islands. Branches compressed a little. Leaves coloured like those of the orange, 5-6 inches long. Corolla white, having the throat and segments villous. Berries large, ribbed. P. brachiata, Spreng. in herb. Balb. Citron-leaved Psychotria. Clt. 1793. Shrub.

116 P. laur\( \text{r\text{.i\text{.f\text{.o\text{.l}}}a}}\) (Swartz, prod. p. 43. fl. ind. occ. 1. p. 399.) glabrous; leaves lanceolate-ovate, thickish, shining; stipulas ovate, acuminated, deciduous; panicles cymose, erect, 4 G
trichotomous; filaments ciliated; anthers inclosed in the bearded throat; berries roundish. 

Native panicles peduncles leaves berries corymbs margin branches

Native S. branches Native Native S. flowers panicles panicles ovate.

Porto-Rico. 

Native American plants, described by Swartz, p. 43. fl. ind. occ. I. p. 417.)

leaves obvate, short-accuminated, cuneated at the base; stipulas deltoid, with revolute margins, subulate at the apex, permanent; branches angular; panicles large, pistillate, with subverticillate branches. S. Native of Jamaica, in the interior and western parts of the island, among bushes on the mountains; and of Mexico, ex herb. Henkel. Leaves a foot and more long, and 3 inches broad. Branches of panicle compressed, usually ternately verticillate. Flowers numerous, small, white. Throat of corolla villous. Berries ovate.

Native of Porto-Rico, S. Native of St. Domingo, where it was collected by Bertero. P. glabra, ex Hispaniola, Spreng. 


Berries ovate.


leaves oblong, acuminate at both ends, shining above, but downy on the veins beneath; stipulas connate, aristately bidentate; panicles terminal, elongated; peduncles and pedicels hairy. ½ S. Native of South America, where it was collected by Humb. and Bonpl., but is unknown to Kunta.

**Annu-priced Psychotria.** Shrub.

131 P. spleêndens (Spreng. syst. 1. p. 474.) leaves lanceolate, narrowed at the base, bluntish, shining; stipulas deciduous; corymb few-flowered, pedunculate, terminal. ½ S. Native of South America, at the Rio Negro, where it was collected by Humb. and Bonpl., but is unknown to Kunta. P. lúcida, Willd. in Rœm. et Schultes, syst. 5. p. 189.

**Glittering-leaved Psychotria.** Shrub.

132 P. lampro-viûla (Spreng. syst. 1. p. 474.) leaves narrow-lanceolate, elongated, tapering to both ends, coriaceous, shining above, quite glabrous and veinless beneath; stipulas short, caducous; panicles terminal, tripartite. ½ S. Native of South America. P. salicifolia, Willd. in Rœm. et Schultes, syst. 5. p. 190. The rest unknown.

**Shining-leaved Psychotria.** Shrub.

133 P. attennuâta (Willd. in Rœm. et Schultes, syst. 5. p. 192.) leaves ovate-elliptic, long-acuminate, membranous; stipulas bidentate; cymes terminal. ½ S. Native of South America, where it was collected by Humb. and Bonpl., but is unknown to Kunta. It is joined with P. pedunculata by Sprengel, who is probably right.

**Attenuated-leaved Psychotria.** Shrub.

134 P. ? dicôhôma (Willd. in Rœm. et Schultes, syst. 5. p. 518.) leaves ovate-oblong, acute; stipulas bifid; spikes dichotomous. ½ S. Native of South America, where it was collected by Humb. and Bonpl.

**Dichotomous-leaved Psychotria.** Shrub.

135 P. comûnâta (D. C. prod. 4. p. 518.) leaves elliptic, acute at both ends, rather membranous; stipulas oblong, obtuse, stem-clasping; panicle corymbose, terminal. ½ S. Native of South America. Humb. and Bonpl. P. elliptica, Willd. in Rœm. et Schultes, syst. 5. p. 189, but not of Ker.

**Changed Psychotria.** Shrub.

136 P. membrânacea (Willd. in Rœm. et Schultes, syst. 5. p. 189.) leaves obovate-oblong, acuminate, membranous; stipulas ovate, acute. ½ S. Native of South America, where it was collected by Humb. and Bonpl.

**Membranaceous-leaved Psychotria.** Shrub.

* Species natives of Africa.

137 P. Nûvêra (Caill. et Delîl. pl. afr. p. 66.) leaves elliptic, glabrous above, acutish at both ends, with the nerves on the under surface prominent and downy; stipulas triangular; cymes terminal, with trifid crowded branches, which are downy, as well as the corollas; style much exerted. ½ S. Native of the north of Africa, in Nubia, at Singue. Teeth of calyx 5, obtuse, very short. Stigma turbinate, bifid. Tube of corolla campylate. Fruit unknown.

**Nubian Psychotria.** Shrub.

138 P. ? pâthôroûloa (D. C. prod. 4. p. 518.) glabrous; leaves oblong, acute at both ends, coriaceous, petiolar; stipulas ovate, obtuse, deciduous, 4 times shorter than the petioles; panicles terminal, shorter than the leaves, with opposite branches; calyx truncate; corolla divided beyond the middle. ½ S. Native of the Mauritius, where it was collected by Bory de St. Vincent. The flowers are not well known; and the fruit is perfectly unknown.

**Pathura-like Psychotria.** Shrub.

139 P. ? obtûsîfôlla (Lam. ill. t. 161. f. 4. Poir. dict. 5. p. 67.) glabrous; leaves obovate, cuneated, very blunt, tapering into the very short petioles; stipulas twin on both sides, some-

what concrete at the base, ending in linear points; corymb trifid, pedunculate, much shorter than the leaves, with the branches bearing crowded sessile flowers at the apex. ½ S. Native of Madagascar, where it is called *Maron-Pouton.* Leaves 4-5 long and 2 broad. Berries ovate, striated.

**Blatt-leaved Psychotria.** Shrub.

140 P. angusîtûloa (shrub, nearly simple; leaves oval-lanceolate, entire, acuminate; flowers panicled, terminal. ½ S. Native of Sierra Leone, on the banks of rivulets. Flowers pale red.

**Narrow-leaved Psychotria.** Shrub.

* Species natives of Asia.

141 P. sêprenîs (Lin. mant. p. 204.) plant suffrutescent, much branched, twisted, glabrous; branchlets rather compressed, but at length becoming terete; leaves ovate, acute at both ends, coriaceous; stipulas ovate, obtuse, undivided, brown, deciduous; corymb pedunculate, trichotomous, terminal, having the peduncles and branchlets 2-edged; berries ovate. ½ G. Native of China and the East Indies.

**Serpentine-branched Psychotria.** Shrub 2 to 6 feet.

142 P. Roxb. (D. C. prod. 4. p. 519.) branchlets oppositely, complanate, downy, but becoming smooth at length; leaves elliptic, acuminate at both ends, membranous, shining above, downy on the nerves beneath, which are parallel; stipulas oval, about equal in length to the petioles, recurved at the apex, acutely bifid; panicles terminal, on short pedicels; pedicels downy, compressed, umbellate; lobes of calyx ciliate. ½ S. Native of the Moluccas. P. Asiatica, Lin. spec. ? exclusive of the synonyms. Roxb. fl. ind. 2. p. 160. Leaves 8-10 inches long. Flowers very small, greenish. Bracteas small, lanceolate. Throat of corolla villous; anthers inclosed. Berries oval, 10-nerved (conforming to that in the figures of Gaertn. fruct. t. 1. t. 25. and Browne. jam. t. 17. f. 2), deep red.

**Roxburgh’s Psychotria.** Shrub.

143 P. sâmărâkêra (Wall. in Roxb. fl. ind. 2. p. 161.) glabrous; branchlets compressed; leaves ovate-elliptic, acuminate, coriaceous, with parallel veins; stipulas ovate, about equal in length to the petioles, recurved at the apex, and acutely bifid; corymb pedunculate, compact, villous; teeth of calyx subulate; berries globose, smooth. ½ S. Native of the East Indies, on the hills near Silhet. Leaves 8-12 inches long, shining above. Flowers very small, crowded. Corolla densely bearded at the throat. Berries pale red, without ribs.

**Round-fruited Psychotria.** Shrub.

144 P. trûncâta (Wall. in Roxb. fl. ind. 2. p. 162.) glabrous; branchlets compressed; leaves ovate-elliptic, acuminate, coriaceous, with parallel veins; stipulas ovate, about equal in length to the petioles, recurved at the apex, and acutely bifid; corymb pedunculate, compact, villous; teeth of calyx subulate; berries globose, smooth. ½ S. Native of the East Indies. Leaves 6-8 inches long and ½ broad. Petioles submarginate. Backs of stipulas depressed. Flowers rather large, by threes, intermediate ones sessile.

**Truncate-calyxced Psychotria.** Shrub.

145 P. conûnâta (Wall. in Roxb. fl. ind. 2. p. 165.) glabrous; branchlets compressed; leaves lanceolate, acuminate, tapering much at the base, almost sessile, coriaceous; stipulas ovate, acutely cuspidate, longer than the petioles, rather recurved at the apex; corymb terminal, ovate, on long peduncles, with the first ramifications umbellate, the rest trichotomous; bracteas connate at the base, ciliate, slightly lobed; flowers by threes, sessile; throat of corolla bearded. ½ S. Native of the East Indies. Leaves sessile in the axils of the nerves beneath. Pedicules rather compressed. Berries ovate, almost black, angular when dried.
Conuate-bracted Psychotria. Shrub. 146 P. stipulacea (Wall. in Roxb. fl. ind. 2. p. 164.) glabrous; leaves oblong-lanceolate, acuminated, coriaceous, nerved, tapering at the base, almost sessile, smooth; stipulas broad, triangular, expanded into foliaceous lamina at the apex; petals terminal, trichotomous, shorter than the leaves; pedicels compressed; flowers by threes, sessile; lobes of calyx obtuse. $\pi$. S. Native of Pulo-Penang. Leaves 7-10 inches long, somewhat glandular in the axis of the veins beneath. On the inside of the base of the stipulas there is a tuft of hairs, which remains some time after the stipulas have fallen. Corolla with a very short tube, and a bearded throat. Stamens exserted.

Large-stipuled Psychotria. Shrub. 147 P. Reevesii (Wall. in Roxb. fl. ind. 2. p. 164.) glabrous; leaves oblong-lanceolate, acute at both ends, smooth, glaucous, coriaceous; stipulas broad-ovate, adpressed, with a rounded apex; panicles terminal, oval, small, with deccussate branches; limb of calyx truncate; corolla short, with a densely bearded throat. $\pi$. G. Native of Chittagong, from which place it was sent to the botanical garden at Calcutta by Mr. Reeves. Branches beset with copious small whitish dots, having the upper extremities slightly compressed. Leaves 6-7 inches long, a little wrinkled, foveolate in the axis of the veins beneath. Panicles almost sessile. Bracteas deciduous. Flowers small, by threes, pea-green. Stamens concealed among the hairs in the throat of the corolla.

Reeves's Psychotria. Shrub. 148 P. aurantacea (Wall. in Roxb. fl. ind. 2. p. 163.) glabrous; branches flattened; leaves lanceolate, acuminate, smooth, on short petioles; stipulas ovate, acuminate, deciduous; panicles terminal, pedunculate, erect, with whorled branches; flowers by threes, shortly obovate; limb of calyx truncate; corolla with a long tube, and a villous throat. $\pi$. S. Native of Pulo-Penang, Java, and Nusa-Kambanga. Blum. bijdr. p. 962. Leaves 5-7 inches long, dotted beneath. Stamens ending in a long subulate acumen each. Peduncles compressed. Stamens exserted. Berries obovate, as large as a cherry stone, orange-coloured, ex Wall, but ovate, and 10-ribbed according to specimens from Java.

Orange-coloured-fruited Psychotria. Shrub. 149 P. denticulata (Wall. in Roxb. fl. ind. 2. p. 520.) stem ascending, with a creeping base, compressed at the apex; leaves ovate, ascending, short-acuminated, coriaceous, shining; stipulas ovate, subacute, with a toothed apex, downy outside, about equal in length to the petioles; panicles axillary, linear, coriaceous, combined into a sheath-like tube, which is villous at the base. Panicles cymose, downy. Throat of corolla slightly hairy. Teeth of calyx subulate. Berries globular, purple, size of currants.

Denticulate-stipled Psychotria. Shrub creeping. 150 P. adenosphylla (Wall. in Roxb. fl. ind. 2. p. 168.) glabrous; leaves lanceolate, acuminate, shining, with parallel nerves, which are glandular in the axis; stipulas ovate, blunt, connate at the base, deciduous; racemes terminal, cyllindrical, a little branched at the base; pedicels compressed; bracteas aristately acuminate. $\pi$. S. Native of the East Indies, in Silhet. The uppermost branches dichotomous, and a little compressed. Leaves 3-4 inches long, pallid beneath. Peduncles flattened. Flowers greenish, in heaps, almost sessile. Corolla with a short tube, a villous throat, and acute segments.

Glandular-leaved Psychotria. Shrub. 151 P.? curviflora (Wall. in Roxb. fl. ind. 2. p. 167.) glabrous; branchlets terete; leaves lanceolate-oblong, long-acuminated, tapering much to the base, on long petioles, membranous, shining above, and pubescent on the nerves beneath, and glandular in the axis; stipulas ovate, obtuse, connate at the base, sometimes furnished with 1-2 teeth at the apex, with a series of adpressed hairs within the insertion, deciduous; racemes small, terminal, oval, compact, on short peduncles, much shorter than the leaves; corolla long, slender, tubular, with an incurved border. $\pi$. S. Native of Pulo-Penang. Petioles long. Racemes smooth, consisting of opposite approximate more or less compound fascicules of long sessile flowers. Corollas nearly an inch long, with lanceolate acute lobes, and a naked throat. Anthers exerted. Filaments inserted near the middle of the corolline tube. Perhaps a species of Chasalia or Palicourea.

Curved-flowered Psychotria. Shrub. 152 P. ophioxyloides (Wall. in Roxb. fl. ind. 2. p. 168.) smooth, climbing, dichotomous; leaves lanceolate, on short petioles, acuminate; stipulas ovate, drawn out at the apex into an acumen, which is often bifid; corolla small, terminal; corollas long, slender, tubular, with incurved lobes. $\pi$. S. Native of Silhet, in the East Indies. Leaves smooth, acute at the base, about 5 inches long. Perhaps a species of Chasalia or Palicourea.

Snake-wood-like Psychotria. Shrub cl. 153 P. polyneura (D. C. prod. 4. p. 520.) glabrous; branchlets and peduncles compressed; leaves elliptic-ovate, short-acuminated, coriaceous, with usually 20 pairs of opposite lateral nerves; stipulas ovate, drawn out into a long sessile acumen, deciduous; corolla terminal, pedunculate, one half shorter than the leaves; limb of the calyx with 5 short teeth; corolla short, with a smoothish throat. $\pi$. S. Native of Nicobar Islands. It agrees with P. aurantacea in the stipulas, but differs from that plant in the short corollas, &c.; and from P. nervosa in the teeth of the calyx being acute, not obtuse, nor membranous.

Many-nerved-leaved Psychotria. Shrub. 154 P. wallichiana (Spreng. cur. post. p. 79.) leaves oval, acuminate, serrulate, nervet, glabrous; teeth of the calyx roundish, membranous; panicles terminal, glomerate. $\pi$. S. Native of Nipaul, Wallich. P. nervosa, D. Don, prod. fl. nep. p. 137. but not of Swartz.

Wallich's Psychotria. Shrub. 155 P. vaginale (D. C. prod. 4. p. 520.) glabrous; leaves ovate-oblong, cuspulate at the apex, attenuated at the base; stipules oval, where it was collected by Wall. It agrees with P. vaginale in the stipulas, but differs from that plant in the short corollas, &c.; and from P. nervosa in the teeth of the calyx being acute, not obtuse, nor membranous.


Sheathed-stipled Psychotria. Shrub. 156 P. malaya (Jack, in nail. misc. 1. no. 1. p. 3.) leaves broad-lanceolate; stipulas undivided; panicles terminal, coriaceous, combined into a sheath-like tube, which is bifid at the apex, having the lobes bidentate at the apex, in front of the leaves; panicles terminal, pedunculate, downy, with the rachis compressed, and the branchlets opposite; limb of the calyx broadly campanulate, truncate. $\pi$. S. Native of Ceylon. Ophioloxylon arboreum, Koen. in herb. Royen. Bracteas short, acuminate, spreading. Fruit unknown. Perhaps a species of Chiocoea.

Malay Psychotria. Shrub. 157 P. roxburghii (Blum. bijdr. p. 958.) stem herbaceous, creeping at the base; leaves ovate-oblong, attenuated, smooth above, reticulated beneath, and rather tomentose; stipulas ovate, bifid; cymes compound, pedunculate, axillary, rarely terminal; flowers secund; pyrene 1-ribbed. $\pi$. Z. S. Native of Java, on the mountains, in humid places. Berries globose, ribbed. Perhaps belonging to the first section of the genus.
Twisted-stemmed Psychotria. Pl. creeping.

158 P. divegens (Blum. bijdr. p. 959.) leaves oblong-lanceolate, acuminate at both ends, coriaceous, glabrous above, palloid beneath, and downy on the veins; stipulas bifid, ciliate, hardly shorter than the petioles; coryzms terminal, trichotomous; corollas funnel-shaped; drupes oval, dry, ribbed. H. S. Native of Java, on the higher mountains, in woods. P. divaricata, Blum. cat. hort. bull. p. 53, but not of Swartz.

Diverging Psychotria. Shrub.

159 P. echioides (Blum. bijdr. p. 959.) leaves lanceolate-oblong, acuminate, rather membranous, glabrous; stipulas broad-ovate, short, bidentate, adpressed; coryzms terminal, trichotomous; flowers densely crowded, sessile; calyxes obsoletely 5-toothed, and are, as well as the peduncles, colored; tube of the corolla elongated; drupes globose. H. S. Native of the West of Java, frequent in humid, shady places. Peduncles thickened at length. Pyrene 1-ribbed on the back, and fenestrate inside. Nearly allied to P. corymbosa and P. spheroxarpa.—There is a variety of this with oblong-lanceolate leaves.

Livid Psychotria. Shrub.

160 P. gandarussa-leaved Psychotria. (Blum. bijdr. p. 960.) leaves on short petioles, linear-lanceolate, acuminate at both ends, membranous, glabrous; stipulas ovate, acute, bidentate; cymes terminal and axillary, dense, trifid. H. S. Native of the Island of Java, in the province of Bantam, among bushes. Leaves 5 inches long, and 0-7 lines broad.

Gandarussa-leaved Psychotria. Shrub.

161 P. montana (Blum. bijdr. p. 960.) leaves oblong, acuminate at both ends, membranous, glabrous; stipulas intra-axillary, membranous, clasping the petioles; flowers terminal, umbellately corymbose; limb of the calyx urceolate, obsoletely 5-toothed; corolla with a short sub-cylindrical tube; drupes elliptic-globose; pyrene wrinkled, with one furrow on the back. H. S. Native of Java, on the mountains.

Mountain Psychotria. Shrub.

162 P. rostrata (Blum. bijdr. p. 961.) leaves on short petioles, oblong-lanceolate, much acuminate, membranous, glabrous; stipulas short, rather connate; coryzms pedunculate, dichotomous, or trichotomous; calyxes obsoletely 5-toothed; corolla with a short cylinclindrical tube; drupes nearly globose; pyrene smooth, obsoletely 1-ribbed. H. S. Native of Java, in shady places, on Mount Salak. Allied to P. montana and P. tetraandra.

Beaked Psychotria. Shrub.

163 P. tetraandra (Blum. bijdr. p. 961.) leaves on short petioles, oblong, acuminate at both ends, membranous, glabrous, reticulated beneath; stipulas short, acute; coryzms pedunculate, terminal; flowers tetradromous; drupes nearly globose, ribbed in the dry state. H. S. Native of Java, in woods on Mounts Salak and Seribu, &c. Sides of the leaves mucous.

Tetradromous-flowered Psychotria. Shrub.

164 P. rhinoceros (Reinw. in Blum. bijdr. p. 961.) leaves cuneate-oblong, acute, coriaceous, glabrous above, tomentose beneath; coryzms terminal, tomentose; stipulas bifid, or trifid; flowers capitulate; tube of the corolla sub-campanulate; drupes ovate-globose, furrowed in the dried state. H. S. Native of Java and Nusa-Kambanga, in humid parts of woods.

Rhinoceros Psychotria. Shrub.

165 P. robus (Blum. bijdr. p. 962.) leaves obovate, or cuneate-oblong, acuminate, coriaceous, glabrous; stipulas intra-axillary, acuminate, connate at the base, and clasping the petioles; panicles terminal, with whorled branches; limb of the calyx urceolate, obsoletely 5-toothed; tube of the corolla short, cylindrical. H. S. Native of Java, on the mountains. P. latifolia, Blum. cat. hort. bull. p. 54, but not of Wild.

Robust Psychotria. Shrub.

166 P. viridiflora (Reinw. in Blum. bijdr. p. 963.) leaves oblong-lanceolate, acuminate at both ends, membranous, glabrous; stipulas ovate, obtuse, with membranous margins, ciliated at the base; coryzms terminal, divaricately trichotomous; calyxes downy; tube of the corolla short, cylindrical; drupes nearly globose, somewhat 10-ribbed in the dry state. H. S. Native of Java, in humid places among bushes. Allied to P. stipulacea, Wall.

Green-flowered Psychotria. Shrub.

167 P. sylvestra (Blum. bijdr. p. 963.) leaves on long petioles, oblong-lanceolate, acuminate, glabrous; stipulas ovate, blumish, membranous at the top, clasping the petioles; coryzms terminal, trichotomous, glabrous; tube of the corolla short, cylindrical; drupes elliptic-globose, ribbed when dry. H. S. Native of Java, in mountain woods. Allied to P. viridiflora.

Wood Psychotria. Shrub.

168 P. expansa (Blum. bijdr. p. 963.) leaves elliptic-oblong, acuminate at both ends, membranous, connate at the base; cymes pedunculate, terminal, 3-5-parted; flowers sub-umbellate; calyx obsoletely 5-toothed; tube of the corolla short, cylindrical. H. S. Native of Java, at the foot of Mount Salak. Leaves rather large.

Expanded Psychotria. Shrub.

169 P. laxiflora (Blum. bijdr. p. 964.) stem radicant and climbing; leaves on short petioles, elliptic-oblong, attenuated at both ends, membranous, glabrous; stipulas connate; coryzms tripartite, loose; tube of the corolla somewhat campanulate; drupes nearly globose, furrowed when dry. H. S. Native of Java, in mountain woods.

Lax-flowered Psychotria. Shrub.

170 P. sarmentera (Blum. bijdr. p. 964.) stem radicant and climbing; leaves on short petioles, lanceolate-oblong, acuminate at both ends, finely veined, coriaceous, glabrous; stipulas connate; coryzms terminal, divaricate, trichotomous; tube of the corolla funnel-shaped; drupes elliptic-globose, furrowed when dry. H. S. Native of the west of Java, in woods on the higher mountains. Allied to P. paraestica, Swartz.

Sarmentera Psychotria. Shrub.

171 P. leucocarpa (Blum. bijdr. p. 964.) stem radicant and climbing; leaves on short petioles, lanceolate-oblong, acuminate at both ends, coriaceous, glabrous, terminal ones verticillately approximate; stipulas connate; coryzms terminal, trifid; flowers capitulate; drupes globose; pyrene smooth on the back. H. S. Native of Java, in woods on the mountains of Seribu. Allied to P. sarmentera.

White-fruited Psychotria. Shrub.

172 P. paciiflora (Barbl. in herb. Hanke, ex D. C. prod. 4. p. 522.) glabrous; branchlets compressed; leaves narrow-oblong, acute, tapering much at the base, rather coriaceous, glabrescent; stipulas lanceolate, elongated, deciduous; coryzms terminal, trid to the base, having the branches bearing from 1 to 3 flowers; calyx truncate; fruit obovate. H. S. Native of the Island of Luzon. Colour of the leaves and habit almost of P. albula.

Few-flowered Psychotria. Shrub.

173 P. ixoroidea (Barbl. in herb. Hanke, ex D. C. prod. 4. p. 522.) glabrous; branchlets compressed; leaves oblong, tapering much at the base, short-acuminate at the apex, glabescent, hardly veined beneath; stipulas triangularly ovate, acute, deciduous; coryzms terminal, downy, pedunculate, trifid, with compact many-flowered branches; limb of the calyx with 5 short acute teeth; fruit globose. H. S. Native of the Island of Luzon.

Ixonoid Psychotria. Shrub.

174 P. mariana (Barbl. in herb. Hanke, ex D. C. prod. 4. p. 522.) glabrous; branches and peduncles compressed; leaves oval-oblong or obovate, blumish, attenuated at the base, rather coriaceous; stipulas caducous; cymes pedunculate, terminal,
shorter than the leaves, twice trifid; flowers sessile in the forks, and on the tops of the branchlets of the cyme; limb of the calyx campanulate, truncate, or bluntly toothed, and at length cleft irregularly. — S. Native of Marianne Island. Corolla short, campanulate, but obovate in the bud state. Fruit unknown.

Marianne Psychotria. Shrub.

175 P. membranifolia (Bartl. in herb. Hanke, ex D. C. prod. 4. p. 522.) glabrous; leaves ovate-oblong and oval, short-acuminate, membranous, veiny beneath; stipulas membranous, acutely bidentate, erose; panicles terminal, contracted, corymbose, almost sessile, much shorter than the leaves; anthers exerted. — S. Native of the Islands of Luzon and Sozogon, in the Philippine Archipelago. The leaves in the specimens from the Island of Luzon are more oblong and more acuminated at both ends than those from Sozogon.

Membrane-leaved Psychotria. Shrub.

176 P. lineariae (Bartl. in herb. Hanke, ex D. C. prod. 4. p. 522.) branches terete, and are, as well as the panicles, petioles, and leaves, especially on the nervation on the under surfaces, beset with rusty hairs; leaves long-linear, glabrous above; stipulas membranous, ovate, acuminate, caducous; flowers crowded in terminal fascicles, on short pedicels; calyx rather truncate; corolla villous; fruit obovate. — S. Native of the Island of Manilla, near Sozogon.

Linear-leaved Psychotria. Shrub.

177 P. Manilleensis (Bartl. in herb. Hanke, ex D. C. prod. 4. p. 522.) glabrous; branchlets rather compressed; leaves elliptic-oblong, acuminate, attenuated at the base, rather coriaceous, of a different colour beneath; stipulas ovate, acute, combined into a short ring at the base, deciduous; coryumbs triplicate, hardly pedunculate, with elongated branches, which are twice trifid at the apex; fruit ovate-oblong. — S. Native of the Island of Manilla, near Sozogon.

Manilla Psychotria. Shrub.

* * * * * * * * * * * Species natives of Australia.

178 P. colliana (Labill. sert. caled. p. 47. t. 47.) glabrous; branches nearly terete; leaves lanceolate-oblong, attenuated at both ends; stipulas ovate, caducous; coryumbs terminal, on short peduncles, shorter than the leaves, trichotomous; peduncles compressed; style bifid beyond the middle; berries roundish.

— S. Native of New Caledonia.

Hill Psychotria. Shrub.

179 P. loniceroides (Sieb. nov. holl. exsic. no. 263.) every part of the plant is clothed with rusty hairs; leaves elliptic or oblong, acute at both ends; stipulas lanceolate, acuminate, deciduous; panicles terminal, a little shorter than the leaves, with opposite distant branches, which are trifid, or twice trifid at the apex, with a sessile flower in each fork; bractees ovate, acute; berries ovate, crowned by the 5-toothed calyx.

— S. Native of New Holland. It is very like P. hirsuta of Swartz, with which it is joined by Sprengel, in his curr. post., but is still very distinct.

Honeysuckle-like Psychotria. Shrub.

180 P. speciosa (Forst. prod. no. 89.) arboreous; leaves oblong-lanceolate; involucrem terminal, usually 3-flowered. — S. Native of Otaheite. Cephalis speciosa, Spreng. syst. 1. p. 749. Showy Psychotria.

181 P. Daphnoides (Cunningh. in bot. mag. 3228.) shrub dichotomous, glabrous; branches very leafy at ends; leaves ob-ovate; stipulas nearly orbicular, bidentate, small; coryumbs terminal, few-flowered; mouth of corolla villous. — G. Native of New Holland. Flowers pure white.


Cult. All the species of Psychotria are of the most easy culture and propagation. They grow best in a mixture of loam, peat and sand; and cuttings will strike root readily, if planted in sand, with a hand-glass over them. Some of them bear handsome foliage, but the flowers of all are insignificant.

CLXXII. ANTONIA. CLXXII. PALICOUREA.

CLXXII. ANTONIA (named in compliment to the Archduke Antony of Austria, a promoter of botany.) Pohl, pl. bras. 2. p. 13. t. 109.

Gen. syst. Pentandra, Monogynia. Calyx with an oblong-cylindrical tube, which is covered by scales, and a 5-parted limb. Corolla funnelformed, with a bearded throat, and a 5-parted limb; segments lanceolate, acute, at length reflexed. Stamens 5, exerted, bearded at the base. Style long, filiform, thickened towards the apex; stigma bifid, obtuse. Berries oblong, 2-celled.—Shrub middle-sized. Leaves decussately opposite. Stipulas interpetiolar. Cymes terminal, many-flowered. Flowers by threes, white.

1 A. ovaeta (Pohl, l. c. 2. p. 14. t. 109.) leaves ovate-elliptic, quite glabrous, as well as the branches. — S. Native of Brazil, among bushes in dry places, about Joze de Tocantins, in the province of Goiyaz.

Ovate-leaved Antonia. Shrub 5 feet.

Cult. For culture and propagation see Psychotria above.


Gen. syst. Pentandra, Monogynia. All as in Psychotria, but differing in the corolla being tubular, nearly cylindrical, curved or gibous on one side at the base, shortly 5-cleft at the apex, and bearded beneath the middle inside. Teeth of the calyx and lobes of the corolla sometimes rather unequal.—Glabrous shrubs, all natives of America. Leaves opposite, rarely verticillate, usually large. Stipulas connected in various ways. Panicles terminal, sometimes elongated, sometimes thyroid, and sometimes cymose, sessile, but usually pedunculate. Corollas yellow or white. Anthers exerted or inclosed, either inserted in the bottom, middle, or upper part of the tube of the corolla. Flowers variable, rarely with a 3-celled ovary and 2-lobeal stigma.

§ 1. Flowers corymbose or cymose.

1 P. Sellowiiana (D. C. prod. 4. p. 525.) glabrous; branches terete; leaves elliptic, acute at both ends, with undulate margins, on long petioles; stipulas bantly bidentate, with a large blunt recess; panicles cymose, fastigate, with angularly compressed branches; corollas glabrous; stamens inclosed; fruit roundish-ovate. — S. Native of Brazil, about Rio Janeiro, where it was collected by Sello. P. fastigiata, Cham. et Schlcht. in Linnaea, 4. p. 16, but not of Kunt.

Sello’s Palicourea. Shrub 6 to 8 feet.

2 P. fastigiata (H. et Kunt, nov. gen. amer. 3. p. 368, but not of St. Hilt.) glabrous; branchlets rather tetragonal; leaves elliptic, or ovate-oblong, acuminate, acute at the base, membranous; stipulas bidentate; coryumbs pedunculate; flowers on long pedicels, somewhat fastigate, glabrous; fruit ovate, nearly globose. — S. Native on the banks of the Orinoco, near Atures. Psychotria fastigiata, Spreng. syst. 1. p. 742. exclusive of the synonyme of Wild.

Fastigiata-flowered Palicourea. Shrub 6 to 8 feet.

3 P. tabernellioida (D. C. prod. 4. p. 525.) glabrous; branches terete; leaves large, soft, lanceolate, acuminate, petiolate; stipulas unknown; panicles almost cymose, short; segments of the calyx subulate; tube of the corolla slender, with
laceolate lobes. ß. S. Native of St. Domingo. Psychotria tabanafia, Poir. dict. 5. p. 704. Flowers cream-coloured, hardly half an inch long.

Tent-leaved Palicourea. Shrub 4 to 6 feet.

4 P. hebeBATHa (D. C. L. c.) glabrous; branches terete; leaves elliptic-oblong, acuminate, acute at the base; stipulas very short, somewhat bidentate; corollas pedunculate, terminal, rarely axillary, trichotomous, bracteate; corollas downy on the outside, curved; anthers a little exserted. ß. S. Native of French Guiana, where it was collected by Patria. Branches and peduncles yellow. Berries nearly globose, dillyanos, ribbed.

Yellow Palicourea. Shrub 5 to 6 feet.

10 P. punicA (D. C. prod. 4. p. 526.) glabrous; branchlets nearly terete, rufescent; leaves oblong-lanceolate, acute, shining on both surfaces; stipulas twin on both sides; subulate, connected by a short ligula; panicles corymbose, pedunculate, of a scarlet colour; corollas urceolate; berries roundish, didymous. ß. S. Native of Peru, in forests on the Andes. Psychotria punicA, Ruiz et Pav. fl. per. 2. p. 62. t. 42. f. a. Leaves 9 inches long, undulated. Bracteas subulate. Flowers glomerate. Corolla of a purplish scarlet colour, with a short tube, and ovate acute segments.

Scarlet-corymbed Palicourea. Shrub 6 feet.

11 P. crocA (Rom. et Schultes. syst. 5. p. 193.) glabrous; leaves ovate or oval-lanceolate, acuminate, stiltis; stipulas connected by a short ligula, twin on both sides, linear, acuminate, one half shorter than the petioles; panicles corymbose, terminal; corollas obconically tubular; anthers exserted from the tube, but shorter than the limb; berries rather didymous. ß. S. Native of Porto-Rico, Trinidad, Cuba, Guadaloupe, &c. Psychotria crocA, Swartz, fl. ind. occ. p. 429. Sieb. fl. trin. no. 28. Meyer, essq. 1. p. 105.?—Browne, jam. t. 13. f. 1. Leaves with prominent veins. Panicles and peduncles saffron coloured.


12 P. pedunculaA (D. C. prod. 4. p. 526.) glabrous; leaves elliptic-oblong, acuminate at both ends, and somewhat cuneate at the apex, stiltis; stipulas oval, deciduous; panicles corymbose, on long peduncles, with opposite branches; corolla funnel-shaped, glabrous, with revolute lobes; fruit ovate-globose. ß. S. Native of French Guiana, where it was collected by Patria. Psychotria pedunculA, Rich, act. soc. hist. nat. par. 1792. p. 107.?—Palicourea Cayennensis, Desv. in Ham. prod. fl. ind. occ. p. 29.?

Long-peduncled Palicourea. Shrub 4 to 6 feet.

13 P. chionaBATHa (D. C. L. c.) glabrous; leaves ovate, ending in a short point at the apex, hardly acute at the base, stiltis; stipulas oval, at length deciduous; panicles corymbose, pedunculate, shorter than the leaves, with opposite branches; corolla funnel-shaped, glabrous on the outside; anthers exserted; fruit obovate, pears-shaped, ribbed. ß. S. Native of Brazil, about Bahia, where it was gathered by Salzmann, G. Don, &c. Corollas snow-white, tubular, with linear-lanceolate lobes, and a villous throat. Stigma bifid. Lobes compressed.

Snow-flowered Palicourea. Shrub 4 to 6 feet.

14 P. umbellA (D. C. L. c.) glabrous; branches trigonal or tetragonal; leaves elliptic-oblong, acuminate, attenuated at the base, stiff, curved, on short pedicles; stipulas connected, sheathing, short, coriaceous, with 2 short teeth on both sides; corollas pedunculate, sub-umbellate, composed of 5-7 branches, which rise almost from the same point, and are corilymbose at the base; calyx acutely 5-toothed. ß. S. Native of French Guiana, where it was collected by Patria. On the same branch there is often opposite leaves, or 3-4 in a whorl. Stigma 3-cleft in many of the flowers.

Umbellate-corymbed Palicourea. Shrub 4 to 6 feet.
§ 2. Flowers panicled.

* Leaves disposed in whorls.

15 P. triphylla (D. C. prod. 4. p. 526.) glabrous; leaves 3 in a whorl, elliptic-oblong, acuminate at both ends, hardly petiolate; stipules twin on both sides, linear-subulate, hardly joined at the base, longer than the petioles; racemes terminal, pedunculate, downy, somewhat paniculate, longer than the leaves. ʃ. S. Native of French Guiana, where it was collected by Patris. Leaves 4-5 inches long, and 1½ broad. Raceme, along with the peduncle, 6 inches long. Fruit rather compressed, coarsely ribbed. Corolla unknown, hence the genus is doubtful.

Three-leaved Palicourea. Shrub.

16 P. verticillata (D. C. l. c.) branches tetragonal, glabrous; leaves 4 in a whorl, lanceolate-oblong, quite glabrous, on short petioles; stipula bifid; panicles pedunculate, downy; racemes of the panicule triquetrous, and the branches are angularly compressed; corollas glabrous; fruit orbicularly ovate. ʃ. S. Native of the south of Brazil, in woods. P. longifolia, St. Hil. pl. rem. bras. p. 232. t. 22. f. ʃ. Corollas yellow. Stamens inclosed.

Whorled-leaved Palicourea. Shrub 4 to 6 feet.

17 P. quadrifolia (Rudge, pl. guian. p. 27. t. 42.) stem tetragonal; leaves 4 in a whorl, oblong-lanceolate, acuminate; stipulae infrafoliaceous, sheathing; corymb many-flowered; peduncle a little shorter than the leaves. ʃ. S. Native of French Guiana.

Four-leaved Palicourea. Shrub.

18 P. tetraphylla (Cham. et Schlech. in Linnaea. 4. p. 17.) branches bluntly tetragonal, smooth; leaves 4 in a whorl, ovate, or lanceolate-oblong, attenuated at both ends, stiffish, on short petioles, glabrous above, and downy beneath; stipula bifid, with the lobes lanceolate, acute, and ciliated; peduncle terminal, pyramidal, large, pedunculate, downy; corollas glabrous on the outside. ʃ. S. Native of tropical Brazil.

Tetraphyllus Palicourea. Shrub 4 to 6 feet.

* * Leaves opposite, more or less petiolate.


Long-racemed Palicourea. Shrub 10 to 12 feet.

20 P. macrocarpa (B. et Kuntz, nov. gen. amer. 3. p. 569.) branches terete, glabrous; leaves obovate-oblong, short-acuminate, cuneate at the base, rather coriaceous, glabrous above, and hairy on the veins beneath; stipula bifid, glabrous; panicles pedunculate, spreading; corollas glabrous; fruit nearly globose. ʃ. S. Native of New Granada, in hot places. Physotria anacardifolia, Willd. in Rom. et Schultes, syst. 5. p. 190. Distinct from P. maccabotrys, with which it is joined by Sprengel.

Long-fruited Palicourea. Shrub 6 to 7 feet.

21 P. amethystina (D. C. proc. 4. p. 527.) branches somewhat tetragonal, rather hairy; leaves oblong-lanceolate, acuminate, glabrous above and villous on the nerves and veins beneath; stipulas connected together almost to the middle into a sheath, and drawn out into 2 subulate teeth on each side; panicles hairy, a little longer than the leaves; bracteoles subulate; fruit oval. ʃ. S. Native of Peru, in forests on the Andes at Pillao and Huanus-Huass. Psychotria amethystina. Ruiz et Pav. fl. per. 2. p. 57. t. 203. f. b. Glands 7 in the axis of each stipula. Corollas tubular, blue. Berries ovate, blue.

Blue-barred Palicourea. Shrub 10 to 12 feet.

22 P. longibracteata (D. C. prod. 4. p. 527.) branches slightly tetragonal, smoothish; leaves oblong, acuminate, on short petioles, clothed with villous down on both surfaces; stipulas connate at the base a little way, twin on both sides, linear, acuminate; panicles longer than the leaves, hairy; bracteoles elongated, rather foliaceous; berries roundish, compressed. ʃ. S. Native of Panama. P. amethystina ʃ. longibracteata, Bartl. in herb. Hänke. Very like P. amethystina, but differs in the petioles being 1-2 lines long, not 11-12; and in the stipulas not being glandular at the base, and connected only a very short way. Berries globose, blue. Corollas blue?

Long-bracteate Palicourea. Shrub 6 to 8 feet.

23 P. obovata (D. C. l. c.) branches bluntly tetragonal; leaves obovate, acuminate, large, veiny, downy on the nerves and veins beneath; stipulas connected, ovate, with 2 short blunt lobes on each side; panicles thyrsoid, downy, bractiaceous, longer than the leaves; calyx ciliated; corolla tubular; berries globose. ʃ. S. Native of Peru, on the Andes in forests at Chincha and Pillao. Psychotria obovata, Ruiz et Pav. fl. per. 2. p. 58. t. 204. f. a. Leaves a foot long. Stipulas glandular at the base. Corollas purple, villous inside. Berries purplish, almost globular.

Obovate-leaved Palicourea. Shrub 8 to 10 feet.

24 P. siris (D. C. l. c.) branches bluntly tetragonal; leaves lanceolate, acute at both ends, very soft and probably velvety above, and glabrous beneath; stipulas connate at the base, ovate, emarginate, with very blunt teeth; panicles divaricate, hardly longer than the leaves; corollas funnel-shaped. ʃ. S. Native of Peru, in forests on the Andes at Pillao and Chacahuasi. Psychotria mitis, Ruiz et Pav. fl. per. 2. p. 60. t. 208. f. b. Leaves 4-10 inches long. Peduncles tetragonal. Flowers sessile. Bracteas subulate. Corolla yellow, with a hairy throat. Authors linear, shorter than the corolla.

Mild-leaved Palicourea. Shrub.


Loose-flowered Palicourea. Shrub 8 to 10 feet.

26 P. hyacinthiflora (Rom. et Schultes, syst. 5. p. 194.) glabrous; branches bluntly tetragonal; leaves large, obovate, acuminate; stipulas bifid, with the lobes ovate, obtuse; panicles length of leaves; peduncles bractiaceous; bracteas small, ovate; corolla funnel-shaped, with long revolute lobes. ʃ. S. Native of Peru, on the Andes in forests. Psychotria hyacinthiflora, Ruiz et Pav. fl. per. 2. p. 62. t. 213. f. a. Psych. hyacinthifolius, Pers. ench. 1. p. 208. Panicles purple. Corolla violaceous. Stamens inclosed in the middle of the tube. Berries roundish, ovate, of a bluish violet colour.

Hyacinth-flowered Palicourea. Shrub 10 to 12 feet.

27 P. coriifolia (Rom. et Schultes, syst. 5. p. 194.) glabrous;
leaves lanceolate, acuminate, spreadingly deflexed; stipulas ovate, undivided, one-half shorter than the petals; branches of panicle opposite, lower and ultimate ones rising from the axis; flowers crowded at the tops of the branches of the panicle; corolla funnel-shaped, with revolute lobes; berries turbinate.


*Blue-berried Palicourea.* Shrub 9 to 10 feet.

28. P. sulphurea (D. C. prod. 4. p. 528.) glabrous; branchlets bluntly tetragonal; leaves obovate-cuneated, terminating in a short blunt point, coriaceous, nerved, shining above; stipulas bluntly 2-lobed, somewhat connected at the base; panicle loose, rather longer than the leaves; corolla funnel-shaped; fruit roundish.

29. S. Native of Peru, on the Andes in forests. Psyçhòtrîa sulphurea, Ruiz et Pav. fl. per. 2. p. 58. t. 203. f. a. Leaves yellowish, 6 inches long. Bracteae subulate. Corolla sulphur-coloured, having the tube villous inside beneath the throat. The shrub is very villous, and affords a yellow dye, which is used by the natives in the places of its natural growth.

**Sulphur-coloured-flowered Palicourea.** Shrub 10 to 12 feet.

30. P. sulphurea (H. B. et Kunth, nov. gen. amer. 3. p. 366.) branchlets rather tetragonal, villous; leaves oblong, acuminate, narrowed at the base, rather coriaceous, downy or hairy above, and clothed with golden yellow hairy tomentum beneath, and particularly so on the nerves; stipulas villous, combined, bidentate: teeth subulate; petals sessile: corollas hairy.


*Yellow-flowered Palicourea.* Shrub 8 to 10 feet.

32. P. sulphurea (D. C. prod. 4. p. 528.) glabrous; branchlets bluntly tetragonal; leaves lanceolate, acute; stipulas twin on both sides, short, tooth-formed, connected by a ligula; petals thyrsoid, bracteate, longer than the leaves; berries ovate.

33. S. Native of Peru, on the Andes in forests at Cuchero. Psyçhòtrîa thyrsiforme, Ruiz et Pav. fl. per. 2. p. 57. t. 204. f. b. Leaves 5 inches long. Stipulas tridentate, the middle tooth ovate ciliated, and the lateral ones subulate. Calyces yellowish.

34. Corollas yellow, villous inside. Berries ovate, dark purple.

*Thrysae-flowered Palicourea.* Shrub 10 to 12 feet.

35. P. alpinna (D. C. prod. 4. p. 528.) branchlets tetragonal; leaves obovate-lanceolate, membranous, reticulated, a little ciliated; petals downy; stipulas twin on both sides, linear, rather ciliated, connected by a short ligula; petals terminal, erect, usually shorter than the leaves; corollas terete, elongated, diaphanous; anthers inclosed in the throat.

36. S. Native of Jamaica, on the Blue Mountains. Psyçchòtrîa alpina, Swartz, prod. p. 44. fl. ind. occ. p. 401. The leaves and branches are said to be glabrous. Peduncles rufescent. Corolla rather ventricose at the base, yellow, red, purple, and white. Berries nearly globose.

*Alpine Palicourea.* Shrub.

37. P. eriandra (D. C. prod. 4. p. 528.) branchlets terete; leaves elliptic, acute at the base, acuminate at the apex, glabrous above, hairy on the petals and nerves beneath; stipulas twin on both sides, subulate, joined by a membrane; petals terminal; calyx acutely 5-toothed, glabrous; corolla tubular, very hairy outside.

38. S. Native of St. Domingo. Psyçchòtrîa alpina, Poir. dict. 5. p. 702. exclusive of the synonyme of Desf.

*Wolly-flowered Palicourea.* Shrub 8 to 10 feet.

39. P. speciosa (H. B. et Kunth, nov. gen. amer. 3. p. 368.) branches glabrous, terete; leaves oblong, acuminated, acute at the base, membranous, roughish, shining; stipulas glabrous; peduncles pedunculate, with angular branches, which are as well the corollas downy. 39. S. Native of New Granada, near Santa Ana. Form of stipulas and fruit unknown. According to Sprengel, this is the same as Psyçhòtrîa hirugata, Willd. but not of Kuntz.

*Shonly Palicourea.* Shrub 6 to 8 feet.

40. P. elliptica (H. B. et Kunth, nov. gen. amer. 3. p. 369.) branchlets tetragonal, smoothish; leaves roundish-elliptic, acute, rounded at the base, coriaceous, stiff, glabrous above, and hairy or downy beneath; peduncles on short peduncles, with short dichotomous smoothish branches; corollas glabrous.

41. S. Native on the banks of the Oriñon. Psyçchòtrîa circinata, Willd. in Rom. et Schultes, syst. 5. p. 190. ex Spreng. syst. 1. p. 744. 7 Distinct from Psyçhòtrîa elliptica of Kert. and Willd.

*Elliptic-leaved Palicourea.* Shrub.

42. P. longifolia (D. C. prod. 4. p. 528.) branches terete, smooth; leaves ovate-lanceolate, acuminated, large, coriaceous, rather downy beneath, on short pedicles; peduncles one-half shorter than the leaves, with alternate horizontal branches; corolla with a very long tube, which is attenuated at the base, and short, straightish lobes.

43. S. Native of Cayenne. Psyçchòtrîa longifolia, Poir. dict. 5. p. 104, but not of Willd. Nerves of leaves and branches of peduncle yellowish. Stipulas unknown. In the specimen of the plant preserved in the royal museum at Paris, the leaves appear to be quite glabrous on both surfaces. Leaves 6-8 inches long.

*Long-flowered Palicourea.* Shrub.

44. P. Domingensis (D. C. prod. 4. p. 529.) glabrous; branches terete; leaves ovate-lanceolate, acute, shining, petiolate; panicles terminal, usually twin; flowers sessile, cylindrical, incurved; berries shining.


*St. Domingo Palicourea.* Shrub 5 to 6 feet.

46. P. tilmifolia (D. C. prod. 4. p. 529.) glabrous; branches terete; leaves ovate-oblong, acute, reticulated veined beneath, rather coriaceous, shining; stipulas bifid, obuse; panicles stiff, with angular thickened branches; corollas salver-shaped; stamens inclosed.

47. S. Native of South America. Psyçchòtrîa tilmifolia, Willd. in Rom. et Schultes. syst. 5. p. 190. Colladonia tilmifolia, Spreng. syst. 1. p. 716. and 757. Berries 3-celled, 3-seeded, probably from the same cause as those of Palicourea apiciform.

*Laurestine-leaved Palicourea.* Shrub.

48. P. crocoïdes (Desf. in Ham. prod. fl. ind. occ. p. 29.) leaves broad-ovate, acuminated, attenuated at the base, shining, quite glabrous; panicles on long peduncles.

49. S. Native of the Antilles. Branches safron-coloured, as in P. croceâ, to which it is very nearly allied, but differs in the flowers being smaller and fewer, and in the nerves of the leaves being common, not parallel. The stipulas, flowers, and fruit remain unchanged.

*Crocoïde Palicourea.* Shrub 4 to 6 feet.

50. P. coccinea (D. C. prod. 4. p. 529.) glabrous; leaves elliptic-oblong, acuminated at both ends, rather membranous; stipulas twin on both sides, setaceous, connected by a short ligula; panicles elongated, contracted; corolla with a short cylindrical tube, and an erect limb; anthers inclosed; berries roundish.

51. S. Native of St. Domingo and Porto-Rico. Psyçchòtrîa coccinea, Poir. pl. exsic. Very nearly allied to P. croceâ, and is probably often confused with it, but differs in the corollas and fruit being smaller, in the branches of the peduncle being erect and spreading, and usually alternate, in the stipulas being shorter and thinner, &c.

*Scarlet Palicourea.* Shrub 4 to 6 feet.

46. P. longifolia (H. B. et Kunth, nov. gen. amer. 3. p. 369.) 4 H
glabrous; branches terete; leaves lanceolate-oblong, acuminate, acute at the base, membranous, shining; stipulas caducous; panicles sessile; corollas smooth; S. Native of New Granada, near Santa Anna. This is a very distinct plant from Psychotria longiflora, Willd., with which it has been confounded by Sprengel in his syst. 1. p. 744.

Long-leaved Psychotria. Shrub.

41 P. angustifolia (H. B. et Kunth, nov. gen. amer. 3. p. 367.) branchlets hairy; leaves oblong-lanceolate, acuminate, acute at the base, membranous, stiff, discoloured, glabrous, rather hairy on the nerves and veins; stipulas glabrous, bidentate; teeth subulate; panicles pedunculate, hairy; corollas hairy; fruit nearly globose, didymous. S. Native of South America, on the banks of the Orinoco and Rio Negro. Psychotria scutrophylla, Sprung. syst. 1. p. 744.

Narrow-leaved Palicourea. Shrub.

42 P. klot i a n e f o l i a (Cham. et Schlecht. in Linnaea. 4. p. 18.). branchlets, panicles, stipulas, and under surfaces of leaves clothed with minute down; leaves ovoid-lanceolate, acuminate, short at both ends, membranous, glabrous above; stipulas truncate, drawn out into 2 lanceolate-linear teeth each; panicles elongated, contracted; corollas tubular, downy on the outside while young. S. Native of equinoctial Brazil. Segments of the corolla rather unequal, pilose at the apex. There are also 5 fascicles of hairs in the tube of the corolla. Berries nearly orbicular, flattened.

Tobacco-leaved Palicourea. Shrub 6 to 8 feet.

43 P. c a l o p h y l l a (D. C. prod. 4. p. 529.) glabrous; branches terete; leaves oblong, acute at the base, acuminate at the apex, on short petioles; stipulas combined at the base, twin on both sides, lanceolate, acuminate; panicles erect, shorter than the leaves, with very short few-flowered downy branchlets; corollas clothed with powdery tomentum. S. Native of French Guiana, where it was collected by Patris. Leaves 6-8 inches long, and 2 or 2½ broad. Newly allied to P. nicotianaefolia, but differs in the leaves being glabrous beneath, in the different form of the stipulas. The lobes of the stipulas appear as if they were verticillate, 2 being axillary, and the other 2 between the petioles.

Beautiful-leaved Palicourea. Shrub 5 to 6 feet.

44 P. petola r is (H. B. et Kunth, nov. gen. amer. 3. p. 376.) glabrous; leaves elliptic-oblong, acuminate, cuneated at the base, membranous, on long petioles: stipulas connate, acutely biset at the apex; panicles erect, clothed with very minute down; calyx glabrous, with acutish lobes. S. Native of New Andalusia, on Mount Tumiriquiri. Psychotria petolaris, Sprung. syst. 1. p. 745. Corolla unknown. Leaves 6-7 inches long. Petioles 1 or 1½ inch long. Panicles 3-4 inches long. Said to be nearly allied to P. guianensis.

Petiolar Palicourea. Tree 60 feet.


Guiana Palicourea. Shrub 7 to 8 feet.

46 P. henkeana (D. C. prod. 4. p. 539.) branchlets bluntly tetragonal; leaves petiolate, elliptic, acute at the base, and very blunt at the apex, or hardly cuspidate, glabrous, velvety beneath on the middle nerve and veins; stipulas triangular, acute; panicles terminal, pedunculate, much branched, equal in length to the leaves, with opposite or alternate spreading branches; corollas glabrous. S. Native of Peru, on the mountains about the Guanoco, where it was collected by Hanke. Cinchona Henkeana, Bartl. in herb. Hanke. Corollas purpulish, 4 lines long. Fruit unknown. Hanke's Palicourea. Shrub 6 to 8 feet.

47 P. barbarentia (D. C. prod. 4. p. 530.) branchlets terete, glabrous; leaves oval, acute at the base, cuspidate at the apex, stiffish, glabrous, with the nerves rather prominent beneath, and bearded on both sides; stipulas intraflacées, adpressed, very blunt, somewhat 2-lobed; panicles pedunculate, rather longer than the leaves, large, much branched, having the rachis angular, and the branchlets somewhat verticillate, spreading, and many-flowered; corollas clothed with powdery tomentum. S. Native of Porto-Rico, and probably of St. Domingo. Psychotria macropiliya and Psych. lutea, Sprung, in herb. Balb. A very beautiful species, nearly allied to P. guianensis, but very distinct. The nerves of the leaves become naked at length.

Beaded-leaved Palicourea. Shrub 6 to 7 feet.

48 P. costata (H. B. et Kunth, nov. gen. amer. 3. p. 366.) branchlets villous; leaves oblong, acuminate, acute at the base, membranous, glabrous, discoloured beneath, and hairy on the nerves and veins; stipulas hairy, bidentate, with the segments linear, and about equal in length to the petioles; panicles pedunculate, hairy; corollas hairy on the outside, and bearded inside. S. Native of South America, on the banks of the Orinoco and Rio Negro. Said to be nearly allied to Psychotria reticulata. Perhaps the same as Psychotria aristata, Willd. in Ramm. et Schultes, syst. vol. 5. to which it is referred by Sprengel.

Ribbed-leaved Palicourea. Shrub.

49 P. sionica (Mart. reis. ex Linnaea. 5. p. 39.) glabrous; leaves membranous, oblong, acuminate, rounded at the base on short petioles; panicles divericate; pedicels usually trifid; corollas velvety. S. Native of Brazil. The rest unknown, as in the following species.

Poisonous Palicourea. Shrub.

50 P. sions (Mart. l. c.) glabrous; leaves coriaceous, oblong, attenuated at both ends, acuminated or retuse; racemes subcorusciform, disposed into a large pyramidal panicle. S. Native of Brazil. Corollas velvety.

Sounding Palicourea. Shrub.

51 P. diuretica (Mart. l. c.) leaves with thickened revolute margins, velvety beneath the ribs and veins; racemes disposed into a subcorusciform panicle; flowers clothed with fine velvety down. S. Native of Brazil.

Diuretic Palicourea. Shrub.

52 P. officinalis (Mart. l. c.) shrub clothed with harsh yellow down in every part; leaves narrow-elliptic, on short petioles, acute or rounded at the apex, with a mucronate, tapering a little at the base; corollas disposed into a coarctate panicle.

S. Native of Brazil. Official Palicourea. Shrub.

53 P. aue'ata (Mart. l. c. p. 40.) leaves 4 in a whorl, membranous, stiffish, oblong or obovate, on long petioles, bluntish, glabrous, of a golden yellow colour beneath; racemes disposed in a coarctate panicle; corollas clothed with fine velvety down. S. Native of Brazil. Eared Palicourea. Shrub.

54 P. stre'vens (Mart. l. c.) bark corky; leaves coriaceous, stiff, glabrous on both surfaces, almost sessile, broad-ovate, obtuse at both ends, with thickened revolute margins, yellowish beneath; corollas disposed into a pyramidal panicle; corollas clothed with fine velvety down. S. Native of Brazil. Perhaps the same as P. rigidus?

Rattling Palicourea. Shrub.
*** Leaves opposite, sessile.

55 P. rigid a (H. B. et Kunth, nov. gen. amer. 3. p. 370.) glabrous; branches bluntly tetragonal; leaves elliptic, acute, rounded at the base, almost sessile, coriaceous, shining: stipulas twin on both sides, connected by a short ligula, almost linear, acute; pedicels on long peduncules, spreading; corollas clothed with very fine down; stamens exerted. \( \varphi \). Native of New Andalusia, on arid mountains, tropical Brazil, and at Caraquetas. Chaus. et Schlecht. in Linnaea. 4. p. 15. Psychotria rigida, Willd. in Rem. et Schultes, syst. 5. p. 192. Psych. byrsophylla and Psych. rigida, Spreng. syst. 1. p. 747. and 745. and perhaps P. strépens, Mart. Flowers yellow, varying from peta
termous to hexamereous.


CLXXIV. CHASALIA (in honour of D. Chasal, once governor of the Mauritius, a great lover of natural history). Comm. insc. Juss. mem. mus. 6. p. 379. A. Rich. mem. soc. hist. nat. pat. 5. p. 166. t. 16. f. 1. D. C. prod. 4. p. 531.—Psychotria, Coffea, and Nonatèla species, Sieb. Lin. syst. Peniculdris. Monogynia. Calyx with an ovate tube, and 4 lanceolate rather tubular limb, with an entire or 5-toothed border; lobes or teeth joined together at length. Corolla with an elongated terete equal tube, and 5 short acutish erect or spreading lobes, which are usually callous at the apex, and valvate in secession. Anthers 5, inserted in the middle or top of the tube of the corolla, inclosed or sometimes a little exerted. Stigmas 2, linear. Berries ovate, crowned by the limb of the calyx, containing 2 pyrene, hardly ribbed even in the dry state; pyrene coriaceous-chartaceous or horny, oblong, marked by a furrow inside, convex on the outside, and furnished by a longitudinal crest in the middle, which is extended beyond the base, l-seeded. Seed erect, with the transverse section arched, lunate, and compressed. Embryo at the base of a horny albumen.—Glabrous shrubs, all natives of the Mauritius. Leaves opposite or 3 in a whorl. Stipulas ovate, undivided or combined into a 4-cleft sheath. Flowers tubular, crowded and sessile on the tops of the branches, or disposed in terminal panicked corymbs. This genus differs from \( \psi \) \( \psi \) Corollae in the corolla being elongated, and from Palicourea in the corolla not being gibbous at the base, and from both in the urceolate or campanulate calyx. The habit is that of \( \varphi \) \( \varphi \) Gaertnèra, but the characters are very different.

* Flowers sessile, and crowded on the tops of the branches. Leaves opposite. —Chasalia, Juss.

1 C. capitata (D. C. prod. 4. p. 531.) leaves opposite, oval, or obovate, terminating in a very short point; stipulas ovate, acuminate, permanent, longer than the pedicels; flowers disposed in spicate heads at the tops of the branches, fascicled, sessile. \( \varphi \). Native of the Mauritius. Psychotria capitata, Sieb. fl. maur. no. 56. Corolla tubular, 8-10 lines long, with acute hardly open lobes. Leaves 2 inches long, and 12-15 lines broad. Stipulas 8-9 lines long. Fruit unknown. Perhaps the same as Chasalia Commersonii described by Jussieu.

Capitate-flowered Chasalia. Shrub.

** Flowers disposed in terminal panicked corymbs. Leaves opposite.

2 C. psycllorhoides (D. C. prod. 4. p. 531.) leaves opposite, obovate-oblong, bluntish, coriaceous, cuneated at the base, on very short pedicels; stipulas ovate, obtuse, about equal in length to the petioles; panicles corymbose, pedunculate: racis and branches compressed, opposite. \( \varphi \). Native of the Mauritius. Psychotria? Sieb. fl. maur. 2. no. 57. Internodes half an inch long. Leaves 2 1/2 to 3 inches long, and 15 lines broad. Corolla in the unexpanded state 7 lines long. Calyx bluntly 5-toothed.

Psychotria-like Chasalia. Shrub.

3 C. coffeoides (D. C. l. c.) leaves opposite, oblong, bluntish, cuneated at the base; stipulas ovate, acute, a little longer than the pedicels; panicles terminal, pedunculate, somewhat corymbose, with the rachis and peduncles compressed, and the branches opposite. \( \varphi \). Native of the Mauritius. Coffea capitata, Sieb. fl. maur. exsic. no. 385. Leaves 3 1/2 to 4 inches long, and 12-15 lines broad. Stipulas 5 lines long. Calyx with 5 acute short teeth. Corolla in the unexpanded state 3 lines long.

Coffee-like Chasalia. Shrub.

4 C. Fontanesii (D. C. l. c.) leaves opposite, obovate-oblong, bluntish, attenuated at the base; stipulas oval, obtuse, deciduous, shorter than the pedicels; panicles terminal, pedunculate, rather corymbose, with the rachis and branches compressed. \( \varphi \). Native of the Mauritius, and probably of the island of Bourbon. Coffea cymosa, Willd. in Rœm. et Schlüchtes, syst. 5. p. 201. Very nearly allied to C. coffeoides, but the stipulas are different. Petioles 4-6 lines long. Fruit ovate, crowned by the calyx. Flowers unknown.

De Fontanesii Chasalia. Shrub.

5 C. capitata (D. C. prod. 4. p. 539.) leaves opposite, obv

ative, acute, cuneated at the base; stipulas combined in the middle into a 4-cleft sheath, equal in length to the pedicels or longer than them: lobes acuminate, 2 of which are within the leaves, and 2 between the leaves; corollas terminal, trichotomous, with elongated branches, which bear a head of the flowers each at their tops. \( \varphi \). Native of the Mauritius. Psychotria, Sieb. fl. maur. 2. no. 271. Leaves 6 inches long. Corolla 6-7 lines long. Limb of calyx short, 5-toothed.

Large-stipuled Chasalia. Shrub.

6 C. divaricata (D. C. l. c.) leaves opposite, obovate-oblong, acute, cuneated a long way at the base, and petiolo
tate; stipulas ovate, obtuse, membranous, deciduous, 2 or 3 times shorter than the leaves; panicles corymbose, one-half shorter than the leaves; lobes of corolla short, acute, straight. \( \varphi \). Native of the Mauritius. Coffea divaricata, Tansch. ex Sieb. fl. maur. 2. p. 271. in herb. Dunant. Mussa'nda lanceolata, Poir. dict. 4. p. 392. and hence the Chasalia Bourboni, Comm.? Leaves 5-6 lines long, and 15 lines broad. Petioles about an inch long. Calyx urceolate, bluntly and shortly 5-toothed. Corolla 6 lines long.

Divaricata Chasalia. Shrub.

** Flowers disposed in terminal panicked corymbs. Leaves 3 in a whorl.

7 C. Bory'na (D. C. prod. 4. p. 532.) leaves 3 in a whorl, elliptic, acute at both ends, on long pedicels; stipulas deciduous; panicles trichotomous, a little shorter than the leaves; lobes of corolla short, ovate, spreading; anthers exerted a little from the throat; calyx subtruncate. \( \varphi \). Native of the Mauritius and the Island of Bourbon, where it was collected by Bory de St. Vincent. Sieb. fl. maur. 2. no. 253. Petioles 12-16 lines long. Leaves 4 inches long and 2 broad, with the nerves often white. Corolla 6 lines long.

Bory de St. Vincent's Chasalia. Shrub.

8 C. grandifolia (D. C. l. c.) leaves 3 in a whorl, elliptic, acuminate at both ends, rather membranous, on long pedicels; stipulas ovate, acuminate, rather longer than the pedicels; panicles thyrsoid, terminal, on short peduncles. \( \varphi \). Native of the Mauritius. Psychotria grandifolia, Sieb. fl. maur. 2. no. 55, but not of Rœm. et Schlüchtes. Branches bluntly triangular. Petioles 7-10 lines long. Leaves 5 inches long and 1 1/2 broad.

4 ii 2
Limbs of calyx short, hardly 5-toothed. Corolla 10-12 lines long. Anthers at the throat.

Great-leaved Chasalia. Shrub.

9 C. clusiaefolia (D. C. I. c.) leaves 3 in a whorl, obovate-oblong, obtuse, coriaceous, attenuated at the base; stipulas twin on both sides, ovate, obtuse, adpressed, shorter than the petioles; peduncles rising by three to the tops of the branches, angularly compressed, and densely coriaceous at the apex; bracteas numerous, short. ONSE. Native of the Mauritians. non-tella? clusiaefolia, Reich. in Sieb. fl. maur. no. 89. Branchlets angular. Leaves 2-3 inches long and 1 or 1/3 broad. Petioles 6 lines long. Bracteas one at the base of each pedicel, and 2 on each. Corolla 5 lines long in the unexpanded state.

Var. S. leaves opposite. ONSE. Growing along with the species.

Clusia-leaved Chasalia. Shrub.

Cult. For culture and propagation see Psychotria. p. 599.

CLXXV. Jackia, CLXXVI. Cephalis.

Sect. I. Tapogomea (Tapogomo is the Guiana name of the first species). D. C. prod. 4. p. 533. Heads of flowers involucrated by 2 large spreading connate coloured bracteae.

1 C. tomentosa (Willd. spcc. 1. p. 977.) branches, petioles, peduncles, leaves, and involucral hairy; stipulas aminatimated, villous; heads of flowers on long peduncles; leaves of involucrum sessile, ovate-obovate, 2-3 inches wide at the base. p. 8. Native of Guiana, Trinidad, and probably of Mexico (if C. cyanocarpa, Moc. et Sesse, fl. mex. icon. ined. be the same,) in open spaces of woods, and about waysides. Tapogomea tomentosa, Aubl. guian. 1. p. 160. t. 61. Cephalis tomentosa, Vahl, ecol. 1. p. 19. Callicoea tomentosa, Gmel. syst. 1. p. 371. Peduncles axillary and terminal. Bracteas or involucrum scarlet, or of a vermilion-colour, large, sometimes long-acuminated, and sometimes only cuspidate. Branches obscurely tetragonal. Berries striated, ex Aubl., but blue and smooth according to the fig. in fl. mex. There are therefore 2 species probably confused. In Trinidad we have seen this shrub growing in great abundance, and where it makes a very elegant appearance from its scarlet bracteae; the flowers, as far as we can remember, are brownish, and the berries bluish.


Tall Cephalis. Cilt. 1795. Shrubs 12 to 15 feet.

4 C. rubellaris (Cham. et Schlecht. in Linnaea. 4. p. 134.) every part of the plant is clothed with short hairs; leaves broad-lanceolate, acute, attenuated at both ends, on short petiolo, membranous; stipulas triangular, bifid at the apex; heads of flowers terminal, almost sessile, solitary or by threes; floral leaves connate and dilated; bracteas reticulately nerved, lanceo-

Subtribe II. Cepheletae (the plants contained in this subtrice agree with the genus (Cephalis in the flowers being disposed in involucrated heads). D. C. prod. 4. p. 532.—Cepheletae, Cham. et Schlecht. in Linnaea. 4. p. 133. Flowers disposed in fasciculate heads; the heads involucrated by bracteae.


LIN. SYST. Pentandria, Monogynia. Calyx with an obovate tube, and a very short 5-toothed limb. Corolla funnel-shaped, with 5 small blanituous lobes. Anthers inclosed. Stigma bifid, usually exerted. Berries obovate, oblong, 2-celled, 4-seeded, crowned by the vestiges of the calyx.—Shrubs and herbs, natives of America. Leaves ovate, acute, petiolate. Stipulas twin on both sides, free or combined, and sometimes bidentate or bipartite. Heads of flowers terminal or axillary, sessile or pedunculate, involucrated by 2-8 bracteae, which are disposed in a cruciately opposite manner; there are also bracteoles or paleae among the flowers.—Perhaps the species with dry berries, and those with fleshy berries, ought to be separated into distinct genera. Perhaps Evae is properly joined with this genus, notwithstanding its tetrandrous flowers. Probably Carapaecia might be joined with this genus, but for its exerted stamens.
large, longer than the calyx. \( \varphi \). S. Native of equinoctial Brazil.

*Ruellia-leaved Cephalis.* Shrub 4 to 5 feet.

** sect II. Calligecæa** (from καλλιεργος, kallitatos, the most beautiful, and καλλις, kallos, a berry; the berries are blue or pulpy). D. C. prod. 1. p. 533. Heads of flowers involucrated by distinct ovate or oblong erecely adpressed bracteas.

* Shrubs. Heads of flowers pedunculate.

5 C. justi
ceticfollia (Rudge, pl. guian. 1. p. 28. t. 43.) glabrous; branches dependent, knotted; leaves oval-lanceolate; stipulas truncate, bidentate; heads on long peduncles, involucrated by broad-lanceolate bracteas; calyx nearly entire. \( \varphi \). S. Native of Guiana, on the banks of rivers. Peduncles downy. Bracteas fulvous. Corolla with a bearded throat. Flowers sessile on a disk formed by the bases of the bracteas.

* Justicea-leaved Cephalis.* Shrub 6 to 8 feet.

6 C. stipulaceæ (Blum. biijdr. p. 1005.) stem suffruticosse, nearly simple; leaves cuneate-oblong, acuminate, glabrous; stipulas semi-ascending; heads on very short peduncles, axillary, and terminal, involucrated by roundish bracteas. \( \varphi \). S. Native of Java, on the mountains. Stipulas large, membranous. Margin of calyx truncate, entire. Berries dry, 3-celled, compressed, the commissure drawn out into a prominent angle on both sides.

* Stipulaceæ Cephalis.* Shrub 1 to 2 feet.

7 C. ligulæris (Rich. miss. ex D. C. prod. 4. p. 533.) glabrous; leaves petiolate, oval, acute; stipulas broad, emarginate; peduncles compressed, solitary, involucrated by 9-10 ligulate bracteas; calyx hardly 5-toothed. \( \varphi \). S. Native of French Guiana. Scardëra ligulæris, Rudge, pl. guian. 1. p. 29. t. 815. Tratt. tab. t. 84. According to Richard, the ovary is 2-celled, and the cells 1-seeded, and therefore it is a true species of *Cephalis*.

* Ligular-bracteate Cephalis.* Shrub.

8 C. salicifolii (H. B. et Kunth, nov. gen. amer. 3. p. 376.) glabrous; leaves almost sessile, lanceolate, acuminate, shining; stipulas subulate, combined at the base; heads of flowers pedunculate, terminal, involucrated by 4 ovate-cordate leaves or bracteas. \( \varphi \). S. Native of New Andalusia, in arid places on Mount Cocollar. Involution green. Branches compressed while young.

* Willow-leaved Cephalis.* Tree 20 feet.


* Glabrous Cephalis.* Shrub 2 to 3 feet.

10 C. bracteocædæa (D. C. prod. 4. p. 534.) branches terete, clothed with velvet down while young, but glabrous in the adult state; leaves elliptic-oblong, tapering to both ends, downy on the veins beneath; stipulas twin on both sides, subulate, joined a little way at the base; heads of flowers pedunculate, terminal, downy, involucrated by 4-6 acute bracteas, which are cordate at the base. \( \varphi \). S. Native of French Guiana, where it was collected by Patris; and of Brazil, in the province of Bahia by Salzmann.

\( \varphi \) a; bracteas acuminate, purplish.—Native of Guiana.

\( \varphi \) b; bracteas pale, less acuminate. Native of Brazil, at Bahia. Corollas flesh-coloured.

\( \varphi \) c; bracteas pale, hardly acuminate, rather ovate at the base.—Native of Guiana.

* Heart-bracteate Cephalis.* Shrub 2 to 3 feet.

11 C. ambi
guæ (D. C. prod. 4. p. 534.) branches terete, downy, compressed while young; leaves elliptic-oblong, tapering to both ends, downy on the veins beneath; stipulas twin on both sides, subulate, joined together a little way at the base; heads pedunculate, terminal, smoothish, involucrated by 4-6 bracteas, which are hardly cordate at the base, and very blunt at the apex. \( \varphi \). S. Native of Brazil, near Bahia, in shady valleys, where it was collected by Salzmann. Involucrum violaceum.

* Ambiguous Cephalis.* Shrub 2 to 3 feet.

12 C. cromæa (Meyer, essq. p. 107.) glabrous; branches rather tetragonal; leaves ovate, short-acuminate at both ends; stipulas linear, twin; heads terminal, globose, on short peduncles, involucrated by 8 oblong-linear bracteas, and without any palea among the flowers. \( \varphi \). S. Native of Dutch Guiana, at Essequibo. Corolla suffrason-coloured, villous outside. Leaves of involucrum villous, yellowish.

* Saffron-coloured-flowered Cephalis.* Shrub.

13 C. Humboldtiana (Cham. et Schlecht. in Linneae. 14. p. 363.) glabrous; leaves elliptic-lanceolate, tapering to both ends, on short petioles, firm and shining; stipulas tooth-formed on both sides at the base of the petioles; heads terminal, pedunculate, nearly globose, loose; bracteas membranous, nerved; outer ones roundish-ovate; inner ones more acute. \( \varphi \). S. Native of South America, at Javiana, and other places.

* Humboldts Cephalis.* Shrub.

14 C. dichotoma (Rudge, pl. guian. 1. p. 29. t. 44.) glabrous; branches dichotomous; leaves on short petioles, ovate-lanceolate; stipulas bidentate; heads terminal, on short peduncles, involucrated by nearly orbicular bracteas. \( \varphi \). S. Native of French Guiana, and of Brazil, near the river Iheos, if C. dichotoma, Nees et Mart. nov. act. bon. 12. p. 17. be the same. Bracteas fulvous. Calyx obvolutely 5-cleft. Fruit furrowed, as in the genus *Psychotria*.

* Dichotomen Cephalis.* Shrub 6 to 8 feet.

15 C. Swardze (D. C. prod. 4. p. 534.) glabrous; branches rather tetragonal; leaves ovate-lanceolate, acuminate, nerved, petiolate; stipulas broad, combined, acuminate, at length ciliated; heads terminal, globose, pedunculate, involucrated by 5 ovate concave bracteas; palea among the flowers obtuse. \( \varphi \). S. Native of the West India Islands, and of St. Lucia, &c. C. violacea, Swartz, prod. p. 45. fl. ind. occ. 439. exclusive of the syncymes. Peduncles an inch long, quadrangular. Corollas bluish. Berries blue. Bracteas violaceous. It differs from the true *C. violacea* in the heads of the flowers being pedunculated, in the stipulae being ciliated, and in the palea among the flowers being obtuse.

* Swartzs Cephalis.* Shrub 4 to 6 feet?

16 C. Marahamhænis (Leaves broad-oblong, acuminate, membranous, glabrous; heads of flowers terminal and axillary. \( \varphi \). S. Native of Maraham, on the banks of rivulets. Shrub branched. Flowers violaceous.

* Maraham Cephalis.* Shrub 4 feet.

17 C. ferrugineæ (Climbing, villous; leaves oblong-lanceolate, acuminate, rusty beneath, petiolate; peduncle axillary, elongated, villous; heads involucrated by many leaves. \( \varphi \). S. Native of Sierra Leone, on the banks of rivulets.

* Rusty Cephalis.* Shrub cl.

18 C. pedunculata (Salis. par. Lond. 2. t. 99.) stem terete, swelled below the joints; leaves oblong-lanceolate, glabrous, tapering to both ends; stipulas twin on both sides, combined almost to the top, keeled; heads of flowers pedunculate, terminal, or in the forks of the branches; outer bracteas repandly toothed; calyx bearded; segments of calyx horned on the back. \( \varphi \). S. Native of Sierra Leone. Flowers white.

* Pendunculate Cephalis.* Fl. Feb. Ch.? Shrub 2 feet.
19. C. coria'ce.a; leaves oblong, coriaceous, dark green; heads on long peduncles, involucrated by many leaves. h. S. Native of Sierra Leone, on the edges of woods.

Coriaceae-leaved Cephalis. Shrub 2 to 3 feet.

** Shrubs. Heads of flowers sessile.

20. C. violacea (Willd. spec. 1. p. 977. exclusive of the synonyme of Swartz) glabrous; branches nearly terete; leaves oval, acuminate, on short pediels; stipulas broad, somewhat concave, obtuse, rather scariosus at the apex; heads of flowers terminal, globose, sessile, declinate, involucrated by 5 ovate-shaped bracteas; paleae among the flowers acute. h. S. Native of French Guiana, in woods, in humid places. Tapogómea violacea, Aubl. guian. 1. p. 137. t. 60. Leaves 3-5 inches long, Bracteas and corollas violaceus. Berries blue, angular.

Violaceae-flowered Cephalis. Shrub.

21. C. nud'a (Cham. et Schlecht. in Linneus. 4. p. 135.) glabrous; leaves elliptic-lanceolate, sub-acuminate, membranous, on short pediels; stipulas small, thin, on both sides acute; heads terminal, sessile, few-flowered, involucrated by pellucid, membranous bracteas. *S. Native of Brazil, near Rio Janeiro.

Naked Cephalis. Shrub 4 to 6 feet.

22. C. musc'osa (Swartz, prod. p. 46. fl. ind. occ. p. 442.) glabrous; leaves ovate-oblong, attenuated at both ends, on short pediels; stipulas sheathing, bidentate on both sides; heads terminal, almost sessile, involucrated by numerous oblong bracteas; paleae among the flowers toothed. *S. Native of Martini'que, in mountain woods, and by river sides. The same plant has been found in French Guiana, Trinidad, about the Havannah, in Cuba, &c. Morinda musc'osa, Jacq. am. 65. t. 35. Tapogómea musc'osa, Poir. dict. 7. p. 587. Leaves 3-4 inches long. Stipulas rusty. Corollas white. The branches are always covered with moss.

Mossy Cephalis. Tree 15 feet.

23. C. axillari's (Swartz, prod. p. 45. fl. ind. occ. p. 441.) glabrous; leaves petiolate, oblong, acuminate at both ends; stipulas ovate, combined, membranous, obtuse; heads axillary, sessile, glabrous, involucrated by 4-6 bracteas; paleae among the flowers ovate, obtuse. *S. Native of the West Indies, as of St. Christopher, Guadaloupe, &c. Tapogómea axillaris, Poir. dict. 7. p. 585.


24. C. oblong'a (D. C. prod. 4. p. 553.) glabrous; branches dichotomous, terete; leaves oblong, tapering to both ends, on short pediels; stipulas acuminate at length, truncate, ciliated; heads terminal, sessile, involucrated by 4 oblong bracteas. *S. Native of French Guiana. Branches purplish. Leaves painted with white above, as in C. purpure'a, 2-3 inches long, and an inch broad. Berries almost dry, striated, much smaller than peas.

Oblong-leaved Cephalis. Shrub.

25. C. prun'folia (H. B. et Kuntz, nov. gen. amcr. 3. p. 377.) bracteas terete, downy; leaves oblong, acute, mucronate, glabrous, shining; stipulas bidentate; teeth furrowed; heads terminal, sessile, involucrated by 4 spatulate ciliolate bracteas. *S. Native of South America, in shady places on the banks of the Orinoco, near the estuary of Maypures. Involucrum green. Corollas blue. There is a variety of this species with tetratomic flowers, hence the genus *Eca has been joined with Cephalis.

Plum-leaved Cephalis. Shrub.

26. C. fe'grans (Hook. et Arn. in Beech. voy. pt. bot. p. 64. t. 13.) flowers tetramorous; branchlets compressed; leaves broad-oval, obverse, coriaceous, glabrous, reticulately veined, on short pediels; stipulas ovate, acuminate; pedicles bibracteate at the base; bracteas heart-shaped; flowers by threes, sessile. *G. Native of Elizabeth Island, one of the Society Islands. It seems to approach C. speciosa, Sprengel, from Ota'hiti.

Corollas red.

Fregorgi Cephalis. Tree 20 feet.


Eeva Cephalis. Shrub.

** * Herbaceous plants.

28. C. purp'e'rea (Willd. spec. 1. p. 978.) stems creeping, ascending, hispid from rufescent hairs at the tops; leaves oblong, acuminate, hispid on the nerves beneath, and ciliated on the edges; stipulas twin, hispid; heads terminal, almost sessile, involucrated by 2 oblong bracteas, which are, as well as the paleae among the flowers, ciliated. *S. Native of French Guiana, in woods, and of Maranham. Tapogómea purpurea, Aubl. guian. 1. p. 162. t. 63. f. 3. Callicocca purpure, Gmel. syst. 1. p. 371. Leaves painted with a white line above. Corollas and berries purple.

Purple-flowered Cephalis. Fl. April, June. Pl. creeping.


White-flowered Cephalis. Fl. creeping.


Although the root of ipecacuanha has been long employed as a valuable article of the Materia Medica, yet the botanical characters of the plant which produced it remained unknown till Professor Brotero, of Colombia, determined the genus to which it ought to be referred, with the assistance of observations made in Brazil, on living plants; by Bernardo Gomez, a resident medical botanist. The plant is a native of moist woods near Permambuco, Bahia, Rio Janeiro, and other provinces of Brazil. It is called Ipecacuanha by the natives of some parts of Brazil;
Posla do Matte by those of the southern provinces; and Cipo by others, which is the name often given to it by the Portuguese settlers. The root is simple, or a little branched, and furnished with a few short radicles, irregularly bent, externally brown, wrinkled from rings.

It appears that a native of Brazil, whose name was Michael Tristan, was the first who brought ipecacuanha into use. He speaks of it as a remedy for dysentery. Piso afterwards describes it, and speaks of two sorts (hist. nat. bras. p. 101.), the white and brown, which he says were given for fluxes, and as vomits. But we are indebted to Helvetius for bringing it into general use, under the patronage of Louis XIV., from whom he received a thousand pounds, to reveal the secret medicine with which he so successfully treated dysentery. Besides the brown ipecacuanha, there is another sort, brought from Brazil, which varies in appearance from the former; and some have supposed that these differences are owing to accidental circumstances, such as the place of growth, the kind of soil, &c.; but, on the authority of M. Gomez, the common brown ipecacuanha of the shops, is yielded to Cepheila ipecacuanha, while the white is the root of Richard'sia scabra and R. rosea, which is exported largely to Portugal. Besides these, the name of ipecacuanha, which, in the language of South America, means vomiting root, is given to various species of Cynanchum, Asclepias, Euphorbia, Datura, and Rauvolfia; and with regard to their comparative power, De Candolle says that vomiting is produced by 22 grains of Cynanchum; by 24 of Psychotria emetica; by from 60 to 72 of Viola calceolaria; and by from 1 to 3 drachms of C. ipecacuanha. Linnaeus, in a paper published in the third volume of "Amicitiae Academicae," gave ipecacuanha, as a trivial name, to a species of Euphorbia, a native of Virginia and Carolina, the root of which is there used as an emetic. But this was soon discovered not to be real ipecacuanha. In his second "Mantissa" he gave the trivial name to a species of VIOLA, a native of Brazil, the root of which he supposed to be the white ipecacuanha of the shops. De Candolle, in a paper published in the "Bulletin des Sciences par la Société Philomathique," and republished entire in the "Neuveau Dictionnaire d'Histoire Naturelle," says there are three species of Viola which produce the white ipecacuanha; the V. calceolaria, a native of Guiana and the Antilles; the V. ipecacuanha, and the V. parviflora, both natives of Brazil. The roots of these, and especially the last, are sometimes mingled in common with the true, or brown, ipecacuanha; but they are a fraudulent adulteration, and do not possess its active properties. They may be distinguished by their colour, but most certainly by the size of the woody part, which in these is always considerably thicker than the bark; whereas in the true ipecacuanha it is much less, and, as described by Brotero, is only a fibre.

The black or striated Ipecacuanha (Psychotria emetica) is exported from Carthagena to Caliz, and is also said to be the Peruvian grey ipecacuanha. The root is black within and without, fusiform, articulated, striated, and not annulated. The white ipecacuanha is described by Gomez to be the root of Richard'sia scabra; it is of a dirty white, and turns brown by drying; it is simple, or a little branched, often 5 or 6 lines thick, 3 inches long and upwards, variously twisted, and tapering at its extremities, with transverse annular ruggosities, larger than those of the brown ipecacuanha. The common brown ipecacuanha is exported from Rio Janeiro to Portugal. Its colour varies from different degrees of grey and brown; but it is characterized by being contorted, wrinkled, and unequal in thickness; having a thick brittle bark, deeply fissured transversely, covering a central, very small white wood, so as to give the idea of a number of rings strung upon a thread.

Qualities and chemical properties.—Powdered ipecacuanha has a sickly odour, and a bitterish acid taste; and on those who pulverize it, sometimes excites such powerful effects as to produce nausea, faintings, and spitting of blood. It has been subjected to various chemical investigations, and Dr. Irvine ascertained that it contains a gum resin. MM. Pelliot and Magendie, while pursuing their investigation on ipecacuanha, discovered that the power of the various kinds of ipecacuanha depended on a peculiar principle, to which the name emetine has been given; and they think that it might upon all occasions be substituted with advantage, being much more active than ipecacuanha itself, without possessing its disagreeable taste and smell. The latter quality resides in a greasy substance, quite distinct from its emetine virtue; for M. Caventou swallowed it with impunity to the extent of 6 grains.—All vegetable astringents, as infusion of galls and vegetable acids, weaken or destroy the power of ipecacuanha; and Dr. Irvine found that half a drachm, administered in 2 ounces of vinegar, had little effect.

Medical properties and uses.—The utility of ipecacuanha is generally known, and properly appreciated. As an emetic, it operates in doses of from 5 to 30 grains, surely and efficiently, without depressing the system at large, like many other emetics, or injuring the mucous membrane of the stomach; it is therefore to be preferred as a mere evacuant of that organ, and can be given in the fullest doses with perfect safety, and without exciting much nausea. Its power as an emetic has been rather undervalued in one particular view; for if opium be taken, recourse is generally had to violent remedies, which, by simple contact with the stomach, when in a torpid condition, cannot fail to produce injurious results. Ipecacuanha is sometimes employed in a full dose after the accession of a paroxysm of intermittent fever; and, by destroying the link which held the chain of diseased sympathies together, it has often succeeded in cutting short the disease. Paroxysms of spasmodic asthma also often yield to the same treatment; and in the more chronic form of that disease, small doses advantageously produce both expectoration and perspiration. In chronic dysentery and diarrhoea, it is a most useful medicine in small doses. Given in doses of half a grain, it promotes secretion in the lining membrane of the bowels, whereby a healthy condition is eventually re-established, and is, therefore, frequently prescribed in cases of dyspepsia, attended by a foul tongue. Small nauseating doses are advantageously given to subdue uterine and pulmonary haemorrhages; and combined with opium, the effects of both appear to be modified; so that under the name of Dover's powders, doses of from 5 to 10 grains form one of the most powerful and useful sedatives that can be employed for acute or chronic rheumatism, and for eruptive diseases that are disposed to recede. Nauseating doses of ipecacuanha are also useful for hooping-cough, epilepsy and aneurism. Two kinds of emetine are obtained from ipecacuanha—the coloured emetine and pure emetine; the latter is white and powdery, not acted on by the air, whereas coloured emetine is deliquescent. The cases in which emetine may be given, are the same as those in which ipecacuanha is indicated. Pure emetine is much more powerful than the coloured. Two grains are sufficient to kill a large dog. The official preparations are Pulvis ipecacuanhæ, Compositum et Vinum ipecacuanhæ. Pectoral lozenges of emetine are useful in chronic pulmonary catarrhs, hooping-cough, obstructive diarrhoeas, &c.

Ipecacuanha Cephalis. Pl. 2/3 to 1 foot.

31 C. rubra (Hoffm. ex Willd. Mus. in Rave. et Schultes, syst. 5. p. 214.) stem dichotomous, knched; leaves ovate, acuminate, petiolate, glabrous above, and downy beneath; stipulas sheathing, lindentate; heads terminal, on short peduncles, involucrated by 6 unequal bractes. 2. H. S. Native of Brazil. Roots creeping. Veins of leaves purple. Stems flexuous, tumid at the joints.
Red-veined-leaved Cephalis. Pl. 1 foot. 32 C. colora'ta (Hoffm. ex Willd. mas. in Räum. et Schultes, syst. 5. p. 213.) stems herbaceous, simple, glabrous; leaves oblong, tapering at both ends, roughish beneath; stipulas furnished with 2 bristles on each side; heads terminal, on short peduncles. 2. S. Native of Brazil. Stems thickened at the joints.

Coloured Cephalis. Pl. 1 foot. 33 C. fure'scens (Hoffm. l. c.) stem simple, herbaceous, downy; leaves elliptic, acute at both ends, downy at the veins; heads pedunculate, terminal, involucrated by many leaves. 2. S. Native of Brazil, at Bahia.

Downy Cephalis. Pl. 1/2 to 1 foot. 34 C. Hoffmianse'giana (Räum. et Schultes, syst. 5. p. 214.) stem herbaceous, branched; branches dichotomous or trichotomous; leaves oblong, narrowed at both ends, acuminate; heads terminal, surrounded by a 4-leaved involucrem. 2. S. Native of Brazil. C. dichotoma, Willd. rel. but not of Rugde. Nearly allied to C. rubra, but the stems are much taller. Hoffmannsegg's Cephalis. Pl. 2 feet.

† Species not sufficiently known.

35 C. germiff'lora (Willd. rel. and Schultes, syst. 5. p. 213.) leaves obovate, tapering at both ends, glabrous; heads globose, twin, on long peduncles, involucrated. 2. S. Native country unknown.

Bulb-flowered Cephalis. Shrub. 36 C.? biden'ta (Hanb. ex Willd. rel. in Räum. et Schultes, syst. 5. p. 214.) leaves oblong, acuminate, glabrous; heads globose, terminal; involucrem 2-leaved, bidentate. 2. S. Native of Sierra Leone.

Bidentate-involucrated Cephalis. Pl.? Cult. See Psychótria, p. 599, for the culture and propagation of the shrubby species; and Geophila, p. 609, for those of the herbaceous kinds.

CLXXVII. CARAPICHEA (Carapichea is the Caribbean name of the first species). Aubl. guian. 1. p. 167. t. 68. D. C. prod. 4. p. 536. Cepha'lis species, Willd. Juss. Eutróphiæ, Neck. elem. Lin. syst. Pentándria, Monógy'nia. All as in Cephæ'lis, except in the anthers and stigmata, which are a little exerted. Berries dry, bipartite, angularly furrowed, crowned by the small limb of the calyx; nuts or pyræm 1-seeded, smooth on the outside, not striated, as in Cephæ'lis.—Glabrous shrubs, with rather nodose branches. Leaves petiolate, oval, acuminate. Stipulas twin on both sides, combined at the base, and therefore bidentate. Heads of the flowers rising from the axils of the upper leaves, on short peduncles, deflexed, girdled by 4 acute bracteas. Corollas white. According to Willdenow, Jussieu, and Richard, this genus should only form a section of Cepha'lis.


2 C. Patrisis (D. C. prod. 4. p. 536.) stipulas combined, bidentate at the apex; bracteas of the heads of the flowers nearly equal, ovate, acute. 2. S. Native of French Guiana, where it was collected by Patris. Stems terete, dichotomous. Leaves ovate-lanceolate, acute at the base, and acuminate at the apex. Heads on very short peduncles, hardly larger than peas. Corolla white, hairy on the inner part of the limb. Anthers linear, exserted.

Patris's Carapichea. Shrub 5 to 6 feet. Cult. See Psychotria, p. 599, for culture and propagation.

CLXXVIII. SUTERIA (named after John Rudeph Suter, a professor at Bern in Switzerland; author of Flora Helvetica, &c.). D. C. prod. 4. p. 556.—Cephalis species of Lindl.

Lin. syst. Pentándria, Monógy'nia. Calyx with an ovate tube, and a tubular angular limb, which is 5 times longer than the ovaryum, having an unequally 5-toothed border. Corolla salver-shaped, with a terete tube, a naked throat, and 5 ovolobobolobes. Anthers sessile, inclosed. Stigma bilamellate. Fruit 2-celled, 2-seeded.—A glabrous shining shrub, with terete branches. Leaves almost sessile, oblong-lanceolate. Stipulas ovate, deciduous. Heads of flowers axillary, almost sessile, usually 6-flowered, surrounded by ovate-follicaceous bracteas. Paleæ among the flowers linear. Corollas white, almost like those of jasmine, sweet-scented.—This genus differs from Cephæ'lis in the form of the calyx.

1 S. calyce'na (D. C. prod. 4. p. 536.) 2. S. Native of Brazil. Cephalis calycina, Lindl. coll. t. 21.


CLXXIX. GEO'PHILA (from γη, ge, the earth, and φιλεια, philēia, to love; the species creep on the surface of the earth, and the stems never rise beyond it). D. Don, prod. fl. nec. p. 136, and of Berg. D. C. prod. 4. p. 537.—Psychotria species, Lin.—Cepha'lis species, Kuntz. Lin. syst. Pentándria, Monógy'nia. Calyx with an obovate tube, and a 5-parted limb; segments linear, spreadingly recurved. Corolla tubular, with a pilose throat, and 5 oval somewhat recurved lobes. Anthers 5, inclosed. Stigma bifid. Berry ovoid, angularly ribbed, crowned by the calyx, 2-celled, 2-seeded.—Perennial depressed creeping herbs. Leaves petiolate, cordate, similar to those of some species of Viola. Stipulas solitary on both sides, undivided. Pedunces rising from the axis of the ultimate leaves, terminal, solitary, bearing many flowers at the apex. Flowers almost sessile, umbellate, involucrated by bracteas, which are shorter than the flowers.

1 G. keni'roëmis (Cham. et Schlcht. in Linnæa. 4. p. 137.) petioles hairy above; leaves reniform, obtuse, with the lobes at the base approximate; bracteas linear; peduncles 4-6-flowered, shorter than the leaves. 2. S. Native of South America, in shady places; as of Jamaica, Porto-Rico, Cubas, about the Ori'noco, Brazil, Guiana, Society Islands, &c. Psychotria herbacea, Lin. spec. p. 245. Jacq. amer. t. 46. Tuss. ant. t. 8. Psychot'rophum herbaceum, Browne, jan. p. 161. Cephalis reniformis, H. B. et Kunth, nov. gen. amer. 3. p. 377. Flowers white. Berries red. There are varieties of this with downy or glabrous stems and leaves. Leaves always glabrous beneath.


2 G. vi'la'ce'a (D. C. prod. 4. p. 537.) petioles hairy above; leaves cordate-reniform, obtuse, glabrous, with the lobes approximate at the base; umbels few-flowered, almost sessile between the ultimate pair of leaves; bracteas linear-lanceolate. 2. S. Native of Cayenne and Guiana, in woods (Aubl.); and of the Isthmus of Panama (Hænke). Psychotria violacea, Aubl. guian.
Violaceous-flowered Geophila. Pl. creeping.

5 G. diversifolia (D. C. pro. p. 557.) petals and peduncles clothed with short hairs or down; leaves reniformly cordate, rounded or acute, glabrous on both surfaces, paler beneath, with the lobes at the base approximate; heads 2 or few-flowered; bracteas linear-lanceolate, downy. \( \text{fl.} \) S. Native of Java, on the mountains; and probably of Malabar and Sihle, &c., if the Karinta-Tali, Rhed. mal. 10. 1. 21. be the same. Psychotria herbaecae, Roxb. fl. ind. 2. p. 161. and therefore G. reniformis, D. Don, pro. fl. nep. p. 136. Cephalis diversifolia, Blum. bijdr. p. 1004. Flowers white? Berries red?

Diverse-leaved Geophila. Pl. creeping.

4 G. violacea (D. C. l. c.) petals hairy above; leaves roundish-cordate, acute, glabrous on both surfaces, with the lobes at the base divericate; peduncles about equal in length to the petals; bracteas lanceolate; umbellules 6-9-flowered. \( \text{fl.} \) S. Native of New Granada, on the banks of the river Magalacena, in humid places. Cephalis violacea, H. B. et Kunth, nov. gent. vol. ii. p. 379. Psychotria kederzeka, Willd. in Roem. et Schultes, syst. 5. p. 191. Corolla white, glabrous, 4 times longer than the calyx.

Violet-leaved Geophila. Pl. creeping.

5 G. macroroda (D. Don, pro. fl. nep. p. 136.) petals roughish; leaves cordate, acute, glabrous; peduncles length of leaves; bracteas linear-lanceolate; umbellules 3-6-flowered. \( \text{fl.} \) S. Native of Peru, in groves, along the tract of Pillao to Izwuna. Psychotria macroroda, Ruiz et Pav. fl. per. 2. p. 63. t. 211. f. b. Psychotria cordifolia, Dietr. gebrn. f. l. 1. 618. Berries dark purple. Seeds smooth.

Long-peduncled Geophila. Pl. creeping.

6 G. gracilis (D. Don, l. c.) petals striated, beset with retrograde hairs at top; leaves cordate, acute, rather pilose above; peduncles length of petals; bracteas subulate; umbells 6-9-flowered. \( \text{fl.} \) S. Native of Peru, in forests at Pillao and Pueblo-Nuevo. Psychotria gracilis, Ruiz et Pav. fl. per. 2. p. 63. t. 211. f. c. Corollas pale-violaceous, glabrous inside. Berries ovate, blackish. Seeds trisulate.

Scler Geophila. Pl. creeping.

Cult. A mixture of vegetable mould and sand, or peat and sand, is the best soil for the species of Geophila; and they are easily increased by detachment of their creeping stems.


Linn. syst. Tetra-Heptandra, Monogynia. Calyx with an obovate-globose tube, and a very short entire or 4-toothed limb, rarely 5-6-toothed. Corolla with a short nearly terete tube, and 4-6 oblong spreading lobes. Stamens 4-6; anthers sessile within the throat. Stigma bluntly bifid. Berries globose, crowned by the nearly closed calyx, smooth, 2-celled, 2-seeded.

—Glabrous shrubs, natives of South America. Leaves on short petioles, oval or ovate, acuminate at the apex. Stipulas broad at the base, and subulate at the apex. Flowers sessile, crowded into heads in the axils of the leaves or tops of the branches. Heads propped by 4 small bilaterally opposite bracteas. This genus differs from Psychotria in the capitate inflorescence, in the sessile bracteas, and in the number of the floral parts being usually quaternary.

1 P. coccysea (Aulb. l. c.) stipulas undivided; leaves oval, acute at the base; heads of flowers sessile; flowers tetramorous; throat of corolla naked. \( \text{fl.} \) S. Native of French Guiana, in the woods of Orope. Lam. ill. no. 1464. t. 65. Cephalis sessiliflora, Willd. spec. 1. p. 979. Flowers red.

Scarlet Patabee. Shrub 4 to 5 feet.

2 P. \( \text{fl.} \) tenuiflora (D. C. pro. p. 558.) leaves oblong, acute at both ends, membranous; stipulas 4, lanceolate-linear, connate at the base; heads of flowers some sessile, and others pedunculate; corolla with a naked throat, linear lobes, and a slender tube; limb of calyx truncate. \( \text{fl.} \) S. Native of French Guiana, where it was collected by Patris. Leaves 5-6 inches long and 1/2 broad. Bracteas small. Fruit unknown.

Slighted-flowered Patabee. Shrub 4 to 5 feet.

3 P. \( \text{fl.} \) alta (H. B. et Kunth, nov. gen. amer. 3. p. 375.) leaves ovate, rounded at the base; stipulas bifid at the apex; cymes pedunculate; flowers pentameros and hexameros; throat of corolla villous. \( \text{fl.} \) S. Native of South America, on the banks of the Orinoco, near Mayapures, and San Fernando. Cephalis cynosura, Spreng. syst. 1. p. 749. Psychotria Mayapurusis, Willd. rel. in Roem. et Schultes, syst. 5. p. 190. ? ex Spreng. Calyx violaceous. Corollas white.

White-flowered Patabee. Shrub.

Cult. See Psychotria, p. 599. for culture and propagation.

CLXXXI. SALZMANNIA (named after M. Salzmann, a collector of plants in Mauritania, and afterwards in Brazil). D. C. prod. 4. p. 617.

Linn. syst. Tetrandria, Monogynia. Calyx with an oval cup, and a very bluntly 4-toothed or sinuated permanent limb. Corolla with a short tube, and 4 oblong lobes. Abalabra tetragonal. Stamens with very short filaments, and very long anthers. Style 1, undivided, or the lobes are combined. Berry dry, crowned by the limb of the calyx, 1-celled in the adult state by abortion, compressed, oval, 1-seeded. Seed compressed.—A glabrous Brazilian shrub. Branches at first tetragonal, but terete in the adult state. Stamipus truncate, very short. Leaves opposite, ovate, on short pedicels, shining above, and as if they were varnished. Peduncles axillary, opposite, very short, bearing dense heads composed of 10-12 flowers, girded by 2-4 ovate foliaceous bracteas. Flowers sessile within the bracteas, white. This genus appears to come nearest to Cephalis, from which it differs in the very long anthers, in the compressed fruit, and in habit.

1 S. nitida (D. C. prod. 4. p. 617.) \( \text{fl.} \) S. Native of Brazil, about Bahia on arid hills. Corolla a line and a half long. Leaves 1 1/2 inches long and 1 broad, obtuse.

Shining-leaved Salzmania. Shrub 5 to 6 feet.

Cult. See Psychotria, p. 599. for culture and propagation.

Tribe X.

Spermacoceae (this tribe contains plants agreeing with the genus Spermacoce in particular characters). Clam. et Schlecht. in Linnaea, 3. p. 309. A. Rich. mem. soc. hist. nat. Paris. 5. p. 147. D. C. prod. 4. p. 538. Stigma bilamellate (f. 109. b.). Fruit dry or hardly fleshy, usually of 2, rarely of 3-4 1-seeded mericarps or nuts, which are sometimes combined, and sometimes separating from each other, indehiscent or dehiscent in various ways. Albumen between fleshy and horny.

—Shrubs or herbs. Leaves opposite. Stipulas membranous at the base, and usually of many bristles at the apex.

Subtribe 1. Cephalanthinae (this subtribe only contains the genus Cephalanthus). D. C. prod. 4. p. 538. Flowers and fruit crowded and sessile, upon globose receptacles. Fruit divisible into 2 parts.

Sect. II. Naucleoides (from Nauclea and idea, like; the species resemble species of the genus Nauclea). D. C. prodr. 4. p. 539. Glands in the recesses between the lobes of the calyx and corolla.—Indian species.

4 C. naucleoides (D. C. prodr. 4. p. 539.) leaves opposite or 3-4 in a whorl, ovate-lanceolate, acuminate, on short petioles, villous beneath, and on the branchlets; stipulas inlastraceous, acuminate; heads terminal, subverticilicate. ‡ S. Native of the East Indies, in Silhet. Nauclea tetrándra, Roxb. fl. ind. 2. p. 125. Peduncles terminal, from 3 to 4 in whorled panicles. Flowers yellow, intermixed with filiform clavate scales. Capsules turbinate, 2-celled, 2-seeded; the cells 2-valved. According to Cham. et Schlecht. in Linnæa. 4. p. 147. This species is more nearly allied to Cephalanthus than to Nauclea, from the tetraneous flowers, and single seeded cells of the fruit.

Nauclea-like Button-wood. Tree 10 to 20 feet.

† Asiatic species not sufficiently known, and probably ought to be excluded from the genus altogether.

5 C.? Plučiler (Lam. diœt. 1. p. 679.) leaves opposite, approximate, ovate, bluntly acuminate, smooth on very short petioles; peduncles axillary, leafy, a little shorter than the leaves. ‡ S. Native of the East Indies. Fruit and number of the parts of the flowers unknown. Leaves hardly 2 inches long. Heads of flowers hardly the size of peas. Pile-bearing Button-wood. Shrub.

6 C.? Plučilfiorus (Wild. fl. in Rœm. et Schultes, syst. 5. p. 521.) leaves elliptic, tapering to both ends, bluntish; heads of flowers terminal and axillary, numerous. ‡ S. Native of Asia. The rest unknown. Pileflowered Button-wood. Shrub.

7 C.? orientalis (Rœm. et Schultes, syst. 3. p. 105. but not of Lin.) arboreous; leaves opposite or 3 in a whorl, ovate, acuminate, reflexed, glabrous; peduncles terminal; divided; fruit bacca. ‡ S. Native of China. C. orientalis, Lour. coch. p. 67. but not of Lin. Acbróyron orientale, Spreng. syst. 1. p. 386. A large tree. Flowers white, tetramerous, and tetrurous. Berries 1-seeded, red, edible. Perhaps a species of Morinda. According to Sprengel, this with the following species will constitute a distinct genus, which he has called Acbróyron.

Eastern Button-wood. Tree large.

8 C.? Angustifiorus (Lour. coch. p. 67.) arboreous; leaves opposite, lanceolate-linear; heads of flowers terminal; lobes of calyx subulate, beset with glandular hairs; fruit bacca. ‡ G. Native of Cochinchina. Acbróyron angustifiorum, Spreng. syst. 1. p. 386. Receptacle of flowers villous. Flowers pale, tetramerous and tetrurous. Berries roundish, crowned, 2-celled, 1-seeded, aggregate into a globose head. Perhaps a species of Morinda, or perhaps will form a distinct genus along with the preceding species.

Narrow-leaved Button-wood. Tree.

† † The two following species should be removed from the order altogether.

9 C.? procumbens (Lour. coch. p. 67.) stem procumbent; leaves alternate, ovate-lanceolate, tomentose; racemes terminal, interrupted; flowers 5-cleft, dioecious. ‡ G. Native of Cochinchina. Stilbe procumbens, Spreng. syst. 1. p. 418. Flowers violaceous. The female flowers on a naked global receptacle. Flowers numerous, on long peduncles, forming a ball or head. Stigma simple. This plant ought evidently to be excluded from the order, but it is hardly a species of Stilbe.

Procumbent Button-wood. Shrub procumbent.

Willow-leaved Button-wood. Shrub 10 feet.

Sect. I. Platanocéphalus (from πλατανος, platans, the plane-tree, and χεφαλη, kephale, a head; the heads of flowers resemble those of the plane-tree). D. C. prodr. 4. p. 538.—Platanocéphalus, Vaill. act. acad. par. 1722. Glands none in the calyx or corolla.—American species.

1 C.? occidentalis (Lin. spec. 138.) leaves opposite or 3 in a whorl, ovate or oval, acuminate; peduncles much longer than the heads, usually by threes at the tops of the branches. ‡ S. Native of North America, from Canada to Florida, in marshy places. Duham. arb. 1. t. 54. Schkuhr, handb. t. 21, and t. 5. b. fruit. Lois. herb. amat. t. 272.—Plank. aln. 336. t. 77. f. 4. C. oppositifolius, Meench. meth. p. 487. Petioles reddish next the branches. Heads of flowers globular, size of a marble. Flowers whitish-yellow. There are varieties of this species having the branchlets and young leaves either glabrous or downy.

Var. β. brachipodus (D. C. prodr. 4. p. 539.) leaves elliptic-oblong, 3 in a whorl, on short pedicels. ‡ G. Native of the North of Mexico, near Rio de la Trinie and Bejar, where it was collected by Berlandier. Petioles 3–4 lines long. There are varieties of this either with glabrous or downy branches.


2 C. Sakaund (Cham. et Schlecht. in Linnæa. 2. p. 610. and 4. p. 147.) leaves opposite or 3 in a whorl, oblong, acuminate, on very short petioles; peduncles hardly longer than the heads, 3-5-together at the tops of the branches. ‡ S. Native of the south of Brazil, where it is called Sarandi by the natives, and where it was collected by Sello; common on the coasts of La Plata and Caracass; and of Peru, ex Henke. Budden glabra, Spreng. syst. 1. p. 431. ex Cham. et Schlecht. in Linnæa. Glabrous. Leaves lanceolate or ovate-lanceolate, red beneath while young, and hairy in the axils of the secondary veins. Heads of flowers verticillate in the axils of the upper leaves, and umbellate at the tops of the branches, much smaller than those of the first species, Sarandi. Button-wood. Shrub 10 to 15 feet.

3 C. Salicifolius (Humb. et Bonpl. pl. equin. 2. p. 63. t. 98.) leaves opposite or 3 in a whorl, linear-lanceolate, on very short petioles; heads of flowers on long peduncles, terminal, solitary. ‡ S. Native of Mexico, near Acapulco. Stipulas linear-subsulate, permanent, twin on both sides. Heads of flowers white.

Willow-leaved Button-wood. Shrub 10 feet.
Cult. See *Spermacoce* for culture and propagation.

**CLXXXV. BORRERIA** (named after William Borrer, F.L.S. &c. one of our first British botanists). Meyer, exs. p. 79. Cham. et Schlecht. in Liñanea. 3. p. 310. Spreng. neue entd. 2. p. 144; but not of Aeh.—Bigelowia, Spreng. syst. 1. p. 394, but not of his neue entd. nor of others.—Chlorophytm and *Spermacoce*, Polh, in litt.—*Spermacoce* species. Lin. Lam. Spreng. A. Rich.—Gruñhamiá, Neck. elem. no. 323.? Linn. syst. *Tetrandria, Monogynia.* Calyx with an ovate tube, and a permanent limb, which is parted into 2-4 teeth. Corolla salver-shaped or funnel-shaped, 4-lobed. Stamina 4, exserted or inclosed. Stigma bifid or univided. Capsule crowned by the limb of the calyx, 2-celled, opening from the apex at the dissepiment when mature, but without any free dissepiment; coccce or nuts 1-seeded, opening by a longitudinal chink inside. Seeds ovate-oblong, marked in front by a longitudinal furrow.—*Herbs or subshrubbs, nearly all natives of the hotter parts of America.* Stems and branches usually tetragonal. Leaves opposite, or the young ones are disposed in fasicles in the axils of the old ones, and therefore appearing verticillate. Stipulas joined with the petioles, more or less sheathing, fringed by many bristles. Flowers disposed in verticillate heads in the axils of the leaves, or on the tops of the branches, rarely cymose or corymbose, small, white, rather blue.

§ 1. Flowers disposed in axillary and terminal verticillate heads: the terminal heads are girded by floral leaves, which are longer than them.

* Teeth of calyx only 2.

1 B. *Globularioides* (Cham. et Schlecht. in Liñanea. 3. p. 312.) plant shrubby, erect, glabrous; branches somewhat tetragonal; leaves narrow-lanceolate, acuminate, with scabrous margins, paler beneath; bristles of stipulas longer than the sheath; heads of flowers globose, terminal or lateral; calyx bidentate; genitals exserted. ♂. ♀. Native of equinoivial Brazil. *Spermacoce* fruticos, Polh, in litt. Heads of flowers a little larger than peas. Flowers 3 times the size of those of *B. verticillata*, white. Capsule glabrous; nuts opening but slowly.

**Globularia-leaved Borreria.** Shrub 1 to 1 ½ foot.


♂. ♀. Native of Brazil, in dry places at Rio Janeiro.

**Whorled-flowered Borreria.** Fl. June, July. Clt. 1732. Sh. 2 to 3 feet.

3 B. *Konautilana* (Cham. et Schlecht. in Liñanea. 3. p. 311.) plant suffruticose, glabrous; branchlets tetragonal; leaves oblong-linear, bluntish, mucronate, opposite, but appearing verticillate from clusters of young ones in their axils; bristles of stipulas shorter than the sheath; whorls of flowers globose, terminal, and axillary; capsule downy, crowned by the bidentate calyx. ♂. ♀. Native of Senegal and Gambia; and probably

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**CLXXXIV. OCTODON.** Liñanea. 3. p. 310. Spreng. neue entd. 2. p. 144.
RUBIACEÆ. CLXXXV. Borreria.


Kohaut's Borreria. Fl. Ju. Aug. Ct. 1732. Shrub 1 to 2 ft. B. stricëta (Meyer, essq. p. 83. t. 1. f. 1-3. fr.) stems herbaceous, suffruticose, rather compressed, tetragonal; branchlets dichotomous; leaves lanceolate, acutely mucronate, glabrous, with serrulate margins; stipulas hairy, ciliate, with bristles at the apex; heads or whorls of flowers terminal and axillary; capsule scabrous from dots, glabrous, obtuse, crowned by the 2 subulate teeth of the calyx. S. S. Native of Porto-Rico, where it was collected by Ledru and Wydler. Flowers white. Nearly allied to B. verticillata, but differs in the capsule being twice longer. Lower leaves almost lanceolate-linear, rather scabrous on the margins at the top; upper ones usually with revolute margins.

Straight Borreria. Shrub 1/2 to 1 foot. B. dichotómia (Cham. et Schlecht. in Linnaea. 3. p. 348.) stem suffruticose, rather compressed, tetragonal; branchlets dichotomous; leaves lanceolate, acutely mucronate, glabrous, with serrulate margins; stipulas hairy, ciliate, with bristles at the apex; heads or whorls of flowers terminal and axillary; capsule scabrous from dots, glabrous, crowned by the 2 ovate-lanceolate teeth of the calyx. S. S. Native of Peru, near Ayavaca, (Diodia glabra, Willd. herb.), and on Mount Tanqueragua (Knöxia dichotóma, Willd. herb.). Spermacéè dichotóma, H. B. et Kunth, nov. gen. amer. 3. p. 348. Flowers white.

Dichotomous-branched Borreria. Shrub 1 to 2 feet. B. podoce'phala (D. C. prod. 4. p. 542.) stem branched, tetragonal, glabrous, rather downy at the nodi; leaves linear, glabrous, opposite, or falsely verticillate, almost veinless, with revolute margins; bristles of stipulas 5-7, longer than the sheath, which is downy; heads of flowers globose, and if as they were pedunculate, in consequence of the lateral branches being naked, except the 4 floral leaves surrounding each head; capsule oblong, glabrous, crowned by the 2 subulate calyceal teeth. S. S. Native of Mexico or of Cuba. This species differs from all the others in the heads of flowers being on long tetragonal peduncles, which are 1-2 inches long, naked and glabrous, sometimes rising from the forks of the branches, then solitary, and sometimes from the axils of the leaves, then opposite.

Stalked-headed Borreria. Pl. 1 foot. B. dístáns (Cham. et Schlecht. in Linnaea. 3. p. 340.) stems herbaceous, erect, tetragonal, having the angles becset with retrograde prickles; leaves lanceolate, glabrous, with serrulate scabrous margins; stipulas hairy, ciliate with bristles; whorles of flowers capitately remote; capsule oblong, villous at the top, crowned by the 2 subulate teeth of the calyx. S. S. Native of Mexico. Spermacéè distáns, H. B. et Kunth, nov. gen. amer. p. 344. Spermacéè spiculátá, Willd. herb. Spermacéè acúlátá, Schlecht. in Schultes, syst. 3. p. 531. Flowers white. Very nearly allied to B. verticillata. Corolla funnel-shaped, a little longer than the calyx.

Distant-whorled Borreria. Pl. 1 foot. B. densíflora (D. C. prod. 4. p. 542.) stem erect, tetragonal, glabrous; leaves linear, with revolute margins, 1-nerved, glabrous; bristles of stipulas 7-9, longer than the sheath; whorles of flowers dense, sessile, 2-3 axillary, and the terminal one globose, and larger than the axillary ones; floral leaves 1-6, reflexed; capsule linear-oblong, villous at the apex, crowned by the 3 subulate calyceal teeth. S. S. Native of Jamaica. Spermacéè longifólia, L'Hérit. herb. but not of Aubl. Superior leaves 2 inches long, and 1-2 lines broad. Corollas small, glabrous.

Dense-flowered Borreria. Shrub 1 to 2 feet. B. spínösa (Cham. et Schlecht. in Linnaea. 3. p. 340.) stem erect, herbaceous, simple, glabrous, somewhat tetragonal, with the angles a little mucrinated; leaves lanceolate-linear, acuminate, attenuated at the base, glabrous, with roughish margins: the mid-rib drawn out into a pricklike-formed tubercle at the apex; stipulas membranous, bristly; whorles of flowers capitately axillary ones 2-3, and the terminal one surrounded by a 8-leaved involucreum; capsule oblong, downy at the apex, crowned by the 2 subulate teeth of the calyx. S. S. Native of Jamaica, in filds; and of Martinique and Mexico. Spermacéè spinósa, Lin. spec. 148. exclusive of the syn. of Jacq. Swartz, obs. p. 45. Flowers white.

Spiny-leaved Borreria. Pl. 1 ft. B. neesi'ana (D. C. prod. 4. p. 542.) glabrous, erect; stems herbaceous, tetragonal; leaves lanceolate, acute, scabrous on the mid-rib and margins; bristles of the stipulas 5, ciliated; whorles of flowers white, one of them terminal; calyceal teeth 2, scutaceous; throat of the corolla closed with hairs. S. S. Native of Brazil. Spermacéè linifólia, Nees. herb. bol. p. 49. but not of Vahl. Spermacéè neesi'ana, Schultes, mant. 3. p. 289. Flowers white. The same as B. Bogotá'ensis, according to Sprengel, but doubtful according to Cham. et Schlecht. in Linnaea. 3. p. 311.

Nees's Borreria. Pl. 1 foot. B. repens (D. C. prod. 4. p. 542.) stems herbaceous, creeping, dichotomous, low, tetragonal, with the angles winged and pilose, and the sides striated; leaves oblong, acute, attenuated at the base, glabrous; bristles of stipulas shorter than the sheath, which is villous; heads of flowers roundish, sessile in the forks, and at the tops of the branches, and nearly in the axils of all the leaves; capsule ovate, rather villous, crowned by the 2 acute teeth of the calyx. S. S. Native of the Mauritius. Bigelowia parvifóra, Sieb. fl. marr. exsic. no. 144. but not of Spreng. Flowers white.

Creeping Borreria. Pl. creeping. B. mínima (D. C. prod. 4. p. 542.) plant glabrous, herbaceous, small, sparingly branched; stems tetragonal; leaves oblong-linear, acuminate at both ends; bristles of the stipulas rather shorter than the sheath; heads of flowers terminal, involucrated by 4 leaves; calyceal teeth 2, subulate. S. S. Native of Brazil, where it was collected by Pohl. Herb a finger high, erect, or ascending. Corolla and mature fruit unknown.

Least Borreria. Pl. 1/2 foot.

** Teeth of the calyx 4.**

B. radí'ya (D. C. prod. 4. p. 542.) stem herbaceous, erect, branched, terete, hispid from spreading hairs; leaves oblong-linear, acuminate, glabrous, glaucous, smooth, margined by a vein, 1-nerved; bristles of the stipulas longer than the sheath, which is villous; heads of flowers terminal, depressed, girded by 12-16 radiant floral leaves; capsule oblong, downy at the apex, crowned by the 4 short, linear-subulate teeth of the calyx. S. S. Native of Senegal, in sandy places, at Gala and Walo. Spermacéè radí'ya, Siebl. pl. sen. exsic. no. 8. Flowers white. A very distinct species, agreeing in habit with B. spinósa. Keel or mid-rib of the leaves smooth, and much exserted.

Ray-involved Borreria. Pl. 1 foot. B. aspe'élula (D. C. prod. 4. p. 543.) stem herbaceous, erect, glabrous, rather tetragonal; leaves oblong-linear, acute, glabrous, having the keel rather prickly from small stiff teeth; bristles of the stipulas longer than the sheath, which is membranous; heads of flowers many; verticillate; calyceal teeth 4, 1 or 2 of which are often deciduous, shorter than the ovary, which is rather pilose. S. S. Native of Brazil, about Bahia, in dry pastures, where it was collected by Salzmann.

Rugish Borreria. Pl. 1 foot.

B. subúla'ta (D. C. prod. 4. p. 543.) plant herbaceous,
glabrous, erect, sparingly branched; stem tetragonal; leaves linear-subulate, with rather scabrous margins; bristles of the stipulas the length of the sheath; heads of flowers terminal, girded each by an erect 8-leaved involucrem; corolla tubular, glabrous; anthers exerted; teeth of the calyx 4, lanceolate, unequal, 2 of which are one half smaller than the other. C. S. Native of Mexico. Spermacéco subulátá, Pav. ined. Flowers white.

Subulate-leaved Borreria. Pl. 1 foot.

16 B. crávilíma (D. C. prod. 4. p. 543.) plant glabrous, herbaceous, slender, sparingly branched; branches rather tetragonal; leaves linear-subulate; stipulas lanceolate, undivided, or furnished with 5 bristles; heads of flowers terminal, on long peduncles, girded by 2-leaved involucre. C. S. Native of Brazil, where it was collected by Pohl. Flowers and fruit hardly known. Habit very much like that of B. subulátá.

Very slender Borreria. Pl. ½ to 1 foot.

17 B. pusílla (D. C. prod. 4. p. 543.) stem herbaceous, slender, simple or branched, tetragonal, hispid under the nodi, the rest glabrous; leaves linear-lanceolate, acute, glabrous, pale beneath; bristles of the stipulas exceeding the whorles; heads of flowers small, 2-3 of them axillary, and one terminal; involucra 4-6-leaved; capsule ovate, hairy, crowned by the 3-4 linear-subulate teeth of the calyx. C. S. Native of Nipaul, in the valley. Spermacéco pusílla, Wall. fl. ind. 1. p. 379. Bigelowia pusílla, Spreng. syst. 1. p. 405. Spermacéco tríandrá, Ham. ex D. Don, prod. fl. nep. p. 134. Flowers white. Very like B. ténera and B. pámíta, but differs from them in the calyceye teeth being usually 3.

Small Borreria. Pl. ½ to ½ foot.

18 B. ténera (D. C. l. c.) stem herbaceous, erect, branched, tetragonal, slender, hardly scabrous; leaves linear, acute, glabrous; bristles of stipulas shorter than the sheath, which is glabrous; whorles of flowers dense, 3 of them axillary, and 1 terminal, the latter larger, sessile, and involucred by 4-6 leaves; capsule ovate, smooth, crowned by the 3-4 linear-subulate calyceye teeth. C. S. Native of Brazil. Spermacéco ténera, Pohl, in litt. Flowers white. Very nearly allied to B. pámíta, but differs in its smoothness, and in the axils of the leaves being nearly all floriferous, and in the leaves being almost always 3 times shorter.

Tender Borreria. Pl. ½ foot.

19 B. fúmíla (D. C. l. c.) stem herbaceous, slender, tetragonal, beset with retrograde plí; leaves linear, acuminate, with revolute margins, scabrous above, and glabrous beneath, 1-nerved; bristles of the stipulas longer than the sheath, which is scabrous; heads of flowers terminating the stem and axillary branches, rarely axillary; involucra 6-8-leaved; capsule ovate, downy at the apex, crowned by the glabrous, subulate teeth. C. H. Native of Brazil, where it was collected by Pohl. Herb with a slender root, and a stem 6 inches high. Superior leaves 15 lines long, and a line broad.

Dwarf Borreria. Pl. ½ foot.

20 B. téntémus (D. C. l. c.) stem slender, tetragonal, erect, sparingly branched, downy, especially on the angles; leaves lanceolate-linear, acute, downy on both surfaces, scabrous; bristles of the stipulas stiff, a little longer than the sheath, which is villous; whorles of flowers capitate, 1-2 of them axillary, and 1 terminal; involucra 2-leaved; calyceye teeth 4, glabrous, unequal; anthers inclosed. C. F. Native of Brazil, where it was collected by Pohl. Spermacéco téntémus, Pohl, in litt. Herb 6-7 inches high, indurated at the base. Fruit unknown, but from habit it is judged to be a species of Borréria.

Slender-stemmed Borreria. Pl. ½ foot.

21 B. cépuláris (D. C. l. c.) stem herbaceous, erect, simple, rather angular, downy, and rather scabrous; leaves oval-oblong, acuminated, petiolate, glabrous; upper stipulas broad-concave, cup-shaped, furnished with 9-10 bristles on each side, which are shorter than the sheath; heads of flowers 2, 1 axillary, and 1 terminal and larger; capsule oval, downy at the apex, crowned by the 4 oblong teeth of the calyx. C. F. Native of Brazil, where it was collected by Pohl. Spermacéco pisílla, Pohl. in litt. but not of Wall. Herb 5-6 inches high. Flowers densely crowded in the cups formed by the stipulas, white.

Capsular-stipulated Borreria. Pl. ½ foot.

22 B. ocyoides (D. C. prod. 4. p. 544.) stem herbaceous, branched, tetragonal, with the angles hairy and winged; leaves oval, tapering into the stem and axillary branches; bristles of the stipulas few, rather shorter than the sheath; whorles of flowers axillary, sessile, dense; capsule small, ovate, crowned by the 2-4 small teeth of the calyx. C. H. Native of the East Indies. Spermacéco ocyoides, Burm. fl. ind. 34. t. 13. f. 1. but the angles of the stems are said to be glabrous.

Basil-like Borreria. Pl. ½ foot.

23 B. ramíspadás (D. C. prod. 4. p. 544.) smoothish; stem herbaceous, dichotomous, tetragonal; leaves oval-oblong, acute at both ends; bristles of the stipulas membranous, pale, longer than the sheath; whorles of flowers capitate in nearly all the axils, and on the tops of the branches, equal in size, sessile, girded by 2-4 leaves; capsule small-ovate, smooth, crowned by the 4 short subulate calyceye teeth. C. F. Native of the West Indies, as of Porto Rico, Guadaloupe, and Sperm. áspéra from Hispaniola, Spreng. syst. 1. p. 401. ex herb. Balh. Perhaps Spermacéco lévis, Linn. is identical with this plant. This species, with many others, is very intricate, but is nearly allied to B. ramíspadás. It differs from B. áspéra. It is another allied to B. ramíspadás. It differs from B. áspéra. It is the much less scabrous stem, in the shorter leaves, and in the smaller whorles of flowers. Flowers white. Bigelowia áspéra, Sieb. is a distinct plant from this. Bristles of the stipulas pilose.

Small-flowered Borreria. Pl. 1 to 2 feet.

25 B. f. álátá (D. C. prod. 4. p. 544.) stems herbaceous, diffuse, radicant, branched, glabrous, tetragonal, with winged angles; leaves smooth, not acuminate; bristles of the stipulas longer than the sheath; heads of flowers terminal, girded by 4 leaves; style bibracteolate. C. F. Native of French Guiana, at the river Aroura. Spermacéco álátá, Aubl. ann. 1. p. 60. t. 22. f. 7. Flowers white. Fruit divisible into 2, 1-seeded, dehiscent nuts. It is nearly allied to B. bartlingiana, but the structure of the fruit and flowers is different. Superior leaves sessile, rather cordate at the base. Stamens didymous, 2 of which are shorter than the corolla. Corollas rather large, blue.

Winged-stemmed Borreria. Pl. creeping.

26 B. bartlingiána (D. C. prod. 4. p. 544.) stem herbaceous, diffuse, radicant, tetragonal, with winged ploce angles,
and the sides between the wings are lined with parallel veins; leaves oval, acutish, beset with bristle-like hairs on both surfaces; whorles of flowers sessile, glomerate, axillary ones numerous, and one terminal, girded by 4 leaves; capsule nearly globose, pilaose, crowned by the 4 lanceolate teeth of the calyx. F. Native of Mexico. Bigelovia alata, Bartl. in herb. Hanke, but differs from B. alata in the wings of the stem being hispid, in the leaves being hispid and much less acute, in the axillary whorles, &c.

Bartling’s Boreria. Pl. creeping.

27 B. Tampica (D. C. L. c.) plant glabrous, diffuse, branched, herbaceous; branches tetragonal, with smooth angles; leaves oblong-linear, acute, 1-nerved, scabrous on the mid-rib, but not on the margins; whorls of flowers capitulate from nearly all the axils, and from the tops of the stems, sessile, involucrated by 4-8 leaves; capsules small, ovate, glabrous, crowned by the 4 short subulate teeth of the calyx. Y. G. Native of Mexico, at Tampico de Tamaulipas, where it was collected by Berlandier. Very nearly allied to B. parejiflorus, but the nuts of the fruit are dissimilar, one of them bearing 3 of the calycine teeth, and the other 1.

Tampico Boreria. Pl. 1 foot.

28 B. Borreria (D. C. L. c.) glabrous; stem diffusely, dichotomous, rather tetragonal; leaves linear, with revolute margins; stipules setiform; whorles of flowers capitate, axillary, and terminal, globose, rather compound; floral leaves 4-5, reflexed; capsule oval, smoothish, crowned by the 4 short, subulate teeth of the calyx.—Native of Brazil, where it was collected by Pohl. Spermacéæa diffusæ, Pohl, in litt. but not of Kunth. Corollas small, smooth, white. ? Capsule small, membranous, whitish.

Diffuse Boreria. Pl. diffuse.

29 B. Nettosifolia (D. C. L. c.) stem slender, tetragonal, rather hairy; leaves oblong-linear, almost sessile, acute, scabrous above and on the margins, but downy beneath; bristles of the stipulae downy, a little longer than the sheath, which is villous; whorls of flowers capitulate, terminal ones on long peduncles, a very few axillary; lobes of the calyx 4, narrow, acute, unequal, glabrous.—Native of Brazil, where it was collected by Pohl, in litt. but not of Ruiz et Pav.


30 B. discolor (Bartl. in herb. Hænke, under Bigelovia, ex D. C. L. c. 1. p. 545.) stem herbaceous, branched, quite glabrous, tetragonal, having the wings angled a little; leaves oval-oblong, or oblong-lanceolate, acute, scabrous above, and clothed with yellowish down beneath; bristles of the stipulae many, longer than the leaves; whorls of flowers axillary, and terminal, small, girded by 2 leaves; capsule nearly globose, rather downy, crowned by the 4 lanceolate teeth of the calyx.—Native of the Island of Manilla, near Sorzogon, where it was collected by Hænke.

Discoloured-leaved Boreria. Pl. 1 to 2 feet.

31 B. ? Cornifolia (D. C. L. c. 4. p. 545.) stem herbaceous, erect, tetragonal, tomentose; leaves petiolate, oblong, acute, with scabrous margins, and having the veins downy beneath; stipulae villous, of many bristles; whorls of flowers dense, 1 axillary, and 1 terminal, the latter girded by 4 leaves; calyx villous, with 4 equal teeth; anthers exerted. G. F. Native of Brazil. Spermacéæa cornifolia, Fisch. in Nees. hor. berl. p. 50. Link. Enum. herb. berl. 1. p. 152. Cham. et Schlecht. Linnaea. 3. p. 313.

Allied to B. brechystemonides, but the fruit is unknown.


32 B. ? Wydecriana (D. C. L. c.) stem herbaceous, ascending, elongated, rather tetragonal, with the angles rather hairy; leaves elliptic-oblong, attenuated at both ends, glabrous above, and downy on the nerves beneath; bristles of the stipula 5, shorter than the sheath; whorls of flowers 2-3, axillary, distant, almost immersed in the stipular sheaths, and terminal, pedunculate, larger than the axillary ones; involucrum of 4 spreading leaves.—Native of Porto Rico, where it was collected by Wydler. Flowers while young densely crowded, intermixed with a number of bristles. Very like the following and preceding.

Wydler’s Boreria. Pl. ascending.

33 B. brachystemonides (Cham. et Schlecht. in Linnaea. 3. p. 314.) stems suffruticose at the base, erect, tetragonal, scabrous from retrograde hairs; leaves elliptic-lanceolate, acute, scabrous on both surfaces, and on the margins when young, but glabrous above in the adult state; bristles of the stipulae longer than the sheath, which is villous; heads of flowers terminal, girded by 4 leaves; capsule oblong-conical, villous upwards, crowned by the 2 acute teeth of the calyx, and 1-2 accessory ones. G. S. Native of the south of Brazil. Flowers white?

Brachystemon-like Boreria. Shrub 1 to 2 feet.

34 B. capitella (Cham. et Schlecht. in Linnaea. 3. p. 319.) stems fistular; leaves petiolate, ovate, lined, acuminated, rather pilaose on both surfaces; bristles 2 to the stipulae 4-7; whorles of flowers axillary and terminal; capsules oblong, elliptic, hairy at the top, crowned by the teeth of the calyx, which are 3 times shorter than it.—Native of New Granada, near Santa Fe de Bogota. Spermacéæa capitellata, Willd. in Róm. et Schultes, syst. 3. p. 530. H. B. et Kunth, nov. gen. amer. 3. p. 349. but not of Sprengel. Flowers white. ? Said to be allied to B. scabiosoides. Involucrum clothed with pili.

Small-headed Boreria. Pl. 1 foot.

35 B. scabiosoides (Cham. et Schlecht. in Linnaea. 3. p. 318.) stems fistular, terete, glabrous; leaves lanceolate, acute, on short petioles, with a few oblique veins, and scabrous margins; teeth of the stipulae 3-5, ending in a bristle each, shorter than sheath; heads of the flowers terminal, hemispherical, involucrated by 2-6 leaves; capsule glabrous, oblong, crowned by the 2-4 hairy teeth of the calyx.—Native of equinoctial Brazil. The part of the involucrum girding the flowers is pilose both inside and outside.

Scabious-like Boreria. Pl. 3/4 foot.

36 B. capitella (D. C. L. c. 4. p. 545.) stems shrubby at the base, prostrate; branches ascending, rather tetragonal, villous; leaves lanceolate, with scabrous margins, smoothish on both surfaces; bristles of the stipulae longer than the sheath; heads of flowers 2-3, one axillary, and the other terminal and larger, involucrated by 4 leaves; corolla glabrous, tubular; anthers exerted; capsule glabrous, turbinate, crowned by the 4 lanceolate teeth of the calyx. G. S. Native of Peru, on the declivities of the mountains. Spermacéæa capitata, Ruiz et Pav. fl. per. 1. p. 61. t. 91. f. b. Branches purplish. Leaves sessile. Flowers white; anthers reddish.

Capitale-flowered Boreria. Shrub 1 foot.

37 B. Aturensis (Cham. et Schlecht. in Linnaea. 3. p. 345.) plant shrubby, erect; branchlets tetragonal, roughish; leaves narrow-linear, glabrous, with serrulate margins; stipulae hairy, ciliated with bristles; heads of flowers terminal, rarely lateral; capsule hairy, oblong, crowned by the 4 linear-subulate, ciliated teeth of the calyx. G. S. Native on the banks of the Orinoco, near Atures. Spermacéæa Aturensis, H. B. et Kunth, nov. gen. amer. 3. p. 345. Flowers white. Allied to B. verticillata. Corolla tunnel-shaped, a little longer than the calyx.

Atures Boreria. Shrub 1 to 2 feet.

38 B. erys goofy (Cham. et Schlecht. in Linnaea. 3. p. 316) glabrous; stems herbaceous, erect, tetragonal, almost simple; leaves linear, acute, with revolute margins; bristles of the stipulae 5, longer than the sheath; whorls of flowers nearly globose, terminal and axillary; capsule downy, elliptic, crowned...
by the nearly equal teeth of the calyx, and with a small accessory tooth between each of these.  

2. S. Native of the south of Brazil and Buenos Ayres. Heads small. Leaves an inch long, and a line broad. Seed oblong, granular.

*Eryngio-like* Borreria. Pl. 1 foot.

39 B. *saturefolia* (Cham. et Schlecht. in Linnae. 3. p. 313.) stem shrubby, erect, smooth; branchlets tetragonal; leaves linear-lanceolate, acute, glabrous, with somewhat revolute edges; bristles of the stipulas rather downy, longer than the sheath; whorls of flowers semi-globose, axillary, and terminal, the latter the largest; capsule glabrous, crowned by the 4 elongated calycine teeth, which are furnished with short pili in the recesses. *S.* Native of equinoctial Brazil. Said to be allied to *B. saturefolia*, but the flowers are smaller, the involucral leaves are larger, and the stature is smaller, &c.

*Savory-leaved* Borreria. Shrub 1 foot.

40 B. *suaveolens* (Meyer, ess. p. 81. t. 1.) glabrous; stem shrubby, erect, much branched; branchlets slightly tetragonal; leaves linear, pungent, opposite, and falsely verticillate; bristles of the stipulas stiff, rather shorter than the sheath; whorls of flowers globose, a few axillary, and a larger terminal one, which is involucreted by 8 leaves; corolla glabrous, with acuminate lobes; capsule ovate, glabrous, crowned by the 4 teeth of the calyx, and 4 small accessory teeth in the recesses among the others. *S.* Native of Dutch Guiana, in shady places, at Arrowsichkreek. Bigelowia suaveolens, *Spreng.* syst. 1. p. 494, exclusive of the variety from Porto Rico, and probably that from Brazil. Corolla funnel-shaped, ex Meyer involucres exerted.

*Sweet-scented* Borreria. Shrub 1 to 2 feet.

41 *sideritis* (Cham. et Schlecht. in Linnae. 3. p. 201.) plant scabrous from hairs; stem tetragonal, having the angles a little winged; leaves ovate-oblong, sessile, marked by 4 nerves on both sides; bristles of the stipulas shorter than the sheath, which is pilose; whorls of flowers axillary, at length globose; lobes of the corolla bearded below; capsule pilose, ovate, crowned by the 4 teeth of the calyx. *S.* Native of equinoctial Brazil. Plant probably procumbent.

*Sideritis-like* Borreria. Pl. procumbent.

42 B. *scaenens* (D. C. prod. 4. p. 546.) stem shrubby at the base, ascending, weak, rather scantily branched; branches tetragonal, striated, rather scabrous along the edges; leaves ovate, glabrous, tapering into the petioles a little; bristles of the stipulas few, shorter than the sheath; heads of flowers small, terminal, girded by 4 leaves; capsule oval, glabrous, crowned by the 4 teeth of the calyx. *S.* Native of Guadaloupe, where it was collected by Bertero. Diâdia sarmentosâs, from Guadaloupe, *Spreng.* syst. 7. p. 405. Spermacécœa scænêns, *Gmel.* syst. 235.—Sloam. jam. hist. 1. t. 28. f. 4. A. It differs from *Diâdia sarmentosâs*, in the leaves being glabrous and more ovate, in the heads being terminal, and in the fruit being dehiscent.

*Climbing* Borreria. Shrub cl.

43 B. *affinis* (D. C. prod. 4. p. 546.) stems herbaceous, tetragonal, having the angles scabrous from pili; leaves oblong-lanceolate, having the edges tapering to the base, scabrous from scattered pili above, and more so along the veins beneath; bristles of the stipulas yellow, 7-9, longer than the sheath; whorls of flowers sessile, axillary, and terminal, the latter involucreted by 2-4 leaves; capsule oval, glabrous, crowned by the 4 subulate teeth of the calyx, and 4 smaller subulate accessory ones in the recesses between the others.—Native of Brazil, where it was collected by Pohl. Spermacécœa affinis, Pohl, in litt.

*Allied* Borreria. Pl. 1 foot.

44 B. *microphylla* (D. C. prod. 4. p. 436.) glabrous; stems herbaceous, ascending, tetragonal; leaves lanceolate-linear, acute; bristles of the stipulas 7-9, longer than the sheath; whorls 10-12-flowered in nearly all the axils, and at the tops of the stem and branches, all equal in size, the latter girded by 4-6 leaves; capsule oval, downy, crowned by the 4 subulate teeth of the calyx.—Native of Brazil, where it was collected by Pohl. Spermacécœa microphylla, Pohl, in litt. Leaves 7-8 inches long, and 1½ to 2 broad.

*Small-leaved* Borreria. Pl. ascending.

45 B. *rubro-stipulata* (D. C. l. c.) stem herbaceous, straight, almost simple, tetragonal, having the angles beset with retrograde villi; leaves oblong-linear, acute at both ends, opposite, or falsely verticillate; bristles of the stipulas 7-9, stiffish, coloured, glabrous, longer than the sheath, which is downy; whorls of flowers capitata, 3-4 axillary, and one terminal, the latter the largest, and girded by 4 leaves; teeth of the calyx 4; anthers exerted. *S.* Native of Brazil, where it was collected by Pohl. Spermacécœa rubro-stipulata, and Sperm. fasciculata, Pohl, in litt. Spermacécœa Brasilíciensis, *Spreng.* syst. 1. p. 402. Fruit unknown.

*Red-stipuled* Borreria. Pl. ½ to 1 foot.

46 B. *elongata* (D. C. prod. 4. p. 547.) stem herbaceous, branched; branches elongated, hairy, terete; leaves oblong-lanceolate, acuminate, downy on both surfaces; bristles of the stipulas longer than the sheath, which is villous; whorls of flowers capitata, 1-2 axillary, and a nearly globose terminal one, which is involucreted by 5-6 leaves; teeth of the calyx 4, acute, short.—Native of Brazil, where it was collected by Pohl. Spermacécœa verticillata, Pohl, in litt. Branches a foot high. Leaves usually in fascicles in the axis. Fruit unknown, and therefore the plant is referred to *Borreria* from habit only.

*Elongated*-branched Borreria. Pl. 1 to 2 feet.

47 B. *ferruginea* (D. C. prod. 4. p. 547.) stem herbaceous, lard, erect, branched; branches tetragonal, hairy; leaves oblong, acute, obliquely 3-4-nerved, scabrous above, and pale beneath and scabrous on the nerves from hairs; bristles of the stipulas the length of the sheath; whorls of flowers globose, terminal, and axillary; capsule downy, crowned by the 4 subulate teeth of the calyx. *S.* Native of Brazil, in elevated pastures in the provinces of Minas Geraes and St. Paul. Spermacécœa ferruginea, *St. Hil.* pl. usuul. bras. no. 15. t. 13. Spermacécœa globosa, Pohl, in litt. The hairs on the branches and nerves of the leaves are rust coloured. Corollas rose-coloured, violaceous, or white, with the lobes pilose at the apex. Heads of flowers one half larger than those of *B. verticillata*, which it very like. The plant is called *Poaiga* and *Poaiga do praya* at Cape Frio. The roots are of a brown colour, and are used as *Ipecacuanha*.

*Rusty* Borreria. Pl. 1 to 2 feet.

48 B. *spineca* (D. C. l. c.) stem suffruticos at the base? branched, terete, glabrous; leaves oblong-linear, acute, scabrous above, pale and villous beneath; bristles of the stipulas longer than the sheath, which is villous; heads of flowers globose, terminal, and axillary; capsule oblong, glabrous, crowned by the 4 subulate ciliated teeth of the calyx.—Native of Cayenne. Very like *B. ferruginea*, but differs from it in the branches being smoothish, in the leaves being less nervèd, in the involucral leaves being larger and reflexed, and in the capsules being twice the length.

*Spherical*-headed Borreria. Shrub 1 to 2 feet.

49 B. *luteascens* (D. C. prod. 4. p. 547.) stem terete, simple, clothed with dense soft hairs, but with retrograde down at the apex; leaves sessile, lanceolate, acuminate, villous on both surfaces, furnished with 4 oblique nerves on each side; bristles of the stipulas stiffish, rufous, much longer than the sheath, which is almost obsolete; whorls of flowers dense, sessile,
1-2 axillary, and a terminal globose one, which is involucreted by reflexed bracteas; capsule oblong, villous at the apex, crowned by the 4 subulate, glabrous teeth of the calyx.—Native of Brazil, where it was collected by Pohl. Spermacoeae nutescens, Pohl, in litt. Allied to B. fessignea. *Luescent Boreria.* Pl. 1 foot.

50. B. *Haekeana* (D. C. I. c.) stem erect, sub-herbaceous, straight, branched, tetragonal, with the angles hairy at the apex; leaves linear, acute, rather scabrous, with rather revolute edges; bristles of the stipulas longer than the sheath; heads of flowers globose, terminal, girdled by 4-leaved reflexed involucra; capsule obovate, roughish, crowned by the 4 lanceolate teeth of the calyx.—Native of Mexico and Peru. Bige- lowia pyrshoideae, Bartl. in Herb. Haeke. Spermacoeae tenior, Pav. ined. but not of Lin. It differs from *B. pellissooides* in the involucretion being reflexed, in the heads being one half larger, in the limb of the calyx being divided into 4 lobes to the base, not to the middle.

*Haeke's Boreria.* Pl. 1 foot.

51. B. *strictissima* (D. C. I. c.) stem and branches straight, tetragonal, clothed with powdery down under the nodi; leaves linear, acute, glabrous, almost veinless, opposite, and in axillary fascicles; bristles of the stipulas 5-7, stiff; longer than the sheath; whorls of flowers capitata, sessile, 1-2 of which are axillary, and a larger terminal globose one, which is girdled by 2-4 leaves; capsule oblong, glabrous, crowned by the 4 short subulate teeth of the calyx.—Native of Brazil, where it was collected by Pohl. Spermacoeae strictissima, Pohl, in litt. Allied to B. *suaveolens,* but differs from that species in the calyx being without accessory teeth. *Corolla unknown.*

*Very straight Boreria.* Pl. 1 to 2 feet.

52. B. *Tenuella* (Cham. et Schlecht. in Linnaea. 3. p. 317.) stem suffruticos at the base, erect, nearly terete, clothed with retrograde adpressed villi; leaves oblong-linear, acuminated, clothed with small down above, and scabrous on the nerves and margins, having a few oblique nerves on both sides; bristles of the stipulas longer than the sheath, which is downy; heads of flowers globose, terminal, surrounded by 4 reflexed leaves; capsules oblong, hairy at top, crowned by the hairy 4-toothed calyx. *S. S.* Native of equinocial Brazil.

*Var. β, augustifolia* (D. C. prod. 4. p. 547.) plant weak; leaves narrow-linear; seeds large of peas; floral leaves spreading.

*Var. γ, lavandulifolia* (D. C. prod. 4. p. 548.) stem at first clothed with fine velvety down, but at length becoming glabrous; leaves linear, with rather revolute margins; bristles of the stipulas very long; heads of the flowers hemispherical, depressed, involucrated by 4 spreading leaves. *S. S.* Native of Brazil, where it was collected by Pohl. Spermacoeae lavandulifolia, Pohl, in litt. *Weak Boreria.* Shrub ½ to 1 foot.

53. *Linoides* (D. C. prod. 4. p. 438.) quite glabrous; stem suffruticos at the base, erect; branches tetragonal; leaves linear, acutish, with revolute edges; stipulas ending in 1-3 stiff, setaceous points; axillary heads few, or wanting, and 1 terminal and sub-globose, the latter involucrated by 2-4 reflexed floral leaves; corolla glabrous; capsule oval, glabrous, crowned by the 4 short teeth of the calyx. *S. S.* Native of Brazil, where it was collected by Pohl. Spermacoeae Linoides, Pohl, in litt. Anthers exserted.

*Flax-like Boreria.* Shrub 1 foot.

54. B.? *Puellioidea* (H. et Kunth, nov. gen. amer. 3. p. 346. t. 278. under *Spermacoeae*) stem suffruticos, erect, tetra- gonal, branched, scabrous from retrograde bristles; leaves linear-lanceolate, hairy on both surfaces, with serrately scabrous edges; bristles of stipulas longer than the sheath; heads of flowers terminal, involucrated by 6-8 radiant floral leaves; calyx funnel-shaped, 4-cleft to the middle. *S. S.* Native of Mexico, near Ario. Fruit unknown, but from habit it is evidently a species of *Borriaea.* Very nearly allied to *B. strictissima* and *B. Haenkeana.* It differs from all the rest of the species in the calyx being divided to the middle.

*Flavouri-Borrea.* Shrub 1 to 2 feet.

55. B. *Flavescens* (D. C. prod. 4. p. 548.) plant diffuse, quite glabrous, suffruticos at the base; branches tetragonal; leaves oblong, acute, attenuated at the base; bristles of stipulas 3-5, longer than the sheath; axillary whorls of flowers few, and one terminal and larger than the axillary ones, the latter involucrated by 2-4 floral leaves; capsule oval, crowned by the lanceolate teeth of the calyx. *S. S.* Native of Brazil, where it was collected by Pohl. Spermacoeae flavescens, Pohl, in litt. The whole herb is yellowish. The nuxs of the immature fruit appear almost indeliscent; it is, therefore, perhaps a species of *Diosia,* with the habit of *Borriaea.*

*Yellowish Borrea.* Shrub diffuse.

56. B. *Scabra* (D. C. I. c.) stem erect, tetragonal, scabrous on the angles; leaves lanceolate, acute, with 4 oblique nerves on both sides, scabrous above, and pilose on the nerves beneath; bristles of stipulas 5, stiffish, longer than the sheath; whorles of flowers capitata, sessile, terminal, and axillary, approximate; corolla glabrous; capsule oblong, glabrous, crowned by the 4 subulate teeth of the calyx.—Native of Brazil, where it was collected by Pohl. Spermacoeae scabra, Pohl, in litt. Corollas one half smaller than in *B. asclepiadea.*

*Scabrosa Borerea.* Pl. 1 to 2 feet.

57. B. *Asclepiadea* (Cham. et Schlecht. in Linnaea. 3. p. 520. under *Bigelowia*) plant smoothish, suffruticos at the base; stems erect, tetragonal, glabrous, but downy at the apex, having the angles winged; leaves lanceolate, acute, glabrous, obliquely 4-nerved on both sides; bristles of stipulas 3, longer than the sheath, the middle one the longest; whorles of flowers loosely capitata, terminal, and axillary; lobes of corolla lanceolate, bearded a little; capsule elliptic, crowned by the 4 elongated, acuminate teeth of the calyx. *S. S.* Native of the south of Brazil. *Stipulas 2, revolute.*

*Var. β, glabriflora* (D. C. prod. 4. p. 548.) stems and corollas glabrous; stipulas furnished with one bristle each. *S. S.* Native of equinocial Brazil.

*Asclepias-like Borrea.* Shrub 1 to 2 feet.

58. B. *Perrottei* (D. C. I. c.) stem herbaceous, tetragonal, with rather rough angles; leaves oblong-lanceolate, acuminate at both ends, scabrous above, and downy beneath, obliquely 4-nerved; bristles of stipulas 9, hispid, longer than the sheath; flowers axillary, vertical, sessile; capsule oblong, compressed, crowned by the 4 lanceolate acute convivertic teeth of the calyx.

—Native of French Guiana, where it was collected by Perrottet. Perhaps *Sperma* áspera, Aubl. guian. 1. p. 59. t. 22. f. 6. not of Vahl, but in the present plant the branches are nearly glabrous.

*Perrottei Borrea.* Pl. 1 foot.

59. B. *Nervosa* (Pohl, in litt. under *Chlorophýnum,* ex D. C. prod. 4. p. 548.) the whole plant clothed with scabrous pubescence; stems erect, tetragonal, striated; leaves lanceolate, or oval-lanceolate, acute, obliquely 4-nerved on both sides; stipulas cleft into 3-5 linear, acute ligule; whorles of flowers axillary and terminal, sessile; lobes of calyx 3-4, longer than the ovarium, lanceolate, acuminate, scabrous, a little toothed at
the apex. 2. S. Native of Brazil, where it was collected by Pohl. Perhaps the same as Spermacoce Poiya, var. pubescens, St. Hil. &c.

Nerved-leaved Boreria. Pl. 1 foot.

60. B. frate'ssis (Pohl. in litt. under Chlorophytum, ex D. C. prodr. 4. p. 548.) quite glabrous; stem tetragonal, erect, almost simple, with the angles a little winged; leaves sessile, obtlong-oblong, acute, with 6-7 prominent veins on each side; stipulas triangular, 3-4-toothed at the apex: teeth acute, middle one the largest; heads of flowers axillary and terminal: lower ones on short peduncles, the rest sessile; lobes of calyx 4, lanceolate-linear; lobes of corolla smooth: stamina exerted. 2. S. Native of Brazil, where it was collected by Pohl. Corolla very like that of B. Poiya when dry. Perhaps the same as Spermacoce gentianoides, St. Hil. pl. us. bras. no. 12. in a note.

Meadow Boreria. Pl. 1 foot.

61. B. Poiya (D. C. prodr. 4. p. 549.) quite glabrous; stem herbaceous, simple, tetragonal; leaves sessile, obtong-eliptic, acute, obliquely 6-nerved on both sides of the mid-rib; stipulas cleft into many long bristles; whorles of flowers capitate, sessile, few axillary, and a larger terminal one; lobes of calyx 4, lanceolate-linear, acute, longer than the ovary; corolla smooth; anthers exerted. 2. S. Native of Brazil, in elevated pastures, in the mine provinces frequent. Spermacoce Poiya, var. a. St. Hil. fig. 12. t. 12. Corolla blue, with the lobes rather hairy above. The roots are white, and are substituted with success in place of Ipecacuanha. The leaves are at first sweet, but afterwards acid, and a decoction of them is used in the cure of cholic.

Poya Boreria. Pl. ½ to 1 foot.

62. B. platyphylla (D. C. prodr. 4. p. 549.) the whole plant is scabrous from stiff hairs; stem herbaceous, erect, simple, tetragonal, having the angles a little winged; leaves lanceolate, acute, attenuated at the base, obliquely 4-5-nerved on both sides; stipulas ending in 5-7 very long scabrous bristles; whorles of flowers sessile, capitulate, many axillary, and one terminal, which is hardly larger than the rest: lobes of calyx 4, lanceolate-linear, subulate, scabrous, longer than the ovary. 2. S. Native of Brazil, where it was collected by Pohl. Spermacoce latifolia, Pohl, in litt. but not of Aubl. Bristles of stipulas 6 lines long. Very nearly allied to B. Poiya, but differs in being hispid. Corolla unknown.

Broad-leaved Boreria. Pl. ½ to 1 foot.

63. B. gymnocephala (D. C. prodr. 4. p. 549.) stem branched, tetragonal, striated, furrowed, and glabrous between the angles: and the angles are winged a little, and rough from being serrulate; leaves ovate, acute, attenuated at the base, glabrous, obliquely nerved; bristles of stipulas 7-9, longer than the sheath; whorles of flowers nearly globose, many axillary, and one terminal, which is naked from the abortion of the floral leaves; teeth of calyx 2-3, conically subulate.—Native of Brazil. This plant is probably generally distinct from Boreria. Stem tetragonal and smooth between the heads. Corollas small. Anthers inclosed.

Naked-headed Boreria. Pl. 1 foot.?

64. B. cyrmosa (Cham. et Schlecht. in Linnae. 3. p. 323.) shrubby, glabrous; branches flexuous, tetragonal; leaves elliptic-lanceolate, acuminate, coriaceous, on short petioles; stipulas interpetiolar, connate, drawn out on both sides into 2 linear segments, the middle segment the longest; heads of flowers 3 at the top of each stem, and the lateral ones pedunculated and almost leafless; capsule smooth, crowded by the 4 lanceolate-linear teeth of the calyx. 2. S. Native of Brazil, in the province of Rio Janeiro. Spermacoce cyrmosa, Spreng. syst. 1. p. 405. Leaves 3 inches long, and one broad. Corollas hairy outside. Inflorescence rather panicked.

Cynose-headed Boreria. Shrub 2 to 3 feet.

§ 2. Flowers solitary, or in axillary fascicles.

65. B. virgata (Cham. et Schlecht. in Linnae. 3. p. 324.) branches fistular, tetragonal, with downy angles; leaves lanceolate, tapering to both ends, glabrous on the margins, and scabrous at the nerves beneath; upper stipulas undivided, the rest downy, and furnished with 5-9 bristles; flowers glomerate in every other axil; capsules downy, elliptic, crowned by the irregularly 2-6-toothed calyx. 2. S. Native of Brazil, about Rio Janeiro. Twiner Boreria. Pl. 11 foot.

66. B. saponerifolia (Cham. et Schlecht. in Linnae. 3. p. 325.) glabrous; stem prostrate, tetragonal, fistular, branched: leaves sessile, acuminate, with scabrous margins; lower ones obovate, upper ones lanceolate: bristles of stipulas 1-3, hairy, the middle one the largest; flowers solitary in every axil; capsules glabrous, oblong-elliptic, crowned by the 2 primary and the 2 accessory teeth of the calyx.—Native of Brazil.

Soap-nort-leaved Boreria. Pl. prostrate.

67. B. A'rida (D. C. prodr. 4. p. 549.) stems simple, erectish, tetragonal, downy, glabrous at the apex; leaves linear, acute, scabrous on the nerve beneath at the apex, with revolute serrately scabrous edges; bristles of stipulas 5, pilifer, longer than the sheath: floral leaves 3, having bristles axial, sessile; capsule oblong-oblong, rather downy, crowned by the 2 subulate teeth of the calyx.—Native of Porto Rico, in arid places by the sea side, where it was collected by Bertero. Bigelovia suaveolens, from Porto Rico, Spreng. syst. 1. p. 416. but is very distinct from the true B. suaveolens.

Arid Boreria. Pl. 1 foot.

§ 3. Flowers disposed in cymes, or corymb-cymes. Floral leaves small. Corollas campanulately funnel-shaped. Seeds marked by a crest inside, probably in all. Perhaps a proper genus.

68. B. ericoides (Cham. et Schlecht. in Linnae. 3. p. 326.) shrubby, erect, glabrous; branchlets tetragonal; leaves linear, blntish, 1-nerved, opposite, or in whorled fascicles: bristles of stipulas 3-5, shorter than the sheath; cymes terminal, 3-4-forked; floral leaves small; capsule cylindrically turbinate, crowned by the 4 elliptic teeth of the calyx. 2. S. Native of equinoctial Brazil. Corolla short, funnel-shaped, glabrous outside, and villous in the throat. Habit of a heath.

Heath-like Boreria. Shrub ½ to 1 foot.

69. B. Anthospermoides (D. C. prodr. 4. p. 550.) glabrous; branches twiggy, tetragonal; leaves linear, acute, nervless; bristles of stipulas many, stiff, longer than the sheath; coryms small, terminal, crowded; lobes of calyx 4, narrow, acute. 2. S. Native of South America, near Santa Fe de Bogota. Habit of B. stipulata, with the inflorescence of B. ericoides. Mature fruit unknown.

Anthospermoid-like Boreria. Pl. 1 foot.

70. B. Eupatoriumoides (Cham. et Schlecht. in Linnae. 3. p. 327.) shrubby, downy; branches bluntly tetragonal; leaves ovate-oblong, acute, lined; bristles of stipulas equal in length to the sheath; cymes terminal, compact, trichotomous; floral leaves small; capsule oblong, downy, crowned by the 4 ovate teeth of the calyx. 2. S. Native of Equinoctial Brazil. Corolla campanulately funnel-shaped, glabrous outside.

Eupatorium-like Boreria. Shrub 1 foot.

71. B. Centranthoides (Cham. et Schlecht. in Linnae. 3. p. 328.) plant herbaceous, smoothish; stem ascending, fistular, bluntly tetragonal; leaves elliptic-lanceolate, attenuated at both ends, rather scabrous; bristles of stipulas 5-7, slightly longer than the sheath; cymes terminal, fastigate, pedunculate; floral leaves small; capsule hairy, obconically cylindrical, crowned by 4 K.
the 4 ovate teeth of the calyx. 2. S. Native of the south of Brazil.

*T. β. angustifolia* (Cham. et Schlecht. l. c.) the whole plant is catkin from hairs; leaves oblong-lanceolate, much more narrow than those of the species. 2. S. Native of the south of Brazil.

*Centranthus-like Borreria.* Pl. 1 to 2 feet.

72 B. *Pohlia'na* (D. C. prod. 4. p. 550.) branches hairy, compressed; leaves lanceolate, acuminate, lined, downy above, and rather hairy on the nerves beneath; bristles of stipules length of sheath, which is villous; corymb tricholomous, terminal, crowded; tube of calyx calyx from hairs; lobes of calyx 4, lanceolate; corolla hairy inside.—Native of Brazil, where it was collected by Pohl. Hydrophyllæus pusillum, Pohl, in litt. Fruit unknown, but the plant has a habit very different from Hydrophyllæus, and appears to be nearly allied to *B. eupatioroides* and *B. centranthoides*.

Pohl's Borreria. Pl. 1 foot.

73 B. *angustiphilia* (Cham. et Schlecht. in Linnaea. 3. p. 356.) plant herbaceous, erect, glabrous; stem tetragonal; leaves lanceolate-linear, with revolute edges, having 2-3 veins on each side of the mid-rib; bristles of stipules twice the length of the sheath, which is downy; cymes tricholomous, capsule obovate-oblong, glabrous, crowned by the 4 lanceolate teeth of the calyx. 2. S. Native of Equinoctial Brazil. Corolla short, glabrous outside.

Narrow-leaved Borreria. Shrub 1 foot.

74 B. *corymbosa* (Batr. in herb. Henke, under Bigelovia, ex D. C. prod. 4. p. 550.) glabrous; stem suffruticoso, tereke, erect; leaves lanceolate, acuminate, lined with veins, which are smooth, as well as the margins; bristles of stipules longer than the sheath; coryms terminal, tricholomous; capsule obovate-oblong, glabrous, crowned by the 4 lanceolate teeth of the calyx. 2. S. Native of Peru, on the mountains. Spermacoæe corymbosa, Ruiz et Pav. fl. per. 1. p. 60. t. 91. f. 5. but not of Lin. Spermacoæe! Ehrh. Pers. ench. 1. p. 134. Hedychiét Spermacoæe, Donn. herb. The leaves of the figure in fl. per. are one half broader than those of the specimens collected by Pavon and Henke.

Corymbose-flowered Borreria. Shrub 1 to 2 feet.

75 B. *verbénoïdes* (Cham. et Schlecht. in Linnaea. 4. p. 550.) plant herbaceous, erect, smoothish; stem tetragonal at bottom; leaves narrow-lanceolate, very acute, scabrous on the margins above; bristles of stipules longer than the sheath; cymes terminal, tricholomous, with a lateral flower; floral leaves small; capsule oblong-cylindrical, glabrous, crowned by the 4 lanceolate teeth of the calyx. 2. S. Native of the south of Brazil. Herb very variable in habit, sometimes glabrous, and sometimes downy. Leaves linear, or lanceolate; lower ones usually ovate, petiolate. Corolla short, tubular, clothed with pruinose down outside.

Terete-like Borreria. Pl. 4 feet.

76 B. *Valerianoides* (Cham. et Schlecht. in Linnaea. 3. p. 335.) plant herbaceous, erect; stem tetragonal, fistular, glabrous at the base, but scabrous from retrograde bristles at the apex; leaves lanceolate, acute; lower ones somewhat spatulate, with the nerves all scabrous from hairs; bristles of stipulas longer than the sheath, which is rather scabrous; cymes terminal, large, tricholomous; floral leaves small; capsule nearly cylindrical, roughed, crowned by the 4 narrow-linear teeth of the calyx. 2. S. Native of Equinoctial Brazil. Corolla glabrous; lobes acute, bearded with stiff hairs at the apex.

Valerian-like Borreria. Pl. 3 to 4 feet.

77 B. *Là'xa* (Cham. et Schlecht. l. c. p. 337.) plant herbaceous, erect; stem fistular, tetragonal, with opposite, spreading branches; leaves lanceolate, attenuated at both the ends, loose, membranous, with scabrous edges; bristles of stipulas glabrous, length of the sheath, which is downy; cymes terminal, somewhat tricholomous; floral leaves small; capsule elliptic, rather truncate, crowned by the 4 narrow, acute teeth of the calyx.

2. S. Native of the south of Brazil.

Loose-leaved Borreria. Pl. 2 feet.

78 B. *Equisetoides* (Cham. et Schlecht. l. c. p. 338.) glabrous; root woody; stems herbaceous, erect, contracted at the nod; blumly tetragonal? leaves narrow-linear, straight, almost filiform, with revolute, scabrous edges; stipulas fuscose, ciliated with bristles; cymes terminal and axillary, crowded. 2. S. Native of the south of Brazil. Habit of the plant elegant; but the fruit being unknown, it is very doubtful whether it belongs to the present genus.

Horse-tail-like Borreria. Pl. 3 feet.

§ 4. *Flora umbellata; umbels cymose or capitata.*

79 B. *umbellata* (Spreng. neu. entd. 2. p. 144.) stem herbaceous, branched, somewhat tetragonal, shining; leaves lanceolate, tapering to both ends, glabrous; stipulas setose, connate at the base; umbels pedunculate, semi-globe, axillary, and terminal; capsule obconical, downy, crowned by the 4 acute teeth of the calyx. 2. S. Native of Brazil, within the tropic. Cham. et Schlecht. in Linnaea. 3. p. 338. Bigelovia umbellata, Spreng. syst. 1. p. 405. Corolla small, white. Herb clothed with very fine down while young.

Umbellate-flowered Borreria. Pl.

80 B. *alaroides* (Cham. et Schlecht. in Linnaea. 3. p. 339.) glabrous; stem herbaceous, erect, fistular, tetragonal, branched at the top; leaves lanceolate, acuminate, on short petioles, rather coriaceous; bristles of stipulas few, shorter than the sheath; cymes umbellate, terminal, downy, with tetragonal branchlets; calyx glabrous, acutely 4-toothed; anthers exerted.—Native of Equinoctial Brazil. Allied to *B. umbellata*, but is twice the size in all its parts. Fruit unknown, therefore the genus is doubtful.

Aralia-like Borreria. Pl. 2 feet.

† Species not sufficiently known.

81 B. *abscédens* (Cham. et Schlecht. in Linnaea. 3. p. 340.) glabrous; stems ascending; leaves linear-lanceolate, acute; stipulas toothed; teeth bristy.—Native of Madagascar. Spermacoæe abscédens, Willd. in Roem. et Schultes, syst. 3. p. 523.

Ascending Borreria. Pl. ascending.

82 B. *vagina'ta* (Cham. et Schlecht. l. c. p. 340.) stem suffruticoso, and is as well as the branches, tereke and glabrous; leaves lanceolate; stipulas cunate; lower ones sheathed; fruit hispid.—Native of St. Domingo. Spermacoæe vagina'ta, Willd. in Roem. et Schultes, syst. 3. p. 531. Bigelovia vagina'ta, Spreng. syst. 1. p. 405.

Sheathed Borreria. Shrub 1 foot?

83 B. *linifölla* (D. C. prod. 4. p. 551.) stem herbaceous, tetragonal, rather villous on the angles; leaves linear-lanceolate, acule, on short petioles, villous, with scabrous margins; bristles of stipulas rather shorter than the flowers: whorles of flowers axillary and terminal; the latter globose, and girded by 4 leaves: anthers exerted; calyxes clothed with cinius villous.


Flax-leaved Borreria. Pl. 1 foot.

Cult. The species of Borrëria are of most easy culture. A light soil suits them best; and cuttings of the perennial and shrubby kinds strike root readily in the same kind of soil, in heat. The annual kinds require the treatment of other tender annuals.
CLXXXVI. SPERMACOCE (from σπέρμα, σπέρνει, a seed, and ακολω, akole, a point; in allusion to the capsule being crowned by the calycine points). Meyer, fl. esaq. p. 79. Cham. et Schlecht. in Linnaea. 3. p. 355. D. C. prod. 4. p. 559.—


LIN. SYST. TETRAPLIA, Monogynia. Calyx with an ovate or turbine tube, and a 2-4-lobed limb (f. 108. a. b.), and sometimes accessory teeth in the recesses of the primary lobes. Corolla salver-shape, or funnel-shaped, 4-lobed (f. 108. c.). Stigma bital or undivided. Capsule crowned by the limb of the calyx (f. 108. f.), which is often obliterated, 2-owed; nuts 1-seeded, divided into 2 parts from the apex: the one part closed by the adran dissepiment, and the other open. Seed oval-oblong, marked inside by a longitudinal narrow.—Herbs or subshrubs. Branches or stems usually tetragonal. Leaves opposite. Stipulas combined with the petiole, sheathing, fringed by numerous bristles. Flowers axillary, sessile, crowded, verticillate, or semi-verticillate, white, red, or blue.—The fruit of this genus is drawn with great character in Gärtn. fruct. 1. t. 23.—

The fruit of a great number of the plants still preserved in this genus being unknown, many of them will yet be expelled, when proper specimens can be procured.

* Species natives of America.

1 S. TENn'or (Lin. spec. p. 147.) stems herbaceous, branch- ed; branches tetragonal, with the angles smooth or scabrous; leaves lanceolate, on very short petioles, rather scabrous above and on the margins; bristles of stipulas hardly longer than the sheath; flowers disposed in sessile axillary fascicles, semi-verticillate; stamens inclosed; capsule ovate, usually hairy, crowned by the 4 short, acute calycine teeth. O. F. Native of the West Indies Islands, as of Jamaica, Martinico, Porto-Rico, Cuba, St. Domingo, &c, as well as of Peru, Panama, Carolina, very frequent. S. lanceolata and S. dichotoma, Willd. in herb. S. parviflora, Salisb. prod. p. 60.—Dill. clth. p. 370. t. 359. Lam. ill. t. 62. f. 1. There are varieties of this species (ex Swartz, obs. p. 43), with smooth, pubescent, and straight or ascending stems; narrow and broader leaves; scabrous or solitary flowers; smooth or hispid fruit, having one of the parts or nuts bearing 3 of the calycine teeth, and the other bearing only one. The varieties are so numerous, and run so gradually into each other, as hardly to be distinguished, many specimens of which are to be found in herbaria, under various names, from their different habits; as P. ossisergens, Spreng. syst. 1. p. 402, a native of Porto-Rico, but not of the fl. per.; and Sperna longifolia, Bartl. in herb. Hänke, &c. Some specimens are suffruticose at the base, and others are herbaceous. Perhaps the whole form a congeries of species, of which some may be ultimately distinguished from each other. The flowers in most of the varieties are of a white or pink colour, and one is said to have yellow flowers.


2 S. PORTORIE'nes (Balb. in herb. Bert. ex D. C. prod. 4. p. 532.) stems herbaceous, glabrous, tetragonal; leaves elliptic-oblong, acuminate at both ends, on very short petioles, glabrous; stipulas rather downy, having the bristles longer than the sheath; flowers axillary, sessile, crowded, semi-verticillate; fruit oval, rather downy, somewhat truncate at the apex.—Native of Porto-Rico, where it was collected by Bertero. Perhaps sufficiently distinct from S. teniitour.

* Porto-Rico Button-weed. Pl. 1 to 2 feet.

3 S. LONGIFOLIA (Aspl. guian. 1. p. 59. t. 21.) stem herbaceous, glabrous, dichotomous, and are, as well as the branches, acutely tetragonal; leaves oval-oblong, tapering to both ends, on short petioles, scabrous above between the nerves and on the margins, and pilose on the nerves beneath; stipulas downy, bearing each 5-7 bristles, and short hairs between these bristles; whorles axillary, few-flowered; fruit ovate, downy, crowned by the 4 short teeth of the calyx. y. S. Native of French Guiana. S. fruticosa, Poir. Flowers white. Stems reddish.

* Long-leafed Button-weed. Shrub. 4 S. CEREA'lea (Pohl. in litt. ex D. C. prod. 4. p. 552.) stem herbaceous, almost tetragonal, downy; leaves elliptic-oblong, acute, petiole, glabrous, downy on the nerves beneath; stipulas downy, bearing 3-7 bristles, which are a little longer than the sheath; flowers axillary, sessile, crowded, semi-verticillate; fruit oval, downy, truncate at the apex.—Native of Brazil, where it was collected by Pohl. Flowers blue. Very nearly allied to S. teniitour, but is very distinct.

* Blue-flowered Button-weed. Pl. 1 to 2 feet?

5 S. RIPA'BIA (Cham. et Schlecht. in Linnaea. 3. p. 355.) quite glabrous; stems long, fistulat, tetragonal, sulfrutescent at the base; leaves lanceolate, acute, with scabrous margins; bristles of stipulas 3, longer than the sheath; flowers terminal in the upper axis, disposed in whorled heads; stamens almost inclosed; capsule ovate, glabrous; teeth of calyx 6-7, acute, at length obliterated. y. S. Native of Brazil, on the banks of the Rio Negro.


6 S. HEVERCA'pa (D. C. prod. 4. p. 553.) stem herbaceous, tetragonal, nearly naked, downy; the rest of the plant smoothish; leaves ovate, acute, tapering to the base, glabrous above, but downy on the nerves beneath while young; bristles of stipulas many, rather shorter than the sheath, which is downy: heads of flowers verticillate, 1-2 axillary, and one terminal; the latter girded by 4 very unequal leaves: fruit downy, truncate at the apex.—Native of South America, about Caraccas, where it is collected by Vargas. Both the nuts of the fruit being dehiscent, it is therefore rather an ambiguous species.

7 S. VARI'US (D. C. prod. 4. p. 553.) leaves lanceolate, and are, as well as the stems, glabrous.—Native of St. Domingo, where it was collected by Bertero.

* Downing-fruited Button-weed. Pl. 1 foot?

8 S. DIFFUS'As (H. B. et Kunth, nov. gen. amer. 3. p. 343.) stems suffruticose, procumbent, terete, hairy; leaves lanceolate, scabrous from retrograde hairs on both surfaces, with the margins serrately scabrous; stipules hairy, ciliated with bristles; whorles of flowers axillary, sessile, and one larger terminal; the latter girded by 4 leaves: capsule smoothish, globose, crowded by the 4 teeth of the calyx, 2 of which are linear-subulate, and longer than the other 2. y. S. Native of South America, in the province of Vario, at the river Atures. Flowers white. Said to be allied to S. teniitour, and therefore it is probably a true species of Spermacoce.

Diffuse Button-weed. Shrub procumbent.

9 S. SUFFRUT'EScens (Jacq. schoenbr. t. 332.) stem suffruticos at the base, rather diffuse, branched, tetragonal, glabrous; leaves ovate-lanceolate, acuminate, lined, with scabrous margins; stipules furnished with bristles: whorles of flowers dense, sessile, axillary, and terminal; the latter girded by 4 leaves: lobes of corolla large, villous at the apex; genitils exserted; stigma capitate; fruit turbinate, hispid, crowded by the 4-cleft calyx. y. S. Native country unknown. S. sulfruticosa, Spreng. syst. 1.
400. S. tragantha, hort. berol. Leaves pilose above? Flowers pale red.


9 S. *linearis* (H. B. et Kunth, nov. gen. amer. 3. p. 543.) stem suffrutescent, obsolete tetragonal, clothed with hairy down; leaves linear, scarbose above and on the margins, hairy beneath; stipulas hairy, ciliated with bristles; whorles many-flowered, sessile, axillary; corollas glabrous; stigma rather capitate, exserted; capsule oblong, hispid at top; teeth of calyx 4, ovate-lanceolate. S. Native on the banks of the Orinoco. Corollas white. Bigelovia linearis, Spreng. syst. 1. p. 405.

Linear-leaved Button-weed. Shrubs 1 foot.**

** Species natives of Africa.

10 S. *palmetorum* (D. C. pro. 4. p. 553.) plant herbaceous, ascending, branched; stem tetragonal, hairy; branchlets compressed; leaves oval-lanceolate, scarbose above and lined, hairy beneath and nervled; stipulas villous, with the bristles shorter than the sheath; flowers 3-6 together on both sides, sessile, axillary, verticillate; fruit rather hairy, obovate; teeth of calyx 4, short, subulate, at length deciduous.—Native everywhere where about the Gambia, at the roots of palm-trees, in humid places, where it was collected by Leprieur and Perrottet. Al- lied to *S. tenax.* Perhaps Diódia scabra, Schum. pl. guin. p. 76.

*Pilose* Button-weed. Pl. 1 foot.

11 S. *fideosa* (D. C. pro. 4. p. 553.) stem herbaceous, tetragonal, with blunt, pilose angles; leaves ovate, acute, scarbose on both surfaces; bristles of stipulas distant, longer than the sheaths; whorles sessile, many-flowered; fruit ovate, crowned by the reflexed, acute lobes of the calyx.—Native of Guine. Diódia pilosa, Schum. pl. guin. p. 76.

Pilose *Button-weed.* Pl. 1 foot.

12 S. *phillocéthala* (D. C. l. c.) plant erect, glabrous, sparingly branched; stems tetragonal; leaves linear, 1-nerved; floral ones dilated at the base; bristles of stipulas 5-7 on each side, longer than the sheath; heads of flowers axillary, verticillate, very few, and a large terminal one, the latter surrounded by long, squarrose leaves; fruit solitary in the axils of the floral leaves, crowded from the floral leaves being clustered; seeds large, shining. O. S. Native of the west coast of Africa, at Kouma and Walo, where it was collected by Perrottet and Leprieur. Seeds 2 lines long, almost like those of *Psyllium.*

Leaf-headed *Button-weed.* Pl. 1 foot.

13 S. *stachydea* (D. C. pro. 4. p. 554.) plant erect, nearly simple, villous; stem tetragonal; branchlets compressed; leaves linear, acute, floral ones dilated at the base; bristles of stipulas 5-7, longer than the sheath, which is velvety; heads of flowers verticillate, numerous, surrounded by 6-8 aggregate, squarrose leaves; flowers solitary in the axils of the leaves, and aggregate only from the leaves being crowned; lobes of calyx linear-subulate, nearly the length of the fruit; seeds large, shining. O. S. Native of the west coast of Africa, among stones, at Bakel, where it was collected by Leprieur. Plant about a foot high. Leaves 3 inches long, and nearly 4 lines broad. Bristles of stipulas blackish. Seed 2 or 2½ lines long, larger than any other of the genus.

Stachys-like *Button-weed.* Pl. 1 foot.

14 S. *gallochlaena* (D. C. pro. 4. p. 554.) erect, branched; stem tetragonal, hairy; leaves lanceolate-linear, rather scarbose on both surfaces; bristles of stipulas longer than the sheath, which is velvety; flowers axillary, few, sub-verticillate; fruit large, velvety, longer than the subulate, calycine lobes. O. S. Native of Senegambia, at Dagaio, in sandy places. Allied to *S. Ruellia.* But very distinct. Herb about a foot high. Leaves 15-16 lines long, and 3 broad, pale beneath. Stipulas yellowish. Fruit larger than in any other species of the genus, almost like that of a species of *Diodia,* but is membranous and dehiscent. Seeds large.

*Galeopsis-like* Button-weed. Pl. 1 foot.

15 S. *ruellie* (D. C. l. c.) erect, branched; stem tetragonal, hispid; leaves lanceolate-linear, acuminated, clothed with rough down on both surfaces; heads many, verticillate, axillary; bristles of stipulas many, 3 times longer than the sheath, which is downy; valves of fruit at length opening widely at the apex; lobes of calyx subulate, rather longer than the fruit. O. S. Native of Equinoctial Africa, in sandy places at Bakel, where it was collected by Leprieur. Stem a foot high. Leaves 3 inches long, and 3-6 lines broad. Mature fruit nearly as in the genus *Ruellia.* Seed a line and a half long.

*Ruellia-like* Button-weed. Pl. 1 foot.

16 S. *cheilocéthala* (D. C. l. c.) stem erect, simple, terete at the base and glabrous, and tetragonal at the apex, with the angles scarbose; leaves linear-elongated, acuminated, glabrous; bristles of stipulas 5-7, subulate, longer than the sheath, which is villous; heads verticillate, surrounded by many leaves, and the many bristles of the stipula; fruit pale, membranous, downy at the apex; lobes of calyx subulate, shorter than the fruit. O. S. Native of Equinoctial Africa, in Gala, among rocks at Bakel, where it was collected by Leprieur. Plant ½ foot high. Leaves 3 inches long, and 3 lines broad. Bristles of stipulas rufous. Capsules whitish. Seeds a line long.

Bristly-headed *Button-weed.* Pl. ½ foot.

** Species natives of the Mauritius and Madagascar.

17 S. *flagelliformis* (Poir. dict. 7. p. 314.) stem herbaceous, terete, glabrous, simple, erectec; leaves glabrous, oblong-lanceolate, acute, revolute on the margins at the base, and therefore petiole-formed; stipulas broad-cupshaped, having the bristles rather shorter than the sheath; flowers axillary, few, sessile, verticillate; capsule ovate, subulate, crowned by the 3 slender acute teeth of the calyx. O. S. Native of the Mauritius and Bourbon. S. flagellaris, Wild. in Rom. et Schultes, syst. 3. p. 532; ex Cham. et Schlecht. in Linn. 3. p. 357. Hedyotis verticillata, Lam. ill. no. 1423, exclusive of the synonyms of *Desf.*

Whip-formed *Button-weed.* Pl. 1 foot.

18 S. *muriculata* (D. C. pro. 4. p. 554.) glabrous; stem herbaceous, tetragonal, having the angles just under the nodi rough from small tubercles; leaves elliptic-lanceolate, acuminated at both ends, scarbose above; bristles of stipulas longer than the sheath, which is very short; flowers disposed in sessile, glomerate whorles in the axils of the leaves; fruit ovate, downy, crowned by the 2-4 very short, acute, calycine teeth, but is at length nearly naked.—Native of the Mauritius and Bourbon. Allied to *S. tenax;* but the angles of the stem are not downy, but scarrous from tubercles.

Muriculated-stemmed *Button-weed.* Pl. 1 to ½ foot.

19 S. *serrylíphióphora* (Wild. in Rom. et Schultes, syst. 3. p. 532.) plant diffuse, scarrous; leaves elliptic, with revolute margins; whorles few-flowered.—Native of Madagascar. A true species of Spemmacoeae ex Cham. et Schlecht. in Linn. 3. p. 357; but the rest is unknown. Wild-tygna-leaveded *Button-weed.* Pl.

** Species natives of India.

20 S. *stricta* (Lin. fil. suppl. p. 120.) stem herbaceous, straight, erect, scarrous at the angles; leaves linear-lanceolate, lined, scarrous; stipulas ciliately fringed; whorls of flowers axillary, remote, globose; fruit obovate-globose, rather membranous at the base, and hispid at the apex, crowned by the 4


**Straight Button-weed.** Fl. June, July. Cl. 1820. Pl. 11/2 to 1 foot.

21 S. BURMANNI (D. C. prod. 4. p. 555.) stem tetragonal, branched, slender, rather pimose on the angles; leaves oblong-linear, acuminate at both ends, scabrous above, and on the margins; bristles of stipulas glabrous, about the length of the sheath, which is villose; flowers axillary, sessile, few, somewhat verticillate, almost inclosed in the stipular sheaths; fruit ovate, rather hairy, crowned by the 4 acute teeth of the calyx. Native of the East Indies. S. corynomus, Burm. fl. ind. p. 34, but not of Lin. Allied to \textit{S. flagelliformis}. Flowers white.

**Burmans Button-weed.** Pl.

22 S. \textit{Scapebrima} (Blum. bijdr. p. 946.) stem herbaceous, branched, climbing; branches quadrangular, having the angles beset with retrograde down; leaves oval-lanceolate, rough above, and on the veins beneath; stipulas pubescent, furnished with bristles, which are a little longer than the sheath; stamens exserted; fruit glabrous, crowned by the 4 lobes of the calyx. Native of Java, in humid places about Buitenzorg. Habit of \textit{S. tenor}.

**Very-sea-bourn Button-weed.** Pl. climbing.

23 S. \textit{hispid/a} (Lin. mant. p. 558.) plant herbaceous, erect, hoary; stem tetragonal, hispid; leaves ovate, a little mucronate, hispid on both surfaces, and on the margins; bristles of stipular length or longer than the sheath; flowers 1-3-together, axillary, sessile, opposite or somewhat verticillate; stamens length of corolla; capsule elliptoid, hairy, crowned by the 4 teeth of the calyx. Native of the East Indies. Murr. comm. gett. 3. t. 57. Cham. et Schlecht. in Linneja. 3. p. 355. S. rigidus, Salsib. prod. p. 60. Burm. zeyl. t. 20. f. 5. Corollas turbinate, violaceous. Stamens purplish.


24 S. \textit{Scaera} (Willd. spec. 1. p. 572.) stem herbaceous, diffuse, turete, or slightly tetragonal, scabrous from pili; leaves ovate, obtuse or acute, undulated, scabrous on both surfaces, and on the margins; bristles of stipulas rather longer than the sheath, which is downy; flowers few, axillary, verticillate; stamens exserted; capsule ovate, rather hairy, crowned by the 4 lanceolate teeth of the calyx. Native of Coromandel, ex Roxb.; of Malabar, ex Rheed. mal. t. 76.; and of the Island of Timor. Roxb. fl. ind. 1. p. 377. S. hirta, Rotch. in nov. act. nat. cur. berl. 1803. p. 95. Flowers small, purple.

**Rough Button-weed.** Pl. June, July. Clt. 1818. Pl. diffuse. 25 S. \textit{Articulaa} (Lin. fl. suppl. p. 119. exclusive of the synonyms.) plant herbaceous, diffuse; stems tetragonal, pilose above at the angles; leaves elliptic-lanceolate, hardly acutely clothed with rough pubescence on both surfaces, and on the margins; bristles of stipulas longer than the sheath, which is downy; flowers 2-4, axillary, sessile; capsule oval, downy, crowned by the 4 teeth of the calyx. Native in sandy places on the shores of Coromandel. Roxb. fl. ind. 1. p. 378. Allied to \textit{S. hispida}. Stem reddish. Flowers white. Branches succulent.

**Jointed-branched Button-weed.** Pl. procumbent. 26 S. \textit{Bruxonii} (Wall. cat. no. 822.) stems herbaceous, erect, tetragonal, glabrous; leaves lanceolate, acute, sessile, glabrous, with serrulate scabrous edges; stipulas bifid and trident, or multident; heads of flowers terminal, rarely axillary: the former involucrated by 2 long leaves, and sometimes also 2 small ones. Native of Kamaon. Flowers white. Perhaps a species of \textit{Barbarea}.

**Brownie's Button-weed.** Pl. 1 to 2 feet.

27 S. \textit{Loxocalvis} (R. Br. in Wall. cat. no. 826.) plant scabrous; stem elongated, tetragonal, with scabrous angles; leaves oblong and obovate-oblong, opposite, and falsely verticillate, scabrous; bristles of stipulas longer than the sheath; flowers axillary, few, verticillate. Native of the Burmese Empire, at Prome; and of Singapore.

**Long-stemmed Button-weed.** Pl. 2 to 3 feet, diffus. 28 S. \textit{Avana} (R. Br. in Wall. cat. no. 828.) stems tetragonal, scabrous on the angles; leaves elliptic or obovate-elliptic, acute, attenuated at the base, rather scabrous, serrulate on the margins; bristles of stipulas longer than the sheath; flowers axillary, sessile, somewhat verticillate. Native of the Burmese Empire, at Ava. Very nearly allied to the preceding. 

**Avana Button-weed.** Pl. 1 to 2 feet. 29 S. \textit{Teixera} (R. Br. in Wall. cat. no. 833.) plant glabrous, diffuse; leaves lanceolate, tapering to both ends, petiolate, smooth; flowers axillary, verticillate; bristles of stipulas longer than the sheath. Native of the East Indies. O. cymoides, Heyne, but not of Burm.

**Plant Button-weed.** Pl. diffuse. 30 S. \textit{Compressa} (Wall. cat. no. 6187.) plant diffuse, densely clothed in every part with woolly scabrous hairs; leaves ovate or oblong, acute; stipulas bristly; heads of flowers axillary and terminal, verticillate; fruit compressed, crowned by the teeth of the calyx. Native of Sibhet, in the East Indies. Compressed-fruited Button-weed. Pl. procumbent.

† Species not sufficiently known.

* Species natives of Asia.

31 S. \textit{Flexuosus} (Lour. coch. p. 79.) stem shrubby, flexuous, nearly terete, procumbent; leaves ovate-lanceolate, obliquely-nerved, thick; stipulas bristly; heads of flowers globose; capsule of 2 2-horned nuts. Native of Cochlin-china, in hedges and among bushes. Corollas white, with revolute segments.

**This Button-weed.** Shrub procumbent. 32 S. ? \textit{Hedyotisdea} (D. C. prod. 4. p. 555.) stem tetragonal, glabrous; leaves lanceolate; stipulas rhomboid; thyrse bracteate; bracteae subulate; corolla tomentose inside; anthers linear; stigma capitata; capsule ovate, crowned by the 4-toothed calyx; cells 1-seeded. Native of the East Indies. Hedyotis fruticosa, Retz, obs. 2. p. 8. and probably also of Lin. If the cells of the fruit are truly 1-seeded, it is a true \textit{Spermacocce}. All the synonyms cited by authors for this plant are very doubtful.

**Hedyotis-like Button-weed.** Pl. 33 S. \textit{Procumbens} (Lin. syst. veg. p. 124.) stems herbaceous, procumbent, angular; leaves linear; corollas lateral, opposite, pedunculate, surrounded by many-leaved involucra; stamens exserted. Native of the East Indies. S. corynomus, Lin. spec. p. 149. but not of others. Stamens longer than the corolla.

**Procumbent Button-weed.** Pl. procumbent. 34 S. ? \textit{Semiresta} (Roxb. fl. ind. 1. p. 377.) stems tetragonal, ascending, bent in various ways, with rather hispid angles; branches brachiata, alternately smaller; leaves ovate, acuminate, on short petioles, scabrous; stipulas of many bristles; whorls of flowers small, compact; genicula inclosed; capsule turbinate, pilose. Flowers small, white. Native of Sunnata. S. Roxburghiana, Wall. cat. no. 6186. Fruit not sufficiently known. Half-creep Button-weed. Pl. 1/2 foot. 35 S. ? \textit{Costata} (Roxb. fl. ind. 1. p. 376.) plant diffuse, very villous; leaves broad-lanceolate or oblong, nervet; stipulas...
usually furnished with 3 bristles; flowers axillary, disposed in small proliferous crowded umbels; stamens protruding beyond the corolline tube. *S*. Native of the Moluccas. Perhaps the same as *S. cristata*, Willd. in Röem. et Schultes, syst. 3. p. 530. * Flowers pale, pink.

**Rubiaceae.**

**Rosed-leaved Button-weed.** Pl. diffus. 39 *S.* *R.* (Roxb. fl. ind. 1. p. 375.) stem erect, simple, nearly terete, smooth; leaves petiolate, lanceolate, smooth; flowers axillary or terminal, sessile, crowded.—Native of the Island of Honimoa. Plant hardly half a foot high.

**Dwray Button-weed.** Pl. $\frac{1}{2}$ foot. 40 *S.* *l.* (Lex.) (Roxb. fl. ind. 1. p. 375. but not of Blume,) plant erect, branched, pilose; leaves on short petioles, lanceolate-linear, acuminate, lined; stipulas triangular, furnished with bristles; peduncles axillary, trichotomous; flowers capitate; stamens exserted.—Native of the Moluccas. The rest unknown.

**Lined-leaved Button-weed.** Pl. 1 foot. 41 *S.* *l.* (Lex.) (Spreng. syst. 1. p. 401.) stem erect, and as well as the leaves rough; stipulas toothed; stamens exserted; fruit glabrous.—Native of the Philippines. The rest unknown.

**Smooth Button-weed.** Pl. Fl. May, July. Ch. 1820. Pl. 1 foot. 42 *S.* *l.* (Lex.) (Röem. et Schultes, syst. 3. p. 530.) flowers terminal, capitulate; leaves linear, verticillate.—Native of St. Domingo, where it was collected by Martin. Sloane, hist. 1. p. 94. f. 2. Said to be nearly allied to *S. teniouri*. Flowers numerous.

**Steellate-leaved Button-weed.** Pl. 1 foot? 43 *S.* *l.* (Lex.) (Spreng. syst. 3. p. 275.) glabrous; stems diffusely, ascending, quadrangular; leaves ovate, mucronate; bristles of stipulas few, naked, short; flowers in capitulate whorls; teeth of calyx villous.—Native of St. Domingo, where it was collected by Martin. Poir. dict. 7. p. 512. Whorles of flowers the size of a pea.

**Rotate Button-weed.** Pl. diffuse. 44 *S.* *l.* (Lex.) (Lam. ill. 1. no. 1436.) stems straight, rather tetragonal, and downy; leaves linear-lanceolate, very rough, crenose beneath, shorter than the internodes; whorles of flowers dense, distant; capsules obtuse, villous.—Native of St. Domingo, where it was collected by Martin. Poir. dict. 7. p. 512. Leaves more than an inch long.

**Remote-whorled Button-weed.** Pl. 1 foot? 45 *S.* *l.* (Lex.) (Spreng. syst. 3. p. 530.) branchlets and under sides of leaves downy; bristles of stipulas longer than the whorles of flowers; stamens inclosed.—Native of the West Indies. S. decidua, Bosc. The rest unknown.

**Basil-leaved Button-weed.** Pl. 1 foot. 46 *S.* *l.* (Lex.) (D. C. prod. 4. p. 556.) glabrous; stem herm-locuneus, tetragonal; leaves ovate-oblong, attenuated at both ends, lined; stipulas connate, ciliate with bristles; whorles of flowers globose; corollas villous inside; stamens exserted.—Native of Cuba and Hispaniola. S. capitellata, Spreng. neuf. entd. 3. p. 46. exclusive of the synonyms. Fruit unknown.

**Obscure Button-weed.** Pl. 1 foot? 47 *S.* *l.* (Lex.) (D. C. prod. 4. p. 557.) plant glabrous; stem herbaceous, much branched, creeping, filiform; branches opposite; leaves ovate, on very short petioles, shining; peduncles 1-flowered, solitary; fruit hispid.—Native of Chili, in humid places and about springs. Oldenlandia uniflora, Ruiz et Pav. fl. per. 1. p. 57. but not of Linn. Perhaps a true species of *Spermacoce* from the cells of fruit being 1-seeded.

**Oldenlandia-like Button-weed.** Pl. creeping. 48 *S.* *l.* (Lex.) (D. C. prod. 4. p. 557.) plant glabrous; stem herbaceous, much branched, creeping, filiform; branches opposite; leaves ovate, on very short petioles, shining; peduncles 1-flowered, solitary; fruit hispid.—Native of Chili, in humid places and about springs. Oldenlandia uniflora, Ruiz et Pav. fl. per. 1. p. 57. but not of Linn. Perhaps a true species of *Spermacoce* from the cells of fruit being 1-seeded.

**Oldenlandia-like Button-weed.** Pl. creeping. 49 *S.* *l.* (Lex.) (D. C. prod. 4. p. 557.) plant glabrous; stem herbaceous, much branched, creeping, filiform; branches opposite; leaves ovate, on very short petioles, shining; peduncles 1-flowered, solitary; fruit hispid.—Native of Chili, in humid places and about springs. Oldenlandia uniflora, Ruiz et Pav. fl. per. 1. p. 57. but not of Linn. Perhaps a true species of *Spermacoce* from the cells of fruit being 1-seeded.

**Oldenlandia-like Button-weed.** Pl. creeping. 50 *S.* *l.* (Lex.) (D. C. prod. 4. p. 557.) plant glabrous; stem herbaceous, much branched, creeping, filiform; branches opposite; leaves ovate, on very short petioles, shining; peduncles 1-flowered, solitary; fruit hispid.—Native of Chili, in humid places and about springs. Oldenlandia uniflora, Ruiz et Pav. fl. per. 1. p. 57. but not of Linn. Perhaps a true species of *Spermacoce* from the cells of fruit being 1-seeded.

**Oldenlandia-like Button-weed.** Pl. creeping. 51 *S.* *l.* (Lex.) (D. C. prod. 4. p. 557.) plant glabrous; stem herbaceous, much branched, creeping, filiform; branches opposite; leaves ovate, on very short petioles, shining; peduncles 1-flowered, solitary; fruit hispid.—Native of Chili, in humid places and about springs. Oldenlandia uniflora, Ruiz et Pav. fl. per. 1. p. 57. but not of Linn. Perhaps a true species of *Spermacoce* from the cells of fruit being 1-seeded.

**Oldenlandia-like Button-weed.** Pl. creeping. 52 *S.* *l.* (Lex.) (D. C. prod. 4. p. 557.) plant glabrous; stem herbaceous, much branched, creeping, filiform; branches opposite; leaves ovate, on very short petioles, shining; peduncles 1-flowered, solitary; fruit hispid.—Native of Chili, in humid places and about springs. Oldenlandia uniflora, Ruiz et Pav. fl. per. 1. p. 57. but not of Linn. Perhaps a true species of *Spermacoce* from the cells of fruit being 1-seeded.

**Oldenlandia-like Button-weed.** Pl. creeping. 53 *S.* *l.* (Lex.) (D. C. prod. 4. p. 557.) plant glabrous; stem herbaceous, much branched, creeping, filiform; branches opposite; leaves ovate, on very short petioles, shining; peduncles 1-flowered, solitary; fruit hispid.—Native of Chili, in humid places and about springs. Oldenlandia uniflora, Ruiz et Pav. fl. per. 1. p. 57. but not of Linn. Perhaps a true species of *Spermacoce* from the cells of fruit being 1-seeded.

**Oldenlandia-like Button-weed.** Pl. creeping. 54 *S.* *l.* (Lex.) (D. C. prod. 4. p. 557.) plant glabrous; stem herbaceous, much branched, creeping, filiform; branches opposite; leaves ovate, on very short petioles, shining; peduncles 1-flowered, solitary; fruit hispid.—Native of Chili, in humid places and about springs. Oldenlandia uniflora, Ruiz et Pav. fl. per. 1. p. 57. but not of Linn. Perhaps a true species of *Spermacoce* from the cells of fruit being 1-seeded.
urceolate, sinutately-quadrifid. ț. S. Native near Santa Fe de Bogota. Corolla, genitals, and fruit unknown.

**Trailing Button-weed.** Shrub procumbent. 53 S. ș. **ERIOCLADA** (D. C. prod. 4. p. 557) plant suffruticose, ascending; branches rather angular, clothed with hairy tomentum; leaves oblong, acuminate, very scabrous on both surfaces, almost villosus, with serrately scabrous edges, and sometimes mucronate at the apex; bristles of stipulas glabrous, length of sheath, which is villous; heads of flowers terminal, girded by 4 leaves; teeth of calyx 4, equal; stamens exerted. ț. S. Native of Peru. S. scaberrima, Bartl. in herb. Hance, but not of Blume. Fruit unknown, and therefore the genus is doubtful.

The habit is that of **Borreria**.

Var. ț. **LINEARIFOLIA** (D. C. prod. 4. p. 557) leaves linear, distinctly mucronate. ț. S. Native of Peru.

**Woolly-branched Button-weed.** Shrub ascending.

**** Species natives of Guinea.

54 S. ș. **SEXANGULARIS** (Amb. guian. 1. p. 61. t. 22. f. 8.) plant glabrous, prostrate; stem flexuous, prostrate, hexagonal; leaves ovate, acute, petiolate; heads of flowers terminal; anthers in the throat.—Native of Guiana, on the banks of rivers. S. hexagona, Wildt. spec. 1. p. 569. Flowers small, blue. Perhaps a species of **Borreria** nearly allied to B. alata.


55 S. ș. **PROSTRA'TA** (Amb. guian. 1. p. 58. t. 20. f. 3.) glabrous; stem herbaceous, prostrate, oppositely branched, tetragonal; leaves almost sessile, elliptic, acute, smooth; flowers verticillate.—Native of Guiana, on the banks of rivers. Flowers small. Leaves pale green.

Prostrate Button-weed. Pl. prostrate.

56 S. ș. **Radi'cans** (Amb. guian. 1. p. 58. t. 20. f. 4.) glabrous; stem herbaceous, alternately branched, prostrate, radical; leaves almost sessile, lanceolate, acute; flowers verticillate. ț. S. Native of Guiana, on the banks of the river Orapu. The rest unknown.


57 S. ș. **CERULE'SCENS** (Amb. guian. 1. p. 57. t. 19. f. 2) stem simple, straight, tetragonal; leaves ovate, acute, rather hairy, smooth; bristles of stipulas about equal in length to the flowers; flowers verticillate; stamens exerted.—Native of Guiana and Cayenne, on the edges of fields. Vahl. ecolg. 1. p. 9. Corollas blue. Fruit unknown.

Bluish-flowered Button-weed. Pl. 1 to 2 feet.

58 S. **LATIFOLIA** (Amb. guian. 1. p. 56. t. 19. f. 1.) glabrous; stem, erect, herbaceous, tetragonal; leaves ovate, acuminate, petiolate; rough; bristles of stipulas hispid, a little longer than the sheath; flowers axillary, verticillate; limb of calyx 4-toothed, rather villous, as well as the capsules, which are ovate.—Native of Guiana and Cayenne by way sides. Lam. ill. t. 62. f. 2. Probably a species of **Borreria** or Mitracarpum. Flowers white.

**Broad-leaved Button-weed.** Fl. July. CIt. 1803. Pl. 2 to 3 feet.

**** Species natives of Mexico.

59 S. **POLYCEPHALA** (Bartl. in herb. Hance, ex D. C. prod. 4. p. 558.) stem herbaceous, erect, branched, quadrangular, villous; leaves ovate-lanceolate, acuminate, pilose on both surfaces, lined with veins beneath; bristles of stipulas longer than the sheath, hairy; heads of flowers terminal, nearly globose, girded by 4-leaved involucra; teeth of calyx subulate, nearly equal; stamens exerted.—Native of Mexico. Perhaps a species of **Borreria**.

Many-headed Button-weed. Pl. 2 to 3 feet.

60 S. ș. **ECHINODERES** (H. B. et Kunth, nov. gen. amer. 3. p. 344.) stem herbaceous, tetragonal, erect, hispid; leaves lanceolate, acuminate, petiolate, hispid on both surfaces; stipulas hispid, ciliate by bristles; whorls of flowers nearly globose, axillary and terminal. ț. S. Native of Mexico, near Campeche. There is a variety of this with glabrous stems, and narrower less hispid leaves.

**Buglos-like Button-weed.** Pl.

61 S. ș. **INVERSIFOLIA** (H. B. et Kunth, nov. gen. amer. 3. p. 341.) plant herbaceous, erect, with tetragonal branches, which are scabrous from retrograde bristles; leaves linear, with remotely scabrously serrated margins: the lower ones minute and oblong-elliptic; stipulas smoothish, fringed by bristles; heads of flowers terminal; calyx 2-4-toothed; capsules hispid. ț. F. Native of Mexico. Knösia simplex, Willd. in Rom. et Schultes. sst. 3. p. 532. Perhaps a species of **Borreria**. Flowers white.

Diverse-leaved Button-weed. Pl.

62 S. ș. **RECLINATA** (Nees, hor. berl. p. 50.) plant glabrous, ascending, herbaceous; leaves lanceolate, acute, smooth, veinless; stipulas downy, furnished with 5 bristles each; heads terminal, dense, hemispherical, supported by 2 leaves; calyx and fruit glabrous. ț. S. Native of Mexico. Fruit unknown.

**Reclinata Button-weed.** Pl. ascending.

**** Species natives of North America.

63 S. ș. **LASS'ANTHA** (Rafin. fl. lud. p. 76.) stem weak; branches diffuse; leaves sessile, oblong, acute, nerved; nerves scabrous; flowers verticillate; corolla woolly inside.—Native of Louisiana.

Woolly-flowered Button-weed. Pl. diffuse.


65 S. ș. **INVOLUCRATA** (Pursh, fl. amer. sept. 1. p. 105.) plant very hispid, herbaceous, erect; stem alternately branched; leaves ovate-lanceolate, acuminate, hairy on both surfaces; stipulas of many bristles; heads terminal, involuong; tube of corolla very long; stamens exerted.—Native of Carolina. Flowers white. Leaves rather broad. According to Sprengel this is a variety of Cracea rubra. Fruit unknown.

Involuturate-flowered Button-weed. Pl. 1 foot.

Cult. See **Borreria**, p. 618. for culture and propagation.

**CLXXXVII. Hexaspe'culum** (from ἕξ, hex, six, and σπεῖρα, σεπαλον, an alternation of σπεῖρα, a sepal; in reference to the limb of the calyx being 6-parted, indicating its being composed of six sepals). Bartl. in herb. Hance, ex D. C. prod. 4. p. 561.

**Lin. syst.** Tetra'ándrum, Monogy'nia. Calyx with an oblong obovypyramidal tube, and a 6-parted limb; lobes narrow, nearly equal, acute, permanent. Corolla campanulate funnel-shaped, with an obconcical tube, and 4 lanceolate acute lobes, which are valvate in resurrection. Stamens 4, shorter than the lobes of the corolla. Fruit oblong, dry, ribbed, divisible into 2 parts at the dissepiments: the dissepiment being double, both the parts of the fruit or nuts are closed, and 1-seeded.—A small ascending much branched glabrous shrub, with diffuse flexuous compressed branches. Leaves opposite, long-linear, acute, with the margins hardly scabrous. Stipulas sheathing, furnished with many bristles, which are equal in length to the sheath, intermixed with very short ciliate. Flowers axillary, solitary, sessile, larger than in any other genus belonging to the tribe Spermacoceae.

1 H. ANGUSTIFOLIUM (Bartl. l. c.) ț. S. Native of Mexico,
in Real del Monte, where it was collected by Henke. Leaves 1½ to 2 inches long, and a line broad. Corolla 6 lines long. Ovarium 3 lines long.

**Narrow-leaved Hexasepalum.** Shrub 2 to 3 feet. 

**Cult.** See Borrêria, p. 618. for culture and propagation.

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**CLXXXVII. DIO DIA (from διόδος, a passage; the greater part of the species grow by way sides, hence the name).** Lin. gen. no. 122. Gaertn. fruct. 1. p. 121. t. 25. Meyer, essq. p. 81. Cham. et Schlecht. in Linnaea. 3. p. 341. D. C. prod. 4. p. 561.—Diôdia and Spermacoce species of authors.

**Lin. syst. Tetrándria, Monogyîna.** Calyx with an obovate or ovate tube, which is usually 8-nerved; limb dentately parted; teeth sometimes 2, sometimes 4, equal or unequal, cruciately disposed, rarely more than 4. Corolla funnel-shaped, with a 4-lobed limb. Stamens 4, exerted or inclosed. Style bifid or undivided. Fruit 2-celled, crowned by the calyx, divisible into 2 1-seeded inacelous parts or nuts. Seeds erect in the cells, furrowed in the front.—Herbs or subshrubs, all natives of America except one species. Branches terete or tetragonal. Leaves opposite, or falsely verticillate from axillary fascicles. Flowers small, white, disposed in various ways in the different sections.

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**SEC. I. EUDÔRIA (from eu, well, and Diodia; this section is considered to contain the true species of the genus).** D. C. prod. 4. p. 561. Capsules crustaceous or somewhat fleshy; having the mericarps or nuts separate, without any dispacement between them.—Flowers axillary, sessile, opposite; or 2 or more on each side verticillate.


1. **D. VIRGINICA** (Lin. spec. 151.) glabrous in every part; stems procumbent, nearly terete; leaves lanceolate; lobes of stipules linear-subulate; corolla rather hairy inside; fruit ovate-oblong, glabrous, crowned by the 2 lanceolate lobes of the calyx. 2. F. Native from Virginia to Carolina, in humid sandy places. Jaqc. icon. rar. 1. t. 29. Lam. ill. t. 63. Pursh, fl. sept. amer. 1. p. 105. Stems reddish, smooth. Flowers white.


**Tetragonal-stemmed Diodia.** Pl. procumbent.


**Hairy Diodia.** Pl. procumbent.

4. **D. MELLEX** (Swartz, fl. ind. occ. 1. p. 226.) stems herbaceous, erectish, smooth, simple; leaves oblong-lanceolate, glabrous; lobes of stipules linear-oblong; fruit ovate-oblong; limb of calyx benticate; teeth linear. 2. ? F. Native of Jamaica, on the higher mountains. Leaves ciliate on the margins while young. Flowers sessile, solitary, axillary, white.

**Simple-stemmed Diodia.** Pl. 1 to 1½ foot.

5. **D. VERTİCILLÂTA** (Vahl, symb. 2. p. 28.) glabrous; stem herbaceous, simple, erect, smooth; leaves lanceolate, attenuated at both ends, with scabrous margins; stipules ciliate; flowers verticillate; fruit linear, crowned by the 2 calcyce teeth.—Native of the Island of Santa Cruz. The leaves are said to be in whorles within the stipules, hence they are probably in axillary fascicles. Flowers white, in axillary and terminal whorles: the latter the largest. It is probably a species of Borrêria from the terminal whorl of flowers being larger than the axillary ones.

**Whorled-flowered Diodia.** Fl. June, July. Ct. 1821. Pl. 1 foot

6. **D. VILLÔSA** (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 4. p. 562.) stem herbaceous, deciduate, tetragonal, villous; leaves lanceolate, acuminate, scabrous above and on the margins, hairy beneath, and obliquely nerved; bristles of stipulas scabrous, longer than the sheath; whorles axillary, sessile, 10-12-flowered; fruit ovate, easily separated into 2 parts, crowned by the 2 teeth of the calyx.—Native of New Spain. Spermacoce declinata, Pavon, ined. Habit of Spermacoce teniòris, but the fruit is composed of 2 indehiscent nuts, each crowned by one calyce tooth.

**Villosa Diodia.** Pl. declinate.

* Calyx 4-toothed.

7. **D. TÉRES** (Walt. car. p. 87.) stem terete, velvety, procumbent; leaves linear-lanceolate, clothed with velvety down; lobes of stipulas setaceous, longer than the fruit; corolla bearded inside; fruit ovate, downy, crowned by the 4 lanceolate calyce lobes. 0. H. Spermacoce dioídia, Michx. fl. amer. bor. 1. p. 82. Torr. fl. u. st. 1. p. 170. Leaves with scabrous edges and keel. Flowers white, solitary, sessile.

**Tere-stemmed Diodia.** Pl. procumbent.

8. **D. HYSSÔPODÔRIA** (Cham. et Schlecht. in Linnaea. 3. p. 342.) plant suffruticosæ, branched; branches nearly terete, hairy; leaves linear, acute, glabrous, glaucescens; bristles of stipulas equal in length to the fruit; whorles usually 6-flowered; fruit obvolutely turbinate, downy. 8. S. Native on the banks of the Orinóco, near San Borja in hot places. Spermacoce hyssopîdôria, H. B. & Kuntth. nov. gen. amer. 3. p. 342. Wild. in Rom. et Schultes, syst. 3. p. 532. Said to be allied to D. teëræ. Flowers white.

**Hyssop-leaved Diodia.** Shrub.

9. **D. PRÔSTRÂTA** (Swartz, fl. ind. occ. 1. p. 228.) stems suffruticosæ, subdivided; branches prostrate, tetragonal, filiform, rather hairy at the apex; leaves linear, rather hairy, with revolute edges; lobes of stipulas setaceous, intermixed with pili, which rise from the sheath; fruit ovate, downy, crowned by the 4 short lobes of the calyx. 8. S. Native of Jamaica. D. protonáta, Swartz, in herb. L'Her. D. próstrata, Spreng. exclsive of the species from Hispaniola.

**Vacc. β, longiçéta** (D. C. prod. 4. p. 562.) bristles of stipulas longer than the sheath; branches hispid. 8. S. Native of Mexico. D. próstrata, Bartl. in herb. Hænke, ex D. C. l. e. 


10. **D. DOMINGÈSSIS** (D. C. prod. 4. p. 563.) glabrous; branches and stems procumbent, tetragonal, filiform; leaves linear, with revolute margins; bristles of stipulas stiff.—Native of St. Domingo, where it was collected by Bertero. Diodia prostrata, ex Hispaniola, Spreng. syst. 1. p. 406. Flowers and fruit unknown, and therefore the genus to which it belongs is doubtful. Nearly allied to D. próstrata.

**St. Domingo Diodia.** Shrub procumbent.

11. **D. SCÂNDENS** (Swartz, fl. ind. 1. p. 230.) stems suffruticosæ, climbing; branches very long, tetragonal, smoothish; leaves ovate-lanceolate, scabrous, at length rather muricate above; bristles of stipulas stiffish; fruit ovate-oblong, crowned by the 4 lanceolate calyce teeth. 8. S. Native of St. Domingo.

**Diam.** Leaves muricate above, almost as in boraginaceous plants. Flowers white, sessile, 4-6-together, axillary.

**Climbing Diodia.** Shrub el. 8 to 10 feet.
12 D. sarmentosa (Swartz, fl. ind. occ. 1. p. 231.) stem climbing, suffruticulose, tetragonal, villous, particularly on the leaves; leaves ovate-oblong, acute, scabrous from murice, rosely nerved in the adult state; bristles of stipulas stiffish; fruit oval, rather tetragonal, crowned by the 4 lanceolate teeth of the calyx. ≠ S. Native of Jamaica, Porto-Rico, St. Thomas, &c. Spermacoce radaula, Spreng. neut. entd. 2. p. 144. Schultes, mant. 3. p. 207. but not of Willd.—Diodia sarmentonosa = Guadalupa, Spreng. syst. 1. p. 405. is a species of Borrieda. Flowers solitary, axillary, white. Corolla with a tetragonal tube.


13 D. latiloba (D. C. prod. 4. p. 563.) stems suffruticos, flexuous, sparingly branched, tetragonal, glabrous, hardly pilose at top; leaves linear, cuspitate, glabrous on both surfaces, with serrately scabrous margins, ciliated at the base; bristles of stipulas equal in length to the fruit; flowers axillary, sessile, opposite; corolla glabrous; fruit ovobrate-globose, crowned by the 4 lanceolate, acuminate, unequal calyceal teeth. ≠ S. Native of St. Domingo. Spermacoce barbata, Spreng. in herb. Balb. but not of Lam. D. scändens, Vahl, herb. ex Puer. Very nearly allied to D. scándens, and probably only a variety of it. Corolla 5 lines long, oblong, white.

Broad-flowered Diodia. Shrub cl.

14 D. grandiflora (D. C. prod. 4. p. 563.) stems twiggly, flexuous, sparingly branched, tetragonal, glabrous, hardly pilose at top; leaves linear, cuspitate, glabrous on both surfaces, with serrately scabrous margins, ciliated at the base; bristles of stipulas equal in length to the fruit; flowers axillary, sessile, opposite; corolla glabrous; fruit ovobrate-globose, rather hairy, crowned by the 4 lanceolate, acuminate, unequal calyceal teeth. ≠ S. Native of St. Domingo, where it was collected by Bertero. Spermacoce grandiflora, Spreng. neutr. entd. 3. p. 45. syst. 1. p. 400. Flowers white. Nuts of fruit truly indehiscent. Allied to D. scándens and D. latiloba.

Great-flowered Diodia. Shrub.

15 D. conésta (D. C. prod. 4. p. 563.) stem ascending; branches hairy, almost tetragonal; leaves ovate, acuminate, terminated by a long hair each, sessile, with serrately scabrous edges, hairy beneath; bristles of stipulas numerous, stiff longer than the sheath. ≠ S. Native of Brazil, where it was collected by Schott. Spermacoce conferta, Schott. ex Pohl, in litt. Fruit not seen, but from its analogy with D. polysticha it has been placed in this genus.

Crowded-flowered Diodia. Shrub 3 to 4 feet.

16 D. setígera (D. C. prod. 4. p. 563.) stem ascending, suffruticulose at the base, somewhat tetragonal, hairy; leaves sessile, ovate-lanceolate, subacutate at the base, and terminating in a bristle at the apex, ciliated on the nerve and margins: the ciliate largest towards the base; bristles of stipulas longer than the sheath, which is smoothish; fruit nearly globose, ribbed, glabrous, crowned by the 4 teeth of the calyx. ≠ S. Native of Brazil, about Bahia, in arid places, where it was collected by Salzmann. Corolla blue, with acuminate lobes.

Bristle-bearing Diodia. Shrub ascending.

17 D. ? barba'ta (D. C. l. c.) plant procumbent, scabrous; branches tetragonal, downy; leaves lanceolate, villous; bristles of stipulas long; flowers few, axillary.—Native of St. Domingo. Spermacoce barbata, Lam. ill. no. 1457. Poir. dict. 7. p. 514. Allied to D. longiflóra and D. longisétá, but the fruit is unknown. The flowers are said to be small. Leaves hardly an inch long; superior ones disposed in fascicles.

Bearded Diodia. Pl. procumbent.

18 D. folisétá (D. C. l. c.) branches or stems simple, twiggly, rather tetragonal, hispid from long spreading stiff hairs; leaves lanceolate, acute, hispid from long spreading pilly bristles; bristles of stipulas numerous, long, stiffish; fruit 2-3-together, axillary, roundish, crowned by the 4 small teeth of the calyx. ≠ S. Native of Porto-Rico.

Many-bristled Diodia. Shrub.

19 D. marítima (Schum. pl. guin. p. 75.) stems prostrate, tetragonal, with furrowed sides, and scabrous angles; leaves ovate or oblong, having the margins scabrous from serrulations, rather downy or hairy on both surfaces; bristles of stipulas stiffish; fruit oval-oblong, crowned by the 4 lanceolate teeth of the calyx. ≠ S. Native of Guinea, along the coast in the sand. Flowers white.

Var. β, commutáta (D. C. prod. 4. p. 564.) leaves glabrous on both surfaces. ≠ S. Native of Porto-Rico, in the sand by the sea side, where it was collected by Bertero and Wydler. Spermacoce commutáta, Schultes, mant. 3. p. 208. There are varieties of this plant with either elongated or tufted branches, and having the axils of the leaves naked, or bearing fascicles of leaves or branches, and with the leaves flat, or nervously furrowed.


20 D. nigéa (Cham. et Schlecht. in Linn. aa. 8. p. 341.) stem suffruticulose, creeping, quadrangular, hairy; leaves lanceolate, piliferous at the apex, stiff, with serrulated margins, hairy beneath; stipulas hairy, ciliated at the apex; fruit ovate-globose, crowned by the 4 linear-subulate teeth of the calyx. ≠ S. Native of the Spanish Main, near Caracas; of St. Domingo; Brazil, in the province of Para, and of the Society Islands. Spermacoce rigida, H. B. et Kunth, nov. gen. amer. 3. p. 342. Sperm. apiculata and Sperm. rigida, Willd. in Schultes, syst. 3. p. 551. Sperm. setosa, Willd. herb. but not of Schultes. Flowers white.

Stiff Diodia. Shrub creeping.

21 D. articuláta (D. C. prod. 4. p. 564.) glabrous; stem shrubby, terete, nodose; leaves linear, acute at both ends, with rather revolute edges, also smooth on the margin and mid-rib; bristles of stipulas stiff, shorter than the sheath; whorles 6-8-flowered; fruit ovobrate-oblong, crowned by the 4 calyceal teeth. ≠ S. Native of Brazil, where it was collected by Pohl. Spermacoce articulata, Pohl, in litt. Leaves in axillary fascicles, hence they appear in whorles, very like those of Hippuris.

Jointed-stemmed Diodia. Shrub.

22 D. kosmarinisólla (Pohl, in litt. ex D. C. prod. 4. p. 564.) stem herbaceous, erect, simple, terete, hairy; leaves linear, ending in a long hair each, with rather revolute edges, glabrous, but scabrous from serrulations on the margins and nerve below; bristles of stipulas very long; fruit oval, crowned by the 4 calyceal teeth. ≠ F. Native of Brazil, where it was collected by Pohl. This is a very distinct species, having the ciliate of the stipulas half an inch long, about half the length of the leaves.

Rosemary-leaved Diodia. Pl. 3 to 1 foot.

23 D. arenósa (D. C. prod. 4. p. 564.) stem decumbent, branched, tetragonal, rather scabrous above; leaves lanceolate-linear, sessile, acuminate, with revolute edges, rather scabrous on both surfaces; bristles or ciliate of stipulas longer than the sheath; whorles 8-10-flowered; fruit ovobrate-globose, scabrous from down, crowned by the 4 calyceal teeth. ≠ L. S. Native of Brazil. Spermacoce arenósa, Pohl, in litt. Nuts of fruit indehiscent. If Spermacoce ciliáris, Pay. in herb. Moric. be the same it is also a native of New Spain.

Sand Diodia. Pl. decumbent.

24 D. multíflóra (D. C. prod. 4. p. 564.) stem and branches long and twiggly, compressedly tetragonal, hairy; leaves lanceolate, sessile, acute, lined, beset with stiff villi on both surf.
faces; bristles of stipulas longer than the sheath, reflexed under the heads of flowers; whorles 15-20-flowered, nearly in all the axils; fruit obovate, rather downy, crowned by the 4 calyceal teeth.—Native of Brazil. Fruit easily separated into 2 parts; the parts or nuts closed.

Many-flowered Diodia. Pl. 25 D. muriculata (D. C. prod. 4. p. 504.) stem ascending; branches tetragonal, hairy; leaves sessile, ovate, cuspitate, reflexed below the whorles of flowers, beset with stigmas above, and villi on the nerves beneath; bristles of stipulas longer than the sheath; fruit nearly globose, downy, crowned by the 4 calyceal teeth. 4. S. Native of Brazil, about Bahia, in dry places. Allied to D. multiflora.

Multiclavulose Diodia. Pl. ascending.

26 D. micolor (D. C. l. c.) stem suffruticosum, downy, rather ascending, tetragonal; leaves lanceolate, acuminate at both ends, glabrous, rough, canescent beneath; bristles of stipulas 7-11, ciliate; fruit hairy, brittle, crowned by the 4-5 hispid teeth of the calyx. 4. S. Native of Surinam. Spermacoce discolor, E. Meyer, nov. act. bonn. 12. p. 178. Flowers white. Allied to D. radula, but distinct, ex Cham. et Schlecht. in LINN. 3. p. 342.

Discolored-leaved Diodia. Shrub 1 to 1½ foot.

27 D. radicans (Cham. et Schlecht. in LINN. 3. p. 550.) stem radicant, oppositely branched, tetragonal, glabrous; leaves lanceolate, acute, obliquely nerved, smoothish, pale beneath; fruit ovate, sessile, crowned by the 4 lanceolate lobes of the calyx. 4. S. Native of St. Domingo, where it was collected by Poiteau. Spermacoce radicans, Wildl. herb. but not of Annul. Flowers large, axillary, solitary, white?

Rooting Diodia. Shrub creeping.

*** Calyx 5-10-toothed.

29 D. radula (Cham. et Schlecht. in LINN. 3. p. 342.) stem herbaceous, weak, tetragonal, smoothish; leaves ovate-lanceolate, acute, lined, scabrous above, and downy on the nerves beneath; stipulae downy, ciliate; whorles 6-10-flowered; calyx unequally 5-10-toothed, ciliate; fruit didymous. 4. S. Native of Brazil, in the provinces of Para and Rio Janeiro. Spermacoce radula, Wildl. in Rom. et Schultes, syst. 3. p. 531. This probably belongs to a different genus from the calyx.

Rasp-leaved Diodia. Pl. 3 feet.

Sect. II. Dasyphyllea (from ὀδυς, dasy, thick, and κέφαλη, kepale, a head; the flowers are disposed in dense thick heads). D. C. prod. 4. p. 565. Capsules membranous, having the mericarps or nuts probably subdehiscent inside at length. Flowers disposed in heads.—This is probably a section of the genus Borreria, or a proper genus.

30 D. Falustris (Cham. et Schlecht. in LINN. 3. p. 347.) stem herbaceous, glabrous, erect, simple, tetragonal, with winged scabrous angles; leaves elliptic, rather cuneate, obtuse, but apiculate; bristles of stipulas 7-9, long; heads of flowers axillary, rather pedunculate; limb of calyx 4-toothed. 4. S. Native of Brazil. Flowers white.

Marsh Diodia. Pl. 1 to 2 feet.

31 D. dasycphyllea (Cham. et Schlecht. l. c. p. 348.) plant glabrous, herbaceous, ascending, rather woolly at the base; branches tetragonal; leaves lanceolate, on short petioles, rather glaucous, with scabrous margins; bristles of stipulas 5-7, hardly longer than the sheath; heads terminal, globose, girded by 4 leaves; calyx hairy, bidentate. 4. S. Native of the south of Brazil. Flowers white.

Thick-leaved Diodia. Pl. ½ to 1 foot.

32 D. alata (Nees et Mart. nov. bonn. 12. p. 11.) stem erect, glabrous, dichotomous at the base, tetragonal; angles membranous, spinulose; leaves ovate, cuspitate, glabrous, with scabrous edges; bristles of stipulas 7-8, long; whorles of flowers terminal, naked, globose; fruit obovate, crowned by the 2 oblong-lanceolate teeth of the calyx. 4. S. Native of Brazil, about the river Ilheos. Probably a species of Borreria.

Winged-stemmed Diodia. Pl. 1½ foot.

33 D. Bogotaensis (Cham. et Schlecht. in LINN. 3. p. 347.) plant suffruticosum; branches quadrangular, scabrous; leaves oblong-lanceolate, glabrous, serrulatated on the margins, and on the middle nerve beneath; heads of flowers terminal, rarely nearly axillary; fruit glabrous, obovate, crowned by the 4 scabrous teeth of the calyx. 4. S. Native of the town of Santa Fe de Bogota. Spermacoce Bogotensis, H. B. et Kuntz, nov. gen. amer. 3. p. 347. Wildl. in Rom. et Schultes, syst. 3. p. 530. Corolla white, having the throat, and upper part of the tube bearded.

Bogota Diodia. Shrub procumbent.

34 D. indecora (D. C. prod. 4. p. 565.) plant decumbent or ascending, much branched, glabrous; stem tetragonal, scabrous along the angles; leaves oblong-linear, acuminate; fruit glabrous, oppositely, or falsely verticillate; bristles of stipulas longer than the sheath; heads of flowers terminal, girded by 4 leaves; fruit oval-oblong, glabrous, crowned by the 4 teeth of the calyx. —Native of Mexico, at the Cordillera de Cuchilaguna, where it was collected by Berlandier. Perhaps the immature fruit is indehiscent. Perhaps a species of Borreria.

Indecomus Diodia. Pl. decumbent.

Cult. For culture and propagation see Borreria, p. 618.

CLXXXIX. TRIDODON (from τρίς, treis, three, and ὀкос, okovos, odous odontos, a tooth; the axis remains after the nuts of the fruit have fallen, and is tridentate at top). D. C. prod. 4. p. 566.—Diódia species, Cham. et Schlecht. in LINN. 3. p. 343.

L. SYST. Tetrandria, Monogyния. Calyx with a turbinate tube, and a 2-4-toothed limb, and sometimes with accessory teeth. Corolla short, funnel-shaped, 4-cleft. Stigma bident. Capsule clavatiform, 2-celled, crowned by the calyx, containing 2 indescibent 1-seeded nuts; having the axis, along with the lateral nerves, remaining after the nuts have fallen, and therefore the axis appears tridentate.—Much branched glabrous shrubs, natives of Brazil, with acutely tetragonal branches. Leaves opposite and falsely verticillate, oblong or linear; floral ones small. Flowers axillary or terminal at the tops of the branches, small, disposed in spikes or fascicles. It differs from Diodia in the axis of fruit being permanent and tridentate; and in habit.

1 T. Anthospermoides (Cham. et Schlecht. in LINN. 3. p. 343. under Diodia) shrubby, much branched, glabrous, downy at top while young; branches acutely tetragonal; leaves sessile, linear, acute, opposite, or falsely verticillate; bristles of stipulas longer than the sheath; flowers usually by threes in the axils of the upper leaves, and appear almost spicule from the upper leaves being nearly abortive; calyx hairy, with many teeth. 4. S. Native of Equinoctial Brazil. Anthospermum-like Triodon. Shrub.
2 T. glomeratus (D. C. prod. 4. p. 566.) shrubby, much branched, glabrous; branchlets acutely tetragonal; leaves oblong-linear, opposite, and falsely verticillate; bristles of stipulas short; flowers disposed in fascicles at the tops of the branches; teeth of calyx 4, on the top of the fruit, 2 large, and 2 nearly obliterated. \( \uparrow \) S. Native of Brazil. Dióedia Brasiliana, Spreng. syst. 1. p. 406. Rūbia glomerata, Pohl, in ltt. Nearly allied to T. polymorpha, var. a., but differs in the bristles of the stipulas being one-half shorter, in the branchlets being glabrous, and in the flowers being in terminal fascicles.

Glomerate-flowered Triodon. Shrub.

3 T. polyphora (Cham. et Schlecht. in Linnaea. 3. p. 344. under Dióidea) shrubby, much branched, glabrous; branchlets tetragonal; leaves petiolate, oblong-linear, opposite, and falsely verticillate; bristles of stipulas rather longer than the sheath; flowers axillary and terminal, few; calyx bidentate, and sometimes with 2 accessory teeth. \( \uparrow \) S. Native of Brazil. Fruit as in T. anthospermoideae, to which it is very nearly allied.

Var. a., microphyllae (Cham. et Schlecht. 1. c.) tops of plant downy; leaves smaller and finer; calyx hairy, 4-toothed. \( \uparrow \) S. Native of Brazil, in the province of Rio Janeiro, in dry, exposed places.

Var. \( \beta \), intermedius (Cham. et Schlecht. 1. c.) smoothish; leaves flat, softish; calyx glabrous, 4-toothed. \( \uparrow \) S. Native of the south of Brazil.

Var. \( \gamma \), macrophylæ (Cham. et Schlecht. 1. c.) glabrous; internodes elongated 2 leaves flat, thinner and larger; calyx glabrous, bidentate. \( \uparrow \) S. Native of the south of Brazil.

Polyphorinus Triodon. Shrub \( \frac{1}{2} \) foot.

Cult. The species of Triodon will grow in any good, light soil; and cuttings of them will strike root readily in the same kind of soil, under a hand-glass in heat.


Lin. syst. Tetrándria, Monogynía. Calyx with a didymous, ovate tube, and with the limb contracted at the base, and profusely cleft at the apex, but not parted; lobes 4, linear-subulate, elongated, hairy, and 4 small accessory ones between these. Corolla salver-shaped, with a long tube, which is obconical at the apex; a naked throat, and a 4-lobed limb. Stamens exerted. Style longer than the stamens, bifid at the apex. Fruit composed of 2 indehiscent, 1-seeded nuts, which at length separate from the axis, which is permanent, flat, membranous, and retaining the calyx at its apex.—Herbs which are sometimes suffruticoses at the base, erect or ascending. Leaves opposite, ovate-lanceolate. Stipulas sheathing, ciliated with bristles. Flowers red, disposed in capitae, terminal umbels, which are girded by involucra.

1 C. calceophylla (D. C. prod. 4. p. 567.) stem terete, herbaceous, villous; leaves oblong-lanceolate, acuminate, with rather oblique nerves, of which 2 rise near the base on both sides; bristles of stipulas 7-9, hispid. \( \bigcirc \) H. Native of Mexico. Spermáceae capitata, Morc. et Sesse. fl. mex. icon. ined. but not of fl. per. Spermáceae hirta, Pav. ined. but not of Lin. Stamens longer than the lobes of the corolla. Corolla 4 lines long, red.

Beautiful-headed Crusea. Pl. 2 feet.

2 C. rubra (Cham. et Schlecht. in Linnaea. 5. p. 165.) stem tetragonal, herbaceous, hispid; branches opposite; leaves ovate, acuminate, hairy, with the nerves oblique on both sides of the mid-rib; bristles of stipulas 7-9, hispid. \( \bigcirc \) H. Native of Vera Cruz and Cuba. Crucianella hispida, Mill. dict. no. 4. Spermáceae rubra, Jacq. Hort. schoenbr. 3. p. 3. t. 256. Spermáceae longiflora, H. et Kunt. nov. gen. amer. 3. p. 271. Spermáceae striósa, Sims, bot. mag. t. 1558. but not of Thunb. Spermáceae rubra and S. striósa, Poir. Schultes. Flowers red or purple.


3 C. cocinea (D. C. prod. 4. p. 567.) stem tetragonal, suffruticos at the base, glabrous; leaves ovate-lanceolate, acuminate, petiolate, glabrous, with 3 nerves on both sides of the mid-rib; bristles of stipulas 3, glabrous, the middle one the longest. \( \uparrow \) S. Native of New Spain. Spermáceae coccinea, Pavon, in herb. Duant. Corollas scarlet, larger than in any other plant belonging to the tribe Spermáceae; it is even an inch long. Alabastra and lobes of the corolla beset with bristles on the outside; the rest of the corolla glabrous. Style exerted beyond the tube of the corolla. Fruit unknown; but the plant agrees in habitat with the other species of the genus.

Scarlet-flowered Crusea. Pl. 1 to 2 feet.

4 C. rachyphylla (Cham. et Schlecht. in Linnaea. 5. p. 165.) stem nearly terete, fustular, clothed with rather retrograde hairs; leaves broad-ovate, on short petioles, of a different colour beneath, beset with scattered hairs above, and along the nerves beneath; heads of flowers terminal, involucrated by leaves; lobes of calyx triangular.—Native of Mexico, on Serra Colorado, where it was collected by Schiede and Deppe. Nearly allied to C. rubra, but differ in the characters indicated above, and in the fruit being much smaller, and nearly terete, not globose. Flowers red, smaller and shorter than in C. rubra.

Short-leaved Crusea. Pl. 2 feet.

Cult. The annual species should be treated as other tender annuals, by being raised in a frame, and afterwards planted out in the open ground in May. The shrubby species should be treated in the manner recommended for Triodon above.


Lin. syst. Tri- Hexandria, Monogyínia. Calyx with a subglbose tube, and a 6-7-parted limb; teeth or lobes unequal, without any accessory ones. Corolla funnel-shaped, with an obconical tube, and a spreading, 3-6-lobed limb; lobes valvate in aestivation. Stamens equal in number to the lobes of the corolla; filaments exerted. Style 3-4-cleft at the apex. Stigmas rather capitate. Capsule containing 3-4 indehiscent, membranous, 1-seeded nuts, crowned by the permanent calyx, which at length becomes circumcised at the base, and falls off, leaving the nuts naked. Seeds peltate.Albumen between fleshy and horny, rather thick, and composed of a distinct biform, decumbent herbs, natives of America. Roots almost simple, rather woody, with thick bark, which is wrinkled transversely; those of many of the species are used in various parts of the world as substitutes for Ipecacuanha. Leaves opposite, ovate. Stipulas of many bristles. Flowers capitate at the tops of the branches, each head involucrated by the 4 uppermost leaves.

§ 1. Calyx 6-7-lobéd.

R. scabra (St. Hili. pl. us. bras. 8. t. 8. Mart. spec. med. bras. p. 10. t. 9. f. 13. root.) stems hairy; leaves ovate, or ovate-lanceolate, rather oblong, acutish, with seersucker margins; bristles of stipulas shorter than the sheath; heads many-flowered; lobes of calyx triangular, ciliated; segments of 4 to 2.
corolla pilose at the apex. \[S.\] Native of Brazil, at Rio Janeiro, in sandy, cultivated fields, and by way sides; also of New Granada, in dry, sandy places near Ibague, and at Vera-Cruz; as well as of Peru, about Lima and Cercado, &c., Sweet, fl. gard. t. 91. Richardsia scabra, Lin. spec. 470. Richardsia pilosa, Ruiz et Pav. fl. per. 3. p. 50. \[R.\] scabra and \[R.\] pilosa, Pers. cich. t. 3. p. 392. \[R.\] pilosa, H. B. et Kunth, nov. gen. amer. 3. p. 330. t. 279. Spermacoce hexandria, A. Rich. hist. nat. spec. p. 13 and 31. R. Brasilienchrist, Gom. mem. ipec. p. 31. t. 2. Virey, journ. pharm. 1829, p. 297, with a figure. Hayn. arzn. 8. t. 21. Spermacoce hirsuta, Röhm. et Schultes, syst. t. p. 85. Corolla white, twice the length of the calyx. The roots are horizontal and white, and are used as a substitute for Ipecacuanha, in the province of Rio Janeiro, where it grows in great plenty, under the name of Paoya do Canapo. It is the Ipecacuanha amâlce on blane, Merat. dict. med. 26. p. 13, and therefore the white Ipecacuanha of the shops.


2 \[R.\] kôseâ (St. Hil. pl. us. bras, no. 7. t. 7.) stems hispid, very hairy at the tops; leaves ovate-lanceolate, mucronately acute, with scabrous margins; bristles of stipulae longer than the sheath; heads few-flowered; lobes of calyx 6, linear, rather hispid; corolla ventricose, having the segments pilose on the outside. \[S.\] Native of Brazil, in dry, sandy places. R. enôtica, Mart. spec. nat. med. bras. p. 11. t. 9. f. 19. Cham. et Schlecht. in Linneana. 3. p. 351. R. rôscea and R. enôtica, Schultes, syst. t. p. 87. Corolla rose-coloured, 3 times longer than the lobes of the calyx. Roots black, twisted, and are used as a substitute for Ipecacuanha in the neighbourhood of Joao del Rey, in Brazil, where it is cultivated in great quantities for that purpose, under the name of Paoya do Canapo, and are, along with the roots of \[R.\] scabra, imported into Europe.

Rose-flowered Richardsonia. Pl. procumbent.

3 \[R.\] grandiflôra (Cham. et Schlecht, in Linneana. 3. p. 551.) plant ascending; stems hispid from bristles; leaves lanceolate, acute, scabrous from bristles; bristles of stipulae rather longer than the sheath; heads few-flowered; segments of the calyx lanceolate, acuminate; corolla glabrous. \[S.\] Native of the south of Brazil. Roots like that of \[R.\] rôscea. Corolla white, tipped with red. Stamens 6.

Great-flowered Richardsonia. Pl. decumbent.

4 \[R.\] laterâalis (D. C. prod. 4. p. 568.) erect, stem hispid from spreading hairs; leaves oblong-lanceolate, muriculated above, and pilose beneath; bristles of stipulae longer than the sheath; heads of flowers small, 3 times shorter than the bracteas, which are ovate-lanceolate, and hispid beneath at the base; lobes of calyx 6, subulate, longer than the tube. \[S.\] Native of Brazil, where it was collected by Pohl. Spermacoce latérâlis, Pohl, in litt. Very nearly allied to \[R.\] divêrgens, but the fruit is unknown, and is therefore a doubtful species of the genus.

Lateral Richardsonia. Pl. 1 to 2 feet.

5 \[R.\] divêrgens (D. C. prod. 4. p. 568.) plant erect, hispid from bristles in every part; leaves linear-lanceolate, acuminate; bristles of stipulae longer than the sheath; heads small, 3 times shorter than the bracteas, which are lanceolate; limb of calyx very hispid, 6-cleft; fruit of 4 tubercularly muricate nuts. \[S.\] Native of Brazil, Pohl; and near Bahia, in cultivated places, Salzmann. Spermacoce divêrgens, Pohl, in litt. Corolla white.

Diverging Richardsonia. Pl. 1 to 2 feet.

6 \[R.\] spârâsa (D. C. prod. 4. p. 568.) the whole plant hispid from bristles; branches trichotomous; leaves linear-lanceolate, acuminate; bristles of stipulae equal in length to the sheath: heads either from the forks of the branches or from their tops; the latter one-half shorter than the bracteas, which are lanceolate; limb of calyx very hispid, 6-cleft; fruit of 4 tubercularly muricate nuts. \[S.\] Native of Brazil, Pohl; at Bahia, in dry pastures, Salzmann. Spermacoce spârâsa, Pohl, in litt. Flowers white.

Scattered Richardsonia. Pl. 1 to 2 feet.

§ 2. Calyx 4-lobed, very rarely 5-5-lobed.

7 \[R.\] stella'rm (Cham. et Schlecht. in Linneana. 3. p. 552.) plant decumbent, twisted; stem hairy; leaves lanceolate, acuminate, hairy; bristles of stipulae 5, much longer than the sheath; heads hemispherical; segments of the calyx 4, oblong; corolla glabrous, about equal in length to the calyceous teeth. \[S.\] Native of Brazil, in the province of Cisplatine. Flowers 3-4-parted, white.

Starry Richardsonia. Pl. decumbent.

8 \[R.\] humistrâta (Cham. et Schlecht. l. c. 3. p. 534.) plant trailing, flexuous; stems clothed with canescent hairs; leaves ovate-lanceolate, acute, clothed also with canescent hairs; bristles of stipulae 3-6, equal in length to the sheath; heads hemispherical; segments of calyx 4, ovate; corolla glabrous, rather longer than the lobes of the calyx. \[S.\] Native of Brazil, in the province of Monte Video. Flowers small, tetraermous and pentamous.

Trailing Richardsonia. Pl. trailing.

9 \[R.\] arcingendens (D. C. prod. 4. p. 549.) stems ascending, villous; leaves oblong, attenuated at both ends, scabrous from pubescence on both surfaces; heads terminal, on long peduncles; leaves of involucrum ovate, hardly exceeding the flowers; calycine segments 5, acute; corolla tubular, downy outside at the tops of the lobes, the rest glabrous. \[S.\] Native of Mexico. Spermacoce arcingendens, Pav. in herb. Moric. Richardsoni villösa, Moc. et Sesse, fl. mex. icon. ined., in which the corolla is more coloured.

Ascending Richardsonia. Pl. ascending.

10 \[R.\] Henke'a (D. C. prod. 4. p. 569.) stems trailing, tufted, twisted, creeping, suffruticose, hairy; leaves oblong, villous; bristles of stipulae shorter than the sheath; heads of flowers flatish; lobes of calyx 4, ovate, acutish; corolla subrotate. \[S.\] Native of Mexico, where it was collected by Hauke. Schiedea Mexicana, Bartl. in herb. Hauke. Hauke's Richardsonia. Pl. trailing.

Cult. The species of this genus will thrive in any light soil; and cuttings of them strike root readily in the same kind of soil, under a hand-glass, in a little heat.


Lin. syst. Tetrándria, Monogyna. Calyx with an ovate, rather ribbed tube, and 4 small unequal teeth, which are permanent, and extremely convinent on the fruit. Corolla salver-shaped, with a terete tube, a usually bearded throat, and a 4-lobed limb. Anthers at the throat. Stamina 2-lobed. Fruit 2-celled, usually separated from the base to the apex at the dissectum into 2 indehiscent, 1-seeded nuts, which are sometimes, however, combined at the base, and separating slowly, having the axis filiform, and remaining as in unbelliferous plants. Seeds ovate, triquetrous, erect. Albumen fleshly. Embryo eery.—Herbs or sub-shrubs, natives of the East Indies. Stems terete or tetragonal. Leaves opposite, and falsely verticillate from axillary fascicles. Stipulas undivided, or of few bristles, joined with the base of the petioles. Cymes as in the plants belonging
to the order Valerianaceae, terminal, sessile, or pedunculate, having their branches becoming elongated and spike-formed, after flowering.

1 K. "Zeylanica" (Linn. spec. p. 151.) stem erect, glabrous, nearly terete; leaves lanceolate, almost sessile, glabrous; branches of cyme 1-3, very long, spicate, erect; tube of corolla much longer than the calyce teeth; throat of corolla bearded; stigma exserted. — Native of Ceylon. Burm. fl. ind. 34. t. 13. f. 2. Lam. ill. t. 59. f. 1. Corolla 6 lines long. Fruit easily separated into 2 parts from the base.


Sumatra Knoxia. Fl. July, Aug. Clt. 1818. Sh. 2 to 3 ft. 3 K. te'zes (D. C. l. c.) stem suffruticoso, erect, branched, terete, villous; leaves lanceolate, villous; corymb terminal, compound, with opposite branches, which at length become spike-formed; tube of corolla terete, straight, with the throat very villous, and hiding the anthers; style twice the length of the corolla. ½. S. Native of the East Indies, in woods at Koorg. Spermacoea teres, Roxb. fl. ind. 1. p. 373. K. umbellata, Banks, herb. ex Roxb.


4 K. eXee'ta (D. C. l. c.) stem suffruticoso, stiff, villous in the younger parts; leaves lanceolate, petiolate, remote; corymbs terminal, compound; stamens exserted; style bifid, exserted; fruit ovate, hardly separable into 2 parts. ½. S. Native of the East Indies, on the Circars, and of Nipaul. Spermacoe exserta, Roxb. fl. ind. 1. p. 374. This is only, perhaps, a var. of K. teres, according to Roxb.

Exserted-stemmed Knoxia. Shrub 1 foot.


Glabrous Knoxia. Shrub 1 foot.


Heyne's Knoxia. Pl. 1 foot.
Asparagus-like Psyllocarpace. Shrub 1 to 2 feet. 4 P. thyrmoides (Mart. t. c. p. 46.) shrub much branched; branches squarrose, downy; leaves downy, in fascicles; flowers terminal, somewhat spicate; calyces hairy. b. S. Native of Brazil, in the province of Minas Geraes, on Serra de Gran Mogol. Flowers azure blue.

Thymandra-like Psyllocarpus. Shrub 1 to 2 feet. Culti- See Richards, p. 628, for culture and propagation.


Linn. syst. Tetradraria, Monogynia. Calyx with an ovate tube, and a 4-toothed, permanent limb: 2 of the teeth are usually larger than the other 2, which are always small, or nearly obsolete. Corolla salver-shaped, with a terete tube, which is furnished near the base inside with a circular line of hairs, a glabrous throat, and a 4-lobed limb. Anthers exerted, or enclosed. Stigma bifid. Capsule membranous, crowned by the calyx; 4-celled, circumcised round the middle. Seeds solitary in the cells, basilar, partly fixed to the dissemination. —Herbs or sub-shrubs, with the habit of Spermacoce, all natives of America, except one species from Africa. Leaves opposite. Stip- ulas combined with the petioles a little way, and ending in many bristles. Flowers in dense, verticillate, axillary and terminal heads, the latter always involucrated by 4 leaves. Corollas white.

§ 1. Two of the calycine teeth are large, and two small.

* Sufiiffocose and herbaceous parenchymatous plants.

1 M. humboldtianum (Cham. et Schlecht. in Linnaea. 3. p. 358. f. 1.) erect; branches nearly terete, downy when young, but glabrous in the adult state; leaves linear-oblong, or lanceolate, pubescent or hairy on both surfaces; stipulas with 5 stiff bristles on each side, naked in the apex; flowers disposed in dense verticillate heads; heads numerous, distant, terminal and axillary ones alike; the two large teeth of the calyx are subulate, and ciliated. b. S. Native of New Spain, on Silha de Caracas; and of Brazil, in sand by the sea-side, at Rio Janeiro. The specimens from Caracas are more hairy than the Brazil plant, which is trailing. Spermacoce frigida, Wildh. in Roem. et Schultes, 3. p. 531. Knuth, nov. gen. 3. p. 349. Flowers white.

Humboldt's Mitracarpum. Pl. 2 to 3 feet.

2 M. ellowianum (Cham. et Schlecht. in Linnaea. 3. p. 361.) stem diffusse, much branched, clothed more or less with white hairs; leaves oblong or lanceolate, sessile, cuspitate, scabrous on both surfaces; stipulas cleft into many stiff bristles, membranous and villous at the base; heads terminal, dense, inco- lated by 4 leaves, which are 2 or 3 times longer than the head. —Native of Brazil, about Rio Grande do Sul, Monte Video, &c.; in the Pampas of Buenos Ayres and Cordova. Capsule glabrous. The 2 larger teeth of the calyx are scabrous, erect, and subulate, with a very few additional deculations. Flowers white. Leaves varying from 2 to 4 lines broad. Stem usually very villous, but sometimes almost glabrous, as well as the leaves.

Sello's Mitracarpum. Pl. diffusse.

3 M. salzmannianum (D. C. prod. 4. p. 571.) stems diffusse, much branched, hispid from spreading stiffish hairs; leaves ovate-lanceolate, scabrous on both surfaces, setigerous at the apex; stipulas villous, membranous at the base, cleft into many stiffish bristles; flowers disposed in dense, verticillate heads, the ultimate or terminal head round, and involucrated by 2-4 leaves, which are hardly longer than the head. b. S. Native of Brazil, in sand by the sea-side, at Bahia, where it was collected by Salzmann. Very like M. schonienia, but differs in the characters indicated, as well as in the seeds being paler and one-half smaller. Flowers white.

Salzmann's Mitracarpum. Pl. diffusse.

4 M. schizangium (D. C. prod. 4. p. 572.) suffruticose; branches sub-tetragonal, downy; leaves oblong-lanceolate, acu- minated, scabrous on both surfaces, and on the margins; sti- pulas villous and membranous at the base, cleft in many stiff bristles; heads of flowers terminal and axillary, verticillate; the former involucrated by 4 leaves. b. S. Native of Mexico, where it was collected by Henke. Schizangium teres, Bartl. in herb. Henke. Leaves 24-27 lines long, and 4 broad. Teeth of calyx acuminate, scabrous. Flowers white.

Cut-capssule Mitracarpum. Shrub diffusse.

5 M. cuspidatum (D. C. prod. 4. p. 572.) stems ascending, branched, downy; leaves linear, cuspitate by a straight mucro, almost whinless, glabrous; bristles of stipulas 3-5, stiff, longer than the sheath; heads of flowers hemispherical, terminal, 3-4 times shorter than the bracteas; calyx with 2 cuspitate teeth, and 3-4 nearly abortive ones. b. S. Native of Monte Video; and of Chili, at Maldanado, in the Banda Oriental. Stem hardly a hand high, suffruticose at the base. Heads of flowers 4 lines in diameter. Floral leaves 9 lines long, and a line broad. Tube of the corolla almost double the length of the calycine teeth. Flowers white.

Cuspidate-leaved Mitracarpum. Pl. ascending.

6 M. virgatum (Cham. et Schlecht. in Linnaea. 3. p. 363.) stem suffruticose, erect, and are, as well as the branches, terete and glabrous; leaves linear, very narrow, flaccid; stipulas of two colours, ciliated; corollas long, tubular; stamens exerted. b. S. Native of Brazil. Spermacoce virgata, Wild. in Roem. et Schultes, syst. 3. p. 281. and 531. mant. 3. p. 205. Sprengi- syst. 1. p. 401. Flowers white. Leaves 6-8 in a whorl, according to Link, but are probably only in axillary fasciciles.

Trigge Mitracarpum. Shrub 1 foot.

7 M. diffusum (Cham. et Schlecht. in Linnaea. 3. p. 363.) stem suffruticose, procumbent, terete, hairy; leaves lanceolate, bett with retrograde asperities on both surfaces, and serrately ciliated on the margins; flowers capitulate and verticillate; the 2 larger lobes of the calyx exceeding the corolla, which is silvershaped; capsule smoothish. b. S. Native of South America, in woods about the Orinoco and Apare. Flowers white; stamens exerted; seeds oblong.

Diffuse Mitracarpum. Shrub diffusse.

8 M. sagrada (D. C. prod. 4. p. 572.) plant suffruticose, twisted and tufted, clothed with fine down; leaves oblong; heads of flowers axillary and terminal, the latter girded by 4 leaves; lobes of calyx 4, 2 large concave and blunt, and 2 small. b. S. Native of Cuba, near the Havana, where it was collected by Ramon de La Sagra. Flowers white. Seeds brown, hollow in front, and marked by 4 small rays.

Ramon de La Sagra's Mitracarpum. Shrub tufted.

9 M. senegalense (D. C. prod. 4. p. 572.) glabrous; stem erect, suffruticose at the base, rather tetragonal; leaves oblong, acuminated at both ends; stipulas furnished with 2-3 teeth on both sides; flowers disposed in capitulate whorles; calyx with 4 teeth, 2 long and acute, and 2 small. b. ? ? ? F. Native of Senegal, on the banks of the river at Walo, where it was collected by Bache, Perrotet, and Leprieur; and in other parts of Guinea, by Thonnong. Oldenlandia verticillata, Bache, in litt. Stauropspermum verticillatum, Thom. in Schum. pl. guin. pl. 73. Flowers white. Seeds small, nearly globose, pale, umbilicate in
front, and marked by 4 rays. Perhaps the same as M. scabrum, Zuccar. in Rüm. et Schultes, syst. 3. p. 210. which was found about Fort Louis.

Seneval Mitracarpum. Shrub.

** Annual plants.**

10 M. Torreana* (Cham. et Schlecht. in Linnaea, 3. p. 360. t. 3. f. 2.) stem erect, simple, somewhat tetragonal, rather pilose on the angles; leaves elliptic-lanceolate, attenuated at the base, membranous, rather downy on both surfaces; stipulas membranous, with white villous bristles; flowers disposed in capitake whorles, the terminal one usually formed of 2 combined heads, and girded by 4 leaves. O. F. Native of Guajan and Marianne Islands. Flowers white.

Torres' Mitracarpum. Pl. 2 ½ foot.

11 M. villosum (Cham. et Schlecht. in Linnaea, 3. p. 363.) stem erect, sparingly branched, slightly tetragonal, villous; leaves oval-lanceolate, downy; stipulas membranous, cleft into many bristles; heads of flowers axillary, verticillate, and terminal, the latter girded by 4 leaves; anthers inclosed. O. F. Native of Jamaica. Spermacoece hirta, Jacq. icon. r. t. 380. and probably of Linn. Spermacoece villosa, Swartz, obs. p. 45. Corolla white. Anthers yellow. Seeds pale, somewhat tubercular on the back, and marked by a cruciate furrow in front.


12 M. hirtum (D. C. prod. 4. p. 572.) stem erect, branched, scabrous, tetragonal; leaves ovate-lanceolate, clothed with hairy pubescence; stipulas membranous, with many bristles: axillary heads of flowers verticillate; terminal ones girded by 4 leaves; anthers exerted. O. F. Native of Jamaica. Spermacoece hirta, Swartz, obs. p. 45. Very like M. villosa, but differs in being more branched, in the anthers being exerted and blue, and in the seeds being smaller, blacker, and concave in front, not with 4 rays.


13 M. Fishe'ri (Cham. et Schlecht. 3. p. 363.) stem erect, hairy, tetragonal; leaves oblong, attenuated at the base, acute, downy from very short hairs; stipulas ciliated; flowers densely capitate, terminal; teeth of calyx 4, lanceolate, acute, a little shorter than the corolla. O. F. Native of Jamaica. Spermacoece Fischéri, Link. enum. 1. p. 132. Spermacoece adscendens, Fisch. ined. Corollas white. Habit of Spermacoece Aspera, Aubl.


14 M. styl'osum (Cham. et Schlecht. in Linnaea. 3. p. 363.) stem decumbent, terete, glabrous; leaves oblong-lanceolate, attenuated at the base; bristles of stipulas long; flowers disposed in dense whorles; the two large teeth of the calyx are subulate at the apex; style exerted. O. F. Native of Manilla. Spermacoece stylosa, Link. enum. 1. p. 132. Spermacoece crassifolia, Hortul. Capsule membranous, glabrous. Corolla white. Seed orbicular, with a mark like the letter x engraved on the front, somewhat 4-lobed, of a pale, dirty colour.


§ 2. Calyx with 4 nearly equal acute teeth.

15 M. negl'ectum (D. C. prod. 4. p. 573.) plant glabrous, dichotomous; leaves oblong-linear, acute, almost veinless; bristles of stipulas 3, stiff, longer than the sheath; heads of flowers terminal, 6 times shorter than the bracteas; calyx glabrous, with 4, hardly acute teeth, which are a little shorter than the corolla.

—Native of Brazil, where it was collected by Pohl. Spermacoece neglecta, Schott ex Pohl, in litt. Heads of flowers 3 inches in diameter. Floral leaves about an inch long, and 2 lines broad. Neglected Mitracarpum. Pl.?  

† Species not sufficiently known.

16 M. squarro'sum (Cham. et Schlecht. in Linnaea, 3. p. 363.)—Native of Cuba, on rocks about Havana. Spermacoece squarrósa, Poepp. Nearly allied to M. Selloinum, but differs in its smoothness.

Squarrose Mitracarpum. Pl.

Cult. See Borreria, p. 618, for culture and propagation.

CXCIV. CRUCKSHANKSIA (named after Mr. Cruckshanks, the original discoverer of the plant, and a particular friend of both Hooker and Arnott). Hook, et Arn. in bot. misc. 3. p. 361, but not of Hook. in bot. misc. vol. 3. t. 90.

Linn. syst. Pentendria, Monog'ynia. Calyx with a globose subdudious tube, and a 5-toothed limb; teeth usually furnished with an accessory small subulate tooth on each side; one or two of the teeth are usually expanded into large reticulated pedunculate roundish membranous wings. Corolla salver-shaped, with an elongated tube, a 5-cleft spreading limb, and a glabrous throat. Stamens 5, exerted, inserted in the mouth of the corolla. Filaments club-shaped, acute; anthers linear-oblong, fixed by the base. Style filiform, a little longer than the tube of the corolla; stigma bifid, pilose: the divisions linear and acute. Capsule membranous, globose, subdudious, crowned by the more or less widened calycine segments, 5-celled, 4-valved, and furnished with 2-seeded; valves ovate, very concave, boat-shaped, 1-nerved in the middle, separable from the thin membranous white dissolution. Seeds large, obovate, black, tubercled, very deeply furrowed on the outside at the hylum. Albumen horny. Embryo central, very much curved; cotyledons flat; radicle nearly terete, inferior, elongated.—The whole plant is more or less pubescent. Root perennial, dividing into many stems at the neck. Stems herbaceous, terete, ascending, flexuous, branched. Leaves obovate-lanceolate, acute, tapering into the petiole, stipitate; stipulas interspersed, broad-subulate, free, or joined more or less. Bracteas involucrate, simple or tripartite, furnished with small subulate toothed stipulas at the base on both sides. Peduncles terminal and axillary. Flowers disposed into a rather large depressed cyume; having the corolla and calycine wings yellow.

1 C. hy'me'nodon (Hook. et Arn. l. c.)—Native of Chili, about Coquimbo. There are varieties with hoary or less pubescent leaves. This most extraordinary plant has little of the general appearance of any of the Rubiaceae, although in its most striking peculiarities, the dilatation of some of the calycine teeth into disproportionately large orbicular, or somewhat reniform petiolar wings, it has an affinity with Mussa'nda. Its place in the order is, however, near Spermacoece and Mitracarpum.

Mammea-toothed Cruckshanksia. Pl.

Cult. See Richards'onia, p. 628, for culture and propagation.

CXCVI. STAEelia (this genus is dedicated to the illustrious Baron Augustus de Stael Holstein). Cham. et Schlecht. 3. p. 364. t. 3. f. 5. D. C. prod. 4. p. 575.

Linn. syst. Tetrindria, Monog'ynia. Calyx with an ovate tube, and only 2 subulate teeth, with hardly any accessory ones. Corolla funnel-shaped, with a slender tube, and a 4-lobed acute limb. Stamens 4, exerted. Stigma 2-lobed. Capsule membranous, 2-celled, 2-valved, with an entire permanent dissepiment; valves concave, crowned each by a calycine tooth, cut at the
base by a line from the dissepiment, and therefore falling asunder. 

Seed solitary, fixed to the dissepiment.—Brazilian herbs, with terete stems. Leaves glabrous, linear, opposite, and in axillary fascicles. Stipulas membranous, narrow, of many bristles, or acutely 5-lobed. Axillary heads of flowers verticillate, and the terminal ones globose. Allied to Mirraecrium.

1 S. TRITOMIDES (Cham. l.c.) stem much branched, ascending, puberulous; stipulas acutely 3-lobed; whorles of flowers few. 2. S. Native of the south of Brazil. Leaves 5 lines long, and hardly a line broad. Corolla purple. Heads of flowers size of small peas.

**Thyme-like** Stelia. Pl. ¼ to ½ foot.

2 S. galoideis (D. C. prod. 4. p. 573.) stems glabrous, sparingly branched, twiggy, elongated; stipulas of many bristles; whorles of flowers few.—Native of Brazil, where it was collected by Pohl. Spermacoeae galooides, ex Pohl, in litt. Leaves an inch long, and half a line broad. Whorles of flowers distant at the top of the stem.

**Galium-like** Stelia. Pl. ½ foot.

3 S. reflexa (D. C. l.c.) stems smoothish, much branched; branches twiggy; leaves linear, with rather revolute margins; stipulas tridentate; whorles in nearly all the axis; floral leaves reflexed.—Native of Brazil, where it was collected by Pohl. Spermacoeae reflexa, Pohl, in litt. Whorles 20-30 on each branch. Leaves 4 lines long.

**Reflexed-leaved** Stelia. Pl. ½ to 1 foot.

Cult. See Richardsonia, p. 628. for culture and propagation.

**CXCVII. TESSIEREA** (named after M. Tessier, who has written on the diseases of wheat, and the effects of light upon plants, &c.). D. C. prod. 4. p. 574.

**Lin. syst. Tetrandria, Monogynia.** Calyx with an ovate tube, and a 4-lobed limb; lobes nearly equal, without any accessory ones. Corolla funnel-shaped, with a glabrous throat, and a 4-lobed limb. Stamens hardly exerted. Stigma 2-lobed. Capsule 2-celled, 2-valved, with an entire oval deciduous dissepiment; valves concave, crowned by the teeth of the calyx, falling asunder from being cut vertically along the dissepiment. Seeds solitary in the cells, fixed to the middle dissepiment.—American herbs, clothed in every part, except the corollas, with tomentum or wool. Leaves opposite, sessile, lined by the nerves. Stipulas cleft into many bristles. Flowers axillary, sessile, few, verticillate, bracteate.—This genus is nearly allied to *Stelia* from the structure of the fruit, but to *Borreria* or *Diodia* from habit.

1 T. LANIEREA (D. C. prod. 4. p. 574.) plant clothed with long white wool; stem or branches twiggy, terete.—Native of Brazil, where it was collected by Pohl. Diodia or Spermacoe laniera, Pohl, in litt.

**Wool-bearing** Tessiera. Pl.

2 T. LITHOSPERMOIDES (D. C. prod. 4. p. 574.) plant suffruticose, erectish, branched; grey in every part from crowded short velvety down; fruit at length glabrous. ½. ½. S. Native of Mexico, where it was collected by Haene. Spermacoeae lithospermoides, Bartl. in herb. Haene.

**Lithospernum-like** Tessiera. Pl. 1 foot.

Cult. For culture and propagation, see Richardsonia, p. 628.

**CXCVIII. GAILLONIA** (evidently named after some person of the name of Gaillon, of whom we know nothing). A. Rich. mem. soc. hist. nat. par. 5. p. 153. t. 15. f. 54. D. C. prod. 4. p. 574.

**Lin. syst. Pent-Hepactria, Monogynia.** Calyx with an ovate tube, and a 5-7-lobed permanent limb; teeth unequal. Corolla funnel-shaped, with a terete tube, and a 5-7-lobed limb; lobes oblong. Stamens 5-7, exserted from the throat, but shorter than the corolline lobes. Style filiform, thickened at the apex; stigma 2-lobed. Fruit egg-shaped, almost naked at the apex, containing 2 separable, 1-seeded, indehiscent nuts.—Hard, oppositely-branched herbs, velvety from fine down in every part, as also on the corollas. Leaves linear, ending in a callosous mucrone, opposite, bearing twin stipulas on both sides, which are sometimes short and truly stipula-formed, and sometimes long and foliaceous, and in the latter case appearing like those of Galium. Flowers some in the forks of the branches, sessile, solitary, and naked, and others sessile at the tops of the branches, between the 2 superior leaves.—Habit of *Aspérala*, with a velvety aspect. This genus ought probably to be placed among Rubiaceae, sect. Stellate.

1 G. OLIVEIRII (Rich. l.c.) stem multiple, brachiate, and as if it was articulated; branches opposite; leaves distinct at the base, linear-subulate, spineasect at the apex; stipulas leaf-formed, distinct from the leaves. ½. ½. F. Native of Persia, between Tcheran and Isphan, where it was collected by Olivier and Bruguier.

**Olivier’s Gaillonia.** Pl. ½ foot.

2 G. BORRELLII (A. Rich. l.c.) stem multiple; leaves linear-lanceolate. ½. 2. ½. S. Native along with the preceding, and probably only a broad-leaved variety of it.

**Bruguieres’ Gaillonia.** Pl. ½ foot.

3 G. SZOWITZII (D. C. prod. 4. p. 574.) stem branched at top; branches erect; leaves subulate; upper ones connate at the base, and adhering to the stipulas, and therefore appearing trifurcate and tripinose at the apex. ½. F. Native of Persia, in very arid, stony places near Nekhiteheven, where it was collected by Szowitz.—A very distinct species.

**Szowitz’s Gaillonia.** Pl. ½ foot.

Cult. The species of *Gaillonia* should be grown in pots, half filled with pot-swards, in a mixture of sand and peat, and placed among other alpine plants. They may be increased either by cuttings or seeds.


**Lin. syst. Pentandria, Monogynia.** Calyx with an ovoid tube, and a small 5-parted limb. Corolla funnel-shaped, 5-cleft, with a short tube, and a villous throat. Stamens 4, inserted in the throat, exserted; authors rather coriaceous. Stigma bipartite. Capsule oblong-cuneated, rather tetragonal, crowned by the limb of the calyx, 2-celled, separable into 2, 1-seeded, indehiscent, lignosus-coriaceous, trigonal nuts, which are fixed internally to the linear axis beneath its apex. Seeds solitary in the cells, pendulous. Radicle superior. Alumen fleshy.—Shrubs or trees natives of South America. Leaves opposite, petiolate, acuminate. Stipulas interpetiolar, solitary on both sides. Panicles sub-corymbose, terminal. Flowers white, hardly larger than those of *Aspérala*.

1 M. AUMINATA (Humb. et Bonpl. pl. equin. t. 29.) unarmed; leaves ovate-elliptic, short-acuminate, downy on both surfaces. ½. S. Native in the town of Guyaquil, by way sides, where it is called *Céiba-blanca* by the natives. H. B. et Kunth, nov. gen. amer. 3. p. 350. Flowers white.

**Auminated-leaved** Machaonia. Tree 25 feet.

2 M. BRASILIENSIS (Cham. et Schlecht. in Linnea. 4. p. 2.) unarmed; leaves oblong-lanceolate, acuminate, having the veins downy beneath. ½. S. Native at the mouth of the Amazon, about Gran-Para. Cinebora Brasilensis, Hoffmannseg. ex Willd. miss. in Humb. berl. med. p. 119. Roem. et Schultes,
Native Thymelae'a, S. andthers hence E. S. Native of Brazil. Flowers white. 

Pterostigma Machaonia. Shrub cl.?

SUTURE III. PUTOIRIE (the plants contained in this tribe agree with the genus Potoria in having fleshy, indivisible fruit). D. C. prod. 4. p. 575. Fruit rather fleshy, not separable into parts.


LIN. SIST. Tetra-Pentandria, Monogyna. Calyx with an obovate tube, and a 5, rarely 4-cleft limb; lobes short, and sometimes with a few accessory teeth between them. Corolla funnel-shaped, with the tube hairy inside, and a 5, rarely 4-parted limb; lobes induplicate in aestivation: hence they are somewhat trifid at the apex. Stamens 5, rarely 4. Anthers exserted, linear. Style inclosed; stigma bifid. Berry nearly globose, 2-celled, 2-seeded, crowned by the limb of the calyx, ex Rich. - A small shrub, glabrous in every part except the young branches, which are whitish. Leaves small, almost sessile, opposite, and generally in axillary fascicles, having an ungrateful scent when bruised. Stipules combined with the petioles, and ciliately fringed on the margins. Flowers terminal, in fascicles, almost sessile, white. - The fruit is described by Blume and Jussieu as many-seeded.


Cult. This little shrub grows well in a mixture of loam, peat, and sand; and cuttings root readily in sand, with a hand-glass over them.


LIN. SIST. Tetra-Hexandria, Monogyna. Calyx with an ovate tube, and a 4-6-parted limb; lobes oblong-linear, acute, erect, permanent. Corolla salver-shaped, with a terete, somewhat tetragonal tube, a naked throat, and 4-6 lanceolate, revolute lobes, ex Rich; but circumnately convolute according to others. Stamens with the filaments free from the upper part of the tube, longer than the corolla; anthers acute, erect. Style longer than the stamens; stigma emarginate. Berry roundish, crowned by the calyx, biseriate, 2-celled, containing two 1-seeded pyriform, or nuts. Seeds peltate, ex Rich, fixed by a longitudinal chink in the middle. Albumen cartilaginous. Embryo erect, with foliaceous cotyledons. - A decumbent shrub, native of America. Leaves opposite, almost sessile, lanceolate or elliptic. Flowers axillary, pale yellow, sessile.

1 E. littorta lis (Swartz, l. c.). ę. S. Native of Jamaica, Porto Rico, Guadaloupe, and others of the West India Islands, on the sea shore, Vahl. symb. 2. p. 28. - Knóxia, Browne, jan. 140. no. 1. Thymeza, Sloane, hist. jam. 2. p. 93. t. 109. f. 1-2. Berries yellow. In fl. mex. the flowers are painted white, and the berries reddish; it is, therefore, perhaps a distinct species. Stipulas surrounding the branch ciliated.

Sea-shore Ernodea. Shrub decumbent.

Cult. See Richardsiana, p. 628. For culture and propagation.


1 C. taimida (Hamilt. l. c.). ę. F. Native of Nipaul. Trifid-bracted Cuncea. Pi. 1½ foot.

Cult. For culture and propagation, see Richardsiana, p. 628.


LIN. SIST. Tetra-andria, Monogyna. Calyx with an ovate, angular tube, and a 4-parted, permanent limb (f. 109. a.); teeth acute, erect. Corolla campanulately funnel-shaped, 4-cleft (f. 109. a.). Anthers 4, sessile in the throat, exserted, linear-oblong (f. 109. f.). Stigma roundly 2-lobed (f. 109. b). Berry dry, corky, angular, lanceolate, crowned by the calyx, 2-celled (f. 109. c). Seeds solitary in the cells, oblong, bisulate inside, with hard albumen, and a straight embryo. - Glabrous, creeping herbs. Stems terete. Leaves opposite, ovate-oblong, fleshy, jointed with the stipulas into a cupular toothed sheath at the base. Flowers axillary sessile, usually by twos, pale lilac. -This genus is very nearly allied to Diáé, but differs in the fruit not being divisible into 2 parts, and in the stipulas not being cut into many bristles.

1 H. maríta (Lin. fil. suppl. p. 126.). ę. S. Native of Malabar and Coromandel, in the sand by the sea side, Roxb. 4 M

Sea-side Hydrophilax. Pl. creeping.

† A species not sufficiently known.

2 H. Madagascarensis (Willd. herb. ex Rœm. et Schultes, sys. 3. p. 527.) leaves lanceolate, acute, sessile, closely imbricated, sheathed; flowers terminal.—Native of Madagascar, where it was collected by Commerson.

Madagascar Hydrophilax. Pl. creeping.

Cult. This plant should be grown in a pot filled with small gravel, and watered from time to time with salted water. It will be easily increased by separating the stems, or by seeds.


LIN. SYST. Tetrandria, Monogynia. Calyx with an ovate tube, and a short tubular truncate nearly entire limb. Corolla funnel-shaped, having the tube hairy inside, and the limb with 5 lanceolate spreading segments. Stamens 4, exerted; filaments short; anthers incumbent inwardly. Stigma bifid, with approximate lobes. Drape bacatte, crowned, 8-furnished, containing 2 bony oblong 1-seeded pyrenae or nuts, which are flat inside, and furrowed on the back. Albumen fleshy. Embryo central, erect, with oblong cotyledons, and a somewhat incurved radicle. —A shrub native of the Moluccas. Leaves opposite, veinless. Flowers subcoriaceous, axillary.

1 S. hydrophilax (Gaertn. and Blum. l. c.). Γ. S. Native of the Moluccas, by the sea side. Hydrophilax, Banks, herb.

Hydrophilax-like Scyphiphora. Shrub.

Cult. For culture and propagation see Hydrophilax above.


LIN. SYST. Pent-Heptandria, Monogynia. Calyx with an ovate-globose tube, and a small simutaneously toothed limb. Corolla campanulatefunnel-shaped, 5-cleft, rarely 6-cleft. Anthers inserted between the lobes of the corolla, sessile at the throat, linear. Stigma thickish, slightly 2-lobed, or undivided. Fruit almost baccate, arcuate at the apex, and crowned by the small infulose calyx, 2-5-celled. Endcarpal membranous. Seeds solitary in the cells, erect, with thin albumen. Embryo with a tereate radicle, and flat cotyledons.—A small, glabrous, much-branched shrub, with the branches terete, slender, and pendulous. Leaves linear-silifórm, opposite. Stipulas combined, with the petioles short, bluntly toothed, membranous. Flowers solitary or by threes in the axils of the upper leaves, and on the tops of the branches, white, or short peduncles.


Cult. See Serissa, p. 633, for culture and propagation.


2 P. ? Sibbe (D. C. prod. 4. p. 577.) stem hermaphrodite, sparingly branched, rather radicate at the base; branches hispid from villi; leaves ovate, acute, villous; stipulas twin on both sides, subulate. Γ. F. Native of the East Indies, on the Negilgery mountains, in humid places, where it was collected by Lessenault, who has called it Aspérula from habit, in his herbarium. Style exerted, divided at the apex into 2 thickish, hispid, short stigmas. The flowers are much like those of the first species, but the fruit being unknown, the genus to which it properly belongs is still doubtful.

Indian Putoria. Pl. ½ to 1 foot.

Cult. A mixture of chalk, sand, and peat will be the best soil for the species of Putòria; and they may be readily increased by cuttings or seeds.

Tribe XI.

ANTHOSPERMEE (the plants contained in this tribe agree with the genus Anthosperma in particular characters). Cham. et Schlecht. in Linnea. 3. p. 389. A. Rich. mem. soc. hist. nat. Par. 5. p. 136. D. C. prod. 4. p. 578. Flowers dioecious, or hermaphrodite. Corolla rotate (f. 110. b). Styles separate to the base, ending in an elongated, hispid, or plumose stigma each (f. 110. c). Fruit constantly of 2 indehiscent, 1-seeded mericarps or nuts (f. 110. g, f), which are easily separated at maturity. Albumen fleshy. —Small shrubs or herbs. Leaves opposite or verticillate. Stipulas small, 1-3-toothed, adnate to both sides of the petioles.


LIN. SYST. Tetra-Heptandria, Digynia. Calyx with an ovate tube, and a 5-lobed short limb (f. 110. a.). Corolla cam-
panulately turbinate, with a short broad tube, a naked throat, and 4-7 acute lobes (f. 110. b. e). Stamens 4-7 (f. 110. k.). Style almost divided to the base into 2 parts; the divisions filiform, very long, pilose (f. 110. c.), and exserted. Berry nearly ovate, pulpy, containing 2-3 indehiscent, bony nuts (f. 110. f.). Seeds flat on one side, and convex on the other: one in each nut. Albumen hard, fleshy. Embryo with an inferior radicle, and foliaceous cotyledons.—Glabrous shrubs, natives of Australia. Leaves opposite, oval-oblong. Stamens interpetiolar, solitary on both sides, permanent. Flowers axillary and terminal, solitary or few together on the same peduncle, bifracteolate at the base, sometimes male by abortion. Fruit of Coffea. Stigma of Anthospermum.

1 C. DISTELLI (Labiil. nov. holl. 1. p. 70. t. 95.) leaves oblong, cuspidate; peduncles simple; flowers 3-5 together, axillary or terminal, hermaphrodite; anthers inclosed; styles very long, hairy. G. Native at Cape Van Dieman. (F. 110.)

Hairy Caprosma. Shi. 8 feet.
2 C. PENALDINNIA (Forst. prod. no. 118.) peduncles simple; flowers solitary; anthers exserted. G. Native of New Zealand. Leaves oblong obtuse. Very feathery.

Very-feathery Caprosma. Shrub.
3 C. LUCIDA (Forst. prod. no. 118.) leaves ovate, acuminate at both ends; peduncles axillary, compound; flowers sub-capitate; anthers exserted. G. Native of New Zealand. C. lucida, Gertrn. fil. carp. 3. p. 17. t. 182. is probably distinct from Forster's plant, and even appears to belong to a different genus, as the fruit is said to be a unilocular, 8-seeded berry.

Shining-leaved Caprosma. Shrub.
4 C. CUSPIDIFOLIA (D. C. prod. 4. p. 578.) leaves oval, attenuated at the base, and ending in a spine-forming point at the apex; flowers axillary, few, fasciculate, almost sessile. G. Native of Australia, at the Strait of Entrecasteaux. The flowers are probably dioecious, as in a specimen we examined they were all female. Limb of calyx nearly entire. Lobes of corolla 4-7, linear, striated by 3 parallel nerves. Anthers 1-3 at the top of the tube. Style solitary: very hairy, elongated. Berry ovate, 2-celled, crowned by the calyx. Stipules triangular, acuminate.

Cusp-leaved Caprosma. Shrub.

Cult. For culture and propagation, see Phyllis.


Lin. syst. Pentantria, Digynia. Calyx with an obovate, compressed tube, and an obsolete limb. Corolla with a short tube, and a 5-lobed spreading limb. Stamens 5. Anthers sessile at the throat. Style almost wanting. Stigma 2. Capsule obovate, compressed, narrow at the apex, divisible into two 1-seeded parts, or nuts, ex Gertrn. which hang from the central filiform axis, as in the genus Knöxia, or as in umbelliferous plants, ex Rich; but according to others there is no central axis. Seeds erect, conforming to the mericarps. Albumen fleshy. Embryo erect, dorsal, with a filiform radicle, and cordate foliaceous cotyledons.

—Glabrous shrubs, with tereate branches. Leaves opposite, or 3-4 in a whorl, acuminate. Stipulas membranous, adnate to the petioles, and cleft into many filiform bristles. Panicles terminal, compound. Flowers small, greenish white, but changing to brownish as they fade. According to Cruse, ex Linn. 6. p. 20. the fruit is shining, and the nuts are fixed by the base, not hanging from a central filiform axis.

1 P. nobla (Linn. spec. p. 333.). G. Native of the Canary Islands.—Dill. eth. p. 405. t. 299. f. 386. Panicles many-flowered. Leaves large.


Noble Bastard Hare's-ear. Fl. June, July. Cult. 1869. Shrub 2 to 3 feet.

Cult. A mixture of loam, peat, and sand is a good soil for this shrub; and cuttings root freely, if planted in a pot of sand, with a hand-glass over them.


Lin. syst. Tetrandria, Digynia. Flowers hermaphrodite. Calyx with an obovate tube, and a very minute, nearly equal limb. Corolla subrotate, 4-parted, almost cleft to the base. Stamens 4, inserted in the bottom of the corolla. Anthers oblong. Styles 2, very short, each ending in a long hairy stigma. Fruit obovate, rather didymous, somewhat compressed from the back, and elegant and gyroscopically warty on the back, composed of two 1-seeded, indehiscent mericarps, joined by a concave commissure, but at length separating from each other.—A glabrous herb, with the habit of Circce'a. Stem rather angular from 2 elevated lines which run from the stipulas, branched. Leaves opposite, 1 to 3 inches long, obovate-lanceolate, acuminate, tapering into the petioles, paler beneath, with sori-lately-scabrous margins. Stipulas trifurcate. Peduncles terminal and axillary, the whole forming a large terminal, trichotomous panicle, which is nearly a foot in diameter. Flowers small. Fruit dark brown.


Enchantress's Nightshade-like Galopina. Pl. 2 feet.

Cult. See Phyllis above for culture and propagation.


Lin. syst. Tetra-Pentandria, Digynia, or Diazia Tetra-Pentandria. Flowers dioecious or hermaphrodite. Calyx with an obovate tube, and a 4-5-toothed deciduous limb (f. 110. a.). Corolla funnel-shaped, with a short tube, and a 4-5-parted limb (f. 110. b.); lobes linear or ovate-lanceolate, revolute, valvate in restitution. Stamens 4-5, inserted in the base of the tube of the corolla (f. 110. c.). Anthers oblong, sub-tetragonal, exserted. Styles 2, very short, connate? ending each in a long 

FIG. 110.
hairy stigma (f. 110. f. g). Fruit composed of 2 easily-sepa-
rated, induscent, 1-seeded mericarps, which are a little com-
pressed at the raphe, and joined together by a flatfused
suture. Albumen sub-cartilaginous. Embryo dorsal, erect.—
Small shrubs or herbs, natives of the Cape of Good Hope.
Stems branched. Leaves linear or lanceolate, small, opposite or
verticillate. Stipulas adhering to the petioles at the base, drawn
out into a tooth in the middle. Flowers axillary, sessile, verti-
cillate or opposite, rarely panicled, small, furnished each with
2–3 bracteas at the base, usually dioecious. The male flowers
are always smaller than the female ones.

* Flowers dioecious, sessile in the axils of the leaves.

1 A. BERGIAINUM (Cruse, rub. cap. p. 8.) leaves linear-lanceo-
late, 3 in a whorl, imbricated, and connately pediolate, ciliated;
flowers pentandrous, disposed in a verticillate spike; G. 
Native of the Cape of Good Hope. Stem branched, terete or
obsoletely angular, glabrous at the base, but clothed with long
white hairs above. Leaves pale green, having the margins and
keel ciliated with long white hairs, half an inch long. Whorles
3-flowered. 

Bergia's Amber-tree. Shrub 1 foot.

2 A. AETHIOPICUM (Lin. spec. 1511.) leaves linear-lanceolate,
3 in a whorl, glabrous; stipulas simple, short, acute; flowers
tetrandrous, disposed in verticillate spikes; G. 
Native of the Cape of Good Hope, Cruse, rub. cap. p. 10.
Gerrn. fruct. 3. p. 195. Lin. hort. clff. t. 27.—Pluk. alm. t.
183. f. 1.—Ambrària Heisteri, Walth. hort. t. 9. Stem much
branched, downy above. Leaves shining above, and whitish
beneath, 2–3 lines long. Male flowers brownish, and the female
ones green.

Ethiopian Amber-tree. Fl. June, July. Ch. 1692. Shrub
2 to 3 feet.

3 A. SPATULATUM (Spreng. gen. contd. 3. p. 45. syst. 1. p.
399.) leaves opposite, linear-spulate, bluishish; flowers axil-
ary, sub-verticillate; mericarps oblong, warted; branches
twiggy, crenely spreading, downy. G. 
Native of the Cape of Good Hope, Cruse, rub. cap. p. 9, and p. 13.
A. Aethiopicum, var. b, oppositifolium, Schlecht. and Cruse, in Linnaea.
6. p. 10. It differs from A. Aethiopicum in the opposite,
linear-spulate leaves, and in the more loose habit. A. Aethiopicum,
var. c, Ecklonianum, Schlecht. and Cruse, in Linnaea, 6. p. 10.

Spatulate-leaved Anthospermum. Shrub 2 feet.

4 A. CILORE (Lin. spec. 1521.) leaves opposite, lanceolate,
acute, ciliated; stipulas short, short; flowers axillary, tetrar-
androus; mericarps oblong, glabrous, shining, destitute of the
calyx limb. G. 
Native of the Cape of Good Hope, Gerrn. fil. carp. 3. p. 195. Cruse, rub.
344. f. 5. Stem usually decumbent, much branched; branches
angular, downy. Leaves glabrous, and green above, but white
beneath, connate at the base. Lobes of the corolla hairy out-
side. Anthers white.—The A. galoideis, Rechb, differs from this
in the leaves being rusty beneath.

Ciliated-leaved Amber-tree. Shrub decumbent.

5 A. LANCEOLATUM (Thum. prod. 32. fl. cap. p. 157.) leaves
opposite, lanceolate, acute, glabrous, spreading; stipulas pro-
foundly bifid; flowers axillary, sub-verticillate, tetrandrous, and
often pentandrous; mericarps ovate-oblong, glabrous. G. 
Native of the Cape of Good Hope, Cruse, rub. cap. p. 12. A.
herbacem, Lin. fil. suppl. p. 440. Stem procumbent, glabrous,
brownish purple. Branches sub-tetragonal, purplish, downy at the
apex. Leaves an inch long, connate at the base, paler
beneath, and whitish. Habitat of Galiwm.

Lanceolate-leaved Amber-tree. Shrub procumbent.

6 A. uritum (Cruse, rub. cap. p. 11.) leaves opposite, lanceo-
late, acute, ciliated while young, hairy at the base; stipulas sim-
ple, subulate, hairy; flowers axillary, pentandrous; mericarps
unknown. G. 
Native of the Cape of Good Hope, on
p. 5. p. 580. Stem purplish brown, branched, beset with white
hairs about the axis of the leaves. Branches purple, hairy.
Leaves oval long, connate at the base. Stipulas hairy, of a
shining green colour above, but whitish beneath.

Hairy Amber-tree. Shrub 1 foot.

7 A. saccatum (Thum. prod. 32. fl. cap. p. 158.) leaves
opposite, linear, somewhat trigonal, acuminate, having the mar-
gins and keel scabrous; stipulas simple, very short; flowers
axillary, pentandrous. G. 
Native of the Cape of Good
Hope, on the mountains. Stem decumbent at the base, branched
a little. Branches aggregate, twiggy, crenulous at the base, and
rather scabrous at the apex, leafy. Leaves ½ to 1 inch long, connate
at the base.

Scabrous Amber-tree. Shrub ½ decumbent.

* * * Flowers dioecious, panicled.

8 A. PANCULATUM (Cruse, rub. cap. p. 9, and p. 15. t. 1.
f. 2.) leaves opposite, linear-subspatulate; stipulas short, sim-
ple; flowers panicled, tetradrous; mericarps glabrous, with 3
ribs. G. 
Native of the Cape of Good Hope. Stem
fuscescent, branched from the base; branches downy. Leaves
glabrous, blunting, pale on the lower surface, hardly ½
inch long. Panicle terminal, narrow, elongated. Fruit crowned by
the calyceal teeth.

Panicled-flowered Amber-tree. Shrub 1 to ½ foot.

* * * Flowers hermaphroditic.

9 A. LICHTENSTIINI (Cruse, rub. cap. p. 15.) leaves opposite,
linear, keeled, glabrous, ciliated; stipulas simple, ciliated;
flowers axillary, verticillate; mericarps hairy. G. 
Native of
the Cape of Good Hope. Spermacoce ericoides, Lich. in
Reem. et Schultes, syst. 3. p. 281. Stem branched, glabrous
at bottom, and downy at top. Branches naked at the base.
Leaves connate at the base, mucronate. Flowers tetrandrous.

Lichtenstein's Amber-tree. Shrub 1 to 2 feet.

10 A. Spermacoce (Rechb. in Spreng. syst. 4. p. 338.) leaves
opposite, oblong-lanceolate, with scabrous margins; stip-
ulas entire; flowers axillary, solitary, pedicellate, pentandrous;
calyx 5-toothed. G. 
Native of the Cape of Good Hope.
Stem herbaceous, flexuous, rather angular, branched, glabrous,
downy at the apex. Leaves connate at the base. Stipulas
pliote, cleft into bristles.

Spermaceae-like Amber-tree. Fl. 1 foot.

Cult. See Phyllis, p. 635. for culture and propagation.

CCXI. AMBRARIA (a name formerly applied to the genus
Anthospermum by Heister, and is probably derived from Cape
Ambra, in Madagascar). Cruse, rub. cap. p. 16. t. 1. f. 34.
hist. nat. Par. 5. p. 139. t. 12. f. 2.

Lin. syst. Dioxia, Tétrandra. Flowers dioecious, of the
same structure as those of Anthospermum, but differs from that
genus in the capsule being 5-celled, the intermediate cell vacant,
and the lateral ones 1-seeded. The rest as in Anthospermum.

1 A. nitra (Cruse, rub. cap. p. 17. t. 1 f. 2.) leaves 3 in a
whorl, connately pediolate; fruit tomentously hairy. G. 
Native of the Cape of Good Hope. Shrub much branched from
the base, hairy at the top. Leaves linear, subtriquetrous, glab-
rous, connate at the base, with the margins and keel ciliated,
at length imbricated and deciduous. Stipulas hardly prominent, ciliate. Flowers axillary, verticillate. According to Cham. et Schlecht. Clitófora cinerea, Lin. is a synonyme of this.

**Uairy Ambraria.** Shrubs $\frac{1}{2}$ to $\frac{3}{4}$ foot.

2 A. *Ciaera* (Cruse, rub. cap. p. t. 1. f. 3.) leaves 3 in a whorl, connately perfoliate; fruit obovately subglobose, glabrous.  bj. G. Native of the Cape of Good Hope. Nénax acerosa, Gaertn. fruct. t. 32. f. 7. Young branches reddish. Leaves linear, subtriquetrous, glabrous, seriatly ciliated on the margin and keel, 3-6 lines long, and $\frac{1}{2}$ to 1 broad. Flowers axillary, subverticillate.

**Glabrous Ambraria.** Shrubs $\frac{1}{2}$ to $\frac{3}{4}$ foot. Cult. See *Phyllis*, p. 635. for culture and propagation.

**Tribe XI.**

**STELLATE** (from *stellatus*, starry; the leaves and stipulas form whorls, resembling the rays of a star). Ray, syn. p. 229. Cham. et Schlecht. in Linnaea. 3. p. 220. D. C. prod. 4. p. 580. — Aperineae, Link, (1809). — Galée, Kunth, nov. gen. amer. (1818) p. 335. — Asparacérea, A. Rich. mem. soc. hist. nat. Par. (1830) p. 126. Flowers hermaphrodite, rarely of different sexes. Corolla rotate or funnel-shaped; lobes valvate in anthesis. Styles 2, almost distinct from the base, or more or less combined in one. Stigmas capitulate. Fruit constantly of 2 indehiscent 1-seeded mericarps. Seeds hardly distinct from the pericarp and calyx. Albumen horny. — Usually herbs, rarely small shrubs. Leaves opposite, bearing each a bud in the axils, furnished with 1-2 or 3 leaf-formed stipulas between the leaves on both sides, which are destitute of buds, and form whorles along with them. Roots usually red, furnishing a red dye, as the madder. — The leaves are only to be distinguished from the stipulas in having buds in their axils.


**Lin. syst. Tetradria, Monogynia.** Calyx with an ovate tube, and a 4-6-toothed permanent limb. Corolla funnel-shaped, with a terete tube, and a 4-lobed limb. Stannias 4. Style 1, 2-lobed at the apex; stigmas capitellate. Fruit dry, crowned by the calyx, divisible into two mericarps; mericarps 1-seeded, indehiscent, flat on one side, and convex on the other. — An annual herb native of Europe. Leaves opposite, with 1-2 stipulas on each side, obovate, acute, scabrous, forming whorls. Flowers small, red, capitulate, almost sessile, girded or involutated by the uppermost whorl of leaves.

1 S. *Arve'ssis* (Lin. spec. p. 119.)  bj. H. Native of Europe and Tauria, very common in fields in sandy soil; plentiful in many parts of Britain in fallow fields and among corn. Fl. dan. t. 439. Cart. lond. 5. t. 13. Smith, engl. bot. t. 891. Schkuhr, handb. t. 22. — Barcel. icon. t. 541. Root with many reddish brown fibres. The whole plant rough and hairy. Leaves rough along the edges and keel, 4-6 in a whorl.

**Corn Field-madder.** Fl. April, Sept. Britain. Pl. $\frac{3}{4}$ to $\frac{3}{2}$ ft.

N. B. *Sherardia fruticosa* (Lin. spec. 149.) stem shrubby; leaves 4 in a whorl, equal; flowers axillary.  bj. G. Native of the island of Ascension. Stipulas very short, subulate, interfoliaceous. Corolla white. Fruit unknown. This plant appears to be intermediate between *Didia* and *Spermacoce*.

Cult. The seeds only require to be sow in the open ground in a dry situation.


**Lin. syst. Tetradria, Monogynia.** Calyx with an ovate didymous tube, and a very short 4-toothed deciduous or obsolete limb. Corolla funnel-shaped, rarely campanulate, 4-cleft, rarely 3-cleft. Styles 2, joined together at the base, and nearly to the apex. Fruit didymous, not crowned by the calyx, dry, or hardly fleshy; mericarps easily separated, indehiscent, 1-seeded.—Herbs, rarely small shrubs. Stems and branches usually tetragonal. Leaves opposite, with 1-2-3 stipulas on each side; they are therefore called 4 to 8 in a whorl, but between the uppermost leaves there are no stipulas. Flowers terminal and axillary, in fascicles.


1 A. *Arve'ssis* (Lin. spec. p. 149.) plant erect, smoothish; leaves 6-10 in a whorl, lanceolate-linear, a little ciliated; lower ones obovate; floral ones ciliated with long hairs; corybens ciliated, terminal, many flowered; flowers sessile; fruit glabrous.  bj. H. Native of Europe and Caucasia, in fields and arid stony places. A. corcula, Dod. pempt. p. 585. Lob. icon. t. 801. f. 2. A. ciliata, Moench. meth. p. 484. A. doubt, Wild. herb. ex Spreng. Roots yellow. Under surface of leaves whitish from adpressed hairs. This differs from all the other species of *Asperula* in the flowers being blue. It differs from Sherardia in the capsule not being crowned by the calyx, in the blunter leaves, and in the floral leaves being ciliated. Anthers yellow.

**Cornfield Woodroof.** Fl. July. Cit. 1596. Pl. $\frac{3}{4}$ to 1 foot.

2 A. *Ciliata* (D. C. prod. 4. p. 582.) stems ascending, angular, glabrous; leaves 6-9 in a whorl, lanceolate-linear, acute, and are as well the bracteas, serrated by stiff cilia; flowers almost sessile, disposed in a terminal subumbellate corymb, pedunculose; style exerted.—Native of Persia, where it was collected by Gneelin. Corollas glabrous, 5-6 lines long. Stamens 5.

**Ciliated Woodroof.** Pl. ascending.

3 A. *Trichodes* (Gay, in litt. 1821) ex D. C. prod. 4. p. 582.) stems erect, simple at the base, branched at the apex, glabrous; leaves glabrous, subultimately filiform, equal in length to the internodes; cauline ones 10-16 in a whorl, and the rameal ones 2-6 in a whorl; pedicels solitary, almost axillary; corollas small, downy outside, trifid; fruit obturate, clothed with very short down.  bj. H. Native of the north of Persia. Stem very smooth, white, 7-10 inches high. Leaves an inch long, scabrous. Corolla greenish-white, with a slender terete tube, and oblong awnless lobes. Stamens 3.

**Hairly Woodroof.** Pl. $\frac{3}{4}$ to 1 foot.


4 A. *Taurina* (Lin. spec. 150.) plant smoothish, erect; leaves 4 in a whorl, ovate-lanceolate, 3-nerved, with finely ciliated margins; corybens pedunculate, axillary, fasciculate umbellate, involutated; bracteas ciliated; fruit glabrous, and rather scabrous.  bj. H. Native of Dauphiny, Piedmont, Switzerland, Carniola, Iberia, &c. on hills in shady places. A. triërìvà, Lam. fil. fr. 3. p. 376. Gálium Tauricum, Scop. carn. no. 148. Lob. icon. t. 800. f. 1.—Moris, hist. sect. 9. t. 21. f. 1.—Hall. helv. no. 752. Leaves broad. Corollas white, elongated. Anthers violaceous, exserted.

**Bell Woodroof.** Fl. April, July. Cit. 1759. Pl. 1 foot.

5 A. *Léviota* (Lin. mant. p. 58.) plant glabrous, ascending; leaves 4 in a whorl, elliptic, nervs, with finely scabrous margins; cymes corybecute, pedunculate, axillary or nearly terminal; corolla with a short tube; fruit glabrous, scabrous from elevated
RUBIACEÆ. CCXIII. ASPERULA.


6 A. hexaphylla (All. ped. no. 48. t. 77. f. 3.) plant ascending, glabrous; leaves 6 in a whorl, linear, spreading, acute, with revolute scabrous margins; cymes terminal; flowers aggregate, umbellate; bracteas glabrous, acute, shorter than the flowers.  2. H. Native of Piedmont, on the lower Alps about Tende and Saorgio. A. Allioni, Baumi. enum. trans. 1. p. 89. Corolla purple outside, but white within.

Var.  β, rigida (D. C. prod. 4. p. 582.) leaves stiffer and blunter than those of the species, and the floral ones are obovate.  2. H. Native of Sicily, in the fissures of calcareous rocks by the sea side. A. hexaphylla, Guss. profl. fl. sic. 1. p. 166. There are glabrous and downy variations of this plant.

Six-leafed Woodroof. Pl. ½ foot.

7 A. graecifilis (Meyer, verz. pfl. p. 52.) plant perennial, smooth, glabrous; stems filiform, much branched, diffuse; leaves 4 in a whorl, equal, elliptic, blunter, with rather scabrous margins; upper ones opposite; umbels terminal, few-flowered; corolla 4-5-cleft, almost glabrous; with obuse segments; style seminifl.; mericarps smooth, glabrous.  2. H. Native of Caucasus, in alpine places at the river Maka.

Slender Woodroof. Pl. diffuse.

8 A. uncata (Lamond, bul. phil. no. 41. p. 131. t. 9. f. 1. 2-3.) plant tufted, erectish; leaves 6 in a whorl, linear, acute, hairy, longer than the internodes; flowers aggregate umbel late, terminal, sessile, exceeding the bracteas; fruit glabrous.  2. H. Native of the central Pyrenees, on the higher ranges on dry banks. A. nov. spec. St. Amans, trav. pyr. 194. Corollas white, purplish outside. In cultivation the plant becomes smooth, and is then referable to  A. hexaphylla.


9 A. tintoria (Lin. spec. 150.) plant erectish, glabrous; leaves linear; lower ones 6 in a whorl; middle ones 4, and the uppermost few opposite; floral leaves ovate; flowers usually triandrous.  2. H. Native of Europe, on hills in arid stony places. A. rubiβa L., Lam. fl. fr. 3. p. 375. Gálium tintorium, Scop. carn. no. 149.—Tabern. icon. t. 733. f. 2. Roots large, creeping, reddish, and are used in Gothland instead of madder for dyeing red. Plant procumbent, unless supported. Stem 1-2 feet long, purplish. Flowers usually by threes. Corollas white, reddish on the outside. Very like  A. cynanchica.


10 A. cynanchica (Lin. spec. p. 151.) plant glabrous, erectish; leaves 4 in a whorl, linear; lower ones small, oblong, upper ones opposite; floral ones lanceolate-linear, acuminate; awned; flowers terminal, quadrifid; fruit granulat.  2. H. Native of Europe, in dry gravelly places; abundant in many parts of England on chalky downs. Smith, engl. bot. t. 33. Berg. phyt. t. 81. Rubia cynanchica, J. Bauh. hist. 3. p. 723. with a figure. Asp. rubiβa, Lam. fl. fr. 3. p. 375. A. tinctoria var. β, Lam. dict. 1. p. 298. Gálium cynanchicum, Scop. carn. no. 147. Herb variable in habit. Stems prostrate, dichotomously branched. The flowers grow on erect branches, forming a fastigate corymb, white or blush-coloured, elegantly marked with red lines, and sometimes they are pure white. Dalechamp seems to be the chief authority for the reputation this plant formerly acquired in the cure of quinsies. He says it should be applied externally, as well as taken internally, but it is now entirely out of use.


11 A. supina (Bieb. fl. tur. 1. p. 101.) glabrous; stem much branched at the base, procumbent; leaves 4 in a whorl, linear, acute; lower ones imbricately crowded; peduncles 3-flowered, axillary and terminal, rather panicked; corolla with a terete tube, and 4 oblong lobes; fruit glabrous.  2. H. Native of Tauria and Caucasus, in the fissures of calcareous rocks, and in gravelly places. A. cynanchica  β, Meyer, verz. pf. p. 406. Very nearly allied to A. cynanchica, but the flowers are white, not as in it, blush-coloured. Internodes of the stem short.


12 A. longiflora (Waldis. et Kl. pfl. rar. hung. 2. t. 150.) stems numerous from the same neck, erectish, glabrous; leaves 4 in a whorl, linear; lower ones small, obovate; upper ones opposite; fascicles of flowers terminal, pedunculate; bracteas small, subulate; tube of corolla elongated; fruit glabrous, smooth.  2. H. Native of Croatia, Carniola, and Carinthia, in mountainous places, and on rocks. A. suavolens, Schrad. in litt. 1815. Corolla white, yellowish inside, and reddish outside. Stems weak.


13 A. brevifolia (Vent. hort. cels. p. 65. t. 63.) plant glabrous, decumbent; leaves 4 in a whorl, very short, distant: uppermost ones opposite; flowers axillary, solitary on short pedicels, and in terminal fascicles; corolla 4-cleft; style bipartite to the base.  2. H. Native of Caramania, near Cylindre on mountains. Stem much branched. Corollas at first yellowish-green, but at length becoming purplish.


14 A. lu£tea (Smith, fl. grac. t. 120.) stems erect; leaves 4 in a whorl, linear, glabrous, mucronate; flowers in fascicles, downy, awned.  2. H. Native of Mount Parnassus. Rubéola Crética saxatilis frutescens flore luteo, Tourn. cor. p. 5. Flowers yellow. Fascicles of flowers spicate.

Yellow-flowered Woodroof. Pl. 1 foot.

15 A. aristata (Lin. suppl. fl. 120.) plant erect, glabrous; leaves 4 in a whorl, linear, acute: upper ones opposite: the floral ones like the rest, but smaller; flowers in terminal fascicles; lobes of corolla bluntly awned.  2. H. Native of the south of Europe, Sicily, &c. Flowers usually by threes, pale yellow.


16 A. montana (Willd. enum. p. 151.) glabrous; stem flaccid; leaves linear; lower ones 6 in a whorl; middle ones 4, upper ones opposite; floral leaves linear; flowers in fascicles; corollas 4-cleft, scabrous externally.  2. H. Native of Hun-

Mountain Woodroof. Fl. June, July. Cl. 1801. Pl. ½ to ¾ foot.

17 A. virs'E'ta (Desf. fl. atl. 1 p. 127.) plant erect or ascending; leaves 6 in a whorl, linear, acute, with revolute margins: lower ones and tops of stems glabrous; flowers in fascicled umbels, rising from the tops of the stem or branches; bracteas hardly exceeding the ovaries; fruit glabrous. 2. H. Native of Algiers and Algarves, on chalky and sandy hills. Rubia Lusitánica, t. c. Tourn. inst. p. 130. A. répens, Brot. phyt. lus. pl. 10. 10. A. Algérica, Pers. ench. 1 p. 124. Rubia répens, &c. Grisel. vir. no. 1244. Stem hairy at bottom. Leaves glaucous. Flowers subcapitate, red. In cultivation this plant becomes smooth.

Hairy Woodroof. Fl. May, June. Cl. 1819. Pl. 1 to 2 ft.

18 A. Tomentó'sa (Ten. prod. xii. fl. neap. t. 9.) plant ascending or diffuse, clothed with velvety tomentum; leaves 4 in a whorl, linear, with revolute margins: lower ones obovate; flowers terminal or axillary, 8-10 in a fascicle; bracteas rather shorter than the flowers. 2. H. Native of Goats' Island, near Naples, in arid places. Herb branched from the base. Stem tetragonal. Stipular leaves the longest. Tube of corolla longish. Corolla red. A crassifolia, Lin. mant. p. 37. does not seem to differ from the present plant. Perhaps A. scabra, Link, enum. 1 p. 134. is also the same.

Făr. 5. Demiglabra (D. C. prodr. 4 p. 58.) lower part of herb velvety; upper part and flowers glabrous. 2. H. Native along with the species, and probably of Sicily at Càfalu. A. commutátà, Presl, fl. sic. prod. p. 62.? Rœm. et Schultes, syst. 3 p. 267.?


19 A. inc'ana (Smith, fl. græc. t. 119.) stems villous at the base, and smoothish at top; leaves 6 in a whorl, linear, hairy, flowers downy, in terminal fascicles. 2. H. Native of Candia, on the Sphecceotn mountains. Flowers pale red.

Hoary Woodroof. Pl. ½ to ¾ foot.

20 A. Arcadí'esnis (Sims, bot. mag. t. 2146.) plant hoary, decumbent; leaves 6 in a whorl, oblong-ovate, acute, with revolute edges; flowers terminal and axillary, aggregate, sessile; style bifid at top. 2. F. Native of Arcadia, on Mount Tyria. A small hoary plant, with rose-coloured flowers. Gália Grec'm of Hort.

Arcadian Woodroof. Fl. May, Cl. 1819. Pl. 2 to 3 inches.

21 A. De'blis (Led. hort. dorp. suppl. 1824, p. 2.) plant hispid from pili; leaves 6 in a whorl: upper 4 in a whorl, linear-lanceolate, scabrous above, and keen smooth; umbels lateral, pedunculate, 3-flowered; corolla funnel-shaped; fruit granular. 2. H. Native of Tauria, near Bachtachsaraf.

Weak Woodroof. Pl. ½ foot.

22 A. Nísida (Smith, fl. græc. t. 121.) glabrous; stems diffusely tufted, as well as the leaves; leaves 4 in a whorl, shining, glaucescient; lower ones oval, the rest linear, acute, awned, revolute; fascicles terminal, 3-4-flowered, length of leaves; lobes of corolla awned; tube terete, wide; fruit glabrous, rather rugged. 2. H. Native of Sicily, on rocky and gravelly mountains, and on Mount Olympus, in Bithynia. Guss. prod. fl. sic. 1 p. 168. Flowers purplish. Very like A. hexaphyllum.

Nítid Woodroof. Pl. tufted, ½ foot.

23 A. scabr'a (Presl. del. prag. p. 124. but not of Link.) stem scabrous, diffuse, kneed; leaves 4 in a whorl: lower ones oblong downy: upper ones glabrous, linear, unequal, opposite, small, awned; flowers in fascicled; corollas scabrous, with the

lobes mucronate; style biparite to the base. 2. H. Native of Sicily, on dry mountains; of Spain, in arid places; and of Portugal, on the banks of the Tagus and Douro. Guss. prod. fl. sic. 1 p. 167. A. digyna, Dufour, ann. gen. sc. phys. 7 p. 295. A. macrorhiza, Link. fl. port. 2 p. 41. t. 84. Stamens exactly quadrangular. Flowers purplish white. Habit of A. longifólia, but differs from it in the lower leaves and flowers being downy.

Scabrous Woodroof. Pl. 1 to 2 feet.

24 A. Alpína (Bieb. fl. taur. suppl. p. 103.) the whole plant, as well as the corollas and ovaries are downy; stems procumbent, much branched, tetragonal; leaves 4 in a whorl, linear, acute: upper ones nearly equal, spreading; cymes terminal, crowded, 5-7-flowered; lobes of corolla 4. 2. H. Native of Eastern Caucasus, on the Alps. A. cynáchica, var. yr. Stev. in mem. soc. mosc. 3 p. 253. Meyer, verz. pl. p. 406. Flowers white, or tinged with red. Leaves shorter and broader than in A. cynáchica, and the lower ones blunter.


25 A. cretác'ea (Willd. in Rœm. et Schultes, syst. 3 p. 529.) stems tufted, prostrate; leaves 6 in a whorl, lanceolate: the whorles so close as to be imbricated; flowers terminal, aggregate. 2. H. Native of Siberia, in chalky places.

Cretaceous Woodroof. Pl. prostrate.

26 A. tauri'atrás (Smith, fl. græc. t. 129.) stem downy; leaves linear, 4 in a whorl, scabrous on the margins and stem (almost hoary, according to D'Urv.) floral ones opposite: flowers quadrifid, pilose; fruit hispid. 2. H. Native on the shores of the Euxine Sea, on hills. Flowers pale red. Fascicles of flowers disposed in terminal panicles.

Sea-shore Woodroof. Pl. procumbent.

27 A. negléc'ta (Guss. fl. rar. 69. t. 13. f. 1.) stems numerous, hairy, ascending; leaves 4 in a whorl, hairy, acute, longer than the internodes: lower ones obtuse; flowers in terminal fascicles; mericarps globose, hispid. 2. H. Native of Abruzzo and Sardinia, in alpine places. Corolla white inside, and reddish outside, and downy. Bracteas ovate. Said to be allied to A. littoralis.

Neglected Woodroof. Pl. decumbent.

28 A. six'ens (Guss. fl. rar. 70. t. 13. f. 2.) plant smooth; stems tufted, decumbent; leaves 4 in a whorl, awned, longer than the internodes, shining, quite glabrous; lower ones the broadest; flowers in terminal fascicles; lobes of corolla awned; mericarps tuckercularly mucricated. 2. H. Native of Abruzzo, in arid, alpine situations. Flowers white inside, and purplish outside. Very like A. negléc'ta, and probably only a variety of it.

Shining Woodroof. Pl. decumbent.

29 A. ni'sida (Sibth. et Smith, fl. græc. t. 121.) stems diffusely, downy; leaves linear, 4 in a whorl, superior ones opposite; flowers scattered; fruit glabrous. 2. H. Native of Candia, on hills and in fields, Rœm. et Schultes, syst. 3 p. 270. exclusive of the syn. of Lois. Leaves rather scabrous. Flowers pale red, disposed in terminal and lateral few-flowered fascicles.

Staff Woodroof. Pl. ½ to 1 foot.

30 A. suber'es (Smith, fl. græc. t. 123.) stems tufted, ascending; root corky; leaves 4 in a whorl, linear, rather hoary; lobes of the corolla awnless. 2. H. Native of Greece, on high rocks. Stems downy. Flowers rose-coloured, disposed in subsipicate fascicles.

Corky-rooted Woodroof. Pl. ½ to ¾ foot.


31 A. longifóli'ea (Smith, fl. græc. t. 118.) stems smooth;
leaves 8 in a whorl, linear-lanceolate, deflexed, with rather scabrous margins; panicles capillary, many-flowered; fruit smooth.  
H. Native of Turkey, about Constantinople. Flowers white, campanulately funnel-shaped. Habit of a species of Gálium. 


32 A. odoráta (Dod. fl. p. 355.) plant glabrous, erect, or ascending; stems simple; leaves 8 in a whorl, lanceolate, smooth, with serrately scabrous edges; corymb terminal, pedunculate; fruit hispid.  
H. Native of Europe, Siberia, and Caucasus, in shady places and woods, plentiful in Britain. Cbl. fl. t. 502. Lam. ill. t. 61. Mill. fig. t. 55. Smith, eng. bot. t. 755. Blackw. t. 267. Gálium odoráatum, Scop. carn. no. 158. Root creeping a little below the surface of the soil. Stems tetragonal. Corymb usually trifid, each division bearing about 4 flowers. Flowers snowy white. The plant is without scent when fresh, but when dried diffuses an odour like that of vernal grass. It is said to give a grateful flavour to wine; and when kept among clothes, not only to impart an agreeable perfume to them, but to preserve them from insects. Turner calls the plant Wood-rose, or Wood-rowel. 

Gerard, Woodrose, Woodrowell, and Woodroof; and Parkinson, Woodroof. In modern times it is called Woodroof, or Woodruff; These names are derived from the place of its natural growth, in woods, and from the whorls, ruffs, or rows of leaves. 

Sweet-scented or common Woodroof. Fl. May, June, Britain. Pl. ½ to 1 foot. 

33 A. apárine (Bieb. fl. taur. p. 102. and suppl. 105. Bess. fl. gall. 1. p. 114.) branches diffuse, straggling, with scabrous angles; leaves 6-8 in a whorl, oblong or lanceolate, scabrous, having the keel and margins beset with small retrograde prickles; peduncles axillary, branched, disposed in a loose fasciculate panicle; corolla short, tubular; fruit granular.  

Herb scabrous all over. 


34 A. paniculáta (Bunge in Ledeb. fl. alt. ill. t. 301. fl. alt. 1. p. 140.) stems tetragonal, glabrous; lower leaves 4 in a whorl: the rest 6, oblong-lanceolate, acuminate, with scabrous margins; flowers terminal and axillary, panicled; panicle diffuse; corolla campanulate; fruit smooth.  
H. Native of Siberia, in grassy parts of mountains at the rivers Tscharysch and Sentelek, and in sandy places at the river Katunja. Leaves rather glaucous beneath. Corollas white, with obtuse segments. 

Panicled-flowered Woodroof. Pl. 1 foot. 

35 A. subélvétina (D. C. prod. 4. p. 585.) stems many, branched, erect, velvety from small down; leaves 3-8 in a whorl, broad-linear, obtuse, rather velvety; flowers verticillate, and capitate at the tops of the branches; floral leaves small; corollas campanulate; fruit glabrous.  
H. Native of Persia, on Mount Elwend, where it was collected by Olivier and Bruniquere. Old stems permanent, white, and glabrous. Leaves 6 lines long, and a line broad. 

Rather-velvety Woodroof. Pl. ½ to 1 foot. 

36 A. galáloïdes (Bieb. fl. taur. 1. p. 101. and suppl. p. 104.) plant glabrous; stems terete, ascending; leaves 6-8 in a whorl, linear, glaucous; peduncles dichasious, terminal, racemose; corolla campanulate; fruit glabrous, smooth.  
H. Native of Middle and South Europe, even to Tauria and Caucasus, in stony places. Gálium glaucócium, and probably Gálium monánum, var. Lin. spec. 156. Asp. gláucia, Bess. Gálium Hal-léri, Sut. fl. helv. 1. p. 88. Gálium campanulatum, Vill. dauph. 2. p. 326. Gálium grandiflorum, Clairv. man. p. 41. Flowers white. Plant glaucous.—This is a very variable plant, and is intermediate between Gálium and Aspérula. Stems either terete or blunted sub-tetragonal, erectish or diffuse, smooth or scabrous at the base. Leaves with revolute or flat margins, obtuse or mucronulate.—See Jacq. fl. austr. t. 84. Vill. dauph. in. M. Bocc. Gálium 'Tyráica, (D. C. prod. 4. p. 585.) stems erect, hispid at the base; lower leaves rather hispid.  


37 A. humpífísa (Bieb. fl. taur. suppl. p. 105.) stems prostrate, much branched, hispid, tetragonal; leaves 6 in a whorl, linear, spreadingly reflexed, with scabrous edges: lowermost ones 8 in a whorl; pedicels axillary, usually by threes, 1-flowered; corolla sub-campanulate, with a short tube; fruit glabrous.  


† Species not sufficiently known. 

38 A. tournefortí (Sieb. ex Spreng. syst. 1. p. 395.) stems suffrutescous; leaves obovate-oblong, quite glabrous, glaucous; whorles of flowers approximate; flowers sub-fasiculate, hispid. 
H. Native of Candia. 

Tournefort’s Woodroof. Pl. suffrutescous. 

39 A. umbelláta (Willm. herb. ex D. C. prod. 4. p. 586.) 
H. Native of Hungary. This is the same as A. hexáphíthía, ex Spreng. syst. but according to Stevens, obs. miss. it differs in the flowers being shorter. 

Umbellate-flowered Woodroof. Pl. 

40 A. involúcráta (Bergr. et Wahl. in 1825. vol. 21. p. 971.) leaves 4 in a whorl, obovate, elongated, obtuse, glabrous; stems decumbent; peduncles lateral and terminal; flowers umbellate; leaves of involucrum obtuse, glabrous.  
H. Native of the Levant, among bushes on the sides of hills. Leaves like those of Gálium palustré. 

Involucrated Woodroof. Pl. decumbent. 

Cul. Most of the species of Woodroof are very pretty when in flower, and are therefore well adapted for decorating flower-borders or rock-work. They will grow in any common garden-soil, and are easily increased by parting at the root. A. odoráta will thrive under the shade of trees, where hardly any thing else will grow. The seeds of annual species only require to be sown where the plants are intended to remain. 


Lin. syst. Tetra-Pentádria, Monogyinia. Calyx with an ovate tube, and a hardly distinct limb. Corolla tubular, elongated, funnel-shaped, 4-5-lobed; lobes usually drawn out into a setaceous, inflexed appendage each. Stamina 4-5, inclosed; anthers linear. Style 2-lobed at the apex, shorter than the tube of the corolla. Fruit divisible into 2 parts, but not crowned by
the calyx; mericarps semi-ovate or oblong, indehiscent.—Herbs, sometimes suffrutescent at the base, but usually annual. Leaves truly opposite, furnished with from 1 to 3 stipulas on each side. Flowers furnished with 3 bracteas each, the exterior bractea representing a calyce leaf, and the 2 lateral ones opposite, all longer than the ovarium, and appearing like a calyx. Spikes sometimes elongated and continuous, sometimes capitate, and sometimes interrupted from being formed of pedunculate fascicles of flowers.

§ 1. Flowers disposed in continuous spikes.

1 C. latifolia (Lin. spec. 157.) plant erect, with ascending branches; leaves 4 in a whorl, elliptic-lanceolate, acute; lower ones usually ovate, and mucronate, with sebaceous margins; spikes biflorn, tetragonal; flowers quadridiform, solitary, imbricated in 4 rows. \( \text{C. latifolia, } \text{Bieb. fl. t. 1. p. 106.} \)

2 C. angustifolia (Lin. spec. p. 157.) erect; leaves 6 in a whorl, linear, acute, sebaceous on the margins, and on the angles of the stem; spikes linear, imbricated in 4 rows, somewhat interrupted at the base; flowers tetracyclic, twin: one of them biflacteolate. \( \text{C. angustifolia, Bieb. fl. t. 149.} \)

3 C. glauca (A. Rich. in mem. soc. hist. nat. par. 5. p. 131.) plant suffrutescent at the base, erect, glaucescent; leaves 6 in a whorl, linear, with revolute edges; spikes slender, pedunculate, somewhat interrupted at the base; bracteas ciliate; flowers pentanemous. \( \text{C. glauca, Roth, cat. 1. p. 27.} \)

4 C. siliqua (Lam. dict. 2. p. 217.) plant diffuse; leaves 4 in a whorl, or opposite; spikes hardly interrupted at the base; bracteas ciliate, unequal, rather loose; flowers tetracyclic; fruit beaked with blunt tubercolae. \( \text{C. siliqua, Roth, Ust. neu. anm. 4. p. 40. cat. 1. p. 26.} \)

5 C. pætula (Lin. spec. p. 602.) erect; branches spreading; leaves 6 in a whorl, linear, rather sebaceous; flowers 1-2 in the axils of the bracteas, on short pedicels, pentancicous; fruit smoothish.

6 C. suaveolens (Meyer, ver. pl. p. 406.) plant perennial, glabrous; stem herbaceous, erect, branched; leaves linear, mucronate, with prickly, revolute edges, 8 in a whorl, but the upper ones are 6 in a whorl; flowers opposite, disposed in dense spikes; floral leaves and bracteas lanceolate, ciliate, a little shorter than the corollas, which are glabrous, and 5-cleft; stamens inclosed; mericarps glabrous, smooth.\( \text{C. suaveolens, Bieb. fl. t. 106.} \)

§ 2. Flowers capitata.

7 C. EGYPTIACA (Lin. mant. p. 38.) plant diffuse; leaves 4 in a whorl, linear, with revolute edges, glabrous above, and on the margins; lower ones ovate; spikes terminal; bracteas lanceolate, with the keel and margins rather sebaceous. \( \text{C. EGYPTIACA, Bieb. fl. t. 602.} \)

8 C. GILANTICA (Trin. in mem. act. petersb. 1818. p. 493. t. 12.) stems erect, branchless; leaves 4 in a whorl, linear, mucronate, with prickly revolute edges; flowers remotely spicate; bracteas and floral leaves ovate, ciliate, 4 times shorter than the corolla, which is glabrous.

9 C. MARITIMA (Lin. spec. 158.) plant suffrutescent, procumbent, much branched, glabrous, glabrous; leaves 6 in a whorl, lanceolate, stiff, margined, mucronate; flowers axillary, disposed in interrupted spikes, pentanemous. \( \text{C. MARITIMA, Bieb. fl. t. 354.} \)

10 C. CAPitaTA (Lam. dict. 2. p. 217.) plant diffuse, procumbent, branched, callous, glabrous; leaves 6 in a whorl, linear, with revolute edges; spikes capitate, ovate; bracteas membranous, lanceolate, longer than the leaves, trilobed, girding 2 flowers each; corollas 6-parted. \( \text{C. MARITIMA, Bieb. fl. t. 354.} \)
mountains. Laxmannia fasciculata, S. G. Gmel. Said to be nearly allied to C. molluginoides.

Long-styled Crosswort. Pl. procumbent.

12 C. purpurea (Willd. spec. 1. p. 602.) plant erect; leaves 6 in a whorl, linear, downy; heads of flowers pedunculate, axillary, and terminal; corollas pentameras. 5. H. Native of Candia. Rubéola Crética meana floribus purpurascensibus, Tourn. cor. 5. Stem downy. Corollas purplish, downy.


§ 3. Flowers in fascicles; fascicles opposite, on short peduncles: the whole forming an interrupted raceme.

13 C. molluginoides (Bieb. cent. 2. t. 65. ex fl. taur. 1. p. 106. suppl. 110.) erect; leaves 5–12 in a whorl; linear-lanceolate, with revolute, scabrous edges, and a villous keel; fascicles of flowers opposite, disposed in an interrupted spike; bracteas ovate-lanceolate, acuminate, villous, much shorter than the flowers; fruit glabrous, smoothish; corollas pentameras. 5. H. Native of Candida, in subalpine places, Armenia, and Hungary. C. acanuïma, Balh. herb. taur. Aspérula tubiflora, Hortul.—Buxb. cent. 2. t. 30. f. 1. Corollas greenish yellow. Stamens 5. Mericarps nearly globose. Angles of the stem scabrous.


14 C. aspera (Bieb. fl. taur. 1. p. 107.) plant procumbent or ascending; leaves usually 6 in a whorl, linear, bluntish, with revolute edges, and are, as well as the stem, scabrous; fascicles of flowers opposite, pedunculate, disposed in interrupted spikes; bracteas ovate, acute, ciliated, much shorter than the flowers; flowers pentameras; fruit glabrous. 5. H. Native of Iberia and Caucasus, in subalpine places.

Flowers greenish yellow.

Rough Crosswort. Pl. procumbent.

15 C. clavaetá (Bieb. fl. taur. 1. p. 107.) stems ascending, sterile ones hairy, and floriferous ones smooth; leaves 6 in a whorl, linear, with revolute margins, scabrous, rather glabrous; heads of flowers opposite, pedunculate, disposed in an interrupted raceme; bracteas ovate, acute, ciliated, much shorter than the flowers; flowers pentameras. 5. H. Native of Iberia and Caucasus, on stony hills. Rubéola orientalis folis Galli, flore multiplici, Tourn. cor. 5. Flowers greenish yellow.


† Plants referred to the genus which ought to be excluded from it.

16 C.? Ameriana (Mill. dict. no. 5.) stem erect, villous; leaves opposite, linear-lanceolate, hairy; flowers solitary, axillary. 5. S. Native of Vera Cruz. Flowers pale blue. Fruit didymous. Probably a species of Spiraeaæceae.


17 C.? dispida (Mill. dict. no. 4.) stem hispid; leaves opposite, lanceolate, hairy; flowers umbellate, terminal. 5. S. Native of Vera Cruz. Stems quadrangular, rough, prickly. Flowers blue, tetrameras. Fruit didymous.

Hispid Crosswort. Shrub 2 feet.

Cult. The seeds of annual species should be sown in the open ground where the plants are intended to remain. The perennial, herbaceous, and shrubby species being rather tender, should be grown in pots, in a mixture of peat, sand, and a little loam; and they will be easily increased by dividing at the root, or by cuttings.

CCXV. RUBIA (from ruber, red; in allusion to the red colour of the roots), Tourn. inst. 113. t. 38. Lin. gen. no. 127.


Lin. syst. Pentândria, Digesta. Calyx with an ovate-globose tube, and a 4-toothed limb. Corolla 4-5-parted, rotate. Stamens 4, short. Styles 2, short. Fruit didymous, nearly globose, baccate, juice.—Herbs or sub-shrubs. Stems diffuse, much branched, tetragonal. Leaves opposite, usually furnished with 1–2, rarely with 3–4 stipulas on both sides, which are very like the leaves, constituting 4–10-leaved whorles. Flowers small, greenish white, or pale yellow. Berries black, rarely red or white.

§ 1. Exineolocrinita (the flowers of the plants contained in this section are without involucra). D. C. prod. 4. p. 588. Peduncles axillary, dichotomous or trichotomous; bracteas wanting, or very small, and opposite, but never constituting an involucre. Flowers usually pentameras. —Species all natives of the old world.

* Cardifolia (from cor, the heart, and folium, a leaf: the leaves are heart-shaped). D. C. prod. 4. p. 588. Sterns herbaeaceous. Leaves on long petioles, all coriaceae, or only the lower ones.

1 R. cardifolia (Lin. mant. p. 197.) leaves 4 in a whorl, petiolate, oblong, coriace at the base, 3–5-nerved, beset with prickles on the middle nerve, margins, petals, and angles of stems; flowers tetrameras or pentameras. 5. H. Native of Siberia, on the banks of the Salenga, &c.—There are varieties of this plant with glabrous, hairy, narrower and broader leaves, which are disposed 8 in a whorl. (Pall. inn. 3. t. L. f. 1. and gall. t. 92.) Flowers whitish. Berries red or black. Perhaps 2 species are confused under this name.


2 R. java (D. C. prod. 4. p. 588.) leaves 4 in a whorl, petiolate, ovate-lanceolate, not coriace at the base, 5-nerved, scabrous on the middle nerve, petioles, and angles of stems; flowers tetrameras and pentameras. 5. S. Native of Java, on the mountains. R. cordifolia, Blum. bijdr. p. 944. An intermediate plant between R. cordifolia, R. Siberica, and R. Munjista.

Java Madder. Pl. straggling.

3 R. munjista (Roxb. fl. ind. 1. p. 383.) leaves 4 in a whorl, petiolate, ovate-lanceolate, and linear, 5-nerved, and are, as well as the stem, hispid; flowers all pentameras. 5. H. Native of Nipaul and Bengal, on the mountains; and of Japan. R. cordifolia, Thunb. fl. jap. p. 60. R. Munjith, Roxb. ex Flem. cat. in Desv. journalet bot. 1814. pt. 2. p. 207. There does not appear much difference between this and R. cordifolia, Lin. This kind of madder is used by the dyers and calico-printers in the same manner as the common madder.

Munjith or Indian Madder. Pl. straggling.

4 R. alata (Wall. in Roxb. fl. ind. 1. p. 384.) leaves 4 in a whorl, petiolate, ovate-lanceolate, and linear, 3-nerved, acuminate at the apex, scabrous; angles of stem winged, scabrous from recurved denticulations; flowers pentameras, hispid; corymbbs trichotomous, elongated. 5. H. Native of Nipaul. Limb of leaf 3 times the length of the petiole. Very like a species of Galium.

Winged-stemmed Madder. Pl. straggling.

5 R. petiolatus (D. C. prod. 4. p. 588.) leaves 4 in a whorl, petiolate, oblong-lanceolate, acuminate, 1-nerved, having the nerve, margins, petals, and angles of the stem scabrous from prickles. 5. G. Native of the Cape of Good Hope. R. cordifolia, Thunb. fl. cap. p. 151, but not of Lin. Petioles the length of leaves, tetragonal; perhaps the lower leaves are coriace. Flowers not sufficiently known.

Petiolate-leaved Madder. Pl. straggling.
6. *R. angustissima* (Wall. cat. no. 6207.) stems quadrangular, almost winged, serrated from retrograde prickles; leaves 4 in a whorl, long, linear, with scabrous edges, sessile; peduncels dichotomously divided. Ζ. S. Native of the Burmese Empire, on Mount Taung Dong, near Ava. Root like that of *R. Munjista*.

Very-narrow-leaved Madder. Pl. straggling.

7. *R. charadriolía* (Wall. cat. no. 6210.) stems quadrangular, angles beset with retrograde, prickly denticulations; leaves 8-10 in a whorl, linear, sessile, scabrous on the margins and keel; corymbs terminal. Ζ. F. Native of Nipaul.

Chara-leaved Madder. Pl. straggling.

**Suffrutescens.** Stems shrubby. Leaves on short petioles, oblong or lanceolate.

8. *R. fruticosae* (Ait. hort. kew. 1. p. 147.) stem shrubby, smooth; leaves 2-6 in a whorl; the uppermost ones opposite, elliptic, on short petioles, having the margins and keel scabrous from prickles; flowers pentameros; corymb axillary, short, few-flowered. Ζ. G. Native of Teneriffe, among bushes. "Large brown prickles on stems of young plants, but they do not persist in the mature stage." From the Canary Islands. R. fruticosae, Poir. suppl. 2. p. 707. Leaves varying from oval to oblong-lanceolate, with distant retrograde prickles on the margins. Corollas yellowish. Peduncles usually 3-flowered.

Vari. β. galoides (D. C. prod. 4. p. 589.) stem shrubby, terete, smooth; leaves 6 in a whorl, petiolate, ovate-lanceolate, with rough margins; peduncles axillary, 3-4-flowered, much shorter than the leaves. Ζ. G. Native of the Canary Islands. R. galoides, Poir. suppl. 2. p. 705.


9. *R. acalyculata* (Cav. hort. 2. p. 75. t. 193.) stems rather herbaceous, smooth, hexagonal; leaves petiolate, ovate-lanceolate, having the nerve beneath and the margins furnished with retrograde prickles; corymb axillary, trichocephous, birotate; flowers pentameres. Ζ. G. Native of Madras, where it is called *Tasaggo*. Leaves 7-9 in a whorl, but on the branches only 3 in a whorl. Flowers yellowish. Teeth of calyx not perspicuous, as in many other species of the genus. Very nearly allied to *R. fruticosae*.

Ecalyculate-flowered Madder. Shrub 2 feet.


Smooth Madder. Shrub.

**Tinetorius** (from tintorium, for dyeing; the roots of most of the species are used for dyeing). D. C. prod. 4. p. 589.

Stems herbaceous. Leaves sessile, or on short petioles, never cordate.

11. *R. angustifolia* (Lin. mant. p. 39.) plant herbaceous; leaves 4 in a whorl, linear, scabrous above, and also along the margins and nerve; angles of stems prickly; corymb axillary, 3-flowered; lobes of corolla bluntish, apiculated. Ζ. F. Native of Gibraltar, Portugal, and Balearic Islands. Lam. ill. t. 60. f. 2. Leaves evergreen. Flowers pale yellow. Perhaps this and the 6 following are only variations of *R. tintorius*.


12. *R. longifolia* (Poir. suppl. 2. p. 703.) herbaceous; leaves 4-6 in a whorl, linear-lanceolate, elongated, acuminate, almost sessile, smooth above, but with the margins and nerve scabrous from prickles, as well as the angles of the stem; peduncles trichotomous; lobes of corolla acutish, acuminate, not abruptly cuspitate. Ζ. H. Native of Corsica and at Mogador. R. Requien, Duby, bot. gall. 1. p. 247. Flowers yellowish. Berries black.

Long-leaved Madder. Pl. straggling.

13. *R. tintorius* (Lin. spec. p. 158.) herbaceous; leaves 4-6 in a whorl, on short petioles, lanceolate, smooth above, scabrous from prickles on the margins and keel, and along the angles of the stem; peduncles axillary, trichocephous; lobes of corolla gradually acuminated, not cuspitate. Ζ. H. Native of the Levant and south of Europe; and also of Caucasus, on Mount Beschbarmak, and plentiful near Dervent, and in the province of Bukh; but cultivated in many parts for the sake of its roots. Lam. ill. t. 66. f. 1. Heyne, aræ. gw. xi. t. 5. Seihuhr. hambl. t. 28. Mill. fig. t. 1. Woolv. med. bot. t. 68. Smith, fl. gecc. t. 141. Sall. hort. t. 177. Blackw. t. 26. R. perennis, Marr. bot. val. p. 91. ex Gaudin. R. sylvariaes and R. tintorius, Mill. dict. no. 1-2. Roots long, thick, and red. Leaves and stems fading in autumn. Flowers yellow, pentameroS. Berries dark purple.

The root of the dyer's madder is composed of many long, thick, succulent fibres, almost as large as a man's little finger; these are joined at the top in a head, like the roots of asparagus, and strike very deep into the ground, being sometimes more than three feet in length. From the upper part come out many side-roots, which extend just under the surface of the ground to a great distance, whereby it propagates very fast; for these send up a number of shoots, which, if carefully taken off in spring, soon after they are above ground, become so many plants. It is native of the south of Europe, flowers in June, and seeds soon afterwards; but by them it is never propagated. Madder is mentioned by the Greeks as a medical plant; but when it was first used in dyeing is uncertain. It has been cultivated in Holland and Flanders, and other parts of the continent for that purpose, for many years, and has been tried in this country; but unless the importation of the root from the continent were entirely prevented, it will not answer. Its culture has been attempted at different times, when our commerce with the Dutch was interrupted, or when they raised the price of the article exorbitantly high. At present it may be imported not only from Holland, but from France, Italy, and Turkey.

The soils most suited to the cultivation of madder are those of the deep, fertile, sandy loams, which are not retentive of moisture, and which have a considerable portion of vegetable matter in their composition. It may also be grown on the more light descereous soils, that have sufficient depth, and which are in a proper state of fertility.

The preparation of the soil may either consist in trench ploughing, lengthways and across, with pronged stirrings, so as to bring it to a fine tilth; or, what will often be found preferable, by one trenching 2 feet deep by manual labour.

The sets of plants are best obtained from the runners, or surface shoots of the old plants. These being taken up, are to be cut into lengths of from 6 to 12 inches, according to the scarcity or abundance of runners. Sets of one inch will grow, if they have an eye, or bud, and some fibres; but their progress will be slow, for want of maternal nourishment. Sets may also be procured by sowing the seeds in fine light earth, a year before they are wanted, and then transplanting them; or sets an inch long may be planted for one year in a garden, and then removed to the field plantation.

The season of planting is commonly May or June, and the manner is generally in rows, 9 or 10 inches asunder, and 5 or 6 inches apart in the rows. Some plant promiscuously in beds, with intervals between; but this is unnecessary, as it is not the surface, but the descending roots, which are used by the dyer.

The operation of planting is generally done by the dibber, but some plant them by the aid of the plough. By this mode, the
ground is ploughed over with a shallow furrow, and in the course of the operation the seeds are deposited in each furrow, leaving on and pressed against the furrow-slice. This, however, is a bad mode, as there is no opportunity offirming the plants at the roots, and as some of the seeds are apt to be buried, and others not sufficiently covered.

The after culture consists in hoeing and weeding, with stirring by pronged hoes, either of the horse or hand kind. Some earth up, but this is unnecessary, and even injurious, as tearing the surface roots.

The Madder crop is taken at the end of the third autumn after planting, and generally in the month of October. By far the best mode is that of trenching over the ground, which not only clears it effectually, but fits it once for another crop. But where madder has been grown on land prepared by the plough, that implement may be used in removing it. Previously to trenching, the haunch may be removed with an old scythe, and carted to the farmery, to be used as litter to spread in the straw-yards.

Drying the roots is the next process, which, in very fine seasons, may sometimes be effected on the soil, by simply laying the plants on it as are taken up; but in most seasons they require to be dried on a kiln, like that used for malt or hops. They are dried till they become brittle, and then packed up in bags for sale to the dyer.

The produce from the root of this plant is different according to the difference of the soil, but mostly from 10 to 15 or 20 hundred weight, where it is suitable to its cultivation.

In judging of the quality of Madder roots, the best is that which, on being broken in two, has a bright red or purplish appearance, without any yellow cast being exhibited.

The use of the Madder roots is chiefly in dyeing and calico printing. The haunch which accumulates on the surface of the field in the course of 3 years, may be carted to the farm-yard, and fermented along with horse-dung. It has the singular property of dyeing the horns of the animals who eat it of a red colour.

Madder seed in abundance may be collected from the plants in September of the second and third years, but it is never so propagated. Madder is sometimes blighted, but in general it has but few diseases.

Madder is cultivated in Holland only on the very best soils, and with plenty of manure. At the end of May or April, according as the young plants are large enough to be transplanted, the land must be ploughed in beds of 2 feet, and 2½ feet wide; the beds are then harrowed and raked, and the young suckers of the roots or plants are to be put down in rows, at intervals of a foot or a foot and a half, and at 6 or 8 inches distant in the row. During the entire summer the land should be frequently stirred, and kept free from weeds. In the month of November, when the leaves are faded, the plants are covered with 2 inches of earth, by a plough, having the point of the coulter a little raised or rounded, so as not to injure the young plants. In the following spring, when the young roots are 4 or 5 inches long, they are gathered or torn off, and planted in new beds, in the same manner as above stated; and then, in the month of September or October, after the faded leaves have been removed, the old roots are taken up. The madder thus taken up should be deposited under cover, to protect it from the rain, and after 10 or 12 days, placed in an oven moderately heated. When dried sufficiently it is gently beaten with a flail, to get rid of the clay that may adhere to the plants; and by means of a small wind-mill, is ground and sifted, to separate it from any remaining earth or dirt. It is then replaced in the oven for a short time, and when taken out, is spread upon a hair cloth to cool; after which it is ground and cleaned once more. It is then carried to a bruising mill, and reduced to fine powder, and then packed in casks or barrels for the market.

Var. β, Iberica (Fisch. in litt. ex D. C. prod. 4. p. 589.) leaves on longer petioles, downy on the veins and nerves beneath. 2. H. Native of Iberia. The roots of this variety are said to be better for the purposes of dyeing than those of the species.


15 R. lucida (Lin. syst. veg. xii. p. 732.) herbaceous; leaves 4-6 in a whorl, elliptic, shining, with a smooth keel, but scabrous from prickles along the margins and angles of the stem; peduncles axillary, trichotomous, short; lobes of corolla lanceolate, acuminate, inflexed at the points. 2. H. Native of south and middle Europe, in rugged places. Smith, fl. grace. 142. D. C. fl. fr. 4. Leaves perfoliata, D'Urv. cat. p. 17. R. rotundifolia, Poir. suppl. 2. p. 106. Leaves permanent. Flowers dusky yellow, pentan- taneous.

Var. β, angustifolia (Guss. prod. fl. sic. i. p. 183.) stem smoothish; leaves elliptico-oblong or lanceolate. 2. H. Native of Sicily and the south of France.


17 R. sphenes (Hoffins. et Link, fl. port. 2. p. 67-85.) herbaceous; leaves 4-6 in a whorl, obliquely oblong, acute, having the nerve on both surfaces and margins scabrous from prickles, as well as the angles of the stems; peduncles axillary; lobes of corolla prickly. 2. H. Native of Portugal, in hedges about Lisbon. R. sylvestris, Brob. fl. lus. 1. p. 152, but not of Mill. Flowers yellow, pentan- taneous.


18 R. intricata (Hook. et Arn. in bot. misc. 3. p. 362.) glabrous, smoothish; stem diffusus; wholly prickly. Stock entirely branched, intricate, acutely 4-angled; leaves small, oblong-linear, hardly acute, almost nerveless; branches of pedicellate; flowers pedunculate, bracteless; berries globose.—Native of Chili, among hedges of Cacti at San Isidro.

Intricate-branched Rubia. Pl. diffuse.

19 R. Oliveri (A. Rich. in mem. soc. hist. nat. Par. 5. p. 132.) stems suffruticos, rather hexagonal, scabrous from retrograde prickles or bristles; branches powdery, downy; leaves usually 6 in a whorl, ovobovate, mucronate at the apex, with hispid margins; peduncles axillary, usually by threes, tripartite, and 5-flowered at the apex; corolla subcampanulate, 5-parted. 2. H. Native of the island of Scio, where it was collected by Olivier and Bruguier.
Oliveir's Madder. Pl. straggling.
20 R. Thunbergii (D. C. prod. 4, p. 590.) plant glabrous in every part; leaves usually 4 in a whorl.—Native of the Cape of Good Hope. R. hævis, Thumb. fl. cap. 151. but not of Poir. The rest unknown.

Thunberg's Madder. Pl. straggling.

§ 2. Involucrata (the flowers of the plants contained in this section are involucrated by bracteas). D. C. prod. 4, p. 590.
Peduncles axillary, bearing each 4 bracteas in a whorl, which constitute an involucrium to the flowers. Flowers 1–3, rising from each involucrum, sessile, or pedicellate, usually tetramerous.—
Diffuse prostrate plants, all natives of America, which probably should be joined with Gálium according to A. Richard.

* Berries glabrous. Leaves 1-nerved.
21 R. Walterii (D. C. prod. 4, p. 590.) stems tetragonal, smooth on the angles, and pilose on the sides; leaves ovate, membranous, rather pilose on both surfaces while young, but having the keel and margins scabrous in the adult state; bracteas ovate, acute; flowers solitary from the involucrum; fruit glabrous, pedicellate. 2. H. Native of Carolina and Florida, in shady places. R. peregini, Walt. var. p. 86. but not of Lin. R. Brownei, Michx. fl. bor. aner. 1. p. 81. exclusive of the syn. of Browne. R. Techénesis, Ralf. fl. Ind. p. 76. Flowers small, yellow, tetramerous. Fruit blackish.
Walter's Madder. Pl. straggling.

22 R. Guadaloupe (Spicy. syst. 1. p. 397.) stems tetragonal, rough along the angles at the base; leaves oblong, mucronate, attenuated at the base, having the margins and keel prickly; peduncules axillary, shorter than the leaves, 1-flowered; flower sessile among the bracteas, which are oblong; berries sebaceous. 2. S. Native of Guadaloupe, where it was collected by Badier and Bertero.

Guadaloupe Madder. Pl. straggling.

23 R. Indecóra (Cham. et Schlecht. in Linnaea. 3. p. 229.) stems tetragonal, scabrous from pili; leaves oblong, somewhat cuneated, obuse, mucronate, membranous, remotely pilose on the nerves beneath and margins; peduncules axillary, solitary, opposite, 1-flowered; bracteas lanceolate; ovarium pilose; berries egg-shaped, glabrous, sessile within the involucrum. 2. F. Native of the south of Brazil.

Indecorus Madder. Pl. straggling.

24 R. Chile (Mol. chil. 118. ed. gall. p. 390. but not of Willd.) stems smooth, tetragonal while young, but at length becoming terete and erectish; leaves oblong-linear, mucronate, pilose on the nerves and margins; peduncules axillary, opposite, 1-flowered, a little longer than the leaves, hairy at top, as well as the bracteas. 2. F. Native of Chili, near Ranagua and Valparaiso, where it was collected by Bertero, who asserts that it is the Retbmn of the natives. Nearly allied to R. indecora.

Chile Madder. Pl. straggling.

25 R. Ramosissima (Polh. in litt. ex D. C. prod. 4. p. 591.) stems tetragonal, rather hairy along the angles; leaves oblong, obtuse, rather cuneated at the base, 1-nerved, rather pilose beneath and glabrous above, and shining; peduncules axillary, length of leaves, 1-flowered; bracteas oval, glabrous; berry sessile, within the involucrum, glabrous. 2. G. Native of Brazil, where it was collected by Polh. Herb becoming black on drying.

Much-branched Madder. Pl. straggling.

26 R. Valántioideae (Cham. et Schlecht. in Linnaea. 3. p. 231.) stems tetragonal, pilose along the angles; leaves sessile, ovate, acute, membranous, 3-nerved, pilose on the margins and nerves; peduncules axillary, verticillate, shorter than the leaves, 1-flowered; bracteas ovate-oblong; flower sessile within the involucrum. 2. F. Native of Brazil. Stem sebaceous from the bases of the hairs remaining. Corolla pilose. Berries glabrous.

Valantia-like Madder. Pl. straggling.
27 R. nitida (H. B. et Konth, nov. gen. 3. p. 339. t. 280.) stems tetragonal, beset with reflexed hairs along the angles; leaves elliptic, bluish, with revolute edges, glabrous above and shining, and rather hairy beneath; peduncules axillary, 1-flowered, opposite, twice the length of the leaves; flower sessile, within the involucrum; berries glabrous. 2. F. Native at the foot of the burning mount Pichincha, near Quito. Allied to R. Walterii.

Nitid-leaved Madder. Pl. straggling.
28 R. vitis (Cham. et Schlecht. in Linnaea. 3. p. 230.) glabrous; stems tetragonal, sebaceous from retrograde bristles on the angles, and on the nerves and margins of the leaves; leaves oblong, obtuse, hardly attenuated at the base, rather mucronate, membranous; peduncles axillary, verticillate, 3-flowered, length of leaves: the middle flower sessile; bracteas oblong, acute. 2. F. Native of the south of Brazil. Berries glabrose.

Vite Madder. Pl. straggling.

Ciliated-leaved Madder. Pl. procumbent.
30 R. monanthia (D. C. prod. 4. p. 591.) stems procumbent, much branched, tetragonal, smoothish; leaves oval or ovate-oblong, acutish, ciliated with long hairs, hispid above; peduncules axillary, solitary, 1-flowered, bearing each 4 leaves or bracteas just under the flower; flower sessile, within the involucrum; fruit glabrous, smooth. 2. F. Native of Peru, where it was collected by Hænke. Gálium monanthum, Bartl. in herb. Hænke. This species is nearly allied to R. ciliata.

One-flowered Madder. Pl. procumbent.
31 R. ovalis (D. C. l.c.) stems climbing a little, tetragonal, hairy; leaves 4 in a whorl, oblong-oblong, acuminate, equal, at length reflexed; peduncles axillary, 1-flowered, a little shorter than the leaves, bearing 4 oval acute bracteas at top under the flower; fruit glabrous. 2. F. Native of Peru; among rubbish. Gálium ovale, Ruiz et Pav. fl. per. 1. p. 59.
Oval-leaved Madder. Pl. climbing.
32 R. crócea (D. C. l.c.) stems procumbent, branched; bracteas tetragonal; leaves 4 in a whorl, linear, ciliated, rather sebaceous beneath; peduncles axillary, short, 1-flowered, bearing 4 leaves at the apex; fruit glabrous.—Native of Peru, at Tarma and Huanaco, on arid declivities. Gálium cróecum, Ruiz et Pav. fl. per. p. 126. Flowers 3-4-cleft. Fruit of a reddish copper-colour.

Saffron-coloured-fruited Madder. Pl. procumbent.
33 R. levigata (D. C. l.c.) plant quite glabrous; stems tufted, much branched, diffuse; leaves 4 in a whorl, ovate-oblong or ovate-lanceolate; peduncles axillary, 1-flowered, bearing 4 leaves at the apex; flower sessile, within the involucrum; fruit glabrous, smooth. 2. H. Native of Mexico, where it was collected by Hænke. Gálium levigatum, Bartl. mss.

Smooth Madder. Pl. diffuse.
34 R. ? corymbosa (D. C. prod. 4. p. 591.) stems creeping, filiform; branches alternate, erect, corimbosely dichotomous, tetragonal; leaves 4 in a whorl, sessile, approximate, oblong-lanceolate, rather ciliated, glabrous; peduncles 1-flowered, bearing each 4 bracteas; fruit glabrous.—Native of Peru, on the

* * Berries hairy or scabrous. Leaves 1-nerved.

35 R. hyopocárpi (D. C. prod. 4. p. 591.) stems tetragonal, hispid from long villi along the angles; leaves oval-oblong, hairy on both surfaces; peduncules axillary, 1-flowered, hardly shorter than the leaves; bracteas oblong, rather hairy; flower as well as the fruit almost sessile within the involucrum; berries rather hairy.—Native of Jamaica. P. Browne, jam. p. 141. Valentiná hypocárpi, Lin. spec. 1491. Swartz, obs. p. 385. R. Brönné, Spreng. syst. 1. p. 397. Berries blackish.

Under-frutet Madder. Pl. creeping.

36 R. Re'ljus (Cham. et Schlecht. in Linnena. 3. p. 229.) the whole plant is scabrous, and clothed with short piles; stems acutely tetragonal; leaves ovato-elliptic, obtuse, mucronate, rather membranous, with ciliated margins, scabrous from hairs on both surfaces; peduncules axillary, 1-flowered, opposite or verticillate; bracteas broad- Lanceolate; flower sessile; berry sessile, glbose, rather pilose. 2. F. Native of Chili, Brazil, and Caracas. Pocp. pl. exsic. chil. no. 703. Fenn. obs. 3. p. 60. t. 45. R. Chilicensis, Willd. spec. 1. p. 604. but not of Mol. The plant is called Re'ljus in Chili, as well as other species; and the roots are red, and used for dying like the common madder.

Redlim Madder. Pl. straggling.

37 R. Hendek's Rubia. Pl. straggling.

38 R. Hendek's Rubia (Gill. mss. ex Hook. et Arn. in bot. misc. 3. p. 382.) plant glabrous, scabrous, shining; stems erectish, terete, or slightly quadrangular; leaves in a whorl, linear-oblong, acute, 1-nerved, one-half shorter than the internodes; peduncules opposite or in whorles, equal in length to the leaves, bearing 4 bracteas and 3 flowers at the apex; fruit tubercular, scabrous. 2. F. Native of Chili, about Mendoza.

Hendek's Rubia. Pl. procumbent.

39 R. Fugi'silla (Gill. mss. ex Hook. et Arn. in bot. misc. 3. p. 363.) plant tufted, glabrous, branched, shining; stems smooth, terete, furrowed; leaves in a whorl, oblong-linear, mucronate, with smoothish margins; peduncles equal in length to the leaves, bearing 3 flowers and 3 bracteas at the apex; fruit minutely tubercular when immature. 2. F. Native of Chili, in the province of San Louis. This has quite the appearance of some of the species of Gálium pinpinum.

Small Rubia. Pl. straggling.

40 R. Orinoco'èsis (H. B. et Kunth, nov. gen. amer. 3. p. 299.) stems tetragonal, glabrous, scabrous on the angles; branches pilose; leaves on short petioles, oblong, acute, pilose, one-half shorter than the internodes; peduncules axillary, 1-flowered, solitary; flower almost sessile, within the involucrum; berries pilose. 2. F. Native on the banks of the Orinoco, in hot places, and of the south of Brazil, ex Cham. et Schlecht. in Linnena. 4. p. 228. R. Brönné, Spreng. syst. 1. p. 397. Gálium paciïrôm, Willd. herb. Orinoco Madder. Pl. herb.

41 R. Mucroná (Hook. et Arn. in bot. misc. 3. p. 363.) stems prostrate, glabrous, terete, 4-furrowed, branched; leaves in a whorl, linear-oblong, glabrous, shining, with revolute edges, 3 times shorter than the internodes; common peduncles axillary, longer than the leaves; flowers cymose. 2. F. Native of Chili, about Conception and Tarma; and of Peru, in arid places. Gálium leucocárporum, D. C. prod. 4. p. 612. Gálium Tarménsë, Spreng. syst. p. 27. G. mucronatum. Ruiz et Pav. fl. per. 1. p. 66. G. apiculatum, Rem. et Schultes, syst. 3. p. 222. Fruit milk coloured.

Mucronate Madder. Pl. prostrate.

45 R. Inca'na (H. B. et Kunth, nov. gen. amer. 3. p. 388.) stems tetragonal, hairy from villi; leaves in a whorl, ovate, short-acuminate, mucronate, with revolute margins, which are as well as the middle nerve hispid from pili; peduncles axillary, 1-flowered, length of leaves; flower sessile, within the involu- crum; berries rather pilose. 2. F. Native on the Andes about Quinindiu, near El Moral. Corolla rather hairy outside.

Hoary Madder. Pl. straggling.

45 R. ho'ria (H. B. et Kunth, nov. gen. amer. 3. p. 388.) stems tetragonal, hairy; leaves in a whorl, on short petioles, oblong, acute, mucronate, hairy; peduncles axillary, opposite, 1-flowered, hardly shorter than the leaves; flower sessile, within the involucrum; berries scabrous. 2. F. Native near the town of Quito.

Hairly Madder. Pl. straggling.

* * * Leaves 3-nerved. Berries glabrous.

44 R. sôma (St. Hil. pl. rem. bras. p. 229.) stems tetragonal, beset with retrograde bristles along the angles below, and hairy at top; leaves sessile, elliptic, obtuse, ending in a very short point, 3-nerved, membranous, rather pellucid, scabrous from pili above, and on the nerves beneath; peduncles axillary, solitary, 1-flowered, pilose; bracteas 4, ovate; berries glabrous.—Native of Brazil, in woods in the province of Minas Geraes. Corollas greenish, hardly pilose. Flowers either sessile or pedicellate within the involucrum. Berries white.

Hortful Madder. Pl. straggling.

45 R. Asper'a (Pohl. in litt. ex D. C. prod. 4. p. 592.) stems tetragonal, glabrous, scabrous along the angles from retrograde bristles; leaves sessile, ovate, mucronate, membranous, 3-nerved, rather scabrous along the margins and nerves, especially beneath, glabrous; peduncles axillary, tetragonal, rather longer than the leaves; bracteas ovate, glabrous; berries glabrous, sessile, within the involucrum. 2. F. Native of Brazil, where it was collected by Pohl. Nodi of stems scabrous from short crowded hairs. Bracteas greenish-yellow. Berries blackish.

Rough Madder. Pl. straggling.

46 R. Diffpusa (Pohl. in litt. ex D. C. prod. 4. p. 592.) stems tetragonal, hispid; leaves sessile, ovate, acute, membranous, 3-nerved, hispid along the margins and nerves, especially beneath; peduncles axillary, 1-flowered, longer than the leaves; bracteas 4, ovate, acute, rather hispid; berry glabrous, sessile within the involucrum. 2. F. Native of Brazil, where it was collected by Pohl. Upper leaves smoothish. Peduncles 5-6 lines long. Berries blackish.

Diffuse Madder. Pl. straggling.

§ 3. Galioideae (this section contains plants having the habitat of species of Gálium). D. C. prod. 4. p. 492. American species with tetraëdrous flowers, which are disposed in dichotomous cymes, never girded by any involucre.

47 R. equisetoïdes (Cham. et Schlecht. in Linnena. 3. p. 332.) branches compressedly tetragonal, scabrous from retrograde bristles; leaves small, erectly adpressed, somewhat triangular, acute; cymes divaricate, dichotomous or trichotomous; flowers sessile in the forks; bracteas 4, under the branches; berries glabrous. 2. F. Native of the south of Brazil.

Horse-tail-like Madder. Pl. straggling.

48 R. ephe'droides (Cham. et Schlecht. in Linnena. 3. p. 231.) glabrous; stem nearly terete; branches acutely tetragonal, roughish; leaves narrow-elliptic or linear, acute, smooth; cymes
dichotomous or trichotomous; bracteas conformating to the leaves under the branches; flowers pedicellate; berries glabrous. 2.

F. Native of Brazil. Leaves deciduous, smooth.

Ephedra like Maddier. Pl. straggling.

49 R. SCABRA (H. B. et Kuhn, nov. gen. amer. 3. p. 340.) stems tetragonal, beset with retrograde prickle along the angles; leaves 6 in a whorl, and the upper ones 4 in a whorl, sessile, oblong-lanceolate, acutish, with rather revolute and serrated edges, 3 times shorter than the internodes; peduncules terminal, usually by threes; bracteas 1-3; berries glabrous. 3. H. Native of the Andes about Quindiu, between Carthage and Ibagué. Perhaps a species of Galium nearly allied to G. Cleistostoma.

Seabward Maddier. Pl. straggling.

50 R. DEBILIS (H. B. et Kuhn, nov. gen. amer. 3. p. 341.) stems tetragonal, beset with retrograde prickle along the angles; leaves oblong, acute, mucronate, flat, having the margins and keel beset with retrograde prickle; peduncules 2-3 together, terminal, 1-flowered, naked; berries glabrous. 2. F. Native of Quito, in high places near Chillo and Ichuamba. Perhaps a species of Galium nearly allied to G. citatum. Mature fruit unknown.

Weak Maddier. Pl. trailing.

Cult. The species will grow in any common soil, and are all easily propagated by dividing at the root or by seeds. Those species natives of warm climates require to be placed in the green-house in winter.


SECT. I. Ecgalium. Perennial plants.

§ 1. Leucogáta (from λυκος, leios, smooth, and galium; in reference to the smooth fruit of the species). Perennial plants. Leaves 6 to 10 in a whorl, rarely only 4-5. Flowers disposed in cymose panicles, hermaphrodite, white. Fruit glabrous.

1. G. SYLVATICUM (Lin. spec. p. 155.) stems erect, smooth, terete, much branched; leaves 8 in a whorl, elliptic, obtuse, mucronate, smooth, scabrous beneath, and rather glaucous; floral leaves opposite; peduncules capillary, disposed in a terminal panicle; lobes of corolla obtuse; fruit glabrous. 2. H. Native throughout Europe (Britain and Sicily excepted), in woods. D. C. fl. fr. no. 3356.—Bauh. hist. 3. pt. 2. p. 716. f. 4. Flowers white.

Var. β. pubescens (D. C. fl. fr. vol. 4. p. 248.) stems, branches, and nerves on the under side of leaves downy. 2. H. Native of Moguntia and elsewhere.


2 G. LINIFLÓLUM (Lam. dict. 2. p. 578.) stems erect, terete, smooth; leaves 4-5 in a whorl, lanceolate-linear, acuminate, quite glabrous, membranous, glaucous beneath, with smoothish margins; peduncules capillary, panicked; lobes of corolla acute; fruit glabrous, smooth. 2. H. Native of Dauphiny, Provence, Italy, &c. in shady places as in woods. D. C. fl. fr. t. 4. p. 255. G. atró-virens, Lápey. abr. ex Benth. G. levigáiatum, Vill. dauph. 2. p. 229. Leaves rather rough at the tops from a very few bristles or prickles. Flowers white.

Var. β. serrulatúm (D. C. prod. 4. p. 593.) leaves membranous, serrulated by prickles round the margins. 2. H. Native about Naples, where it was collected by Passy.


Flax-leaved Bed-straw. Pl. June, July. Ch. 1753. Pl. 1 to 2 feet, var. γ. 3 to 4 feet.

3 G. PASCALIA (Forsk. deserp. p. 203.) stems weak, glabrous, smooth; leaves 8-9 in a whorl, linear-lanceolate, with scabrous margins, glabrous, mucronate; peduncles axillary, opposite, twice longer than the leaves, trichotomous at the apex; fruit glabrous, minute. 2. H. Native about Constantinople. G. Hierosolymitánnum is probably not distinct from this, ex Vahl, symb. 2. p. 29, but that plant is joined to G. leveillei by Schrad, and to G. scabrum by Persoon. Flowers white.


4 G. INCENDÉUM (Sibth and Smith, fl. gréc. t. 132.) stems panicled; leaves 8 in a whorl, linear, glabrous, awned, incurved; lobes of corolla obtuse, awnless; fruit glabrous. 2. H. Native of Crete, on the spathaceae mountains. Flowers yellow.—Perhaps the same as G. incendéum, D'Urv. unn. p. 15. which was collected on rocky hills in the island of Samos. Often much pubescent. Peduncules axillary and terminal, trichotomous. Incurvèd Bed-straw. Pl.

5 G. SUBTRIFIDUM (Reinw. ex Blum. bidjr. p. 944.) stems twigg, obversely scabrous; leaves usually 6 in a whorl, short, narrow, linear-spatulate, acute, rather scabrous; peduncles terminal, few-flowered. 2. F. Native of Java, on the mountains. Said to be nearly allied to G. spelátulatum and G. pilúnitum.

Sub trifid Bed-straw. Pl. 1 foot.


Apiculátum-flowered Bed-straw. Pl. 1/4 to 1 foot.

7 G. INCA'NÉUM (Sibth and Smith, fl. gréc. t. 130.) leaves 6 in a whorl, linear, and are as well as the stems hoary; peduncles 3-flowered; lobes of corolla awned; fruit glabrous. 2. H. Native on Mount Parnassus. Flowers white. (F. 111.)


8 G. OBELi'ÁTUM (Vill. dauph. 2. p. 221. t. 8.) stems ascending, tetragonal, villous at the bottom; leaves 8 in a whorl; lower ones obovate, villous; upper ones linear-lanceolate, glabrous; peduncles twice triñed, glabrous; lobes of corolla ending in a setaceous acumen each; fruit glabrous. 2. H. Native of Dauphiny, Piedmont, Eturia, and Austria, in rugged places, and in hedges among the mountains. G. mucronátum, Lam. dict. 2. p. 581. D. C. fl. fr. 4. p. 258. Flowers white. Habit of G. Boccòni, but differs in the lobes of the corolla ending in a setaceous point.
Rubiaceae. CCXVI. Galium.

**Oblique Bed-straw.** Pl. 1 foot, ascending.


13. *G. littoralis* (Guss. fl. sec. prod. 1. p. 172.) stems stiff, tetragonal; branches approximate; leaves nearly in a whorl, oblong-lanceolate, dilated at the apex, mucronate, a little serrate on the margin, spreading or reflexed; branches of panicle trichotomous, erect; corolla downy outside, with ovate-lanceolate, awned lobes. 2. H. Native of Sicily, in sandy, bushy places by the sea. Flowers white. Nearly allied to *G. mollugo* and *G. apiculatum*.

**Var. ß, pubescens** (Guss. l. c.) stems and peduncles downy or villous at top.

**Sea-shore Bed-straw.** Pl. 1 to 2 feet.


12. *G. pumilum* (Lam. dict. 2. p. 580. ill. no. 1368. t. 60. f. 2.) plant tufted; leaves 6-8 in a whorl, linear, smooth, bisulate beneath, very acute, tufted at the base; flowers almost terminal, subumbellate; peduncles longer than the leaves; fruit glabrous. 2. H. Native of the Pyrenees, in rugged places, &c. D. C. fl. fr. no. 3374. Req. diss. mss. G. thyrsoides. All. ped. art. p. 1. Flowers white. Lobes of the corolla obtuse.

**Var. ã, hypnoides** (Vill. dauph. 2. p. 323.) plant tufted, erectish; peduncles 2-3-flowered. 2. H. Native of Dauphiny, frequent on the mountains.


**Var. ã, récentum** (Req. diss. mss.) stems erectish, branched above; peduncles divided, 2-4-flowered. 2. H. Native of Provence, &c., among rocks.

twice the length of the fruit.  

**Hypocaenia Bed-straw.** Pl. 1 foot.

18 G. ERECTUM (Huds. angl. p. 68. Smith, engl. bot. 2067.) stems erect, branched at the top, tetragonal, smooth, equal; leaves 6-8 in a whorl, linear-lanceolate, mucronate, still, having the margins serrulated with prickles; panicles trichotomous, lobes of corolla accuminated; fruit glabrous, smooth.  


**Var. β, luctidum** (D. C. l. c.), lobes of corolla setaeceously acuminated. 


**Var. γ, scabridum** (D. C. prod. 4. p. 596.) lower part of stem and lower leaves clothed with scabrous pubescence.  


**Var. τ, approximatum** (D. C. prod. 4. p. 596.) whorles of leaves closer together.  

2. H. G. luctidum, Hort. par.

**Erect Bed-straw.** Fl. June, July, Britain. Pl. 1 to 2 feet.

19 G. MOLLUGO (Linn. spec. p. 153.) stems flaccid, tetragonal, thickened above the node, glabrous, sparsely branched; leaves 6-8 in a whorl, elliptico-ovate, mucronate, spreading, serrated a little; peduncles much branched, disposed in panicles; lobes of corolla acuminated; fruit glabrous, smooth.  

2. H. Native almost throughout Europe and Caucasus, in hedges; plentiful in Britain. (Ceder. fl. dan. t. 455. Bull. herb. t. 283. Smith, engl. bot. t. 1673. Lob. icon. t. 502. f. 12. G. boreale, Lapeyr. ex Benth.—Petiv. herb. brit. t. 30. f. 4. Flowers white, and sometimes yellowish. Herb very variable in height and breadth of leaves. Leaves hairy on the margins and keel, but never rough to the touch. The plant is called Wild Madder, and Great Bastard Madder. The roots are creeping, and yield a red dye like the true Madder, but of a brighter colour: like that also they dye the bones of animals red that feed on them.

**Var. α, aristatum** (Durb. bot. gall. p. 240.) lobes of corolla mucronate.  


**Var. γ, scabrum** (D. C. fl. fr. no. 3861. β,) lower parts of stems and lower leaves scabrous from hairs.  


**Var. δ, elatum** (D. C. prod. 4. p. 596.) stems taller and more umbil. at the joints.  

2. H. Native of moist places, as bogs. G. elatum, Thuill. fl. par. ed. 2. vol. 1. p. 76.

**Mollugo, or Great-hedge Bed-straw.** Fl. July, Aug. Britain. Pl. 2 to 4 feet.

20 G. FRUTICOSUM (Wildl. spec. 1. p. 585.) stems suffrutescent, glabrous, tetragonal; leaves 4 in a whorl, linear, very blunt, glabrous; flowers densely panicked at the tops of the branches; lobes of corolla acuminated; fruit glabrous.  


**Shrubby Bed-straw.** Fl. June, July. Chit. 1819. Sh. 1 ft.

21 G. MEDITERRANEUM (D. C. prod. 4. p. 596.) stems ascending, tetragonal, smooth; lower leaves 4 in a whorl, obovate, mucronulate: upper leaves 6 in a whorl, linear-lanceolate, mucronate, with rather scabrous margins; peduncles di-trichotomous; lobes of corolla ending in an awn; fruit glabrous.  

2. H. Native of Corsica, on Mount Reston, where it was collected by M. Thomas; and on the mountains of Liguria, by Badaro. G. campéstre, Dub. bot. gall. 1. p. 248. but not of Willd. Flowers white or yellowish. It differs from *G. campéstre* in the stem being smooth, not scabrous on the angles, in the form of the leaves, and in the formed lobes of the corolla.

**Mediterranean Bed-straw.** Pl. ascending.

22 G. MAXIMUM (Moris, elench. sard. 1. p. 55.) plant glabrous; stems smoothish, much branched, erect; leaves 6 in a whorl, oblong-linear, obscure, with scabrous edges; branches 4 in a whorl; peduncles trichotomous; lobes of corolla acutish; fruit glabrous.  

2. H. Native of Sardinia, among bushes, and in wet pastures by the sea side.

**Largest Bed-straw.** Pl. 2 to 3 feet?

23 G. INSEBUM (Gaud. fl. helv. 1. p. 421.) plant glabrous; stems decumbent, much branched; leaves ovate, apiculated, serrated with prickles; cauline ones 6 in a whorl: rachel ones 4 in a whorl; umbels trifid, few-flowered; bracteae oblong, solitary; lobes of corolla drawn out into a thread each; fruit glabrous.  

2. H. Native of Switzerland and Insubria, in rocky, stony places. Flowers very small, white. Allied to *G. Mollugo.*

**Insubrian Bed-straw.** Pl. decumbent.

24 G. PYRENAEUM (Goun. ill. p. 5 t. 1. f. 4.) plant tufted, quite glabrous, greenish-glaucescent, shining; stems striated, smooth; leaves 6 in a whorl, linear, aristate, erect, approximate, rather tumid at the base; pedicels axillary, solitary, 3 times shorter than the leaves, 1-flowered; fruit glabrous.  


**Pyrenean Bed-straw.** Pl. ft. tufted.

25 G. VILLARISI (Req. in Guer. in vauc. ed. 2. p. 250.) stems flaccid, filiform, glabrous, much branched; leaves 4-5 in a whorl, oblong-linear, soft, mucronate, with smoothish margins; peduncles by threes, trifid, subumbellate; lobes of corolla awnless; fruit smooth, glabrous.  


26 G. ULiginosum (Linn. spec. 153.) stems weak, erectish, seaborous along the angles; leaves 6 in a whorl, obovate-lanceolate, serrated on the margins and nerve, with retrograde prickles, mucronate, stiff; peduncles almost terminal, trichotomous; lobes of corolla acute; fruit glabrous, dotted.  


**Var. a, Witheringii** (D. C. prod. 4. p. 597.) leaves lanceolate: lower ones 5-6 in a whorl: upper 4 in a whorl, beset with hooked prickles on the margins; the serratures often tumid towards the apex.  


27 G. helodes (Hoffm. et Link. fl. port. 2. p. 47.) stems weak, diffuse, scabrous; leaves 5-6 in a whorl, lanceolate-linear, maronulate, scabrous above and on the margins; panicles ciliate. 1. H. Native of Portugal, in marshes about Torres Vedras. G. uliginosum, Brot. fl. lus. 1. p. 150. It is very like G. uliginosum, and probably only a variety of it.


28 G. falu'stre (Lin. spec. p. 153.) stems diffuse, tetragonal, rather scabrous; leaves 4-6 in a whorl, ovate, obvate, unequal, glabrous, with scabrous edges; superior ones lanceolate; peduncles nearly terminal, trichotomous; lobes of corolla ovate, awnless; fruit smooth, glabrous. 1. H. Native of Europe and Siberia, on the banks of rivers and ditches, and in moist meadows; frequent in Britain. Ed. fl. dan. t. 423. Smith, Engl. bot. t. 1857. Hook. fl. lond. fasc. 1. t. 26.—Petr. brit. t. 30. f. 5. Roots creeping. Flowers numerous, white. Plant tall when supported by other herbage.


29 G. sulfo'temum (Sibth. et Smith, fl. grece. t. 128.) stems diffuse, much branched, smooth; leaves 4 in a whorl, lanceolate, acute, glabrous; flowers terminal and axillary, by threes; fruit glabrous. 1. H. Native of Canidia, on the mountains. Leaves with roughish margins. Flowers greenish-purple, bracteolate. Bracteas ciliate, ovate, acute.


30 G. sa'turefoulwm (Trev. mag. nat. amic. berl. 1815. vol. 7. p. 146.) stems fuscous, scabrous along the angles; lower leaves 6 in a whorl, rameal ones 4 in a whorl, linear-elliptic, unequal; branches of panicule dichotomous, panicled; fruit glabrous, spherical, emarginate. 2. H. Native of Tauris, among reeds about Astracan; and of Caucasus, in humid places near Lebeker, mixed with G. palustris, Bieb. suppl. 106. G. pal'-stri, Bieb. fl. taur. 1. p. 103. Corolla white.


32 G. tin'torium (Lin. spec. p. 155.) stems decumbent, smooth; leaves 4-6 in a whorl, linear, obtuse, scabrous on the margins and keel; peduncles axillary and terminal, elongated, subcorynose, many-flowered; lobes of corolla 4, obtuse; fruit glabrous, smooth. 2. H. Native of North America, in low marshy places, as in Canada, United States, Newfoundland; Straits of De Foc, on the North-West Coast. Very nearly allied to the preceding, but differs from it in the stems being smooth, in the peduncles being longer, and in the flowers being always 4-parted. It is said that from the roots of this species the Indians prepare the red dye with which they colour the feathers and other ornaments of their dress. Some states of G. palüstre, in our country, when they have more numerous leaves than usual, are scarcely distinguishable from the G. tinctorium.

Dyers' Bed-straw. Pl. decumbent.

33 G. obtu'sum (Torr. fl. bowt. ed. 2. p. 55.) stems smooth; peduncle, tetragonal; leaves 4 in a whorl, oblanceolate, obtuse, roughish on the margins and nerves; peduncles 3-flowered; lobes of corolla acuate; fruit smooth, glabrose. 1. H. Native about Boston, on the banks of rivers and rivulets. Corollas white.

Ibex-leaved Bed-straw. Pl. procumbent.

34 G. sax'a'tile (Michx. fl. bor. amer. 1. p. 178.) stems diffuse, much branched, tetragonal, rough from retrograde prickles along the angles; caudine leaves 6 in a whorl, rameal ones 4, lanceolate, acuminate, prickly on the nerve and margins; floriferous branches divericate, many-flowered; pedicles short; lobes of corolla awnless; fruit glabrous. 1. H. Native of North America, from Canada to Virginia. Pursh. fl. amer. sept. 1. p. 103. Flowers white. Perhaps the same as G. Claytōni or G. trifolium.

Rough Bed-straw. Pl. decumbent.


37 G. asperfo'tium (Wall. in Roxb. fl. ind. 1. p. 381.) stems branched, weak, tetragonal, scabrous from recurved hairs along the angles; leaves 6 in a whorl, oblong-linear, somewhat cutaneous, maronulate, rather scabrous above, but beset with recurved hairs on the nerve beneath and margins; peduncles axillary, many-flowered, disposed in a kind of leafy panicle; fruit glabrous.—Native of Nipau. Req. diss. miss. G. parviflorum, D. Don, prod. fl. nep. 133. Flowers white, but blackish when dried. Lower leaves 8-9 in a whorl. The stem and branches are soft, while the leaves are harsh.


Etna Bed-straw. Pl. tufted.

39 G. G'rut'uc'scens (Cav. icon. 3. p. 3. t. 206. f. 1.) stems suffrutescent at the base, erect; branches tetragonal, glabrous; leaves 6 in a whorl, linear, maronulate, subrevolute; peduncles
usually 2-3-flowered; lobes of corolla acute; fruit glabrous. 


Frutescent Bed-straw. Shrub 1 foot. 

40 G. De'bell (Hoffm. et Link. fl. port. 2. p. 48.) stems weak, tetragonal, branched, rather scabrous; leaves 6 in a whorl, linear, ending in a short mucrone, with roughish margins: the prickles bending forward, not backwards, as in most of the species; panicules erect. 

2. H. Native of Portugal, in humid meadows. Corollas white. Nearly allied to G. pallitare and G. helodes, and probably only a mere variety of one of them.


41 G. Aristatum (Linn. spec. 152. Smith, Engl. fl. 1. p. 294.) stems erect, much branched, spreading, smooth; leaves 6 in a whorl, petiolate, lanceolate, flat, bistris pointée, with minute marginal prickles, which point forward; lobes of corolla acuminate; seeds smooth, kidney-shaped, separated. 

2. H. Native of many parts of Europe; in Scotland, on billy ground, in Angusshire, but not common.—Barcl. Ind. 1. t. 256.—Boce. mus. 1. t. 75. Flowers white, in terminal forked compound panicles. The upper leaves are sometimes 4-5 in a whorl.


42 G. Junceum (Sibth. et Smith, fl. grece. t. 127.) stems erect, smooth; leaves 4 in a whorl, obovate-linear, obtuse, glabrous; flowers crowded, panicked; fruit glabrous. 


Rushy Bed-straw. Pl. 1 to 2 feet.

§ 2. Platygalia (from παρε, platys, broad, and galium; in reference to the leaves of the species being broad). D. C. prod. 4. p. 598. Perennials, herbaceous plants. Leaves broad, 4 in a whorl. Flowers disposed in cymose panicles, hermaphroditic, white, very rarely purple or cream-coloured. Fruit glabrous.

43 Tata'ricum (Trev. mag. am. nat. erl. berl. 1815. p. 146.) stems quadrangular, scabrous from retrograde prickles along the angles; leaves 4 in a whorl, lanceolate, equal, acuminate, 3-nerved, scabrous along the margins above, and on the nerves beneath; peduncles axillary, shorter than the leaves, trichotomous, 2-flowered; fruit glabrous. 

2. H. Native of Tartary, on the Ural mountains, ex Fisch. and frequent about Astrachan, ex Trev. Stem purplish at the base. Corollas white, with obtuse lobes.

Tartarian Bed-straw. Pl. 1 foot.

44 G. Latifolium (Michx. fl. bor. amer. 1. p. 70, but not of D. Don.) stems erect, smooth; leaves 4 in a whorl, ovate-lanceolate, acuminate, 3-nerved, membranous, having the margins and nerves hispid from very minute bristles; peduncles axillary, opposite, or terminal, divaricate, trichotomous, loosely many-flowered; fruit glabrous.

2. H. Native of Carolina, on the mountains. Ell. sketch. 1. p. 194. Flowers dark purple. One of the mericarps of the fruit is abortive, and therefore the fruit is 1-seeded. Leaves 2-3 inches long.

Broad-leaved Bed-straw. Pl. 1 foot.

45 G. Ruboideus (Linn. spec. p. 152.) stems erect, straight, tetragonal, simple, smoothish; leaves 4 in a whorl, lanceolate, 4 or 5 times longer than broad, 3-nerved, often scabrous on the nerves beneath and margins; peduncles axillary, trichotomous, much longer than the leaves, disposed in a terminal panicle; bracteas ovato-oblong; fruit glabrous. 

2. H. Native of Europe, in meadows and woods, especially in the temperate parts; and of Siberia and Caucasus, even to Kamtschatka. G. ruboideus, var. a., Lam. dict. 2. p. 576. Rom. et Schultes, syst. 3. p. 214. Buxb. cent. 2. t. 29. G. diffisum, Schrad. Link, Enum. 1. p. 131. ex Cham. et Schlecht. in Linneæ. 4. p. 220. G. lyssopitofilum, Hoffm. germ. 1. p. 71. Root creeping, red. Flowers pale yellow, or cream-coloured. Very like G. boreale, but larger, with broader leaves. There is a variety of this species with hispid fruit, according to Steven, obs. p. 70.

Var. β. angustifolium; leaves narrower and longer; flowers fewer.

2. H. Native of Kotzebue's Sound; abundant in dry elevated soils, under the shade of solitary pines, in the valley of Columbia, North-west America. The leaves are almost as narrow as those of G. boreale, but the inflorescence and fruit are very different. G. ruboideus, Hook. et Arn. in Beech. voyt. pt. bot. p. 115. and 125. This variety has been received by Dr. Hooker from the United States, under the name of G. Bermoduhamum.


46 G. Articulatum (Lam. dict. 1. p. 260.) stems ascending, nodose at the joints, tetragonal, smooth; leaves ovate-lanceolate, 3 times longer than broad, 3-nerved, with scabrous edges; peduncles trichotomous, disposed in a crowded corymbose panicle; bracteas ovate; fruit glabrous. 


47 Valantoides (Beeb. fl. taur. 1. p. 102.) stems erect, branched at the base, glabrous, smooth along the angles; leaves 4 in a whorl, rhomboid-lanceolate, twice longer than broad, obtuse, 3-nerved, rather scabrous on both surfaces; panicle trichotomous, much branched; fruit glabrous, smooth. 


§ 3. Trichogalium (from τρις τριγώνον, trichus, a hair, and galium; in reference to the fruit being hispid). D. C. prod. 4. p. 599. Perennials, herbaceous plants. Leaves 4-10 in a whorl. Flowers hermaphroditic, usually white, disposed in cymose panicles. Fruit hispid.

48 G. Ca'picum (Stev. obs. pl. ross. p. 70.) whole plant villous; stems obsoletely tetragonal; lower leaves 8 in a whorl, lanceolate-oblong, mucronate, upper ones opposite; floriferous branches panicked, and are, as well as the fruit, villous. 

2. H. Native of the north of Persia, in the province of Ghilan. Flowers white. Stature and leaves of G. syléatica, but the panicle is dense, like that of G. mollugo.

Caspian Bed-straw. Pl. 1 to 2 feet.

49 G. Roundifolium (Linn. spec. p. 156. exclusive of var. β.) stems diffuse, glabrous; leaves 4 in a whorl, roundish-ovate, 3-nerved, ciliated; peduncles axillary and terminal, loose, elongated, naked, trichotomous at the apex; fruit nearly globose, beaked with bristles, which are hooked at the apex. 


Elliptic-leaved Bed-straw. Fl. Ju. July. Clt. 1819. Pl. 1 ft. 51 G. obovatum (H.B. et Kuntz, nov. gen. amer. 3. p. 336. t. 278.) stems almost simple, pilose; leaves 4 in a whorl, on short petioles, obovate, acute, flat, smoothish, ciliated, 4 times shorter than the internodes; flowers terminal, by threes, pedunculate; fruit covered with hooked bristles.—Native of South America, in temperate parts of the kingdom of Quito, about Chiloé and Guancabamba. Corolla of a whitish violaceous colour.

Nearly allied to G. rotundifolium.

Obovate-leaved Bed-straw. Pl. 1½ foot. 52 G. Javaeum (Blum. bidr. p. 943.) branches tetragonal, hairy; leaves 4 in a whorl, roundish obovate, 3-nerved, with the margins and veins downy beneath; cymes pedunculate, trichomatous, leafy.—Native of the East of Java, on the mountains.

Said to be allied to G. elegans.

Java Bed-straw. Pl.

53 G. neesianaum (Req. diss. miss. ex D. C. prod. 4. p. 600.) stems ascending, erectish, branched, tetragonal, beset with soft hairs; leaves 4 in a whorl, roundish-ovate, ending each in a very short cusp, 3-nerved, hairy; peduncles axillary and terminal, longer than the leaves, trichomatous, hairy; fruit nearly globose, beset with hooked bristles. 2. F. Native of Teneriffe, in the Chestnut woods. G. hisitiatum, Nees, in Buch. in hor. berl. p. 115. t. 22. but not of Ruiz et Pavon. G. ovatifolium, Schott, Spis, & Mart. 1. p. 55. ex Link, in Buch. can. p. 131. Flowers white. Said to be nearly allied to G. rotundifolium.

Necci's Bed-straw. Pl. ascending.

54 G. kiegans (Wall. in Roxb. fl. ind. 1. p. 382.) stems diffuse, ascending, tetragonal, hairy; leaves 4 in a whorl, elliptic, obtuse, sessile, 3-nerved, rather hairy above, and villous along the nerves and margins beneath; peduncles axillary and terminal, trichomatous, hardly pilose, disposed in a panicle; fruit roundish, hispid from bristles, which are hooked at the apex. 2. F. Native of Nipaul. G. Punduannum, Wall. cat. no. 6212. Roots creeping. Fruit small. Flowers white. Habit of G. cruciatum.

Var. β. glabrisculum (Req. diss. miss. ex D. C. i.c.) stems and leaves smoothish. 2. H. Native of Nipaul.

Elegant Bed-straw. Pl. diffuse. ½ foot.

55 G. hamiltonii (Spreng. cor. post. p. 39.) stems erect, branched, pilose; leaves 4 in a whorl, oblong, acute, rather pilose on both surfaces; peduncles terminal, trichomatous, loose-flowered; fruit hispid. 2. F. Native of Upper Nipaul, at Mereba. G. latifolium, Ham. in D. Don, prod. fl. nep. 133.

Hamilton's Bed-straw. Pl. ½ foot.

56 G. hirtifolium (Req. diss. miss. ex D. C. prod. 4. p. 600.) stems weak, branched, rather scabrous; leaves 4-6 in a whorl, linear, bluntish, glabrous above, and scabrous from pilii on the keel and margins beneath; peduncles axillary and terminal, biform, disposed in a kind of panicle; pedicels divaricate; corollas bristly outside; fruit roundish, hispid from bristles, which are hooked at the tops. 2. F. Native of Nipaul, at Narahamby. G. ciliatum, D. Don, prod. fl. nep. p. 133, but not of Ruiz et Pav. G. Aparico, Roxb. fl. ind. 1. p. 382. Stems rather hispid. Flowers small, milk-coloured.

Hairy-flowered Bed-straw. Pl. ½ to 1 foot.

57 G. uscinulatum (D. C. prod. 4. p. 600.) stems weak, diffuse, branched, tetragonal, hispid at the base, and glabrous at the apex; leaves 4 in a whorl, oval, acutish, hispid on both surfaces, hardly 3-nerved at the base; peduncles dichotomously corymbose, few-flowered; fruit beset with bristles, which are hooked at the apex, and about equal in length to the diameter of the fruit. 2. F. Native of Mexico, between Tampico and Real del Monte, where it was collected by Berlandier.

Small-leaved Bed-straw. Pl. 1½ foot.

58 G. Chammissonis (Hook. et Arn. in bot. misc. 3. p. 563.) plant quite glabrous, perennial; stems erectish, acutely tetragonal; angles smoothish; leaves deflexed, oblong, acute, with revolute margins; pedicels axillary and terminal, tridif, bifid, or trichomatous; pedicels very much divaricate; fruit roundish, hispid from compressed bristles, which are acute at the apex, but not hooked. 2. F. Native of Chili, about Valparaiso. This approaches somewhat in habit to Asperula galloides.

Chanissao's Bed-straw. Pl. 1 foot.

59 G. Gilliesii (Hook. et Arn. in bot. misc. 3. p. 364.) perennial; stems herbaceous, diffuse, almost simple, acutely 4angled; leaves 4 in a whorl, oval, obliquely 1-nerved, with spiny margins; pedicels axillary and terminal, 3-flowered, equal in length to the leaves; flowers pedicellate; fruit hispid; bristles longer than the fruit, not hooked at the apex.

Var. α; stem and leaves glabrous. 2. F. Native of Chili, in El Valle de Las Caigas, Andes of Mendoza, Cordillera of Chili.

Var. β; stem and leaves hairy. 2. F. Native of Chili, at El Malpaso and Los Palomares, Andes of Mendoza.

Gillies's Bed-straw. Pl. diffuse.

60 G. suffruticosum (Hook. et Arn. in bot. misc. 3. p. 363.) suffruticosum, hairy, crenascents; stems erectish, simple, terete; leaves oblong-linear, mucronate, hairy; the nerves as well as the recurved margins pilose; pedicels alternate, longer than the leaves, divaricately pinnate. 2. F. Native of Chili, in Vina de la Mar, near Valparaiso. The hairs forming the pubescent point downwards.

Suffruticosum Bed-straw. Pl. 1 foot.

61 G. Ericarum (Bartl. in herb. Hanke, ex D. C. prod. 4. p. 600.) plant suffruticosum, glabrous, erect; leaves 4 in a whorl, oblong, 1-nerved; flowers trichomatously pilose; fruit beset with bristles, which are as long as, but not hooked at the apex. 2. F. Native of Cordillera of Chili. This is very distinct from all other species.


62 G. Tricharum (D. C. prod. 4. p. 600.) stems dichotomous, much branched, glabrous, tetragonal, having the angles scabrous from retrograde bristles, the rest glabrous; corymb trichomatous, few-flowered; fruit beset with bristles, which are a little shorter than it, but not hooked at the apex.—Native of Chili, about Rancagua, among bushes. Allied to G. eriocarpum, but differs in the bristles of the fruit being shorter and fewer.


63 G. boreale (D. C. fl. fr. suppl. p. 498.) stems erect, straight, tetragonal, smoothish; leaves 4 in a whorl, linear- lanceolate, 3-nerved, glabrous; peduncles axillary, trichomatous, much longer than the leaves, disposed in a terminal panicle; bracteas obvatly orbicular. 2. H. Native throughout the whole of Europe, in moist rocky shady places, by rivers and lakes; plentiful in some parts of Britain, as in the north of England and Scotland. Root creeping, brownish. Leaves with scabrous margins. Flowers milk-coloured.


Northern Bed-straw. Pl. 1 foot.

65 G. coriaceus (Bunge in Ledeb. fl. ross. alt. ill. t. 216.) stems branched, tetragonal, scabrous at the base; leaves coriaceous, shining, with revolute scabrous edges; lower ones 4 in a whorl, obovate-oblong; upper ones opposite, oval, rather scabrous, as well as the stems; peduncles axillary, 2-4-flowered; fruit hispid from hooked pili at the base, much shorter than the pedicels. 2 H. Native of Siberia, in the fissions of rocks at the river Katunga, at a place called Boom, and at the river Tschuja. Peduncles slender, bifid, trifid, rarely twice trifid, rather hispid. Flowers yellowish-white.

Coriaceous-leaved Bed-straw. Pl. 3/4 to 1 foot.


Circine-like Bed-straw. Pl. 1 to 1 1/2 foot.

67 G. lanceolatum (Torr. fl. un. st. 1. p. 163.) stems erect, glabrous; leaves 4 in a whorl, ovate-lanceolate, acute, with ciliately scabrous edges, 3-nerved at the base; peduncles terminal, dichotomous, divaricate, longer than the leaves; flowers lateral, sessile, deflexed; corollas very acute; fruit beset with hooked bristles. 2 H. Native of North America, in the states of New York, Massachusetts, and Boston; and of Canada about Quebec. G. circæ'zans β lanceolatum, Torr. cat. new York, p. 23. G. Torreyi, Bigel. fl. bost. ed. 2. p. 56. G. circæ'zans var. Nutt. Flowers milk-coloured.

Lanceolate-leaved Bed-straw. Pl. 1 to 1 1/4 foot.

68 G. brachiæ'tum (Pursh, fl. amer. sept. 1. p. 103.) stems flacid, elongated, brachiately branched, hispid; branches short; leaves 6 in a whorl, oblong-lanceolate, acuminate, glabrous, having the margins and keel ciliately bristles; floriferous branches verticillate, longer than the leaves, divaricately dichotomous; pedicels 2-flowered; fruit beset with hooked bristles. 2 H. Native of America, from New England to Virginia, in meadows, and on the margins of woods, frequent. G. longicaule, Rafin. fl. lud. p. 75.2. Flowers white.

Brachiæt Bed-straw. Pl. 1 to 1 1/2 foot.

69 G. cuspidatum (Muhl. cat. ex Ell. sketch. carol. 1. p. 197.) stems prostrate, glabrous; leaves usually 6 in a whorl, lanceolate, acuminate, a little ciliated; peduncles trifid; lobes of corolla acuminate; fruit pilose. 2 H. Native of Carolina and Georgia. Flowers white. Fruit beset with long white pili.

Cuspidate-flowered Bed-straw. Pl. prostrate.

70 G. hispis'tum (Michx. fl. bor. amer. 1. p. 79.) stems procumbent, much branched, hispid; leaves 4 in a whorl, oval-lanceolate, acuminate, with revolute edges, wrinkled, hispid on both surfaces; flowers nearly solitary, terminal; fruit hispid. 2 H. Native of Lower Carolina. Perhaps the same as G. lappaceum, fl. per. 1. p. 50. ex Pursh, fl. sept. amer. 1. p. 104. Flowers white.


71 G. densi'fIorumm (Lindl. fl. alt. ill. t. 194. fl. alt. l. 1. p. 137.) stems many from the same root, erect or ascending, glabrous; leaves 8 in a whorl, oblong-linear, cuspidate, glabrous with scabrous margins; peduncles crowded; segments of corolla mucronulate; ovarium villous. 2 H. Native of Siberia, near Smiejow. Rameal leaves sometimes 6-7 in a whorl, pale green. Panicles from the tops of the stem and branches. Corollas greenish-yellow.

Dense-flowered Bed-straw. Pl. 1 foot.


VAR. β. pilosum (D. C. prod. 4. p. 601.) stems hispid; leaves villous on both surfaces, and full of pellucid dots. 2 H. Native of the states of New York and Boston, in dry pastures and woods. G. pilosum, Ait. hort. kew. p. 145. Torr. fl. un. st. 1. p. 167. The dots on the leaves less pellucid, and villi more conspicuous than in var. α, but very like it.


73 G. triflórum (Michx. fl. bor. amer. 1. p. 80.) stems procumbent, tetragonal, hispid or smoothish; leaves 6 in a whorl, oblong, cuspidate, glabrous, scabrous along the nerves and edges, 1-nerved; peduncles axillary and terminal, 3-flowered, longer than the whorls of leaves; flowers pedicellate; fruit beset with bristles, which are hooked at the apex. 2 H. Native of Carolina, Pennsylvania, New York, Canada, Unalaska, Sitka, and Norland, in rather humid shady places. It is common from Quebec to the Rocky Mountains, and as far north as lat. 65°, and from the west side of the Rocky Mountains to the Pacific. Clam. et Schlecht. in Linn. 3. p. 222. Torrey, fl. un. stat. 1. p. 167. Willd. hort. berol. t. 66. G. cuspidatum, Muhl. cat. 1. p. 15. G. suavaleps, Wahl. fl. lapp. p. 48. Req. diss. med. ex herb. D. C. There are varieties of this with either rough stems, as in G. aparine, or glabrous stems. Flowers small, white. Habit and scent of Aspénula odorata.

VAR. β. cirrò'diòrum (D. C. prod. 4. p. 602.) stems smooth; corollas green. 2 H. Native about Moscow, in mossy woods. G. hyssopiflórum, Goldbl. in litt. 1821. Req. diss. med. in herb. D. C.


74 G. märini'tum (Lin. mant. p. 38. but not of Thunb. prod. 3.) plant villous all over; stems much branched, tetragonal; leaves 4-6 in a whorl, but the ultimate ones are opposite, all lanceolate-linear, acute; peduncles axillary, 1-flowered; corollas and fruit villous or hispid outside. 2 H. Native of Nice and
the Levant, in exposed rocky places. Corollas reddish. Stems creeping at the base.


75 G. brachychilum (Schultes, mant. 3. p. 180.) Plant smoothish, much branched, procumbent; leaves 4-6 in a whorl, but the upper ones are opposite, all lanceolate, mucronate, and reflexed; pedicels 2-3-together, axillary, 1-flowered; fruit scarious from pubescence. 2. H. Native of Caucasus, about Buduch, in the calcareous range, &c. G. brevifilium, Stev. mem. mose. 3. p. 253. but not of Smith et Sibth. G. alpestre, Stev. cat. hort. gor. 1812. p. 43. G. brachyphillum, Sieb. fl. taur. suppl. p. 107. Flowers white. This is an intermediate plant between the granular and villous fruited species.

\textit{Short-leaved Bed-straw. Pl. procumbent.}

76 G. greceum (Lin. mant. p. 38.) Stems suffrutescous, branched at the base; branches erect, hispid; leaves 6 in a whorl, linear, hairy, erect; peduncles axillary and terminal, few-flowered, a little longer than the leaves; fruit beset with long white bristles. 2. H. Native of Greece, on Mount Paramnasus, and the islands of Cos and Candi, on exposed rocks. Sibth et Smith, fl. grece t. 136. D'Urville cat. no. 129. Req. diss. mss. Linn. dict. 2. p. 584. Lodd. bot. cab. t. 1573.—F. Alp. exot. t. 166. Pedicels forming a racemose or thyrsoid panicle. Flowers small, yellowish-brown.


77 G. canum (Req. diss. mss. ex D. C. prod. 4. p. 602.) Stems suffrutescous, tufted; branches very hairy and hoary; leaves lanceolate, with revolute margins, hairy on both surfaces, hoary beneath; peduncles cymose, few-flowered, 2-3 times longer than the leaves; fruit hispid. 2. H. Native of Syria, where it was collected by Donati and Labillardiere. Flowers small, purplish. Perhaps only a variety of \textit{G. greceum.}

\textit{Hoary Bed-straw. Pl. 2} foot.

78 G. micranthemum (Pursh, fl. amer. sept. 1. p. 103.) Stems much branched, divericate, beset with retrograde prickles; leaves short, lanceolate, mucronate, glabrous, having the margins and keel prickly; floriferous branches divericately branched; pedicels finally 2-flowered; fruit hispid. 2. H. Native of North America, from Canada to New York, in mountain bogs. Said to resemble \textit{G. uliginosum} very much.

\textit{Small-flowered Bed-straw. Pl. divericate.}

§ 4. 

\textit{Coccolgo}lia (from \textit{coccol}, \textit{kokkos}, a grain, and \textit{galium}; in reference to the granular fruit). D. C. prod. 4. p. 602. \textit{Perennial plants. Leaves 4 in a whorl. Flowers on long peduncles, herna-

\textit{phrodite. Fruit granular.}

79 G. cotinoides (Chamm. et Schlecht. in Linnaea. 3. p. 227.) Stems diffuse, weak, tetragonal, beset with retrograde bristles along the angles; whorls of leaves distant; leaves 4 in a whorl, sessile, lanceolate, acute, with the nerve and margins scarious; pedicelles trichotonous, few-flowered, terminal; pedicels capillary, very long; fruit glabrous, minutely tuberculare. 2. F. Native of Chili, in hedges near Talagana, and about Concepcion. This is a very showy species, with the habit of \textit{G. uliginosum. Cotinus-like Bed-straw. Pl. diffuse.}

80 G. lanuginosum (Linn. ill. no. 1360.) Stems, branches, and peduncles clothed with long soft dense hairs; leaves 4 in a whorl, lanceolate, acute, glabrous, with scarcely margins; pedicels axillary and terminal, simple and bifid, very long, 1-flower-
ed; corolla glabrous, with acutish lobes; fruit glabrous, minutely tuberculare.—Native of the East Indies, ex herb. Lam.

\textit{Woody Bed-straw.}

81 G. tomoxeum (Thum. fl. cap. 151.) Stems scapent, glabrous, much branched, tetragonal: with the angles denticulated; branches densely clothed with white hairs; leaves 4 in a whorl, oblong, roughly serrated; pedicules dichotomous, capil-

\textit{larious, villous. —Native of the Cape of Good Hope. G. maritimum, Thum. prod. p. 30, but not of Lin.}

\textit{Tomentosum Bed-straw. Pl. climbing.}

§ 5. 

\textit{Erythroglia} (from \textit{erythros}, \textit{cratylos}, red, and \textit{galium}; in allusion to the red flowers of the species). D. C. prod. 4. p. 603. \textit{Perennial plants. Leaves 6 in a whorl. Flowers herma-

\textit{phrodite, cymose panicle, purple or red. Fruit glabrous.}

82 G. purpureum (Lin. spec. p. 150.) Stem erect, suffrute-

\textit{cosse, much branched, glabrous; leaves 4-6 in a whorl, linear, scapent; peduncles capillary, longer than the leaves; lobes of corolla apiculare; fruit glabrous.}


83 G. rubrum (Lin. spec. p. 150.) Stems herbageous, weak, glabrous; leaves 6 in a whorl, linear, spreading, glabrous; pe-

\textit{duncles axillary, many flowered; pedicels short; lobes of co-

\textit{rolla apiculare; fruit glabrous.}


\textit{Var. \beta, rubrum} (Duby, ench. 1. p. 248.) Stem pilose at the base. 2. H. Native of the meadows of Lozera, about Medas. G. purpureum var. \beta, D. C. fl. fr. 5. p. 446.


§ 6. \textit{Xanthogalia} (from \textit{xanths, yellow, and \textit{galium}; in reference to the yellow flowers of the species). D. C. prod. 4. p. 603. \textit{Plants perennial. Leaves 6-10 in a whorl. Flowers yellow, all herna-

\textit{phrodite. Inflorescence panicled.}

84 G. rupestris (Visiani, ex Bisol. in litt. 1829. ex D. C. prod. 4. p. 603.) Stems erect, tetragonal, velvety, glabrous at the apex; leaves 6 in a whorl, upper 4 in a whorl, and the uppermost ones opposite, linear-lanceolate, a little cuneated, mucro-

\textit{nate, glabrous, with rather scabrous edges; floriferous branches panicled; lobes of corolla acuminate; fruit glabrous.}

2. H. Native of Dalmatia, on rocks. Flowers small, deep yellow.


85 G. veirum (Lin. spec. 155.) Stems erect, tetragonal, almost simple; leaves 8 in a whorl, linear, sulcate, with rather revolute edges, smooth; floriferous branches panicled, almost all terminal; pedicels crowded, leafy, about equal in length to the flowers. 2. H. Native of Europe and Siberia, in meadows, way sides, margins of fields and woods, and among bushes fre-

\textit{quent; very common in Britain, in dry soil. G. liturn, Moench, meth. 486. Root creeping, tawny. Flowers yellow. Leaves each tipped by a hair.}

\textit{Var. a, leiophyllum} (Wallr. sched. crit. p. 56.) Stem and leaves quite glabrous, smooth; flowers pale yellow. 2. H. Native in rather humid shady places. G. veirum \beta glabrum, Req. diss. mss.}


Var. ε, *tenementum* (Meyer, verz. pil. p. 51.) stems and fruit densely clothed with tenementum. 2. H. Native of Caucasus, on the tops of the Taurus mountains near Dryzich.

The common name Bed-straw given to all the species is from the verb to straw, an early written straw. Before the invention of feather-beds a variety of herbs were used to straw beds with; among these doubtless this was one. In Johnson’s edition of Gerard, it is called our Ladies’ Bed-straw (p. 1127.) From the notion of its curdling milk, Dioscorides has named it γαλολοü; and it is said to have been used in many parts for this purpose, but from later experiments it has not succeeded in coagulating milk. It has probably been put into milk destined to make cheese, not so much for the purpose of curdling it, as of giving it a flavour, or as Matthioli expresses it, to make it eat the sweeter. The French formerly prescribed the flowers in hysterical and epileptic cases. Boiled in alum-water the flowering stems dye a good yellow colour. The roots dye a very fine red, not inferior to madder.


86 G. RETHECOM (Willd. spec. 1. p. 596.) leaves S in a whorl, linear-filiform, cuspidate, with revolute scabrous margins; stems also scabrous; flowers panicked; peduncles pubescent; fruit hispid from villi. 2. H. Native of Siberia and Caucasus, growing along with G. vêrum. Flowers deep yellow.

Var. β, *rosmarinifolium* (Lecom. fl. alt. 1. p. 138.) leaves 8-10 in a whorl, linear, shining above and pubescent, and clothed with hoary tomentum beneath, with revolute edges; stems tomentose suffruticoso at the base; panicle conicatitate; fruit vil-lous. 2. H. Native of Siberia, at the river Tschanja, in the Karaciea desert in dry exposed places.

Ruthen Lady’s Bed-straw. Pl. 1 foot.

87 G. VEKO-MOLOGO (Wallr. in Schiede, pl. hybr. p. 64.) stems tetragonal, rather downy; leaves sub lanceolate-linear, rather scabrous, with revolute scabrous edges, downy beneath; panicles rather divaricate; flowers rather distant; corollas cream coloured, with acutish segments. 2. H. Native of Germany. This is a hybrid raised from the seed of G. vêrum, impregnated by G. moligi. G. vêrum β, Reen. et Schults, syst. 3. p. 233. G. Moligo var. ochroleica of authors.

Veron-Mollugo or Hybrid Ladies’ Bed-straw. Pl. 1 to 2 feet.


Tunis Bed-straw. Pl. 1 to 2 feet.

89 G. MINTUM (Lin. spec. p. 154.) stems decumbent, smooth; leaves 8 in a whorl, lanceolate, mucronate, serrated from prickles, glabrous, incurved; peduncles reflexed; fruit fleshy. 2. H. Native of Russia. Gmel. sib. 3. p. 169. no. 45. Flowers yellow. The plant resembles G. vêrum very much, and is probably only a variety of it.

Minute Bed-straw. Pl. decumbent.

90 G. MIMIFILS (Bieb. fl. taur. 1. p. 104.) stems prostrate, much branched, villous; leaves 6 in a whorl, linear, spreading much, villous; floriferous branches axillary, aggregate; lobes of corolla acute; fruit downy. 2. H. Native of Caucasus, Tauris, on the lower Volga, in exposed places, and by way sides common. Corollas cream-coloured; anthers yellow. Habit and inflorescence like that of G. vêrum.

Trailing Bed-straw. Pl. trailing.


Sand Bed-straw. Pl. prostrate.

§ 1. *Ericogalia* (from *eriou*, a heath, and *galium*; the habit of the species is that of *Eriæn*). D. C. prod. 4. p. 904. *Perennial or suffruticoso plants.* Leaves 4-6 in a whorl. *Inflorescence axillary.* Flowers hermaphrodite.

92 G. EROCOIDES (Lam. dict. 2. p. 583.) stems suffruticoso, much branched, downy; leaves approximate, 4-5 in a whorl, linear-lanceolate, with revolute margins, apiculated, stiff, smoothish; flowers axillary, nearly sessile, solitary, bibracteate; corolla pilose outside; fruit covered with stiff short hairs. 2. G. Native of Monte-Video and Chili. Cham. et Schlecht. in Linna. 3. p. 125. Larger leaves 2-3 lines long, and the smaller ones only half a line. Flowers minute, cream-coloured. Fascicles of leaves sessile, hence the plant has the habit of a heath. Stems decumbent.

Var. β, *intermedium* (Cham. et Schlecht. in Linna. 3. p. 225.) plant shrubby, clothed with short down; leaves linear, quite glabrous, ending in a long cusp each. 2. G. Native of Brazil, in Campo d’Utría.

Var. γ, *atherodes* (Cham. et Schlecht. in Linna. 3. p. 225.) quite glabrous in every part, as also the fruit; leaves linear, with revolute edges. 2. G. Native of Brazil, in Estrela do Campo Aguda. G. atherodes, Spreng. cur. post. p. 39.


93 G. MIRUM (Lam. dict. 2. p. 583.) root woody; stems herbaceous, branched, tetragonal, very leafy, hispid; leaves 4-5 in a whorl, sessile, lanceolate, more or less hairy on both surfaces; flowers axillary, verticillate, nearly sessile, bibracteate; lobes of corolla acute; fruit glabrous, tubercular. 2. G. Native of the south of Brazil and Monte-Video. Cham. et Schlecht. in Linna. 3. p. 224. Reig. diss. mss. G. redéxum, Pohl, in litt. G. megapotamicum, Spreng. cur. post. p. 39. ex Cham. et Schlecht. in Linna. Stems decumbent or erect. Flowers yellow. *Inflorescence of G. verticillatum.*

Hairy Bed-straw. Pl. decumbent or erect.

94 G. CAMRORUM (Pohl, in litt. ex D. C. prod. 4. p. 601.) plant quite glabrous; stems erect, tetragonal; leaves 4 in a whorl, sessile, linear, acutish, spreading, with revolute edges, more or less ciliatæ; flowers axillary, almost sessile; fruit finely granulated.—Native of Brazil, where it was collected by Pohl. Flowers small. Fruit almost like that of G. spurium, but differs in being almost sessile. Leaves 4 lines long. Allied.
to *G. hirtum*, but differs in the angles of the stem being glabrous.

**Field Bed-straw.** Pl. 1 foot.

95 G. *nuile* (Cham. et Schlecht. in Linnaea. 3. p. 226.) stems diffuse, tetragonal, filiform, beset with stiff hairs or glabrous; leaves 4 in a whorl, petiolulate, elliptic, acute at both ends, flat, ciliate, ciliated; flowers axillary, solitary, opposite, on short pedicels, bibracteate; lobes of corolla acute, rather pilose at the apex; fruit globose, didymous, downy. —Native of the south of Brazil.

**Humble Bed-straw.** Pl. procumbent.


96 G. *coronatum* (Sibth et Smith, fl. grcec. t. 125.) stems ascending, branched from the base, smooth; leaves 4 in a whorl, elliptic, obtuse, nearly veinless, with the margins and base ciliated; peduncles quinquef dessert, glabrous, bibracteate; flowers polygamous; fruit glabrous. Y. H. Native of the East of the Mediterranean, and of Mount Olympos; and of Tauria and Caucasus. Valiénta Tarica, Bieb. fl. taur. 2. p. 457.—Buxb. cent. 5. p. 47. f. 29. *There is a variety of this with rather hispid stems. Flowers pale yellow.*


97 G. *Tauricum* (Röm. et Schultes, syst. 3. p. 250.) stems decumbent, branched, hispid; leaves 4 in a whorl, elliptic, reticulated, hispid; peduncles branched, ciliated, bibracteate, de


98 G. *veurnum* (Sop. carn. ed. 2. no. 144. t. 2.) stems erect, simple or branched from the base; leaves 4 in a whorl, 3-nerved, hispid; peduncles dichotomous, bracteate, shorter than the leaves; flowers polygamous; fruit glabrous. Y. H. Native of France and Switzerland, Upper Italy, Germany, Hungary, Galicia, Siberia, &c. in grassy places. *Stems and leaves glabrous or hispid, with the exception of the ciliate*. Flowers yellow or cream-coloured, D. C. fl. fr. ed. 3. no. 3533. Very like *G. cruciata*. Valiénlanum verna, G. Don, in Loud. hort. brit. p. 411.


**Spring Bed-straw.** Fl. May, June. Clt. 1371. Pl. trailing, 1 foot.

99 G. *Pchericum* (D. C. prod. 4. p. 605.) plant quite glabrous, smooth, erect, of many stems; leaves 4 in a whorl, oblong, not ciliated; peduncles axillary, many-flowered, 3 times shorter than the leaves, bibracteate; fruit glabrous. Y. H. Native of Persia, near Amadan, where it was collected by Olivier and Brünigerve. Flowers yellow in the dried state. Nearly allied to *G. veurnum*, but differs in the plant being perfectly glabrous.

**Persian Bed-straw.** Pl. 1/2 to 1 foot.


VAR. γ. *angustifolium* (D. C. prod. 4. p. 606.) leaves linear-oblong, very seaceous along the edges. Y. H. Cultivated in gardens; according to Req. diss. mss. ex D. C.

**Crosswort Bed-straw.** Fl. May, June, Britain. Pl. 1 foot.


### Sect. II. Annual species.—Aparine.


**Retrograde prickled Bed-straw.** Pl. 1/2 to 1 foot.

103 G. *Pedemontana* (All. nat. 2. p. 2.) stem erect, simple, slender, loosely villous; leaves 4 in a whorl, oval-oblong, hispid; peduncles bracteate, 3-4-flowered, shorter than the leaves, deflexed after flowering; flowers polygamous; fruit glabrous, globose, didymous. O. H. Native of the south of Europe, as of Portugal, Spain, Vallàis, Piedmont, &c. in sterile dry places. D. C. fl. fr. ed. 3. no. 3353. Req. diss. mss. Valiénlanum Pedemontanaum, Bell. append. 46. t. 5. act. taur. 5. t. 7. but not of Kit. G. chloranthum, Brot. fl. lus. 1. p. 149. Fruit sometimes truly globose, from one of the cells being abortive. Flowers yellow, very like those of *G. cruciataum*.

VAR. β. *reflexum* (Presl. fl. sic. prod. p. 123.) fruit rough from stiff pili. O. H. Native of Sicily, and also on grass on the mountains and in groves. Perhaps a proper species.


104 G. *Gibulaitricum* (Schott, in isis. 1828. p. 821.) stems
pilose, marricated along the angles; lower leaves ovate; cauline ones 8 in a whorl; uppermost ones opposite, all with revolute hispid edges; panicles decompound; lobes of corolla cuspitate; fruit glabrous.  

§ 10. *Xanthoparinae* (from Xanthos, xanthis, yellow, and *aphy`, aparine*, the Greek name of eleavers or goose-grass; in reference to the yellow flowers of the species). D. C. prod. 4. p. 600.  

Plants annual. Leaves 4-8 in a whorl. Inflorescence cymosely panicled. Flowers yellow, hermaphroditic. Fruit glabrous.

110 G. viscosum (Vahl, symb. 2. p. 29.) stems pilose, diffuse; leaves 4 in a whorl, oblongate, uniform, with scabrous edges; peduncles trifid, leafless; fruit glabrous.  

Native of the kingdom of Tunis, on the mountains. Corolla pale yellow, almost white.
long-linear, with hairy revolute edges; floriferous branches short, axillary, few-flowered; lobes of corolla hardly ascid; fruit glabrous.—Native of New Holland, at Port Jackson, where it was collected by Gaudichaud. Stems 8–10 inches long. Leaves 2–3 lines long, shorter than the internodes. Flowers white.

Gaudichaud’s Bed-straw. PL decumbent.

§ 12. *Euparinae* (from *exu*, well, and *aparine*, cleavers; the section is supposed to contain the true kinds of cleavers). D. C. fl. introd. 4. p. 607. Plants annual. Stem scabrous. Leaves 4–8 in a whorl. Inflorescence axillary. Flowers usually hermaphro-
dric.

**Fruit granulatum or hispid, didymously globose.**

117 G. *Saccaratum* (All. pedem. no. 39) stems weak, branched, with retrograde roughness along the angles; leaves 6 in a whorl, linear-lanceolate, scabrous from prickles along the margins; prickles not retrograde; peduncles axillary, 3-flowered, recurved when bearing the fruit, and length of leaves; fruit didymously globose, warty. O. H. Native of Europe, in corn fields; Scotland, in the Cause of Gowrie, and near Forfar; and near Malton, in Yorkshire. D. C. fl. fr. ed. 3. no. 3379. Wallr. ann. bot. 24. Req. diss. ms. G. verrucosum, Smith, in engl. bot. t. 2173. fl. grec. t. 132. Va-


The well known property of this plant of adhering to whatever it comes in contact with, acquired it the names of Cleavers or Clivers, and Catchweed or Scratchweed; and from being a favourite food or medicine of geese, Goosegrass, Gooseshare, and Goslingweed. The stalks, according to Linnaeus, are used in Sweden as a fritter to strain milk through. Dioscorides relates that the shepherds made the same use of it in his time. It is reckoned to purify the blood, and for that purpose the tops are an ingredient in spring broth. The expressed juice of the herb taken to the amount of 4 ounces or a quarter of a pint night and morning, during several weeks, is very efficacious in removing many cutaneous disorders. It has been most celebrated in scrofulous and cancerous sores, but the experiments made has not turned out in its favour. The seeds are a good substitute for coffee. The roots, like most of the genus, will dye red, and eaten by birds have tinged their tongues of that colour.

**Fruit granulatum or hispid, didymously globose.**

*Var. beta, minor* (Req. diss. ms. ex D. C. fl. introd. 4. p. 608.) stems weak; leaves usually 6 in a whorl, and smaller. O. H. Native of the island of St. Lucia, near Barbado.


122 G. *Vallantia* (D. C. fl. introd. 1805. no. 8381.) stems weak, nearly simple, glabrous at the nodi, but scabrous from retrograde prickles along the angles; leaves 8 in a whorl, linear, having the keel and margins scabrous from retrograde prickles; peduncles simple or bifid; fruit didymously globose, rather hispid from a few bristles, which are hooked at their tops. O. H. Native of Europe, in cultivated fields; plentiful in some parts of Britain. G. infestum, Waldst. et Kt. pl. rar. hung. 3. p. 292. (1808) Bess. gall. 121. G. agrése chinospermum, Wallr. schwed. p. 59. G. Aparine beta, Lam. Flowers small, yellowish. Fruit about half the size of those of *G. aparine*, and not so hispid.

**Cleavers’-like Goose-grass.** Fl. June, July. Ct. 1817. Pl. 2 to 3 feet.

123 G. *Arabica* (Forsk. descrip. p. 30.) stems weak, prickly along the angles, but the prickles are not retrograde as in most of the species, but lean forward, and the knees or joints are equal and glabrous; leaves 6 in a whorl, obovate, scabrous from retrograde prickles along the keel; fruit hispid, 3 from the top of each branch, bifid; fruit hispid from bristles, which are hooked at the tops. O. H. Native of Arabia, in shady places. Vahl. symb. 2. p. 30. Flowers white. Fruit like that of *G. aparine*.

**Cleavers’-like Goose-grass.** PL procumbent.

124 G. *Pulchrum* (Bunge, l. c.) annual; stems weak, glabrous, tetragonal, scabrous from retrograde prickles along the angles; leaves 6 in a whorl, spatulate-oblong, attenuated at the base, cuspitate by a spine, hispid above, and glabrous be-
neath, with scabrous margins; peduncles axillary, a little longer than the leaves, bracteate, 1-2-flowered; corollas very minute, obtuse; fruit didymous, very hispid from hooked bristles. 2. G. oblongus. Native of China, in humid places, near Sis-jiu-sy.

Few-flowered Goose-grass. Pl. decumbent.

125 G. austrole (D. C. prod. 4. p. 608.) stems weak, profligate, branched, tetragonal, pilose, on one side; leaves 4 in a whorl, oblanceolate, mucronately acute, rather pilose, with subacute edges; peduncles axillary, 3-flowered, hardly longer than the leaves; fruit very hispid from bristles. —Native of New Holland, at Bass Straits, where it was collected by D'Urville. Said to be nearly allied to G. recurvum, but differs in the pedicels not being recurved, and in the fruit being twice the size.

Southern Goose-grass. Pl. succulent.

126 G. gracile (Bunge, in mem. acad. sc. Petersb. 2. p. 109.) stem simple, erect, quite glabrous, shining, tetragonal; leaves 4-6 in a whorl, lower ones obovate, middle ones elliptic, superior ones oblanceolate, 1-nerved, scabrils from dots, hispid on the margins; panicules axillary, dichotomous, very slender, exceeding the leaves; corollas very minute, obtuse; fruit hispid from hooked bristles. 2. G. oblongus. Native of China, on mountains, near Hsin-liu-sy.

Slender Goose-grass. Pl. ½ foot.

127 G. tenax (Schleich. ex Gaud. fl. helv. 4. p. 442.) stem filiform, glabrous; leaves 6 in a whorl, oblong, seta-cuspidally scabrous, scabrid from retrograde prickles on the margins; peduncles by three, trifid, spreading; fruit hispid. —Native of the Alps of Switzerland. Corollas small, white.

Tender Goose-grass. Pl. succulent.

128 G. littigiosum (D. C. fl. fr. no. 3382. icon. rari. t. 26.) stem succulent, decumbent, rather scabrous; leaves 4-6 in a whorl, linear-lanceolate, acute, shorter than the internodes, rather scabrous; peduncles elongated, divaricate, bifid or trifid; fruit nearly glabrous, hispid at top from somewhat hooked hairs. —Native of the south of France, Italy, Sicily, in rough stony places, and probably about Paris, but very doubtful. G. Parisiense, Lin. spec. p. 157. exclusive of the synomymes. G. multiformum, Brot. fl. lus. t. 2. p. 251. G. axillare, Presl. prod. fl. sic. p. 61. ex Guss. Flowers small, reddish. This species differs from G. angustissimum and G. gracile in the fruit being hispid.


129 G. microstemma (Desf. fl. atl. 1. p. 130.) stems erect, tetragonal, glabrous, rough; branches divaricate; leaves 6 in a whorl, linear-acute, dentilicate; fruit hispid. —Native of Barbary, near Mascari; and of Sardinia. Asperula scabra, Moris. elench. sard. 2. p. 2. in the same. —Flowers small, white. Very nearly allied to G. divaricatum, Lam., and is perhaps only a variety of it, with hispid fruit. According to Steven, obs. inc. in herb. Willd. it is only a variety of G. ligusticum.


130 G. setacea (Lam. dict. 2. (1786.) p. 584.) stems filiform, erect, scabrous at bottom; leaves usually 5-6 in a whorl, but from 4 to 8, linear-setaceous, with rather scabrous margins; lower ones oblong; peduncles slender, divaricate, trifid; fruit hispid from bristles, which are hooked at the apex. —Native of Spain, Mauritania, Sicily, Provence, in exposed stony or rocky places. Desf. fl. atl. 1. p. 129. D. C. fl. fr. 5. p. 498. G. microcarpum, Vahl, symb. 2. (1791.) p. 30. —Stems pilose, Cav. icon. 2. (1792.) p. 75. t. 191. f. 1. Lag. gen. et spec. no. 127. —G. floribundum, Sibth. et Smith, fl. grece. t. 134. ? G. capitulare and G. microcarpum, Sprenge, syst. Flowers red. The oldest name is here admitted for this plant, as in all other cases. Setaceus-leaved Goose-grass. Pl. June, July. Ct. 1819. Pl. ½ to ¾ foot.

131 G. Sibirorum (Roem. et Schultes, syst. 3. p. 244.) stems smooth; leaves 8 in a whorl, linear, revolutely setaceous, scabrous; lower ones obovate; pedicels capillary; fruit rather pilose. —Native of the Grecian Islands, on sterile hills. G. capillare, Smith, prod. fl. grac. 1. p. 94. but not of Cav. G. Creticum annuum tenellifolium flore albidò, Tourn. cor. p. 4. Flowers pale yellow or cream-coloured. Perhaps only a variety of G. microcarpum or G. setaceum.

Sibthorp's Goose-grass. Pl. 1 foot.

132 G. brevifolium (Sibth. et Smith, fl. grece. t. 135.) stems weak; leaves in a whorl, obovate, awned, scabrous; peduncles trichotomous, terminal; lobes of corolla awned; fruit hispid. —Native of Caramania, on the seashore. Flowers cream-coloured. The bristles on the stem and leaves are not retrograde, as in most of the species. Perhaps the same as G. album, Wildf. ex Roem. et Schultes, syst. 

Short-leaved Goose-grass. Pl. 1 foot.

133 G. alatum (Forsk. descr. const. p. 26.) stems erect, branched, downy, coloured at the nodis; leaves 6-8 in a whorl, oblong, mucronate, with scabrous hardly serrulately margins, glabrous above, and villous beneath, especially on the keel; fruit hispid. —Native about Smyrna. Flowers white.

White-flowered Goose-grass. Pl. 1 ½ foot.

134 G. recurvum (Roq. syst. 1. p. 609.) leaves 6 in a whorl, the uppermost ones are only 4, obovate-oblong, narrow at the base, acute at the apex, glabrous; peduncles axillary, 3-flowered, equal in length to the leaves, deflexed when fresh, shorter than the fruit, hairy; fruit small, globose, hispid. —Native of the Grecian Archipelago, among rocks. G. micranthum, D'Urv. cat. no. 153. but not of Pursh. Sherardia muralis, Sibth. in herb. L'Her. Sherardia murallis, Stev. obs. p. 70.

Recurved peduncled Goose-grass. Pl. succulent.


136 G. filifórmë (Roem. et Schultes, syst. 2. p. 252.) stems simple, hispid, slightly tetragonal; leaves 4 in a whorl, oblong, remotely ciliately denticulate, reticulate, glabrous; male flowers nearly sessile, hermaphrodite ones on short pedicels; fruit oblong, paleaceous, longer than the pedicels. —Native of Teneriffe, and on the walls of Lagona, but not to be found elsewhere. Valánia filifórima, Ait. hort. kew. 3. p. 42. Flowers yellowish.


Var. ß, leiospermum (Req. in litt. 1828. ex D. C. prod. 4. p. 610.) stems, leaves, and fruit glabrous. —Native of Sicily, 4½ feet.
Montpelier, at Pont Juvenal, where it was collected by Re-quin.


137 G. verticillatum (Danth. in Lam. dict. 2. p. 585.)

stem branched at the base; branches nearly simple, elongated, smoothish; leaves linear-lanceolate, hispid, ½ in a whorl; uppermost ones opposite, deflexed; flowers 2-4, axillary, and therefore verticillate, almost sessile; fruit erect, hispid. Œ. H. Native of Sicily, Provence, about Salon Fox; at the foot of Mount Ventosa, Tauria, and Canecusus, in arid places, and at the places of the river salt Solis. Lois. not. 32. t. 2. D. C. suppl. fl. fr. p. 495. Req. diss. mss. Gallium murale, Bieb. fl. taur. 1. p. 105. ex Stelv. G. verteclatum, Pourr. chl. no. 508.


138 G. Smithii; branches erect, simple, bluntly quadrangular, scabrous; leaves 4 in a whorl, uppermost opposite, all deflexed, elliptic-lanceolate, scabrous; flowers axillary, by threes, therefore 6 in a whorl, erect; fruit hispid, with distinct, elongated mericarps. Œ. H. Native of the Grecian Islands, among rocks. Sherardia erecta, Smith, fl. grcc. t. 116. Flowers greenish yellow.

Smith’s Goose-grass. Pl. ½ foot.

† Species of Galium not sufficiently known.

* Species natives of Europe.

139 G. soleirolii (Lois. nov. not. 7.) stems weak, angular, downy (Lois.), villous (Spreng.); leaves 5-6 in a whorl, ovate-lanceolate, acute, hairy; peduncles dichotomous (Lois.), divaricate, trifid, few-flowered (Spreng.); fruit wrinkled. 2. H. Native of Corsica, by the sea-side, where it was collected by Soleiroli. G. Cörsicum, Spreng. curs. post. p. 39. Flowers unknown.

Soleiroli’s Bed-straw. Pl. procumbent.

140 G. Goldachiicum (Klink. in Bess. prim. fl. gal. 2. p. 337.) stems procumbent, diffuse, tetragonal; leaves 8 in a whorl, narrow-lanceolate, awned, girded by strong hairs at the apex; flowers umbellate; fruit globose. — Native of Galicia, in grassy places. Said to be like G. Le’re and G. Boccioni.


141 G. Pentandrum (Gileb. ex Klink. in Bess. prim. fl. gal. 2. p. 338.) stems erect, branched; leaves 8 in a whorl, linear-lanceolate, spotted with white at the apex, racemes few-flowered; flowers pedunculate; fruit ciliately. — Native of Galicia. Flowers yellowish. Said to be nearly allied to G. verum, and is probably merely a pentameres-flowered variety of that plant.

Pentandrum Bed-straw. Pl. 1 foot.

142 G. ochroleicum (Kit. in Schlultes, cestr. fl. ed. 2. vol. 1. p. 305.) stems erect, quadrangular, smooth; leaves 8 in a whorl, linear-subulate, with very rough margins, and ending in a long mucronate each; flowers by threes, corymbose, cymato-corymbose. 2. H. Native of Austria, on mountain rocks. Flowers cream-coloured. Perhaps a species of Asperula.

Cream-coloured-flowered Bed-straw. Pl. 1 foot.

143 G. Montanum (Lin. spec. p. 155.) stems weak, scabrous; leaves 4 in a whorl, linear, smooth; corymbs trifid. Œ. H. Native of Germany, France, England. Corolla white, purplish outside before expansion. Anthers brown. This plant is not known at the present day, as the plant under this name in the Linnean herbarium does not agree with the characters given of it by him.

Mountain Bed-straw. Pl. ¾ to ½ foot.

** A species native of the Levant.

144 G. Hierosolymitana (Lin. amen. 4. p. 451.) leaves 10 in a whorl, lanceolate-linear; flowers umbellate, fa-tigate.

—Native of Palestine. Stature of G. rubrum. The rest unknown.

Jerusalem Bed-straw. Pl. ½ to 1 foot.

* * * Species natives of Asia.

145 G. tuberosum (Lour. coeh. p. 79.) root oblong, tuber-ous; stem procumbent, simple; leaves 4-6 in a whorl, lanceolate, glabrous; pedicels axillary, 1-flowered, crowded, longish; fruit rough. — Native of China and Cochim-china, where it is cultivated for the sake of the tubers, which are farinaceous, and are eaten when boiled. Flowers hardly known. Perhaps a true species of Galium.

Tuberous-rooted Bed-straw. Pl. procumbent.

146 G. stenogamus (Thunb. nov. act. ups. 7. p. 141. t. 4. fl. 1-9.) stems decumbent, tetragonal, scabrous along the angles; leaves 6 in a whorl, elliptic, ending in a spinose point, hispid from pili above, and nearly glabrous beneath, with ciliately scabra-brous edges; flowers axillary, on short peduncles. — Native of Japan. G. uliginosum, Thunb. fl. jap. 58.

Strigose Bed-straw. Pl. decumbent.

* * * Species natives of the Cape of Good Hope.

147 G. mucronatum (Thunb. prod. p. 30. fl. cap. 151.) stems downy, weak, tetragonal, rising in numbers from the same root; leaves 6 in a whorl, linear, mucronate, glabrous, with revolute serrated edges; branches few-flowered; fruit glabrous. — Native of the Cape of Good Hope. Perhaps the same as G. mucronatum, Spreng. pug. 2. no. 49. The G. mucronatum, Lam. and the G. mucronatum, Ruiz et Pav. are distinct species. Mucrones of leaves white.

Mucronate-leaved Bed-straw. Pl. ½ foot.

148 G. horridum (Thunb. fl. cap. 1. p. 556. phyt. bl. p. 16.) stem suffrutescent, erect, tetragonal, prickly along the angles; leaves usually 8 in a whorl, linear, reflexed, serrated by prickles. 2. G. Native of the Cape of Good Hope.

Horrid Bed-straw. Shrub 2 feet.

149 G. glabrum (Thunb. prod. p. 30. fl. cap. 152.) stems flexuons, erect, tetragonal, glabrous, serrated along the angles; leaves 6 in a whorl, obovate-oblong, acute, glabrous, with replicately-serrated edges; peduncles ample, lateral and terminal, panicled. 2. G. Native of the Cape of Good Hope. Flowers white. Very like G. upserum.

Glabrum Bed-straw. Pl. 1 foot.

150 G.asperum (Thunb. prod. 30. fl. cap. 554.) stem flexuons-ously erect, beset with white twisted hairs, and scabrous along the angles; leaves 6 in a whorl, oblong, glabrous, with replicately serrated margins; flowers few. 2. G. Native of the Cape of Good Hope. Angles of stem rough from retrograde deiculations. Fruit glabrous.

Rough Bed-straw. Pl. ½ foot.

151 G. expansum (Thunb. prod. 30. fl. cap. 152.) stem tetra-gonal, smooth, with divaricate downy branches; leaves 6 in a whorl, linear, mucronate, glabrous, with revolute margins; pedicels trichotomous, spreading, divaricate; fruit smooth. 2. G. Native of the Cape of Good Hope. Corollas white.

Expanded Bed-straw. Pl. 1 foot.

152 G. capeense (Thunb. prod. 30. fl. cap. 151.) stems frutescent at the base, erect, branched; branches terete, downy; leaves 6-8 in a whorl, linear-lanceolate, glabrous, with revolute margins; peduncles dichotomous; fruit glabrous, smooth. 2. G. Native of the Cape of Good Hope. Flowers white.

Cape Bed-straw. Shrub 1 foot.

* * * Species natives of North America.

153 G. uniflorum (Mich. fl. bor. amer. 1. p. 79.) stems falcate, smooth; leaves 4 in a whorl, linear, acute, glabrous;
peduncles axillary, solitary, 1-flowered, very short; flowers drooping; fruit glabrous. 2. H. Native of Carolina. Fertile branches ascending. Said to be nearly allied to G. tinctorium. Flowers white. G. uniflorum, Req. incd. in herb. D. C. is a variety of G. triforum.

One-flowered Bed-straw. Pl. ascending.

154. G. FRUITERUM (Rafin. med. disp. 5. and in Desv. journ. bot. 1. p. 227.) stems diffuse, angular, glabrous; leaves 5-6 in a whorl, linear-lanceolate, very acute, glabrous; flowers very numerous, panicked.—Native of North America, about New-\n


Spinulose Bed-straw. Pl. diffuse.

156. G.? MEXICANUM (H. B. et Kuntth, nov. gen. amer. 3. p. 337.) stem beset with retrograde prickles; leaves 8 in a whorl, linear, acuminate, angular, glabrous, with evolute edges, which are, as well as the middle nerve, rough from retrograde prickles, one-half shorter than the internodes; corymbs terminal, sub-trichotomous; fruit glabrous. 2. H. Native of Mexico, near Guanaxuate. Perhaps a species of Rhibia. Mexican Bed-straw. Pl. 1 1/2 foot.

******** Species natives of South America.

157. G. DENTICULATUM (Bartl. in herb. Haecke, ex D. C. prod. 4. p. 612.) stems diffuse, branched, rather hispid from bristles; leaves 4 in a whorl, ovate, cuspidate, ciliated by distant bristles, rather hairy on both surfaces, 1-nerved; flowers few, terminal, usually by threes; pedicels capillary; fruit glabrous.—Native of Mexico, at Real del Monte. Perhaps a species of Rhibia.


158. G. HIRSUTUM (Ruiz et Pav. fl. per. 1. p. 59.) stems procumbent, tetragonal, much branched, hairy; leaves 4 in a whorl, lanceolate, reflexed, hairy; peduncles axillary, 1-flowered, solitary, short; fruit scabrous. 2. H. Native of Peru, in the province of Canta, in shady places. Perhaps a species of Rhibia.


159. G. PILIFERUM (H. B. et Kuntth, nov. gen. amer. 3. p. 337.) stems weak, beset with retrograde prickles; leaves 8 in a whorl, linear-lanceolate, acuminate by hairs, glabrous, with evolute edges, which are, as well as the middle nerve, beset with retrograde prickles, much shorter than the internodes; flowers terminal, on long peduncles; fruit hispid. 2. H. Native of New Granada, on the Andes. This plant ought probably to be excluded from the genus, on account of its cannnulate corolla. Habit of G. uliginosum.


160. G. CANESCENTES (H. B. et Kuntth, nov. gen. amer. 3. p. 336.) stems almost glabrous; branches and leaves villous; leaves 4 in a whorl, ovate, acuminate, trimple-nerved, canescent beneath, much shorter than the internodes; floriferous branches bifid; flowers lateral and axillary, solitary and terminal, by threes; fruit beset with hooked bristles. 2. H. Native about the town of Quito. Habit of G. maritima, but is said to be annual. Perhaps a species of Rhibia.

Canescent Bed-straw. Pl. procumbent.

161. G. CARIPENSE (H. B. et Kuntth, nov. gen. amer. 3. p. 337.) stem glabrous, beset with retrograde prickles; leaves 8 in a whorl, upper ones 6, oblong-lanceolate, mucronate, having the margins beset with retrograde prickles, much shorter than the internodes; flowers terminal, usually by threes, pedunculate; fruit hispid. 2. H. Native of Cumaná, near Caripo, in shady places. Said to be allied to G. tinctorium, but is annual.

Caripe Bed-straw. Pl. diffuse.

162. G. LAPPACEUM (Ruiz et Pav. fl. per. 1. p. 59.) stem rather scendent, much branched, tetragonal; branches villous, dichotomous; leaves oblong or ovate, 4 in a whorl, hispid; upper ones 3 in a whorl, lanceolate; peduncles axillary, 1-flowered; fruit hispid from bristles.—Native of Peru, about Huancaco, at Puelles Collem. The fruit is said to be baccate. Perhaps a species of Rhibia.


******** Species the native habitats of which are unknown.

163. G. DICHOTOMUM (Lehm. ind. sem. hort. hamb. 1823, p. 7.) stem dichotomous, frutescent, quadrangular; leaves 4 in a whorl, ovobolate-lanceolate; fruit glabrous. 2. H. Native country unknown. Said to be allied to G. fruticosum, but the leaves are much broader and shorter, and the flowers are larger.


164. G. NIGRUM (Ait. hort. kew. 1. p. 144.) stem erect, retete, ploose, rather scabrous; leaves verticillate, linear, scabrous above; panicles divaricate. 2. H. Native country unknown.


Cult. The species of Gálium are of the most easy culture and propagation. They will all grow in any common soil. The perennial kinds are easily increased by dividing the plants, or by seeds. The seeds of annual species should be sown where the plants are intended to remain. Those species natives of bogs or marshes should be planted in a moist situation; and those natives of warmer climates should be protected during winter, either by covering with mats or haum of other herbs, or by placing them in a green-house. None of them are worth cultivating, unless in botanical gardens.


Lin. Syst. Tetradriia, Diginia. Calyx with an oblong tube, and the limb not perspicuous. Corolla 4-parted, campanulate; lobes ovate, very short. Stamens 4, very short. Stigma 2. Fruit oblong, rather incurved; one of the mericarps being abortive. Flowers 3 from each axil, on short pedicels, and therefore constituting 6-flowered whorles. Bractea large, membranous, cripicate, and as if it were holding the fruit within its hollow. Flowers small, all fertile. Fruit hispid at the apex.


Cult. Sow the seeds in a warm dry situation, where the plants are intended to remain for seed.

Lin. syst. Polygénium, Monœæticæ. Flowers by threes; middle one fertile, hermaphrodite, and the two lateral ones male, and combined with the middle one. Tube of calyx ovate; limb dentilculated, permanent, the dentilicultions many, irregular, and stiûfl. Corollas rotate; male one tridiud, and the hermaphrodite one quadrifid. Stamens 3-4. Styles 2 in the hermaphrodite flower; stigma capitate. Fruit 3-horned, in consequence of the ovaria of the three flowers being combined; the lateral horns sterile, and the middle one bivolute, but usually only 1-seeded at maturity.—Annual branched herbs. Stems tetragonal. Leaves oval, opposite, and stipules 2, very like the leaves, forming 4-5-angled whorl. Flowers 3 in each axial, sessile, small, yellow, therefore they appear 6 in a whorl. —According to the observation of A. Richard, the seeds are half naked at maturity from the rupturing of the mericarp.

1 V. Mura'alis (Lin. spec. p. 1490.) stem, leaves, and calyces glabrous. O. H. Native of the south of Europe, in rocky places, and on old walls; on the whole coast of Tuscany; on the sandy shores of the County of Nice; and in the south of France, about Nemours; also about Montpellier and Leghorn. Sibth. et Smith, fl. grac. 137. V. quadrifidum, Mench. meth. p. 640.—Sabb. hort. t. 1. 83.—Mich. gen. 13. t. 7.—Mor. oxon. 4. sect. 9. t. 21. f. 2.—Col. ephr. t. 207. Angles of fruit fringed.


Var. ß, aculeata (D. C. prod. 4. p. 614.) plant larger; fruit glabrous, longer than the dentilicultions of the calyx. O. H. Native of the kingdom of Naples, among rubbish and on old walls.


 Cult. Sow on the seeds on an old wall or on rock-work, or in any dry sandy soil and situation.

Tribe XIII.

OPERULÆRIÆ (this tribe contains plants whose fruit opens by an operculum). A. Rich. mem. soc. hist. nat. Par. 5. p. 142. D. C. prod. 4. p. 614.—Operulæria, Juss. ann. mus. 1. p. 418. and 10. p. 528.—Operulæria Gærtn. fruct. 1. p. 111. t. 24. Flowers combined: having the calyceous tubes resembling in length a peculiar operculum. Corollas 3-5-cleft. Stamens 1-5; filaments hardly adnate to the tube of the corolla at the base. Style short; stigma 2, slender, elongated, acute. Fruit 1-celled and 1-seeded by abortion, combined, 2-valved (f. 112. b.), at length dehiscing.—Herbs or sub-shrubs, usually natives of Australia. Leaves opposite. Stipulas on both sides, distinct or combined. Flowers combined into a head, girded by a partial, many-toothed involucrem. Heads of flowers sometimes umbellate and pedunculate, and sometimes sessile and capitulate, usually girded by a universal involucrem.—This tribe agrees with Spermacædæae in habit and stignmas, but the number of stigmas is variable, and therefore it approaches the order L'aletrœæae.

CCXIX. POMAX. CCXXX. OPERULÆRIA.


Lin. syst. Mono-Tetradria, Monogynia. Limit of calyx wanting. Corolla 3-4-cleft. Stamens 1-4. Seeds wrinkled from tubercles.—Suffrutescent herbs. Leaves opposite, furnished with one leaf-formed stipula on each side. Peduncles 7-10, terminal, umbellate, involucrated by the 2 floral leaves and 4 small stipulas, bearing at their tops a small distinct head of flowers each; heads girded by a blunt 8-10-toothed involucrem. Flowers 3 within each partial involucrem, joined together by the tubes of the calyces.


2 P. Glæbra (D. C. 1. c.) plant glabrous in every part; leaves elliptic, attenuated at the base. ß. G. Native of New Holland, about Port Jackson. Stipulas smaller than in the preceding species.

Glabrous Pomax. Shrub 1 foot.

 Cult. The species of this genus grow best in a mixture of loam, peat, and sand; and cuttings root freely under a hand-glass.


Lin. syst. Mono-Pentandria, Monogynia. Limit of calyx 3-lobed. Corolla 3-5-cleft. Stamens 1-5. Seeds nearly smooth.—Herbs suffrutescent at the base. Leaves opposite, furnished with distinct stipulas on both sides. Heads of flowers globose, terminal, or rising from the forks of the branches, pedunculate, or nearly sessile. Universal involucrem wanting, or composed of the 2 upper leaves and 4 small stipulas. Partial involuca acutely 8-10-toothed.

1 O. Hiatta (Spreng. syst. 1. p. 385.) stems diffuse, furrowed, tetragonal, rough from numerous hairs; leaves small, ovate, plicate; heads pedunculate, rising from the forkes of the branches, drooping. ß. G. Native of New Holland. Æ. áspera, Juss. ann. mus. 4. p. 427. t. 70. f. 1. Universal involucrem wanting; partial ones 8-10-toothed, each containing 3-5 flowers. Corolla 5-cleft, monandrous or diandrous, white.


2 O. Sessiliflora (Juss. 1. c. p. 427. t. 170. f. 2.) glabrous; stems diffuse, slender, hardly furrowed; leaves linear; heads of flowers small, hemispherical, sessile in the forks of the branches. ß. G. Native of New Holland.
Partial involuca 4-5 in the same head, each containing 2-4 flowers. Corollas 4-5-cleft, monandrous or diandrous, white. Leaves like those of the species of Linaria.

**Sessile-flowered Opecularia.** Fl. June, July. Cl. 1824. Pl. diffuse.

3. O. _apricifölia_ (Labiil. nov. holl. 1. p. 35. t. 48.) glabrous; stems diffusel, very slender, furrowed; leaves oblong-linear, short; stipulas joined in one on both sides; heads of flowers terminal, small, hemispherical, involucreated by about 4 verticillate leaves. G. Native of New Holland, in Van Lewin's Land. Juss. mem. mus. 4. p. 427. Partial involuca 1-3 in each head, each containing 3-4 flowers. Corollas 4-5-cleft; monandrous or diandrous, white. (Fig. 112.)

**Top-flowered Opecularia.** Shrub 1 foot.

4. O. _spermaceœa_ (Labiil. nov. holl. 1. p. 35. t. 47.) glabrous; stem shrubby, erect; leaves linear, almost triquetrous; stipulas combined in one on both sides, bidentate at the apex; heads spherical, pedunculate, terminal. G. Native of New Holland, in Lewin's Land. Juss. ann. mus. 4. p. 437. Leaves falsely verticillate. Partial involuca 4-5 in the same head, each bearing 4 flowers. Habit of Spermacoea verticillata. *Spermaceœa*-like Opecularia. Shrub 1 foot.

5. O. _vagina'ta_ (Labiil. nov. holl. 1. p. 34. t. 16.) glabrous; stem erect, woody at the base, rather angular; leaves linear; stipulas combined into a long sheath, which is bidentate at top on both sides; heads globose, naked, terminal. G. Native of New Holland, in Van Lewin's Land. Juss. ann. mus. 4. p. 425. Partial involuca 5-9 in a head, each containing 3-5 flowers. Corolla 4-cleft. Stamens 4, ex Labill.

**Sheathed-stipule Opecularia.** Shrub 1 foot.

6. O. _hirtella_ (D. C. prod. 4. p. 616.) stem rather angular, and rather pilose at the apex; branches elongated; leaves linear, stipulas lanceolate-subulate; heads of flowers pedunculate, drooping, hairy, rising from the forks of the branches. G. Native of New Holland. Branches, leaves, and stipulas beset with longish hairs.

**Hairly Opecularia.** Pl. 1 foot.

7. O. _hyssofori'a_ (Juss. mem. mus. 4. p. 428. t. 71. f. 1.) stem erect, rather angular, clothed with short down; leaves narrow-lanceolate, with somewhat ciliated margins; stipulas combined entire, acute; heads of flowers rising from the forks of the branches, on short peduncles, drooping a little, globose. G. Native of New Holland. Partial involuca about 5 in every head, each containing 2-4 flowers.

**Hyssofor-leaved Opecularia.** Pl. 1 foot.

8. O. _loustrifölia_ (Juss. mem. mus. 4. p. 428. t. 71. f. 2.) stem erectish, tetragonal, hairy from short down, but glabrous between the nodi; stipulas combined at the base on both sides, acutely 2-lobed; heads of flowers rising from the forks of the branches, on short peduncles, drooping. G. Native of New Holland, about Port Jackson. The rest as in the preceding species.

**P萩leaved Opecularia.** Shrub 1 foot.


**Chafly Opecularia.** Fl. July, Aug. Cl. 1793. Shrub 4 feet.

10. O. _octimöfölia_ (Juss. ann. mus. 4. p. 428. t. 71. f. 3.) glabrous; stems diffuse, tetragonal, furrowed; leaves ovate-oblong, petiolate; stipulas combined in one on both sides; heads of flowers rising from the forks of the branches, on short peduncles, drooping, globose, naked. G. Native of New Holland. Heads larger than peas, with 7-9 partial involuca in every head, each containing 4-6 flowers. Corolla 3-4-cleft. Stamens 2-3, ex Juss.

**Basil-leaved Opecularia.** Fl. June, July. Cl. 1824. Pl. 1 foot.

11. O. _ruböioides_ (Juss. ann. mus. 4. p. 428.) stems tetragonal, ascending, glabrous; leaves lanceolate, with revolute margins; margins and middle nerve scabrous beneath; stipulas combined on both sides, entire or bidentate; heads on short peduncles, rising from the forks of the branches, drooping, globose, naked. G. Native of New Holland, on the Eastern Coast. Heads of flowers larger than peas. Partial involuca 5-7 in every head, each containing 5-6 flowers. Corolla 3-4-cleft. Stamens 3-4.

**Madder-like Opecularia.** Pl. 1½ foot.

† Doubtful species.

12. O. _aspera_ (Güntr. fruct. 1. p. 112. t. 24.) leaves oblong, scabrous, venous; heads of flowers pedunculate, axillary.—Native of New Zealand, ex Solander. O. aspera, Spreng. syst. 1. p. 383. Probably the same as _O. hispidus._

**Rough Opecularia.** Pl. 1 foot.

13. O. _diphylla_ (Güntr. l. c. p. 113.) stem and leaves unknown; heads of flowers rising from the forks of the branches; partial involuca hispid, many in every head, each containing 3-4 flowers; flowers tetranodium.—Native of New Zealand. Juss. ann. mus. 4. p. 428. Rubiöoides diphylla, Soland. Icon. The rest unknown.

**Two-leaved Opecularia.** Pl. 1 foot. Cult. For culture and propagation see Pönax, p. 662.

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**CCXXI. LIPOSTOMA.** (from _lyco_, _leipo_, to fall from, and _aropa_, _stoma_, a mouth; _lid_ from capsule.) D. Don, in edinb. new phil. journ. Jan. 1830. Sweet, h. gard. n. s. with a figure. L. _syst._ Tetrándria, Monógynia. Limb of calyx 4-parted. Corolla tubular at the base, and ventricose at the throat, and bearded inside, with a 4-lobed limb; lobes ovate, spreading, valvate in aestivation. Stamens 4, inserted in the throat, exserted; filaments compressed; anthers linear, versatile. Style capillary; stigmas 2, subulate, hispid. Capsule globose, celled, opercular, many seeded, but often 1-celled from the middle dissepiment having vanished. Placentas 2, spherical, stipitate, inserted beneath the middle of the dissepiment. Seed small, angular, scabrous. Embryo slender, with oblong plano-convex cotyledons, and a cylindrical obtuse radicle, which is a little longer than the cotyledons.—Diffuse trailing pilose herbs, natives of Brazil. Leaves opposite, petiolate. Stipulas subulate, interpetiolar. Flowers sessile, capitato, intermixed with bracteas. Heads of flowers pedunculate, solitary, axillary. Corolla blue.


**Capitate-flowered Lipostoma.** Pl. trailing.

2. L. _sericéum_ (D. Don, l. c.) plant hairy; hairs adpressed; leaves ovate, acute, when young silky. G. Native of Brazil, in pastures. The whole plant is clothed with silky adpressed hairs. Heads of flowers smaller than the preceding. Corolla
blue, hairy. Seeds triquetrous, dark brown, beset with elevated dots.

Silky Lipostoma. Pl. trailing.

Cult. For culture and propagation see Richardsonia, p. 628.

1. Genera of Rubiaceae not so sufficiently known as to be placed in any particular situation in the body of the order.


Lin. syst. Pentandria, Monogyinia. Limb of calyx spreading, 5-parted, Corolla with a short tube, and a 5-parted limb. Stamens 5, fixed to the base of the corolla. Stigma clavate, 10-winged, exserted. Fruit cylindrical, silique-formed, crowned by the permanent calyx, 2-celled, many-seeded. Seeds disposed in a double series along the axis in each cell.—Indian shrubs. Stems thinly tetragonal. Leaves opposite, petiolar, lanceolate. Stipulas broad, keeled. Flowers axillary, bracteate. Estivation valvate. It is not said whether the fruit is dehiscent or indehiscent.

1 P. xutana (Jack, L. c.) smooth; peduncles drooping, 3-petalled. ♂ S. Native of Sumatra, in the interior of the island.

Drooping-peduncled Psilobium. Shrub.

2 P. tomentosum (Jack, L. c.) tomentose; flowers almost sessile in the axis of the leaves. ♂ S. Native of the East Indies, at Katoum. Fruit said to be baccate.

Tomentose Psilobium. Shrub.

Cult. See Psychotria, p. 599. for culture and propagation.

CCXXIII. PLATYMERIUM (from πλατύς, broad, and μέρις, meris, a part; probably from the parts of the flowers being broad). Bartl. in herb. Haenke. D. C. prod. 4. p. 619.

Lin. syst. Tetra-Pentandria, Monogyinia. Calyx with a short tube, and a rotate 5-parted, rarely 4-parted limb; lobes flat, obtuse. Corolla coriaceous, funnel-shaped, with a short tube, which is woollly inside, and a 5-parted, rarely 4-parted limb; segments of the limb twisted to the right in estivation. Anthers linear, sessile within the tube of the corolla. Style clavate, spirally 10-ribbed. Ovarium 2-celled, covered by an epigynous disk. Fruit unknown.—A shrub, with slender terete branches. Leaves opposite, coriaceous, lanceolate, acuminate, downy beneath and on the branches, short petioles. Flowers numerous, glomerate, on short pedicels, axillary. Calyxes tetramerous.—This genus is nearly allied to Psilobium, but is distinguished from it in the estivation of the corolla, and in the fruit not being silique-formed.

1 P. glomeratum (Bartl. in herb. Haenke, ex D. C. prod. 4. p. 619.) ♂ ♂ S. Native of the island of Luzon, one of the Philippines. Leaves 3½ inches long and 1 broad. Flowers small. Glomerate-flowered Platymerium. Shrub.

Cult. For culture and propagation see Psychotria, p. 599.


Lin. syst. Pentandria, Monogyinia. Calyx small, tubular, with a 5-toothed border. Corolla tubular, slender. Stamens 5? Style and fruit unknown.—Stems quadrangular. Leaves opposite, petiolar, ovate, acute at the apex, acuminate at the base, yellowish beneath, soft to the touch. Stipulas large, interpetiolar, broadly ovate, acute, glabrous. Heads of flowers almost sessile, surrounded by large 5-toothed calyceiform villous involucra. The place which this genus should occupy in the order is very doubtful.

1 S. AFRICANA (Beauv. fl. d'Am. 2. p. 26. t. 75.) Native of the west coast of Africa, in deserts about the river Gallar; we have also seen it in the neighbourhood of the Gaboon river. Flowers pale yellow.


Cult. For culture and propagation see Psychotria, p. 599.

CCXXV. BENZONIA (named in compliment to the celebrated African traveller Benzoni, who died at Benin, the habitat of the present plant). Schum. pl. guin. p. 113. D. C. prod. 4. p. 620.

Lin. syst. Tetrandria, Monogyinia. Calyx with a globose tube, and a small 5-toothed limb; teeth erect. Corolla tubular, coriaceous, 5-cleft; segments concave, cup-shaped. Anthers triquetrous, sessile in the throat. Style filiform; stigma ovate-globous, acute, marked by 6-7 longitudinal furrows. Fruit inserted in the base of the tube. Antlers linear, erect, shorter than the tube of the corolla. Style truncate clavate; stigma subulate. Ovarium 2-celled, 2-seeded.—A tree. Leaves elliptic-lanceolate, petiolar, quite entire, glabrous. Flowers spicate, sessile, involucrated by a large deciduous bractea before expansion.—This tree belongs probably to Rubiaceae, but the stipules and situation of the leaves, seeds, &c. are unknown.

1 B. corticosa (Schum. pl. guin. p. 113.) ♂ ♂ S. Native of Guinea, in various parts. Corynubus-flowered Benzonia. Shrub 5 to 6 feet.

Cult. See Psychotria, p. 599. for culture and propagation.

CCXXVI. HIMATANTHUS (from ἰματιον, hitimation, a garment, and ἀνθος, anthos, a flower; the flowers are involucrated by a large bractea before expansion). Willd. ex Rottm. et Schultes. syst. 5. p. 13. D. C. prod. 4. p. 621.

Lin. syst. Pentandria, Monogyinia. Tube of calyx adnate to the ovary, turbinated; limb loose, permanent, 5-parted; segments ovate, acuminate, 5 of them one-half smaller than the other three. Corolla funnel-shaped, having the tube much longer than the calyx, dilated a little at the apex; and the limb 5-cleft, with oblong segments. Stamens 5, capillary, very short, inserted in the base of the tube. Anthers linear, erect, shorter than the tube of the corolla. Style truncate clavate; stigma subulate. Ovarium 2-celled, 2-seeded.—A tree. Leaves elliptic-lanceolate, petiolar, quite entire, glabrous. Flowers spicate, sessile, involucrated by a large deciduous bractea before expansion.—This tree belongs probably to Rubiaceae, but the stipules and situation of the leaves, seeds, &c. are unknown.

1 H. hispida (Hoffin. ex Willd. l. c.) ♂ ♂ S. Native of Brazil, in the province of Para, where it is called Sucuba by the natives.

Stiff Himatanthus. Tree.

Cult. For culture and propagation see Psychotria, p. 599.


Lin. syst. Pentandria, Monogyinia. Calyx permanent, 5-toothed. Corolla campanulate, 5-toothed; teeth oblong. Filaments 5, inserted in the middle of the corolline tube. Anthers linear, exserted. Stigma 1. Capsule woody, 2-valved. Seeds winged.—Trees, natives of Caracas. Leaves opposite. Flowers terminal, trichotonous, pinnate, sweet-scented. This is a very doubtful genus from the description given by Willdenow; but according to Richard it is related to Cinchonaaceae, in consequence of the winged seeds; but the stipules are not mentioned, and the leaves are said to be deeply and remotely toothed; and therefore it ought probably to be excluded from Rubiaceae.

1 S. erythroxylo (Willd. l. c.) leaves oblong-rhomboïd,
toothed at the apex, downy beneath. *S. Native of mountain woods, about Caraccas.

Red-wooded Sickingia. Tree or shrub.

2 S. longifolia (Willd. 1. c.) leaves oblong-ovate, quite entire, glabrous. *S. Native along with the preceding.

Long-leaved Sickingia. Tree.

Cult. See Fuchsiiaria, p. 599. for culture and propagation.

CCXXVIII. CALYSPHYRUM (from κάλυξ, κάλυξ, a calyx, and σφυρός, σφυρόν, a little hammer ; the calyx is like a peduncle). Bunge, in mem. acad. mem. Petersb. 2, p. 107.

Lin. Syst. Tetrandria, Monogyria. Tube of calyx linear-pentagonal, adnate to the ovarium, 10-striped; limb subcampanulate, profoundly 5-lobed; segments lanceolate, equal, acute, erect, deciduous. Corolla superior, funnel-shaped, about equal in length to the calycine segments; throat wide, glabrous; limb ample, spreading, 5-parted; segments roundish, imbricate in aestivation; the fifth one a little smaller than the rest. Stamens 5, inserted in the bottom of the tube of the corolla, and alternating with its segments. Anthers linear-oblong, 2-celled, dehiscing at each side by a longitudinal chink. Ovarium inclosed in the tube of the calyx, 2-celled, many-ovulate. Style filiform, exserted; stigma peltate. Capsule 2-celled; cells many-seeded. Seeds disposed in 2 rows in each cell, inserted in the disseminum, imbricate, compressed.—Perhaps the genus is more nearly allied to Lobelidæmoneae than to Rubiaceae.

1 C. floridum (Bunge, 1. c.) leaves opposite, almost sessile, oblong, acuminate, toothed; flowers 2-4, sessile, terminating the branches; corollas grumose. *S. G. Native of China, in gardens. Flowers size and form of those of Rhodolitlédron Dauertium.

Flowerly Calysphyrum. Shrub.

Cult. See Fóns, p. 602. for culture and propagation.

† † Genera referred to Rubiaceae by authors, but do not belong to the order.

Bellónia, Lin. belongs to Soláneae; and Gärtnérä, Lam., Ustéria, Willd., Pagánia, Aulbl. belongs to Logáneae.


Tube of calyx adnate to the ovarium; limb variable in the different genera, sometimes toothed or parted, sometimes going away in pappus, which is at first involute, and at length expanded. Corolla tubularly funnel-shaped, usually 5-lobed, rarely 3-4-lobed; lobes obtuse; tube equal or gibbous, or spurred at the base. Stamens adnate to the tube of the corolla, but free at the apex, alternating with its lobes when they are equal in number, but varying in number in the different genera from 1 to 5. Anthers ovate, 2-celled. Style filiform; stigmas 2-3, free, or combined in one. Fruit membranous or submucronate, indehiscent, crowned by the limb of the calyx in the younger state; sometimes 5-lobed, in this case 2 of the cells are vacant; sometimes only 1-lobed. Seed in the fertile cell or solitary fruit, pendulous, exalbomious. Embryo straight, with a superior radicle, and 2 flat cotyledons.—Annual or perennial herbs, very rarely woody at the base. Roots of the perennial species thickish, intensely sweet-scented; of the annual species slender, white, and inodorous. Leaves opposite, exstipulate, different in diverse species, and in the same plant. In the latter case the lower ones are usually entire, and the superior ones are laciniated. Flowers disposed in cymose coryums, usually hermaphrodite, very rarely dioecious by abortion, usually furnished with from 1-3 bracteas, white, rose-coloured or bluish, but in the genus Nordóstachys they are purple, and in Patriânia yellow.

The plants contained in this order are more interesting for the sake of their symmetry and neatness than on account of any particular attractions; they may be considered a connecting link between Rubiaceae and Dipsácceae. Most of them are pretty. The Valerianellas are useful esculent, known under the name of corn salads; Centãnthus ruber is also eaten in the same way in Sicily. Their medicinal properties are of a decisive character. The roots of Valeriana officinalis, Phu, Céllica, and others are bitter, tonic, aromatic, antispasmodic, and vermifugal; they are occasionally used as febrifuges. The odour of valerian is not generally agreeable, but eastern nations procure from the mountains of Austria the roots of Valeriana Céllica, with which they perfume their baths; and the natives of India at this day employ the Nordóstachys, the spikenard of old times, as a perfume, and against hysterics and epilepsy.

Synopsis of the genera.


6 Fédia. Limbo of calyx with 4 unequal subulate lobes (f. 113. c.). Corolla filiform, with an unequally 5-lobed subrigent limb (f. 113. f.). Stamens 2 (f. 113. h.). Stigma bifiid (f. 113. g.). Fruit spongy (f. 113. b.), indehiscent, 3-celled.


8 Centãnthus. Limbo of calyx involute at the time of flowering (f. 114. b.), but afterwards evolute and deciduous, of many-feathered bristles (f. 114. h.). Corolla with a narrow tube, which is spurred at the base (f. 114. c.), and a regular 5-

9 VALERIANA. Limb of calyx the same as in Centranthus. Corolla with an obovate or cylindrical tube (f. 115. b.), which is equal or gibbous at the base, and a bluntly 5-cleft limb (f. 115. b.), rarely only 3-cleft. Stamens 3 (f. 115. b.). Fruit indehiscent, 1-celled, and 1-seeded at maturity.


1. P. sinica (Juss. l. c.) stem beset with 2 rows of hairs; leaves rather fleshy; primordial ones oblanceolate or spatulate, undivided and obtuse, entire, toothed, serrated, or pinnatifid towards the apex; calyx leaves pinnate, with entire, usually oblong fragments; fruit adnate to the paleae. 2. H. Native of Siberia, among subalpine rocks. Sims. bot. mag. t. 2325. P. coronata, Fisch. in litt. Valeriana Sibirica, Linn. spec. p. 48. but not of Wild. Valeriana Rutheâônica, Wildl. spec. 1. p. 181. Fédia Sibirica, Vahl. Enum. 2. p. 122. Gertrn. 3. fr. t. 56. f. 3. Valerianella latea, Meun. Valeriana Sibirica β hâmulis, Gmel. sb. 3. p. 125. no. 5. — Anom. rath. no. 25. t. 3. Radical leaves spatulate, entire, toothed or serrated, but sometimes pinnatifid at the apex; calyx leaves pinnate. Fruit crowned by the 5-toothed limb of the calyx. Flowers yellow. Root black, strong scented.


4 P. hetrophylla (Bunge, in mem. acad. imp. peterb. 2. p. 109.) stem leafy, downy; lower leaves pinnatifid, with distant ovate-oblong coarsely toothed lobes; the terminal lobe the largest, sharply toothed or deeply lobed, acuminate; superior leaves quite entire or ternate, with oblong-linear elongated quite entire lobes; flowers corymbose; achenia bracteate. 2. H. Native of the north of China, on the mountains. Nearly allied to P. rupestris, but differs in the lobes of the leaves being fewer, shorter, broader, and in being variably cut, and in the upper leaves being of a different form.

Variable-leaved Patrinia. Pl. 1 foot.

5 P. scabiosaeolia (Link, enum. 1. p. 131.) stem glabrous; radical leaves ovate or oblong, deeply serrated and lyrate; calyx leaves pinnatifid, with lanceolate-linear acute segments; terminal segment very long; coryumbs loose, rather paniced; fruit trigonous, naked. 2. H. Native of Dahuria. Sweet. brit. fl. gard. t. 154. Lodde. bot. cab. t. 1340. P. serratulifolia, Fisch. in litt. Fédia scabiosaeolia, Trev. act. bonn. 13. p. 165. Flowers yellow. There is a variety of this plant, having the radical leaves rather palisade, and the rest glabrous. Limb of calyx wanting or truncate.


Flowers yellow.

Villous Patrinia. Pl. 1 foot.

7 P. ceratophylla (Hook. fl. bor. amer. 1. p. 290.) stem glabrous; leaves all rather fleshy, downy, petiolate; radical ones linear-lanceolate, entire, pinnatifid or bipinnatifid, with divericate lobes; calyx leaves profoundly pinnatifid, with linear segments; panicles elongated; peduncles teresately verticillate.

2. H. Native of North-West America, common on low wet soils between the Kettle Falls and Spokon; and in the valleys on the west side of the Rocky Mountains. Root thick, fusiform. Stems simple. Peduncles opposite or 3-4 in a whorl. Pedicels short, and flowers crowded. Flowers white. The roots during the spring months are collected by the Indians, baked on heated stones, and used as an article of winter and spring food. From a bitter and seemingly pernicious substance, it is thus converted into a soft and pulpy mass, which has a sweet taste, resembling that of treacle, and is apparently not unwholesome.

Horn-leaved Patrinia. Pl. 1 to 1½ foot.

Cult. The species of Patrinia grow well in any light soil, and are easily increased by seeds.

II. NARDOSTACHYS (from rapioc, nardos, a shrub, and σταχυς, stachys, a spike; but so named from the plant being spike-named). D. C. coll. mem. vii. t. 1-2. prod. 4. p. 634.

—Patrinia, D. Don, prod. fl. nep. p. 159.

Lyn. syst. Tetradria, Monogynia. Limb of calyx 5-parted; lobes ovate-oblong, acute, foliaceous, somewhat dentilliculated, permanent. Corolla regular, sparsely, bluntly 5-toothed, with a bearded throat. Stamens 4, adnate to the bottom of the corolla. Stigma capitulate. Capsule 3-celled, crowned by the calycine lobes, and shorter than them, but not adnate to the bracteae.

—Herbs, with the habit of Scrophulârium hâmulis, having very sweet-scented perennial roots, which are beset with erect fibres at the neck. Leaves entire, oblong; radical ones very long; calyx ones
III. **DUFRESNIA** (named after Peter Dufresne, M.D., author of Histoire Naturelle et Medicale de La Famille des Valerianes, 4to, Montpellier, 1811.) D. C. coll. mem. vii. t. 3. prod. 4. p. 624.

**Lin. syst. Tetrándria, Monogynia.** Limb of calyx 2-parted; lobes ovate, acute, rather unequal, permanent, reticulated, and serrated. Corolla with an obconical tube, and a 5-lobed limb; lobes roundish. Stammes 3. Style unknown. Fruit membranous, indehiscent, very villous outside, crowned by the lobes of the calyx, 3-celled inside, one of the cells fertile and flattened, and the other 2 cylindrical and sterile. —A small glabrous herb. Stem suffruticose at the base, nearly simple. Leaves opposite, oblong, obtuse, quite entire. Cymes crowded, subcapitate. Bracteas oblong, spreading, serrated. Flowers small, rose-coloured in the dry state, and probably monoeocious from abortion.

1. **N. orientalis** (D. C. coll. mem. vii. t. 3.) *H. F.* Native of the Levant, between Mosul and Bagdad, where it was collected by Olivier and Bruguiere.

**Oriental Dufresnia.** Pl. 4 ½ foot.

_Cult._ This plant should be grown in a pot in a mixture of peat, loam, and sand; and placed among other alpine plants; it can only be increased by seeds.


**Lin. syst. Triándria, Monogynia.** Limb of calyx toothed, permanent. Corolla sparsely, regular, 5-lobed. Stammes 3. Stigma nearly undivided or trífid. Fruit 3-celled, rather membranous, indiscernent, crowned by the toothed or acerate limb of the calyx.—Annual herbs. Stems dichotomous at the tops. Leaves oblong or linear, undivided, or toothed at the base, or the superior ones are pinnatifid. Flowers solitary in the forks, or in fascicled coryumbs, bracteate, small, white, rarely rose-coloured.

§ 1. _Locista_ (from _locusta_, a locust; so named from some semblance in the branches). _D. C._ prod. 4. p. 624. **Mature fruit** 2 or 3-celled; one of the cells alone fertile, and gibbous on the back; the two sterile ones equal or broader than the fertile one, sometimes distinct, and sometimes connotate, from the dissepiment having vanished.

* Mature fruit 2-celled.


**Cult._ See _Triplostegia_, p. 680. for culture and propagation.
russ. t. 24. Flowers pale blue. There is a variety of this species having the upper leaves toothed or jagged according to Vahl. Lamb's lettuce is also called corn-salad; Acker-salat in German, and Valerianella in Italian. It is a diminutive annual plant, common in corn-fields or sandy soils. The leaves are of a pale glaucous hue, and rather succulent. When cultivated it rises almost a foot high, and flowers in March. Gerard tells us that foreigners using it while in England led to its being cultivated in our gardens. It is used in salads through the winter and early in spring, both as a substitute for common lettuce in those seasons, and to increase the variety of small salads. For these purposes it has long been a favourite plant in France under the denominations of marche, doucette, salade de chavonoe, and poivre grass. It is raised from seed, of which a quarter of an ounce is sufficient for a bed 4 feet by 5. To answer the common demand 2 or at most 3 sowings will be sufficient, viz, a principal sowing at the beginning or towards the middle of August, a secondary sowing early in September, to furnish together crops in winter and early spring; and a smaller sowing in spring, at the close of February or in the course of March, if the plants are required in continuation throughout that season, though they are apt to get rank tasted in warm dry weather. If wanted throughout summer, sow once a month, and cut the crop quite young. Sow the seeds in any bed of common mellow earth, broad cast, and rake in the seed. When the plants are up, thin them to 2 or 3 inches asunder, that they may have room to acquire some small stocky growth for gathering. For seed leave some plants in spring.

Fett. fi. basincoryna (Reh. l. f. f. z.) fruit downy.

*Salad* Lamb's-lette. Fl. April, May, Britain. Pl. t. to 1 ft.

2 V. radiata (Dufr. l. f. f. z.) a slender, rather tetragonal, glabrous, smooth; limb of calyx obliquely truncate, almost wanting; sterile cells of fruit combined in one, from the dissemination being incomplete, equal in size to the fertile one; bracteas linear-oblong, spreading, ciliated a little; leaves oblong-spataulate, attenuated at the base, subdentate. O. H. Native from Pennsylvania to Carolina, in corn-fields. Valerianna radiata, Wildl. spec. l. p. 185. Fédia radiata, Michx. fl. bor. amer. 1. p. 18. Bart. comp. l. p. 20. Fruit downy, according to Michx. but in the specimen it is obviously glabrous. Flowers pink. Perhaps only a variety of *V. olitoria*. The young leaves are used as a salad.


3 V. *escapata* (Stev. mem. soc. mosc. 3. p. 251.) fruit 2-celled, one of which is sterile, obovate, ribbed, glabrous, sessile at the neck, and protruded at the apex, and 5-6-toothed: teeth oblong, straight, thick: leaves ligulate, glabrous; stem none. O. H. Native of Caucasus, near Gandha. Fédia excapa, Stev. mem. mosc. 5. p. 554. Rem. et Schultes, syst. 1. p. 366. Fédia acaulis, Biel. suppl. p. 35. Flowers pink. The fruit is said to be 2-celled, with both the cells fertile, but it is probably like the other species, having only one of the cells fertile, and the other sterile combined ones.


** Mature fruit 3-celled.

4 V. *turgida* (D. C. prod. 4. p. 626.) fruit nearly globose, compressed on one side and concave-convex, almost aplanous, glabrous; fertile cell turgid, convex and cellular on the back, and the 2 sterile cells about equal in size to the fertile one; bracteas oblong, spreading, ciliated; flowers subcapitate; leaves obovate: upper ones oblong-linear, quite entire. O. H. Native of Tauria, in corn-fields. Fédia turgida, Stev. mem. mosc. 2. p. 178. but not of others. A very distinct species.

IV. Valerianella.

*Turgid* Lamb's-lette. Pl. t. to 1 foot.

5 V. *gibbosa* (D. C. coll. mem. t. 3. f. 3.) fruit globose, somewhat compressed, glabrous, crownless, ciliate and flat on one side, and gibbous on the other, and furnished with 3 stripes on both sides; fertile cell turgid, cellular, and furnished with a furrow; and the 2 sterile ones smaller, and furrowed on the back; bracteas linear-oblong, spreading, quite entire; flowers subcapitate; leaves oblong-linear, entire. O. H. Native of Sicily, on the mountains in exposed places. Fédia gibbosa, Guss. 1. p. 28. Herb smooth, 2-3 inches high. Nearly allied to *V. turgida*.

*Gibbous-fruit* Lamb's-lette. Pl. t. foot.

6 V. *costata* (D. C. prod. 4. p. 626.) fruit roundish, a little compressed, glabrous, not crowned; fertile cell turgidly cellular and convex on the back, and the two sterile ones profusely furrowed on the back; bracteas oblong, spreading, with glabrous edges; flowers subcapitate; leaves linear-oblong, quite entire. O. H. Native of the south of Tauria, in vineyards. Fédia costata, Stev. mem. mosc. 5. p. 344. Bibb. suppl. p. 28. Herb 1-2 inches long, simple, slender, smooth. Fruit nearly allied to *V. turgida* and *V. gibbosa*, but much smaller.

*Ribbed-fruit* Lamb's-lette. Pl. 1. to 2 inches.

§ 2. *Pilosello* (from *phalos*, pilos, slender, and *calos*, bai-los, a hollow; in reference to the narrow sterile cells of the fruit). D. C. prod. 4. p. 626. Fruit 3-celled, flatish in front; fertile cell not cellularly turgid on the back; and the 2 sterile ones filiform, and much narrower than the fertile one, usually close and nere-form.

** Limb of calyx parted into recurved stifflish teeth.


9 V. *corniculata* (Meyer. verz. pfl. p. 49.) fruit oblong, with the 2 sterile cells filiform, and the fertile one convex on the back; crown of fruit tubular, tridentate; teeth elongated, linear, usually denticulated, straight or hooked at the apex. O. H. Native of Caucasus, in corn-fields near Baku. Habit of plant nearer to *V. uncinata* than to *V. echinata*.

*Hooked-fruited* Lamb's-lette. Pl. t. to 1 foot.

** Limb of calyx erect, toothed or entire, never recurved.

10 V. *ericoarpa* (Dev. journ. bot. 2. p. 314. t. 11. f. 2.) fruit ovate, obsolesly ribbed, hispid; the 2 sterile cells of fruit
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very narrow; limb of calyx obliquely truncate, campanulate, 6-toothed; teeth erect, the 3 front ones the shortest; bracteas adpressed, linear; leaves oblong-linear, quite entire, or toothed at the base. O. H. Native of Europe, in corn-fields, from Andegevany and Spain to Tauria. Lois. not. p. 49. t. 3. f. 2. Dufr. val. p. 59. t. 3. no. 4. D. C. coll. mem. t. 3. f. 5. Fédia eriocarpa and Fédia muriçaca, Rem. et Schultes. Fédia campanulata, Pers. sic. p. 11. V. campanulata, Bir. man. 4. p. 18. Fédia eriocarpa, Rechb. pl. crit. t. 65. Guss. prod. 1. p. 26. Fédia rugulosa, Stev. in litt. Mor. oxon. sect. t. 16. f. 33. Flowers lilac. There is a variety of this, having the fruit pisolis on the ribs, and glabrous at the base. Bracteas quite entire or serrated. Sterile cells of capsule very narrow.


Var. β, leiocarpa (D. C. prod. p. 4627.) fruit glabrous. O. H. Native along with the species. F. dentata, Stev. F. Morrisoni, Agardh. Fédia dentata, var. leiocarpa, Rechb. pl. crit. t. 62. There are varieties of this, having the leaves 3 in a whorl, and pinnaftid.


13 V. Fere'ula (D. C. prod. p. 4627.) fruit ovate, downy, hardish, rather angular, not umbilicated; limb of calyx very short, oblique, 3-5-toothed; the 2 sterile cells of the fruit filiform, and very narrow; bracteas linear, erect, ciliately dentilicate, with membranous margins; flowers corymbose; leaves linear-oblong, quite entire, or hardly unidentate at the base. O. H. Native of Sicily and Calabria, in corn-fields. Fédia puberula, Berol. in Guss. pl. rit. t. 14. prod. 1. p. 27. Fédia microcarpa, Rechb. pl. crit. 2. t. 111.

Downy Lamb's-lettuce. Pl. ½ foot.

14 V. praecta (D. C. prod. p. 4627.) fruit ovoid, downy, convex on the back, and bicostate in front; the 2 sterile cells of fruit filiform, much narrower than the fertile one; limb of calyx ear-formed, obliquely truncate, quite entire, equal in length to the fruit; bracteas linear, dilated and concave at the base, ciliately serrated; flowers cyamo; leaves oblong, quite entire. O. H. Native of Canàia, at Canca or Cylónia, in corn-fields; also of the Island of Melos, and in Cazor and Theodosia. Fédia trunca, Rechb. pl. v. taur. p. 115. Fédia dentata, Sibb. ex Rchb. Fl. aucrica, D'Urv. num. 5. but not of D. C.

Truncate-calyx Lamb's-lettuce. Pl. ½ foot.

§ 3. Platycæae (from πλατυς, platys, broad, and κολος, kolos, a hollow; in reference to the broad, hollow, sterile cells of the fruit). D. C. prod. p. 4627. Fruit 3-celled, arrowed in front; sterile cell not cylindrically gibbous on the back, and the two sterile cells broader than the diameter of the fertile one, or nearly equal to it; the transverse section nearly orbicular.

* Limb of calyx entire or toothed, erect; teeth not hooked at the apex.

15 V. auricula (D. C. fl. fr. suppl. p. 492. coll. mem. t. 3. f. 6.) fruit ovate, glabrous; limb of calyx obliquely truncate, almost quite entire, acutely auricle-formed; the 2 sterile cells of the fruit broader than the fertile one; bracteas spreading, linear, glabrous; flowers disposed in dichotomous corymb, rather loose; leaves oblong, quite entire, or toothed at the base. O. H. Native of Europe, in fields, especially in the south. Fédia auriculata, Gaud. fl. helv. 1. p. 84. t. 4. Rechb. pl. crit. t. 62. Fédia olitoria, Gaut. fr. p. 86. Flowers pink. This species is often confused with V. dentata, and numerous others. There is a variety of it with pinnaftid leaves and villous fruit, according to Rchb.

Var. β, laxiflora (D. C. prod. p. 4626.) dwarf; leaves oblong-oblong.


16 V. dentata (D. C. fl. fr. no. 3331.) fruit ovate, glabrous, smoothish, chinky in front; limb of calyx obliquely truncate, auricle-formed, tridentate; the 2 sterile cells of the fruit broader than the fertile one; bracteas spreading, linear-lanceolate, glabrous, hardly ciliated; flowers diatomously corymbose, rather loose; leaves oblong-linear, quite entire. O. H. Native of Europe, in woods; and of Caucasus, near Baku, in corn-fields.

Dufr. val. p. 57. t. 3. no. 5. Fédia dentata, Vahl, enum. 2. p. 20. exclusive of the syn. of Moris. Valériana dentata, Wild. Fl. Caucasian, 1831. t. 1. p. 20. Val. olitoria, Sturm, deutsch. fl. with a figure. Flowers blue. This is an intermediate plant between V. auricula and V. pumila, and probably not distinct from the former.

Toothed-calyx Lamb's-lettuce. Pl. ½ foot.

17 V. pumila (D. C. fl. fr. no. 3335) fruit nearly globose, inflated, glabrous, engraved in front, retuse at the apex; limb of calyx tridentate, short, unequal; the 2 sterile cells of the fruit broader than the fertile one; bracteas spreading, lanceolate, with membranous villously-ciliated margins; flowers corymbose; leaves oblong-linear, deeply toothed at the base. O. H. Native of the south of Europe and Tauria, in cultivated sandy fields; and of Caucasus, near Baku, in fields and on hills. Valériana pumila, Wild. spec. 1. p. 184. Fédia pumila, Vahl, enum. 2. p. 21. Rechb. pl. crit. 2. t. 113. V. membranacea, Lois. not. p. 150. V. tridentata, Link, enum. 1. p. 63. Fédia tridentata, Stev. mem. soc. mosc. 2. p. 173. Bieb. fl. taur. suppl. p. 29. Rechb. pl. crit. 1. t. 64. Flowers pink. There is a variety of this, having the leaves somewhat pinnaftid.

Dwarf Lamb's-lettuce. Fl. April, May. CIt. 1826. Pl. 1 1/2 to 1 foot.

21 V. hanna'ta (Bast, in D. C. prod. 4. p. 628.) fruit ovoid, villous outside, somewhat tetragonal, engraved in front: the 2 sterile cells about equal in breadth to the fertile one; limb of calyx spreading, broader than the fruit, quite glabrous inside, and cleft into 6 lobes beyond the middle; lobes awned, hooked at the apex; bracteas adpressed, oblong, ciliated; flowers rather densely capitate; upper leaves linear, entire or triplicate, and are as well the stem glabrous. H. Native in the region of the Mediterranean. D. C. coll. mem. t. 3. f. 7. V. coronàta, Guss. prod. 1. p. 25. V. coronàta integrifòlia, Recib. pl. crit. 1. p. 54. t. 66. f. 1.—C. ecprh. t. 299. Fèdia coronàta of many authors. Flowers pink.

Hooked Lamb's-lettuce. Fl. May, June. CIt.? Pl. 1 1/2 foot. (D. C. prod. 4. p. 628.) fruit ovoid, villous, somewhat tetragonal, engraved in front: the 2 sterile cells about equal in breadth to the fertile one; limb of calyx cup-shaped, broader than the fruit, hairy inside, cleft into 6 lobes beyond the middle: lobes awned, hooked at the apex; bracteas adpressed, oblong, ciliated; flowers densely capitate; superior leaves pinnatifid, and are as well the stem downy. H. Native of the region of the Mediterranean. V. coronàta, D. C. fl. fr. no. 3333. Dufri. val. 60. t. 3. f. 2. Fèdia Sicula, Guss. prod. 1. p. 25. Fèdia coronàta, Recib. pl. crit. t. 66. f. 15. Gali, enum. 2. p. 20. Flowers pink.


Crowns Lamb's-lettuce. Fl. April, June. CIt. 1731. Pl. 1 1/2 f. ** Limb of calyx inflated, closed by the inflamed calyx teeth.

22 V. vesicâria (Monech. math. p. 497.) fruit villous, crowned; limb of calyx bladder, inflated, 6-toothed; teeth conniving, acute; the 2 sterile cells of fruit a little smaller than the fertile one, or nearly equal in size to it; bracteas adpressed, ovate, ciliated, shorter than the fruit; leaves entire or toothed; stem rather villous. H. Native in the region of the Mediterranean, in corn-fields. D. C. fl. fr. 4. no. 3332. coll. mem. t. 3. f. 8. Dufri. val. 60. t. 3. f. 9. Fèdia vesicâria, Vahli, enum. 2. p. 20. Recib. pl. crit. 1. t. 70. Valeriana vesicâria, Wild. Val. locusta, ß, vesicâria, Lin. Sibth. et Smith, fl. gracc. t. 34. Flowers lilac.


§ 4. Solenocoe'âria (from solens, solen, a tube, and coles, kolos, a hollow; in reference to the sterile cells of the fruit). D. C. prod. 4. p. 629. Fruit 3-celled, broadly furrowed in front; the fertile cell not celluilarly gibose on the back, and the 2 sterile cells broader than the fertile one, and curved, and therefore the transverse section is lunulate.

* Lobes of calyx hooked a little.

24 V. platyl'oea (Dufri. val. 59. t. 3. f. 1.) fruit ovoid, villous outside, rather tetragonal, broadly furrowed in front, boat-shaped; limb of calyx spreading, broader than the fruit, rather hairy inside, 6-lobed to the middle; lobes ovate, each furnished with a hooked mucrone; bracteas adpressed, ciliated, oblong; flowers sub-capitate; upper leaves toothed, and are as well the stem glabrous. H. Native in the region of the Mediterranean. D. C. coll. mem. t. 3. f. 9. Fèdia discoidù, Recib. pl. crit. 1. p. 54. t. 67. Fèdia rotata, Recib. l. c. p. 93. Flowers pink.

Broad-lobed Lamb's-lettuce. Fl. May, June. CIt. 1825. Pl. 1 1/2 foot.

** Limb of calyx erect.

25 V. carin'a'ta (Lois. not. p. 149.) fruit oblong, longitudinally boat-shaped, or chinky on one side, and ciliated; the 2 sterile cells compressed, curved, about equal in size to the fertile cell; fruit crowned, by the uninodert erect limb of the calyx; flowers sub-capitate; bracteas oblong, spreading, serrately ciliated; leaves oblong, almost obovate, quite entire. H. Native of France, Germany, Tauria, Sicily, &c. in corn-fields. Dufri. val. 50. t. 3. D. C. fl. fr. suppl. 492. coll. mem. t. 3. f. 10. Fèdia carinàta, Stev. mem. soc. mosc. 5. p. 316. Rom. et Schultes, syst. 1. p. 361. Recib. pl. crit. t. 61. —Morph. oxon. sect. 7. t. 16. f. 31. Habit of V. òtiora. Stem smooth, dichotomous. Flowers blue.

Keckled-fruit Lamb's-lettuce. Fl. April, June. CIt. 1819. Pl. 1 3/4 to 1/2 foot.

† Species not sufficiently known.

26 V. chenopodîfolià (D. C. prod. 4. p. 629.) plant dichotomous; leaves ovate, acute, toothed below; cymes naked, divericate, dichotomous; filaments long. H. Native of Virginia. Fèdia chenopodîfolia, Pursh, fl. amer. sept. 2. p. 727.

Goose-foot-leaved Lamb's-lettuce. Pl. cult. The seeds of all the species only require to be sown in the open ground in the early part of spring. All the species answer very well for spring salad.

V. ASTREPHEIA (from a, priv., and ðerpes, strephe, to turn; the calyx is not turned back at the time of flowering, as in Fa-lerià'ud). Dufri. val. 50. exclusive of many species. D. C. coll. mem. vii. prod. 4. p. 629.—Hemesbrià, Rafn. ann. gen. sc. phys. 6. p. 88.—Valeriana species, Ruiz et Pav. Smith.—Fèdia species, Knuth.

LAV. syst. Triântìdum, Monoygias. Tube of calyx very short, somewhat 5-toothed or subcampanulate. Corolla funnel-shaped, 5-toothed, gibbose on one side at the base, and therefore furnished with a kind of spur. Stamens 3. Style 3-cleft at the apex; stigma slender. Fruit 2-celled, one of the cells alone fertile; and the other is sterile, and marked by a furrow in the middle, and is therefore probably formed of 2 cells, having the partition between
them obliterated.—Nearly glabrous herbs. Radical leaves rhomboid, cut; cauline ones impari-pinnate, with oval-oblong, deeply toothed segments. Flowers disposed in panicles or corymbbs, white.—Habit of Valeriana, and the fruit almost of Valeriana, but is easily distinguished from both these genera in the corolla being gibbously spurred on one side at the base, and in the fruit 3-celled. Stamens 2 (f. 113. b). Ripen summer.


2. A. crispa (Dufr. val. p. 51.) stem glabrous, as also at the nodi; panicle elongated, with dichotomous branches, floriferous in the axis of the forks; corolla gibbose at the base; limb of calyx sub-campanulate, entire. (f. 2.) Native of Chili, among bushes, and in meadows and corn-fields. Valeriana crispa, Ruiz et Pav. 1. p. 41. Herb 2 feet high. Flowers white. Curved Astrephia. Pl. 2 feet.

3. A. laxa (Hook. et Arn. in bot. misc. 3. p. 364.) plant herbaceous, glabrous; radical leaves ovate-cordate, bluntly toothed; cauline leaves lorate, pinnatifid, terminal lobe the largest; panicle loose, divaricate; ultimate pedicels short, crowded; fruit ovate, excavated on one side, 3-ribbed on the back, and crowned by an annular ring.—Native of Chili, about Concepcion. Fedia laxa, Hook. et Arn. in Deech. voy. pt. bot. p. 28. This species approaches near to Fedia paniculata, but that plant is pubescent, and has a pappose fruit. Loose-flowered Astrephia. Pl. 1 foot.

4. A. lobata (Hook. et Arn. in bot. misc. 3. p. 364.) leaves pinnate-lobed; lobes distant, coarsely toothed; terminal lobe broadly ovate, lateral ones oblong, much smaller; lower teeth looking downwards, upper ones upwards; rachis glabrous; corymbbs pedunculate, opposite, distant, disposed in a panicle; fruit glabrous.—Native of Chili. Var. a; stem beset with long hairs. The stem below the last pair of opposite cauline leaves is hairy, above them it is glabrous. Var. b; stem glabrous.—Native of Chili, about Valparaiso. Lobed-leafed Astrephia. Pl. Cult. A. choriophyllodes should be treated like other tender annuals; the rest should be protected in winter by placing them in a frame or greenhouse. All are only to be increased by seeds.


Lin. Syst. Diaëndia, Monogynia. Limb of calyx short and straight; lobes 4, subulate, unequal (f. 113. c). Corolla with a filiform spurred tube (f. 113. a), and an unequally 5-lobed suborbicular limb (f. 113. b). Stamens 2 (f. 113. c). Fruit indehiscent (f. 113. d), rather spongy, 8-celled; the 2 sterile cells narrow, and the fertile one broader and 1-seeded.—Glabrous annual herbs. Leaves entire or toothed. Flowers capitately corymbose or cymose, rose-coloured or purple. Bractees adpressed.


27.—Riv. mon. t. 5. Stem purplish. Flowers red. This is a very ornamental annual. The fruit is like a cornucöpii. Cornucöpii-fruit Fedia. Pl. June, July. Clt. 1796. Pl. ½ foot, straggling.

2 F. scorpioides (Dufr. val. p. 55. t. 1.) leaves ovate, petiolate; lower ones quite entire; middle ones irregularly toothed; upper ones lanceolate, hardly pinnatifid; flowers cymose, unilateral and sessile along the two branches of the cyme. (f. 2.) Native of the north of Africa, about Tangiers. Flowers purple. Scorpion-like-cymed Fedia. Pl. ½ foot.

† Species not sufficiently known.

3 F. Panaeula (Colla, app. 3. p. 38.) lower leaves spatulate, nearly entire; middle ones lanceolate, obsolescently toothed: upper ones linear-lanceolate, quite entire; stems erect, glabrous; panicles dichotomous. (f. 3.) Native country unknown. Perhaps a species of Valerianella. Panicled Fedia. Pl. 1 foot.

Cult. The seeds of the species of Fedia only require to be sown in the open border in spring, like other hardy annuals. A light soil suits them best.


Lin. Syst. Triandria, Monogynia. Margin of calyx straight, quite entire. Tube of corolla furnished with a short spur at the base, and gibbous in front; limb 3-cleft, bilabiata. Stamens 3. Capsule cartilaginous, 1-celled, 2-winged; but the capsule may be truly said to be 3-celled, the 2 empty or abortive cells forming the wings.—A glabrous herb, with a habit between Centrianthus and Fedia, but the flowers are triandrous, and the fruit is singularly distinct. Flowers monoeccious, rose-coloured, crowded, in whorles. Bractees multifid, with subulate segments.

1 P. Congesta (D. C. prod. 4. p. 631.) (f. 2.) Native of the north-west coast of America, on the banks of streams and moist rocks, along the shore near the mouth of the Columbia, where it was collected by Douglas. Valerianella congéstá, Lindl. bot. reg. t. 1095. Var. β, minor (Hook. fl. bor. amer. 1. p. 291.) leaves narrow. (f. 2.) Native along with the species. Valerianella parviflora, Dougl. mas.


Cult. The seeds of this plant only require to be sown where the plants are intended to remain in the open border.

Linn. syst. Monandria, Monogynia. Limb of calyx involute (f. 114. b) when the flower is in blossom, but afterwards it unfolds into a deciduous pappus, composed of many plumose bristles (f. 114. b). Corolla with an obovate tube, which is spurred at the base (f. 114. c), and a regular 3-lobed limb (f. 114. d). Stamen 1 (f. 114. e). Fruit indehiscent, 1-seeded, and 1-seeded at maturity.—Quite glabrous European herbs. Leaves undivided or pinnate. Flowers red or white, unilaterial along the branches of the panicle, which is corymbose.

* Spur of flower elongated. Flowers red, very rarely white.

1. C. longifolius (Stev. obs. pl. ross. p. 76.) leaves lanceolate-linear, quite entire; spur of corolla about equal in length to the tube, and about twice the length of the ovary; genitils twice the length of the limb of the corolla. 2. H. Native of Armenia, about Tiflis, among rocks. C. angustifolius, Bieber. fl. taur. 1. p. 67. but not of D. C. The leaves are intermediate in breadth between the two following, and are probably glaucous like them. Corollas red, an inch long.


Pl. 1 to 2 feet.

2. C. angustifolius (D. C. fl. fr. 4. p. 239.) leaves linear-lanceolate, quite entire; spur one-half shorter than the tube of the corolla, and about equal in length to the ovary; genitils much exserted. 2. H. Native of Spain, south of France, Switzerland, Italy, Greece, on the mountains in stoney open places. Dufr. val. p. 39. Val. rubra, β, Lin. spec. p. 44. Valeriana angustifolia, Cav. icon. 4. t. 253. Sibth. and Smith. fl. græc. t. 29. but not of Host. Val. monandria, Vill. delph. 2. p. 236. Flowers red, half an inch long. This plant does not change under cultivation.

Narrow-leaved Spurred-Valerian. Fl. May, July. Ch. 1759.

Pl. 1 to 2 feet.

3. C. rupestris (D. C. fl. fr. 4. p. 632.) leaves ovate or lanceolate: upper ones unequal at the base, toothed a little; spur one-half shorter than the tube, and much longer than the ovary; genitils exceeding the corolla but a very little. 2. H. Native of the south of Europe, the Levant, north of Africa, and on Mount Venusus, and now cultivated in almost every garden. It is to be found in some parts of Britain, on chalk cliffs, on walls, and among rubbish, but is probably an escape from gardens. Stev. obs. pl. ross. p. 67. C. maritimus, Gray. brit. arr. 2. p. 479. C. latifolius, Dufr. val. p. 38. H. B. et Kuth, nov. 3. p. 323. Valeriana rubra, All. ped. 1. p. 1. Valeriana rubra, a, Lin. spec. p. 44. engl. bot. t. 1351.—Berg. phyt. t. 141. Don. penn. 551. f. 1.—Riv. mon. t. 3. f. 2. Plant of a glaucous hue. Flowers red.—There is a variety of this with narrow leaves, and another with white flowers. In this and the preceding the root is sweet-scented, and the stem suffruticose at the base.


* * Spur of flower very short (f. 114. c.). Flowers white.

4. C. nervosum (Moris. clench. sard. 2. p. 4.) leaves all elliptic or oblong-lanceolate, attenuated into the petioles, 3-7-nerved, quite entire; flowers cymose, corymbose; spur very short. 2. H. Native of Corsica, at a place called Alle Trinita, and on Sardinia, on the mountains. Valeriana trinervis, Viv. fl. cors. p. 3. add. fl. Ital. p. 67. Flowers white.

Nerved-leaved Spurred-Valerian. Pl. 1 foot.


Cult. All the species are elegant border-flowers. They will grow in any common soil, or on walls or rock-work, and are all readily increased by seed.

IX. VALERIANA (said by some to be named after one Valerius, who is said to have used this plant first in medicine; and by others to be from valere, to be in health, on account of the medicinal qualities of V. officinalis). Neck. elem. 1. p. 123.


Linn. syst. Triandria, Monogynia. Limb of calyx involute in the time of blossom, but it unfolds itself at last into a deciduous pappus, which is composed of many plumose bristles (f. 115. d). Corolla with an obovate or cylindrical tube (f. 115. b), which is equal at the base or gibbous, but not spurred, with a bluntly 5-cleft limb (f. 115. b.), rarely 3-cleft. Stamens 3 (f. 115. b.). Fruit indehiscent, 1-celled and 1-seeded at maturity.—Herbs or subshrubs. Leaves variable even in the same plant. Flowers corymbose, capitate or panicked, nearly all white, rarely blue, rose-coloured, or yellow.


Stiff Valerian. Pl. tufted.

2. V. tenufolia (Ruiz et Pav. fl. per. 1. p. 39. t. 65. f. d.) plant stemless; leaves crowded in a stellate manner, linear-subulate, ciliate at the base, very unequal, outer ones very long; corymba sessile, crowded, head-formed; corollas 3-cleft; genitils exserted. 2. F. Native of Peru, on the tops of the Alps. Phyllactis tenuifolia, Pers. ench. 1. p. 39. Dufr. val. p. 53. Flowers white.

Fine-leaved Valerian. Pl. tufted.
3 V. SPATULATA (Ruíz et Pav. fl. per. 1. p. 40. t. 68. f. b.)

4 V. obovata (Schultes, mant. 1. p. 214.) plant stemless, tufted; root fusiiform; leaves disposed in a stellate manner, linear-spatulate, obtuse, hairy; flowers umbracellate, capitate, involucrated.

5 V. stellata (H. B. et Kunth, nov. gen. amer. 3. p. 326.) stem suffruticosum, and is as well as the branch. quadrangular, glabrous, pilose at the nod; leaves ovate-oblong, denticulated at the base, triple-nerved, rather fleshy, glabrous; corollas dichotomous, dicate; corolla 5-cleft; stamens inclosed; fruit glabrous.

67;5 Native of Peru, on the Andes. Corolla red, gibus at the base. Pappus about 14-rayed.

Quadrangular-branched Valerian. Shrub.

11 V. TripHylla (H. B. et Kunth, nov. gen. amer. 3. p. 326.) branches woody, terete, glabrous; branchlets angularly furrowed; leaves 3 in a whorl, sessile, lanceolate-oblong, coriaceous, glabrous; heads by threes, axillary and terminal, pedunculate; corolla 5-cleft; stamens exserted. G. Native of New Granada, near Santa Fe de Bogota, in frigid places on the mountains.

Three-leaved Valerian. Shrub.

12 V. nuestrilla (H. B. et Kunth, nov. gen. amer. 3. p. 327.) stem suffruticosum, terete, hairy; branchlets hairy; leaves linear-lanceolate, quite entire, 3-nerved, somewhat coriaceous, rather pilose above, and glabrous beneath; panicles much branched; fruit glabrous.

9 G. Native of the Andes of Quito, on the top of Mount Assuay. Flowers unknown. Pappus 6-8-rayed.

Hairy Valerian. Shrub 2 to 3 feet.

13 V. Chamedrifoá (Cham. et Schlecht. in Linnaea. 3. p. 129.) stem shrubby, erect, downy at the tops, and densely leafy; leaves ovate-lanceolate, coarsely and bluntly serrated; panicles straight, pyramidal; corolla 5-cleft; genials about equal in length to the corolla. G. Native of the interior of Brazil. Flowers small. Fruit unknown.

Germander-leaved Valerian. Shrub.

§ 2. Stems scandent, shrubby, rarely herbaceous. Leaves undivided.

14 V. Tomentosa (H. B. et Kunth, nov. gen. amer. 3. p. 327.) shrubby, scandent; branches terete, clothed with hoary tomentum; leaves ovate, denticate at the base, membranous, downy above, and clothed with white tomentum beneath; corollas hairy, pedunculate, dichotomous; corolla 5-cleft; genials exserted. G. Native of the temperate parts of Quito, in the valley of Choto. Corolla small, white, gibus at the base. Fruit unknown.

Tomentose Valerian. Shrub cl.


Clematis-like Valerian. Shrub cl.

16 V. Cassifolia (H. B. et Kunth, nov. gen. amer. 3. p. 328. t. 274.) shrubby, scandent; branches terete, glabrous; leaves ovate-elliptic, obtuse, quite entire, rather fleshy, glabrous; corollas trichotomous, divericate; corolla 5-cleft, pilose outside; stamens inclosed; style exserted. G. Native of New Granada, in frigid places, near La Erre and Sebondo. Fruit unknown.

Thick-leaved Valerian. Shrub cl.

17 V. Laurus (H. B. et Kunth, nov. gen. amer. 3. p. 328.) shrubby; branches terete, glabrous, tergionwhile young; leaves ovate-oblong, acuminate, quite entire, rather coriaceous, quite glabrous and shining; panicles branched, with the branchlets and bracteas downy.

G. Native of New Granada.
Granada, in alpine situations. Flowers monocious, ex Mutis. 

Nearly allied to V. crassifolia.

18. 

Valerianae. 

Laurel-leaved Valerian. Shrub cl.

18. V. scanens (Lin. spec. p. 47. but not of Forsk.) plant glabrous, herbaceous, scandent; branches terete; leaves trifoliate; leaflets quite entire; the terminal broad-ovate, acuminate; large: lateral ones lanceolate, smaller; panicles axillary, loose; stamens exserted; fruit rather pilose. 2. S. Native of New Andalusia, near Caripe, and about Cumaná; and also of Brazil and St. Domingo, and probably of Mexico. H. B. et Kuth, nov. gen. amer. 3. p. 333. Vilm. et Schultes, 1. p. 353. mnt, 1. p. 257. V. volubilis, Moc. et Sesse. fl. mex. with a figure. Loclf. lit. p. 235. no. 64.

Climbing Valerian. Pl. cl.

§ 3. Stems herbaceous, never scandent. Leaves all undivided.

* Species natives of America.

19. V. pilosa (Ruiz et Pav. fl. per. 1. p. 39. t. 66. f. a.) stem herbaceous, erect, pilose; leaves linear-lanceolate, pilose, with revolute margins: radical leaves obtuse: cauline ones few, distant, acutish; corymb racemose; stamens exserted. 2. G. Native of Peru, in frigid places. The whole herb has the habit of Plantago alpina. Corollas white.

Pilose Valerian. Pl. 1. foot.

20. V. longifolia (H. B. et Kuth, nov. gen. amer. 3. p. 330.) stems herbaceous, terete, rather hairy; leaves quite entire, coriaceous, glabrous: radical ones linear-lanceolate, petiolate: cauline ones linear, sessile; panicle branched; corolla 5-cleft, glabrous; stamens exserted. 2. G. Native of New Granada, in alpine places. There is a variety of this with the stem 1-3 feet high, and the radical leaves 3-12 inches long. Corollas white. Nearly allied to V. pilosa and V. plantaginea.

Long-leaved Valerian. Pl. 1 to 3 feet.

21. V. salicariifolia (Vahl, enum. 2. p. 16.) plant glabrous, herbaceous; stem simple, striated, rooting at the bottom; leaves lanceolate, quite entire, sessile: upper ones cordate at the base; corymbs terminal, decomposed. —Native of Buenos Ayres.

Saliciarion-leaved Valerian. Pl. 1 1/2 foot.

22. V. plantaginea (H. B. et Kuth, nov. gen. amer. 3. p. 329.) stem herbaceous, erect, trigonar, furrowed, glabrous, pilose at the nodi; leaves quite entire, coriaceous, glabrous: radical leaves oblong-spatulate, petiolate: cauline ones lanceolate, sessile, connate at the base; panicles branched; stamens exserted; fruit glabrous. 2. G. Native of Quito, in arid places, on the plains of Antisana, and on the declivities of Mount Pichincha. Flowers white. Pappus of fruit few-rayed.

Plantain-like Valerian. Pl. 4 to 6 feet.

23. V. lariatipifolia (Vahl, enum. 2. p. 11.) stem herbaceous, striated, glabrous; leaves ovate-cordate, almost quite entire, undivided, villous above on the nerves, the rest of the leaf glabrous: superior leaves sessile; corymb trichotomous.—Native of the Straits of Magellan.

Dock-leaved Valerian. Pl. 1 1/2 foot.

24. V. urticifolia (H. B. et Kuth, nov. gen. amer. 3. p. 330. t. 275.) stem herbaceous, erect, terete, hairy: leaves roundish-ovate, subcordate, acute, simply toothed, rather pilose above; lower leaves petiolate; upper ones sessile; panicles branched; corymbs downy; corolla glabrous at the base; geniculate petals. —Native of New Granada and Peru. Flowers white. Root a round tuber.

Nettle-leaved Valerian. Pl. 1 foot.

25. V. scorpioides (D. C. pro. 4. p. 635.) stem rather herbaceous, erect, terete, downy; leaves ovate or roundish, dentately crenated, pilose above and on the margins; panicle corymbose, trichotomous; branches of panicle elongated, bearing uniseriate flowers; fruit small, ovate, glabrous. 2. H. Native of Mexico, in the valley of Tolucca, where it was collected by Berlandier. Habit almost of Fedia scorpionis.

Scorpion-like Valerian. Pl. 1 foot.

26. V. robusta (H. B. et Kunth, nov. gen. amer. 3. p. 329.) stem herbaceous, furrowed, glabrous: cauline leaves sessile, ovate-cordate, long-acuminate, sharply toothed, stiff, glabrous; panicles much branched; fruit villous. 2. F. Native of Mexico, near Pascuar. Flowers unknown. Pappus of calyx 11-12-rayed.

Tall Valerian. Pl. 3 to 4 feet.

27. V. macrorhiza (Poepp. pl. exsic. no. 918.) glabrous; radical leaves spatulate, obtuse, tapering into the petiole, which is twice the length of the limb; scalps a little higher than the leaves; panicles racemose spicate, terminal, having the racemes opposite: the lower ones pedunculate: floral leaves linear. 2. F. Native of Chili, near the baths of Villa Vicencio and La Quebrada de San Isidro, and on the Andes of Mendoza. Root thick. Flowers white. Stamens exserted. Habit almost of V. coarctata.

Long-rooted Valerian. Pl. 1 foot.

28. V. coarctata (Ruiz et Pav. fl. per. 1. p. 40. t. 68. f. a.) stems herbaceous, erect, simple, striated, downy; leaves narrow-lanceolate, attenuated, denticulated, ciliat: cauline leaves few: flowers crowded in whorles, disposed in a somewhat interrupted spike. 2. G. Native of Peru, at Huassa-Hussi, in frigid places in the province of Tarma. Flowers white. Fruit said to be oblong, and crowned by 5 scales. Astrepho coarctata, Dufr. val. p. 50.

Coarctate Valerian. Pl. 1 foot.

29. V. serrata (Ruiz et Pav. fl. per. 1. p. 40. t. 68. f. c.) plant tufted, glabrous; stems striated; leaves cuneate-lanceolate, serrated from the middle to the apex; flowers in crowded whorles, disposed in an interrupted elongated spike. 2. G. Native of Peru, in cold places. Astrepho serrata, Dufr. val. p. 51. Flowers white. Fruit as in V. coarctata, to which it comes very near.

Serrated-leaved Valerian. Pl. 1 1/2 foot.


Fleshy Valerian. Pl.

31. V. elongifolia (Ruiz et Pav. fl. per. 1. p. 40. t. 65. f. a.) plant herbaceous, pilose on the stems, few, striated, almost leafless; leaves oblong, dentate, obtuse: cauline ones linear, serrately-cut; corymbs contracted. 2. F. Native of Peru, on the alps in the province of Tarma, towards Pasco. Flowers white.

Oblong-leaved Valerian. Pl. 1 foot.

32. V. obtusifolia (D. C. pro. 4. p. 655.) plant herbaceous, erect, glabrous; root tuberous; leaves obtuse: lower ones obovate or oval, petiolate: upper ones sessile, oval-oblong, toothed at the base; corymbs coarctate. 2. F. Native of Chili. Valerianæ, no. 530. Poepp. pl. exsic. Fruit unknown. Herb 3-7 inches high. Flowers white, crowded. Stamens not exserted. Allied to V. oblongifolia, and with it is intermediate between the present and following division of the genus.

Blunt-leaved Valerian. Pl. 1 1/2 foot.

** Species natives of Europe and the Levant.

33. V. alliarifolia (Vahl, enum. 2. p. 11.) plant glabrous, erect; stem striated; leaves all cordate, undivided, equally toothed, acuminated: lower ones petiolate, upper ones almost sessile; corymbs rather contracted; fruit glabrous. 2. H. Native of Cappadocia, Iberia, and throughout Caucasus, in alpine
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places. Valeriana macrophylla, Bieb. fl. taur. 1. p. 25. Flowers white, tinged with red.


Var. γ. cuspidata, (D. C. prod. 4. p. 636.) stems humble, nearly naked; lower cauline leaves ovate, acuminate, undivided or subtrifid. 2. H. Native of Abruzzo, on the Appenines. Val. cuspidata, Bert. inded.


35 V. Alpést里斯 (Stev. in mem. soc. nat. mosc. 5. p. 342.) radical leaves ovate, almost quite entire, obtuse: cauline leaves tripartite or ternate, acute: upper ones linear, entire; flowers capitately corystis; pappus of calyx equal to the achenia in length. 2. H. Native of Siberia, about the fountains of the rivers Sentelek, Uba, and Iina; and of Caucasus, in alpine meadows. V. montana, Bieb. fl. taur. 1. p. 25. no. 67. 3. p. 28. Schiir., fig. 1. p. 256.—Gmel. sib. 5. p. 121. no. 2. The whole plant is glabrous. Corystis coarctate when in flower, but rather loose while in fruit.

Alp Valerian. Pl. 1 foot.

36 V. saxatilis (Lin. spec. p. 45.) radical leaves on long petioles, elliptic, 3-5-nerved, undivided, or a little toothed, ciliated: cauline leaves few, small, linear; stems erect; corystis racemose; fruit glabrous. 2. H. Native of the Alps of France, Austria, Italy, &c. Jacq. austr. t. 267. vind. 204. D. C. fl. fr. no. 3239. Bert. amen. ital. p. 326. Krok. sii. no. 52. t. 6.—Pluk. phyt. t. 232. f. 2. Root blackish, very smooth, and when chewed leaving a bitterness on the tongue. The whole plant shining, and about half a foot high, with the stems subdivided at top. Flowers white, often dioecy-polypogamous.


38 V. Salix (All. ped. 1. p. 8. t. 70. f. 1.) plant glabrous; leaves spatulate or obovate, obtuse, entire, on short peti-
lobes or leaflets oblong or acuminate, and the terminal one broad-ovate or roundish, cordate, serrated; corymbs ample; fruit glabrous. 4. H. Native of the Pyrenees, in woods; and of Scotland, in woods, particularly 48 about Edinburgh and Glasgow. D. C. fl. fr. no. 3317. Sowerb. engl. bot. t. 1591.—Phlom. phyt. t. 232. f. 1. V. Canadensis, Riv. mon. t. 6.—Buxb. cent. p. 2. t. 19. t. 11. A showy pale green herb, with large leaves. Flowers pale red, disposed in ample corymbs. There is also a white flowered variety of this plant.


43 V. ITALIC (Lam. ill. 1. p. 92.) plant glabrous, erect; stems terete, nearly smooth; radical leaves petiolate, undivided, ovate-oblong, remotely toothed, the rest pinnate; leaflets or lobes ovate or ovate-oblong, toothed; corymbs subpanicled; fruit glabrous. 2. H. Native of Liguria and Candia, on the mountains. Val. cinn. 2. p. 6. Dufr. val. p. 43. V. tuberosa, Imp. hist. nat. ed. 2. p. 656. with a figure. Flowers truly triunyrid, not tetranourous, as said by Lam. and Vali.

Italian Valerian. Pl. 1 to 2 feet?

46 V. elongata (Lin. spec. p. 1664.) plant glabrous, erect; stems striated; radical leaves petiolate, oval; cauleine leaves sessile, subcordate or hastate; upper leaves deeply 3-5-cleft, acute; panicle elongated, with the lateral branches short and subcorymbose; corolla very short, tubularly campanulate; fruit glabrous. 2. H. Native of Austria, Carniola, &c. on the alps. Jacq. fl. austr. 3. t. 219. vid. t. 1. Morr. ox. sect. 7. t. 13. f. 20. Root whitish, with little taste or smell. Flowers dusky. Stems 6-10 inches high.

 VAR. <i>polygama</i> (D. C. prod. 4. p. 637.) plant larger; upper leaves triunyrid. 2. H. Native of Galicia, in humid meadows. V. dioica, Bess. in litt. var. 4. p. 40. V. polygama, Bess. in litt. Flowers corymbose, a little larger than in V. elongata; but very similar in form.


47 V. ASARIFOLIA (Dufr. val. p. 44.) plant glabrous, erect; radical leaves petiolate, cordate-reniform, a little toothed; cauleine leaves few, pinnate; lobes or leaflets of the upper leaves linear; corymbs rather contracted. 2. H. Native of Crete, on the Spaeotic mountains. Sieb. herb. cact. Schultes. syst. 1. p. 356. mant. 1. p. 239.—Alp. exot. p. 132. with a figure. Flowers red. Root tuberous, black.

49 V. TUBEROBA (Lin. spec. p. 46.) plant glabrous; radical leaves ovate, lanceolate-oblong or oblong, undivided, quite entire; cauleine leaves pinnatifid, with 2-3 pairs of linear segments or lobes, the terminal segment the largest; corymbs at first coarctate; fruit ovate, hairy. 2. H. Native of the south of Europe, from Spain to Caucasus; of Siberia, near Sogra and Wydricha, and from Buchitormisk to Lake Neor Saisali. Val. cinn. 2. p. 12. Dufr. val. p. 43. D. C. fl. fr. no. 3320. Lob. icon. t. 717. f. 2. Can. epid. p. 16. Root tuberous, blackish, simple or double, ovate or oblong. There are varieties of this species with the cauleine leaves all pinnatifid, or the lower ones are quite entire, oblong-lanceolate and elongated, and the upper leaves more or less pinnatifid. Flowers pale red.


49 V. PHU (Lin. spec. p. 45.) plant glabrous, erect; stems terete, smooth; radical leaves oblong or elliptic, undivided; cauleine leaves pinnatifid, with oblong lobes; corymbs panicked; lobes of stigma 3, slender; fruit glabrous, but exhibiting 2 hairy lines. 2. H. Native of Alsaysia, Switzerland, Silesia, Caucasus, &c. in subalpine places, but not of the Pyrenees. Dufr. val. p. 40. but not of Lapwyer, nor Ruiz et Pav..—Fuchs, hist. p. 153. with a figure. Heal. arz. gew. 3. t. 33. no. 22. good. —Blackw. t. 256.—Plench. t. 28. Moris, hist. sect. 7. t. 14. f. 1. Riv. mon. t. 3. Lob. icon. t. 714. Root oblique, thick, and matted, pale green. Plant glaucous. Flowers white, with a pleasant smell.

50 V. dura (Bunge, in Led. fl. alts. 1. p. 52.) primary radical leaves quite entire or auricled; the rest nearly pinnatifid, and the cauleine leaves pinnate; leaflets oblong, obtuse, almost entire: superior ones deciduous; corymbs compound; flowers hermaphroditic. 2. H. Native of Siberia. V. officinalis, Falk. topogr. beyr. 2. no. 59. —Gmel. fl. sib. 3. p. 129. no. 1. exclusive of the synonyms. This species is very nearly allied to <i>V. officinale</i>, but differs from it in the lower leaves being undivided or auricled. Stem and margins of leaves beset with minute adpressed hardly conspicuous pili.

VAR. <i>a. latifolia</i> (Bunge, l. c.) segments of leaves 7-11, more remote and broader than in var. <i>b.</i> 2. H. Native of Siberia, frequent on schistous mountains in exposed places.

VAR. <i>b. augustinfolia</i> (Bunge, l. c.) segments of leaves 21-27, more crowded and narrower, and more elongated than in var. <i>a.</i>

2. H. Native of Siberia, near Salair and Barnaul.

Doubtful Valerian. Pl. 2 to 3 feet.

51 V. noaica (Lin. spec. p. 44.) plant glabrous, erect; stems striated; radical leaves petiolate, ovate or subpatulate, undivided; cauleine leaves pinnatifid, with linear-oblong lobes; flowers of the female corollas of the male flowers loose; of the female ones contracted; lobes of stigma almost combined; fruit glabrous. 2. H. Native of Europe and the Levant, in wet meadows and marshes, and by the sides of streams and ditches; in Britain in moaty meadows frequent. Dufr. val. p. 29. Oed. fl. dan. t. 687. Sturm, deutsch. fl. with a figure. Heyne, arz. gew. 3. p. 478. Smith, engl. bot. 628. Curt. lond. 4. t. 3. Poit. et Turp. fl. par. t. 41. V. sylvestris, Gray. brit. arr. 2. p. 478. V. montana, gen. el. no. 31. ex Wahlen. Roots horizontal, creeping, white, but sometimes tinged with red, slender. Flowers white, tinged with red or flesh coloured.

VAR. <i>β. integrifolia</i> (D. C. prod. 4. p. 637.) all the leaves both radical and cauleine are quite entire. 2. H. Native of Siberia, dioica, or dioica, Reich. icon. 1. p. 48. t. 73. —Loes. pruss. no. 724. t. 84.


** Species natives of America.**

52 V. capitata (Pall. in Wild. herb. no. 789. exclusive of Cham. et Schlecht. which is Gentiana frigida,) plant glabrous, erect; stems downy at the nodes; radical leaves petiolate, roundish, simple; cauleine ones almost sessile, simple or teregate; leaflets minutely serrated, middle one the largest; panicles terminal, capitate, girded by long linear bracteas; tube of corolla elongated; fruit ovate, compressed, glabrous. 2. H. Native of the higher ranges of the Sagan Alps, at the bay of St. Laurence; Korzeheue's Sound; on the Arctic shores of America beyond Behring's Straits; and between the Coppermine and Mackenzie rivers. Link, Jahrb. 1. pt. 3. p. 66. Cham. et Schlecht. in Linnae. 3. p. 130. Perhaps distinct from <i>V. tripteris</i>, ex Stev. obs. in herb. Wild.

CAPITATE-FLOWERED VALERIAN. Pl. 1 foot.

53 V. VULSVMICINA (Banks, miss. Richards, in Frankl. 1st journ. ed. 2. append. p. 2.) plant glabrous, erect; stems striated; radical leaves petiolate, ovate or subpatulate, undivided; cauleine leaves pinnate-parted, with ovate-lanceolate nearly entire

IX. VALERIANA.
segments; flowers hermaphrodite; lobes of stigma 2-3, minute; fruit ovoid, compressed, glabrous. 2. H. Native of Newfoundland, ex Banks, Clear-water River, ex Richards, Prairies of the Rocky Mountains abundant, ex Drummond. In every respect this agrees with the European V. dioica. It differs from V. Phl by the smaller and shorter fruit, and entire absence of the two hairy lines.

Wood Valerian. Pl. 1 foot.

54 V. LAXIFLORA (D. C. prod. 4. p. 658.) plant glabrous, ascending, suffrutescent at the base; leaves petiolate, ovate or oval, with a few coarse irregularly dentately cut teeth; floriferous branches elongated, almost naked; superior leaves pinnate-parted, with 1-2 linear quite entire leaves on each side; floral leaf linear; petiole loose, with opposite branches, which are trifid and few-flowered at the apex. 2. F. Native of Chili. Valeriana, no. 825. Poepp. pl. exsic. Fruit oblong, glabrous.

Lax-flowered Valerian. Pl. ascending.


Shining-rooted Valerian. Pl. ½ foot.

56 V. HUMBERTII (Hook. et Arn. in Bot. misc. vol. 3.) stem herbsaceous, erect, terete, and is as well as the leaves smoothish; radical leaves entire, roundish-elliptic, crenated; cauleine leaves sessile, pinnatifidly lyrate; paniciles much branched; corollas quincunciform; stamens exerted; fruit glabrous. 2. F. Native of Peru, in rocky places. V. hyalinoriza, H. B. et Kunth, nov. gen. amer. 3. p. 331. but not of Ruiz et Pav.

Humboldt’s Valerian. Pl. ¾ to 1½ foot.

57 V. PINNATIFIDA (Ruiz et Pav. fl. per. 1. p. 40. t. 69. f. b.) plant herbsaceous, glabrous; stems erect, simple, striated; two lower leaves lanceolate, quite entire; the rest pinnatifid, with oblong-serrate-toothed lobes; petiole loose; lateral corymb dichotomous; stamens exerted. 2. F. Native of Peru, at Chaney and Lima on hills. Val. brachia, Pers. exch. p. 1. 57. Root tufted, very sweet, scented, as in V. Phl. Flowers white. A variety of the present plant, or a distinct species, was gathered by Berton in the grassy pastures on Mont La Leona on Llanquihue, in Chili.

Pinnatifid-leaved Valerian. Pl. 1 foot?

58 V. LECORDA’RPA (D. C. prod. 4. p. 638.) plant herbaceous, erect, glabrous; lower leaves on long petioles, obov-oblong, obtuse, attenuated at the base, membranous; cauleine leaves very few, small, pinnate-parted at the base, with linear lobes; petiole loose, with opposite trichotomous branches; fruit pale, glabrous, compressed. 2. F. Native of Chili. Valeriana, no. 847. Poepp. pl. exsic. Stem 2 feet high. Radical leaves with the petioles 10-12 inches long. Stamens not exerted. Pappus of calyx plumose.

White-leaved Valerian. Pl. 2 feet.

59 V. YAGINATA (H. B. et Kunth, nov. gen. amer. 3. p. 331.) plant glabrous; stems tufted, simple, tetragonal; radical leaves oblong-oblongate, petiolate, toothed a little; cauleine leaves sinuatly pinnatifid, sheathed at the base, with linear plicate segments; corymbs crowded; stamens inclosed; style much exerted. 2. F. Native of New Spain, in humid places near Real del Monte. Corolla glabrous, gibbous at the base, white. Sheathed-leaved Valerian. Pl. ½ foot.

60 V. PANICULATA (Ruiz et Pav. fl. per. 1. p. 41. t. 70. f. a.) plant herbaceous, villous; stems many, erect, strictly furrowed, terete, rather 2-edged; radical leaves uniodivided, coriaceous, acute; cauleine leaves pinnate, with 3-5 ovate acute, denti- culated leaflets; petiole dilute; stamens length of corolla. gibbous at the base, white. Pappus of calyx 10-rayed.

Panicled flowering Valerian. Pl. 2 to 3 feet.

61 V. PANICLED-FLORIDA (Michx. fl. bor. amer. 1. p. 18. Hook. fl. amer. 1. p. 291. t. 101.) plant herbaceous, glabrous; stems erect, simple, furrowed; radical leaves simple, coriaceous, sinuatly crenated, petiolate; cauleine ones lyrate pinnatifid, with 5-7 segments or leaflets, those at the tip of the stem trifoliate or simple; leaflets broad-ovate, acute, sinwatly toothed; petiole scattered; corymbs few-flowered; corollas tubular; stamens exerted; fruit ovate, compressed, glabrous. 2. H. Native of North America, on the Alleghany mountains in shady places; and in woods on the Rocky Mountains north of the Smoking river, and on Wolf’s plain. Nutt. gen. amer. p. 29. Pursh, fl. amer. sept. 1. p. 28. Root thick, creeping, efiuviating fibres. Stems hairy at the nodi. Flowers white, ex Nutt., pale blue, ex Torrey, rose-coloured, ex Hook. Panicle terminal, cymose. 2. H. Native of Chili, Valeriana, no. 942. Poepp. pl. exsic. Herb 1½ foot high. From the fruit being canescent, it agrees with V. Papilla, but the fruit is 3 or 4 times smaller.

Hairy-fruited Valerian. Pl. 1½ foot.

§ 5. Stems herbaceous. Leaves all pinnate-lobed.

* Species natives of America.

63 V. Papilla (Bert. in litt. ex D. C. prod. 4. p. 638.) stems erect, glabrous; leaves glabrous, lyrate pinnatifid: having the lateral lobes linear and entire, and the terminal one large, obovate-oblong, and somewhat sinuated; petiole trichotomous; fruit oblong, very hispid. 2. F. Native of Chili, in sandy pastures along the Cachiqual, at a place called St. George, where it is called by the natives Papilla, and about the banks of Collina. Herb 1½ foot high. Pedicels plicate. Fruit large. Flowers unknown. Pappus blackish.

Papilla Valerian. Pl. 1½ foot.

64 V. PYRAMIDALIS (H. B. et Kunth, nov. gen. amer. 3. p. 331.) plant glabrous; stem herbaceous, terete, furrowed; leaves pinnate, with sessile ovate-cordate quite entire segments or leaflets; petiole much branched, pyramidal; genitales almost inclosed; fruit oblong, glabrous. 2. F. Native on the walls of the city of Quito. Corolla with a very short tube, white.

Pyramidal-paniced Valerian. Pl. 3 feet.

65 V. BRIDGES (Hook. et Arn. in Bot. misc. 3. p. 365.) glabrous; leaves lyrate pinnatifid; lobes erose, culiared: lateral ones small, terminal one much larger; radical leaves obovate, and more entire than the rest; petiole elongated, with dichotomous distichous branches; fruit ovate, glabrous.—Native of Chili, on the mountains and plains near Valparaiso. Very closely allied to V. crispa, with a totally distinct fruit, which, in this species, is not flat on one side, with a tubercle on the other, but presents a tubercle which is internally spongy on both sides, nor is it half so large as in V. crispa.

Bridge’s Valerian. Pl. 1 to 2 feet?
66 V. polemosoides (H. B. et Kunth, nov. gen. amer. 3. p. 332.) plant downy; stems herbaceous, erect, terete; leaves pinnate; leaflets oblong, on short petioles, quite entire, rather fleshy, smoothish above; pinnule much branched; genitils included. 2. F. Native of the kingdom of Quito, between Hambato and Llactacunga. Corolla glabrous, gibbous at the base, white.

Polemonium-like Valerian. Pl. 2 to 3 feet.

67 V. decussata (Ruiz et Pav. fl. per. 1. p. 42. t. 70. f. b.) plant herbaceous, downy, stems erect, striated; leaves pinnate; leaflets lanceolate, acuminated, a little dentillicated: the terminal one rather the largest; panicle loose, divaricate, downy; stamens nearly inclosed. 2. F. Native of Peru, among rocks, and in hedges. Peduncles decussata. Corolla small, white.

Decussata-peduncled Valerian. Pl. 3 feet.

68 V. Polyacthyia (Smith, icon. med. 3. p. 51.) plant glabrous, erect; stems a little striated; leaves pinnatifid, with linear quite entire acute segments; racemes compound, elongated, composed of opposite spikes.—Native of Buenos Ayres, in moist places, where it was collected by Commerson. Vahl, enum. 2. p. 5. Astrophyia polyacthyia, Dufr. val. p. 51. Oligacoea polyacthyia, Willd. Corolla hardly gibbous at the base.

Many-spiked Valerian. Pl. 2 feet.

69 V. sorbiolida (H. B. et Kunth, nov. gen. amer. 3. p. 332.) stems herbaceous, erect, terete, rather pilose below; leaves pinnate; leaflets sessile, ovate-oblong, cuneated at the base, coarsely serrated, glabrous; panicule much branched; stamens inclosed; style exerted. 2. F. Native of Mexico, on the borders of mountains between Valladolid and Pizaruaro. Corolla glabrous, gibbous at the base, white.

Mountain-ash-leaved Valerian. Pl. 2 to 3 feet.

70 V. sanguisorbofolia (Cav. icon. 5. p. 456.) plant glabrous; stems prostrate at the base, and erect at the apex; leaves pinnate; petioles naked almost to the middle; leaflets sessile, ovate, few-toothed, equal; panicule racemose, oblong, rather loose. 2. F. Native of the Cordillera of Chili, V. sanguisorbea, Pers. ench. 1. p. 37. Flowers white.

Burnet-leaved Valerian. Pl. 1 foot.

71 V. GLAUCUS (Poep. pl. exsic. no. 127.) plant herbaceous, erect, glabrous; stems terete, naked at the apex; leaves glaucescent, pinnate; leaflets obovate-oblong, toothed, those at the base of the petiole small, and those at the top of the leaf larger and confluent; branches of pinnate opposite, trichotomous; bracteas linear. 2. F. Native of Chili, where it was collected by Poepigg. Allied to V. sanguisorbofolia, but the petioles are almost leafy to the base. Leaflets narrowed into the petioles.

Glaucous Valerian. Pl. 1 to 2 feet.

72 V. VIRGATA (Ruiz et Pav. fl. per. 1. p. 42. t. 66. f. b.) plant suffruticose, almost glabrous; stem much branched, striated, rather downy; leaves pinnate; leaflets entire or bifid, with linear bluntish entire lobes; corymb pilose, with dichotomous branches, bearing a sessile flower in each fork; stamens exerted. 2. F. Native of Peru, in the province of Canta, among broken rocks. Flowers white.

Tweiggy Valerian. Pl. 3 feet.

73 V. Gloeifolium (Ruiz et Pav. fl. per. 1. p. 43. t. 65. f. b.) plant herbaceous, humpy, hispid on one side; stems striated, hardly longer than the leaves, almost naked; leaves pinnate; leaflets sinuate-toothed; flowers capitate; bracteas spatulate, membranous. 2. F. Native of Peru, on the alps in the provinces of Tarra and Canta. Corollas white.


74 V. zy.']a (Vahl, enum. 2. p. 4.) plant herbaceous, glabrous; stem bearing 2 leaves; radical leaves lyrate; leaflets oblong, dentately serrated: the terminal one rather pinnatifid:

those of the cauline leaves linear-lanceolate; peduncles trichotomous. 2. F. Native of Peru.

Lavatore-leaved Valerian. Pl. 3 to ½ foot.

75 V. interrupta (Ruiz et Pav. fl. per. 1. p. 42. t. 67. f. a.) plant herbaceous, glabrous; stems many, erect, bearing 2 opposite bipinnatifid leaves under the corymb, which is trichotomous; radical leaves pinnate-parted, and appendiculately toothed between the lobes; segments linear or oblong, unequally bluntly and coarsely toothed; stamens exerted. 2. F. Native of Peru, on the alps in the province of Tarra at Diezmo. Astréphia interrupta, Dufr. val. p. 51. Flowers capitate, sessile. Bracteas linear.

Interrupted-leaved Valerian. Pl. ½ foot.

76 V. crispa (Hook. et Arn. in Beech. voy. pt. bot. p. 27. but not of Ruiz et Pav.) leaves fleshy; inferior ones lanceately pinnatifid, with acutely toothed curved segments; fructiferous panicle coarctate; fruit cordately ovate, plano-convex, broadly margined, with a longitudinal elevated line in front, and 2 lines on the back; pappus plumose, united by a membrane at the base.—Native of Chili, about Concepcion. V. pterocarpa, Hook. et Arn. l.e.

Corded-leaved Valerian. Pl. 1 to 2 feet.

77 V. Celastrophylla (H. B. et Kunth, nov. gen. amer. 3. p. 333. t. 276.) plant glabrous; stems herbaceous, terete, striated; leaves pinnate; leaflets hastately trifid, sessile, with linear acuminated segments; coryumbs dichotomous; stamens exerted; fruit downy. 2. F. Native of Mexico, in high plains near Chapoletpec. Val. dichotoma, Moc. et Sesse, fl. mex. ined. Corolla downy, outside, gibbous at the base, white.

Horn-leaved Valerian. Pl. 1 to 2 feet.

78 V. Toluccana (D. C. coll. mem. vii. prod. 4. p. 640.) plant glabrous, herbaceous, erect; stem nearly terete; leaves pinnate, with 3-4 pairs of membranous repandly toothed leaves, with an odd one: those of the upper leaves very narrow; panicule loose, elongated; lateral corymbs dichotomous; flowers sessile in the forks; fruit oblong, downy. 2. F. Native of Mexico, in the valley of Tolucuo. Very like V. Hardwickii, but differs in the stem and leaves being quite smooth, in the segments of the leaves being more ovate, in the corymbs being dichotomous, and in the fruit being oblong.

Tolucuan Valerian. Pl. ½ to 2 feet?

79 V. Mexicana (D. C. coll. mem. vii. prod. 4. p. 640.) plant herbaceous, erect; stems nearly angular; leaves pinnate, with 2 pairs of oblong leaflets, and an odd one: the latter is larger and ovate, and usually auricled at the base, but all are repandly toothed; panicule loose, elongated, having the lateral branches elongated and trichotomous; stamens exerted; fruit ovate, scabrous. 2. F. Native of Mexico, about the city, where it was collected by Berlandier. Very nearly allied to V. Hardwickii and V. Toluccana, but is distinguished from both by its angular stem.

Mexican Valerian. Pl. ½ to 2 feet?

** Species natives of Asia.

80 V. Leschenaulti (D. C. mem. vii. prod. 4. p. 640.) radical leaves petiolate, ovate, obtuse, crenated, hairy on both surfaces; stems erect, simple, glabrous between the joints, but the joints are pilose; cauline leaves remote, small, sessile: upper ones pinnately divided into 3-5 linear glabrous lobes, the terminal lobe the longest; corymbs contracted; fruit villous. 2. F. Native of the East Indies, on the mountains of Aniguia, where it was collected by Leschenault. Stem 2 feet high. Radical leaves with the petioles, hardly 2 inches long. Habit of V. dioica.

Leschenaulti's Valerian. Pl. 2 feet.

81 V. Meyenni (Wall. cat. no. 434.) the whole plant is
but corymbs fruit those corymbs foot. flowers 171. fruit the 28.) Native of Siberia, near the city of Irkutzk. Stem erect, simple. Radical leaves wanting in the specimen examined. Upper ciliate leaves sessile, but the petals become gradually elongated to the base. Gentils exserted. Corolla 5-parted, cleft longitudinally.

Alternate-leaved Valerian. Pl. 1 to 1¼ foot.

89. **Dioscoriopsis** (Sibth. et Smith. fl. gracc. t. 33.) plant glabrous, erect; lower leaves lyrate-pinnate, with ovate toothed leaflets: the terminal one large; upper leaves with equal lanceolate toothed leaflets; cymes crowded, panediele peduncles dichotomous. 2. H. Native of Lycia. Roots tuberous. Flowers pale red.

**Dissectae** Valerian. Pl. 2 feet.

***Species natives of Europe.***

90. **Valeriana officinalis** (Lin. spec. p. 45.) plant smoothish, erect; stems furrowed; leaves all or nearly all pinnate, with 7-8 pairs of lanceolate serrated leaflets, and an odd one: those of the lower leaves ovate, and coarsely toothed, of the superior ones oblong-lanceolate, toothed, and rather decrement; panicles thyroid. 2. H. Native of Germany. Link, enum. hort. beryl. 1. p. 63. 2. Valeriana, Horn? This is a larger plant in its all parts than **V. officinalis**, and does not change by culture. Flowers pink.

**Elder**-leaved Valerian. Fl. May, June. Ckt. 1819. Pl. 2 to 4 feet.

91. **V. officinalis** (Lin. spec. p. 45.) plant smoothish, erect; stems furrowed; leaves all or nearly all pinnate, with 7-8 pairs of lanceolate serrated leaflets, and an odd one; corymbs at length panicked; fruit glabrous. 2. H. Native of Europe and Caucasus, in humid places, and about the banks of pools and rivers; plentiful in Britain. Dufr. val. p. 40. D. C. fl. fr. no. 3315. Blackw. herb. t. 171. Woodv. med. bot. t. 96. 
Heyne, arz. gew. 3. t. 32. Curt. lond. 6. t. 3. Sover. engl. bot. 695. Oed. fl. dan. t. 570. V. sylvestris, Dodon. pempt. 349. f. 2. Phil. Column. phyt. 114. Phil. Germänicum, Fusch. hist. p. 857. This is a very common and a very variable plant, having the stem from 2 to 4 feet high, glabrous or pilose: the lower leaves almost undivided, or all pinnate, with the leaflets broader or narrower, and more or less decrement, most often toothed, very rarely quite entire, shining or opaque; corymbs contracted or loose: but all these variations are hardly considered varieties. V. lucida, Hort. par. V. excelsa, Poir. dict. 7. p. 501. V. altissima, Mikan in Bess. enum. p. 4. V. répens, Host, austr. 1. p. 5. are only varieties of **V. officinalis**. Root composed of long slender fleshly fibres, uniting into a head, and sending out long fleshly creeping shoots from the crown. Leaves bearded at the base on the under side. Flowers pale red, having a singular colour. Pappus of seeds 12-rayed, purplish. In high dry pasture heaths and woods, the plant becomes smaller and more hairy, with the leaves narrower, and the roots more highly aromatic and less nauseous.

The roots have a strong, and to most people a disagreeable smell; its taste is warm, bitterish, and subacid, communicating its properties to wine, water, and spirit: but it is best in sub stance, and may be taken from half a drachm to 2 drachms to a dose. There is no doubt of its possessing antispasmodic virtues in an eminent degree. It is often prescribed with advantage in

**Tschupha**, against the mouth of the river Tschegan. Root with long thick yellowish white fibres, emitting arsenna. Leaves glabrous, rather fleshy, the primary ones simple or auricled. Flowers disposed in whorles of three. Pappus of fruit greyish-violet.

**Rock-loving** Valerian. Pl. ½ to 1 foot.

88. **Alternafolium** (Led. fl. alt. t. 1. p. 52.) cauline leaves alternate, pinnate; leaflets lanceolate-linear, downy beneath as well as on the stem; flowers corymbose. 2. H. Native of Siberia, near the city of Irkutzk. Stem erect, simple. Radical leaves wanting in the specimen examined. Upper ciliate leaves sessile, but the petals become gradually elongated to the base. Gentils exserted. Corolla 5-parted, cleft longitudinally.

Alternative-leaved Valerian. Pl. 1 to 1¼ foot.

87. **Petrophila** (Bunge, Led. fl. Ross. ill. t. 19. fl. alt. t. 1. p. 54.) leaves all lyrate-pinnate-parted: the terminal segment the largest, oblong, all quite entire and obtuse; stems simple; flowers verticillately subracemose. 2. H. Native of Siberia, in rough stony places on the tops of Alps at the river

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**Valerianae. IX. Valeriana.**
hysterical cases; and instances are not wanting where it appears to have removed some obstinate epilepsies. In habitual constiveness it is an excellent medicine. The unpleasant flavour of valerian is best concealed by a small addition of mint. A tincture of the root in proof spirit, and in volatile spirit, is ordered in the London Pharmacopoeia. Dr. Cullen says, that if it has sometimes failed, it is from the disease depending upon different causes, or the root being frequently employed in an improper condition, or in doses not large enough.—It is well known that cats are much delighted with the roots. Dr. Stokes informs us, that rats are equally fond of them, and that rat-catchers employ them to draw the rats together.

**Official Valerian.** Fl. June, July. Britain. Pl. 1 to 4 ft. 92 V. stachel'ns (Bongard, in mem. acad. imp. Petersb. 2. p. 145.) stem erect, glabrous, but pilose at the nodi; lower leaves ternate: superior ones pinnate, with 2 pairs of ovate, acuminate, coarsely toothed segments or leaflets; corymbs dense, contracted. V. H. Native of the island of Sicha, where the roots are used by the natives as a precious medicine. Very nearly allied to V. samolifolia and V. officinalis.

**Sitcha Valerian.** Pl. 2 to 3 ft. 93 V. angustifolia (Tausch. ex Host, fl. austr. 1. p. 36, but not of Cav.) plant downy, erect; stems furrowed; leaves pinnate; leaflets linear-lanceolate, obtuse, dilated, quite entire, the 3 terminal ones confluents. 2. H. Native of Bohemia, on hills and mountains. Flowers rose-coloured. Root like that of V. officinalis.

**Narrow-leaved Valerian.** Pl. 1 to 2 feet.

**** A species native of the Cape of Good Hope.****

94 V. cape'nensis (Thunb. prod. p. 7, fl. cap. p. 33.) plant glabrous, erect; stem striated; leaves pinnate; segments or lobes alternate? ovate-toothed, acute, the odd one the largest; corymbs panicled. 2. G. Native of the Cape of Good Hope, in valleys on the mountains. Habit of V. officinalis, but differs from it in the shorter lobes of the leaves. The roots are used in the same way as V. officinalis. Stem pilose at the joints.

**Cape Valerian.** Pl. 1 foot.

† *Species not sufficiently known.*

95 V. leucoph'ea (D. C. prod. 4. p. 641.) V. orientalis minima flore leucophase, Tourn. cor. p. 6. Allied to V. tuberosa, ex Stev. obs. p. 67, but the bracteas are long and distant. Flowers dusky.

**Dusky-leaved Valerian.** Pl. 1 foot.

96 V. angustifolia (D. C. prod. 4. p. 641.) V. orientalis angustifolia, floribus et radice Valerianæ hortensis, Tourn. cor. p. 6. This plant is nearly allied to V. officinalis, but differs in the narrower leaves.

**Narrow-lobed-leaved Valerian.** Pl. 2 to 3 feet.

Cult. All the hardy species thrive well in any common garden soil, and are easily increased by dividing at the root. Many of them are very ornamental border-flowers. The tender kinds, or those from warmer climates, should be grown in pots, in a mixture of peat, sand, and loam, so that they may be protected in winter by placing them in a frame or green-house.

X. **Betcke'a** (named after M. Betcke, who has described many species of Valerianella). D. C. coll. mem. vii. prod. 4. p. 649.

**Lin. syst.** Triandria, Mono'gynia. Limb of calyx 1-toothed, deciduous. Corolla funnel-shaped, 5-lobed. Stamens 3. Fruit 1-celled, triquetrous, naked at the apex. Seed 1, conforming to the fruit, and filling the cell.—Glabrous, annual, simple, erect herbs. Leaves undivided. Flowers small, white. Habit of a species of Valerianella.

1 B. samolif'olia (D. C. prod. 4. p. 643.) lower leaves obovate-oblong: upper ones ovate-roundish, sessile, stem-clasping; cymes small, on short peduncles in the axils of the leaves: bracteas oblong. 2. H. Native of Chili, in mountain pastures near La Pinta de Cortes, and about Valparaiso and Concepcion. Valeriana seu Födia samolifolia, Bert. in litt. 1829, and in bull. sc. 1830. p. 111. Habit of Samal'us or Claydònia.

**Samolus-leaved Betcke'a.** Pl. ½ foot.

2 B. Gill'esi (Hook. et Arn. in bot. misc. 3. p. 306.) plant quite glabrous; root tufted, woody; radical leaves roundish-elliptic, almost 3 times shorter than the petioles, quite entire; scapes about equal in length to the leaves; flowers in crowded heads; fruit glabrous, lanceolate, angular; limb of calyx short, urceolate.—Native of Chili, in cliffs of rocks near La Casa de Pedro, and the Andes of Mendoza, forming dense masses. B. samolifolia, Gill. but not of D. C. There is on the scape usually one pair of floral leaves: from the axil of each arises a head of flowers, in addition to the terminal one; and these three heads are often so close as to appear like one. This is probably not a species of Betcke'a; its fruit is not triquetrous, nor is the limb of the calyx 1-toothed and deciduous; but the fruit is still 1-seeded.

**Gillies's Betcke'a.** Pl. ½ foot.

Cult. The seeds will only require to be sown in the open ground in May, in a sheltered situation.

XI. **TRIPLOSTEGIA** (trip'laspho, trip'loos, triple, and stege's, stegos, a covering; the flowers are clothed by 3 coverings, a double involucrum and the calyx). Wall. cat. no. 436. D. C. coll. mem. vii. prod. 4. p. 642.

**Lin. syst.** Triandria, Mono'gynia. Flowers covered by a triple tegument, a double involucrum, and the calyx. Outer involucrum 4-parted and 4-keeled: inner one tubular, 8-toothed, and 8-ribbed. Calyx adhering to the ovarium, with a small 4-toothed limb. Corolla funnel-shaped, 5-leafed, not gibbous at the base, nor spurred. Stamens 3, arising from the base of the tube; anthers a little exerted. Stigma capitulate. Utriculus 1-seeded, beaked, covered by the double involucrum, and crowned by the teeth of the calyx, downy.—An Indian herb. Root long, fibrous, scentless. Stems obviously 4-furrowed, simple or sparingly branched, bearing longish articulated hairs towards the top, which are tipped with glands. Leaves approximate at the base of the stem, ovate-lanceolate, toothed, pinnatifid, downy above, and rather villous beneath, petiolate; cauline leaves few, pinnatifid, small. Calyx 5-toothed, deeply clothed with glandular down. Flowers small, three, downy.

**1 T. glau'dulifera** (Wall. l. c.) 2. H. Native of Nipal, on mountains about Gosaingthang, growing along with *Nard'ostachys.*

**Gland-bearing Triplostegia.** Pl. ½ to 2 feet.

Cult. This plant should be grown in a pot, in a mixture of loam, peat, and sand, and placed among other alpine plants. It may be propagated by dividing at the root, or by seed.


Limb of calyx closely girding the ovary (f. 118. d.). Limb of calyx variable, short or elongated, entire (f. 117. g.), toothed, or ending in numerous variable bristles (f. 118. d.) which are usually plumose, and pappus-formed. Corolla gamo-
petalous (f. 117. f. 118. c.), inserted in the top of the tube, rarely ringent, but usually unequal (f. 117. f. 118. c.), 4-5-cleft. Stamens 4 (f. 118. f.), inserted in the tube of the corolla, and alternating with its lobes, nearly always distinct and free; anthers 2-celled. Style filiform (f. 118. g.); stigma simple, longitudinal or subcapitate. Fruit indehiscent, membranous or subnucamentaceous (f. 118. h. f. 117. c.), crowned by the limb of the calyx (f. 117. i. f. 118. i.), 1-celled, 1-seeded, usually covered by the involucre (f. 117. g.) Seed pendulous in the fruit; albumen fleshy. Embryo straight, with a superior radicle.—Herbs or subshrubs. Leaves opposite, rarely verticillate, very variable in form, and even so in the same individual, the radical and cauline ones being very different. Flowers in dense heads, girded by involucre, very rarely in whorles. Involucre calyciform, girding the flower.

This order was formerly joined with Valerianace., but is readily distinguished from it, by the whole habit, by the flowers being in involucrated heads, and the single flowers being involucellate; by the fruit being constantly 1-celled and 1-seeded, in the stamens being always 4 in number, by the stigmas being simple, and by the seeds being ambulaceous. In this latter respect it agrees with the order Calyceraceae, but is distinguished from it in the embryo being erect, not inverted, and in the anthers being free, not combined into a tube. It agrees also with Compositae, from which it differs in its distinct stamens, and its pendulous ambulaceous seeds. What is called the involucre is a curious organ, resembling an external calyx, and is to each particular flower in the head of Dipsaceae, what the partial involucrum of Compositae is to each umbellule. In several species of Scabiösa the ovarium is entirely united with the tube of the calyx. Mr. Brown remarks that the base of the style coheres with the narrow apex of the tube of the calyx, even in those plants of the order in which the dilated part of the tube is entirely distinct from the ovarium. This kind of partial cohesion between pistillum and calyx is directly opposite to what usually takes place, namely, the base of the ovarium being coherent, while its upper is distinct. It equally, however, determines the apparent origin or insertion of the corolla and stamina, producing the unexpected combination of flos superus with ovarium liberum. The order also agrees in many respects with Nyetaginaceae and Globulariaceae.

The plants contained in this order have almost the habit of Compositae; all have the flowers growing in heads. Many of them are elegant border-flowers, and are cultivated with great facility. Some of the species of Scabiösa have been employed as diaphoretic and anti-syphilitic, but are now neglected.

Synopsis of the genera.

Tribe I.


Tribe II.

Scabiöseae. Corolla 4-5-cleft (f. 118. c.), not ringent. Stamens 4-5 (f. 118. f.), free, nearly equal. Flowers aggregate upon a receptacle (f. 118. c.), the heads involucrated by a general involucre, and each flower girded by a calyciform involucre (f. 117. g.).

Dipsacus. Involucre of many leaves, much longer than the palae among the flowers, which are foliaceous. Corolla 4-cleft. Stamens 4. Fruit crowned by the subtetragonal limb of the calyx, inclosed within the involucre.

Cephalaria. Involucre of many imbricate leaves, which are shorter than the palae (f. 116. a). Involucre terminated by a 4-8-toothed crown. Corolla 4-cleft (f. 116. c.). Stamens 4. Fruit tetragonal, crowned by the limb of the calyx, and inclosed within the involucre.


Petrógéphalæ. Involucre double, each series of 4-6 leaves. Receptacle villous or chaffy. Involucre toothed (f. 117. h.) or annoid. Limb of calyx ending in feathery bristles (f. 117. i. f. 118. i.). Corolla 5-cleft. Stamens 4, rarely 2-3.


Tribe I.

Morinæae (this tribe only contains the genus Morina). D. C. prod. 4, p. 644. Corolla ringent. Stamens 4, didynamous, or combined by twos. Flowers verticillate, bracteate.


Sect. 1. Dioctocalyx (from éc, dis, twelve, and wos wos, onus otos, an ear, and kalyx, calyx; in reference to the limb of the calyx being of 2 lobes). D. C. prod. 4, p. 644. Leaves sinuata and spinosely toothed. Lobes of calyx 2, oblong, more or less emarginate at the apex, unarmed. Stamens combined by twos, perhaps in all the species.

DIPSACEÆ. I. MORINA. II. DIPSACUS.

fig. M. orientalis, Mill. M. verticillata, Mœch. supl. Flowers white and reddish on the same plant. Stamens joined from the base to the authors by twos.


2 M. longifolia (Wall. cat. no. 426. D. C. prod. 4. p. 644.) leaves sinuate pinnatifid, and somewhat spiny-ciliated; floral leaves rather villous; lobes of calyx emarginate. 2. F. Native of Nipaul at Gosingsthan. Intermediate between M. Persica and M. longifolia, but is distinguished from them in the leaves being more elongated and acuminate, and in the lobes of the calyx being bifid beyond the middle. Corolla and genitils unknown.

Long-leaved Morina. Pl. 2 to 3 feet.

3 M. Polyphylla (Wall. cat. no. 425. D. C. prod. 4. p. 644.) leaves pinnatifid; leaves pinnately toothed; floral leaves rather villous, elongated, stiffly spiny; lobes of calyx deeply divided. 2. F. Native of Nipaul, at Gosingsthan. Intermediate between M. Persica and M. longifolia, but is distinguished from them in the leaves being more elongated and acuminate, and in the lobes of the calyx being bifid beyond the middle. Corolla and genitils unknown.

Many-leaved Morina. Pl. 2 to 3 feet.

Sect. II. Acanthocalyx (from aca, acaintos, a spine, and kalys, kalys, a calyx; in reference to the limb of the calyx being spiny-toothed). D. C. prod. 4. p. 645. Leaves quite entire, except the floral ones, which are a little spiny-toothed. Limb of calyx oblique, irregularly spiny-toothed. Stamens 4, distinct, dacyanous.

4 M. na’na (Wall. cat. no. 424. D. C. prod. 4. p. 615.) cauleine leaves quite entire; floral ones bearing spines at the base; involucre 1-leaved, ciliate by spines; limb of calyx oblique, irregularly spiny-toothed. 2. F. Native of Nipaul at Gosingsthan. Native of Nipaul, D. Don, prod. fl. nep, prod. 161. Stem villous at top, as well as the young leaves. Flowers red. Corollas villous outside, 3 times longer than the calyx.

Dreary Morina. Pl. ½ to 1 foot.

Cult. The species of Morina thrive best in a light rich soil; and may be increased by dividing at the root, or by seed.

Tribe II.

SCABIOSEÆ. (This tribe contains plants agreeing with Scabiosa in having capitate flowers). D. C. prod. 4. p. 645.—

Dipsaceæ, Wallr. sched. crit. p. 41. Corolla 4-5-cleft (f. 117, f. f. 118. f.), not ringent. Stamens 4-5, free (f. 118. f.), nearly equal. Flowers crowded in heads upon receptacles, each head girded by a general involucrum (f. 117. a.), with usually distinct pales on each side, and each flower girded by a calyciform involucel (f. 117. c. f. 118. d.).

II. DIPSACUS (said to be from ἐνδασα, dipsas, to thirst; probably in consequence of the conuate leaves having water; ἐνδασα, ἐνδας, is also the Greek name for the disease called diabetes, which is always accompanied by great thirst). Tourn. inst. t. 265. Lin. gen. 114. Gairn. fruct. 2. t. 86. Coult. dips. p. 21. f. 2-4. Wallr. sched. crit. p. 49.

LIN. SYST. Tetrádium, Manogpínia. Involucrum of the head of flowers of many leaves, longer than the pales. Pales on the receptacle acuminate, rather foliaceous. Involucel tetrándrous, 8-furred. Limb of calyx somewhat cymatoform or discol. Corolla 4-cleft. Stamens 4. Stigma longitudinal. Fruit crowned by the subteratragonal limb of the calyx, and inclosed within the involucel. Erect, pilose, or prickly biennial herbs. Leaves opposite, usually connate at the base, toothed or jagged. Heads of flowers terminal, oblong-ovate or roundish. Corolla lilacicoloured, yellow, or white.

1 D. stye’stris (Mill. dict. no. 2.) stem prickly; leaves connate at the base, ovate-lanceolate, acuminate, toothed; leaves of involucrum flexed, weak, longer than the heads of flowers; pales of heads straight, linear-lanceolate, setaceous, bent; involucel not drawn out beyond the furrows. 2. H. Native of Europe and Siberia, frequent; plentiful in some parts of Britain, about hedges and by road sides. Jacq. fl. austr. t. 402. Oed. fl. dam. t. 965. Smith, engl. bot. t. 1032. Curt. lond. 3. t. 9. D. styraxis a, Coult. dips. p. 22. D. vulgarius, Gmel. fl. bâd. 1. p. 312. D. fullenm, ßor. chlor. land, p. 36. Poll. pal. no. 137. D. purpureus, Fuchs, hist. 225. Flowers brown-purple, first breaking forth about the middle of the head. Heads of flowers ovate-oblong. The water contained in the basin formed by the leaves is said to cure warts on the hands, and to serve as a beauty-wash for the face; hence Ray conjectures it had its name, Labrum Lacteum.

Var. β, pallidus (Bess. in Roem. et Schultes, syst. 3, p. 41.) leaves of involucrum shorter, hardly ascending. 2. H. Native of Galicia, &c.


2 D. laciniátus (Lin. spec. p. 141.) stem prickly; leaves connate at the base, sinuate jagged, and the lobes sinuate-toothed; leaves of involucrum erect, stiffish, usually shorter than the head, which is ovate; pales straight, linear-subulate; involucel not drawn out beyond the furrows. 2. H. Native of Europe and Siberia, in hedges and ditches, as of Germany, France, Alsace, Austria, Caucasus, &c. Jacq. fl. austr. t. 5. 405. D. xyléstris, var. γ, Coult. dips. p. 22. Leaves downy beneath. Corolla whitish; authors reddish.


3 D. divaricátus (Presl. fl. sic. p. 57. del. prang. 117.) stem prickly; radical leaves oblong, rather lyrate, ciliate; cauline ones interruptedly pinnatifid; lobes divaricate, pinnatifid at the base; leaves of involucrum shorter than the head, which is ovate; pales spinescent, arched; involucels unknown. 2. H. Native of Sicily, on the edges of fields. Guss. prod. 1. p. 1. 157. D. laciniátus, Urta, Hort. pàp. p. 66. 2.

Divaricate Teazle. Pl. 3 to 5 feet.

4 D. fullém (Mill. dict. no. 1.) stem prickly; leaves connate at the base, oblong-lanceolate, serrate; upper ones entire; leaves of involucrum spreadingly reflexed, shorter than the heads, which are cylindrical; pales stiff, recurved; involucel not drawn out beyond the furrows. 2. H. Native of the south of Europe, where it is said to grow spontaneously in fields. It is said to be a native of England; but scarcely wild. Plenc. off. t. 50. Sowerb. engl. bot. 2080. Hayn. term. bot. t. 41. f. 8. Coult. dips. p. 22. D. sativus, Gmel. fl. bâd. 1. p. 314. D. fullém b, Lin. spec. p. 140. D. xyléstris ε, Coult. in litt. 1824. — Lob. icon. 3. p. 17. with a figure. Flowers whithish, with pale purple anthers. This and the three preceding have been combined by Coult.

Fullers’ Thistle or Teazle is called Chardon a joloulon in French, Kardwestel in German, and Cardenacho in Spanish; Dipsaco in Italian: is a biennial plant from 4 to 6 feet high, prickly and rough in the stem and leaves, and terminated by rough bur-like heads of flowers. It is cultivated in Essex and the West of England, for raising the nap upon woollen cloths, by means of the crooked palea upon the heads. For this purpose they are fixed round the circumference of a cylinder, which is made to turn round, and the cloth is held against them. There are no varieties of the cultivated Teazle, but the wild species is not
materially different, and may be used in its stead, though its chaff is not quite so rigid. The hay of the Teazle will grow the strongest are deep yellowish, clay, not over rich. The situation should be rather elevated, airy, and exposed to the south. In the rotation, it may occupy the place of a green and corn-crop, as the first year the plants are treated like turnips, and the second the crop is ripened. The soil should be ploughed deep, and well comminuted by cross ploughings or stirrings with pronged implements.

The sowing season is the beginning of April; the quantity of seed is from 1 to 2 pecks per acre, and in quality it should be fresh and plump. The mode of sowing is almost always broadcast, but no crop is better adapted for being grown in drills, as the plants require hoeing and thinning. The drills may be either sown on ridges or a flat surface, in the manner of turnips, or by ribbing. The distance between the rows may be from 18 inches to 2 feet. In Essex, carraway is commonly sown with the teazle crop, but this is reckoned a bad plan.

The after culture of this crop consists the first year in hoeing and stirring the soil, and in thinning out the plants to the distance of 1 foot every way, if sown broad-cast, or to the distance of 6 inches, if sown in rows. Vacancies may be filled up by transplanting; and a separate plantation may be made with the thinnings, but these never attain the same vigour as seedlings. The culture the second year consists also of hoeing, stirring, and weeding, till the plants begin to root. When the teazle is grown broad-cast, the intervals between the plants are dug by means of spades which have long narrow blades, about the length of 16 or 17 inches, and not more than about 4 inches in breadth. With these the soil is usually worked over in the intervals of the plants, three or four times during the summer months; and in the course of the following winter, as about the latter end of February, the land between the plants is to be again worked over by the narrow spades, care being taken that none of the mould falls into the hearts of the plants; and again, about the middle of May, when they begin to sprout, another digging over is given, the earth being raised round the root-stems of the plants, in order to support and prevent them from being blown down by the wind. Some cultivators perform more frequent diggings, that the ground may be rendered cleaner and more mellow; consequently the growth of the plants will be more effectually promoted. The business in Essex has usually the name of spuddling, and is executed with great despatch by labourers that are accustomed to the work.

The taking of the Teazle crop, when no regard is had for seed, commences about the middle of July, when the blossoms begin to fall from the heads. It is the best method to have the heads cut as they become ripe; but the work is usually executed at three different times, at the distance of ten days or a fortnight from each other. It is performed by means of a knife, contrived for the purpose, and a string attached to the hilt. This last is done in order that it may be hung over the land. A pair of strong gloves are also necessary. Thus prepared, the labourer cuts off the ripe heads along the rows or lines, with about 9 inches of stem, and ties them up in handsfull, with the stem of one that is more perfectly ripened. And on the morning of the day on which they are cut, they should be put into a dry shed; and when the weather is fine, and the air clear, they should be taken out and exposed to the sun daily, till they become perfectly dry. Much care must, however, be taken that no rain falls upon them. In doing this, some make use of long small stakes or poles, on which these handsfull are hung during the time of their preparation.

As soon as they are completely dried, they should be laid up in a dry room, in a close manner, till they are become tough, and of a bright colour, and ready for use. They should then be sorted or separated into three different kinds, by opening each of the small bundles. These are distinguished into kings, middlings, and scrubs, according to their different qualities. They are afterwards, the author of "The Somerset Report" says, made into packs, which, of the first sort, contain 9000 heads, but of the second, 20,000; the third is a sort of very inferior value. By some, before forming them into packs, they are done up into what are termed staves, by means of split sticks, when they are ready for sale.

The produce of Teazle varies from 10 to 15 packs per acre; nine packs of kings, nineteen of middlings, and two of scrubs, are reckoned a large crop, with a great bulk of haulm. Often, however, the crop fails.

The use of the heads of the Teazle has been already mentioned. Teazle is of no use but for burning as manure. Parkinson observes, that this is a sort of crop that may be grown to advantage on many lands; in rotation, as a fallow to prepare wheat; and by burning the straw and refuse stuff after the crop is reaped, it will be found not to impoverish, but rather to improve the land. In their young state, the teazle plants stand the winter without danger, and are a good crop for clearing land of all weeds, from their lateness in the process of hoeing, there being few weeds at so advanced a season; on all these accounts they become an advantageous crop for the farmer.

To save seed, leave a few of the very best plants uncropped, and then, when the seed is ripe, cut off only the largest and terminating heads, from which the seed is easily separated by beating with flails, and cleaned by a winnowing machine or a sieving operation.

The chief injury to which the Teazle is liable are those effected by the fly and slug in its infant state.

5 D. sinuatus (Wildl. miss. in Rem. et Schultes, syst. 3. p. 519.) leaves pinnatifidly sinuated: segments lacinially toothed.
G. H. Native of Persia, on the alps in the province of Gilan. Cogn. d. no. 22.

*Sinuated-leaved Teazle.* Pl. 3 to 4 feet.
6 D. efeux (Lois. fl. gall. p. 719. t. 3.) stem and leaves echinate from prickles; leaves connate at the base: radical ones sinuated: middle ones pinnatifid: upper ones entire; leaves of involucre spreading, a little longer than the heads, which are ovate; paleae subulate, straight, stiff; involucel drawn out beyond the furrows into a short membrane. G. H. Native of Siberia and Sardinia, on the edges of fields. Said to grow in plenty in Austria, Bohemia, and Moravia. Tratt. tab. 1. 235. D. C. fl. fr. suppl. p. 486. Cogn. d. p. 23. Flowers white or pale red. The central head of flowers is usually cylindrical, and the lateral ones roundish.

7 D. gralliini (Bieb. fl. taur. 1. p. 92.) stem prickly; leaves sessile: lower ones undivided or cut: superior ones pinnate-parted, with oblong acute segments; leaves of involucra deflexed, incurved, weak, shorter than the heads, which are ovate, or nearly globose; paleae membranous, acuminate unawned, straight; involucel drawn out beyond the furrows into a membranous crown. G. H. Native of Tauria, at Kuna, about the ruins of Maschar, but rare, ex Steeven; at the river Don, ex Goll.; and of Siberia, about the Irish, ex Gmel. sib. 2. p. 209.; and of the Kirghisian Steppe, between Buetskornmik and Lake Noor Shyrav, ex Led. fl. alt. 1. p. 127. Cogn. d. p. 22. D. laciniatus, Falck. top. beyt. 2. no. 140. Corollas blue.

8 D. stragádus (Wildl. miss. ex Rem. et Schultes, syst. 3. p. 520.) leaves toothed and entire, appendiculated: upper ones jagged at the base, ciliated; involucra twice the length of the paleae; paleae setaceous, twice the length of the flowers. G. H. 4 s 2

Strigosa Teazle. Pl. 3 to 4 feet.

9 D. pilosus (Lin. Hort. Ups. p. 25.) stem prickly, glabrous; prickles hair-formed under the head; leaves glabrous, petiolar, ovate, toothed, auricled at the top of the petioles; leaves of involuca deflexed, shorter than the heads, which are globose, but hardly exceeding the paleae, which are linear-subulate and pilose; involucel not drawn out beyond the furrows.  2. Native nearly throughout the whole of Europe, in woods and hedges; Caucasus, in Alpine places. In England, in moist shady places on a chalky or lime-stone soil. Oed. fl. dan. t. 1448. Jacq. fl. austr. t. 248. Smith, engl. bot. t. 577. Couth. dips. 23. Curt. Lond. t. 10. Cephalária appendiculata, Schrad. cat. sem. gett. 1814. Paleae ciliated. Corollas white. Antlers dark purple or brown.


10 D. strictus (D. Don, prod. fl. nep. 160.) stem unarmored, but beset with short retrograde hairs; leaves petiolar, lanceolate, acute, dentately serrated, beset with villi on both surfaces; leaves of involuca spreading deflexed, shorter than the heads, but hardly exceeding the paleae, which are oblong-elliptic, straight at the apex, ciliated, canescent; involucels hardly furrowed, crowned.  3. H. Native of Nipal. D. inermis, var. a. Wall. in fl. ind. 1. p. 367. Stem erect, branched, hexagonal. Flowers cream-coloured. According to D. Don, in fl. nep. the leaves are connate at the base. Heads of flowers spherical.

Straight Teazle. Fl. July, Cust. 1832. Pl. 4 to 5 feet.

11 D. inermis (Couth. dips. p. 23.) stem unarmed, downy, but having the branches hispid under the heads; leaves petiolar, ternate or somewhat pinnatifid, clothed with adpressed pili on both surfaces: lobes lanceolate, acuminate, serrated; leaves of involuca deflexed, shorter than the heads, which are globose, but exceeding the palea a little; paleae ovate, mucronate, ciliated at the apex; involucels hardly furrowed, crowned.  3. H. Native of Nipal, in Alpine places. D. inermis, var. b. Wall. in fl. ind. 1. p. 567. D. mitis, D. Don, prod. fl. nep. 161. Stem hexagonal, pilose, unarmed. Paleae about equal in length to the flowers. Corollas yellow.

Crowned Teazle. Fl. July, Cust. 2 to 3 feet.

12 D. apler (Wall. cat. no. 438. D. C. prod. 4. p. 646.) stem prickly; leaves undivided or pinnatifid, oblong-lanceolate, acuminate, serrated; scabrous on both surfaces from bristly hairs; leaves of involuca deflexed, shorter than the heads, which are globose, but exceeding the paleae, which are ovate, ciliated, and mucronate; involucels hardly furrowed.  3. H. Native of the East Indies, on the Pandua Mountains. Stem and branches angular; angles beset with stiff prickles.

Rough Teazle. Pl. 2 to 3 feet.

13 D. Leschenaultii (Couth. in litt. ex D. C. prod. 4. p. 647.) stem smooth, rather hairy; leaves lyrate-pinnatifid, very villous on both surfaces, acuminate, coarsely serrated at the apex; lower ones petiolar; lobes of leaves 3-nerved at the base; leaves of involuca spreading, shorter than the heads, which are globose, and hardly exceeding the paleae, which are oblong, acuminate and pilose; involuce drawn out a little into a membranous crown beyond the furrows.  3. H. Native of the East Indies, on the Nellighery Mountains, where it was collected by Leschenault and Noton. Scabiosa Brunoniána, Wall. cat. no. 429. The plant is called Dode Gueda by the natives. Stem 3 feet high, rather hairy, not prickly. Habit of Cephalária alpina.

Leschenault’s Teazle. Pl. 3 feet.

 Cult. None of the species are worth growing, except in botanic gardens. They will grow in any soil in which the seeds may be sown.


Ln. syst. Tetrantródia, Monogynia. Involuca surrounding the heads of many imbricated leaves (f. 116. a.), shorter than the paleae. Involucel tetragonous, rarely compressed, 8-furrowed, terminated by a 4-8-toothed crown. Linum of calyx rather cup-shaped or discoid. Corolla 4-cleft. Stamens ± (f. 116. d.). Stigma tetragonal, crowned by the limb of the calyx, inclosed within the involucel. — Perennial herbs. Leaves toothed or pinnatifid. Heads of flowers terminal, globose (f. 116. e.); paleae imbricated: outer ones sterile. Corollas white, cream-coloured, or lilac. — This genus is hardly distinct from Dipsacus, unless in the involuca being very short.

* Perennial plants. Paleae acuminate, downy.


Alpína Cephalária. Fl. June, Cust. 1570. Pl. 3 to 4 feet.


** Annual plants. Paleae membranous, arn at the apex.

3 C. Transylvánica (Schrad. l. c.) stems terete, rather pilose at the base; leaves pinnatifid: lower ones lyrate; lobes of the caulis leaves linear-oblong toothed: terminal lobes lanceolate, serrated a little; paleae glabrous, membranous, oblong, ending in a dark purple awn each; teeth of involuca 8, short, equal.  0. H. Native of the south of Europe, from Vasceny to Constantinople, in fields; and of Caucasus, on mountains near Grosnaja. Couth. dips. p. 24. t. 1.

Var. β, seminariâta (Coutt. in litt. 1824. ex D. C. prod. 4. p. 648.) alternate teeth of involucels awned, the rest as in the species.


*Joppa* Cephalaria. Pl. 1 to 3 feet.

5. C. Syriaca (Schrad. l. c.) stems more or less hirsute; leaves oblong-lanceolate, serrated; heads oval; palea broad at the base, membrane, ending each in a long awn; teeth of involu- cels 8, 4 of which are awned, and the other 4 very short; corollas equal. (O. H. Native from Spain to Persia, in fields and woods. Coutt. dpis. p. 23. t. r. 7. Scabiosa Syriaca, Spreng. 1. c.) There are hisp and glabrous varieties of this plant, with either serrated or nearly entire leaves. Flowers blue.


**Perennial plants. Outer palea alone blunt or bluntish.**


7. *C. centaurioides* (Coutt. dpis. p. 25. t. 1. f. 8.) stems terete; leaves pinnatifid: lobes oblong, quite entire, decurrent; heads nearly globose; palea awnless, whitish-yellow; outer ones obtuse; inner ones acuminate; teeth of involucel 4-8, or obsolette. (O. H. Native of the south of Europe, south of Siberia, and the Levant. The following are varieties of this plant, according to Couttler and Treveranus, in mag. nat. am. ber.

1815. Leaves glabrous, ciliated or villous: radical ones entire or very remotely pinnatifid; lobes narrow or ovate, straight or divaricate. Corollas equal or radiant, always yellow.


rigidus, Lag. Succisa rigida, Spreng. l. c.—Comm. hort. amst. t. 93. Shrubby, flowers white. Said to be allied to C. leucanthua. There are varieties of this with either glabrous or scabrous leaves. The upper leaves are cut, with revolute edges.


Var. β, menstrual (Roem. et Schultes, l. c. Coult. l. c.) leaves oblong, toothed, and somewhat pinnatifid at the base. Ό. G. Succisa verbenacea, Lam. ill. no. 1314.


† Species not sufficiently known.


Greek Cephalaria. Fl. 2 feet.


Humble Cephalaria. Fl. ¾ to 1 foot.


Ustulate-braacted Cephalaria. Fl. 1 to 2 feet.

14 C. Scabíaria (Roem. et Schultes, syst. 3. p. 44.) plant scabrous from hairs; leaves stiff, pinnatifid; lobes dentately cut; paleae ovate, obtuse, purplish at the apex; corollas equal. Ό. G. Native of the Cape of Good Hope, on hills. Coulf. dipls. p. 28. Scabiosa scábia, Thumb. fl. cap. 1. p. 529. Lepicéphalus scabíaria, Lag. Succisa scábia, Spreng. l. c. Heads about the size of fillers. Flowers white.


N. B. Scabiosa maríná, Lin. mant. p. 329. is distinct from Scabiosa maríná, Lin., and are probably referrible to the present genus, but are hardly known.

Cult. The hardy herbaceous kinds of Cephalária are of the most easy culture, and will grow in any kind of soil, and are readily increased by dividing at the root, or by seed. The seeds of the annual species only require to be sown in the open border. The green-house shrubby kinds should be grown in a mixture of loam, peat, and sand, and may be increased either by young cuttings under a hand-glass, or by seed.


Lin. syst. Tetrándria, Monogónía. Involuta of heads of many leaves. Paleae none. Receptacle hairy. Involute compressed, with 4 hollows closely girding the fruit, denticulated at the apex, having 2 of the teeth larger than the other 2, furnished with a short stipe. Limb of calyx cup-shaped, neither pappose nor awned at the apex. Corolla 4-5-cleft. Stamens 4.— Erect branched, usually villous herbs.


Eastern Knaútia. Fl. June, Sept. Clt. 1713. Pl. 1 to 1½ ft. 2 K. morphoáxica (Lin. spec. cd. 2. p. 1666. exclusive of Till. sym.) leaves serrated: superior ones lanceolate, quite entire; corollas 10, equal to the involucre; corolla of calyx 15 in number. Ό. H. Native of the Levant. Wildl. spec. p. 1 m. 561. exclusive of the sym. of Tourn. Roem. et Schultes, syst. 3. p. 87. exclusive of the Lam. syst. Coulf. dipls. p. 28. Scabiosa propótica, Lag. gen. et spec. p. 9. Plant villous. Corolla purple. Pistilla white; the corolla is said to be 4-5-cleft by Linnéus. This is a doubtful plant, and is perfectly unknown at the present day, as the plant known in our gardens under this name is K. orientalis.


Sect. II. Trichéroídes (this section contains plants having the habit of those of the next section). D. C. prod. 4. p. 650. Involute spreading, 10-12-leaved. Flowers few or many. Involute bidentate at the apex. Corollas rather irregular. Limb of calyx ciliated.—Annual herbs. Flowers bluish or rose-coloured.

3 K. Urvillei (Coulf. dipls. p. 29. t. 1. f. 10.) lower leaves pinnatifid; superior ones linear, quite entire; corollas 10-12 in each head, nearly equal, hardly longer than the involucre, which is spreading; teeth of crown of the involucre 8, a little curved. Ό. H. Native of the island of Lérin, in arid fields, where it was collected by D’Urvillé; and also of Bulgaria. K. orientalis, D’Urv. enum. p. 14. Plant villous? Stems branched, divaricate. Heads of flowers small. Corollas pale blue.

D’Urvillé’s Knaútia. Pl. 1 to 2 feet.

4 K. hybírida (Coulf. dipls. p. 30. and in litt. 1824.) lower leaves petiolar, lyrate; lobes ovate, toothed; terminal lobe the largest, ovate or roundish; caulis leaves oblong, simple, serrated; heads many-flowered; the 2 teeth of the involucre of many bristles; ciliate of calyx 20-24, obsolete. Ό. H. Native of the south of Europe. Scabiosa hybírida, All. auct. p. 9.


5 K. **Arvensis** (Coult. dits. p. 29. var. α, β, γ, t. 1. f. 13.) stems hispid; leaves sessile, villous; radii of corolla unequally pinnatifid, with lanceolate lobes: cauleine leaves pinnatifid, with linear lobes; uppermost leaves linear-lanceolate: leaves of involucre bluish. γ. H. Native of Europe, in meadows, pastures, and cultivated fields; plentiful in Britain. Duby, bot. gal. 1. p. 237. Scabiosa arvensis, Lin. spec. p. 142. Gaud. fl. helv. 1. p. 389. Scabiosa polyomorpha, Schmidt, bot. 3. p. 77. Trichèra arvensis, Schrad. Flowers bluish purple, and verging to white or purplish. Perhaps Scabiosa dubbìa, Mench. hass. no. 116. t. 3. which is said to have a 5-cleft corolla, is only a variety of this species. This plant may rather be considered a troublesome weed in corn-fields, but in grass-fields it may be considered rather useful, as it produces a large quantity of foliage, which is not refused by kine, sheep, or horses. The plant varies much in the divisions of the leaves, and in its hairiness. It sometimes occurs with white flowers. The flowers held over the smoke of tobacco in a few minutes become a beautiful green. The plant is slightly aromatic, bitter, and saponaceous. The root creeps deep in the ground.

**Var. a, vulgaris** (D. C. prod. 4. p. 651.) leaves downy: radical ones pinnatifid or entire; cauleine ones always pinnatifid. γ. H. Native of Europe, in corn-fields and meadows. Sowerby, engl. bot. t. 639. Curt. lond. 4. t. 13. Fl. dan. t. 447. —Blackw. t. 185. Flowers bluish, and varying from purple to white, outer ones more or less radiant.


**Var. γ, canescens** (Coult. l. c. var. β.) leaves canescent from hairs; lower ones ovate, acuminate, toothed; upper ones pinnatifid; outer flowers of the heads hardly radiant. β. H. Native country unknown. Scabiosa canescens, Hort. taur.

**Corn-field Knautia.** Fl. July, Qetr. Britain. Pl. 2 to 4 ft.


**Wood Knautia.** Fl. June, July. Ckt. 1633. Pl. 1 to 3 ft.


10 K. **Legionésnis** (D. C. prod. 4. p. 652.) stems hispid from retrograde hairs; leaves lanceolate, long-acuminated, remotely toothed: lower ones entire; leaves of involucre 18, exceeding the flowers. γ. H. Native of Spain, on the mountains of Leone. Scabiosa Legionénis, Lag. nov. gen. et spec. p. 9. Asteroéphalus Legionénis, Spræng. syst. 1. p. 379. Flowers red. There is a variety of this with pinnatifid leaves and white flowers. Said to be nearly allied to K. sytéctica.

**Leone Knautia.** Fl. June, July. Pl. 2 ft.

11 K. **Salcédi**; stem scabrous from hairs; leaves all undivided, lanceolate: lower ones entire; upper ones sharply toothed in the middle. γ. H. Native of Spain, on the mountains of Leone. Scabiosa Salcédì, Lagasca. Leaves downy on both surfaces, hoary beneath. Peduncles long, beset with rufous villi under the head of flowers. Involucre of many lanceolate pilose leaves, the length of the flowers, which are of a lilac colour.


Lin. syst. Tetrándria, Monogynía. Involucrum double, each series of 4-6 leaves. Heads many-flowered (f. 118. a.). Receptacles villous (f. 117. b.) or chaffy. Involucres toothed or awned (f. 117. a.). Limb of calyx ending in a many-rayed pappus (f. 117. c. f. 118. d.), which at length becomes feathery (f. 117. i. f. 118. j.). Corollas 5-eleft (f. 117. f. f. 118. c.). Stigmas 4 (f. 118. f), rarely 2-3.—Herbs or subshrubbs.

§ 1. Annual plants. Leaves pinnatifid, particularly the superior ones.


2 P. Barrius (Coult. dips. p. 32. t. 1. f. 16.) plant clothed with soft villi; stems herbaceous, erect; leaves pinnatifid; corollas hardly exceeding the involucrum; crown of involucres membranous, hardly denticate, very short, spreading; bristles of calyx 14-16, feathery, a little longer than the involucel. O. H. Native country unknown. Very nearly allied to the following.

Short-involucelled Pterocephalus. Pl. 1 foot.


4 P. Paleséntus (Coult. dips. p. 31. t. 1. f. 14.) plant clothed with silky villi; lower leaves obovate-oblong, quite entire, the rest lyrate pinnatifid; lower lobes small, decurrent; terminal lobe large, obovate-oblong; involucel having 8 foveola at the base; crown of involucres membranous; bristles of calyx 8-10, subulate, spreading, irregularly pilose at the sides. O. H. Native of the islands of Cyprus and Scio; and of Palestine. Knautiá Palestina, Lin. mant. 117.—Jacq. hort. vind. t. 1. 96. Scabiosa brahiáti and Scabiosa Stib-thorpiáná, Sibth. et Smith, fl. græc. t. 109. Flowers white or pale purple. The rays of the corollas in S. Stib-thorpiáná are entire, while in those of P. Paleséntus, they are jagged; they are, therefore, probably distinct species.


§ 2. Perennial or frutexseous species. Leaves jagged or toothed.

5 P. Lusitâ'nicus (D. C. prod. 4. p. 653.) stems ascending, sparingly pilose; lower leaves bipinnatifid; superior ones pinnatifid; segments of all linear; pale of the receptacle and leaves of involucrum scarious and hairy; involucres many-toothed; awns of calyx 6-9, feathery. O. H. Native of Portugal, between Abrantes and Casabranca. Scabiosa plumósa, Hoffm. et Link, fl. port. 2. p. 91. Cæphálária plumósa, Born. et Schultes, syst. 3. p. 70. Scabiosa Gramanttia, Broth. fl. las. 1. p. 145. Flowers pale red. Perhaps Asterocéphalus internálibus, Lag. gen. et spec. p. 8. which is the Scabiosa internálibus, Rém. et Schultes. 3. p. 76. is referable to this species, as also Scabiosa marítima and Sc. tennifóliá, Lag. leech. hort. madr. 1803. and 1805.


6 P. Broussonetí (Coult. in litt. 1824. ex D. C. prod. 4. p. 653.) leaves bipinnatifid; corollas equal; awns of calyx 6-7, linear, feathery, hardly twice the length of the involucel. O. H. Native of Gibraltar, about San Roque, where it was collected by Broussonet.

Broussonet's Pterocephalus. Pl. 1 foot.


Tomento's Pterocephalus. Pl. ½ foot.
§ 3. Perennial or frutaceous species, with entire leaves.

9 P. xv|v|e^us (Coulit. dips. p. 32.) leaves orbicular; cauleine ones obovate-spatulate, all quite entire, and are as well as the stems clothed with white tomentum; bristles of calyx 10-12, plunose, 3 times longer than the seed. 2. H. Native of Spain, on the top of Sierra Toixeda. Scabiosa nivea, Agardh, in Roem. et Schultes, syst. p. 3, 81. A very small plant.—According to Sprengel, it is the same as the following.

Smyii Pteroccephalus. Pl. 1 to 2 inches.


Spatulata-leaved Pteroccephalus. Pl. 1 to 1½ foot.

11 P. cau|c|tenus (Confl. in litt. 1824. ex D. C. prod. 4 p. 653.) leaves quite entire, obovate-oblong, hoary; peduncles scapose, bearing each one head of flowers; corollas 5-cleft; involucel lageniform, downy, without furrows; rays of calyx 20-25, plunose, linear, twice longer than the involucel; stigmas emarginate. 2. H. Native of the Levant, between Amadan and Kermancha, where it was collected by Olivier and Bruguiere. Scabiosa dumetorum var. from the Levant, Coulit. dips. p. 32.

Hoary Pteroccephalus. Pl. 1½ foot.

12 P. laso|s|os|te|re|mus (Lin. in Buch. canon. p. 150.) stem suffruticosum, with many branches; leaves on very short petioles, oblong-lanceolate, quite entire, crowned, white from short dense tomentum; involucels densely plunose. 2. G. Native of the Grand Canary island, near Trenite, and among rocks on the top of Pico Teid. Per. dumetorum var. pusilla, Coulit. dips. p. 32. Scabiosa fruticosa, Smith, miss.

Woolly-seeded Pteroccephalus. Shrubs small.

13 P. dum|et|o|re|m|us (Coulit. dips. p. 32. var. a.) stem suffruticosum, erect, bearing many heads of flowers; leaves petiolate, quite entire, oval, acuminated, attenuated at the base, smoothish on both surfaces; peduncles and involucels downy; rays of calyx 20-24, plunose, linear, hardly twice the length of the involucel. 2. G. Native of Teneriffe. Scabiosa dumetorum, Bruss. in Wildl. enum. p. 146. Trichéra dumetorum, Roem. et Schultes, syst. 3 p. 56. Leaves crowded at the tops of the branches.

Thicket Pteroccephalus. Shrubs small.

Cult. For culture and propagation see Cephalaria, p. 686.

VI. SCABIO'SA (from scabies, the itch; which disorder the common sort is said to cure). Roem. et Schultes, syst. 3 p. 2. Coulit. dips. p. 33. D. C. prod. 4 p. 654.—Asteroccephalus, Vol. III.
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cells elongated, equal in length to the linear foveole; crown of seed spreading, 24-nerved; limb of calyx pedunculate; bristles of calyx 3, equal in length to the crown. Y. H. Native of Provence, north of Italy, Carniola, Pannonia, Barbary, Switzerland, on the mountains. Coult. diss. p. 34. t. 2. f. 3. Waldst. et Kit. pl. rar. hort. 188. Lindl. bot. reg. t. 835. Asterocephalus granitifolius, Spreng. Flowers pale blue, very like those of S. Cauvética. The Swiss variety of this plant is much more mufled than from other countries, and seems different altogether.

Grass-leaved Scabious. Fl. June, Oct. Ch. 1863. Pl. 1 fl. 5 S. Prolifera (Lin. spec. p. 144.) stem herbaceous, dichotomous; leaves oblanceolate, almost entire, downy; heads almost sessile in the forks of the stem; corollas 5-cleft, radiate; involucres obconical, elongated at the base, equal to the foveole, which are obovate; crown of seed spreading, exceeding the base, 32-36-nerved; limb of calyx pedunculate, hardly equal in length to the bristles of the crown. O. H. Native of Cyprus, Egypt, and Barbary. Coult. diss. p. 31. f. 2. f. 6. Sibth. et Smith, fl. gracc. t. 107. Asterocephalus pro-
life, Spreng.—Herm. part. t. 125. Flowers pale yellow.

Proliferous-stemmed Scabious. Fl. July, Aug. Ch. 1866. Pl. 1 foot. 6 S. Stella'la (Lin. spec. p. 144.) stem branched; leaves cut or subulate; the terminal lobe obovate, toothed, large; heads on long peduncles; corollas radiant; base of involucres elongated, about equal in length to the foveole, which are also elongated; crown spreading, 40-nerved, twice the length of the base; limb of calyx pedunculate, having the bristles thickened on the disk, not exceeding the crown. O. H. Native in the region of the Mediterranean, in fields and arid places. Coult. diss. p. 34. t. 2. f. 5. D. C. fl. fr. no. 3312. Succisa stellata, Monch. meth. p. 490. Scabiosa rotata, Bieb. suppl. p. 102. ex Coult. Asterocephalus rotatus, Spreng. Bristles of calyx black. Flowers very pale blue, almost white.

Var. β. pinnatifida (D. C. prod. 4. p. 655.) leaves pinnatifid, with linear lobes. O. H. Native about Montpelier, in fields. S. stellata β et γ, Coult. diss. p. 31. S. simplex, Desf. fl. atl. 1. p. 125. t. 39. f. 1. ex Coult. Gertta. fruit. 2. p. 39. t. 86. There are varieties of this with branched stems, bearing many heads of flowers; and single stems, bearing only one head of flowers.

Starry-crowned Scabious. Fl. July, Aug. Ch. 1590. Pl. 1½ foot. 7 S. Montfiél'lie'sis (Jacq. misc. 2. p. 392. lorn. rar. 1. t. 24.) hairy; stem a little branched; leaves pinnate-parted; with toothed or cut oblong-linear lobes; heads on long peduncles; corollas nearly equal; base of involucres hardly elongated, equal to the linear open foveole; crown twice the length of the base, 32-35-nerved; limb of calyx pedunculate, with much exserted bristles. O. H. Native of Spain, Barbary, and the south of France, in exposed places. Coult. diss. p. 34. t. 2. f. 7. Asterocephalus stellatus, Spreng. Scabiosa simplex, D. C. fl. fr. no. 3313. Desf. fl. atl. 1. p. 125. t. 39. f. 1. Flowers purple. Montpelier Scabious. Fl. July, Aug. Ch. 1820. Pl. 1 to 2 fl. 8 S. Palestina (Lin. mant. p. 37.) stem dichotomously branched; leaves obvate-oblong, coarsely toothed, tapering into the petioles, pinnatifid at the base; heads on long peduncles; corollas radiant; base of involucres hardly elongated, equal to the foveole, which are linear and elongated; crown spreading, twice longer than the base or more, 32-35-nerved; limb of calyx on a long peduncle; bristles shorter than the crown. O. H. Native about Aleppo, and in Palestine. Jacq. hort. vind. 1. t. 96. S. Válílitli, Coult. diss. p. 35. t. 2. f. 6. exclusive of the country. Asterocephalus Palestinus, Spreng. Flowers white or pale red; segments jagged.

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Palestine Scabious. Fl. July, Aug. Ch. 1771. Pl. 1 foot. 9 S. Ale'ype'a (Coult. diss. p. 35. t. 2. f. 8.) stem branched; leaves pinnate-lobed: lobes oblong-linear, quite entire; heads of flowers pedunculate; corollas radiant; base of involucres hardly elongated, equal in length to the linear foveole; crown spreading, 3 times longer than its base, 20-24-nerved; limb of calyx on a long peduncle; bristles shorter than the crown. O. H. Native of the Levant, between Bagdad and Aleppo, where it was collected by Olivier and Bruniere. Stems humble, silvery, villous. Peduncles smoothish.


Var. β. umbelíllata (Coult. 1. c. var. β.) flowers pedicellate, within the involucrum. Y. H. Native about Venice. Morìland, fl. ven. 1. p. 84.


Ukrain Scabious. Fl. Sept. Ch. 1795. Pl. 1 foot. 11 S. mirántha (Desf. ann. mus. 11. t. 25. choix. t. 40.) stem branched; leaves hairy; lower ones liryatly pinnate, with oblong or linear lobes; lower leaves oblong or lanceo-

Small-flowered Scabious. Fl. June, July. Ch. 1825. Pl. 1 to 2 feet. 12 S. Olivie'nt (Coult. diss. p. 36. t. 2. f. 10.) stem much branched, dichotomous; leaves linear-oblong, villous, entire or auricled; heads small, pedunculate, few-flowered; base of involucres hemispherical, equal to the obovate foveole; crown entire, spreading, 20-24-nerved, hardly exceeding its base; limb of calyx almost sessile, with much exserted bristles.—Na-
tive of the Levant, between Bagdad and Kermancha, where it was collected by Olivier and Bruniere. Stem glabrous, white. Herb very slender. Flowers white.
Oliver's Scabiosa. Pl. 1 to 2 feet. 13 S. iset es (Lin. mast. p. 37.) stem much branched; leaves pubescent: lower ones bipinnate-parted; superior ones pinnate-parted; segments of all oblong-linear; heads and peduncles clothed with white tomentum; corollas radiant; base of involucres elongated, villous; crown erect, 16-20-nerved, one-half shorter than the bristles. 24. H. Native of Siberia, in stony dry places, about Isetsk, and at Cape Caucasus; in the Kirghisean steppes, between the mountains Ku and Karkaraly, and at the Don. Coulit. dops. p. 34. Biieh. suppl. p. 100. S. rupéstris, Biieh. fl. taur. p. 95. S. rupéstris and Isetiésis, Renn el Schultes, syst. 3. p. 64. 83. Asterocéphalus setiésis, Spreng. Schélerostéma Isetiiésis, Schott. ms. —Gmel. sib. 2. p. 214. no. 7. t. 88. Flowers white.


14 S. crena'ata (Cyt. pl. rar. neap. l. p. 11. t. 3.) stems suffrutescent at the base, ascending; leaves smoothish, bipinnatifid: lobes entire or tridentate; heads on long peduncles; corollas radiant, created: base of involucel equal to the oblong fo- veole; crown subdentate, 16-20-nerved; limb of calyx sessile; bristles twice longer than the crown. 2. By. H. Native of Calabria, on calcareous mountains; and of Greece. Coulit. dops. p. 26. Asterocéphalus créniatus, Spreng. S. coro- nópòfóia, Sibth. et Smith, fl. grace. t. 114. S. crenaåta and S. coronópòfóia, Renn. el Schultes, syst. 3. p. 71 and 86. —Col. phyt. 2. f. 31. There are elongated and dwarf varieties of this plant. —Corollas flesh-coloured or pale-red.

Tar. By, hir'sïta (Guss. prod. 1. p. 102.) leaves hairy; bristles of calyx 3 times longer than the crown. 2. or 9. Native of Sicily, on the mountains. —Corollas hirsuta, Bid. mant. 3. p. 6.


Lyrate-leaved Scabious. Pl. 1 foot.

17 S. acútifòra (Reich. pl. crit. 4. p. 24. t. 326.) stem branched: lower leaves spatulate, and linearly pinnatifid, serrated: superior ones pinnate-parted, with oblong-linear entire lobes; heads of fruit ovate; corollas 5-cleft, radiant, with the outer lobes acuminate; crown a little longer than the tube; bristles of calyx 5, exserted. 2. By. H. Native of the south of Europe. —Involucels spongy at the edges. Flowers pale, peach-coloured. Allied to S. Ucránica.

Acute-flowered Scabious. Pl. 1 foot.


18 S. atropûr'púrea (Linn. spec. p. 144.) stem branched: radical leaves lanceolate-ovate, lyrate, coarsely toothed; cauleine leaves pinnate-parted, with oblong, toothed or cut lobes; heads ovate while bearing the fruit; corollas radiant, a little longer than the involucella. 2. By. H. Cultivated in gardens. Said to be spontaneous in India, but Roxburgh contradicts this assertion. Said also to be a native of Sicily, but according to Schouw it has been introduced there. S. atropûr'púrea a and 9. Coulit. dops. p. 37. t. 2. f. 11. Curt. bot. mag. t. 247. Scuca atropûr'púrea, Mönch. Schélerostéma, Schott. Asterocéphalus atropûr'púrea, Spreng. Sc. calypso-céps, St. Am. fl. agen. p. 61. —There is a prolific headed variety of this species (Mor- oxon. sect. 6. t. 14. f. 27.) The flowers are very sweet- scented. There is a great variety in their colour, some being of a purple, approaching to black, others of a pale purple, some red, some white, and others variegated. It varies also in the leaves, some being more finely cut than others.


19 S. setiifera (Lam. ill. no. 1321.) stem branched, downy; lower leaves ovate-spatulate, created or cut, rather villous; superior ones pinnate, with linear-lanceolate obtuse segments, the terminal segment the largest; corollas radiant, much longer than the involucrens. 2. H. Native of the south of France, about Marseilles. S. atropûr'púrea 9 setiifera, D. C. prod. 4. p. 657. Asterocéphalus setiifera, Spreng. Corollas lilac. Bristles of calyx 5, black.

Bristle-bearing Scabious. Pl. 2 feet.

20 S. grandifòra (Scop. del. ins. 3. p. 29. t. 11.) stem branched, downy; leaves rather villous; radical ones oblong, created; cauleine ones pinnatifid, with lanceolate linear spreading segments; corollas amply radiant. 2. By. H. Native of Bar- bary, Italy, and Sicily, in fields. Desf. atl. 1. p. 123. S. arvensis, Udria, but not of Lin. Columbária vulgaris, Presl. S. atropûr'púrea 9 grandifòra, D. C. prod. 4. p. 657. Corollas cream-coloured or white, with reddish tubes. —Bristles of calyx 5, reddish brown.


21 S. marí'tima (Linn. amon. 4. p. 304.) stem branched; radical leaves pinnatifid, with toothed lobes; middle cauline ones pinnatifid, with linear entire lobes; uppermost ones linear and quite entire; fructiferous heads globose; involucrens twice shorter than the radiant flowers. 2. or 9. H. Native of the south of France, Corsica, Italy, and Sicily, in arid places by the sea side. —D. C. fl. fr. suppl. no. 5309 a. S. Cupani, Guss. prod. 1. p. 160. S. angulata, Raîm. car. p. 81. S. atropûr'púrea var. Coulit. Stem villous. Flowers lilac, rose-coloured or white.


Carrot-like Scabious. Pl. 1 to 2 feet.

23 S. ambigüa (Ten. fl. neap. append. 5. 1826. p. 77.) plant glabrous; leaves fleshy, shining, crenated; radical leaves ob- ovate: cauleine leaves lyrate or pinnatifid, with oblong remote entire lobes; heads few-flowered, radiant; tube of corolla very long; corolla spongy, involute. 2. H. Native of the king- dom of Naples, at Paeta del Fresno, in corn-fields by the sea side. —Flowers purple or blue.

Ambiguous Scabious. Pl. 1 to 2 feet.

24 S. cornu-coél (Vivian. add. fl. lin. in fl. lyb. p. 67.) plant hairy; radical leaves elliptic, toothed; cauleine ones pinnate: flowers 5-cleft, pedicellate within the involucel; involucels trid; seed triaristate. —Native of Liguria, in the valley of
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Andora, and Sicily. Perhaps a prolific variety of S. grandiflora, Guss. or S. atropurpurea.

Horn-of-Plenty Scabious. Pl. 2 feet. 225 S. integrata (Hoffm. et Link, fl. port. 2. p. 88.) lower leaves oblong, entire; inferior ones lyrate; upper ones pinnatifid or wanting; corollas 5-cleft, radiant. 2 h. Native of Portugal. Said to be allied to S. Columbária and S. grandiflora.

Entire-leaved Scabious. Pl. 2 feet.

* Species belonging to the present tribe of the genus, but are not sufficiently known.

26 S. limonifolia (Vahl, symb. 2. p. 27.) stem shrubby; radical leaves coriaceous, obovate, quite entire, glabrous, and green above, but reticulated and clothed with hoary tomentum beneath; calyces leaves ciliate at the base; corolla equal, 6-cleft; crown scarious, plicate, denticulated at the apex, broad, extended; limb of calyx sessile; bristles of calyx 4-5, exerted. 2 h. Native of Sicily, among the mountains on calcareous rocks. Guss. prod. p. 164. Coult. dips. p. 42. Astrocerophalus limonifolius, Spreng.—Cup. pamp. 2. t. 247. Lower leaves like those of Sittice Limonium. Corolla blue. Limonium-leaved Scabious. Shrub.

27 S. saxatile (Cav. icon. 2. p. 68. t. 184.) stem herbageous, glabrous; leaves lanceolate, quite entire, green above, tomentose beneath; calyx leaves very few, ciliate at the base; corolla equal, 4-5-cleft; crown white, ciliate; bristles of calyx 5, purple. 2 h. Native of Spain, in the fissures of rocks, in Valencia. Coult. dips. p. 42. Astrocerophalus saxatilis, Spreng. Corollas white; anthers violaceous. Very like S. succisa.


28 S. nitens (Roent. et Schultes, syst. 3. p. 82.) stem herbageous; leaves undivided, elliptic, serrated, shining, petiolate; corollas radiant, 5-cleft. 2 H. Native of the Azores. S. lucida, Att. hort. kew. ed. 1. vol. 2. p. 229, but not of Vill. Astrocerophalus lucidus, Spreng.


Sect. III. Succisa (from succido, to cut down; on account of the prennose root of the first species). Coult. dips. p. 37. D. C.prod. 4. p. 657, but not of others. Base of involucels not distinguishable from the tube; having the foveoate engraven from the base to the crown. Crown spreading, short, membranous. Limb of calyx sessile, with 5 bristles, of which some are sometimes abortive and sometimes all.

* Corollas 5-cleft.


30 S. Fiscaei (D. C. prod. 4. p. 658.) stem branched, smooth; leaves all pinnate, almost glabrous, with linear acute entire lobes; heads of involucel unequal in length to the corollas, which are 5-cleft and radiant; crown of the involucel, which is somewhat cylindrical, membranous, and 3 times shorter than the tube; bristles of sessile calyx pale, twice the length of the crown. 2 h. Native of Dahuria. It was sent to Gay from Fischer under the name of S. Dakhiriaca. Perhaps the same as S. comosa, Roent. et Schultes. syst. 3. p. 84., in which the corollas are said to be large, showy, and violaceous, and in this bluish-purple. Fischer’s Scabious. Pl. 2 feet.

31 S. semipapposa (Salzm. pl. exsic. 1825. ex D. C. prod. 4. p. 658.) plant hairy, rather canescent; stem herbaceous; lower leaves ovate, coarsely toothed, petiolar; superior ones pinnatifid, with oblong-linear, acute, subdentate lobes; heads of flowers pedunculate; leaves of involucelum linear-subulate, ciliated, at length reflexed; corolla radiate; heads ovate; lower fruit of the heads without bristles: the rest furnished each with 6 long exerted bristles.—About Tangers and Mogador. S. atropurpurea γ, coronar erecta, Coult. dips. p. 37.

Semi-pappose Scabious. Pl. 1 to 2 feet.

32 S. lucida (Vill. dauph. 3. p. 293.) plant glabrous; stems usually 1-flowered; leaves shining; radical ones ovate-lanceolate, crenate, ciliate. Calyces pinnatifid, with linear acute lobes in involucelum. The involucelum is rather bluish-green, crown 20-24-nerved, 3 times shorter than the tube; bristles of calyx 5, black, equal in length to the flowers, but 5 times longer than the crown. 2 h. Native of France, in alpine places, Savoy, Switzerland, Austria, Syria, and Croatia, D. C. fl. fr. 4. p. 228. Rchb. pl. crit. 4. t. 381. S. stricta, W bild. et Kit. pl. rar. hung. 2. t. 138. S. Nórica, Vest. bot. zeit. 1805. no. 5. Wahl. fl. carp. p. 39. S. Columbária α, Coult. dips. p. 38, exclusive of the two synonyms. Astrocerophalus strictus, Spreng. Corollas pale blue, or of a pale violaceous colour. In the wild plant the stems usually bear only one head of flowers. This plant, with several of the following, are combined under the name of S. polymorpha, by Wibel, and by Coultier under that of S. Columbária.


33 S. ame'na (Jacq. fil. eclog. 1. p. 86. t. 59.) stem branched, rather hairy at the base; radical leaves obovate, toothed or lyrate, rather hairy; calyces leaves pinnatifid, with lanceolate-acute nearly entire lobes; peduncules elongated, beset with retrograde villi under the heads; corolla radiant; crown 20-nerved, 3 times shorter than the tube; bristles of calyx 5, of a rich brown colour, 4 times longer than the crown. 2 h. Native of Russia. S. nitida, Berth. ex Roent. ex Schultes, syst. 3. p. 68. S. longipedunculata, Fisch. et Jaq. S. Columbária a, Coult. dips. p. 38. Astrocerophalus ame'na, Spreng. Flowers lilac or rose-coloured. There are varieties of this having the involucel either longer or shorter than the flowers. Planting Scabious. Fl. June, July. Ch. 1829. Pl. 2 to 3 feet.

34 S. angustifolia (Hoffm. verz. 1826. p. 206.) stem quite glabrous; leaves downy: radical ones petiolate, oblong, toothed: lower ones lyrately pinnatifid, serrately cut: superior ones ovate, somewhat lyrateally twice bipinnate, with linear lobes; peduncles scabrous from retrograde hairs at the apex; leaves of involucel linear, terminated each by a hair. 2 h. Native country unknown. Said to be allied to S. ame'na.

Narrow-leaved Scabious. Pl. 1 to 2 feet.

35 S. ochroleuca (Lin. spec. p. 146.) stem branched, rather hairy; radical leaves lyrately pinnatifid, downy on both surfaces; these ones pinate-parted, with flat linear lobes; peduncules elongated, rather hairy; crown 20-nerved, one-half shorter than the tube; bristles of calyx 5, 3 times longer than the crown. 2 h. Native of Europe, Caucasus, and Si-


36 S. Scovit (Link, enum. hort. berol. 1. p. 128. but not of Vis.) stem clothed with retrograde hairs above; leaves hairy: radical ones oblong, crenate; lower cauline leaves pinnaatifid; superior ones pinnaatifid; lobes linear, cut; leaves of involucrum linear, clothed with adpressed hairs. 2. H. Native of the south of Europe. Corollas cream-coloured. According to Link, this species comes nearest to *S. ochroleucata*, but according to Coulter, to *S. Banketiana*.


37 S. reversa (Ledeb. ined. sem. hort. dorp. suppl. 1821. p. 6.) radical leaves obovate, obtuse, crenate, clothed with spreading down; cauline leaves pinnate, with deeply cut segments; peduncles setet with retrograde hairs; involucre exceeding the corollas, which are rather radiant and 5-cleft. 2. H. Native country unknown. Said to be nearly allied to *S. grandiflora* and *S. Scopolii*.

*Reverse-haired Scabious.* Pl. 1 to 2 feet.

38 S. Pauciflora (D. C. prod. 4. p. 658.) stem branched, hairy at the base; radical leaves lyrately-pinnaatifid, hairy, having the terminal lobe ovate and coarsely toothed; cauline leaves pinnate-parted, with narrow lobes; flowers radiant; heads of fruit globose; crown 20-nerved, 3 times shorter than the fruit; bristles of calyx usually only one, rarely 2-3, black, 3 times longer than the crown. 2. H. Native of Italy, in fields about Pisa, Carrara, Sarzana, &c. S. unisecta, Savi. fl. pis. p. 167. f. 2. f. 6. S. Grammitica, var. Seb. et Maur. fl. rom. p. 76. S. tenuifolia, var. Savii, bot. etrus. 122. S. Columbia, var. Poll. Coul. Flowers violaceous. Perhaps the same as S. Saviiana, Rchb. hort. bot. t. 1. t. 52. but in that plant the bristles of the calyx are 5, and the heads ovate.

*Pinn-bristled Scabious.* Pl. 1 to 2 feet.

39 S. Columbia (Lin. spec. 143.) stem branched, smoothish; radical leaves ovate, obuse, peltate, crenated, membranous, clothed with tomentum on both surfaces; cauline leaves smoothish, pinnate-parted, with flat linear segments; peduncles elongated, usually trihrid, downy; corollas radiate; heads of fruit ovate-globose; crown 20-nerved, one-half shorter than the tube; bristles of calyx 5, twice longer than the crown. 2. H. Native of Europe, Canaean, and Siberia, very common; in England plentiful on chalky soils. Coul. pis. p. 39. var. et. Smith, engl. bot. t. 1311. Rchb. pl. crit. 4. t. 355. Savi. fl. pis. 1. p. 165. f. 2. f. fl. dan. t. 314. Asterocéphalus Columbia, Wallr. sched. crit. 48. Flowers purple or violaceous. This is a very polymorphous plant.

*Var. β, Columnae* (D. C. prod. 4. p. 659.) leaves villous; lobes of cauline leaves wedge-shaped, cut; bristles of fruit 3-5, deciduous. 2. H. Native about Naples, in fields. S. Columnae, Ten. fl. nep. 1. p. 29. t. 7.

*Var. γ, commutata* (D. C. I. c.) stem glabrous; leaves smoothish; radical ones on long petioles, deeply serrated or pinnatifid; cauline leaves pinnate, with linear lobes. 2. H. Native of Siberia. S. commutata, Rom. et Schultes, syst. 3. p. 65. Corollas deep blue, radiate.


40 S. Baxatica (Waldst. et Kit. hang. 1. t. 12.) stem branched, setet with reflexed white hairs at the base and at the joints; radical leaves lyrate, hairy; cauline ones somewhat bipinnate, with linear ciliated segments, which are each terminated by a white hair; involucre equal in length to the corollas; seeds furnished with 8 pilose ribs; bristles of calyx 5, long, black. 2. H. Native of Hungary, on rocks. S. diversifolia, Baum. emend. herb. trans. 1. p. 79. S. Columbia? / Banketica, D. C. prod. 4. p. 659. Asterocéphalus Banketianus, Spreng. Receptacles of heads columnar, Corollas pale red or cream-coloured, with red rays. Anters pale red.


41 S. Grumusita (Waldst. et Kt. pl. rar. hong. 3. t. 201.) stem terete, purplish at the joints, glaucous, hairy at the base; radical leaves entire and somewhat lyrate; cauline ones tripinicate and pinnate, with linear segments; peduncles hairy at top; corollas radiate; leaves of involucrum linear, downy; seeds crowned by a membrane, which at length ends in 5 teeth; angles of seeds downy. 2. H. Native of Hungary and Croatia, in dry fields. S. Columbia, var. Bieb. fl. torn. 1. p. 96. S. Columbia, Ten. prod. fl. rare. 12. fl. neap. 1. p. 29. t. 7. S. Columbia? grumusita, D. C. prod. 4. p. 659. Asterocéphalus grumusita, Spreng. Corollas pale lilac. Heads on long peduncles; hence the plant is sometimes to be found in gardens under the name of *S. longipedunculata*.


42 S. Grammitica (Lin. spec. 145.) stem rather hairy; peduncles setet with retrograde hairs under the heads; radical leaves pinnaatifid, with obtuse distant segments; cauline ones bipinnate, with linear segments; leaves of involucrum linear, acute, short; bristles of calyx 5, dark brown; corollas radiant, sometimes 4-cleft. 2. H. Native of the middle and west of France, the north of Africa, and the Pyrenees. S. triandra. Lin. spec. p. 98. S. Columbia, var. Grammitica, D. C. fl. fr. no. 3305. Asterocéphalus Grammiticus, Spreng. var. graculis, Rom. et Schultes, syst. 3. p. 104. — Gerard. herb. 584. f. 2. Leaves cinnereous from villi. Corollas lilac or red.


43 S. Ceratophylla (Tenor. prod. fl. neap. p. 12. fl. neap. 1. p. 31. t. 8.) stem fustinular, villous; radical leaves lyrate, cre- nated; cauline ones pinnaatifid, with linear falcate segments; leaves of involucrum equal in length to the flowers; bristles of calyx 5. 2. H. Native of Abruzzo, in forests. S. pilosa, Lag. Flowers red or lilac.


44 S. Hispantica (Willd. in Rom. et Schultes, syst. 3. p. 521.) leaves pinnate-parted: the terminal lobe lanceolate, and a little toothed; corollas 5-cleft, radiant, longer than the involucrum. 2. H. Native of Spain. According to Coulter, this is hardly distinct from *S. Columbia.*

*Spanish Scabious.* Pl. 1 to 2 feet.

45 S. Coronopollia (Willd. herb. but not of fl. græc.) radical leaves lanceolate-spatulate, sharply toothed, or pinnately jagged: cauline ones pinnate-parted, with divericate linear lobes; corollas 5-cleft, radiant. 2. H. Native of Siberia. S. ceratophylla, Rom. et Schultes, syst. 3. p. 521. but not of Tenore. The rest unknown.

*Coronopus-leaved Scabious.* Pl. 1 to 2 feet.

46 S. Heraclea (Willd. in Rom. et Schultes, syst. 3. p. 521.) lower leaves bipinnatifid: superior ones pinnate-lobe; corollas 5-cleft, radiant. —Native at the Straits of Gauliflava. The rest unknown.

*Heraclea Scabious.* Pl. 1 to 2 feet.

47 S. Incana (Rom. et Schultes, syst. 3. p. 521. and 67.) stem villous; leaves hoary, pinnate-parted, with linear ciliated
lobes; corollas 5-cleft, radiate.—Native of Tauria. S. Ucrâ-
Hardly distinct from S. columbâria, or S. suaveolens. Radical
leaves quite entire and lyrate, ciliated; leaves of involucrum ob-
tuse. Corollas radiant, violaceous. Pappus 5-awned.

**Hoary Scabious.** Pl. 8 to 2 feet.

48 S. KIEZSÁNTA (Viv. fl. lib. spec. p. 6. t. 3. f. a. b.) radical
leaves elliptic; cauline ones pinnate-lobel; lobes all linear;
central peduncle rising from the root, bearing one head; the
rest rising from the tops of the branches; leaves of involucrum
5, linear; corollas 5-cleft, radiant; bristles of calyx 5. ☼ H. Native
of Cyrenaica, on the mountains.

**Root-flowed Scabious.** Pl. 1 to 2 feet.

49 S. Hladnikiana (Host, fl. austr. 1. p. 195.) stem
straight, branched, downy; leaves hispid; lower ones obovate,
crenated: upper ones pinnate-parted; lobes jagged; leaves of
involucrum linear; corollas 3-cleft, radiant; bristles of calyx 5,
dark purple. ☼ H. Native of Carniola, on the mountains.

**Hladnik's Scabious.** Pl. 1 to 2 feet.

50 S. reutelis (Host, fl. austr. 1. p. 195. but not of the Thumb.)
stem branched, glabrous, ascending; lower leaves oblong, cren-
ated or jagged; superior ones pinnate-parted; lobes jagged;
peduncles beset with reflexed hairs; leaves of involucrum linear-
subulate; corollas 5-cleft, radiant; bristles of calyx 5. ☼ H. Native
of the Alps of Austria, about Genova. Corollas white,
suffused with purple. Rehb. pl. crit. 5. p. 30.

**Humble Scabious.** Pl. $\frac{1}{2}$ foot.

51 S. NEGLÉCTA (Horn. hort. fl. 1. p. 127.) leaves all lyr-
ate or pinnatifid; peduncles very long; leaves of involucrum
exceeding the corollas, which are 5-cleft and radiant. ☼ H. Native
of Italy. Flowers red or lilac. The plant we have in the
gardens under this name appears to be nothing but S. Gra-
maniaca.

**Neglected Scabious.** Pl. June, July. Ct. 1825. Pl. 1 to
2 feet.

55 S. LACNICA (Licht, in Rem. et Schultes, syst. 3. p. 87.)
plant downy; stem dichotomous; lower leaves obovate-oblong,
unequally and bluntly serrated; superior ones pinnatifid; lobes
cut, acute; corollas 5-cleft, radiate.—Native of the Cape of
Good Hope. Leaves of involucrum downy, linear, acute, and
sometimes bised, one-half shorter than the corollas, which are
pale violet.

**Jagged-leaved Scabious.** Pl. 1 to 2 feet.

53 S. Pyreneâca (All. ped. 1. p. 140. t. 25. f. 2. and 26. f.
1.) the whole plant clothed with cinerous tomentum; stem a
little branched, few-flowered; radical leaves oblong, crenated;
upper cauline ones bipinnatifid; lobes linear, quite entire; cor-
ollas radiate; leaves of involucrum lanceolate; crown 3 times
shorter than the tube, 20-nerved; bristles of calyx 5, 4 times
longer than the crown. ☼ H. Native of the south of Europe,
on the lower mountains and hills; and of Caucasus, on the Ta-
busch Mountains, in dry fields. Durb. bot. gall. p. 236. S.
columbâria, var. Coul. dups. p. 38. exclusive of the synonymes.
Corollas frequently reddish purple, but most often of a bluish
purple.

**Var. a. cinerea** (D. C. prod. 4. p. 659.) plant clothed with
hairy down. ☼ H. Native of the Pyrenees. S. cinerea, Lam.
ill. no. 2510. S. maritima, Vill. dauph. 2. p. 225. S. Pyre-

**Var. b. mollissima** (D. C. l. c.) plant clothed with hoary to-
mentose velvety down. ☼ H. Native from Nice to Sarzana.
S. mollissima, Visiani, ann. 2. p. 161. Asterocephalus mollis-
simus, Spreng. S. laxilífera, Link. enum. 1. p. 128. The plant
in the gardens, under the name of S. mollissima, has white
flowers.

**VI. SCABIOSA.**

Var. γ, tomentosa (D. C. l. c.) lower leaves lyrately pinnatifid,
obtuse: superior ones divided into linear acute lobes. ☼ H.
Native of Spain, in the kingdom of Valencia. S. tomentosa,
Cav. icon. 2. t. 183. Asterocephalus tomentosum, Spreng. Cor-
ollas pale violaceous.


54 S. holoserîcea (Berol. dec. 3. p. 49.) plant clothed with
soft hoary tomentose velvety down; lower leaves lanceolate,
crenated; superior ones pinnatifid; with lanceolate acute
entire lobes; leaves of involucrum linear; corollas radiant;
crown 20-nerved, 3 times shorter than the tube, which is hairy;
bristles of calyx 5, black, twice longer than the crown. ☼ H.
Native of the Apennines, Abruzzo, Dalmatia, and the Pyrenees.
Leaves sometimes all simple. Corollas bluish purple.


55 S. WEBBIANA (Don, in bot. reg. t. 717.) plant clothed
with soft silky hoary tomentum; lower leaves petiolate, obovate,
crenated: superior ones pinnatifid, with ovate or oblong entire
lobes; leaves on long peduncles; corollas nearly equal; crown
4 times longer than the tube; bristles of calyx 5, black. ☼ H.
Native of Phrygia, on the top of Mount Ida. Asterocephalus
Webbianus, Spreng. Flowers cream-coloured.

**Webb's Scabious.** Fl. July. Ct. 1818. Pl. $\frac{1}{2}$ foot.

56 S. mollis (Willd. enum. suppl. p. 7.) lower leaves supra-
decomposed: superior ones bipinnate-parted; lobes of all very
slender and filiform, smoothish, except the margins, which are
rather pilose; peduncles very long, scabrous; involucrum equal
to the corollas, which are 5-cleft and radiant; crown spreading;
bristles of calyx 3-5, short. ☼ H. Native country unknown.
Rehb. pl. crit. 4. t. 333. S. capillata, Rem. et Schultes, syst.
3. p. 64. Lower leaves lyrate, soft, tomentose, ex Link. enum.
1. p. 128. Flowers pale violaceous, ex Willd. Perhaps only a
variety of S. colombâria or S. Pyrenacâcia.

**Saff Scabious.** Fl. June, July. Ct. 1820. Pl. 2 to 3 ft.

57 S. pemilla (Poir. dict. 6. p. 723.) plant hispid from grey
pili; stem short, almost simple; radical leaves lyrate or pinna-
tifid, with obtuse toothed lobes: cauline leaves pinnate-parted,
with linear acute lobes, which are sometimes trifid at the apex;
leaves of involucrum lanceolate, villous, shorter than the corollas,
which are 3-cleft and radiant; bristles of calyx 5, black, nearly
equal in length to the corollas. ☼ G. Native of the Cape of
Good Hope. Asterocephalus pimilus, Spreng. S. acuillls, Lin.
1351. Corollas cream-coloured or nearly white. Plant very hairy.

**Dwarf Scabious.** Pl. $\frac{1}{2}$ foot.

58 S. suaveolens (Desf. cat. hort. par. p. 110.) rather canescent from short down; stems straight; radical leaves ob-
long, attenuated at the base, quite entire; cauline ones pinnate-
parted, with linear-thickish quite entire lobes, smoothish;
heads of fruit ovate; flowers radiant; tube of involucel cylindrical;
crown very short, 16-nerved; bristles 5, spreading, hardly ex-
serted. ☼ H. Native of France, Germany, Sweden, Hungary,
&c. on the higher hills. D. C. fl. fr. no. 3307. Coul.
S. média, Ger. hist. p. 720. Corollas of a bluish lilac colour,
having a scent like O'richs nigra.

Pl. 1 to $\frac{1}{2}$ foot.

59 S. dichôtoma (Ucria, pl. lin. add. 249. Willd. enum. 1.
114.) smoothish; stem dichotomous; heads almost sessile at
the sides, globose; leaves oblong, entire; radical ones petiolate
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and toothed: cauine ones almost sessile, quite entire; corollas equal; tube of involucre nearly cylindrical; crown 20-24-nerved, one-half shorter than the tube; bristles of calyx spreading, very short, inclosed.  C. H.  Native of Mauritania, Sicily, &c.  Coulter, ibid. 9.  t. 2.  f. 15.  Guss.  prod. 1.  p. 168.

Asterocéphalus dichotomus, Lag.  gen.  et  spec.  S. parviflora, Desf.  fl.  atl.  p. 1.  p. 119.  Lower leaves sometimes lyrate or jagged.  Corollas 5-cleft, and flesh-coloured; but by some authors they are said to be 4-cleft.


** Corollas 4-cleft.

61  S.  succisa  (Linn.  spec.  142.)  root prænorous, or appearing as if it was bitten off at the end; radical leaves ovate-lanceolate, acuminate at both ends; cauine leaves conuate, almost entire; heads of flowers pedunculate; leaves of involucrum disposed in 2-3 series; corollas equal; tube of involucre 4-sided; crown very short, undulated; bristles of calyx short, a little exerted, convivuent.  2.  H.  Native of Europe even to Caucaucus, very common in hogs and moist meadows and pastures; plentiful in Britain.  Fl. dan.  t. 279.  Smith, engl.  bot.  t. 878.  Curt.  lond.  t. 10.  Couth.  ibid.  p. 39.  t. 2.  f. 17.  D.  C.  fl.  f. 4.  p. 226.  Blackw.  t. 142.  Asterocéphalus succisa, Wallr.  sched.  l.  p. 52.  Succisa praténensis, Ménch.  meth.  p. 459.  The lower stem leaves are toothed, but the upper ones are entire.  Involute hairy.  Flowers violet or dark purplish blue, varying to flesh-coloured and milk-white.  The leaves are sometimes gashed according to Haller, and the heads of flowers are sometimes proliferate.  In cultivation the plant becomes more branched than in the wild state.  In days of superstition it was bailed that the Devil, envying the good this herb might do to mankind, binway to part of the root; hence the plant is commonly called Devil's-bit.  This appearance of a stamped root is not peculiar to  S.  succisa, but is observed in some species of Plantago, and many other herbs. According to Bergen the root is astringent, and the infusion of it bitterish, but not unpleasant.  A strong decoction of it, kept a while, was formerly an empirical secret for gonorrhœa.  Linnaeus says that the dried leaves are used to dye wool yellow or green.

Var.  a.  hirsuta  (Wallr.  sched.  l. c.)  stem, peduncles, and both sides of leaves hairy.  2.  H.  This is the British variety.  Succisa hirsuta, C.  Bauh.  pin.  p. 269.


62  S.  australis (Wulf.  in  Rom.  arch.  l. c.  p. 216.)  plant smoothish; leaves ovate, elongated, acuminate, almost quite entire; lowermost ones somewhat auriculated at the petioles; heads ovate; leaves of involucrum disposed in two series; corollas equal; tube of involucre lageniform; crown obsolete; bristles of calyx approximately.  2.  H.  Native of Upper Italy, Syria, and Pannonia, in marshy parts of woods, and by the sides of rivulets.  Coulter, ibid.  p. 46.  t. 2.  f. 18.  Rechb.  fl. crit.  t. 325.  S.  repens, Brög.  Fl. Jul. 19.  Nocc.  et  Balbi.  fl.  ticin.  68.  t. 2.  S.  pseudaustralis, Rom.  et  Schultes, syst.  5.  p. 60.  Roots creeping tufted.  Corollas of a bluish violet or purple colour, but Wulffen says they are yellow; there are, therefore, 2 plants probably confused under this name, or only mere variations in the colour of the flowers.

Southern Devil's-bit.  Fl. June, Aug.  Clt. 1820.  Pl. 1 ft. 63  S. tenuifólia  (Linnaea.  vol.  8.)  bristles of pappus twice longer than the denticulated calyx; corollas downy, equal, shorter than the involucrum; heads ovate; stem erect, branched; cauine leaves pinnate, with linear, acute, quite entire, elongated segments.  2.  H.  Native country unknown. Said to be nearly allied to  S.  australis.


†  Species not sufficiently known.

§ 1.  Leaves entire or serrated.

64  S.?  amplexicaulis  (Linn.  mant.  p. 155.)  stem herbaceous, brachiate; leaves stem-clasping, lanceolate, quite entire; radical ones trifid; corollas radiant, 4-cleft.—Native country unknown.  Succisa amplexicaulis, Spreng.  Said to be nearly allied to  S.  integrifólia.  Lin.  Corollas bluish.  According to Couter, it is probably a species of  Kaualtia.

Var.  a.  lyra (Rom.  et  Schultes, syst.  3.  p. 62.)  lower leaves lyrate, obtuse, crasped; superior ones lanceolate, sessile.  2.  H.  Native of France.  S.  lyra, Lam.  illl.  no. 1310.  Flowers pale red.

Stem-clasping-leaved Scabious.  Pl. 1 foot.

65  S.?  cochinchenensis  (Lour.  cochr.  p. 68.)  stem quite simple, nearly naked; leaves lanceolate, undivided, undulated; radical leaves quite entire; involucrum 3-leaved; corollas 5-cleft; pappus pilose.—Native of China and Cochinchina.  Asterocéphalus cochinchenensis, Spreng.  Flowers purple.  Corollas 5-cleft, nearly equal.  Bristles of calyx 5.

Cochin-china Scabious.  Pl. 1 foot.

§ 2.  Leaves lyrate or pinnate-lobed.

* Corollas 4-cleft.

66  S.?  dahurica  (Willd.  in  Rom.  et  Schultes, syst.  3.  p. 521.)  leaves pinnate-parted, tomentose; lobes pinnatifidly jagged; stem tomentose; corollas 4-cleft, radiate.—Native of Dahuria.  Couth.  ibid.  p. 41.  There is another plant under this name by Fischer, cultivated in the gardens.

Dahurian Scabious.  Pl. 1 foot.

67  S.  mira (Willd.  in  Rom.  et  Schultes, syst.  3.  p. 251.)  leaves all pinnate, and are as well as the stem hairy; lobes or segments linear-lanceolate, acute; corollas 4-cleft, radiate.—Native of Siberia.  Couth.  ibid.  p. 41.  The rest unknown.

Hairy Scabious.  Pl. 1 to 2 feet.

* Corollas 5-cleft.

68  S.  styriaca  (Vest, in  flora.  1821.  p. 146.)  plant clothed with fine hairs; stem much branched, many-flowered; leaves all pinnate-parted; lobes pinnatifidly jagged; stem tomentose; corollas 5-cleft, radiate, outer lobes acute; crown quite entire; bristles of calyx wanting.—Native of Styria.

Styrian Scabious.  Pl. 1 to 2 feet.

Cult.  Many of the species of this genus are very ornamental, and are well fitted for decorating flower-borders.  The perennial herbaceous kinds are easily increased by seed, or dividing at the root.  The seeds of annual kinds only require to be sown...
in the open ground. The shrubby species are increased by cuttings under a hand-glass, or by seed. The species most worthly of cultivation are *S. Caucasia*, *S. grandiflora*, *S. atropurpurea*, *S. grandiflora*, and many others.


Calyx of 5 unequal segments. Corolla regular, funnel-shaped, with a long slender tube, and 5-3-nerved segments; glandular spaces or areoles below the stamens, and alternate with them. Stamens 5, monadelphous; anthers combined by their lower half. Ovarium inferior, 1-celled. Style smooth, elevate in the upper part; stigma capitate, undivided. Fruit or achenœ indehiscent, crowned by the rigid spiny segments of the calyx. Seed solitary, inverted, sessile. Embryo in the axis of fleshy albumen, slender. —Herbaceous plants, with alternate leaves without stipules. Flowers collected into heads, which are either terminal or opposite the leaves, surrounded by an involucrum, and bearing bracteas among the flowers. Flowers sessile, hermaphrodite or neuter. This is a very small tribe of plants, differing from *Compositae* in their albuminous pendulous ovulum, and half distinct anthers; and from *Dipsaceae* in their filaments being monadelphous, and their combined anthers.

**Synopsis of the genera.**

1. **Calyceera.** Crown of fruit in some long horned, and in others short and scaly.

2. **Boopis.** Limb of corolla not contracted, campauulate. Fruit crowned by the segments of the calyx, which are stiff and membranous, but acute and spinescent at the apex.

3. **Acicarpa.** Lower flowers of the heads fertile: superior ones numerous and sterile. Tube of anthers undivided. Fruit combined into a globose echaned head.

**I. CALYCERA (from *calyx*, a calyx, and *keras*, a horn; the crown of the fruit is a long horn).** Cav. icon. 4, p. 34. t. 58. Juss. ann. mss. 2, p. 350. Pers. ench. 2, p. 500. Cassini, dict. 5, suppl. p. 28.

**Lin. syst. Syngeaësia, Necessaria.** Involutum 5-parted. Flowers fertile, dissimilar, and promiscuous. Segments of the calyx in some long and horn-formed, and in others short and scale-formed. Limb of calyx contracted a little below the lobes. Tube of stamens inserted a little below the contraction of the corolla, divided at the top.—Herbaceous plants with sub-pinnatifid leaves and terminal heads of flowers.


**II. BOOPIS (from *boeo*, hons, an ox, and *oep*, ops, an appearance; the flowers have some resemblance to the eye of an ox).** Juss. ann. mss. 2, p. 350, t. 58. f. 2. Pers. syn. 2, p. 500. C. Cassini, dict. 5, suppl. p. 28. Rich. mem. mss. 6, p. 87. **Lin. syst. Syngeaësia, Necessaria.** Involutum 7-8-echl. Flowers fertile, nearly alike. Segments of calyx shorter than the ovaria, membranous, some entire, and some deeply toothed. Limb of corolla without any contraction, campauulate, half divided. Column of stamens inserted at the base of the limb of the corolla; tops of filaments distinct.—Many stemmed branched herbs, with pectinately pinnatifid leaves, and terminal heads of flowers.


2. **B. Alpea** (Poep. coll. 2, no. 823. ex Cham. et Schlecht. in Linneæ. 6, p. 258.) leaves oblong-ovobate, fleshy, entire, or furnished with a tooth on one or on both sides, quite glabrous. **H.** Native of Chili. Root woody. Stem erect, simple, only leafy at the base. Corolla yellowish. Involutum 12-toothed. *Alpine Boopis*. Pl. 2 to 3 inches.


**Cult.** The seeds only require to be sown in a warm sheltered situation in the open ground.

**III. ACICARPHA (from *akos*, akis, a point, and *karpos*, carphos, chaff; in reference to the segments of the calyx being spiny).** Juss. ann. mss. 2, p. 347. t. 58. f. 1. Pers. ench. 2, p. 488. Cassini, dict. 1, suppl. 32. Rich. ann. mss. 6, p. 77. pl. 11-12.—Cryptocarpha. Cassini, dict. 12, p. 85. **Lin. syst. Syngeaësia, Necessaria.** Involutum 4-5-parted: outer ones adnate to the ovaria. Lower flowers of heads fertile. Superior ones much more numerous and sterile, with the ovaria of all combined. Segments of the calyx for the most part ending in acicular spines. Limb of corolla funnel-shaped. Column of stamens inserted beneath the attenuated part of the limb of the corolla, undivided to the top of the anthers. Bases of connectives knob-formed.—Herbaceous plants, with toothed or entire leaves, and terminal and lateral heads of flowers.

1. **A. Tribuloides** (Juss. l. c.) plant erect, glabrous; leaves oblong, cuticate-ovobale, obtuse, with broad teeth; style much exserted. **H.** Native of Buenos Ayres, where it was collected by Commerson. Cryptocarpha tribuloides, Cassini, dict. 12, p. 85. *Caltrop-like Acicarpha*. Pl. ½ to ¾ foot.

2. **A. Spatulata** (Br. comp. 29. Richard, mem. mss. 6, p. 78, pl. 12.) procumbent, glabrous; leaves spatulate, tapering a long way at the base, decuticulated and entire at the apex, and mucronate; style a little exserted. **H.** Native of Brazil, where it was collected by Sello. Cryptocarpha spatulata. Cassini, dict. 12, p. 85. *Spatulate-leaved Acicarpha*. Cht. 1824. Pl. proc.

3. **A. ? Lanata** (Lag. in Pers. ench. 2, p. 488.) stem woolly; leaves linear, glabrous, having a tooth on one side, and some-

Woolly-stemmed Aecicarpia. Pl. prostrate.

Cult. Being annual plants, the seeds only require to be sown in the open ground in a warm sheltered situation.

N. B. Cevallia sinuata (Lag. gen. et spec. p. 11. with a figure,) appears to be allied to the present order, but the characters of the plant are not sufficiently known.


Lobelia superior, 5-toothed, or 5-parted, seldom entire, with the tube adnate to the ovarium at the base. Corolla monopetalous, irregular, inserted in the calyx, 5-lobed, or deeply 5-cleft. Stamens 5, inserted into the calyx alternately with the lobes of the corolla; anthers cohering; pollen oval. Ovarium inferior, with from 1 to 3 cells, but usually of 2 cells. Ovula very numerous, attached to the axis or parieties of the fruit. Style simple; stigma usually 2-lobed, surrounded by a cup-like fringe. Fruit capsular or bacate, 1-2-celled, rarely 3-celled, many seeded, dehiscing at the apex. Seeds attached to the axis or parieties of the fruit. Embryo straight, in the axis of fleshy albumen, with the radicle pointing to the hylum.—Herbaceous plants or shrubs. Leaves alternate, exstipulate. Flowers axillary or terminal, of various colours.

This order appears more nearly related to Compósitæ than to Campanulacæae, in their cohering anthers, and in the irregularity of the corolla; the stigma is surrounded by hairs, which are probably analogous to the indusium of Goodeniææ, to which order Lobeliaceæ approaches very closely. It participates in all the affinities of Campanulacæae.

The plants contained in this order are all dangerous or suspicious, in consequence of the acridity of their milk. Tupá Feuillei yields a dangerous poison in Chili. The most active article of the Materia Medica of North America is said to be Lobéla inflata; it is possessed of an emetic, sudorific, and powerful expectorant effect, especially the first. When given with a view to empty the stomach, it operates vehemently and speedily, producing, however, great relaxation, debility, and perspiration, and even death, if given in over-doses. Barton, 1. p. 189. The antisiphilitic virtues ascribed to Lobéla spinghiæ are supposed to have resided in its diuretic properties; they are, however, generally discredited altogether. Barton, 2. p. 211. Hippóbrōma longiflōra, a native of some of the West India Islands, is one of the most venomous of plants. The Spanish Americans call it Rebentia Cavellés, because it proves fatal to horses that eat it; it acts as a violent cathartic, the effects of which no remedy can assuage, and which ends in death. The leaves are an active vesicatory. Lobéla cardinális is an acrid plant, which is reckoned anthelmintic. Barton, 2. p. 180. All the plants contained in this order are very ornamental, and therefore well deserving the care of the gardener. The flowers are very showy blue, white, red, scarlet, but seldom yellow.

Synopsis of the genera.

1 Clermontea. Calyx tubular, 5-cleft. Corolla arching, 5-cleft, almost regular. Stamens with united filaments and cohering anthers; the two lower anthers bearded. Stigma 2-lobed, girded by hairs. Capsule bacate, naked at the apex, indehiscent, 2-celled, many-seeded.

2 Rolla'ndia. Calyx 5-parted. Corolla compressed at the sides, with an undivided tube, and a 5-parted, somewhat bilabiate limb. Staminous column adnate to the superior part of the corolla. Anthers cohering, two lower ones bearded. Stigma pilose. Capsule bacate, crowned by the calyx, 2-celled, many-seeded, indehiscent.

3 Cya'nea. Calyx 10-surfaced, with oblong, foliaceous, curved segments. Corolla tubular, arching, with a 5-parted, somewhat bilabiate limb. Stamens, combined filaments, and cohering bearded anthers. Stigma capitate ciliated. Capsule bacate, 10-surfaced, indehiscent, crowned by the limb of the calyx, 2-celled, many-seeded.


5 Pra'nia. Limb of calyx 5-toothed (f. 119 a.). Corolla cleft on the back, even to the base, and therefore the limb is 5-parted, unilateral, or all on the lower side (f. 119 b.). Stamens combined above and the anthers cohering; the two lower anthers mucronate (f. 119 d.). Stigma 2-lobed. Capsule bacate, crowned.

6 Tu'pa. Calyx spherical, 5-parted. Corolla cleft on the back almost to the base, having the limb divided into 5 segments, which are all united at their tips. Stamens combined almost to the base; anthers cohering, bearded. Stigma 2-lobed, protruding. Capsule 2-celled, many-seeded.

7 Siphoca'mpylus. Limb of calyx 5-parted (f. 120 d.). Corolla with a curved undivided tube, which is ventricose in the middle, and a 5-parted bilabiate limb (f. 120 b.). Stamens and anthers combined; anthers bearded. Capsule 2-celled, 2-valved, dehiscent.

8 Lobélia. Limb of calyx 5-parted (f. 121 a.). Corolla with the tube cleft on the upper side, and thickened at the base, and a bilabiate limb (f. 121 g.). Anthers cohering; 2 lower ones usually bearded. Capsule 2-celled, 2-valved, dehiscent at the apex.

9 Dortma'nnia. Limb of calyx 5-parted. Corolla with the tube cleft on the upper side, and a bilabiate limb, and a bearded throat. Stamens with free filaments, and cohering bearded anthers. Stigma capitate, hairy. Capsule half superior, 3-celled, 3-valved, dehiscent, many-seeded, surrounded by the calycine segments below the apex.

10 Parastra'nlthus. Limb of calyx 5-cleft. Corolla
with hardly any tube, and a bilabiate, 5-parted, reversed limb. Column of stamens under the lower lip. Filaments and anthers combined; the latter bearded. Stigma bifid or trifid. Capsule crowned by the segments of the calyx, 2-celled, many-seeded.

11 Isòtoma. Limb of calyx 5-parted (f. 122. a.). Corolla salver-shaped (f. 122. d.), or funnel-shaped, with an entire or cleft tube, and a 5-parted, nearly regular limb (f. 122. d.). Filaments combined; anthers cohering, beardless; the two lower ones mononate. Stigma capitate, protruding. Capsule 2-celled, many-seeded, dehiscent.


13 Lysimònia. Limb of calyx 5-parted. Corolla with an entire tube, and a 5-parted sub-bilabiate limb. Anthers cohering; the 2 lower ones bearded, or terminating in a membranous process. Stigma 2-lobed, ciliated. Capsule 1-celled, opening by an operculum at the apex, many-seeded.

14 Monòris. Calyx tubular, 5-cleft. Corolla salver-shaped, with a terete tube, which is cleft on one side, allowing the stamens to escape, and a regular rotate limb. Anthers cohering. Capsule 2-celled, many-seeded, dehiscent.


16 Clintonà. Limb of calyx 5-cleft. Corolla bilabiate, with hardly any tube. Anthers cohering; the 2 superior ones bearded. Capsule siliqué-formed, triangular, dehiscing by 3 loriform valves, many seeded. Seeds attached to two parietal placentas.

17 Cýphia. Limb of calyx 5-cleft. Corolla bilabiate, 5-parted; the segments easily separated to the base. Stamens with combined hairy filaments, and free anthers. Stigma hollow, gibbous, bearded. Capsule 2-celled, many-seeded, dehiscent.

18 Campánèthus. Calyx hemispherical, with a 5-parted limb. Corolla tonguens e outside, campanulate, regular, 5-parted at the apex. Stamens with free filaments, and combined anthers. Capsule unknown.


Lin. syst. Pentádria, Monogyguna. Calyx tubular, arched, 5-cleft, coloured, length of corolla, cadaceous. Corolla tubular, arched, 5-cleft, almost regular. Stamens 5, one of which falls off along with the corolla, with combined filaments and cohering anthers; the 2 lower anthers bearded. Stigma 2-lobed, girded by pili. Capsule baccate, 2-celled, naked at the apex, indehiscent; cells many-seeded.—Shrubby or arborescent lacerent plants. Leaves alternate, entire. Flowers racemose, axillary, bracteate, showy, white, or of a rose-violet colour, blue.

1 C. oblongifolia (Gaud. l. c. t. 71.) leaves on very long petioles, oblong, acute, crenated; calyx 5-parted. G. Native of the Sandwich Islands.

Oblong-leaved Clermontea. Shrub.

2 C. persicifolia (Gaud. l. c. t. 72.) leaves oblong-lanceolate, acute, crenated; calyx 5-parted. G. Native of the Sandwich Islands. Lobélia Clermontiana, Gaud. mss.

Peach-leaved Clermontea. Shrub.

3 C. grandiflóra (Gaud. l. c. t. 73.) leaves obvate-oblong, rather acuminate, deuto-crenated; flowers large; calyx 5-parted. G. Native of the Sandwich Islands. Lobélia grandiflora, Gaud. mss.

Great-flowered Clermontea. Shrub. Cult. All the species of this genus bear ornamental blossoms, and are therefore worth cultivating in every collection of greenhouse plants. A mixture of loam, sand, and peat is the best soil for them; and they will be easily increased by cuttings planted in the same kind of soil, under a glass-house, in a little bottom heat.

II. Rolländia (named after R. M. Rolland, gunner of the expedition under Freycinet, who rendered great services to ornithology). Gaud. in Freyc. voy. pt. bot. p. 458.

Lin. syst. Pentádria, Monogyguna. Calyx closely adhering to the ovarium; limb free, 5-parted, with short obstate segments. Corolla tubular, with the sides compressed; tube curved, undivided; limb 5-parted, somewhat bilabiate; segments narrow, Stamens 5. Staminal tube adnate at the bottom to the superior part of the tube of the corolla. Anthers cohering, two lower ones bearded. Stigma 2-lobed, girded by hairs. Capsule baccate, indehiscent, 2-celled, crowned by the permanent calyx; cells many-seeded.—Lacerent shrubs. Leaves alternate, exstipulate. Peduncles axillary, few-flowered. Pedicels unbractate at the base. Flowers white.

1 R. lançolátia (Gaud. l. c. t. 74.) shrub branched; leaves large, oblong-lanceolate, doubly toothed, hairy beneath; calyx 5-parted, glabrous, with ovate obtuse segments; racemes few-flowered; stamens epipetalous. G. Native of the Sandwich Islands. Lobélia Rollandiana, Gaud. mss. Lobélia lanceolata, Hook. et Arn. in Beech, voy. pt. bot. p. 88.

Lanceolate-leaved Rollandia. Shrub.

2 R. críspà (Gaud. l. c. p. 459.) shrub branched; leaves large, oblong, tapering much to the base, sharply toothed, glabrous, with unduly curled margins; calyx 5-parted, downy, with ovate obtuse segments; stamens epipetalous. G. Native of the Sandwich Islands. Lobélia críspà, Gaud. mss.

Curlèd-leaved Rollandia. Shrub.

3 R. ? pinatidifía; leaves oblong-lanceolate, acute at both ends, running into the short petioles, remotely pinnatifid, sinuately and doubly toothed; flat and glabrous above, reticulately veined beneath and rather hairy; teeth short, and are as well as the lobes obtuse and callously mucronate; racemes axillary; calyx and corolla hairy; ovarium obconical, crowned by the auriculated, ovate, obtuse, calycine segments. G. Native of Owahu, on the mountains. Lobélia pinatidifád, Cham. in Linnæa. 7. p. 221. Leaves like those of a species of Sóntchus. Pedicels arising from a flabby peduncle, and furnished with scale-formed bracteas. Corollas 2 lines long, deciduous. Stem branched. Perhaps a species of Cýphia.

Pinnatifíd-leaved Rollandia. Shrub.

4 R.? ? anúkà; leaves oblong-lanceolate, acute at both ends, sinuately and doubly toothed, flat and glabrous above, and hairy beneath and fuscescent; teeth callously mucronate; racemes axillary; ovarium obconical, smooth; calycine segments ovate, obtuse, mucronate, rather hairy; corolla hairy, especially on the nerves. G. Native of Owahu. Lobélia ambigüa, Cham. in Linnæa. 7. p. 221. Stem simple? Corolla deciduous.
LOBELIACEA. III. CYANEÁ. IV. DELISSEA. V. PRATIA.

Ambiguous Rollandia. Shrub. 
5 R. calycina; leaves oblong-lanceolate, acute at both ends, unequally and erose-crenated, flat and pilose above, and reticulately veined, fuscous and hairy beneath; calyx glabrous, with oblong, bluntish, 1-nerved segments; ovary olive-formed, crowned by the erect calycine teeth; limb of corolla hairy; tube of anthers hairy about the base and along the furrows. L. G. Native of Oahu. Lobélia calycina, Cham. in Linnaea, 7, p. 222. Corella deciduous. Large-calyced Rollandia. Shrub. Cult. See Clermontea, p. 698, for culture and propagation.

III. CYANEÁ (from cyanos, kyaneos, blue; colour of flowers). Gaud. in Freyc. voy. pt. bot. p. 457. Lin. syst. Peniandria, Monogynia. Calyx adhering to the ovary, 10-furrowed, longer than the limb, which is folioaceous and 5-parted; segments oblong, with reflexed undulately curved margins. Corella tubular, cylindrical, arched; limb 5-parted, somewhat bilabiature. Stamens 5, with combined filaments, and cohering bearded anthers. Stigma capitate, simple, ciliated with hairs. Capsule bacate, 10-furrowed, indehiscent, 2-celled, crowned by the permanent calyx; cells many-seeded. 

IV. DELISSEA (named after A. M. Delisse, a physician from the Isle of France, and naturalist to the French expedition under D'Entrecasteaux, to the South Seas—from 1800 to 1804). Gaud. in Freyc. voy. pt. bot. p. 457. Lin. syst. Peniandria, Monogynia. Calyx closely adnate to the ovary; limb free, 5-toothed, permanent. Corella tubular, arched, deciduous; tube cylindrical, undivided; limb 5-parted, somewhat bilabiature; segments narrow. Stamens 5, with connate filaments, and cohering anthers; the two lower ones bearded. Stigma 2-lobed, girded by hairs. Capsule bacate, crowned by the permanent calyx, 2-celled, indehiscent; cells many-seeded. Shrubby laetecent plants. Leaves scattered, exstipulate, entire. Flowers racemose, axillary, pale red, or white or red; pedicels immurbacate at the base. 
1 D. SUBCORDATA (Gaud. l. c. p. 457. t. 77.) branched; leaves ovate, sharply toothed, glabrous. L. G. Native of the Sandwich Islands. Lobélia subcordata, Gaud. miss. Subcordate-leaved Delissea. Shrub. 
2 D. UNDULATA (Gaud. l. c. t. 78.) stem simple; leaves oblong, sharply and coarsely toothed, glabrous, with undulated margins. L. G. Native of the Sandwich Islands. Lobélia undulata, Gaud. miss. Undulated-leaved Delissea. Shrub. 
4 D. ANGUSTIFOLIA (Cham. in Linnaea. 7. p. 219.) glabrous; leaves on long petioles, narrow-lanceolate, flat, acute, bluntly serrated; calyx at first 5-toothed; teeth minute, ciliated, but afterwards toothless, with undulated edges; corolla smooth, without papilla. L. G. Native of Oahu. Stem quite simple. Pedicels axillary at the top of the stem, forming a corymb. Filaments eliatus. Lobes of stigma pilose on the back. Narrow-leaved Delissea. Shrub. Cult. For culture and propagation see Clermontea, p. 698.

V. PRATIA (named in memory of M. Prat-Bernon, of the French navy, who accompanied Freycinet, but died a few days after the expedition sailed). Gaud. in Freyc. voy. pt. bot. p. 456. — Lobélia species of authors. Lin. syst. Peniandria, Monogynia. Calyx adnate to the ovary; limb free, 5-toothed (f. 119. a.). Corolla funnel-shaped, cleft on the back, even to the base; limb 5-parted, spreading, unilabiature (f. 119. b.). Stamens 5, with the filaments combined into the tube above, and the anthers cohering; the two lower anthers mucronate (f. 119. d.). Stigma 2-lobed. Capsule covered by the fleshy calyx, 2-celled (f. 119 c.), indehiscent; cells many-seeded. Small herbs. Stems filiform, branched. Leaves thickish. Flowers axillary, solitary, pedunculate, rarely corysthode, of a pale violet colour; peduncules bracteolate. 
1 P. REPENS (Gaud. in Freyc. voy. p. 456. t. 79.) glabrous; stems creeping; leaves petiolate, rather reniform, undulately suberinated. L. F. Native of the Falkland Islands. Lobélia Pratiana, Gaud. miss. Flowers bluish-violet (f. 119.). Creeping Pratia. Pl. creeping. 
3 P. CORYMBOSA; glabrous; stems weak, angular, branched; superior leaves linear-spatulate; lower ones roundish, running into the petioles: all deeply serrated; flowers disposed in dense pedunculate corymbes; L. G. Native of the Cape of Good Hope. Lobélia corymbosa, Hook. in bot. mag. t. 2639. Flowers pure white, richly dotted with purple, capitate. Filaments and anthers combined; the latter bluish purple. Stigma capitate, surrounded by a circle of hairs. Corymbose-flowered Pratia. Fl. June, July. Clt. 1824. Pl. decumbent. 
4 P. HEDERA'CEA (Cham. in Linnaea. 7. p. 212.) glabrous; stems filiform, creeping; leaves on short petioles, obovate, crestedly toothed. L. F. Native of Brazil, on the banks of the Uruguay, along with Hydrocotyle pusilla, and other parts of Brazil. Corolla bluish, villous inside. Filaments ciliate inside. Pedicels exceeding the leaves. Igly-like Pratia. Pl. creeping. 
VI. TUPA. VII. SIPHOCAMPYLYS.


Cavanilles’s Tupa. Shrub 2½ to 3 ft.

6 T. secunda: leaves elliptic-lanceolate, wrinkled when dried, denticulate, with rather revolute edges; racemes terminal, short; pedicels rising from the axils of the upper leaves or bracteas, which are small and linear; column of stamens much exerted; two upper anthers bearded. \( \ddagger \). G. Native of Peru. Lobelia secunda. Ruiz et Pav. in herb. Lamb. Leaves de-nse. Segments of calyx membranes.

Second-flowered Tupa. Shrub.

7 T. ovata: leaves ovate, slightly and distantly denticulate on the edges, wrinkled when dried; raceme long, terminal, dense, second; column of stamens much exerted; anthers bearded on the lower side. \( \ddagger \). G. Native of Peru. (v. s. in herb. Lamb.).

Ovate-leaved Tupa. Pl.

8 T. obovata: leaves obovate, obtuse, clothed with rusty tomentum beneath, slightly denticulate; peduncles axillary, 1-flowered, longer than the leaves; calyx spherical; corolla rather short. \( \ddagger \). F. Native of Peru. Lobelia incana. Ruiz et Pav. in herb. Lamb. Leaves wrinkled when dried. Flowers purple or red. Anthers all bearded. Obovate-leaved Tupa. Pl. 2 to 3 feet?

9 T. Polyphylla: leaves ovate-lanceolate, mucronate, sharply serrate, quite glabrous; racemes terminal leafy; tube of corolla not much longer than the calyx; two lower anthers bearded. \( \ddagger \). F. Native of Chili, on hills about Valparaiso. Lobelia polyphylla. Hook. et Arn. in Beech. voy. pt. bot. p. 23. Pedicels filiform, about the length of the bracteas. Corolla hardly an inch long, downy, dark purple.


Cult. The species of Tupa are deserving of cultivation in every collection, on account of the beauty and singularity of their flowers. They are generally raised from seed imported from the places of their natural growth; and when the plants are of a sufficient size, they are planted out into the open border in front of a south wall, where they flower in great perfection. In winter they may either be protected with the boughs of herbs, or be taken up and potted, and placed in a greenhouse or frame till the spring, when they should again be planted out.

VII. SIPHOCAMPYLYS (from σίφος, siphôn, a tube, and καμπύλος, siphampus, a curve; in reference to the curved tube of the corolla). Pohl, pl. bras. 2. p. 104.—Lobelia species of authors.

Lin. syst. Tetradria, Monogynia. Calyx adnate to the ovary; limb 5-parted (f. 120, d.), having the segments shorter than the tube of the corolla. Corolla irregular, tubular (f. 120, a.); tube entire, dilated, rather ventricose in the middle, and rather coarctate at the base; limb 5-parted, bilabiate (f. 120, b.); upper lip of 2 straight or spreading segments; the 2 lateral segments of the lower lip diverging, and the middle one more profound. Stamens and anthers combined, 2-valved, dehiscing at the apex.—Erect shrubs or subshrubs. Leaves alternate and opposite, petiolate. Flowers axillary, solitary, rarely crowded at the tops of the stem or branches, so as
to appear racemose. The segments of the corollas are usually falcate or lanceolate; the upper ones generally the longest. The lower anthers are usually bearded, and sometimes they are all bearded.

1. S. macra'ntus (Pohl, pl. bras. 2. p. 106. t. 168.) leaves oblong-ovate, acute, denticulated, quite glabrous; tube of corolla ventricose at the apex, incurved; calyx glabrous, having the segments the length of the third part of the tube of the corolla. Π. S. Native of Brazil, about Rio Janeiro, and elsewhere in that province, in shady bushy places.—Vaud. in Rem. script. p. 147. no. 2. Stem fistular, simple, green. Flowers axillary, solitary, approximate at the tops of the stems, and forming leafy racemes. Corollas of a bluish red colour. Anthers all much bearded at the apex.

Long-flowered Siphocampylus. Shrub 3 feet.

2. S. ca'xus (Pohl, pl. bras. 2. p. 106. t. 169.) leaves ovate, acute, crenated, downy beneath; tube of corolla glabrous, rather ventricose; segments of calyx hairy, 4 times shorter than the tube of the corolla. Π. S. Native of Brazil, in the province of Minas Geraes. Stem medullary in the centre, simple, hairy, a little branched. Flowers axillary, approximate at the top of the stem and branches, forming there leafy racemes. Corollas of a bluish red colour.

Hoary Siphocampylus. Shrub 2 to 3 feet.

3. S. cre'nati'olius (Pohl, pl. bras. 2. p. 107. t. 170.) leaves acute, oblong, somewhat attenuated at the base, doubly crenated, downy beneath; tube of corolla glabrous, ventricose; calyx hairy, having the segments 4 times shorter than the tube of the corolla. Π. S. Native of Brazil, in the province of Minas Geraes, among bushes about Villa St. Joc'o del Rey. Stem suffrutescet, fistular, tetragonal, furrowed. Leaves 3 inches long, and 1 1/2 broad, yellowish green. Flowers axillary, solitary, remote, but so crowded at the tops of the stems as to appear leafy spikes; of a bluish red colour.

Crenate-leaved Siphocampylus. Shrub 2 to 3 feet.

4. S. villo'sules (Pohl, pl. bras. 2. p. 105. t. 171.) leaves oblong-oval, acute, doubly serrated, hairy, rather villous beneath, and truly villous on the nerves; corolla rather hairy; calyx having the segments 4 times shorter than the tube of the corolla. Π. S. Native of Brazil, among bushes at Extrema, not far from Rio de Jiquininhos. Stem fistular, tetragonal, rather villous. Leaves 2 inches long, and 1 1/2 broad. Flowers axillary, solitary; the upper ones forming leafy racemes. Corolla of a bluish red colour.

Villous Siphocampylus. Pl. 2 feet.

5. S. longi'peduncu'latus (Pohl, pl. bras. 2. p. 109. t. 172.) leaves coriaceous at the base, and acuminate at the apex, denticulated, quite glabrous; flowers solitary, on very long peduncles; tube of corolla ventricose, and is as well as the calyx glabrous; segments of the calyx 5 times shorter than the tube of the corolla. Π. S. Native of Brazil, in the province of Rio Janeiro, among bushes. Stem suffrutescent, filled with medulla, simple, glabrous. Leaves more than 3 inches long, and 1 1/2 broad. Flowers all remote, on peduncles 4 inches in length. Corollas bluish-red.

Long-peduncled Siphocampylus. Shrub 3 feet.

6. S. car'dophy'lu's (Pohl, pl. bras. 2. p. 110. t. 173.) leaves coriaceous, acuminate, rather undulated, quite glabrous, with remote short denticulations; flowers solitary, on long peduncles; tube of corolla as well as the calyx glabrous; calyceine segments much shorter than the tube of the corolla. Π. S. Native of Brazil, in the province of Minas Geraes, among bushes in mountains at Serra de Clunlho, not far from Rio Abaite. Stem suffrutescent, fistular, a little furrowed, glabrous. Leaves 2 1/2 inches long, and more than an inch broad; the denticulations are the extension of the veins. Upper flowers forming a leafy raceme. Corolla bluish-red, having the segments ciliated.

Heart-leaved Siphocampylus. Shrub 3 feet.

7. S. nit'idus (Pohl, pl. bras. 2. p. 111. t. 174.) leaves coriaceous, acute, simply and doubly serrated, quite glabrous, shining, opaque beneath, and the nerves are pilose when examined by a lens; tube of corolla rather ventricose, and rather hairy when examined by a lens; calyx downy, having the segments 3 times shorter than the tube of the corolla. Π. S. Native of Brazil, in the province of Minas Geraes, about Facendo do Apollinario, not far from Rio Abaite. Stem suffrutescent, filled with medulla, glabrous. Leaves 2 1/2 inches long, and more than an inch broad. Superior flowers forming a leafy raceme. Corolla bluish-red, hairy.

Shining-leaved Siphocampylus. Sh. 2 to 3 feet.

8. S. cor'nybeer'es (Pohl, pl. bras. 2. p. 112. t. 175.) leaves coriaceous, acuminate, doubly and emarginately toothed, ciliated, glabrous, rather hairy on the nerves and veins beneath; tube of corolla rather ventricose; calyx glabrous, having the segments much shorter than the tube of the corolla. Π. S. Native of Brazil, in the province of Minas Geraes, an obovate bush in mountainous places about Viceria. Stem herbaceous, fistular, glabrous. Leaves more than 2 inches long and an inch broad. Cormybs terminal, simple, many flowered. Corollas scarlet, smooth.

Corymb-bearing Siphocampylus. Pl. 2 to 3 feet.

9. S. col'u'mi'ne (Pohl, pl. bras. 2. p. 110. t. 176.) leaves ovate, rounded at both ends, cre- cored, coriaceous, emarginated above, glabrous, and shining, but clothed with viscidous tomentum beneath; pedicels axillary, longer than the leaves; corolla a little curved, with sessile tomentum outside, having the segments linear-falcate, and nearly equal. Π. S. Native of New Granada, in high places near the city of Santa Fe de Bogota. Lobelia Colominae, Mutis in Lin. suppl. p. 393. Smith, icon. med. 1. p. 22. t. 29. H. B. et Kunth, nov. gen. amer. 3. p. 392. Calyx tomentose outside. Two lower anthers bearded. Corollas red.

Colomina's Siphocampylus. Shrub.


Bearded Siphocampylus. Shrub 3 to 4 feet.

11. S. serru'genus; leaves obovate-oblong, acutish, obsolescently denticulated, smoothish above, but clothed with rusty stellate tomentum beneath, especially on the nerve and veins; flowers axillary, pedicellate, longer than the leaves; calyx segments 4 times shorter than the tube of the corolla. Π. S. Native of New Granada, near Santa Fe de Bogota; and of Peru, near Guamananga and Obragillo. Lobelia ferruginea, Mutis, Lin. suppl. p. 394. L. asclepiadea, Wildl. rel. in Rem. et Schultes, syst. 5. p. 57. Branches clothed with rusty stellate tomentum. Calyx and corolla clothed with rusty stellate tomentum. Corolla red. Genitalia exerted. Two lower anthers bearded.

Rusty Siphocampylus. Shrub.
than the tube of the corolla.  

LOBELIAE.  

13 S. umbellatus; leaves oblong-lanceolate, acuminate, denticulated, smoothish above, and downy beneath; flowers crowded into umbels at the tops of the branches, on long pedicels; segments of calyx equal in length to the tube of the corolla; lower lip of corolla entire, acute.  

14 S. giganteus; leaves oblong-lanceolate, acuminate, toothed, reticulately wrinkled, glabrous above, and downy beneath, and clothed with hoary tomentum along the nerves and veins; flowers axillary, on very long peduncles; calyx-segment equal in length to the tube of the corolla; filaments glabrous.  

15 S. erectus; leaves oblanceolate-oblong, acuminate, narrowed at the base, denticulated, hairy on both surfaces; flowers axillary, on long pedicels; segments of the calyx equal in length to the tube of the corolla; filaments glabrous.  

16 S. hirsutus; leaves oblong-lanceolate, acuminate, serrated, on very short pedicels; pedicels axillary, very long, at the tops of the stems and branches.  

17 S. corymbosa; leaves lanceolate, toothed, powdery beneath; corymbs terminal, supported by a tuft of leaves.  

18 S. cavanillesianus; leaves ovate-lanceolate, biserrated; flowers axillary, solitary, pedicellate, the whole forming a leafy raceme.  

19 S. escleroides; leaves oblong-elliptic, rounded at the apex, denticulated, hairy on both surfaces; flowers axillary, pedicellate, shorter than the leaves; segments of calyx 4 times shorter than the tube of the corolla.  

20 S. spectabilis; leaves oblong, acute, obtuse at the base, minutely denticulated, glabrous; flowers axillary, pedicellate, shorter than the leaves; corolla glabrous, 3 times longer than the calyx.  

21 S. surinamensis; leaves oblong-lanceolate, acute, obtuse at the base, remotely denticulated, glabrous; flowers pedicellate, axillary, shorter than the leaves; corolla glabrous, with the tube 3 times longer than the segments of the calyx.  

22 S. macropoda; leaves elliptic-oblong, serrulated, villous; flowers axillary, on long pedicels; branches downy.  

23 S. wesstianus; leaves in a whorl, oblong, acute, serrated, villous beneath, and glabrous above; pedicels axillary, villous; tube of corolla pentagonal.  

24 S. gran'der; leaves oblong, acute, minutely serrulated, glabrous; umbels terminal, bracteolate; corolla hairy; segments of the calyx 10 times shorter than the tube of the corolla.  

25 S. glabra; leaves oblong-elliptic, acute, rounded at the base, obliquely toothed at the apex; flowers axillary, pedicellate, longer than the leaves; calyx-segments crenated,
about equal in length to the tube of the corolla. \( \text{S.} \) Native along with the preceding species. Lobelia glabrata, H. B. et Kunth, nov. gen. amer. 3. p. 307. t. 270. Branches glabrous. Leaves 3-4 inches long, glabrous, pale green, petiolate. Pedicels bractless. Calyx and corolla glabrous; the latter greenish. Segments of corolla fallate. Filaments downy; anthers glabrous. 

**Sphyocampylus.** Shrub.

26 S. Mutisianus; leaves oblong, short-acuminated, narrowed and acute at the base, remotely and bluntly toothed, glabrous, except the nerve and veins beneath, which are hairy; flowers axillary, pedicellate, shorter than the leaves; corollas glabrous, much longer than the calycine segments. \( \text{S.} \) Native of New Granada, on frigid mountains. Lobelia Mutisiana, H. B. et Kunth. nov. gen. amer. 3. p. 308. Branches rather hirsute. Leaves 6-7 inches long. Petioles hairy. Pedicels bractless. Segments of calyx smooth, irregularly crenated. Corolla greenish, with falcate segments. Column of stamens glabrous; two lower anthers bearded.

**Mutis's Sphyocampylus.** Shrub.

27 S. volcellifolium; stem twining; leaves ovate, acuminate, coriaceous, sharply toothed, glabrous above, and clothed with fine down beneath; flowers axillary, pedicellate; corolla hairy; segments of calyx 5-6 times shorter than the tube of the corolla. \( \text{S.} \) Native on the shady banks of the Orinoco. Lobelia volcellifolia, H. B. et Kunth, nov. gen. amer. 3. p. 309. L. cordata, Willd. rel. ex Rœm. et Schultes, syst. 5. p. 58. Branches glabrous. Leaves coriaceous at the base. Pedicels downy, bractless. Corollas scarlet. Genitals exerted, glabrous. Anthers bearded (f. 120.).

**Twining Sphyocampylus.** Shrub twining.

28 S. Berteriana; leaves remote, on long petioles, ovate-oblong, acuminate, closely suberect, membranaceous, quite glabrous; pedicels solitary, axillary, long; stem scandent. \( \text{S.} \) Native of Guadaloupe. L. scandens, Bertero. L. Berteriana, Spreng. syst. 1. p. 712.

**Bertero's Sphyocampylus.** Shrub cl.

29 S. scandens; stem scandent; leaves oblong, obtuse, quite entire, rather fleshy, with revolute edges, glabrous; racemes terminal; flowers reflexed; corollas glabrous; calycine segments linear, slightly denticulated, 5-6 times shorter than the tube of the corolla. \( \text{S.} \) Native of Peru, in cold plates between Paramo de Saraguro and the city of Loxa. Lobelia scandens, H. B. et Kunth, nov. gen. amer. 3. p. 309. Lobelia obtusifolia, Willd., ex Rœm. et Schultes, syst. 5. p. 57. Branches glabrous. Pedicels furnished with one bractea at the base. Calyx glabrous. Corolla scarlet, with falcate segments. Column of stamens glabrous. Two inferior anthers bearded. Stigma girded by a pilose ring.

**Climbing Sphyocampylus.** Shrub cl.

30 S. Duploserratius (Pohl. pl. bras. 2. p. 114. t. 177.) leaves oblong or coriaceous at the base, twice serrated, petiolate; pedicels longer or shorter than the leaves; genitals exerted. \( \text{S.} \) Native of Brazil. Lobelia triphylla, Présl, symb. bot. 4. p. 61. t. 4. Corollas red or scarlet.

**Doubly-serrate-leaved Sphyocampylus.** Shrub 2 to 3 feet.

31 S. Andröpogon; leaves ovate, glabrous, hardly denti
crated, soft; flowers axillary, solitary, pedicellate; corolla glabrous, curved. \( \text{S.} \) Native of the province of Quito, on Mount St. Antonio, in shady woods. Lobelia Andröpogon, Cav. icon. 6. p. 10. t. 315. Stem glabrous, furrowed. Leaves 3 inches long, petiolate. Pedicels shorter than the leaves, villous at the base, bibracteate. Corolla scarlet, having the lower lip rounded, with 3 small acute teeth. Anthers bearded.

**Bearded-anthered Sphyocampylus.** Shrub 5 to 6 feet.

32 S. cirriformis; leaves linear-lanceolate, toothed, glabrous; teeth subulate, distant; raceme terminal, leafy. \( \text{S.} \) Native of the Antilles and St. Vincent. Lobelia cirrhifolia, Lam. dict. 3. p. 584. no. 12.—Plum. spec. vol. 5. t. 116. Stem straight, simple, naked at the base, glabrous. Corolla curved, green or yellowish green.

**Cirrus-leaved Sphyocampylus.** Shrub 1\( \frac{1}{2} \) foot.

33 S. verticillata (Cham. in Linn. 7. p. 202.) leaves 6-8 in a whorl, almost sessile, narrow-long or linear-oblong, sharply and finely serrated, pale beneath; pedicels axillary, verticillate, shorter than the leaves, but the flowers exceed the leaves; calycine segments acute, more than 6 times shorter than the corolla; anthers glabrous on the back, and bearded in front; stem filled with medullary erect, simple, densely leafy, foot oblique. \( \text{S.} \) Native of the south of Brazil. Top of stem and ribs of leaves rather hairy, and the peduncles, calyxes, and corollas downy. Corollas red, 2 inches long, curved before expansion.

**Whorled-leaved Sphyocampylus.** Shrub 3 to 6 feet.

34 S. betulefolius (Cham. in Linn. 7. p. 204.) leaves scattered, petiolate, cordately triangular or ovate, acuminate, somewhat doubly and acutely serrated, nervcd, and veined; pedicels axillary, solitary, exceeding the leaves; pedicels axillary, sol
tary, much longer than the leaves; ovarium oblong; teeth of calyx small; corolla long; anthers a little exerted, naked on the back. \( \text{S.} \) Native of Brazil. Corolla red, about 2 inches long. Leaves 3 inches long. Very like S. scandens and S. volcellifolium.

**Birch-leaved Sphyocampylus.** Shrub 3 feet.

35 S. convolvulacea (Cham. in Linn. 7. p. 205.) shrubby, climbing, and twining, glabrous; branches terete, slender; leaves petiolate, narrow, ovate-lanceolate, acuminate, with reflexed obliquely denticulated edges; pedicels axillary, solitary, much longer than the leaves; ovarium oblong; teeth of calyx small; corolla long; anthers a little exerted, naked on the back. \( \text{S.} \) Native of Brazil. Corolla red, about 2 inches long. Leaves 3 inches long. Very like S. scandens and S. volcellifolium.

**Convolvulaceae-like Sphyocampylus.** Shrub cl.

36 S. irmberica (Cham. in Linn. 7. p. 206.) leaves imbricated, almost sessile, ovate, coriaceous, hardly acute, serrulate, with rather reflexed edges, scabrous from hairs above, shining, flat; paler beneath, and more hairs, and reticulately veined; pedicels axillary, shorter than the leaves, and as well as the calyxes hairy; calycine segments linear, acute, 4 times shorter than the corolla; corollas downy, exceeding the leaves; anthers exerted, naked on the back; stem with many prominent cicatrices, occasioned by the falling of the leaves, clothed at bottom with brown stiff hairs, and densely leafy at the top. \( \text{S.} \) Native of Brazil. Leaves 6 in a whorl, by threes. Corolla red.

**Imbricated-leaved Sphyocampylus.** Shrub.

37 S. lycoides (Cham. in Linn. 7. p. 207.) erect, glabrous; leaves sessile, erect, narrow-lanceolate, acute, remotely and bluntly serrulate; lower ones somewhat verticillate, by threes, alternate; raceme less terminal; floral leaves 6 in a whorl, having the pedicels by threes, verticillate; pedicels erect, a little shorter than the leaves; segments of the calyx ovate,
lobed-acuminated, 6 times shorter than the corolla; anthers a little exserted, glabrous. * S. Native of Brazil. Stem angular. Corolla red.

Lycurus-like Siphocampylus. Shrub 3 feet.

38. S. DEFENDER; leaves coriaceous, ovate-lanceolate, somewhat cordate at the base, acuminate, finely and sparsely dentilculated, tomentose beneath, glabrous above; branches and inflorescence downy or tomentose; pedicels from the axils of the upper leaves, and longer than them; column much exserted; calyx lobes linear-subulate. * S. Native of Peru. Lobelia dependens, Ruiz et Pav. in herb. Lamb. Flowers racemose, at the tops of the branches. Plant scendent.

Dependent-branched Siphocampylus. Shrub cl.

39. S. ESOMARINIFOLIS; erect; leaves linear-lanceolate, entire, with revolute margins, tomentose beneath, and glabrous above; pedicels axillary, about the length of the leaves; column of stamens exserted; calyx with a spherical tube, and long linear segments. 2. or 3. S. Native of Peru. Lobelia purpurea, Ruiz et Pav. in herb. Lamb. Corollas red. Lower anthers bearded at top. Leaves dense, like those of some species of willow.

Rosemary-leaved Siphocampylus. Pl. 2 to 3 feet.

40. S. MACROPHYLLUS; leaves broad, obovate, acuminate, glabrous, slightly dentilculated, tapering much to the base; flowers almost forming a terminal corymb, much shorter than the leaves; calyx with a hemispherical tube and ovate-lanceolate segments; column of stamens exserted: the lower anther bearded at top. * H. Native of Peru. Lobelia lasciata, Ruiz et Pav. in herb. Lamb. Corollas red or scarlet.

Large-leaved Siphocampylus. Pl. 2 to 3 feet.

41. S. LACINIA; leaves deeply jagged, acuminate; lobes acuminate; branches downy; lobes of corolla falcate; column of stamens downy; anthers glabrous, except the two lower ones, which are bearded at the apex; calyx spherical. * H. Native of Peru. Lobelia lasciata, Ruiz et Pav. in herb. Lamb. Corollas red or scarlet.

Jagged-leaved Siphocampylus. Shrub.

42. S. EUSCUS; clothed with rusty tomentum in every part; calyx spherical, with reflexed dentilculated lobes; leaves elliptic-lanceolate, dentilculated; peduncles axillary, 1-flowered; corolla clothed with rusty wool; two lower anthers bearded. * S. Native of Peru. Apparently a climbing shrub. (v. s. in herb. Lamb.)

Brown Siphocampylus. Shrub cl.

Cult. The species all bear large, showy, scarlet, or red flowers, and are therefore worth cultivating in every collection of store plants. They are of easy culture. The soil best suited to them is a mixture of loam, sand, and peat; and cuttings of them strike readily in the same kind of soil under a hand-glass in heat.

VIII. LOBELIA (in honour of Matthew Lobel, author of various works, and particularly that called Icones Plantarum; he was born at Lisle in 1538, became physician and botanist to James I, and died in London in 1616). Pohl, pl. bras. 2. p. 99.—Lobelia species, Lin. and other authors.

Lin. syst. Pentandria, Monogynia, Calyx adnate to the ovary; limb 5-parted (f. 121. a.). Corolla irregular, tubular; tube cleft on the upper side, thickened or ventricose at the base; limb 5-parted, bilabiate; the 2 segments of the upper lip linear-lanceolate (f. 121. f.); lower lip trifid and pendulous, with lanceolate or roundish segments (f. 121. g.). Filaments combined above (f. 121. c.). Anthers cohering (f. 121. c.), bearded; the 2 lower ones usually bearded, and sometimes all. Capsule oval, 2-celled, 2-valved, many-seeded, dehiscing at the apex.—Erect or procumbent herbs. Leaves alternate, usually sessile. Flowers on short pedicels, usually disposed in terminal leafy spikes or racemes, rarely solitary and axillary, blue, red, or white, rarely yellow.

§ 1. Species natives of America.

* Corollas blue.

1. L. CAMPNFUR (Pohl, bras. 2. p. 100. t. 165.) leaves linear, acute, remotely toothed, ciliated on the margins, glabrous, rather decurrent; flowers spicate, rather remote on short pedicels; bracteas oblong, acuminated, rather toothed, pilose; calyx pilose, a little shorter than the tube of the corolla. * H. Native of Brazil, in the province of Minas Geraes, in dry fields about Villa de Barbacena. Anthers all bearded. In the plant collected by Sello the lower leaves are ovate, and the upper ones lanceolate. Stem filiform, simple, pilose. Corollas blue.

Field Lobelia. Pl. 1 foot.

2. L. EXALTATA (Schott, in Pohl, pl. bras. 2. p. 101. t. 166.) leaves sessile, lanceolate, acuminated, rather attenuated at the base, dentilculated, quite glabrous; flowers racemose, coarctate, pedicellate; bracteas lanceolate, acuminated, rather hairy; calyx pilose, exceeding the tube of the corolla in length. * S. Native of Brazil, in marshy places in the province of Rio Janeiro, at Fazenda Malheas Ramos, as well as of the province of Minas Geraes. Stem fistular, arrowed, quite simple, glabrous, of a yellowish green colour. Bracteas ciliated. Corollas blue.

Exalted Lobelia. Pl. 5 feet.

3. L. TAPSOIDES (Schott, ex Pohl, bras. 2. p. 102. t. 167.) leaves sessile, lanceolate, attenuated at the base, very long, dentilculated, ciliated, rather pilose; flowers racemose, coarctate, on short pedicels; calyx segments lanceolate, acuminated, pilose, shorter than the tube of the corolla. * S. Native of Brazil, about Rio Janeiro; and of the province of Goyaz. Stem tough, filled, simple, rather pilose, of a greenish brown colour. Bracteas ciliated. Flowers dense blue.

Thapsis-like Lobelia. Pl. 6 feet.

4. L. PACHFLOREA (H. B. et Kunth, nov. gen. amer. 3. p. 314.) stem herbaceous, erect, simple; leaves sessile; radical ones lanceolate; calyx ones linear, remotely dentilculated, glabrous; racemes terminal, few-flowered, on long peduncles; flowers on short pedicels; calyx segments hairy, as well as the corolla, one-half shorter than the tube of the corolla. * S. Native of Brazil, in the province of Minas Geraes, in dry grassy places about Villa Barbacena; and of Mexico, near Vallahold de Mechoacan. L. communata, Wildl. rel. ex Rasm. et Schultes, syst. 5. p. 73. L. simplicis, Wildl. herb. Corollas blue. Stem glabrous, striated. Bracteas linear, hairy, longer than the pedicels.


5. L. RAPUFLOCULIDES (H. B. et Kunth, nov. gen. 3. p. 312.) leaves linear-lanceolate, acute, denticulated, glabrous, sessile; racemes terminal, loose-flowered; calyx segments equal in length to the tube of corolla; stems branched, procumbent. * S. Native near the town of Mexico. L. draconculeoides, Wildl. rel. ex Rasm. et Schultes, syst. 5. p. 56.? Stem hairy at bottom. Flowers remote, pedicellate. Bracteas linear, about the length of the pedicles. Corolla blue, glabrous. Leaves 1 1/2 inch long. Two lower anthers bearded.

Ramphion-like Lobelia. Pl. procumbent.

6. L. COLLINA (H. B. et Kunth, nov. gen. amer. 3. p. 312.) leaves lanceolate-linear, acute, denticulated, glabrous, sessile; racemes terminal, ascending; segments of the calyx one-half shorter than the tube of the corolla; stems procumbent; branches ascending, glabrous. * S. Native of Peru, on dry
Hills between Malacatis and Gonzanama, at the altitude of about 3000 feet. L. limifolia, Willd. sub. ex Roem. et Schultes, syst. 3. p. 67. Leaves 1 to 1\(\frac{1}{2}\) inch long. Pedicels recurved, about equal in length to the bracteas, which are linear. Flowers of a violaceous blue colour. Two lower anthers bearded.

**Hill Lobelia.** Pl. procumbent.

7. **L. Fazzigita** (H. B. et Kunth, nov. gen. amer. 3. p. 313.) leaves lanceolate, remotely dentilicate, glabrous, almost sessile; racemes terminal, elongated; calyce segments glabrous, about equal in length to the tube of the corolla; stem herbaceous, erect, with fastigiate branches. **S.** Native of Quito, near Popayan and Chillo, at the altitude of about 3000 feet. Lobélia tenuifolia, Willd. sub. ex Roem. et Schultes, syst. 5. p. 56. Stems and branches angular, glabrous. Leaves 12-15 lines long. Bracteas linear, absolutely dentilicate, shorter than the pedicels. Corolla violaceous. Two lower anthers bearded.

**Fastigiate-branched Lobelia.** Pl.

8. **L. mollis** (Graham, in edinb. phil. journ. Decem. 1829.) stem erect, branched, downy; leaves petiolate, cordately ovate, acute, downy above, and along the veins beneath, mucronately and doubly serrated; superior leaves lanceolate; racemes terminal, elongated; pedicels loose; segments of the lower lip of the calyx subulate, shorter than the corolla. **Q.** Native of Dominicana, where it was collected by Dr. Krauss. Leaves 8 lines long and 6 broad. Calyce segment equal in length to the tube of the corolla, which is purplish, with the tube cleft along the upper side. Anthers purplish, having 2 short white awns projecting from their lower edge. Stigma almost simple, bearded. Perhaps a distinct genus.


9. **L. Rupestris** (H. B. et Kunth, nov. gen. amer. 3. p. 313.) leaves sessile, hairy or downy, toothed; lower ones oblong or obovate-oblong, obtuse; superior ones lanceolate, acute; racemes terminal; segments of the calyx hairy, about equal in length to the tube of the corolla; stem erect, branched a little. **S.** Native of the province of Popayan, on the declivities of the burning Mount Purace. Lobélia polygalina, Willd. sub. ex Roem. et Schultes, syst. 5. p. 56. Stems rather angular, and are as well as the branches downy. Bracteas linear, lanceolate, twice the length of the pedicels, which are distant. Flowers violaceous. Anthers blue, 2 lower ones bearded.

**Rock Lobelia.** Pl. 1 foot.

10. **L. Tenera** (H. B. et Kunth, nov. gen. amer. 3. p. 314.) leaves sessile, lanceolate-linear: lower ones lanceolate, remotely dentilicate, glabrous; racemes terminal, few-flowered, on long peduncles; flowers on long pedicels; calyce segments glabrous, about equal in length to the tube of the corolla; stem herbaceous, erect, simple, glabrous. **S.** Native of the province of Quito, on hills near Puembo. Leaves 12-15 lines long. Flowers blue, remote, about the size of those of **L. exann.** Filaments ciliated at the base. Two lower anthers bearded.

**Tender Lobelia.** Fl. July. Pl. \(\frac{1}{4}\) foot.

11. **L. Xalapeensis** (H. B. et Kunth, nov. gen. amer. 3. p. 315.) leaves on long petioles, ovate-deltoid, irregularly crenated, hairy above, glabrous beneath; racemes terminal, pedunculate; calyce segments about equal in length to the tube of the corolla; stem erect, paniculately branched, angular, glabrous. **S.** Native of Mexico, near Xalapa and Maculipe. Leaves nearly as broad as long. Bracteas linear, much shorter than the pedicels. Filaments ciliated at the base. Two lower anthers bearded.

**Xalapa Lobelia.** Pl. \(\frac{1}{4}\) foot.

12. **L. Xanthina** (Lin. spec. 1818.) radical leaves spatulate, hairy: calyce one linear, glabrous, sessile, decompound or nearly entire; racemes loose, leafy; pedicels furnished with 2 bracteas at the apex, longer than the capsules; stem erect, slender, glabrous.

2. **F.** Native of North America, in Canada, Carolina, and New York. Sims, bot. mag. 2238. Corollas beautiful blue, with the segments of the lower lip obovate, acute, marked by 2 white confluent spots in the centre. The variety of this which grows in Carolina has the radical leaves roundly spatulate; the stem more slender, and the flowers smaller.

**Kad’s Lobelia.** Fl. July, Aug. Clt. 1820. Pl. 1 to \(\frac{1}{2}\) foot.

13. **L. Nuttalii** (Roem. et Schultes, syst. 5. p. 39.) leaves oblong-linear, dentilicate, obtuse, reniform; flowers loosely racemose, distant; pedicels coloured, shorter than the flowers, biflirate at the base; segments of the calyx obtuse; stem erect, minutely scabrous, branched. **S.** Native of North America, from New Jersey to Carolina, on the dry sandy edges of bogs. L. gracilis, Nutt. gen. amer. 2. p. 77. but not of R. Br. Pedicels and corollas blue; the lower lip marked by 2 acute white stripes, and 2 green dots, and other 2 towards the base of the tube. Very like **L. Kalmii**, and probably a variety of it.

**Nuttall’s Lobelia.** Fl. July, Sept. Clt. 1824. Pl. 1 to \(\frac{1}{2}\) foot.

15. **L. Cliffordiana** (Lin. spec. p. 1320.) leaves on long petioles, oval or roundish-ovate, rather cordate, bluntly and sinuately toothed, glabrous; racemes terminal, on long peduncles; calyce segments glabrous, about equal in length to the tube of the corolla; stem erect, nearly simple, glabrous. **S.** Native of North America, in humid places; and of Cuba, about the Havana; and of Mexico, near San Andres and Jalapa, in bushy places. Stem angular. Root perpendicular. Bracteas linear, much shorter than the pedicels, which are long and filiform. Corollas blue or violaceous.

**De Clifford’s Lobelia.** Pl. \(\frac{1}{2}\) to 1 foot.

16. **L. Spicata** (Ruiz et Pav. in herb. Lamb.) glabrous; stem simple; leaves obovately lanceolate, obtuse, dentilicate; upper ones lanceolate, sessile, dentilicate; racemes simple; pedicels rising from the axils of the linear bracteas. **S.** Native of Peru. Flowers small, blue. Like **L. urens.** Calyx tubular, with subulate segments.

**Spike-flowered Lobelia.** Pl. 1 foot.

17. **L. Monticola** (H. B. et Kunth, Nov. gen. amer. 3. p. 316.) leaves petiolate, ovate, obtuse, rather cordate, doubly serrated, hairy on both surfaces; racemes terminal, on long peduncles; segments of calyx glabrous, about equal in length to the tube of the corolla; stem erect, almost simple, rather angular, glabrous, or a little hairy. **S.** Native of New Granada, on the mountains between Fusagasga and Pande. L. palmariis, Willd. sub. ex Roem. et Schultes, syst. 5. p. 56. Root perpendicular, branched. Bracteas linear, much shorter than the pedicels. Corollas blue, glabrous. Anthers puberulous at the apex, but beardless.

**Mountain Lobelia.** Pl. \(\frac{1}{2}\) foot.

18. **L. microstoma** (H. B. et Kunth, Nov. gen. amer. 3. p. 316.) leaves petiolate, ovate, acuminate, dentately serrated, nearly glabrous; racemes terminal, sessile; calyce segments glabrous, about equal in length to the tube of the corolla; stem erect, paniculately branched, angular, hairy. **S.** Native of the province of Quito, near Puebbo. Lobélia ruderális,
LOBELIACEÆ.

Wildl. rel. ex Rœm. et Schultes, syst. 5. p. 56. Root perpen-
dicular. Bracteas linear, shorter than the pedicels. Corolla blue.
Two lower anthers bearded.

Small-flowered Lobelia. Pl. ½ foot.

19 L. subtilis (H. B. et Kunth, nov. gen. amer. 3. p. 317.)
leaves on short petioles, sharply toothed, hairy above, and gla-
brous beneath; lower ones nearly opposite, and sessile;
perianth ones lanceolate; flowers axillary, on long pedicels, race-
mose; calyce segments glabrous, about equal in length to the
tube of the corolla; stem erect, simple or branched, angular,
hairy. 2. H. Native along with the preceding species. L. Drábä, Wildl. rel. ex Rœm. et Schultes, syst. 5. p. 67.
Flowers size and colour of those of the preceding.

Slender Lobelia. Pl. ½ foot.

20 L. nañá (Wildl. rel. ex Rœm. et Schultes, syst. 5. p. 67.)
H. B. et Kunth, nov. gen. amer. 3. p. 317. t. 272.) leaves spa-
stulate, quite entire, thickish, glabrous; flowers axillary and
dense, on long pedicels; calyce segments glabrous, hardly
equal in length to the tube of the corolla; stem short, erect,
throwing out runners. 2. F. Native of Mexico, near Real del Monte and Moran. Herb almost stems, stoloniferous.
Root with thick fibres. Corolla pale, violaceous. Filaments
downy. Two lower anthers bearded.

Dwarf Lobelia. Pl. stoloniferous.

21 L. clatonia-na (Michx. fl. bor. amer. 2. p. 153.) leaves oblong, obtuse, almost quite entire; lower ones spathulate, quite
entire: cauleine ones a little dentilicate; spikes twiggy, naked;
bracteas subulate; stem downy, erect, simple. 2. H. Native of
North America, from New York to Carolina, in mountain woods
Leaves rather villous on the edges. Flowers very small, nu-
merosous, pale blue; segments of the calyx subulate, almost the
length of the corolla. Lower lip of corolla reflexed. Capsules	
turbinate, very short.


22 L. syphilicēta (Lin. spec. 1820. Jacq. icon. 3. t. 597.)
leaves ovate-oblong, acuminate at both ends, unequally ser-
rated; flowers axillary, solitary, forming altogether a long leafy
cracme; sinuses of calyx reflexed, and are as well as the pe-
duncles hairy. 2. H. Native of Virginia, in dry woods.
Woodv. med. bot. 177. t. 63. Ker. bot. reg. 537. Rapuntium
syphilicētum, Mill. dict. no. 2. Geert. fruct. 1. p. 152. t.
Calyce serrately dentilicate. Corolla angular, with nearly equal
segments, having the keel ciliated, and the palate furnished
with 2 gibbosities. The root is the part of the plant directed to
be used in medicine; it resembles tobacco in taste, and is apt to
excite vomiting. It derives its trivial name from its efficacy in
the cure of syphilis, as experienced by the North American
Indians, with whom it was a secret. A decoction is made of a
handful of the roots, in 3 measures of water. Of this half a
measure is taken in the morning fasting, and repeated in the
evening; and the dose increased till its effects become too
violent, when it is intermitted for a day or two. Although the
plant is said to cure the disease in a very short time, yet its vir-
tues have not been confirmed by any instances in European
practice.

Var. β, maculáta; stem more attenuated; leaves sharply
dentilicate, spotted with rust colour. 2. H. Lam. dict. 3. p.
586. no. 21.


23 L. dilata (Lin. spec. 1820. act. nup. 1741. p. 23. t. 1.)
leaves sessile, dentitely serrated; lower ones ovate-oblong:
superior ones ovate; pedicels axillary, 1-flowered, forming a
terminal leafy raceme; stem hairy; capsules inflated. 2. H.

VIII. Lobelia.

no. 5. Stem branched at the top. Leaves rather villous be-
neath. Flowers small, pale blue. Segments of the calyx subu-
late, equal in length to the corolla. Leaves about 2 inches long.

1 to 2 ft.

24 L. colorátā (Sweet. fl. gard. b. s. t. 180.) glabrous;
leaves lanceolate, acuminate, closely toothed; raceme spicate,
elongated, leafy; calyce segments linear-subulate. 2. H.
Received from North America, but probably a hybrid between
L. syphilicēta and L. cardinātis. Corollas deep azure blue,
crowded. Ovarium half inferior. This is probably the L. co-
lectēs, Nutt. and L. crispa, Graham. ex Loud. hort. brit. p. 75.

Coloured Lobelia. Pl. 4 to 5 ft.

25 L. celéstis (Nutt. ex Loud. hort. brit. p. 592.) this
plant is in the gardens, but we are not aware of where it is
described; it comes very near to L. syphilicēta, and may only be
a variety of that species. 2. H. Native of North America.
L. crispa, Graham. ex Loud. hort. brit. p. 75. Flowers of a
beautiful blue, disposed in long dense terminal racemes.


26 L. uránocōmā (Cham. in Linneæa. t. 5. p. 324.) stem erect,
angular, fistular; leaves hairy, erect, linear, attenuated, acute,
finely dentilicate; pedicels disposed in a terminal leafy raceme,
shorter than the floral leaves, which are densely imbricated,
ovate, acute, and shorter than the others, of a bluish colour;
segments of the calyx linear, attenuated, about equal in length
to the middle of the corolla, which is clothed with fine glandular
down; anthers bearded in front. 2. S. Native of tropical
Brazil. Leaves a foot long. Corolla ed on the back, nearly
2 inches long, blue.

Blue-tufted Lobelia. Pl. 5 feet.

27 L. glandulōsa (Walt. ex p. 218.) leaves lanceolate,
 glandularly serrated, rather fleshy, glabrous; flowers on short
pedicels, racemose; segments of the calyx revolute, toothed;
stem erect, branched, rather downy. 2. H. Native of Caro-
olina, by the sea side in marshes among grass. L. crassissicula,
Pedicels furnished with 2 bracteas, which are terminated by a
gland each. Corollas blue, having the disk of the lower lip
bearded. Stigma beset with white hairs.

Glandular-leaved Lobelia. Pl. 1 to 2 feet.

28 L. pūrēkula (Michx. fl. bor. amer. 2. p. 152.) plant
very simple, downy; leaves oblong, obtuse, repandly serrated;
flowers almost sessile, forming altogether a leafy elongated 
spike; calyx downy; calyce segments erect, lanceolate-subulate, entire,
having the sinuses a little reflexed; stamens inclosed. 2. H.
Native from Virginia to Carolina, in mountain tracts. Pursh. fl.
Ovarium hispid. It differs from L. Clatonia-na in the flowers
being thrice the size, and of a more beautiful blue.

Var. β, glabēlla (Hook. bot. mag. t. 3292.) leaves hardly
downy; calyx glabrous. 2. H. Native of Louisiana, about
Jacksonville. Corolla bright purplish blue.


29 L. amēνa (Michx. fl. bor. amer. 2. p. 153.) plant quite
labrous; leaves broad-lanceolate, serrated; spikes second,
masy-flowered; segments of the calyx entire; segments of the
lower lip of the corolla ovate, acute. 2. H. Native from
Virginia to Carolina, on the mountains. Leaves usually gla-
brous, 6-8 inches long, and 1 inch broad. Corollas pale blue.
Juss. ann. mus. 18. p. 16. t. 1. no. 1.


30 L. gruīnā (Cav. icon. 6. p. 8. t. 511. f. 3.) leaves sessile,
lanceolate-linear, toothed; stem naked at the top, therefore the raceome of flowers is naked and terminal; bracteas subulate. 2. S. Native of New Spain. Stem striated, glabrous. Leaves 2 inches long, glabrous. Corollas blue. Tube of corolla 3-4 lines long, segments of the upper lip narrower than those of the lower, and reflexed. Stigma villous. Filaments exerted, and resembling a stork's head. Very like L. urceus.

Stork's Lobelia. Pl. 1 foot.

31 L. nemularioides (Cham. in Linnaea. 7. p. 209.) glabrous; leaves rather fleshy, ovate, cordate, rather reniform, obtuse, quite entire, or obductly subsinually crenated, on short petioles, and sessile; flowers axillary, on long pedicles; calyce segments a little shorter than the corolline tube; anthers glabrous on the back, all bearded; fruit globose; stems prostrate, radicant, but ascending and flowerous at the apex. 2. S. Native of Brazil, within the tropics, in marshy places. Nearly allied to L. Zeylanica. Corolla blue or violaceous.

Moneywort-like Lobelia. Pl. prostrate and creeping.

32 L. reniforme (Cham. in Linnaea. 7. p. 210.) herbaceous, hairy; stems rather capillary, branched, creeping, rooting; leaves on short petioles, obductly reniform, obductly angular, membranous, nerved, and reticulately veined, pale green above, and glaucous beneath; pedicels terminal and axillary, elongated; corolla glabrous outside, villous inside, with a broadish tube, and triangular segments; anthers glabrous on the back; calyce teeth ovate, acute, much shorter than the tube of the corolla. 2. S. Native of Brazil. Plant tufted, creeping. Leaves hairy, ciliated on the edges. Flowers blue.

Kidney-shaped-leaved Lobelia. Pl. creeping.

33 L. aquatica (Cham. in Linnaea. 7. p. 211.) a glabrous aquatic herb; stem erect or floating, flattened in the dry state; leaves opposite, the upper erect, sessile, narrowed-lanceolate, acute, obductly serrated, 1-nerved; pedicels axillary at the top of the stem, capillary, erect, twice the length of the leaves; ovary semi-elliptic, crowned by the calyce segments, which are a little shorter than the tube of the corolla; anthers all bearded, glabrous on the back, exceeding the corolline tube, but shorter than its segments. 2. S. Native of Brazil, on the banks of rivers, or in marshes among grasses. Flowers blue. Leaves half an inch long.

Aquatic Lobelia. Pl. 1$\frac{1}{2}$ to 2$\frac{1}{2}$ foot.

34 L. sessilifolia (Lamb. in Lin. trans. 10. p. 260. t. 6.) leaves sessile, oblong-lanceolate, serrulated, glabrous; pedicels axillary, shorter than the leaves; stem erect, leafy, glabrous, very simple. 2. H. Native of Kamtschatka. L. Camtschatica, Pall. miss. Habit of a Euphorb. Leaves of an obscure green. Flowers blue? Sessile-leaved Lobelia. Pl. 2 to 3 feet.

35 L. umbellata (Vest. ex Rœm. et Schultes, syst. 5. p. 58.) glabrous; leaves sessile, linear, toothed, dilated and trifid at the apex; flowers terminal, umbellate; stem erect. 2. S. Native country unknown. Stem angular. Leaves like those of Chrysanthemum leucanthemum. Inflorescens of umbel shoot. Corollas blue, nearly an inch long, with the segments of the upper lip linear and reflected, and of the lower one oblong. Stamens a little shorter than the tube of the corolla. Anthers bearded at the apex.

Umbellate-flowered Lobelia. Pl. 1 foot.

* * * Corollas red, purple or scarlet, rarely yellowish.

36 L. Graminea (Lam. dict. 3. p. 583.) glabrous; leaves linear, ensiform, acute; racemes long, simple; stem erect, simple; bracts lanceolate, acute, shorter than the flowers.—Native of Peru. Leaves 5 inches long, and 2-3 lines broad. Flowers scarlet, on short pedicles, form of those of L. cardinallis. Filaments and stamens combined.

Grass-leaved Lobelia. Pl. 2 feet.

37 L. pulv. erule'stata (Pers. encyc. 2. p. 212.) leaves ovate, on very short pedioles, glabrous above and wrinkled, but clothed with white tomentum beneath; corollas campanulate, powdery; stem shrubby. 2. S. Native of South America, on the road from Guaranda to Mount Chimborazo. Stem branched, tomentose. Leaves obtuse, with subrevolute edges, 3 inches long. Pedicels longer than the leaves, altogether forming a leafy raceme. Corollas white from powdery tomentum outside, and reddish inside, less than an inch long, with equal oblong acute segments. Perhaps a species of Clermontia.

Ponderay Lobelia. Pl. 6 to 8 feet.

38 L. cordigera (Cav. icon. 6. p. 14. t. 523.) leaves ovate, acute, half-stem-chasing, villous, denticulated; pedicels villous, axillary; stem villous, furrowed. 2. F. Native of Chili. Leaves 3 inches long. Calyx villous. Corolla scarlet, 1$\frac{1}{2}$ inch long, with the segments of the lip linear, elongated, of the lower lip ovate, acute. Gentils glabrous.

Heart-bearing Lobelia. Pl. 3 feet.

39 L. decurrens (Cav. icon. 6. p. 13. t. 521.) leaves ovate-lanceolate, biseriated, decurrent, glabrous, approximate; flowers solitary, axillary, altogether forming a long leafy raceme; calyx villous, with the segments deeply serrated; tube of corolla cleft even to the base. 2. F. Native of Chili, on the banks of the river Charo. Sweet, fl. gard. n. s. 86. Stent glabrous. Leaves 2 inches long and an inch broad, with 2 small teeth between each large one. Corolla purplish-violet, 1$\frac{1}{2}$ inch long; upper lip of 2 linear segments, which are villous at the apex, of the lower acute, and are as well as the anthers pilose.


40 L. congl. olata (Lam. dict. 3. p. 585.) leaves oblong-cuneiform, acuminate, shining; racemes glabrous, terminal; segments of calyx fringed; stem simple, filled with medulla. 2. S. Native of Martinico and St. Domingo. Lin. spec. 4. t. 117. Stem thick, naked at the base. Leaves a foot and more long, and 3 inches broad, exceeding the corymb of flowers. Flowers very numerous, disposed in a short raceme. Bracteas lanceolate, denticulated, shorter than the flowers. Corollas shorter than the calyx, scarlet, but in the larger variety greenish-red. Perhaps a species of Tëpa.

Congolata-racemed Lobelia. Pl. 1 foot.

41 L. cavanielle'sana (Rœm. et Schultes, syst. 5. p. 43.) glabrous; leaves ovate-lanceolate, acuminate, serrated, sessile; pedicels solitary, axillary, longer than the leaves, the whole forming a leafy raceme; corollas downy. 2. S. Native of New Spain, near Acambaro. L. persicifolia, Cav. icon. 6. p. 12. t. 518. Stem herbaceous, striated, branched. Serratures of leaves sessate. Calyx glabrous. Corolla red; with the tube nearly an inch long. Probably a species of Tëpa. Anthers bearded with white hairs.

Cavenilles Lobelia. Fl. June, July. Ct. 1825. Pl. 3 ft. 42 L. per. sicifolia (Lam. dict. 3. p. 584.) leaves narrow-lanceolate, serrated; pedicels axillary, solitary, shorter than the leaves, the whole forming a leafy raceme. 2. S. Native of Guadaloupe, in marshes. Stem fistular. Leaves numerous. Corolla purplish, glabrous, a little curved, 1$\frac{1}{2}$ inch long. Perhaps a species of Siphocampylus.

Peck-leaved Lobelia. Fl. June, July. Ct. 1824. Pl. 11 ft. 43 L. Kraussi (Graham, in edib. phil. journ. Marcb, 1830. botan. mag. 3012.) sessile, lanceolate, decurrent, sharply serrated, glabrous; pedicels axillary, solitary, longer than the leaves, the whole forming a leafy terminal raceme; calyce segments subulate, a little toothed, spreading, and are as well as the corolla glabrous; stem herbaceous, glabrous, erect, branched. 2. S. Native of Dominica, where it was collected by Dr. Krauss. Leaves 4$\frac{1}{2}$ inches long. Corolla 1 inch long, red, 4 x 2
lobeliae

8. Lobelia.

51. L. toloba (Wildl. rel. ex Roem. et Schultes, syst. 5. p. 56. H. B. K., Kunth, nov. gen. amer. 2. p. 310.) leaves sessilis, decurrent, lanceolate, doubly toothed, glabrous; flowers axillary, pedicelled, the whole forming a leafy raceme; corollas hairy; stem erect, simple, glabrous. L. S. Native of the kingdom of Quito, in humid places near Guancabamba. Leaves crowded on the stem, 3 inches long. Pedicels hairy. Segments of the calyx furnished at the base with remote subulate teeth, about equal in length to the tube of the corolla. Corolla pale purple. Two lower anthers bearded. Allied to L. decorrens, Cav. and L. cardinalis.

Leafy Lobelia. Pl. 2 to 3 feet.
52. L. laxiflora (H. B. et Kunth, nov. gen. amer. 3. p. 311.) leaves almost sessile, oblong, acuminate, serrulate, glabrous; racemes terminal, secund; flowers on long pedicels; corollas hairy; stem erect, simple, angular, glabrous. L. S. Native of Mexico, between Quasininiqalpa and Acaquirilla. L. fissa, Wildl. rel. ex Roem. et Schultes, syst. 5. p. 57. Leaves 2 3/4 inches long. Racis of raceme hairy. Calyx hairy. Corolla pale purple. Allied to L. cardinalis.

Loose-flowered Lobelia. Pl. 2 to 3 feet.
53. L. rigidula (H. B. et Kunth, nov. gen. amer. 3. p. 311.) leaves short, sessile, oblong-lanceolate, acutish, sharply serrulate, stiffish, glabrous above, but rugose and hairy beneath; flowers axillary, on long pedicels; corollas hairy. L. S. Native of New Spain. Stems hairy above. Leaves 2 inches long. Flowers and fruit like those of the preceding species, to which it is very nearly allied.

Stifflobus Lobelia. Pl. 2 to 3 feet.

55. L. cardinalis (Linn. spec. 1329.) leaves oblong-lanceolate, cartilagineously denticate, glabrous as well as the stems; racemes terminal, unilaterial, leafy. L. F. Native of Virginia and Carolina; and of Mexico, near Jalapa. Pursh, fl. amer. sept. 2. p. 448. Curt. bot. mag. 320.—Kor. del. 2. t. 1 f. 2. Rapuntium cardinalis, Mill. dict. no. 1.—Mor. hist. 2. p. 466. sect. 5. t. 5. f. 54.—Herr. mex. p. 879. t. 880. Leaves purplish beneath, 3 inches long, and 1/2 broad. Flowers scarlet. It differs from L. fulgentis in being glabrous, and in the segments of the lower lip of the flower being obtuse, not lanceolate, and acute.

56. L. splendens (Wildl. hort. berol. 2. t. 86.) leaves lanceolate, denticate, with flat margins, quite glabrous as well as the stems; racemes terminal, somewhat secund. L. F. Native of Mexico. Ker. bot. rep. 66. Stem purplish. Pedicels compressed, purplish. Corolla scarlet, glabrous, very like those of the two last species.

57. L. speciosa (Hort. Lindl. bot. rep. 1445. Sweet. fl. gard. n. s. 174.). This is a hybrid between L. syphilitica and L. cardinalis, splendens or fulgenst. The flowers are purple. Splendid Lobelia. Fl. June, Oct. Hybrid. Pl. 2 to 5 feet.

§ 2. Species natives of the East Indies and other parts of Asia.
58 L. chinensis (Lour. coch. p. 514.) glabrous; leaves sessile, lanceolate, quite entire; flowers solitary, terminal; stem creeping; branches ascending. O. H. Native of China, about Canton. Flowers pale blue, pedicellate. Segments of the corolla lanceolate, unequal. Stigma bifid, revolute.

China Lobelia. Pl. creeping.

59 L. heyneana (Roxb. et Schultes, syst. 5. p. 56.) stem filiform, erect, winged; leaves subhomboid, serrated, decurrent, setosely ciliated at the base; peduncles axillary, solitary, length of leaves; calyces glabrous.—Native of the East Indies. L. deciduus, Roth, nov. pl. spec. miss. The stem is winged from the leaves being decurrent.

Heyne's Lobelia. Pl. ½ to 1 foot?

60 L. zeylanaica (Linn. spec. 1822.) stems prostrate and creeping, downy; leaves on short petioles, ovate, somewhat cordate, serrated, acute; lower ones obtuse; peduncles solitary, 1-flowered, axillary, equal in length to the leaves, villous; capsules rather villous. O. S. Native of China and the East Indies, in fields. L. nummulariifolia, Lam. dict. 3. p. 568.?—Seb. thes. 1. p. 37. t. 22. f. 12. Var. β, hirta, Linn. spec. 925. Plant small. Leaves like those of l. erosaica chamee'drys, fleshy, beset with a few pellucid hairs; lower ones serrated; upper ones serrated. Peduncles downy. Flowers purple. This is a very pretty plant when in blossom. It differs from l. trigonia, Roxb. by its petiole more rounded leaves, terete stems, and its pubescence.


61 L. chenopodiifolia (Wall. cat. no. 1312.) stem branched at the base; lower leaves roundish-ovate, obuse, broadly creased; upper ones ovate-lanceolate or deltoid, acuminate, coarsely toothed; peduncles elongated, terminal, bearing loose racemes of flowers at the apex; calyce segments subulate. O. H. Native of the East Indies?. Flowers small, probably pale blue.

Goose-foot-leaved Lobelia. Pl. 1 foot.

62 L. affinis (Wall. cat. no. 1311.) plant downy, creeping at the base; leaves ovate, petiolate, membranous, cuneate at the base, slightly dentilicate; peduncles axillary, 1-flowered; calyx hairy, with linear segments; stems angular. O. S. Native of the East Indies, in Silhet and Goalpara. Flowers blue. Stems creeping at the base. This species is very like L. zeylanica and L. trigonia.

Allied Lobelia. Pl. ½ foot.

63 L. nummularia (Linn. dict. 3. p. 589.) stems creeping, filiform; leaves roundish, sessile, cuneate at the base, slightly dentilicate; peduncles 1-flowered, axillary, a little longer than the leaves. O. S. Native of Java. Habit of Sibthorpia. Stem rather villous. Leaves small, rather villous beneath, unequal. Petioles 2-3 lines long. Corolla 4-5 lines long, longer than the stamens.

Money-wort-leaved Lobelia. Pl. creeping.

64 L. pumila (Burm. prod. 1. t. 60. f. 3.) glabrous; stems procumbent; leaves opposite, ovate, quite entire; panicles terminal. O. S. Native of Coromandel. Leaves petiolate. Flowers small.

Dwarf Lobelia. Pl. procumbent.

65 L. triaillata (Ham. spec. ex D. Don, prod. fl. nep. p. 157.) leaves roundish-ovate, serrated, glabrous; petioles dilated, decurrent at the base; pedicels solitary, axillary, longer than the leaves. Flowers somewhat pedicellate; segments of the calyx filiform; stem ascending, triquetrous, branched, winged, glabrous. O. F. Native of Nipaul. L. micrantha, Hook. ext. fl. t. 44. Stem hardly a hand high, rooting at the base. Pedicels longer than the leaves. Corollas small, red. Very like l. gratioloides, Roxb., but in that species the leaves are sessile and cordate.


66 L. trigona (Roxb. fl. ind. 2. p. 111.) glabrous; leaves subobtuse, cordate, coarsely serrated; pedicels axillary, bilobate, longer than the leaves; stems creeping at the base, erect to subverticillate. O. H. Native of the East Indies, delighting in pasture-ground, appearing in the wet season. L. stipularis, Roth. Flowers small, blue. Corolla inserted in the mouth of the calyx. Roth has mistaken the 2 small bracteae on the pedicels to be stipulas.

Trigonal-stemmed Lobelia. Pl. ½ to 1 foot.


68 L. pyramidalis (Wall. in asiat. res. 13. p. 379.) smooth; leaves lanceolate, long-acuminated, serrated: upper ones linear, attenuated; racemes panicked, leafy; calyce segments linear-subulate, about equal in length to the corolla; stems erect, branched. O. H. Native of Nipaul, on the mountains at Nai-rainhett. This is the most common and most ornamental plant in Nipaul, where it grows both in low and elevated situations. It is found from the entrance of that country at Behilaco, up to the mountains that bound the valley to the north, and where it grows at an elevation of at least 8000 feet. It is also found in the hilly country of Silhet. D. Don, in bot. mag. t. 2357. L. stimulans, Hamilt. mss. ex D. Don, prod. fl. nep. p. 157. Plant variable in height, and is often found altogether of a deep purple, but chiefly the floral branches and leaves. Stem pyramidal branches. Leaves downy beneath. Corollas purplish-violet. Anthers deep blue, pilose. Lobes of stigma hollow beneath.


69 L. excelsa (Wall. in Roxb. fl. ind. 2. p. 114.) leaves oblong-lanceolate, acuminate, decumented, attenuated at both ends, densely clothed with villi, on short petioles; racemes terminal, erect, villous, leafy, dense-flowered; calyce segments linear, as long as the tube of the corolla. O. H. Native of the Nelligberry mountains, near Coimbatore, where it was collected by Leschenault, and where it is called by the natives Oomar. Leaves 10 inches long, and 1 broad. Petioles marked by the decurrent base of the leaf. Flowers large.

Tall Lobelia. Pl. 10 to 12 feet.

70 L. rosea (Wall. in Roxb. fl. ind. 2. p. 118.) plant covered with glaucous short dense villi; stem panicked; leaves lanceolate, ensiform, acuminate, finely denticulated; racemes terminal, with unilateral flowers; calyce segments equaling the tube of the corolla. O. F. Native of Nipaul, in the valley of Noakote. Leaves from 8-12 inches long; floral ones linear-lanceolate, rounded at the base. Flowers numerous, nodding, downy, like those of L. pyramidalis, but larger, of a pale rose-colour. Anthers connected into a long purple incurvate tube, bearded. Filaments downy. Ovarium bi-trilocular. Stigma pubescent.

Rose-coloured-flowered Lobelia. Pl. 4 to 6 feet.

71 L. scotianella (Heeye, mss. ex R. et Schultes, syst. 5. p. 47.) leaves oblong-lanceolate, attenuated at both ends, serrated, rather scabrous; stem erect, angular; racemes terminal, equal, downy; flowers very numerous. O. ?. H. Native of the East Indies, in the vicinity of Bangulore. A stout plant. Leaves 1 foot long. Racemes angular, above a foot long. Corollas downy, showy. Calyx and capsules downy, and the anthers glabrous.
\textbf{LOBELIACEÆ. VIII. \\ \textit{Loboelia.}}

\textit{Tobacco-leaved Lobelia.} Fl. June, July. Clt. 1822. Pl. 2 to 3 feet.

§ 3. \textit{Species} natives of Africa, particularly of the Cape of Good Hope. Flowers generally violaceous or blue, rarely white or yellow.

* Stems erect. Leaves entire.

72 \textit{L. linearis} (Thumb. \textit{prod.} 1. p. 39. fl. cap. 2. p. 35.) leaves linear, quite entire, glabrous; stems erect, terete, striated, glabrous; pedicels solitary, axillary, much shorter than the leaves.  

73 \textit{L. erecta} (Thumb. \textit{phyt.} bl. p. 21. act. gorenk. 1811. f. 11. fl. cap. 2. p. 34.) leaves filiform, setaceous, glabrous, quite entire; pedicels axillary, solitary, length of leaves.  


75 \textit{L. scabra} (Thumb. \textit{phyt.} bl. p. 21. fl. cap. 2. p. 35.) leaves linear, emarginate, scabrous, quite entire; stems weak, filiform, hairy; pedicels axillary, solitary, flexuous, longer than the leaves.  

76 \textit{L. bellidifolia} (Thumn. \textit{fl. cap.} 2. p. 40.) leaves ovate, superior ones oblong; all sessile, retuse, and emarginate, with revolute margins, beset with a few hairs on the nerve and on the edges; filiform branches and stems naked at the apex; flowers racemose, on short pedicels, reflexed.  


\textit{Changled Lobelia.} Pl. ascending.


79 \textit{L. finifolia} (Lin. spec. 1318. Thumbl. fl. cap. 2. p. 36.) shrubby; leaves linear-lanceolate, erect, crowded, quite entire, but according to Thumberg they are trinodal; pedicels terminal, few.  

80 \textit{L. bellidifolia} (Thumb. \textit{prod.} 1. p. 40. fl. cap. 2. p. 44.) leaves ovate, toothed, hairy, or obovate, crenated, downy beneath; stems hispid at the base, simple, divided into a panicle at the top; lower pedicels the longest.  

81 \textit{L. rigida} (Spreng. noc. nov. 1818. ex Reem et Schultes, syst. 5. p. 44.) lower leaves petiolate, obovate, rarely toothed, glabrous, rather flexile; superior ones lancelolate, sessile, rather decurrent. Uppermost ones ellated, quite entire; pedicels short, axillary; capsules cylindrical, glabrous; stems radicant at the base, and ascending at the apex, tricuspid, glabrous.  

82 \textit{L. corymbosa}, G. Native of the Cape of Good Hope. Flowers white, marked with blue. It differs from \textit{L. bellidifolia} in the smoothness of its parts; and from \textit{L. cuneiformis}, R. Br. in the decussate radicant stems.


83 \textit{L. triquetra} (Linn. mant. p. 1.290.) glabrous; leaves lanceolate, pinnafially toothed, sessile; racemes terminal; branches and pedicels trinodal.  

84 \textit{L. bellidifolia}, Hott. Calycine teeth short, spreading, subulate. Flowers blue, smaller than in \textit{L. bicolor}, with a white or yellowish throat.


\textit{Grey Lobelia.} Pl. ½ foot.

86 \textit{L. tomentosus} (Lin. fil. suppl. p. 394.) tomentose; leaves linear, toothed; peduncles terminal, very long, 1-2-flowered.  

87 \textit{L. bellidifolia}, G. Native of the Cape of Good Hope. Stems numerous, ascending, simple, having the leaves imbricated at the base. Leaves like those of \textit{Corydaea}, having 4-6 obtuse teeth on each side, with revolute edges, clothed with hairy tomentum; peduncles clothed with adpressed hairs, bearing 2 small opposite leaves in the middle, or towards the base, and above these 2 opposite setaceous ones. Corolla blue or violaceous, half an inch long. Anthers beset with white hairs at the apex.


88 \textit{L. secund} (Lin. fil. suppl. p. 355. Thumbl. fl. cap. 2. p. 45.) glabrous; lower leaves oblong, toothed; superior ones lancelolate, entire; peduncles racemose, secund.  

89 \textit{L. bellidifolia} (Thumbl. \textit{prod.} 1. p. 40. fl. cap. 2. p. 47.) leaves ovate, toothed, hairy, or obovate, crenated, downy beneath; stems hispid at the base, simple, divided into a panicule at the top; lower pedicels the longest.
of the Cape of Good Hope, in sandy inundated places. The plant can hardly be said to be truly glabrous. There are floriferous branches in the axils of nearly all the leaves, and the flowers are all drooping to one side. Stems numerous, filiform, striated and downy, simple. Lower leaves obovate, oblongly, dentilicate, obtuse. Pedicels solitary, 1-flowered, shorter than the leaves. Corollas white, and are as well as the calyx downy outside.


87 L. patula (Thunb. prod. 1. p. 40. fl. cap. 2. p. 411) leaves ovate, minutely toothed, villous; stems diffuse, spreading, filiform; pedicels solitary, axillary, capillary, downy, longer than the leaves. 2. G. Native of the Cape of Good Hope. Leaves petiolate; superior ones lanceolate. In Lin. fl. suppl. p. 395. the plant is said to be glabrous.

**Spreading Lobelia.** Pl. 1 foot.

88 L. fedeva (Thunb. fl. cap. 2. p. 46.) leaves sessile, ovate-oblong: upper ones lanceolate: all serrated, glabrous; pedicels 1-flowered, much shorter than the leaves in the superior axils. 2. G. Native of the Cape of Good Hope. Stems erectish, branched a little, glabrous. Flowers blue.

**Ferent Lobelia.** Pl. 1/2 foot.

89 L. bifida (Thunb. prod. 1. p. 40. fl. cap. 2. p. 46.) leaves obovate, toothed, glabrous; stems filiform, downy, bifid or twice bifid at the apex; flowers terminal, solitary. 2. G. Native of the Cape of Good Hope, on Mount Bockland. Stems erect, simple. Radical leaves subpetiolate, oblong, dentilicate, hardly downy, a line long; but only a solitary cauline one on each stem, or 2 small alternate ones. Flowers blue. Bracteae lanceolate in the forks of the stem.

**Ehrl-stemmed Lobelia.** Pl. 1 to 2 inches.

90 L. dehli (Lin. fl. suppl. p. 395. Thunb. fl. cap. 2. p. 45.) leaves lanceolate, serrated, glabrous; pedicels lateral, longer than the leaves; stems much branched from the base; calyce segments linear-subulate, a little shorter than the corolla. 2. G. Native of the Cape of Good Hope. Very like L. depreissa. 2. G. Upper leaves nearly linear. Corollas blue, villous outside.


91 L. minia (Lin. mant. p. 2929.) leaves radical, ovate, obtuse, hardly crenated; scarpe or pedicels capillary, 1-flowered, 2 inches long; corolla funnel-shaped. 2. H. Native of the Cape of Good Hope, in fissures of rocks on Mount Tafelfberg. Sims, bot. mag. t. 2590. Root throwing out off-sets. Flowers pale blue. Habit of Montia fontana or Bélliurn minium.

**Minute Lobelia.** Fl. June, Sept. Ct. 1772. Pl. 1 inch.

92 L. minima (Sims. bot. mag. 2077.) stems prostrate; leaves ovate, crenated, petiolate, glabrous; pedicels long, axillary, 1-flowered, furnished with 2 to 3 linear hairy bracteae below the middle. 2. G. Native of the Cape of Good Hope. Flowers white inside, and red outside, with a yellow throat.


**Small Lobelia.** Pl. 1 inch.

*** Stems prostrate. Leaves cut or toothed.

94 L. erinus (Lin. spec. 1321. Thumb. fl. cap. 2. p. 39.) leaves toothed; lower ones obovate, petiolate: superior ones almost sessile, narrow-lanceolate; pedicules 1-flowered, longer than the bracteae; stems spreading. 2. G. Native of the Cape of Good Hope. Curt. bot. mag. 901. Rapiniun erinum, Mill. dict. no. 8.—Herm. ligdb. 110. t. 110. Stems branched at bottom. Leaves glabrous. Pedicels axillary, solitary, naked, much longer than the leaves. Flowers slender, blue, with a white or yellowish throat. Fruit 3-celled. According to Thunberg there is a variety of this, having numerous radical stems, which are as well as the leaves villous.


95 L. alpinoides (Lam. dict. 3. p. 586. no. 29.) plant creeping, glabrous; stems branched; leaves roundish-ovate, toothed; peduncles long, 1-flowered, axillary, much longer than the leaves. 2. G. Native of the Cape of Good Hope. Stems erect at the top, but radicate at the base. Radical leaves like those of Sibthorpiia; the rest ovate, toothed, and subpetiolate.

**Chick-ned-like Lobelia.** Pl. 1/4 to 1/2 foot.

96 L. musgoide (Cham. in Linna. 7. p. 215.) herb small, slender, trailing, quite glabrous; stems filiform, rooting at the nodi; leaves roundish, deeply 5-7-cleft, truncate or cuneate at the base: segments elliptic, acute, mucronulate; pedicels axillary, bracteate, erect, much longer than the leaves; ovary obconical. 2. G. Native of the Cape of Good Hope. Herb tufted, pale green. Corollas purple.

**Mass-like Lobelia.** Pl. tufted.

97 L. mundita (Cham. in Linna. 7. p. 215.) plant trailing; stems filiform, angular; leaves sessile, decurrent, lanceolate and elliptic, acute at both ends, with a few acute serratures; flowers axillary, solitary, on short pedicels; calyce segments lanceolate, acute, erect, more than one-half shorter than the tube of the corolla; anthei all bearded. 2. G. Native of the Cape of Good Hope, at Gamka, where it was collected by M. Mundt. Ovarium, calyces, pedicels, stems, and outside of corolla beset with long spreading white hairs.

**Mundt's Lobelia.** Pl. trailing.

98 L. campanulata (Lam. dict. 3. p. 588. no. 20.) plant small; leaves linear-lanceolate, toothed; pedicels very long, 1-flowered; calyx hairy, a little reflexed. 2. H. Native of the Cape of Good Hope. Stem simple, slender, leafy, glabrous. Leaves glabrous, sessile, hardly an inch long. Pedicels filiform, 21/2 inches long, pilose at the apex, solitary in the axils of the superior leaves. Flowers erect, campanulate, blue. Limb spreading, hardly divided, rather irregular. Calyce segments narrow.


99 L. brevifilis (Lam. dict. 3. p. 588.) leaves sessile, lanceolate, toothed, minute, usually unilateral; flowers almost sessile; the pedicels are short and alternate; stems procumbent. 2. G. Native of the Cape of Good Hope. Breyn. cent. p. 175. t. 89. Stems long, filiform. Flowers blue. Bracteae much shorter than the flowers.

**Breynius's Lobelia.** Pl. procumbent.

100 L. champefyllis (Lam. dict. 3. p. 590.) leaves linear, channelled, numerous, bidentate at the apex, clothed with hairy tomentum; pedicels very long, naked, axillary and terminal, furnished with narrow acute scales; stem shrubby. 2. G. Native of the Cape of Good Hope. L. scabra, Spreng. neun. entd. ex syst. Habit of Lactandula, with the leaves of Ajania champefyllis. Stems leafy, slender. Pedicels longer than the stem, 6 inches long. Corollas of a pale violaceous colour, 6 lines long, inflated at the base.

**Ground-pine-like Lobelia.** Pl. 1/4 to 1/3 foot.

101 L. erinoides (Lin. mant. p. 291. Thumb. fl. cap. 2. p. 39.) leaves petiolate, oblong, toothed, bluish, glabrous; pedicels axillary, solitary, shorter than the leaves; corolla funnel-shaped; stems prostrate or erectish. 2. or 2. G. Native of the Cape of Good Hope. Rapiniurn erinoides, Mill. dict. no 9.—Herm. ligdb. p. 108. t. 109. Corollas funnel-shaped, an-
cular, equal, blue, with spreading segments. Filaments combined into a 5-striped, club-shaped tube. Stigma hairy.


102 L. sect. Curvirostis (Curt. bot. mag. t. 514.) leaves downy, serrated; lower ones oblong, nearly sessile; superior ones lanceolate; pedicels solitary, axillary, longer than the leaves. 2. G. Native of the Cape of Good Hope. Willd. enum. 1. p. 218. Corollas blue, with a sulphur-coloured throat. Curtis says the leaves are downy and nearly sessile, while Willdenow says they are glabrous and petiolate.


103 L. Ilicifolia (Ker. in bot. mag. t. 1896.) leaves ovate-lanceolate, deeply and remotely toothed: teeth acute; pedicels axillary, solitary, much longer than the leaves. 2. G. Native of the Cape of Good Hope. Lower leaves ovate-spatulate; superior ones lanceolate: all glabrous. Calyx with salutate toothed segments. Corollas resupinate, twice the length of the calyx, pink or flesh-coloured. Antlers almost naked. Barren stems prostrate; floriferous stems erect. Perhaps a species of *Parastratanthus*.


106 L. Thermaulis (Thumb. prod. 1. p. 40. fl. cap. 2. p. 42.) leaves ovate, serrated, attenuated at both ends, acute, glabrous above, and pilose beneath; pedicels solitary, axillary, shorter than the leaves, and are as well as the calyces clothed with striate white hairs; stems decumbent, hairy. 2. G. Native of the Cape of Good Hope, in the region of the hot springs near Eland's river. Calyx yellow. *Cape lobelia*. Clt. 1800. Petioles much longer than the leaves.

Hot-spring Lobelia. Pl. decumbent.

107 L. leptocarpa (Griess. in Linnaea. 5. p. 419.) stem hermaphroditic, decumbent, branched; branches flaccid; leaves ovate-lanceolate, sharply serrated, quite glabrous, with cartilaginous edges; pedicels axillary, solitary; capsule elongated, clavate, hispid from bristles. 2. G. Native of the Cape of Good Hope. Branches beset with white hairs. Leaves sessile. Calyx bristly. Corolla downy, white, having the segments bearded at their tips, and ciliated on the margins. Filaments and style glabrous.

Slender-fruited Lobelia. Pl. decumbent.

108 L. hisruta (Lin. spec. 1822.) leaves ovate, toothed, or crenated, hairy or woolly; peduncles lateral, solitary, very long. 2-3-flowered; stem shrubby, hairy, prostrate, or erect. 2. G. Native of the Cape of Good Hope. Thumb. fl. cap. 2. p. 37. Rapúnion hirsutum, Mill. dict. no. 9.—Burnm. afr. 105. t. 40. f. 2. Flowers blue, drooping, small.


109 L. serpens (Lam. dict. 3. p. 588.) leaves ovate, crenated, glabrous; pedicels axillary, solitary, shorter than the leaves; stems prostrate, a little branched. 2. G. Native of the Cape of Good Hope. Stems slender, flexuous. Leaves thin, hardly an inch long. Flowers small, blue.

Creeping Lobelia. Pl. prostrate.

110 L. pygméa (Thumb. prod. 1. p. 40. fl. cap. 2. p. 43.) leaves roundish, serrated, hairy; stems decumbent, hairy, branched; pedicels axillary, solitary, longer than the leaves. 2. G. Native of the Cape of Good Hope, on Mount Ribeck-Castel. Stems very slender. Petioles capillary, hairy. Corollas white.

Pygmy Lobelia. Pl. decumbent.

111 L. coronopifolia (Lin. spec. 1822.) leaves lanceolate, toothed; peduncles long, few-flowered. 2. G. Native of the Cape of Good Hope. Curt. bot. mag. 644.—Brey. cent. t. 88. Stems and petioles hairy. The 3 segments of the lower lip of the corolla obvate, emarginate. Leaves with 3 or more teeth on each side. Flowers beautiful blue. Stems procumbent.


113 L. crenula (Hook. bot. mag. 3701.) stem short, decumbent at the base, densely leafy; leaves lanceolate, dentately pinnatifid, downy, attenuated at the base; peduncles terminal, very long, bearing a few-flowered second racemes at the apex; segments of the corolla longer than the tube. 2. G. Native of the Cape of Good Hope. Pedicels bracteated. Corolla drooping, large, purple-blue; lower lip of 3 obvate emarginate mucronate segments, having 3 small yellow raised marks at the base, the upper lip of 2 small bent back segments. Antlers purple, fringed at the top. *Like L. coronopifolia.* (i. 121.)

Blue-flowered Lobelia. Pl. 1 foot.

114 L. Simsii (Sweet, hort. brit. p. 247.) leaves petiolate, recurved, pinnatifid, with bifurcate lobes; peduncles elongated, lateral, 2-3-flowered; stem shrubby. 2. G. Native of the Cape of Good Hope. L. pedunculata, Sims, bot. mag. t. 2251. Flowers blue, having the tube purple outside. Calycine segments short. Lower lip furnished with 2 yellow marks at the base.

Sims' Lobelia. Shrub 1 foot.

115 L. crenata (Thumb. prod. 1. p. 39. fl. cap. 2. p. 40.) leaves lanceolate, crenated, glabrous; stems hermaphroditic, filiform, decumbent; pedicels capillary, axillary, hardly the length of the leaves. 2. G. Native of the Cape of Good Hope. Stems branched a little. Leaves about an inch long: lower ones acute: superior ones smaller and obtuse. Flowers blue?


§ 4. Species natives of the Isle of France, the Society Islands, and New Zealand.

116 L. arbores (Forst. prod. no. 308.) stem arborescent; leaves petiolate, ovate-oblong, serrately toothed; peduncles axillary, solitary, 1-flowered. 2. G. Native of the Society Islands.
LOBELIACEÆ.

VIII. Lobelia.

Tree Lobelia. Tree.

117 L. suprema (Cham. in Lindm. 7. p. 223.) arboreous, palm-form'd; stem quite simple, straight, with a tuft of leaves at top; leaves glabrous, oblong-obovate, acuminate, narrowed into the petioles, undulated, dentilicate, with reflexed edges, almost quite entire towards the base, and revolute; inflorescence and corollas tormento-se. P. S. Native of the Island of Owhyee, in woods. Ribs of leaves thick, and prominent beneath; veins feathered and prominent. Peduncles longer than the leaves, declinate, nutant, furnished with many oblong-elliptic sessile densely imbricated bracteas, bearing a globose head of flowers each. Corolla curved, cleft on the back, $\frac{3}{4}$ inches long. Column of stamens glabrous, exceeding the corolla. Two lower anthers bearded. Leaves 2½ feet long and 1 foot broad. This is a most superb species.

Superb Lobelia. Tree 10 to 15 feet.

118 L. macrostachys (Hook. et Arn. in Beech. voy. pt. bot. p. 88.) glabrous; stem tall, straight; leaves linear-lanceolate, attenuated at both ends, subterete; racemes simple, terminal, very long; pedicels secund, horizontal; bracteas linear, shorter than the pedicels; tube of calyx hemispherical, with the segments obverse; corollas twice the length of the pedicels. P. S. Native of the Sandwich Islands. Calyx closely adhering to the ovarium; with a free 5-parted limb, which is about equal in length to the tube. Corolla tubular, 3 inches long; tube cylindrical, 5-cleft, split on the back. Stamens with a free tube, and cohering anthers; the two lower ones bearded. Stamina 2-lobed; lobes flat, thick, cartilagineous, rounded, divaricate, beardless. Fruit unknown.

Long-spiked Lobelia. Shrubs tall.

119 L. filiformis (Lam. dict. 3. p. 588.) leaves linear, narrow, toothed; pedicels 1-flowered, axillary, length of leaves; stem filiform, quite simple. G. H. Native of the Isle of France. Leaves sessile, glabrous. Flowers minute, ringent, violaceous. Calyces teeth subulate. Said to be nearly allied to L. Laurinii.

Var. 3. Luzoniana (Roem. et Schultes, syst. 5. p. 61.) lower leaves ovate, very minute.—Native of the island of Luzon, near the town of Santa Cruz de la Laguna. L. filiformis, Cav. icon. 6. p. 7. t. 511. f. 2. Flowers pale blue.

Filiform Lobelia. Pl. $\frac{3}{4}$ to 1 foot.

120 L. angulata (Forst. prod. no. 309.) stem prostrate, quite simple; leaves roundish, repandly toothed; pedicules axillary, solitary, 1-flowered. G. Native of New Zealand. L. repanda, Mart. Mitt. no. 35. Perhaps a species of Pratia.

Angular-leaved Lobelia. Pl. prostrate.

§ 5. Species natives of New Holland.

* Herbaceous plants, with axillary 1-flowered pedicels.

121 L. alata (Labill. nov. holl. 1. p. 51. t. 72.) plant glabrous, erect; stem trigonal: angles a little winged; leaves linear or cuneated, decurrent, toothed; teeth divericate or reflexed; pedicels shorter than the leaves; ovarium glabrous; capsules cylindrical. G. Native of New Holland. Flowers blue?

Var. a. angustifolia (Roem. et Schultes, syst. 5. p. 68.) superior leaves linear; angles of stem margined; radical leaves ovate-lanceolate. G. Native of the south coast of New Holland, and about Port Jackson; and of Van Diemen's Land.

Var. b. cuneiformis (Roem. et Schultes, l. c.) leaves cuneiform, toothed at top, decurrent; flowers axillary. G. Native of the south coast of New Holland. L. cuneiformis, Labill. nov. holl. 1. p. 51. t. 78.


122 L. quadrangularis (R. Br. prod. p. 562.) glabrous; stem tetragonal, ascending; leaves ovate, toothed, almost sessile, 3 or 4 times shorter than the pedicules; segments of the superior lip of the corolla narrow, linear. G. Native of New Holland, on the shore, within the tropic. Quadrangular-stemmed Lobelia. Pl. ascending.

123 L. repandula (Graham. in edinb. phil. journ. Dec. 1829.) leaves roundish, repand, wrinkled with the nerves, glabrous; pedicels much longer than the leaves; calyces segments entire, glandular at the base; stem spotted, prostrate, rooting. G. Native of New Zealand. L. muculata, Penny. Plant glabrous. Corolla white, split on the upper side. Segments of corolla rather unequal, arranged like the radii of a semi-circle. Anthers lead-coloured, with 2 or 3 angles projecting downwards from their apex. Nearly allied to L. membranacea, R. Br. prod. Perhaps a species of Pratia.

Wrinkled-leaved Lobelia. Pl. creeping.

124 L. membranacea (R. Br. l. c.) glabrous, procumbent; leaves roundish, repandly toothed, membranous; somewhat 2-angled; shorter than the pedicules; segments of the calyx toothed a little. G. Native of New Holland, within the tropic, on the shore. Flowers beautiful, purple.

Membranous-leaved Lobelia. Pl. procumbent.

125 L. purpureascens (R. Br. l. c.) glabrous; stem ascending, tetragonal; leaves ovate-lanceolate, deeply serrated, one-half shorter than the pedicules; segments of the upper lip of corolla narrower, linear. G. Native of New South Wales, about Port Jackson. Flowers purplish or blue.


126 L. fluitatilis (R. Br. l. c.) plant creeping, smoothiol; branches ascending; leaves ovate, serrated on the outside, rather ciliated; pedicules bractless, downy, as well as the calyces and ovaria; stamens epipetalous. G. Native of New South Wales, at Port Jackson.


128 L. pedunculata (R. Br. l. c.) plant creeping, rather downy; branches ascending, filiform; leaves remote, ovate, angularly toothed, acute, a little ciliated; pedicules very long, furnished with 2 minute bracteas; stamens epipetalous. G. Native of New South Wales, at Port Jackson. Flowers blue.


129 L. irrigua (R. Br. l. c.) plant creeping, moss-like, glabrous; leaves roundish, thickish, dentately crenated, petiolate, longer than the pedicules, which are bractless and glabrous; segments of the calyx a little shorter than the tube of the corolla; stamens epipetalous. G. Native of Van Diemen's Land, and on the south coast of New Holland. Flowers purplish? Irrigated Lobelia. Pl. creeping.

* * Racemes or pedicules few-flowered, terminal. Tube of corolla cleft longitudinally, with the lips of the limb very unequal.

130 L. graecilis (Andr. bot. rep. t. 340.) plant glabrous, erect, branched a little,stem sessile rather secund; calyx length of filaments? superior lip of the corolla densely bearded; middle segment of the lower lip almost square, broader than long; lower leaves nearly ovate, deeply pinnatifid; superior ones 4 Y


131 L. dentata (Cav. icon. 6. p. 14. t. 592.) plant erect, glabrous, a little branched; racemes few-flowered, second; calyx one-half shorter than the filaments; superior lip of corolla a little bearded: segment of the lower lip oblong; lower leaves ovate-lanceolate, deeply toothed on the outer side: superior ones lanceolate, toothed. 2. G. Native of New South Wales, about Port Jackson. Root fusiform, fibrous. Segments of the calyx subulate. Corolla blue, with a white throat. Two upper segments of the corolla very short.


132 L. gibosa (Labill. nov. holl. 1. p. 50. t. 71.) glabrous; stem terete, simple; racemes secund, many-flowered; leaves linear, quite entire, rather fleshy; superior lip of corolla beardless: and with the segments of both lips lanceolate; capsule gibbous on one side. 2. G. Native of New South Wales, about Port Jackson; and of Van Diemen's Land. Root perpendicular, almost simple. Racemes very long. Bracteas subulate, hardly the length of the pedicels. Corollas blue. Anthers hispid at the apex.


133 L. simplicicaulis (R. Br. prod. p. 564.) glabrous; stem quite simple, terete; raceme secund, few-flowered; leaves linear, toothed, remote: lower ones lanceolate; upper lip of corolla bearded, the segments of both lips acute; capsules erect, rather gibbous on one side. 2. G. Native of Van Diemen's Land. Flowers blue.

Simple-stemmed Lobelia. Pl. 1 foot.

134 L. Brownii'ana (Röm. et Schultes, syst. 5. p. 71.) stem terete, a little branched; raceme secund; leaves linear, lower ones toothed; superior lip of corolla ciliated: the segments of both lips acute; capsules gibbous on one side. 2. G. Native of New Holland, within the tropic, on the shore. L. stricta, R. Br. 1. c. Flowers blue.

Brown's Lobelia. Pl. 1 foot.

135 L. heterophylla (Labill. nov. holl. 1. p. 52. t. 74.) plant smoothish; stem angular, simple; raceme secund; leaves thickish: lower ones dentately pinnatifid: superior ones linear, quite entire; middle segment of the lower lip of the corolla obcordate, and the lateral ones dimidiate. 2. G. Native of New Holland, in Van Lewin's Land. Root simple, perpendicular. Bracers lanceolate, solitary or twin, shorter than the pedicels. Calyx inflated, with very acute segments.

Variable-leaved Lobelia. Pl. 1 foot.

136 L. tenusior (R. Br. in prod. p. 564.) plant rather pilose; stem filiform, divided; branches peduncle-formed, 1-flowered; lower leaves pinnatifid, of an ovate outline: superior leaves linear, trifid or quite entire: middle segment of the lower lip of the corolla obcordate: lateral ones dimidiate: capsule sub-cylindrical. 2. G. Native of New Holland, on the south coast, within the tropic. Flowers blue.

Slender Lobelia. Pl. 1 foot.

137 L. farfölia (R. Br. 1. c.) glabrous; stem subpaniculate, terete: branches usually 1-flowered, peduncle-formed: superior lip of corolla beardless: segments of the lower lip oblong, obnivous. 2. G. Native of New Holland, on the south coast.

Small-leaved Lobelia. Pl. 1 foot.

§ 6. Species natives of Europe.


139 L. serulata' (Brot. fl. lus. p. 304.) glabrous; leaves linear-lanceolate, sharply serrated; racemes long; stem erect. O. H. Native of Gibraltar, in sandy humid places. Bractees a little longer than the pedicels. Corolla rather roughish. Middle segment of the lower lip narrower than the lateral ones; segments of the upper lip linear. Flowers blue. Perhaps not distinct from L. ürense.


V. 8. 8. (Vall. 8. 8.) leaves somewhat spatulate. Gourn. l. c.


141 L. Salzmanni'ana (Presl. symb. bot. p. 31. t. 29.) plant quite glabrous; stem quite simple, erect, leafy; leaves lanceolate, crude, crenated, tapering into the petioles; uppermost ones disposed in aggregate whorles; pedicels axillary, filiform, bifracteate in the middle. O. H. Native of Corsica, at Ajaccio by the sea side. L. Laurentites, Salzm. pl. cors. excis. Flowers blue?

Salzmann's Lobelia. Pl. ½ foot.


143 L. Farset'ia (Vand. in Rœm. script. pl. hisp. p. 66. Vittm. suppl. 1. p. 261.) lower leaves ovate-lanceolate, obsoletely toothed; floral leaves linear. O. H. Native of Portugal, in humid places. Stem 2 hands high, many-angled, branched at the base. Leaves glabrous. Calyx gibbous, with linear spreading segments. Corolla pentagonal, blue, the segments of the lower lip the largest. In the base of the inner part of the limb there are two oblong parallel callousities, as in the genus Dölichos. Style longer than the stamens. Capsule ventricose.

Var. a; leaves oval-oblong, acuminated, dentilicate; stem leafy, somewhat sinate; anthers hairy, joined at the apex.

Var. β; stem suffruticoso; leaves cordate, acute, serrated; flowers axillary, pedunculate.

Farseti's Lobelia. Pl. 1 to 1 ½ foot.

† Species not sufficiently known.

144 L. cornut'a (Lin. spec. 1319.) leaves ovate, petiolate;
stamens very long.  
Horned Lobelia. Pl. ?
145 L. brvoides (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 41.) stems tufted; leaves sessile, lanceolate, quite entire, acute. Flowers in corymb, terminal. 2 S. Native of South America, on Mount Antisana, Humb. et Bonpl. Habit of a moss or Aëria. Leaves imbricated, shining, coriaceous, denticulated. Flowers among the terminal connivent leaves. Perhaps a species of Lysipomia.

Brynna-like Lobelia. Pl. 4 foot.
146 L. veronicaefolia (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 57.) stem erect; leaves downy: radical ones obtuse, obovate; cauline leaves lanceolate, dentate, acute; flowers terminal, racemose. 2 S. Native of South America. Humb. et Bonpl.

Speedwell-leaved Lobelia. Pl. ?
147 L. amygdalina (Willd. l. c. p. 57.) stem erect; leaves ovate, acuminate, serrated; pedicels axillary; corolla cleft.—Native of South America. Humb. et Bonpl.

Almond-like Lobelia. Pl. ?
148 L. retorta (Willd. l. c.) stem arboreous; branches scabrous; leaves petiolaris, elliptic, mucronate, with retrograde serratures, wrinkled, veiny; flowers terminal, racemose. 2 S. Native of South America. Humb. et Bonpl.

Retrograde-serrated-leaved Lobelia. Shrub.
149 L. bonplandiana (Willd. l. c.) stem arboreous; leaves lanceolate, sharply serrated, flat, downy, on short petioles; pedicels axillary, shorter than the leaves. 2 S. Native of South America. Humb. et Bonpl. L. dentata, Willd. herb.

Bonpland’s Lobelia. Shrub.
150 L. elliptica (Willd. l. c.) stem arboreous; leaves elliptic, obtuse, rugose, acute; flowers terminal, racemose. 2 S. Native of South America. Humb. et Bonpl.

Elliptic-leaved Lobelia. Shrub.
151 L. nivea (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 58.) stem arboreous; leaves elliptic, with revolute edges, toothed, shining and wrinkled above, but clothed with white tomentum beneath, as well as on the pedicles and corollas; flowers axillary. 2 S. Native of South America. Humb. et Bonpl.

Snowy Lobelia. Shrub.
152 L. reticulata (Willd. l. c.) stem arboreous; leaves ovate-lanceolate, acuminate, crenated, wrinkled from veins, downy beneath; corollas terminal, racemose. 2 S. Native of South America. Humb. et Bonpl.

Reticulated-leaved Lobelia. Shrub.
153 L. madagascariensis (Rœm. et Schultes, syst. 5. p. 67.) lower leaves ovate: superior ones lanceolate, denticulated, decurrent; flowers axillary, length of leaves; stem prostrate. 0. H. Native of Madagascar. L. decerrena, Willd. herb.

Madagascar Lobelia. Pl. prostrate.
154 L. phytomoides (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 68.) leaves lanceolate, toothed, sessile, glabrous; racemes terminal; stem ascending, a little branched. 2 S. Native of South America. Humb. et Bonpl.

Phytomene-like Lobelia. Pl. ascending.
155 L. humboldtiana (Rœm. et Schultes, syst. 5. p. 68.) leaves roundish, acute, sessile, with cartilaginously serrated edges; flowers sessile, axillary; stem weak. 2 S. Native of South America. Humb. et Bonpl. L. sessilifolia, Willd. herb.

Humboldt’s Lobelia. Pl. ?
156 L. polyomorpha (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 68.) stems prostrate; lower leaves serrated, oblong; superior ones quite entire, lanceolate; pedicels axillary, elongated. 2 S. Native of the island of Bourbon, Bory de St. Vincent.

Polymorphous Lobelia. Pl. prostrate.
157 L. loxia (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 72.) plant clothed with scabrous tomentum; leaves oblong, peltate, wrinkled, and shining above; flowers terminal, panicled. 2 S. Native of South America, about Loxa. Humb. et Bonpl.

Loxia Lobelia. Shrub.
158 L. megapotamica (Spreng. syst. add. p. 75.) stem erect, branched, glabrous; leaves linear, very narrow, crenately spreading, glabrous; flowers terminal, corollas. 2 S. Native of Brazil, at the banks of the Rio Grande, where it was collected by Sello.

Rio Grande Lobelia. Shrub.

Culture. All the species of this genus are truly ornamental when in blossom. The hardy herbaceous kinds thrive and flower best in light rich earth or peat soil; but in winter most of the kinds require to be protected by planting them in pots and placing them in a frame or greenhouse. They increase freely by the suckers from the roots or by seed. The green-house and stove perennial herbaceous kinds grow well in a mixture of peat and sand, and are easily increased by dividing, and by seeds. The shrubby, stave, and greenhouse kinds grow well in the same kind of soil recommended for the perennial herbaceous species, and are easily increased by cuttings in the same kind of soil. The seeds of annual species require only to be sown where they are intended to remain.


Lin. syst. Pentàdria, Monogyniæ. Calyx of 5 deep segments. Corolla bilabiate, with a bearded mouth, cleft on the back; lower lip trilab; upper lip of 2 smaller segments. Stamens with free filaments, and cohering bearded anthers. Stigma capitate, hairy. Capsule half superior, 3-valved, 3-celled, 5angled, surrounded by the segments of the calyx beyond the summit, many-seeded. — Aquatic, smooth, fleshy plants. Leaves numerous, mostly radical, recurved. Scapes hollow, with a few leaves at the base, bearing a lax raceme of flowers at the top. Bracteas solitary at the base of the pedicels.


2 D. paludosâ; leaves flat, linear-oblong, with obsolescent crenate margins; scape nearly simple and naked, bearing a few remote flowers at the apex. 2 S. Native of North America, in deep sphagnum swamps, from Sussex county in Delaware to Georgia. Lobelia paludosa, Nutt. nov. gen. 2. p. 75. Leaves 4-6 inches long, and hardly 5 lines wide. Flowers pale blue, small. Corolla with the disk of the lower lip downy.

Marsh Dortmann. Pl. 2 feet.

Culture. The species of Dortmanniana are singular, and beautiful plants, but difficult of culture. However, D. lacustris may be 4 Y 2.
grown for a time, if planted in a pot of gravel, and placed in a pond or cistern, so that the plants may be about 6 inches below the surface of the water; and D. patlodus may be grown in a pot half filled with peat earth, and the other half with sphagnum, in which the plants are to be set, and the pot placed in a shallow pan of water, or in a cistern or pond, but not so deep as to immerse the plants.

X. PARAESTRANTHUS (from παραστρέφω, parastrepho, to invert, or to distort, ar στροφή, anthos, a flower; the flowers are upside down, compared with those of other genera of Lobeliaceae). Lobelia species, Lin. Thunb.

L. L. Pentandria, Monogyonia. Calyx 5-cleft. Corolla bilabiata, with hardly any tube: upper lip of 3 segments, lower one of 2 segments, smaller. Stamina column under the lower lip. Anthers and filaments connected into a column; the former bearded at the apex. Ovary inferior, 2-3-celled. Style bifid or trifid.—Herbaceous plants, with toothed leaves, and terminal racemes of almost sessile yellow flowers.

1. P. simplex; glabrous; stems assurgent, simple; leaves lanceolate, serrated; flowers almost sessile, at the tops of the stems, forming a loose spike; bracteas toothed, shorter than the calycine segments. 

2. P. variifolia; stems erect, branched at top; leaves linear, quite entire, and toothed, particularly the upper ones; flowers blue, or violet, nearly terminal, almost sessile; stigma tripartite. 

3. P. unidentata; leaves linear-lanceolate, furnished with a tooth on each side, rather hairy above, and discolorous beneath; pedicels solitary, terminal; stems angular from the decurrent bases of the leaves. 


Cult. Beautiful plants, of easy culture. A mixture of loam, peat, and sand is the best soil for them; and they are easily increased by dividing at the root.

XI. ISOTOMA (from ἰσός, ἰσος, equal, and τομα, toma, a section; in reference to the segments of the corolla being nearly equal.) Lindl. bot. reg. 964. Lobelia Isotoma, R. Br. prod. fl. nov. holl. p. 564.

L. L. Pentandria, Monogyonia. Limb of calyx 5-parted (f. 122. c.), nearly equal. Corolla salver-shaped (f. 122. d.) or funnel-shaped, with an entire or cleft tube, and a nearly equal 5-parted limb. Filaments combined into a tube. Anthers cohering, beardless; two lower ones mucronate. Stigma capitata, protruding beyond the anthers. Capsule 2-celled, many-seeded.—Herbaceous plants. This genus differs from all the other genera of Lobeliaceous plants, in the 2 lower anthers being mucronate, except Pratia.

1. I. axillaris (Lindl. bot. reg. 964.) plant rather downy; leaves sessile, pinnatifid, toothed; peduncles axillary, naked, elongated, 1-flowered; corolla salver-shaped, with an entire tube. 

2. I. Brozhii; glabrous; stems mostly simple; leaves linear, quite entire; corolla salver-shaped, with an entire tube, and a somewhat unequal limb; flowers racemose. 

3. I. scopiger; stems short; leaves lanceolate, a little toothed; corolla funnel-shaped, having the tube cleft above at the apex; pedicels scap-formed, 1-flowered. 

4. I. scapa, biuncilis (Br. Br. l. c.) stem 6-10 lines long; leaves ovate-lanceolate, 4-6 lines long; scapes many, 2-3 lines long. 

5. I. scopiger. 

6. I. scopically. 

7. I. scopiger. 

8. I. scopically.
the apex, or terminating in a membranous process. Stigma 2-lobed, ciliated outside. Capsule somewhat 6-ribbed, 1-celled, opening by an orbicular cell, undulate, deciduous operculum. Seeds numerous, adnate to parietal placenta.—Small, tufted, stemless or canescent herbs, with the habit of *Aréria* or *Montia*. Leaves alternate, linear or spatulate, quite entire, stiff and crowded, or fleshy and remote. Flowers minute, axillary, solitary, white, pedunculate. This genus is easily distinguished from all the other genera of the present order.

1. **L. Montoides** (H. B. et Kunth, nov. gen. amer. 3. p. 320. t. 266. f. 2.) stems creeping; leaves spatulate, rather fleshy; peduncles axillary; calyces segments unequal, glabrous, 4 times shorter than the tube of the corolla. *L. S.* Native of Quito, in humid places on the high plains of Mount Antisana, at the altitude of above 6000 feet. Lobélia limoselloides, Wild. in Reem. et Schultes, syst. 5. p. 41. Herb glabrous, with the habit of *Montia fontana*.

*Montia*-like *Lysipomia*. Pl. procumbent.

2. **L. Reniformis** (H. B. et Kunth, nov. gen. amer. 3. p. 320. t. 266. f. 1.) stems creeping; leaves orbiculariform, emarginate; flowers axillary; calyces segments equal, acute, glabrous, 8 times shorter than the tube of the corolla. *L. S.* Native of South America, near the Cave of Antisana. Herb glabrous, with the habit of *Viola pavástis*.

*Reniform*-leaved *Lysipomia*. Pl. creeping.

3. **L. Arethoides** (H. B. et Kunth, nov. gen. amer. 3. p. 321. t. 267. f. 1.) plant tufted; stems short, leafy; leaves crowded in a stellate manner, oblong-spatulate, acute, stiff; peduncles axillary; segments of the calyx equal, acute, ciliate, one-half shorter than the corolla. *L. S.* Native of the Andes of Peru, near Loxa, in Cerro de Vinajacu, at the altitude of about 4000 feet. Lobélia glandulosa, Wild. in Reem. et Schultes, syst. 5. p. 41. Plant glabrous, with the habit of a species of *Aréria*.

*Arethia*-like *Lysipomia*. Pl. tufted, an inch high.

4. **L. Acaulis** (H. B. et Kunth, nov. gen. amer. 3. p. 321. t. 267. f. 2.) plant tufted, stemless; leaves radical, crowded in a stellate manner, linear, obtuse, stiff; peduncles radical; segments of the calyx unequal, obtuse, glabrous. *L. S.* Native of South America, on the high plains of Mount Antisana, and roots of Chussulonig, above the altitude of 6000 feet. Lobélia androsácea, Wild. in Reem. et Schultes, syst. 5. p. 41. Plant glabrous, with the habit of *Valeriana rigida*.

*Stemless* *Lysipomia*. Pl. tufted.

5. **L. Subularia**; leaves radical, crowded in a stellate manner, subulate, mucronate, hairy at the base; peduncles elongated; calyces lobes acute. *L. F.* Native on the Cordillera of Peru. Peduncles 1-flowered, an inch long. (v. s. in herb. Lamb.)

*Subulare*-leaved *Lysipomia*. Pl. 1 inch.

**Cult.** The species of *Lysipomia* are very remarkable little plants, but none of them have been as yet introduced to our gardens; but should they ever be, we would recommend their being grown in a mixture of loam and peat, in small pots, well drained with sherd. They will be easily increased by division.

**XIV. Monopsis** (from mones, monos, one, and opis, opis, a face; in reference to the flowers being regular, not bilabiate). Sáisíb.—*Lobélia spéculum*, Andr. bot. rep. 604. *Specularia*, Soland. ms.

**Lin. syst. Pentándria, Monogynia.** Calyx adhering to the ovarium, with a 5-lobed equal limb. Corolla bilabiate, with hardly any tube; lower lip cuneated, 3-lobed; superior one straight, bipartite. Stamens combined into an incurved tube: anthers cohering; the 2 lower ones bearded at the apex. Ovary siliqué-formed, triangular, twisted, 1-celled, with 2 parietal placenta. Capsule dry, chartaceous, many-seeded, opening by 3 thong-formed valves.—Herbaceous, procumbent, glabrous plants, with small linear-lanceolate leaves: and axillary, solitary, almost sessile blue flowers.

1. **C. Klégans** (Dougl. l. c.) glabrous; root annual; stem procumbent, branched, rather angular; leaves sessile, ovate, 3-veined; flowers solitary, axillary, sessile; ovary sessile, long, acuminate. *O. H.* Native of North America, on the banks.
of the Columbia river. Flowers blue; the lower lip having a large white streak on the base. Stigma girded by a papillose beard. Two lower anthers alone bearded.

**Fl.** 1827. Pl. 2517. glabrous; root perennial, creeping; stems erect or decumbent, branched, triangular at bottom; leaves linear-lanceolate, acute, remotely dentated, sessile; lower ones ovate; flowers axillary, almost sessile, at the tops of the branches; ovarium elongated. 9. S. Native of the Cape of Good Hope, near Hangkliph, where it was collected by M. C. Captured elongated, crowned by the segments of the calyx, which are spreading, fleshy, and stellately disposed; anthers all bearded. Corolla pale blue.

**Bergius's** Cl. Pl. decumbent.

3. C. pusilla; we have not been able to see the work in which this plant is described, as it has not been received in this country. 10. H. Native of Chili. L. pusilla, Poepp. Pl. chil. exsic. 2671. syn. pl. amer. austr. misc. diat. 791. Flowers blue.

**Small Cl.** Pl. decumbent.

**XVII. CYPHIA** (from κυφος, κυφος, curved; in reference to the stigma being gibbous). Berg. 3 Fl. cap. p. 173. Lobelia species, Thunb.

**Lin. Syst.** Pentändria, Monogyâma. Calyx turbinata, 5-cleft. Corolla bilabiata; segments easily separated to the base, spreading at the apex. Filaments hairy, cohering; anthers free, bearded. Stigma drooping, hollow, gibbous. Capsule 2-celled, many-seeded.—Herbaceous plants, natives of the Cape of Good Hope, with alternate, undivided, pinnate, and pinnatifid leaves; and blue or red flowers.


Var. a. vulgâtor (Cham. in Linn.Î. 7. p. 224.) flowers nearly an inch long; genitals half an inch, one-half shorter than the tube; segments of corolla narrow-lanceolate.

Var. b. intermedia (Cham. l. c.) flowers 9 lines long; throat of corolla more bearded; segments of corolla more elliptic; genitals shorter than the corolline tube.

Var. c. variiflora (Cham. l. c.) flowers not half an inch long; genitals exceeding the corolline tube; filaments villous. Perhaps a proper species.

**Twining Cl.** Fl. 1827. Cl. 1795. Pl. twining.


**Digitate-leaved Cl.** Pl. twining.


5. C. serrâta (Spreng. syst. 1. p. 809.) leaves radical, oblong, attenuated at the base, sessile, crestedly serrated, quite glabrous, as well as the scape, which is sealy; flowers racemose; segments of the calyx reflexed, serrated. 9. G. Native of the Cape of Good Hope.

**Serrated-leaved Cl.** Pl. 1/2 foot.


**Phyteuma-like Cl.** Fl. Feb. Cl. 1822. Pl. 1 to 1/4 foot.

8. C. ? pinâta (Rom. et Schultes, syst. 5. p. 477.) stem shrubby, erect, branched at top; leaves pinnate, smooth; leaflets very narrow, capillary. 9. G. Native of the Canary Islands. Lobelia pinâta, Lam. dict. 3. p. 591. no. 44. Shrubs milky. Leaves like those of Iysonêa Quandlaleit. Branches very leafy. Leaves shining; leaflets 1/2 inch long.

**Pinnate Cl.** Shrub 3 feet.

9. C. éctye (Willd. rel. ex Rom. et Schultes, syst. 5. p. 477.) leaves bipinnatifidly jagged; stem furrowed. Native of the Cape of Good Hope. There is a smoother and broader leaved variety of this, with larger pinnatifid bracteas, which are about the length of the flowers.

**Racemed Cl.** Pl. 1 foot.

**Cult.** The species of this genus thrive well in an equal mixture of loam, peat, and sand; and cuttings of them root readily under a hand-glass. Some of the species have large tuberous roots; these must be kept quite dry when not in a growing state, or they will rot. These tuberous-rooted kinds may be increased just as the stems begin to push out from the root, by cutting off as many of the shoots as are wanted, and planting them in a small pot, in the same kind of soil recommended for the species, keeping them dry till the wound has healed, but never covering them with glass; they will soon form tubers of themselves, and the old plant will make fresh shoots.

**XVIII. CANONANTHUS** (from κανονικος, κανονικος, regular, and ἄρσεις, ἄρσεις, a flower; the flowers are regular, like those of Campanulaeae, not bilabiate, as in the rest of the Lobeliaeae genera). Lobélia species, Cav. icon. 6. p. 11. t. 517.
STYLIDEE. 1. STYLiDiUM.


1 C. Campanula'tus; b. f. Native of Peru, on the road from Guaranda to Chimbora. Lobelia campanulata, Cav. Icon. 6, p. 11. t. 517. Campamulate-flowered Canonanthus. Shrub 8 feet. Cult. See Tupa, p. 700, for culture and propagation.

Order CXXXV. STYLIDEA (plants agreeing with Stylidium in important characters). R. Br. prod. fl. nov. holl. p. 565.

Calyx superior, 2-6-parted, bilabiate or regular (f. 123. a.), permanent. Corolla monopetalous, with a 5-6-cleft, irregular (f. 123. b.), rarely equal limb, which is imbricate in a stivation, and at length falling off. Stamens 2 (f. 123. d.); filaments combined with the style into a column. Anthers didymous (f. 123. d.), and sometimes simple, lying upon the stigma. Pollen globose, simple, sometimes angular. Ovary 2-celled, but sometimes almost 1-celled from the middle dissepiment being short, many-seeded; furnished with a gland in front, or crowned by 2 opposite glands. Style one; stigma undivided or biform. Capsule 2-valved, 2-celled, with a parallel dissepiment; or almost 1-celled from the dissepiment being short, or at length released from the inflexed margins of the valves. Seeds fixed to the axis of the dissepiment, erect, small, sometimes pedicellate. Albumen conforming to the seed, fleshy, and rather oily. Embryo inclosed, minute.—Canlescenc scarpigerous nonlactescent herbs or shrubs, beset with simple hairs, which are either tipped with capitate glands or acute. Leaves usually scattered, but sometimes verticillate, entire, with naked or ciliated edges; radical leaves crowded in the scarpigerous species. Flowers spicate, racemose, corymbose, and solitary; terminal, rarely axillary; pedicels usually furnished with three bracteae.

This order is nearly allied to both Campasulaceæ and Goodeniaceæ, from both of which it is distinguished by the gynandrous stamens, and from the latter by the want of an indusium to the stigma. The structure of the sexual organs is highly curious; the stamens and style are closely combined into a solid irritable column, at the top of which is a cavity, including the stigma, and bounded by the anthers.

Synopsis of the genera.


2 LEVEnhOÖXiA. Calyx 5-parted, bilabiate. Column erect, adnate to the lower side of the tube. Lobes of anthers one above the other, divaricate. Stigmas 2. Capsule 1-celled.

3 FORSTE'Ra. Calyx double, both composed of 2-3 sepals.
racemes of scape umbellate, involucrated. 2. G. Native of Van Diemen's Land.

**Umbellate-flowered Stylidium.** Pl. 14 foot.

5 **S. armis** (Labi. nov. holl. 2. p. 66. t. 216.) leaves linear, ensiform, with quite entire margins; scape glabrous; raceme simple, downy; lip of corolla appended. 2. G. Native of Van Diemen's Land. Perhaps the same as the following.

**Thid-like Stylidium.** Pl. 1 foot.

6 **S. melan*chlo** (R. Br. prod. p. 568.) leaves linear, with rather revolute smooth margins; scape rather pilose; spike simple, bested with glandular hairs; flowers imbricate, almost sessile; lip of corolla appended at the base. 2. G. Native of Van Diemen's Land. The leaves are sometimes bested with a few denticulations.

**Black-spiked Stylidium.** Pl. 1 foot.

7 **S. Graminifolium** (Swartz, in nov. act. script. berol. ex Willd. spec. 4. p. 146.) leaves linear, with denticulate edges; raceme subsimple, simple, and is as well as the scape bested with glandular hairs; lip of corolla appended at the base. 2. G. Native of New South Wales and Van Diemen's Land. Ker. bot. reg. t. 60. Ventenatia major, Smith, exot. bot. 2. p. 13. t. 66. Candollea serrulata, Labill. in ann. mus. 6. p. 414. t. 64. f. 1. Flowers purplish red.


8 **S. linearia** (Swartz, l. c.) leaves compressed, filiform, 1-1/2 inch long, with denticulated margins; raceme simple; pedicels equal in length to the ovarium; scape glabrous, filiform; lip of corolla appended at the base. 2. G. Native of New South Wales, about Port Jackson. R. Br. prod. p. 568. Ventenatia minor, Smith, exot. bot. 2. p. 15. t. 67. Flowers purple or red.

**Linear-leaved Stylidium.** Fl. June, July. Clt. 1812. Pl. 1 foot.

9 **S. setaceum** (Labi. nov. holl. 2. p. 65.) leaves setaceous, mucronate, an inch long; raceme simple, subscape; scape quite glabrous; capsule elongate-oblong; lip of corolla inappendiculate. 2. G. Native of New Holland, on the south coast. Flowers red.

**Setaceous-leaved Stylidium.** Pl. 1 foot.

§ 3. Leaves radical, crowded, without scales. Scape leafless or with a very few small scattered leaves. Outer lip of calyx bipartite, inner one tripartite.

10 **S. spinulosum** (R. Br. prod. p. 569.) leaves linear, mucronate, attenuated at the base, with spinulose edges; scape clothed with glandular pubescence; raceme simple, rarely subcorymbose; throat of corolla crowned; lip inappendiculate. 2. G. Native of New Holland, on the south coast.

**Spinulose-leaved Stylidium.** Pl.

11 **S. cespitosum** (R. Br. l. c.) leaves linear, glabrous, setaceous mucronate, with quite entire edges; raceme often divided; rachis and scape glabrous; throat of corolla naked; lip appended. 2. G. Native of New Holland, on the south coast.

**Tufted Stylidium.** Pl. tufted.

12 **S. piliferum** (R. Br. l. c.) leaves linear-lanceolate, glabrous, piliferous, with entire margins; raceme simple; rachis downy; scape glabrous; throat of corolla naked; lip appended. 2. G. Native of New Holland, on the south coast.

**Piliferous Stylidium.** Pl.

13 **S. assauceum** (R. Br. l. c.) leaves narrow-spatulate, glabrous, thickish, with quite entire margins; raceme divided a little; rachis and scape downy; throat of corolla naked; lip appended. 2. G. Native of New Holland, on the south coast.

**Similar Stylidium.** Pl.

14 **S. spatulatum** (R. Br. l. c.) leaves spatulate, clothed with glandular pubescence on both surfaces, with quite entire edges; raceme many-flowered, and as well as the radical scape glabrous; throat of corolla crowned; lip appended. 2. G. Native of New Holland, on the south coast.

**Spatulate-leaved Stylidium.** Pl. 1/2 to 1 foot.

15 **S. glaucum** (Labi. nov. holl. 2. p. 64. t. 214.) R. Br. Br. lanceolate-spatulate, clothed with glandular down on both surfaces, with quite entire edges; raceme few-flowered, subcorymbose, glabrous; scape furnished with a few leaves. 2. G. Native of New Holland, on the south coast. Perhaps the plant of Labillardiere is referrible to the following.

**Glaucous Stylidium.** Pl. 1/2 foot.

16 **S. eriophorum** (R. Br. l. c.) leaves spatulate, setaceously mucronate, glabrous on both surfaces, but somewhat tomentose on the margins; raceme somewhat panicked, and as well as the scape clothed with glandular down; root thick, woolly; throat of corolla naked; lip appended. 2. G. Native of New Holland, within the tropic.

**Woolly-rooted Stylidium.** Pl.

17 **S. floccosum** (R. Br. l. c.) leaves oblong, glabrous on both surfaces, with quite entire margins; scape numerous, panicked, woolly from acute villi; throat of corolla naked; lip appended. 2. G. Native of New Holland, within the tropic.

**Bundle-flowered Stylidium.** Pl.

18 **S. junceum** (R. Br. l. c.) radical leaves linear, those of the scape minute, distant, and as are well as the bracteas adnate to the middle; calyceine segments subulate, simple at the base; throat of corolla crowned by stipitate glands; lip inappendiculate. 2. G. Native of New Holland, on the south coast. Scape straight, glabrous.


19 **S. violaceum** (R. Br. l. c.) radical leaves narrow, linear, those of the scape, which is quite glabrous, small and adpressed, and are as well as the bracteas sessile; calyceine segments gibbous at the base; throat of corolla crowned; lip inappendiculate. 2. G. Native of New Holland, on the south coast. Flowers violaceous.

**Violaceous-flowered Stylidium.** Pl.

§ 4. Leaves of scape or stem verticillate. Outer lip of calyx bipartite, inner one tripartite.

20 **S. luteum** (R. Br. prod. p. 570.) scape inarticulated, glabrous; whorls of leaves 1-2 on each scape, besides some scattered leaves at the top; radical leaves linear; calyceine segments rather gibbous at the base; throat of corolla crowned; lip inappendiculate. 2. G. Native of New Holland, on the south coast. Flowers yellow.

**Yellow-flowered Stylidium.** Pl.

21 **S. ame借用um** (R. Br. prod. p. 570.) scape inarticulate, glabrous, furnished with one whorl of leaves beyond the middle, without any scattered leaves above the whorl; radical leaves spatulate, acuminate; throat of corolla crowned; lip inappendiculate. 2. G. Native of New Holland, on the south coast. Flowers red?

**Pleasant Stylidium.** Pl.

22 **S. articulatum** (R. Br. l. c.) scape furnished with 2 joints, and 2 whorls of leaves; radical leaves spatulate, coriaceous; lip of corolla inappendiculate. 2. G. Native of New Holland, on the south coast.

**Jointed-scaped Stylidium.** Pl. 1/2 foot.

23 **S. diversifolium** (R. Br. l. c.) scape straight, inarticulate, furnished with 3-4 whorls of filiform leaves; radical
leaves lanceolate; throat of corolla crowned; lip appendiculate. 2. 2. Native of New Holland, on the south coast.

**Diverse-leaved Stylidium.** Pl. 1 ft.

24 S. *sandadiens* (Br. l. c.) stem scendent; leaves linear, spiral, and cincinnous at the apex; throat of corolla crowned; lip appendiculate; column downy above. 2. 2. Native of New Holland, on the south coast. Flowers lilac or rose-coloured. Leaves whorled.

**Climbing Stylidium.** Pl. July, Nov. Cl. 1803. Pl. cl.

§ 5. Stem shrubby. Leaves numerous, scattered.


**Shrubby Stylidium.** P1. May, Oct. Cl. 1803. Shrub 1 to 1½ foot.

§ 6. Tube of corolla very short. Lip of corolla stretched out.

26 S. *calcarea* (Br. l. c.) plant small; stem few-flowered; leaves ovate; corolla with a naked throat, and rather toothed segments; lip appendiculate. 2. 2. Native of New Holland, on the south coast.

**Spurred Stylidium.** Pl. small.

**Section 11. Andersonia.** J. G. König, ms. ex R. Br. prod. p. 570. Capsules linear, or linear-lanceolate.

§ 1. Scapigeroes. Flowers spicate or corymbose, rarely almost solitary.

28 S. *capilla* (Br. l. c.) scape capillary, 1-2 inches high, 1-2-flowered; leaves radical oval; calyx glabrous, very acute; limb tripartite, with the middle segment bifid; throat of corolla crowned; lip appendiculate. 2. 2. Native of New Holland, within the tropic.

**Capillary-scaped Stylidium.** Pl. 2 inches.

29 S. *tenellum* (Br. Br. prod. p. 571.) scape capillary; spike few-flowered; leaves radical roundish; lips of calyx parted, glandular; the 2 larger segments of the limb of the corolla semi-bifid; throat naked; lip appendiculate. 2. 2. Native of New Holland, within the tropic.

**Slender Stylidium.** Pl. ½ foot.

30 S. *rotundifolium* (Br. l. c.) scape capillary, 1-4-flowered; leaves radical roundish; lips of calyx undivided; 4 of the segments of the limb of the corolla nearly equal; throat naked. 2. 2. Native of New Holland, within the tropic.

**Round-leaved Stylidium.** Pl. ½ to 3½ foot.

31 S. *crassifolium* (Br. l. c.) scape terete, 1-2 feet high; spike racemose, elongated; leaves radical lanceolate, elongated. 2. 2. Native of New Holland, on the south coast.

**Thick-leaved Stylidium.** Pl. 1 to 2 feet.

32 S. *corymbosum* (Br. l. c.) scape terete, 2-3 inches high, coriaceous; leaves radical linear, ending each in a setaceous mucrone; lips of calyx parted. 2. 2. Native of New Holland, on the south coast.

**Corymbose-flowered Stylidium.** Pl. ½ foot.

§ 2. Cauliflorous plants. Flowers alternate or solitary. Capsules terete-linear, the same breadth at the apex.

33 S. *inundatum* (Br. Br. prod. p. 571.) stem branched, an inch and a half high, leafy below the division; leaves linear; larger segments of the limb of the corolla obvate: smaller ones linear; throat naked; lip appendiculate, adnate to the tube at the base. 2. 2. Native of New Holland, on the south coast, in inundated places.

**Inundated Stylidium.** Pl. ½ inch.

34 S. *despectum* (Br. l. c.) stem parted, an inch and a half high; branches few-flowered; leaves linear; segments of the limb linear-oblong, rather unequal; throat naked; lip appendiculate, adnate to the tube at the base. 2. 2. Native of Van Diemen's Land. Very like S. *inundatum*.

**Despised Stylidium.** Pl. ½ inch high.

35 S. *diffusum* (Br. l. c.) stem branched, diffuse, filiform; leaves linear; calyx ones distant; the 2 larger segments of the limb bifid; throat crownet; lip appendiculate, adnate to the tube at the base. 2. 2. Native of New Holland, within the tropic.

**Diffuse Stylidium.** Pl. diffuse.

36 S. *pygmaeum* (Br. l. c.) stem simple, erect, an inch high, 2-3-flowered; leaves linear; lips of calyx parted; segments of the limb entire; throat naked; lip appendiculate. 2. 2. Native of New Holland, on the south coast.

**Pygmy Stylidium.** Pl. 1 inch.

§ 5. Peduncles 1-flowered from the sides of the leaves or top of the scape or branches, which are crowded. Capsule nearly terete, not tapering at the top.

37 S. *repens* (Br. prod. p. 571.) stem creeping; branches ascending; leaves subulate, adnate; upper ones much crowded; throat of corolla crowned; lip appendiculate. 2. 2. Native of New Holland, on the south coast.

**Creeping Stylidium.** Pl. creeping.

38 S. *guttatum* (Br. l. c.) scape simple; flowers nearly sessile, in fascicules; bracteas foliaceous; throat of corolla crowned; lip appendiculate; leaves radical linear. 2. 2. Native of New Holland, on the south coast.

**Spotted-flowered Stylidium.** Pl. ½ foot.

39 S. *pedunculatum* (Br. l. c.) scape simple; flowers umbellate; pedicels capillary; leaves of involucrum linear; segments of the limb of the corolla unequal; throat naked; lip appendiculate; leaves radical lanceolate. 2. 2. Native of New Holland, within the tropic.

**Pedunculate Stylidium.** Pl.

§ 4. Racemes terminating the leafy stems. Capsule compressed, lanceolate or linear, compressed at the neck.

40 S. *evansii* (Br. Br. prod. p. 572.) stem simple; leaves compressed, filiform; upper ones much crowded; raceme pedunculate, rather panicled, having the rachis villous; capsule lanceolate, equal-valved, downy. 2. 2. Native of New Holland, on the south coast.

**Raceme Stylidium.** Pl. ½ foot.

41 S. *fasciculatum* (Br. l. c.) stem branched a little, glabrous; leaves linear; spikes pedunculate, subracemose, having the rachis glabrous; capsule lanceolate, having both the cells seminiferous. 2. 2. Native of New Holland, on the south coast. Lindl. bot. reg. 1459. Flowers pink. (f. 123.)

**Fascicled-leaved Stylidium.** Pl. Aug. Cl. 1830. Shrub ½ ft.

42 S. *falcatum* (Br. l. c.) stem nearly simple, and is as 4 Z
well as the rachis downy; leaves linear; spike pedunculate, sub-racemose; capsule divaricate, lanceolate, with both the cells seminiferous, the superior one one-half narrower than the other, and closed. \( \text{v.}\) G. Native of New Holland, on the south coast. Flowers pink?

*Falcate Stylidium.* Shrub ½ foot.

43 S. *aldnoideae* (R. Br. l. c.) stem multiple; branches undivided; leaves linear; spike almost sessile, divided, with the divisions few-flowered; capsule linear, adnate at the base, having the neck shorter than the calyx: the superior cell very small and very narrow. \( \text{v.}\) G. Native of New Holland, on the south coast. Lindl. bot. reg. t. 914. Flowers pink.


44 S. *pernum* (R. Br. l. c.) stem multiple; partial ones divided in an umbellate manner; leaves linear; spikes sessile, nearly simple; capsule adnate at the base, linear, having the neck equal in length to the calyx: the superior cell very narrow and empty. \( \text{v.}\) ? \( \text{v.}\) G. Native of New Holland, on the south coast. Flowers pink. Very nearly allied to the preceding.

*Opposed Stylidium.* Pl. ½ foot.


45 S. *alegordae* (R. Br. prod. p. 572.) stem erect; leaves ovate; floral ones opposite; flowers axillary, sessile, solitary, bracteate. \( \text{v.}\) ? S. Native of New Holland, within the tropic.

*Chickweed-like Stylidium.* Pl. ½ to 1 foot?

*Cult.* All the species of this genus are rare, elegant, and singular. The best soil for them is a mixture of sand, loam, and peat. Some of the species may be increased by parting at the root; but most of them by seed. Cuttings of the shrubby kind strike root readily under a hand-glass either in sand or mould.

**II. LEVENHOOKIA** (named in memory of Anthony Van Leeuwenhoek, a celebrated micrographist, whose numerous works and observations on the structure of plants are still extant). R. Br. prod. p. 572.

Lin. Syst. *Gynandria, Diandria.* Calyx 5-parted, bilabiata. *Limb of corolla 5-parted,* irregular: the fifth segment or lip dissimilar to the others, arched, and longer than the column, articulated with the tube, moveable. Column erect, adnate to the side of the tube where the labelium is. Lobes of anthers one above the other, divaricate. *Stigmas* 2, capillary. *Capsule* 1-celled.—A small glabrous plant, with the habit of *Radiola malegrina.* Leaves alternate, petiolate, crowded at the tops of the branches, intermixed with fascicles of flowers. The irritability of the joint of the lip is analogous to that of the column in *Stylidium,* and answers the same end, the protection of the sexual organs at the time of flowering. In *Levenhoookia* the labelium is deflexed when the flower is expanded, but from its irritability when touched it rises up, and is applied with great force to the erect immovable column, which it covers by its spoon-shaped lamina.


*Cult.* See *Stylidium* above for culture and propagation.

**III. FORSTERA** (in honour of John Reinhold Forster, and his son George Forster, who both accompanied Captain Cook in his second voyage in the quality of naturalists). Lin. nov. act. ups. 3 t. 9. Swartz, in Schrad. journ. 1799. 1. t. 1, 2, f. 2.—Phyllachne, Forst. char. p. 58.


1 F. *ediololia* (Lin. nov. act. ups. 3 t. 9.) leaves imbricated, ovate-oblong, coriaceous, marginated, smooth, recurved; pedicels terminal, solitary, elongated, 1-flowered; involucrum short, spreading. \( \text{v.}\) G. Native of New Zealand.

*Edible-leaved Forsteria.* Shrub.

2 F. *muscifolia* (Swartz, in Schrad. journ. 1779. 1. t. 1, 2, f. 2.) leaves imbricated, erect, lanceolate, triquetrous, and mucronated at the apex, having the keel and margins serrulate; flowers terminal, solitary, sessile; involucrem exceeding the calyx. \( \text{v.}\) G. Native of Terra del Fuego. Phyllachne uliginosa, Forst. char. p. 58. and Lin. fil. suppl.

*Moss-leaved Forsteria.* Shrub.

*Cult.* See *Stylidium* above for culture and propagation.

Order CXXXVI. GOODENOVIÆ (this order contains plants agreeing with *Goodenia* in important characters). R. Br. prod. p. 578.—*Genera of Campanulaceae,* Juss.

*Calyx* superior (f. 124. a.) or semi-superior (f. 126. a.), rarely inferior, 5-cleft (f. 124. a. f. 125. a.), sometimes 5-5-parted, sometimes short, entire, and sometimes obsolete, usually equal, rarely unequal, permanent. *Corolla* monopetalous (f. 124. b. f. 125. h.), more or less irregular, deciduous or marcescent; tube cleft on the back (f. 125. h.), sometimes 5-parted, and only adhering with the ovary at the base, while that of the calyx is free; limb 5-parted (f. 124. b. f. 125. h.), bilabiata (f. 124. b.), or unlabiata (f. 126. b.); disks of the segments lanceolate, flat: having the sides thinner in texture and elevated, induplicate in estivation, rarely obsolete or wanting. *Stamens* 5, free; from the corolla and style (f. 125. c.), alternating with the segments of the corolla; filaments distinct (f. 125. c.); anthers distinct or cohering, linear, vertical, fixed by the base, undivided, 2-celled; cells delisising lengthwise; pollen usually simple, but sometimes compound. *Ovarium* 1-2-celled, rarely 4-celled, sometimes furnished with a gland between the 2 anterior filaments: ovula definite or indefinite. *Style* 1, simple, rarely divided; stigma fleshy, obtuse, or 2-lobed, girded by a rather membraneous, entire or 2-lobed, cup-shaped indium. *Capsule* 2-celled or half 2-celled, (rarely 4-celled); dissepiment usually parallel, rarely contrary to the valves, which are entire or bipartite; having the axis seminiferous when the seeds are indefinite; but when the seeds are definite, there is one in each cell. Seeds sometimes nuculentaceous, but usually with a thickish testa. *Albumen* fleshy, conforming to the seeds, rarely deficient. *Embryo* erect, almost the length of the albumen, with middle-sized usually foliaceous cotyledons, and an inconspicuous plumule.—*Non-lactescent herbs or shrubs,* usually clothed with simple and sometimes with glandular down, rarely with stellate down. Leaves scattered, exstipitate, simple, usually undivided, sometimes lobed, and often toothed. *Inflorescence* terminal or axillary, variable. *Flowers* distinct, rarely aggregate, yellow, blue, and purplish, rarely reddish.

Nearly related to *Campanulaceae* and *Lobeliaceae,* from which it differs in the estivation of the flower, and in the peculiar in-
On tube Indusium limb segments limb valves GooDE^NiA. or stigma, in adopting cohering deciduous, bilabiate, sole not celled, the connected imperfect be this to compressed. Having stigmas, in Calogyne. DisTVLis. Eutha'les. Velle'ia. having the tube cleft on the upper side, and the limb bilabiate; segments of the upper lip auricled on the inner side. Anthers cohering. Ovarium 2-celled, many-seeded. Indusium of stigma contrary to the lips of the corolla.

 Tribe II.

SCEVOLVEÆ. Seeds definite. Drupe inferior.

8 SCEVOLA. Corolla cleft on the upper side, exceeding the genitals; limb unilabiate, secund, 5-parted, with equal winged segments. Anthers free. Indusium of stigma ciliated. 9 DIASPÆS. Corolla nearly regular, salver-shaped; tube 5-parted, inclosing the genitals. Anthers free. Ovarium 1-celled, 2-seeded. Indusium of the stigma with a naked border. Nut ciliate.

 Tribe III.

BRUNONIÆ. Utriculus superior, 1-seeded.


 Tribe IV.

CAMPANIEÆ. Corolla campanulate, regular. Capsule 3-4-celled, many-seeded.

12 PENTHA'BONIA. Calyx 5-lobed. Corolla 5-lobed, regular. Stamens 5. Indusium of stigma 3-lobed.

 Tribe I.

GOODENIEÆ (this tribe contains plants agreeing with Goodenia, in the capsules being many-seeded). Capsules 2-celled, containing an indefinite number of seeds.


7 ANTHÔTUM. Calyx superior, 5-parted. Corolla having the tube cleft on the upper side, and the limb bilabiate; segments of the upper lip auricled on the inner side. Anthers cohering. Ovarium 2-celled, many-seeded. Indusium of stigma contrary to the lips of the corolla.

 Tribe I.
GOODENOVIÆ.  I. GOODENIA.

axillary or terminal; pedicels bibracteate or brassate. Corollas usually yellow, although sometimes blue and purplish, bilabiate, rarely unlabiate; segments winged, rarely wingless; wings in duplicate in activation; tube sometimes furnished with a little nectariferous sack, which is opposite to the fissure of the corolla, adnate to the ovary. Anthers cohering before expansion, beardless, rarely bearded at the apex. Capsule variable in form, with the top for the most part superior; valves entire or bipartite.

SECT. I. OCHROSA'THUS (from ὑποχρός, ochro, yellow, and αὔφος, aóthos, a flower; colour of flowers). Corolla bilabiate, yellow; segments winged. Capsule 2-celled, or almost 1-celled from the dissepiment being short. Stigma parallel with the lips of the corolla.

§ 1. Peduncles terminal, spicate or panicled; pedicels bibracteate.

1 G. BELLIDIFOLIA (Smith, in Lin. trans. 2. p. 349.) stem naked; spike nearly simple, downy; corolla clothed with simple hair down outside; radical leaves flat, lanceolate-spatulate, toothed or cut. 2. G. Native of New South Wales, about Port Jackson. R. Br. prod. p. 575. Corolla yellow.

2 G. STELLICOEA (R. Br. prod. p. 575.) stem nearly naked; spike almost simple, downy; corolla clothed with simple hairs and stellate down outside; valves of capsule bipartite; radical leaves fleshy, semi-terete or linear, glabrous, a little toothed at the apex. 2. G. Native of New South Wales, about Port Jackson. Corolla yellow.

Stellate-haired Goodenia. Pl. 1 ½ to 2 foot.

3 G. PANICULATA (Smith, in Lin. trans. 2. p. 348. R. Br. prod. p. 575.) stem few-leaved; panicle almost simple, downy; ovary beset with glandular and simple hairs; radical leaves long-lanceolate, a little toothed or cut. 2. G. Native of New South Wales, about Port Jackson. Cav. icon. 6. p. 5. t. 507. Corollas yellow.


4 G. B. F. HUMMELIS (R. Br. prod. p. 575.) stem few-leaved; panicle simple, downy; ovary beset with large hairs; radical leaves long-lanceolate, a little toothed. 2. G. Native of New Holland, on the south coast. Corollas yellow.

Humble Goodenia. Pl. ½ foot.

5 G. GRAECUS (R. Br. l. c.) plant glabrous; stem few-leaved; panicle simple; ovaries glabrous; corolla clothed with glandular down outside; radical leaves linear-lanceolate, elongated, thickish. 2. G. Native of New Holland, within the tropic. Lodd. bot. cab. t. 1082. Corollas yellow.


6 G. DECURDENIS (R. Br. l. c.) plant quite glabrous; stem many-leaved; spike racemose, divided a little at the base; corolla downy outside; cauline leaves oblong, toothed, decurrent. 2. G. Native of New Holland, about Port Jackson. Corollas yellow.

Decurrent-leaved Goodenia. Pl. 1 foot.

§ 2. Peduncles axillary, trifid or simple; pedicels bibracteate.

7 G. ACMINATUM (R. Br. prod. p. 575.) suffruticose, erect, glabrous, painted; pedicelles trifid or trichotomous; leaves ovate, acuminate, dentately serrated, with beardless axils; calyce segments flat, one-half shorter than the capsule, which is prismatic; seeds disposed in 2 rows. 2. G. Native of New South Wales, about Port Jackson. Corollas yellow. Like the following, and probably only a variety of it.

Acreminated-leaved Goodenia. Pl. 1 to 2 feet.

8 G. OVALEA (Smith, in Lin. trans. 2. p. 347. R. Br. l. c.) suffruticose, erect, glabrous, sometimes painted; pedicelles trifid or trichotomous; leaves ovate, acute, dentately serrated, bearded in the axils; calyce segments subulate filiform, a little shorter than the capsule, which is linear; seeds disposed in one series. 2. G. Native of New Holland, about Port Jackson and the south coast, as well as of Van Diemen’s Land. Andr. bot. rep. t. 68. Vent. cels. t. 3. and in mem. de l’institut. sc. phys. 2. p. 321. pl. 10. Cav. icon. 6. p. 4. t. 506. Corollas yellow.


9 G. F. V. H. VARIA (R. Br. prod. p. 576.) suffruticose, glabrous; pedicelles trifid or simple; leaves obovate and obtuse, or ovate and acutish, toothed, coriaceous, with naked axils; calyce segments shorter than the stamens; corollas and styles glabrous; capsule ovate. 2. G. Native of New Holland, on the south coast. Corollas yellow.

Var. a; leaves obovate and oval, a little toothed, attenuated at the base; branches flexuous; stems diffuse. 321.

Var. b; leaves roundish, almost sessile, toothed; pedicelles usually 1-flowered; stems depressed. 2. Var. c; leaves oval, acutish, toothed; pedicelles 3-flowered; stem erect.

Variable Goodenia. Shrub ½ to 2 feet.

10 G. GRANDIFLORA (Sims, bot. mag. 309. R. Br. prod. 576.) plant herbaceous, erect, clothed with glandular pubescence; pedicelles trifid, trichotomous, or simple; branches angularly striated; lower leaves lanceate; rameal ones rather ovate, acute; style longitudinally woolly. 2. G. Native of New South Wales, about Port Jackson. Corollas yellow.


11 G. HETEROPHYLLA (Smith, in Lin. trans. 2. p. 349. R. Br. prod. p. 576.) plant herbaceous, erectish, downy, intermixed with glandless hairs; leaves ovate, cut or lobed; bracteas one-half shorter than the upper half of the one-flowered peduncle; style glabrous. 2. G. Native of New South Wales, about Port Jackson. Cav. icon. 6. p. 6. t. 508. Corollas pale red.

Var. p. 321.

Var. c; plant downy; hairs simple, sometimes diffuse. Round-leaved Goodenia. Pl. 1 foot.

13 G. BARBATA (R. Br. prod. p. 576.) plant herbaceous? erect, clothed with glandular down, scabrous; leaves lanceolate-linear, entire; pedicelles 1-flowered; throat of corolla bearded; styles longitudinally hairy; capsule 1-celled, 2-3-seeded. 2. G. Native of New South Wales, about Port Jackson, and of Van Diemen’s Land. Corollas yellow.

Bearded Goodenia. Pl. 1 foot.

14 G. LANA (R. Br. prod. p. 577.) plant herbaceous, downy, glandless, almost stemless; branches prostrate; leaves obovate or oval, obtuse, a little toothed, hairy; young leaves and ovaria woolly; pedicelles scapiform; corolline segments ciliated on the margins. 2. G. Native of Van Diemen’s Land. Corollas yellow.

Woolly Goodenia. Pl. prostrate.

15 G. GENICULATA (R. Br. l. c.) plant herbaceous, downy,
glandless; stem erect, sometimes short; leaves long-lanceolate, a little toothed; peduncles scape-formed, elongated, when bearing the fruit gomphologically compressed. 2. G. Native of New Holland, on the South Coast.

Gomphologically-peduncled Goodenia. Pl. 1 foot.

16 G. hederaea (Smith, in Lin. trans. 2. p. 349. R. Br. l. c.) plant herbaceous, downy, glandless, almost stemless; branches filiform, prostrate; leaves oval, toothed; radical leaves sometimes lobed; peduncles 1-5-flowered; corolline segments naked on the margins. 2. G. Native of New South Wales, about Port Jackson, and of Van Diemen's Land. Corollas yellow.


17 G. glabra (R. Br. prod. p. 577.) plant herbaceous, glabrous, almost stemless; branches prostrate; radical leaves somewhat oval and spatulate, few-toothed; rameal leaves almost sessile; pedicels 1-flowered; corollas glabrous outside. 2. G. Native of New Holland, within the tropic. Corollas yellow.

Glabrous Goodenia. Pl. prostrate.

§ 3. Peduncles bracteless, axillary or terminal, 1-flowered.

18 G. mollis (R. Br. l. c.) peduncles axillary; leaves ovate, subcordate, acute, serrated, villous, soft; tube of corolla sacate. 2. G. Native of New Holland, within the tropic. Corollas yellow.

Soft Goodenia. Pl. ½ to 1 foot?

19 G. elongata (Labill. nov. holl. l. p. 52. t. 75.) pilose; peduncles solitary, axillary and nearly terminal, elongated, reflexed while bearing the fruit; stem erect, filiform; radical leaves oblong-spatulate, toothed; calyce leaves lanceolate, nearly entire, attenuated at the base. 2. G. Native of Van Diemen's Land. R. Br. prod. 577. Corollas yellow.

Elongated-peduncled Goodenia. Pl. 1 foot.

20 G. hispida (R. Br. prod. 577.) plant erect, beset with strigose hairs; calyce leaves sessile, elongated, lanceolate, a little toothed; peduncles solitary, axillary, elongated, erect while bearing the fruit; calyxes hispida. 2. G. Native of New Holland, within the tropic. Corollas yellow.

Hispid Goodenia. Pl. 1 foot?

21 G. coronopifolia (R. Br. l. c.) glabrous; leaves linear; radical ones pinnatifidly toothed; calyce leaves quite entire, and the semina1 ones permanent; peduncles almost solitary, alternate, erect while bearing the fruit. 2. G. Native of New Holland, within the tropic. Corollas yellow.

Buck-horn-leaved Goodenia. Pl.

22 G. tenella (R. Br. l. c.) plant rather downy, intermixed with a few adpressed hairs; stem simple or wanting; radical leaves flat, lanceolate or spatulate; peduncles radical or terminal, elongated, erect while bearing the fruit. 2. G. Native of New Holland, on the South Coast. Sims, bot. mag. 1137. Erithobodes tenella, Ait. hort. kew. Corollas yellow.

Slender Goodenia. Pl. ½ to 1 foot.

23 G. filiformis (R. Br. prod. p. 575.) plant smoothish; stem simple; radical leaves filiform; calyce leaves small; peduncles terminal, subumbel late. 2. G. Native of New Holland, on the South Coast. Corollas yellow.

Filiform-leaved Goodenia. Pl. ½ foot.

FIG. 194.

SECT. II. Tetraphyllax (from τετρας, tetras, four-fold; and 

60ολας, thlyax, a cell: capsule 4-celled). Corolla bilabiate, yellow, having the segments winged. Capsule 4-celled.

24 G. quadriflora (R. Br. prod. p. 578.) plant glabrous, erect; leaves nearly oval, toothed; flowers spicate or axillary. 2. G. Native of New Holland, on the South Coast.

Four-celled-fruited Goodenia. Pl.

SECT. III. Porphyraanthus (from πορφυρος, porphyros, purple; and ανθος, a flower; colour of flowers). Corolla bilabiate, purple or blue, having the segments winged. Capsule 2-celled, or half 2-celled. Stigma parallel with the lips of the corolla.

25 G. purpureascens (R. Br. l. c.) plant glabrous; panicle effuse; stem naked; leaves radical, elongated-lanceolate. 2. G. Native of New Holland, within the tropic. Corolla purple.

Purple-flowered Goodenia. Pl. ½ foot.

26 G. tetragonophylla (R. Br. l. c.) plant glabrous; stem almost simple, few-flowered; flowers alternate; radical leaves linear, a little toothed; calyce ones smaller, remote; calyx bluntish, and is, as well as the ovarium, glabrous. 2. G. Native of New Holland, on the South Coast. Corollas blue or purple.

Wing-seeded Goodenia. Pl. ½ foot.

27 G. cerulea (R. Br. l. c.) plant glabrous; partial stems or branches nearly simple, few-flowered; radical leaves linear; calyce ones remote; calyxes acute, and are, as well as the ovarium, glabrous. 2. G. Native of New Holland, on the South Coast. Corollas blue.

Blue-flowered Goodenia. Pl. ½ foot.

28 G. iscaena (R. Br. l. c.) plant clothed with hoary tomentum; partial stems or branches almost simple, few-flowered; calyce leaves remote, oblong-linear; corollas woolly on the outside, as well as the ovaria. 2. G. Native of New Holland, within the tropic. Corollas blue or purple.

Hoary Goodenia. Pl. ½ foot.

SECT. IV. Monochila (from μονος, monos, alone; and χείλος, cheilos, a lip, in reference to the unilabiate corolla). Corollas unilabiate, having the segments winged. Stigma 2-lobed, having the indusium dilated, and contrary to the lip of the corolla.

29 G. scaphigera (R. Br. l. c.) plant glabrous, erect; leaves toothed; spike terminal, pedunculate; segments of the calyx subulate, longer than the ovarium, which is tubuliferous on one side. 2. G. Native of New Holland on the South Coast.

Var. a.; common peduncle elongated, scape-formed; leaves linear-lanceolate, elongated.

Var. b.; common peduncle not elongated; leaves oval-lanceolate.

Scape-bearing Goodenia. Pl. ½ foot.

30 G. viscosa (R. Br. l. c.) plant glabrous, painted, erect; leaves lanceolate, toothed; peduncles axillary, 1-flowered, very short; stigma bifid. 2. G. Native of New Holland, on the South Coast.

Viscid Goodenia. Pl.

SECT. V. Selliera (named after Natali Sellier, a Spanish artist). Selliera, Cav. icon. 5. p. 49. t. 47. f. 2. Corolla subumbilicate, purplish, having the segments wingless, and valvate in aestivation.


31 G. repens (Labill. nov. holl. l. p. 53. t. 76.) plant gla bros, creeping; leaves lanceolate, fleshy. 2. G. Native of New Holland, on the South Coast, and about Port Jackson; and of Van Diemen's Land; and of Chili, about Talenguana, in humid sandy places by the sea shore. Selliera radicans, Cav. icon. 5.
GOODENOVEL. I. Goodenia. II. Distylis.

III. Calogynæ. IV. Euthales. V. Vellelia.


Creeping Goodenia. Pl. creeping.

52. Peduncles bracteate. Induuseum of the stigma ciliated. Capsule membranous.

32. Pumilio (R. Br. prod. p. 579.) Plant creeping, downy; leaves ovate, membranous: upper ones crowded; peduncles 1-flowered, from the axils of the upper leaves. G. G. Native of New Holland, within the tropic. Corolla purplish. Perhaps the corolla is unlabiate, or probably nearly regular.

Dwarf Goodenia. Pl. creeping.

Cult. All the species of this genus are worth cultivating for ornament. They grow freely in a mixture of sand, loam, and peat; and young cuttings of most of the species strike root freely in the same kind of soil, under a glass- and all may be raised from seed, which ripen plentifully.

II. DISTYLLIS. (from εἰς, dis, twice, and στύλος, stylus, a style; in reference to the style being bipartite.) Gaud. In Freyc. voy. pl. bot. p. 45. t. 80.

Lin. syst. Pentandria, Monogynia. Calyx adnate to the ovarium; limb free, 5-parted. Corolla deciduous, with the tube cleft behind, 5-parted; spreading, somewhat bilabiata; segments with winged margins. Stamens 5, distinct. Style bipartite. Induuseum of stigma membranous, cup-shaped, and ciliated. Capsule crowned by the permanent calyx, semi-bilocular in consequence of the dissepiment being short; valves parallel. Seeds imbricate, compressed, orbicular, girded by a membranous border.—An annual hairy plant, with almost simple stems. Leaves alternate, toothed. Flowers axillary, solitary, on long peduncles, racemose, bracteate, yellow.

1. D. Berardiana (Gaud. l. c.). G. Native of New Holland, on the Western Coast, in Sharks’ Bay. Goodenia Berardiana, Gaud.

Berard's Distylis. Pl. 1/2 foot.

Cult. Rear the seeds in a frame in the spring, and about the end of May put the plants out into the open border in a warm situation.

III. CALOGYNE. (from καλός, beautiful, and γυνα, a female; in reference to the stigma). R. Br. prod. p. 579.

Lin. syst. Pentandria, Monogynia. Calyx superior; limb 5-parted, with equal segments. Corolla bilabiata. Anthers distinct. Style trifid. Glabd epigynous between the 2 lower filaments. Capsule subbilocular from the dissepiment being short. Seeds imbricate, compressed.—A pilose annual herb, with the habit of Goodenia, and when dry having an odour like that of vernal grass. Leaves toothed or cut; floral ones auriculated at the base. Peduncles axillary, 1-flowered, bracteate, reflexed while bearing the fruit.—This genus is separated from Goodenia alone from the trifid style; each division being furnished with an indusiate stigma.

1. G. pilosa (R. Br. l. c). G. Native of New Holland, within the tropic.

Pilosa Calogynæ. Pl. 1/2 foot.

Cult. Sow the seeds of this plant in spring, in a pot filled with a mixture of sand, loam, and peat, and place it in a hot-bed; and when the plants are of sufficient size, plant them separately into other pots.

IV. EUTHALES. (from εὖ, eu, well, and θάλλω, thallo, to sprout). R. Br. prod. p. 579.

Lin. syst. Pentandria, Monogynia. Calyx inferior, tubular, 5-cleft, unequal. Corolla adhering to the tube beneath the ovarium, cleft on one side at the apex; limb bilabiata. Anthers distinct. Style indiundate. Indusium of stigma bilabiata. Capsule 4-valved, 2-celled at the base. Seeds imbricate, compressed.—A stemless herb, with the habit and inflorescence of Velleia. The corolla in this genus and Velleia is semi-superior, and joined with the calyx at the base. The genus is intermediate between Goodenia and Velleia, but differs from them in the calyx being tubular.


Cult. A mixture of loam, peat, and sand is the best soil for this plant; and it must be but sparingly watered, as it is very delicate, and apt to damp off. It is increased, but sparingly, by dividing, and by seed.


Lin. syst. Pentandria, Monogynia. Calyx inferior, 3-cleft, unequal. Corolla having the tube joined with the ovarium at the base, and cleft on the upper side at the apex; limb bilabiata. Anthers distinct. Style indiundate. Glabd epigynous between the 2 anterior filaments. Capsule 2-celled at the base; valves bipartite. Seeds imbricate, compressed.—Stemless herbas. Leaves radical, subpatulate, usually toothed, but sometimes lyrate. Scaops dichotomous, with the most of the axils floriferous. Bracteas opposite, foliaceous, sometimes large, and sometimes connate. Upper segment of the calyx broad, and often toothed at the base. Corolla yellow, adhering at the base, beneath the glososity or spur. Style somewhat tetragonal. Indusium of stigma large.

Sect. 1. Menoceras (from μεσος, mesos, to abide; and κερας, kera, a horn; in reference to the permanent spur). R. Br. prot. p. 580. Calyx 3-cleft. Corolla spurred at the base; spur permanent.

1. V. paradoxa (R. Br. prod. p. 580.) Plant downy; leaves bluntly toothed. G. G. Native of New South Wales, about Port Jackson; on the south coast of New Holland; and of Van Diemen's Land. Lind. bot. reg. 971. Corolla yellow.


2. V. aequata (R. Br. l. c.) Plant glabrous; leaves sharply toothed. G. G. Native of New Holland, on the south coast. Corolla yellow.


Sect. 2. Vellel'ea-ve're (this section is supposed to contain the true species of the genus). R. Br. prod. p. 580. Calyx 3-leaved. Corolla rather gibbous on one side at the base.

3. V. tenuata (R. Br. l. c.) Glabrous; bracteas of the forks distinct; leaves lyrate or deeply toothed at the base; segments of the calyx ovate-orbicular. G. G. Native of New South Wales, about Port Jackson. Ker. bot. reg. 551. Corolla yellow.


4. V. spatulata (R. Br. l. c.) Glabrous; bracteas of the forks distinct; leaves spatulate, almost toothless, but quite at the entire, with the axils bearded. G. G. Native of New South Wales, about Port Jackson; and of New Holland, within the tropic. Juss. ann. mus. 18. t. 1. Corolla yellow.

Filiform-leaved Lechenaultia. Pl.

Cult. The species of Lechenaultia are elegant plants while in blossom. They thrive best in a mixture of turfy loam, peat, and sand; and young cuttings strike root freely in the same kind of mould under a hand or bell-glass.

VII. ANTHOTIUM (from arbuci, anthos, a flower, and ove ovis, our oos, an ear; in reference to the segments of the superior lip of the corolla being auriculated on the inner margin). R. Br. prod. p. 582.


1 A. BUMILE (R. Br. l. c.)  

G. Native of New Holland, on the south coast. There are two varieties of this plant, one twice the size of the other in all its parts. 

Humble Anthotium. Pl. ½ foot. 

Cult. See Velleia, above, for culture and propagation.

Tribe II.

SCEVOLÆ.A (this tribe contains plants agreeing with Scovel in important characters). R. Br. prod. p. 582. Seeds definite. Drope or nut inferior.


LIN. SYST. Pentandria, Monogynia. Corolla cleft longitudinally on the upper side; limb 5-parted, all to one side; segments winged, about equal in size and shape. Anthers free. Indusium of stigma cleft.—Shrubs and herbs very variable in habit. Down on hairs simple. Leaves alternate, rarely opposite, hardly divided, often toothed. Inflorescence axillary or disposed in a leafy spike. Ovaria bibracteate, usually 2-celled (rarely 4-celled); cells 1-seeded; sometimes 1-celled and 1-2-seeded. Calyx 5-cleft, equal, sometimes obsolete. Corolla white or blue, rarely yellow, deciduous, for the most part downy outside; wings of the segments often fringed at the base, rarely longitudinally; the fringe for the most part floccosely branched at the top, and appears capitate to the naked eye; tube villous inside, and the throat beset with ramenta, which are disposed in continuous lines, with the fringes of the segments. Stamens iliacoid after the dehiscence of the corolla, and falling off with it. Anthers for the most part bearded, but sometimes bearded at the apex.—This genus is divided into natural groups below. Those species with 1-celled ovaria will probably constitute a separate genus from those with 2-celled ovaria.—S. spinucus has a very different habit from the other species, and is probably a distinct genus, from the bracteas being deciduous, and the wings of the segments of the corolla being fringed lengthwise, but the mature fruit is not known.

SECT. I. SARCOCARPA (from σαρκως, sarx, sarx, flesh; and καρπος, karpos, a fruit; in reference to the baccate fruit of the species). Drape baccate, 2-celled. Peduncles axillary, dichotomous, bearing flowers in the forks, rarely 1-flowered. Leaves alternate, bearded in the axils. Shrubs, natives of the sea shore.

1 S. KEOU (Vahl, symb. 2. p. 96): gymes glabrous; flowers...
pedicellate in the forks of the peduncles; calyx 5-parted, equal in length to the ovarium; leaves obovate, subepend at the apex, quite glabrous on both surfaces, as well as the branches. 6. S. Native of New Holland, within the tropic; of the East Indies, Cochin China, and the Sandwich Islands, on the sea shore; and of Romanzoff's Island, in the South Sea. S. Lobelia, Lin. herb. Cerbera salutaris, Lour. coeh. 136. Flowers pale red or white.


Plumier's Scævola. Clt. 1724. Shrub 2 to 3 feet.

4 S. GAUDICHAUDI (Hook. et Arn. in Beech. voy. pt. bot. p. 89.) shrubby, erect, densely clothed with down; leaves oblong-lanceolate, glabrous above, and clothed with silky tomentum beneath, petiole, glandularly denticulated, with bearded axes; peduncles shorter than the petioles, axillary, diacrate, with five flowers in the branches; calyces subulate, recurved; corolla clothed with silky tomentum; calyceal teeth 5, very short, obtuse. 9. G. Native of the Sandwich Islands. Very closely allied to S. sericen, Forst. The whole plant is very brittle.

Soft Scævola. Shrub 2 to 3 feet.

5 S. CILLATÀ shrubby, erect, glabrous; leaves rather membranous, broad-lanceolate, acuminate at both ends, acute, with a few almost obsolete teeth on the margins, narrowed into the short petioles, toothed at the base, with bearded axes; peduncles axillary, equal in length to the leaves or exceeding them, 5-8-flowered, cymosely dichotomous; bracteas linear; flowers sessile; calyceal teeth short, ciliated; corolla glabrous on the outside, and inside of the tube rather villous; segments winged; style villous; drupe olive-formed, containing one 2-seeded pyrene. 7. G. Native of the island of O Wahu. Scævola Chamissoniana, Cham. in Linneæa, 7. p. 226, but hardly of Gaudichaud's Scævola. Shrub 2 to 3 feet.

6 S. TACCA (Roxb. fl. ind. 2. p. 146.) shrubby, with smooth branches; leaves sessile, obovate, rounded at the apex, tapering much to the base, entire, shining, with bearded axes; peduncles axillary, solitary, 2 or 3 times forked. 7. S. Native of the East Indies, on the sea shore. Lobelia Taccâ, Gerra. fruct. 1. p. 119. t. 25. Buglossum littorale, Runph. amb. 4. t. 54. Flowers white, slightly fragrant, villous inside, and shaggy round the mouth. Drupe size of a gooseberry, white when ripe, 2-celled; cells 1-seeded.


7 S. SERVÈCEA (Forst. prod. no. 504.) cymes and corollas tomentose outside; flowers pedicellate in the forks of the peduncles; calyx 5-parted, about equal in length to the ovary; leaves obovate, entire or repand, clothed with soft tomentum on both surfaces, and on the branches. 7. S. Native of New Holland, within the tropic; and of the Society Islands, on the sea shore. Vahl, symb. 2. p. 37. R. Br. prod. p. 583. S. Koenigii, Lamark, aus. p. 108. Very like the two preceding species, but differs in being tomentose. There are varieties of this with more or less tomentose entire and repandly toothed leaves, and with the style either glabrous or longitudinally villous.

Silky Scævola. Shrub 2 to 3 feet.

8 S. CHAMISSONII (Gaud. in Freyc. voy. pt. bot. p. 461. t. 81.) shrubby, erect, glabrous; leaves oblong, acuminated at both ends, sharply denticulated with bearded axes; peduncles axillary, dichotomous, with the margins equal in length to the leaves, with sessile flowers in the forks; calyx short, 5-toothed; corollas downy; drupe 2-celled. 9. G. Native of the Sandwich Islands.

Chamisson's Scævola. Shrub 2 to 3 feet.

9 S. TOMENTOSA (Gaud. in Freyc. voy. pt. bot. p. 460. t. 81.) shrubby, erect, clothed with brownish stellate tomentum; leaves soft, somewhat rhomboid-ovate, obtuse, minutely toothed; flowers axillary, solitary, pedunculate; calyx short, 5-toothed; corollas downy; bracteoles unilateral, half connate, quite entire; fruit 2-seeded. 9. G. Native of New Holland, on the western coast, in Shark's Bay.

Tomentosa Scævola. Shrub 2 to 4 feet.

10 S. MENZIESII (Cham. in Linneæa, 7. p. 227.) shrubby, erect, glabrous; leaves obovate, axillary, obtuse or acute, quite entire, or a little serrated, narrowed into the petioles, bearded at the axis, rather fleshy, downy beneath or glabrous; peduncles shorter than the leaves, bearing 5 flowers at the apex, and often only one; bracteas linear; flowers sessile; calyceal teeth short, ciliated; corolla pilose outside or glabrous, villous inside, having the segments hardly winged; style villous; drupe olive-formed, 1-2-seeded. 9. G. Native of O Wahu. Staminæ glabrous. Fruit 2-celled, fleshy.

Var. β, glabra (Cham. i. c.) leaves narrower, and more cuatred at the base, obtuse, mucronulate, nearly entire, glabrous on both surfaces. Corollas glabrous on the outside.

Menzis's Scævola. Shrub 2 to 3 feet.

11 S. GLabra (Hook. et Arn. in Beech. voy. pt. bot. p. 89.) shrubby, erect, glabrous; leaves cuneate-obovate, obliquely acuminated, on long petioles, with obscure remote glandular denticulations, and bearded axes; pedicels axillary, 1-flowered, naked, one-half shorter than the leaves; corolla glabrous, equal in length to the teeth of the calyx. 9. G. Native of the Sandwich Islands. Very like S. Chamissoniana, Gaud.

Glabra Scævola. Shrub 2 to 3 feet.

12 S. MONTANA (Labi. sect. cal. p. 41. t. 42.) cymes and corollas tomentose; flowers sessile in the forks of the corymb; leaves obovate-oblong, glabrous, rather coriaceous. 9. G. Native of New Caledonia. Leaves entire, undulated or crenulated, with silky hairy axes.

Mountain Scævola. Shrub 4 to 6 feet.

13 S. OPPORTIFLORA (Roxb. fl. ind. 2. p. 148.) leaves opposite, on short petioles, elliptic, entire, smooth; peduncles axillary, few-flowered. 9. S. Native of the Moluccas. A slender shrubby species, very different in habit from S. Koenigii.

Opposite-leaved Scævola. Shrub.

Sect. 11. Xerocarpa (from ἕρως, εξερ, dry; and καρπός, a fruit; in reference to the dry fruit of the species). Drupe usually dry, 1-4-celled. Bracteae foliaceous, lateral, permanent. Spikes terminal, but sometimes axillary.

§ 1. Leaves all or for the most part toothed or cut.

14 S. ATTENUATA (R. Br. prod. p. 583.) shrubby, erect, pilose; leaves lanceolate, toothed; bracteae stretched, quite entire; corolla hairy outside, with the margins naked above; styles very villous. 9. G. Native of New Holland, on the south coast. Attenuated-leaved Scævola. Shrub 2 to 3 feet.

15 S. nitida (R. Br. prod. p. 584.) shrubby, erect, quite

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GOODENOVIE.
G. Native of New Holland, on the south coast.

Shrub. 1 to 2 feet.

17. S. globulifera (Labill. nov. holl. 1. p. 55. t. 78.) suffruticose, erect; leaves elliptic, sharply toothed; bracteae ovary and calyx bracteas entire; ovarium 4-celled. G. Native of New Holland.

18. S. ovatifolia (R. Br. prod. p. 584.) suffruticose, ascending; leaves ovate or elliptic, toothed; bracteae rhomboid-elliptic, very acute, nearly entire; calyx obsolete; style bearded at the top on one side. G. Native of New Holland, within the tropic.

Far. α, cineracea (R. Br. l. c.) clothed with fine cinereous tomentum; corolla downy outside.

Far. β, glabra (R. Br. l. c.) glabrous; corolla beardless on the outside.

Oval-leaved Scævola. Shrub 1 to 2 feet.

19. S. ænulea (R. Br. l. c.) plant herbaceous, erect; leaves cuneated or obovate, toothed, smoothish; spike simple; bracteas lanceolate, nearly entire; calyx lobed; style glabrous below, furnished on one side at the apex with a straight coloured beard, which is equal in length to the indium of the stigma; ovarium 2-celled. G. Native of New Holland, on the south coast. It agrees with the figure given of the next species, except in the lower bracteas of the spikes being many-flowered, while in the present plant they are always 1-flowered.

Emulating Scævola. Pl. 1 foot.

20. S. cuneifórema (Labill. nov. holl. 1. p. 56. t. 80.) plant herbaceous, erect? rather pilose; leaves cuneated, toothed; spike divided at bottom into 2-3-flowered spikellets; bracteas lanceolate, entire; calyx lobed; style glabrous below, but furnished with a straight beard on one side at the apex, which is equal in length to the indium of the stigma. G. Native of Van Diemen’s Land. Flowers blue?


21. S. sinuata (R. Br. prod. p. 584.) plant herbaceous, diffuse, downy, with the hairs adpressed; leaves obovate or cuneated, toothed or sinuately; spike compound; spikellets few-flowered; bracteas elliptic, entire; calyx lobed; style glabrous below, but furnished at the apex on one side with a straight, coloured beard, which exceeds the indium of the stigma. G. Native of New Holland, on the south coast. An intermediate plant between S. ænulea and S. cuneifórema.

Sinuated-leaved Scævola. Pl. diffusæ.

22. S. humilis (R. Br. prod. p. 585.) plant herbaceous, ascending or diffuse, downy; leaves sharply toothed; lower ones obovate-cuneated; rameal ones lanceolate; spike simple; bracteas linear-lanceolate, a little toothed; calyx lobed; style furnished with a straight coloured beard on one side at top, which is equal in length to the indium of the stigma; ovarium 2-celled. G. Native of New Holland, on the south coast.

Humble Scævola. Pl. ascending.

23. S. microcarpa (Cay. icon. 6. p. 6. t. 509.) plant herbaceous, downy; leaves cuneate, ovate, or orbicular, toothed, attenuated at the base; spike simple; bracteas toothed; calyx lobed; tube of corolla bearded inside; hairs in the throat of the corolla, acute, and capitate; style longitudinally villous; ovarium 1-celled, 2-seeded. G. Native of New South Wales, about Port Jackson; and of Van Diemen’s Land. R. Br. prod. p. 585. 2. G. Native of New Holland, on the south coast. Flowers white.


24. S. pallida (R. Br. prod. l. c.) plant herbaceous, diffuse, downy; leaves toothed, attenuated at the base, cuneate or lanceolate; spike simple; bracteas usually toothed; calyx lobed; tube of corolla almost naked inside; style glabrous; ovarium 1-celled, 2-seeded. G. Native of New Holland, on the south coast. Like the preceding, but smaller in all its parts.

Pale-flowered Scævola. Pl. diffuse.

§ 2. Leaves all or for the most part quite entire.

25. S. suaveolens (R. Br. prod. p. 585.) plant herbaceous, diffuse, downy; leaves spatulate, fleshy, with bearded axils; bracteas linear-lanceolate; ovarium 2-celled; drupe baccate. G. Native of New Holland, on the south coast, and within the tropic; and of New South Wales, about Port Jackson. Flowers purple, with a white throat. This is a very polymorphic species, sometimes diffuse, and sometimes erect, varying much in the consistence and form of the leaves.


26. S. cepitosa (R. Br. l. c.) plant suffruticose, erect, diffuse, downy; leaves cuneated, toothed, smoothish; ovary 2-celled. G. Native of New Smith’s Shrub.

Scaevola. Cutt. bot. mag. 287. Willd. spec. 1. p. 954. Flowers purple, with a white throat. This is a very polymorphic species, sometimes diffuse, and sometimes erect, varying much in the consistence and form of the leaves.


27. S. revoluta (R. Br. prod. p. 586.) suffruticose, erect, downy, greyish; leaves oblong-lanceolate, sessile, with revolute edges; spike compact; bracteas lanceolate, rather concave; calyx obsolete and crenate; ovarium 2-celled. G. Native of New Holland, within the tropic.

Revolute-leaved Scævola. Shrub 1 foot.

28. S. linearis (R. Br. l. c.) suffruticose, erect, much branched, pilose, and scabrous; leaves and bracteas linear, recurved on the margins; spike terminal; ovarum 1-seeded. G. Native of New Holland, on the south coast.

Linear-leaved Scævola. Shrub 1 foot.

29. S. paludosa (R. Br. l. c.) plant subherbaceous, erect, a little branched, pilose, scabrous; leaves linear-lanceolate, flatish, about equal in length to the axillary spikers; ovarium 1-seeded. G. Native of New Holland, on the south coast.

Marsh Scævola. Pl. 1 foot.

30. S. angulata (R. Br. l. c.) suffruticose, erect; branches angular; leaves scabeous; ovarium 1-celled. G. Native of New Holland, within the tropic.

March Scævola. Pl. 1 foot.

31. S. angulata (R. Br. l. c.) suffruticose, erect; branches angular; leaves scabeous; ovarium 1-celled. G. Native of New Holland, within the tropic.

Marsh Scævola. Pl. 1 foot.

32. S. angulata (R. Br. l. c.) suffruticose, erect; branches angular; leaves scabeous; ovarium 1-celled. G. Native of New Holland, within the tropic.

Sect. III. Pogonanthæ (from ρογός, pogan, a beard; and ανθος, anthos, an anther: the anthers are bearded). Calyx length of ovarium. Anthers bearded at the apex. Drupe nearly dry. Herbaceous plants. Peduncles axillary, 1-flowered, elongated, each furnished with 2 foliaceous permanent bracteas.
GOODENOVIÉ. VIII. SECOVLA.


32 S. striata (R. Br. prod. p. 586.) wings of the segments of the corolla furnished with parallel veins. 7. G. Native of New Holland, on the south coast.

Striated Seccvola. Pl. 1 foot?

Sect. IV. Crossotoma (from κροσσός, krosis, a fringe; and τομα, toma, a section; in reference to the fringed segments of the corolla.) Calyx obsolete. Wings of the segments of the corolla fringed longitudinally. Peduncles axillary, 1-flowered, furnished with deciduous bracteas at the apex.

33 S. spinifrons (R. Br. prod. p. 586.) shrubby, spinescent; leaves oval or obvate, quite entire. 7. G. Native of New Holland, on the south coast.

Spiniflent Seccvola. Shrub.

Cult. All the species grow freely in a mixture of turf, loamy, turfey, and sand; and cuttings planted in the same kind of soil, with a hand-glass placed over them, strike root readily; those of the stover species in heat.


Thread-leaved Diaspasia. Pl. 1 foot?

Cult. See Secovla above for culture and propagation.

X. DAMPIERA (named in memory of Capt. William Dampier, R.N., the celebrated circumnavigator; he paid great attention to natural history in all his voyages). R. Br. prod. 587.

Juss. ann. mus. vol. 18.

Lin. Syst. Pentándria, Monogynia. Corolla bilabiata (f. 126. a.), having the tube eleft on the upper side (f. 126. c.); segments of the upper lip auricled on the inner margin. Anthers closely coherent (f. 126. d.). Ovarium 1-seeded. Indusium of stigma with a naked border (f. 126. c.). Nut crustaceous. Arid downy subshrubs or herbs; hairs usually of two forms; the longer ones in most of the species are branched, and rather pubescent; and the shorter ones puberulent. Leaves alternate, undivided, or a little toothed, coriaceous. Flowers axillary or terminal, sub-spicate or solitary; bracteas small or wanting. Calyx short, usually obsolete. Corolla blue or purple, 5-parted; with the margins of the claws truly inflexed, and the laminas hairy on the outside: deciduous, but sometimes with the base permanent and entire. Stems remaining after the corolla has fallen; anthers beardless.

1 D. elegalata (R. Br. prod. p. 587.) suffruticose, erect, tomentose; leaves petiolate, roundish, toothed, undulated, scarious above, longer than the peduncles, which are axillary and 2-4-flowered; corolla bearded with black plumose villi outside. 7. G. Native of New South Wales, about Port Jackson. Flowers blue.

Undulate-leaved Dampiera. Shrub 1 foot.

2 D. roscendaria (R. Br. l. c.) suffruticose, erect, tomentose; leaves petiolate, roundish, entire, flat, scarious above, very blunt at the base; peduncles axillary, usually 1-flowered, very short; terminal ones subcoriaceous; corolla bearded with black plumose villi outside. 7. S. Native of New South Wales, about Port Jackson. Flowers blue.

Round-leaved Dampiera. Shrub 1 foot.

3 D. ovalifolia (R. Br. prod. p. 588.) suffruticose, erect, with closely set tomentum; leaves petiolate, ovate, nearly entire, flat, scarious above; peduncles 2-4-flowered, axillary, about equal in length to the leaves: terminal ones coriaceous; corolla bearded with black plumose villi outside. 7. G. Native of New Holland, about Port Jackson. Juss. ann. mus. 18. t. 2. no. 1. Flowers blue. (f. 126.)


4 D. purpurea (R. Br. l. c.) suffruticose, erect, tomentose; leaves petiolate, ovate, acutely toothed, scarious above; peduncles axillary, 1-3-flowered; corolla bearded with black plumose villi outside. 7. G. Native of New Holland, about Port Jackson. Flowers purple. In this and the preceding species the outside of the corollas, as well as the peduncles, are densely bearded with spreading plumose villi.

Purple-leaved Dampiera. Shrub 1 foot.

5 D. ferruginea (R. Br. l. c.) suffruticose, erect, tomentose; leaves petiolate, ovate, acutish, repandly toothed, 3-nerved at base, smooth above in the adult state; flowers almost terminal; corollas clothed with branched wool outside. 7. S. Native of New Holland, within the tropic. Flowers blue.

Rusty Dampiera. Shrub 1 foot.

6 D. hederacea (R. Br. l. c.) plant herbaceous, procumbent, tomentose; leaves for the most part petiolate, somewhat coriaceous, cut: superior ones quite entire, glabrous above in the adult state; corollas bearded on the outside by spreading plumose cincereous villi. 7. G. Native of New Holland, on the south coast. Flowers blue.

Ivy-like Dampiera. Pl. proclive.

7 D. incana (R. Br. l. c.) suffruticose? erect? clothed with hoary tomentum; leaves sessile, obovate, quite entire. 7. G. Native of New Holland, on the western coast about Cape Lewin and Wit’s Land, where it was collected by Dampier and Baudin.

Heart Dampiera. Shrub.

8 D. cuneata (R. Br. l. c.) plant herbaceous, erectish, downy; leaves sessile, toothed, obovate-spatulate, upper ones elliptic-lanceolate, adult ones smoothish; spikes pedunculate; bracteas opposite; flowers alternate; corollas woolly on the outside from simple spreading villi. 7. G. Native of New Holland, on the south coast. Flowers blue.

Cuneate-leaved Dampiera. Pl. ½ to 1 foot.

9 D. linealis (R. Br. l. c.) plant herbaceous, erect, downy; leaves sessile, for the most part linear and few-toothed, lower ones cuneate, adult ones smoothish; spikes pedunculate;
bracteas opposite; flowers alternate; corollas woolly outside from simple spreading villi. **2 G.** Native of New Holland, on the south coast. Flowers blue. In this and *D. cuneata* the calyx is obsolete, the base of the corolla entire and permanent, clothed with simple villi on the outside; and the inflorescence is peculiar in these two plants.

**Linear-leaved Dampiera.** Pl. 1/2 to 1 foot?

10. *D. fasciculata* (R. Br. c.) plant herbaceous, erect; stem compressedly tetragonal; leaves sessile, cuneated, a little toothed, upper ones crowded in a verticillate manner, adult ones glabrous and smooth on both surfaces; peduncles in fascicles, few-flowered; corollas clothed with adpressed hairs outside: branches of pili approximate and parallel. **2 G.** Native of New Holland, on the south coast. Flowers blue.

*Fascicled*-peduncled Dampiera. Pl.

11. *D. oblonga* (R. Br. c.) plant herbaceous, erect; stem compressedly trigonal; leaves sessile, oblong, entire, and few-toothed, glabrous and smooth on both surfaces in the adult state; peduncles almost terminal, very short, 1-3-flowered; corollas clothed with adpressed pili on the outside: divisions of pili approximate and parallel. **2 G.** Native of New South Wales, about Port Jackson. Flowers blue.

*Oblonga*-peduncled Dampiera. Pl. 1/2 to 1 foot?

12. *D. stricta* (R. Br. prod. p. 589.) plant herbaceous, erect; stem compressedly trigonal; leaves sessile, cuneated, a little toothed, sebaceous above in the adult state; peduncles few-flowered, axillary and terminal; corollas clothed with adpressed pili on the outside: divisions of pili parallel and approximate. **2 G.** Native of New Holland, on the south coast, and about Port Jackson; as well as of *Van Diemen's Land*. Juss. ann. mus. 18. t. 2. no. 2. Goodenía stricta, Smith, in Lin. trans. 2. p. 549. Flowers blue. This and the two preceding species are very nearly allied, and are easily distinguished from the rest on account of the peculiar hairs on the outside of the corolla.


Small-leaved Dampiera. Pl. 1 foot?

*Cult.* See *Secevola*, p. 730. for culture and propagation.

**Tribe III.**

**BRUNONIE**E (this tribe only contains the genus *Brunonia.*) Urticulus superior, 1-seeded.


**Lin. syst.** Pentándria, Monogynia. Calyx semi-superior, ovate, villous, 5-lobed; lobes obtuse. Corolla campanulate, permanent, inserted in the calyx; with a recurved 5-lobed limb; lobes obtuse. Stamens 5, short. Anthers distinct, linear. Ovarium surrounded by the calyx, and connected with it by 5 longitudinal septa or processes, from which the staminodium springs, 5-4-seeded, many-seeded. Placenta from the inner angle of the cells. Style short, thick. Stigma concave, surrounded by the thick fleshy 3-lobed indusium. Capsule 3-4-seeded, combined with the villous tube of the calyx in its lower part, and surrounded by the segments. Seeds adhering to long filament free receptacles, which are attached to the apex of the capsule.—A creeping woolly herb. Leaves alternate, broad, semi-cordate, like those of some species of *Begonia*, petiole, serrated, acute, pretty smooth. Racemes axillary, secund, recurved, twice the length of the petioles. Flowers unilateral, arrayed in 2 rows, nearly sessile. Corollas white.


*Begonia*-leaved Pentaphragma. Pl. creeping.

*Cult.* A mixture of vegetable mould and sand will be a good soil for this plant; and it will be easily propagated by dividing the creeping stems.


5 A 2
CAMPANULACEÆ.

Calyx regular, of from 3 to 8 lobes, but usually of 5 lobes, very rarely destitute of the limb. Corolla monopetalous, regular, permanent, usually 5-lobed, rarely 3 to 8-lobed; lobes alternating with the calycine segments, each having a conspicuous central nerve, valvate in aestivation. Stamens like the corolla, inserted in the margin of the disc of the ovarium, and combined with it, distinct from the corolla, but equal in number to its segments, and alternating with them; filaments usually expanded at the base and membranous, and bending towards the base of the style above the disc; anthers fixed by the base, free, rarely more or less combined into a tube, 2-celled; cells dehiscing lengthwise when the flower is in bud; pollen copious, adhering, yellow or violaceous, and clothed with very short papilla. Style one, more or less hairy; stigma naked (not covered by an indusium, as in the order Scrophulariaceæ), rarely capitate, but usually divided into from 2 to 8 lobes, or as many lobes as there are cells in the ovarium; lobes erect while the flower is in aestivation, pliose on the back, and hardly distinct, but they diverge and become recurved and glabrous on the expansion of the flower. Ovary combined with the tube of the calyx, sometimes half superior, many-celled; cells from 2 to 8 in number, but usually 2, 3 or 5, (never 4, unless a monstrosity) opposite the calycine lobes, and sometimes alternating with them. Capsule many-seeded, dehiscing at the sides or apex, having the valves usually septiferous in the middle. Seeds numerous, small, inserted in the placentas on the inner side of the cells. Albumen fleshy. Embryo slender, straight, with opposite, ovate or roundish small follicaceous cotyledons.—Usually milky herbs, rarely shrubs. Leaves exstipulate, alternate, but sometimes opposite, rarely entire, usually toothed or crenated, never fleshy; the radical ones often different from the cauline ones. Flowers rarely involucrated, number and situation variable, terminal and axillary, racemose, panicked or spicate, and glomerate, usually drooping; pedicels always reflexed in those species in which the capsules burst at the base, but on the contrary they are erect in those species whose capsules burst at the apex.—Corollas usually blue or white, rarely yellow or purple.

Campanulaceæ differ from Compositæ in not having the flowers in heads, in their usually distinct anthers; in their polyserpervous fruit. It differs from Lobeliaceæ in the regular flowers, and in the usually distinct anthers, and from Goodeniæ in the flowers being regular, and in the want of an indusium to the stigma. All the plants are pretty, and some highly ornamental. The roots of Camp. Rapunculus are used as a vegetable under the name of Rampion.

Synopsis of the genera.

Tribe I.

Jasioneæ. Capsule dehiscing at the apex. The plants contained in this tribe are most frequent in the southern hemisphere.

§ 1. Corolla 5-parted.

* Anthers distinct.

1 Jasionæ. Capsule 2-celled, inferior: valves dehiscing but a very little way at top.—Herbs with capitulate flowers.

2 LIGHTFOOTIA. Stigmas filiform. Capsule 3-5-celled, half superior; when 5-celled the cells are opposite the stamens and calycine segments.—African subshrubs or herbs.

3 CEPHALOSTYMA. Stigma capitate. Capsule 2-3-celled.—Herbs.

4 CAMPANUMEA. Corolla without a limb. Stigmas ovate, thick. Capsule 3-celled.—Herbs, with opposite leaves, and large involucrated flowers.

§ 2. Corolla 3-6-cleft or 3-6-lobed at the apex. Anthers always distinct.

* Capsule with the valves opening regularly.


6 CANARINA. Coraly and corolla 6-lobed. Stamens 6. Stigmas 6. Cells of fruit opposite the stamens and calycine segments.—Climbing glaucous herbs, with opposite leaves.

7 PLATYCODON. Coraly and corolla 5-lobed. Stamens and stigmas 5. Capsule 3-5-celled; cells when 5 alternating with the stamens and calycine segments. Seeds ovate, flat.—Rather glaucous herbs, with alternate or subopposite leaves, and large campanulate corollas.

8 MCKCODON. Coraly and corolla 5-lobed. Stamens and stigmas 5. Capsule 5-celled; cells alternating with the stamens and calycine segments. Seeds small, ovoid. —Humble herbs, with narrow alternate leaves, and small cylindrical corollas.

9 WAHLENBERGIA. Coraly and corolla 3-5-lobed. Stamens 3-5; stigmas 2-5. Capsule 2-5-celled; cells when 5 opposite the stamens and calycine segments. Seeds small, usually ovoid. Herbs usually with alternate and narrow leaves.

* Capsule elongated, bursting at the top or opening by a pore.

10 PRISMACOCA'RIUS. Coraly and corolla 5-lobed. Stamens 5. Capsule 2-celled, naked, at length bursting irregularly at the apex. Seeds angular, thick.—Herbs or subshrubs, with alternate narrow stiff leaves, and axillary sessile flowers.

11 ROUL’LA. Coraly and corolla 5-lobed. Stamens 5. Capsule 2-celled, always terminated by the permanent calycine segments, dehiscing irregularly at the apex.—Small shrubs, with alternate narrow stiff leaves; and sessile, usually solitary, terminal flowers.

Tribe II.

CAMPANULACEÆ. Capsule dehiscing at the sides.—The plants contained in this tribe are all indigenous to the southern hemisphere.

§ 1. Capsule dehiscing by valves, which are equal in number to the cells.

* Coraly 5-8-parted.

12 PHYTE'MA. Coraly and corolla 5-parted. Stamens 5. Capsule 2-3-celled. Stigmas filiform.—Herbs, with small usually glomerate flowers.

13 PETROMA'RAULA. Coraly and corolla 5-parted. Stigma
capitate. Capsule 3-celled.—Herbs, with pinna-tifid leaves, and racemose flowers.

14 Michæli'x. Calyx and corolla 8-parted. Stigmas 8, filiform. Capsule 8-celled.—Herbs, with the radical leaves pinnate.

** Corolla 5-cleft or 5-lobed at the apex.

15 Camp'nula. Corolla campanulate, funnel-shaped, or broadly tubular. Nectarium none. Capsule 3-5-celled, not elongated; cells when 5 opposite the stamens and calycine segments.—Herbs variable in habit.


17 Trache'lium. Corolla salver-shaped, with a very narrow elongated tube. Nectarium wanting. Style only pilose at the apex; stigmas small, hardly distinct. Capsule 2-3-celled, not elongated.—Herbs.


§ 2. Capsule dehiscing laterally by numerous transverse fissures.

20 Mu'scia. Calyx and corolla 5-cleft. Stamens 5. Capsule 5-celled; cells alternating with the lobes of the calyx and stamens.—A subshrub, with broad serrated leaves, and racemose yellow flowers.

† A genus doubtful whether it belongs to the order.

21 Merc'eria. Calyx 5-lobed, with a very hispid tube. Corolla 5-lobed, with a narrow tube as in Trachelium. Stamens 5, free; filaments long and slender. Stigmas 2, very short. Capsule inferior, indeschiscent? 1-celled, containing probably always 4 ovula in the bottom.—Cape shrubs, with the leaves of Reel'a, and slender lateral flowers.

Tribe 1.

JASION'E. (this tribe contains plants agreeing with Jasiona in the dehiscence of the capsule). Capsule dehiscing at the apex.


LIN. SYST. Pentándria, Monog'ynia. Calyx 5-cleft. Corolla deeply 5-parted; segments linear-lanceolate. Stamens 5, with slender filaments, and the anthers combined into a tube at the base; pollen blue or purplish. Style pilose from the middle to the apex: the pili or hairs disposed in 10 rows; stigmas 2, short. Capsule 2-celled, spheroid or ovoid, dehiscing by a broad hole at top, with very short valves. Seeds small, ovoid, shining. —Dwarf herbs, with the habit of Scabiosa. Leaves alternate, narrow. Flowers collected into terminal bracteate heads: the flowers expanding from the top of the head.


Mountain or Common Sheep's Scabious, or Sheep's-bit. Fl. June, July. Britain. Pl. ½ to 1 foot.

2 J. cor'ynoba (Poir. suppl. 3. p. 131.) stems erect, branched, angular; leaves decurrent, oblong-linear, rather hairy, undulated; peduncles leafy; bracteas pilose. γ H. Native of the kingdoms of Tangiers and Morocco, in sandy places. J. arena-'ria, Salzm. in herb. D. C. Root perpendicular. Heads of flowers numerous, globose, terminating the branches; stems therefore somewhat corymbous. Corollas blue.

Cory'mbose-flow'red Sheep's Scabious. Pl. ½ foot.


Portug'ol Sheep's Scabious. Pl. ½ foot.


Humble Sheep's Scabious. Pl. ¼ feet.

6 J. foliö'sa (Cav. icon. 2. p. 38. t. 148. f. 1.) glabrous; stems ascending, simple; radical leaves rosulate, rather spinu-late; cauline ones linear-lanceolate. γ H. Native of Spain; plentiful near the top of Mount Orospeda, on the north side, in the fissures of rocks; and in the boundaries of the kingdoms
of Valencia and Murcia. Phyteuma? rigidifolium, Duf. ined. in herb. D. C. Root simple. Heads globosum, few-flowered. Flowers pedicellate, of a deep violet colour. This is a dwarf, but very elegant plant, when in blossom.

*Leaves* of *Sheep’s Seabious*. Fl. Aug. Pl. 1 to 3 inches.

7 J. tristis (Bory, ann. gen. 3. (1820) p. 3.) stems prostate, diffuse, almost simple; leaves alternate, rather spathulate, ciliately tomentose; flowers in dense heads; bracteas ovate, coloured. 2. H. Native of Spain, on Sierra Nevada, at a place called Valleta. Flowers of a greyish-blue colour.

*Sad-coloured-flowered Sheeps’ Seabious*. Fl. prostrate.

*Cult.* The species of *Jasionae* are all very elegant while in blossom, and they are, therefore, well fitted for decorating the front of flower-borders and rock-work. They grow best in light soil, and are readily increased by parting at the root, by seed, or by cuttings. Plants of all the kinds should be kept in pots, so as to be placed under shelter in severe weather in winter, or else they are liable to be killed, and the species lost to the gardens.


[Lm. syst. Pentádria, Monogynía. Calyx 5-cleft. Corolla usually 5-parted, sometimes 5-cleft. Stamens 5; filaments broad, ciliated; anthers free, caducous. Stigmas 3-5, short, filiform. Capsule 3-5-celled, usually half superior, dehiscing by the valves at the apex; cells, when 5, opposite the stamens and calyce segments. Seeds ovoid-trigonal, minute. Small shrubs, rarely perennial herbs. Leaves alternate, and sometimes opposite, sessile, small, scattered equally over the whole plant. Flowers usually racemose, and on short pedicels; pedicels erect after the flowers begin to fade, and usually stiff. All natives of the Cape of Good Hope, except one, which is a native of Madagascar.]

§ 1. *Capsule 5-celled.*

1 L. subulata (Lher. sert. angl. t. 5.) stem ascending or erect, rather woody, simple or branched; leaves alternate, erectish, ciliately, subulate, narrow, somewhat denticulated; flowers racemose, on short pedicels; corolla 5-parted, with the segments rather longer than the calyce lobes; valves acute, longer than the entire base of the capsule. 2. G. Native of the Cape of Good Hope; very common on the mountains about Cape Town. Roem. et Schultes, syst. exclusive of the synonyme of Campanula capillacea. Campanula subulata, Spreng. syst. 1. p. 728. Lightfootia, Burch. cat. af. austral. no. 284. Campanula truncicosa, Lin. spec. 1. p. 238.9? Root simple, perpendicularly. Leaves numerous, stiff. Flowers numerous, terminal and axillary, solitary, disposed along the branches in a racemose manner, blue.


§ 2. *Capsule 3-celled.*


Var. *b. canescens* (Cham. in Linnae. 7. p. 192.) stem, leaves, and corollas clothed with hoary down; leaves 4 lines long, straight, with revolute edges; inflorescence more loose than in the species; axillary flowers nearly sessile; terminal ones on long pedicels.

1ăr. *c. lanuginosa*, (Cham. l. c. p. 193.) corollas, inflorescence, and stem rather woolly from long white villi; leaves 2 lines long, with finely-revoluted edges, densely imbricated; inflorescence contracted, subcapitate.

*Long-leaved Lightfootia*. Fl. 1 foot.


*One-toothed-leaved Lightfootia*. Shrub 1 foot.

4 L. ? adpressa (Alph. D. C. mon. p. 110.) stem erect, woody, simple; leaves alternate, reflexed, linear-lanceolate, setaciously-toothed; flowers panicked; corolla semi-5-cleft, twice longer than the calyce lobes. 2. G. Native of the Cape of Good Hope. Campanula adpressa. Thum. prod. p. 38. mem. acad. Petersb. 4. p. 365. t. 7. f. 2. Leaves a little decurrent, ciliated with white hairs at the base. Flowers panicked on the upper part of the stem, which is leafless.

*Adnerved Lightfootia*. Shrub 1 foot.

5 L. albescens (Spreng. in Zeicher, fl. cap. excis. p. 266.) stem erect, woody, branched; leaves alternate, usually in fascicles, spreading, linear, very narrow, entire; flowers loosely racemose; corolla 5-parted, having the segments 3 times longer than the calyce lobes; valves acute, about equal in length to the base of the capsule. 2. G. Native of the Cape of Good Hope. Campanula campanulata. Burch. cat. geogr. af. no. 1720. Flowers terminal and axillary, loosely racemose at the tops of the branches.

*Whitish Lightfootia*. Shrub 1 foot.


*Slender Lightfootia*. Shrub 1 foot.


*Fascicled-flowered Lightfootia*. Shrub 1 foot.

8 L. oxyacoides (Lher. sert. angl. t. 4. exclusive of the syn. Campanula tenella, Lin.) stem erectish or ascending, much
branched, woody at the base; branches diffuse; leaves alternate, reflexed, ovate-lanceolate, acute, thin, denticulated at the base; flowers loosely racemose; corolla 5-parted, having the segments hardly twice the length of the calycine lobes; valves acute, equal to the base of the capsule. ⅲ. G. Native of the Cape of Good Hope, on the Table Mountain. Smith, exoth. fl. 2. t. 99. Alph. D. C. mon. p. 113. Lobélia tellénæ, Lin. mant. p. 120. Thumb. prod. p. 40. Lobélia partifórra, Berg. cap. 45. Capsula Alp. Ornatæ, var. sp. sys. t. 5. p. 113. Branches purplish. Flowers terminal and axillary, at the tops of the branches, white, with reddish nerves.


9 L. lanceolata (Link, enum. 1. p. 217.) stem decumbent, downy; leaves lanceolate, glabrous, furnished with 1 or 2 teeth; peduncles downy; calyx glabrous, one-half shorter than the corolla. ⅲ. G. Native of the Cape of Good Hope. L. oxyccocoides, var. sp. sys. t. 1. p. 809. Corollas white and bluish, larger than those of L. oxyccocoides.


10 L. vesicosa (Link, enum. 1. p. 217.) stem decumbent, glabrous; leaves lanceolate, glabrous, quite entire; rameal ones opposite; peduncles glabrous; calyx shorter than the corolla. ⅲ. G. Native of the Cape of Good Hope. L. oxyccocoides, var. sp. sys. t. 1. p. 809. Leaves 5-4 lines long, and half a line broad. Corolla 2-3 lines long, whitish-blue.

Mossy Lightfootia. Shrub decumbent.

11 L. lodgdgesit (Alph. D. C. mon. p. 114.) stem decumbent, woody at the base, branched; leaves alternate, somewhat reflexed, ovate-lanceolate, acute, entire; flowers loosely racemose; corolla 5-parted, having the segments 4 times longer than the calycine lobes. ⅲ. G. Native of the Cape of Good Hope. L. tenellæ, Lodg. bot. cab. t. 1038. Branches purplish. Flowers axillary and terminal, disposed in loose racemes at the tops of the branches. Corolla bluish.


12 L. lyccocoides (Alph. D. C. mon. p. 114.) branches woody, simple, very leafy; leaves alternate, and sometimes sub-verticillate, erect, adpressed to the branches, linear, very narrow; flowers few, sessile; corolla 5-parted, with the segments 3 times longer than the calycine lobes. ⅲ. G. Native of the Cape of Good Hope. Leaves revolute on the margins. Flowers sessile, usually 3 on the top of each branch, the middle one expanding before the lateral ones.

Club-moss-like Lightfootia. Shrub 1 foot.

13 L. oppositifolia (Alph. D. C. mon. p. 115.) branches erect, slender, stiff, simple; leaves opposite, somewhat reflexed, linear, acuminate, narrow, slightly denticulated; flowers few, usually terminal; corolla deep 5-cleft, twice longer than the calycine lobes. ⅲ. G. Native of the Cape of Good Hope, on the Table Mountain. Campánula ericoides, Lam. Lightfootia, Burch. cat. geogr. pl. sér. austr. no. 606. Branches reddish. Flowers solitary, terminal, rarely axillary. Habit of L. oxyccocoides. L. muscósæ and L. lanceolata, Link, are probably hardly varieties of this species.

Opposite-leaved Lightfootia. Shrub 1 foot.

14 L. rubioides (Alph. D. C. mon. p. 116.) branches pro-cumbent, diffuse; leaves opposite, spreading, or a little reflexed, lanceolate, acute, remotely denticulated; flowers few, terminal and axillary; corolla 5-parted, with the segments longer than the calycine lobes. ⅲ. G. Native of the Cape of Good Hope. Campánula rubioides, Banks, herb. Plant trailing, much branched. Branches reddish. Leaves glabrous, or furnished with a few white hairs. Flowers axillary and terminal, solitary, at the extremities of the branches.

III. CEPHALOSTIGMA. IV. CAMPA NULUMEA.

Madder-like Lightfootia. Pl. trailing.

15 L. Madagascaricæn (Alph. D. C. mon. p. 116.) stem erect, woody at the base, simple; leaves alternate, erect, linear-acuminate, remotely denticulated; flowers somewhat panicked; segments of the corolla, which is deeply 5-parted, about 5 times longer than the calycine lobes; capsule wholly inferior, with short valves. ⅲ. S. Native of Madagascar, where it was collected by Commerson. Campánula Madagascaricæn, Juss. herb. Flowers at the top of the stem, and along one side of the peduncles, about 10 towards the upper part of the stem.

Madagascar Lightfootia. Pl. ⅓ to 1 foot.

Cult. All the species grow freely in a mixture of loam, peat, and sand; and young cuttings strike root readily in the same kind of soil, with a hand-glass over them.

III. CEPHALOSTIGMA (from κεφαλή, kephalē, a head, and στίγμα, stigma, a stigma; in reference to the stigma, which is capitulate). Alph. D. C. mon. p. 117.—Campánula species, Wall. herb.—Wahlenbergia species, Perrott. et Lepr. herb.

Lin. syst. Pentádria, Monogyiæ. Calyx 5-cleft. Corolla 5-parted; segments alternating with the calycine lobes, and longer than them. Stamina 5, free; filaments broadest at the base; anthers 2-celled; style usually exerted, more or less hairy; stigma simple, capitate, pilose. Capsule 2-3-celled, dehiscing by 2-3 short valves at the apex, which are septiferous in the middle. Seeds numerous, small, ovoid, triquetrous.—The species of this genus have a habit intermediate between Wahlenbergia and Lightfootia, but differs from both these genera in the capitulate stigma; but it has a capsule like that of the first, and a corolla like that of the latter.

§ 1. Capsule half superior, 3-celled. Style rather shorter than the segments of the corolla.

1 C. paniculata (Alph. D. C. mon. p. 117.) stem herbaceous, much branched, leafy; leaves ovate, acute at both ends, broad, subsinuated; flowers loosely panicked; segments of corolla 2 or 3 times longer than the calycine lobes; capsule obconical. ⅲ. F. Native of the Burmese empire, about Prome, on the banks of the Irrawaddy. Campánula paniculata, Wall. mass. Stem hairy. Leaves downy beneath. Panicule much branched; pedicels filiform, 1-flowered, glabrous.

Panicled-flowered Cephalostigma. Pl. 1 foot.

§ 2. Capsule 2-celled, almost wholly inferior. Style rather longer than the segments of the corolla.


Perrottet’s Cephalostigma. Pl. ½ foot.

3 C. Prieuri (Alph. D. C. mon. p. 118.) stem woody, humble, much branched, naked at the base; leaves small, linear; flowers panicked; segments of corolla hardly twice the length of the calycine lobes; capsule obconical. ⅲ. S. Native of Senegal, about Jonal, where it was collected by Leprieur and Perrottet. Root simple. Branches very slender, many-flowered, glabrous.

Le Prieur’s Cephalostigma. Pl. ¼ foot.

Cult. For culture and propagation see Micrococcus, p. 737.

CAMPANULACEÆ. IV. CAMPAŅUMÆA. V. CODONOPSIS. VI. CANARINA.

LIN. syr. Pentándria, Monogynia. Flowers involucrated. Involucrum 5-parted. Calyx hemispherical, combined with the involucre at the base, truncate at the apex, bearing the corolla. Corolla 5-parted! (5-petalled, ex Blum.). Stamens 5, free, opposite the lobes of the involucre, inserted at the base of the corolla or top of the calyx, and in the ovarium; filaments broadest at the base; anthers 2-celled. Style inclosed, divided into 3 ovate thick stigmas at the apex, which are pliose before the expansion of the flower. Ovarium combined with the tube of the calyx, 3-celled. Capsule globose, terminated by a broad flat 5-angled umbilicus, which is girded by the eiacretas occasioned by the falling of the corollas and stamens, many-valved, ex Blum.

Seeds very numerous, ovoid-cylindrical, dotted, inserted on the thick placentas, which are inflected on both sides, and situated at the inner angle of the cells. — Quite glabrous lacinseet herbs, with tuberous roots, ex Blum. Stems and branches terete. Leaves opposite, glaucescent beneath. Peduncles axillary and terminal.

1. C. Javanica (Blum. bldr. p. 727.) stem climbing; leaves on long petioles, obvate-cordate; flowers solitary, scattered. \( C. \). 
2. Native of Java, in humid woods on the mountains of Salak and Gede. Leaves 1-2 inches long, and 6-12 lines broad. Flowers green, axillary, and terminal. Peduncles 1-flowered.

Javan Campanumæa. Pl. cl.

2. C. Celleba (Blum. bldr. p. 727.) stem erect; leaves on short petioles, oblong-lanceolate; flowers subcorunose, terminal. \( C. \). 
3. Native of Celebes. Leaves ovate, acute; superior ones lanceolate, nearly entire, or serrulated.

Celleba Campanumæa. Pl. 1 foot.

Cult. A mixture of sand, loam, and peat will be a good soil for the species of Campanumæae; and they are to be increased by cuttings or seeds.

V. CODONOPSIS (from κώδον, kodon, a bell, and ὀπής, opis, resemblance; in reference to the shape of the flowers). Wall. in Roxb. fl. ind. 2. p. 103. Alph. D. C. mon. p. 120.

LIN. syr. Pentándria, Monogyenia. Calyx 5-lobed or truncate. Corolla inserted in the top of the calyx, 5-lobed; lobes alternating with the calycine segments when there are 5. Stamens 5, free, alternating with the lobes of the corolla; filaments broadest at the base; anthers 2-celled, length of filaments. Style inclosed; stigma 3, thick. Ovarium 3-celled, almost combined with the whole of the tube of the calyx. Capsule dehiscing by 3 acute valves at the apex, which are septiferous in the middle. Seeds inserted in the inner angle of the cells to a thick placenta, furnished with albumen and a straight embryo. — Usually quite glabrous herbs, inhabitants of the north of India on the mountains. Stems erect or scendent, and even twining, branched, terete, rising from a woody root, probably always. Leaves usually strictly opposite, ovate, acuminate, not entire, on short petioles, glauceous, rarely hoary beneath. Branches usually opposite, more or less articulated at their origin. Flowers terminal and axillary, pedunculate, sometimes involucrated. Corollas white, yellowish or deep purple. The habit of the species is variable.


1. C. viñata (Wall. fl. ind. 2. p. 103.), stem ascending, twining; leaves alternate and opposite, downy, hoary beneath, a little crenulatæ; corollæ large, yellowish-green. \( C. \). 
2. Native of Nipaul, about Gossingshan, Kamaon, and in an obscure wood on the top of Sheepore. Plant scandent, much branched, with the habit of Consolénæus. Leaves ovate-oblong. Flowers axillary and terminal, solitary, often opposite the leaves, with an ungrateful scent.


2. C. pears (Wall. in Roxb. fl. ind. 2. p. 105.) stems ascending, twining a little, manifestly articulate; leaves strictly opposite, glabrous, glaucescent beneath, a little crenulatæ; corollæ deep purple. \( C. \). 
2. Native of Nipaul, on the mountains towards the Himalaya. Leaves obovate-oblong. Flowers solitary, usually terminal, and terminating axillary branchlets.

Purple-flowered Codonopsis. Pl. twining.

SECT. II. MICROSA’NTHES (from μικρός, mikros, small, and ἀνθος, anthos, a flower; in reference to the small flowers). Flowers small, white, involucrated. Calyx probably always truncate. Seeds rather lenticular, small. Leaves strictly opposite, glabrous, glaucescent beneath.

3. C. trunca’ta (Wall. cat. no. 1301.) stem erect; leaves sharply serrated; involucrum combined with the base of the calyx. \( C. \). 

Truncate-calyx Codonopsis. Pl. 1 to 2 feet?

4. C. Paryflora (Wall. cat. no. 1303). Alph. D. C. mon. p. 123.) stem erect; leaves remotely and setaceous denticulated; involucrum distinct from the calyx. \( C. \). 
4. Native on the Pundua mountains, on the north-east of Bengal. Stem branched; branches opposite. Leaves ovate-acuminated. Flowers small, numerous, and as if they were panicked; peduncles trichotonous or dichotomous.

Small-flowered Codonopsis. Pl. 2 feet.

Cult. For culture and propagation see Canpumæae above.


LIN. syr. Hexándria, Monogyenia. Calyx 6-cleft. Corolla 6-lobed at the apex, large, campanulate. Stamens 6, free; filaments thickest at the base, glaucescent. Style inclosed, hispid above, the hairs disposed in 12 rows. Stigmas 6. Capsule 6-celled, dehiscing at the apex; cells opposite the calycine lobes and stamens. Seeds small, angular. Large herbs, with thick perennial roots: having the stem, leaves, and calyxes glaucescent, and quite glabrous. Leaves opposite. Flowers terminal, solitary.

1. C. campanula’ta (Lam. d. t. 259. ill. t. 598. plant glaucescent; root tuberous, fusiform; stems ascending; leaves hastately subcorulate, irregularly toothed; flowers solitary, terminating axillary branchlets. \( C. \). 

Cult. 8. vag. f. t. 8. — Hort. cliff. p. 65. t. 8. — Pluck. phyt. t. 276. f. 1. alm. p. 76. Flowers drooping, of a yellowish purple or orange colour, having the nerves red.


2. C. Zanguebra (Alph. D. C. mon. p. 125.) stem shrubby, scendent, branched; leaves hastately corulate, quite en-
tire, glabrous; flowers solitary, lateral. b. S. Native of Africa, on the coast of Zanquebar. C. Zanquebrica, Lour. coch. p. 195. Flowers pale. This plant agrees with the present genus in the calyx being 6-cleft, in the corolla being 6-lobed, in the stamens being 6, and in the capsule being 6-celled; but differs in the capsule dehiscing at the base, not at the apex, in the flowers being lateral, and in the leaves being alternate.

Zanquebar Canarina. Shrub climbing.

Cult. C. campanulata is very desirable, as it flowers in autumn and winter, when few other plants are in bloom. After flowering the stem dies down, and the root continues dormant all the summer, when it needs but little water. When the stem begins to push forth the plants had better be removed to the stove, as they will not flower so abundantly in the greenhouse. A light loamy soil, or a mixture of loam and peat, is the best soil for it; and the plant is readily increased by dividing at the root or by cuttings, planted in the same kind of soil under a hand-glass. The C. Zanquebrica being a three-stemmed plant will grow in the same kind of soil recommended for the first species, and will be easily increased by cuttings.

VII. PLATYCODON (from πλάτυς, platys, broad, and κόους, kouos, a bell; in reference to the shape and breadth of the flowers). Alph. D. C. mon. p. 125.—Campanula species, Jacq. hort. vind. 3. p. 4. t. 2. Lam. ill. no. 2513.—Wahlenbergia species, Schrad. cat. hort. gott. ann. 1814.—Campanula sect. Codonia, Spreng. syst. 1. p. 735.

Lin. syst. Pentandra, Monogynia. Calyx 5-cleft (f. 127. c.). Corolla 5-lobed at the apex (f. 127. d.), large, funnel-shaped, Stamens 5 (f. 127. a.), free; filaments broad at the base. Stigmas 3-5 (f. 127. b.). Capsule 3-5-celled, dehiscing by 3-5 valves at the apex, which are septicidere in the middle; cells when at the apex with the calyce lobes and stamens. Seeds ovoid, larger than in any genus of the order, shining, but not angular.—Perennial usually glansceent herbs, natives of Eastern Asia. Leaves alternate or nearly opposite, sessile, of a middle size; upper ones the smallest. Flowers few, terminal, solitary, pedunculate.


2 P. homallanthum (Alph. D. C. mon. p. 126.) plant rather pilose at the top; leaves lanceolate or linear-lanceolate; corolla deeply 5-cleft; stigmas 3; capsule 3-celled. 2. H. Native of the east of Siberia, near Ilga, ex Fisch.; of Kamtschatka, ex Redowsk; and of China, ex Sir G. Staunton. Stems simple. Leaves coarsely and unequally serrate-toothed, glabrous. Flowers usually 4-6, disposed in a loose raceme; pedicels hairy, 1-flowered. Calyx hairy. Corolla downy.


Equal-flowered Platycodon. Pl. 1/2 to 1 foot.

Cult. These species of Platycodon are neat elegant plants when in blossom. They do best in pots in a mixture of sand and peat, placed among other alpine plants; they will also grow very well planted in a peat border. We know of no way of increasing them but by seeds.


Lin. sys. Pentandra, Monogynia. Calyx 5-cleft. Corolla 5-lobed at the apex, small, cylindrical, permanent. Stamens 5, free; filaments very slender, not expanded at the base. Style filiform; stigmas 5. Capsule 5-celled, dehiscing by 5 valves at the apex; cells alternating with the calycine segments and stamens. Seeds ovoid, small, shining, but not angular.—Humble annual herbs, natives of the Cape of Good Hope. Leaves alternate or nearly opposite, small, narrow, sessile; superior ones rather the longest. Branches at the base of the plant opposite and diverging. Flowers almost sessile. Tube of calyx spherical and very hairy.


Glomerate-flowered Microcodon. Pl. 1/2 to 3 foot.


Scattered-flowered Microcodon. Pl. 1/4 foot.

Cult. The seeds of these plants should be raised on the hot-bed; and when the plants are of sufficient size they may be planted out into the open border in May in a warm sheltered situation.


Lin. sys. Pentandra, Monogynia. Calyx 5-cleft (f. 128. a.). Corolla 3-5-lobed at the apex (f. 128. b.), rarely divided to the middle. Stamens 3-5, free; filaments rather broad at 5 B
the base. Style inclosed, pilose, but most so towards the upper part. Stigma 2-5 (f. 128. c.). Ovarium combined with the tube of the calyx. Capsule 2-5-celled (f.128.c.) each opening by so many valves at the apex, which bear each a dissepiment in the middle. Seeds very numerous, minute.—Herbs, rarely shrubs, for the most part annual. Leaves usually alternate, rarely opposite, generally most numerous towards the lower part of the plant. Flowers for the most part on long peduncles; pedicels drooping at first, but when bearing the capsules are perfectly erect. The species of this genus are most plentiful in the southern hemisphere, particularly at the Cape of Good Hope.

**Sect. I. Edraiantha (from εδραίανθ, edraios, sedentary, and ἄνθος, anthos, a flower; in reference to the flowers being sessile, and usually capitate).** Alph. D. C. mon. p. 150. - Campánula species, Lin. and others. Corolla and calyx 5-lobed. Stamens 5. Capsule 2-3-celled. Seeds ovate, flat.—Humble perennial herbs. Leaves alternate, narrow; radical ones crowded; cauline ones stem-clasping. Flowers sessile, usually capitate. — Inhabitants of Italy and the adjacent countries.

* * Plants cauline. Flowers aggregate.

1 W. *graminifolia* (Alph. D. C. mon. p. 130.) stems clothed with soft down; leaves entire; radical ones linear or linear-spatulate; cauline ones linear, and somewhat stem-clasping; bracteas ovate, acute, entire, rather downy; tube of calyx smoothish; but the lobes are downy, and the sinuses are toothless. 

2 W. *Gargarina*; perennial, downy, canescent; stems diffuse or pendulous, simple; leaves roundish, cordate; lower ones on long petioles, deeply and unequally crenated; upper ones dentate; crenatures and teeth mucronate; racemes loose, leafy; pedicels filiform, 1-flowered; calycine segments lanceolate, acuminate, reflexed.

3 W. *Kitaibelii* (Alph. D. C. mon. p. 131.) stems beset with soft pilis; leaves ciliate a little; radical ones linear-subsessile, remotely dentilicate; bracteas ovate, acuminate, dentately suberreted, ciliated with villi; tube of calyx villous, and the lobes subdenticulate, as well as the sinuses, and downy on both surfaces.

4 W. *tenellifolia* (Alph. D. C. mon. p. 133.) stems pilose; leaves linear, entire, with bristly margins; bracteas ovate, acuminate, ciliated with bristles; tube of calyx rather pilose; lobes of calyx ciliated with bristles, and the sinuses toothless.

**IX. Wahlbergia.**


5 W. *Dalmatica* (Alph. D. C. mon. p. 131.) stems glabrous; leaves linear-lanceolate, entire, ciliated with hairs; bracteas ovate-acuminated, entire, ciliated; tube of calyx rather pilose; lobes of calyx entire, ciliated, rather pilose on the back, with the sinuses toothless.

6 W. *Pumilio* (Alph. D. C. mon. p. 134.) plant tufted; stems short, very leafy; leaves linear, entire, glabrous beneath, revolute on the margins at top, and pilose in the middle; hairs adhered, pencilled or in tufts at the tops of the leaves; upper leaves broadest at the base, and covering the flower; tube of calyx obconical, glabrous; lobes of calyx entire, similar to the leaves.


**Dwarf Wahlbergia.** Pl. tufted.

1 Capsule 5-celled. Seeds shining. Stems erect or ascending. Pedicules elongated, naked. Leaves alternate, sessile. All natives of the Cape of Good Hope.


8. W. DIFFUSA (Alph. D. C. mon. p. 137.) stem weak, much branched, glabrous, or rather pilose; leaves linear, acuminate, somewhat dentilicate; calyx glabrous or pilose, with a spherical tube; corolla 5-lobed at the apex, hardly longer than the calyceine lobes; capsule spherical, glabrous. H. Native of the Cape of Good Hope. Campánula rubioides, Banks, herb.—Comm. Hort. t. 97 (?). Calyx quardrilab.


9. W. LINEARIS (Alph. D. C. mon. p. 132.) stem flexuosus, erect, ciliiform, simple and glabrous at the base; leaves linear, entire, glabrous; calyx glabrous or pilose, with a spherical tube; corolla 5-lobed at the apex, hardly longer than the calyceine lobes; capsule spherical, glabrous. H. Native of the Cape of Good Hope, in sandy places. Campánula lineáris, Lin. suppl. p. 140. Thumb. prod. p. 38. mem. acad. petersb. 4. t. 5. f. 5. Stem purplish. Flowers somewhat panicked, white; peduncles and pedicels capillary, drooping when bearing the flowers, and erect while bearing the fruit.

Linear-leaved Wahlenbergia. Pl. 1½ foot.

§ 2. Capsule 3-celled. Seeds shining or dotted. Stems erect or procumbent. Peduncles naked, more or less elongated. Leaves alternate, rarely opposite.

* Seeds usually dotted. Stems branched, slender, usually procumbent. Leaves sessile or petiolate, and opposite or alternate in the same specimen.

10. W. FLACCÍDA (Alph. D. C. mon. p. 198.) rather pilose; stem erect, simple, rather leafy; leaves opposite and alternate, ovate, acute, entire; calyx pilose; with an oval tube; corolla 5-lobed, one-half longer than the calyceine lobes; capsule ovoid, spherical. H. Native of the Cape of Good Hope, where it was collected by Masson. Campánula flácida, Banks, herb. Flowers solitary, terminal. Peduncle not different from the stem, being leafy like it.

Flaccid Wahlenbergia. Pl. 1½ foot.

11. W. DIVERSIFÓLIA (Alph. D. C. mon. p. 139.) stem procumbent, branched, not very leafy, glabrous above, and pilose below; leaves alternate and opposite, smooth: lower ones obovate-roundish, crenately toothed: the rest ovate-lanceolate, acute, toothed; calyx glabrous, with an ovoid-spherical tube; corolla one-half longer than the calyceine lobes; capsule obconically ovoid. H. Native of the Cape of Good Hope. Campánula Eklon, in herb. Dumont. Flowers on long pedicels, which are either terminal or axillary on the upper part of the plant.

Diverse-leaved Wahlenbergia. Pl. procumbent.

12. W. MADAGASCARENSIS (Alph. D. C. mon. p. 139.) stem erect, branched, glabrous, not very leafy, rather pilose above; leaves strictly opposite, ovate, acute, crenated, glabrous; calyx rather pilose, with a spherical tube; corolla profusely 5-cleft, length of the calyceine segments; capsule spherical. H. Native of Madagascar. Stems branched from the base. Flowers solitary, pedicellate, situated in the axils of the forks of the branches.

Madagascar Wahlenbergia. Pl. ¾ foot.


Var. β, foliósá (Alph. D. C. mon. p. 140. t. 15. f. 6.) stems shorter; leaves approximately smaller. G, Y. Campánula, Burch. cat. pl. afr. no. 361. and no. 508.

Procumbent Wahlenbergia. Pl. creeping.

* * * Seeds dotted. Stems branched, slender, usually procumbent. Leaves petiolate, alternate.

14. W. HEDERÆCÆA (Alph. D. C. mon. p. 146.) glabrous; stems slender, ascending; leaves on long petiodes, coriaceous, bluntly 5-angled; corolla 5-lobed at the apex, 4 times longer than the calyceine segments; capsule hemispherical.


*** Seeds shining. Stems more or less erect. Leaves alternate, sessile, narrow.

a. Peduncles elongated.

15. W. GRÄCÍLIS (Alph. D. C. mon. p. 142.) stem simple or branched, glabrous or pilose; leaves alternate or nearly opposite, linear-lanceolate, sinuate-toothed, glabrous; calyx smoothish, with an ovoid tube; corolla funnel-shaped, 5-cleft; capsule obovate. G. Native of Van Diemen's Land; and of New Holland, about Port Jackson; and of New Caledonia and New Zealand. All the varieties grow in New Holland, except var. ε, which only grows in New Zealand. Campánula grácilis, Forst. prod. no. 84. Sims, bot. mag. 691. R. Br. prod. p. 561. Campánula vincéiflora, Vent. malm. t. 12. Campánula capillaris, Lodd. bot. cab. t. 1406. Peduncles terminal and axillary, elongated, 1-flowered. Corolla blue, with a white or yellowish bottom. Anthers yellowish.

Var. β, stricta (Alph. D. C. mon. p. 142.) stem branched, straight; leaves numerous, opposite, linear-lanceolate; calyceine segments linear, exceeding the tube of the corolla a little, which is discoloured on the outside. G. Campánula grácilis, Smith, exot. fl. t. 45. Campánula gráciíis, β, stricta, R. Br. prod. p. 561.

Var. γ, littorális (Alph. D. C. l. c.) stem simple, elongated; leaves few, alternate, linear, narrow; calyceine lobes acuminate, length of the tube of the corolla. G. Campánula littorála, Labill. nov. holl. 1. p. 69. t. 70. Camp. gráciíis, γ, littorála, R. Br. prod. p. 561.

Var. ε, capilláris (Alph. D. C. l. c.) stem capillary, panicked; leaves linear, remote; segments of the calyx one-half shorter than the capsule, which is nearly globose. G. Campánula grácilis, ε, capilláris, R. Br. prod. p. 561.

Var. ι, polymórpha (Alph. D. C. l. c.) lower leaves obovate, obtuse; middle ones lanceolate; upper ones linear-lanceolate; calyceine segments broadish, one-half shorter than the corolla. 5 p 2
CAMPANULACEÆ.

9. H. Native of New Holland. Campánulae, Sieb. fl. nov. holl. n. 577. Peduncles naked, divided into 1-flowered pedicels; the flowers are therefore somewhat panicked. Corolla blue, small. Stem angular at the base.

Sieber's Wahlenbergia. Pl. ½ foot.


Field Wahlenbergia. Pl. 1 foot.

24. W.рева (Alph. D. C. mon. p. 145.) stem branched, rather pilose at the base; leaves linear, rather pilose, entire; acuminate; tube of calyx ovate, glabrous; corolla one-half longer than the calyces; capsule obovoid. O. H. Native of the East Indies, on the Nellygherry mountains, where it was collected by Leschenault, and where it is called Aleka. Habit of W. trinervis. Peduncles 1-flowered, glabrous. Flowers terminal, mutant. Capsule erect.

Indian Wahlenbergia. Pl. ½ foot.

25. W. rīpa (Alph. D. C. mon. p. 146.) plant pilose at the base, and glabrous at top; leaves few, undulated toothed, rather hairy; lower ones obovate-lanceolate; the rest narrower, glabrous, and acuminate; calyx glabrous, with an ovoid narrow tube; corolla one-half longer than the calyces; capsule ovoid. O. H. Native of Senegal. Stem very leafy at the base, divided into many 1-flowered pedicels at top.

River-side Wahlenbergia. Pl. 1 to 1½ foot.

26. W. hуmullis (Alph. D. C. mon. p. 147.) plant pilose at the base, and glabrous at top; leaves much crowded at the bottom, linear-lanceolate; upper ones ligulate; calyx glabrous, with an ovoid narrow tube; corolla one-half longer than the calyces; capsule ovoid. O. H. Native of Senegal. Stem very leafy at the base, divided into many 1-flowered pedicels at top.

Humble Wahlenbergia. Pl. ½ foot.


Naked Wahlenbergia. Pl. 1 foot.


Sieber's Wahlenbergia. Pl. ½ foot.


Field Wahlenbergia. Pl. 1 foot.

24. W.рева (Alph. D. C. mon. p. 145.) stem branched, rather pilose at the base; leaves linear, rather pilose, entire; acuminate; tube of calyx ovate, glabrous; corolla one-half longer than the calyces; capsule obovoid. O. H. Native of the East Indies, on the Nellygherry mountains, where it was collected by Leschenault, and where it is called Aleka. Habit of W. trinervis. Peduncles 1-flowered, glabrous. Flowers terminal, mutant. Capsule erect.

Indian Wahlenbergia. Pl. ½ foot.

25. W. rīpa (Alph. D. C. mon. p. 146.) plant pilose at the base, and glabrous at top; leaves few, undulated toothed, rather hairy; lower ones obovate-lanceolate; the rest narrower, glabrous, and acuminate; calyx glabrous, with an ovoid narrow tube; corolla one-half longer than the calyces; capsule ovoid. O. H. Native of Senegal. Stem very leafy at the base, divided into many 1-flowered pedicels at top.

River-side Wahlenbergia. Pl. 1 to 1½ foot.

26. W. hуmullis (Alph. D. C. mon. p. 147.) plant pilose at the base, and glabrous at top; leaves much crowded at the bottom, linear-lanceolate; upper ones ligulate; calyx glabrous, with an ovoid narrow tube; corolla one-half longer than the calyces; capsule ovoid. O. H. Native of Senegal. Stem very leafy at the base, divided into many 1-flowered pedicels at top.

Humble Wahlenbergia. Pl. ½ foot.


Naked Wahlenbergia. Pl. 1 foot.

branched, pilose at the base; lower and middle leaves ovate, acute, irregularly toothed, and pilose: superior ones narrower, nearly entire, smoothish, tube of calyx glabrous and obconical; lobes of calyx with revolute serrately ciliolate margins; corolla funnel-shaped, 2 or 3 times longer than the calyceine lobes, somewhat 5-crenate at the apex; capsule obovate. ○ H. Native of the Cape of Good Hope. Campánula cérnea, Thunb. prod. p. 39. mem. acad. peteburg. 4. p. 376. t. 7. f. 1.—Comm. Hort. 2. t. 36. Stem very leafy at the base. Peduncles erect, elongated, terminating in numerous 1-flowered filiform pedicels. Corolla funnel-shaped, with a white base, and blue lobes, drooping in the bud state.


**Undulated-leafed Wahlenbergia.** Pl. 1 to 1 1/2 foot.

30 W. nudicaulis (Alph. D. C. mon. p. 149.) stem branched, rather pilose at the base; leaves ovate or lanceolate, undulate crenated, rather pilose; calyx glabrous, with a nearly spherical tube, and entire lobes; corolla broadly funnel-shaped, deeply 5-crenate, 3 or 4 times longer than the calyceine lobes; capsule spherical. ○ H. Native of the Cape of Good Hope. Root cylindrical at its top, branched at the base. Stems numerous, branched, usually dichotomous. Leaves nearly all at the base of the plant, obtuse or acute. Flowers very numerous, terminating the slender naked pedicels. Corolla funnel-shaped, blue, drooping in aestivation.

**Natural-flow ered Wahlenbergia.** Pl. 1 foot.

31 W. androsacea (Alph. D. C. mon. p. 150. t. 19. f. 1.) stem simple, naked, few-flowered, glabrous; radical leaves rostrate, ovate-lanceolate, on short petioles, acute, denticulated, pilose; calyx glabrous, with a hemispherical tube, and short broad entire lobes; corolla broadly funnel-shaped, profusely 5-crenate, 2 or 3 times longer than the calyceine segments; capsule spheroid. ○ H. Native of the Cape of Good Hope. Campánula androsaéæ, Burch, cat. geol. pl. afr. austr. no. 2273. Stem twice dichotomous at top, and nearly naked, except the bracteae at the base of the pedicels. Branches 2, divided into 2 1-flowered pedicels at the apex. Flowers erect in the expanded state, but drooping in the bud state, probably blue.

**Androsace-like Wahlenbergia.** Pl. 1 1/2 foot.

32 W. stellarioides (Cham. in Schlecht. in Linnaea. 7. p. 196.) stems ascending, a little tufted, filiform, tetragonal, glabrous; leaves opposite, somewhat connately approximate, lanceolate, acute, with revolute edges, and the nerve slender, pilose, or glabrous beneath; flowers terminal and lateral, on long pedicels; ovary elliptic, short; calyceine segments very like the leaves, but one-half shorter than the corolla; corolla funnel-shaped, 5-crenate to the middle, with acute oval ovate segments. ○ H. Native of Caffraria. Stem branched at the base. Stamens 5. Calyceine segments reflexed.

**Stichwort-like Wahlenbergia.** Pl. 1 to 1/3 foot.

33 W. nutate좌 (Alph. D. C. mon. p. 151.) plant pilose at the base; stem simple, or branched at the base; lower leaves lanceolate-obovate, nearly entire, with the nerves and margins pilose: the rest lanceolate, acute, smoothish, and irregularly toothed; calyx glabrous, with an ovoid tube; corolla cylindric, 5-lobed, hardly one-half longer than the calyceine lobes; capsule obovate. ○ H. Native of Calabria, near Reggio, on very arid hills; and of Sardinia, in the fields of Carbonara and Tortoreto, ex Moris. Campánula nutate, Guss. in Ten. append. 5. ad fl. nec. prod. p. 8. pl. rar. p. 94. t. 18. Mor. strap. sard. elench. p. 30. Habitat of H. lobeloides. Leaves numerous at the base of the plant. Peduncles nearly naked, elongated, drooping when bearing the flowers, but at length erect, 1-flowered, glabrous. Corolla white.

**Nodding-flow ered Wahlenbergia.** Pl. 1 1/4 foot.

b. Peduncles shorter.

34 W. exilis (Alph. D. C. mon. p. 151.) stem much branched, rather pilose at the base; branches glabrous, filiform; leaves linear, subulate, entire, rather pilose; tube of calyx glabrous or roughish, obconical; corolla tubular, 5-crenate at the apex, scarcely one-half longer than the calyceine lobes; capsule obovate, narrow. ○ H. Native of the Cape of Good Hope. Burch. cat. no. 105. Stem quite glabrous at top. Pedicels mostly axillary, 1-flowered, reddish.

**Slender Wahlenbergia.** Pl. 3 to 1 1/2 foot.


**Tar. β. scabra (Alph. D.C.I. e.) peduncles and calyces rather scabrous.** Burch. cat. pl. afr. no. 2502.

36 W. kriebi (Cham. in Schlecht. Linnaea. 7. p. 195.) stems rather herbaceous, filiform, procumbent, very leafy at the origin of the fertile branches, tetragonal: angles beset with retrograde bristles; leaves crowded, spreading, rather stiff, lunate or obovate-oblong, obtuse or acute, minutely-toothed, with reflexed margins, having the keel and margins pilose or glabrous; branches erect, naked above, elongated, divided into an irregular branched panicle; bracteoles quite entire, acute; ovary globose; calyceine segments oblong-triangular, bluish, almost nerveless, pellucid, with scabrous edges; corolla funnel-shaped, quinquefid, 3 times longer than the calyx; lobes short. ○ H. Native of Caffraria. Stem tufted below the leaves. Stamens 5. Stigma bilabiate. Panicle 4-8-flowered. Pedicels half an inch long, furnished each with one bract. Capsule half inferior, 3-celled, 3-valved. Seeds ovate or elliptic, smooth, shining brown.

**Krebs's Wahlenbergia.** Pl. procumbent.

37 W. dunantii (Alph. D. C. mon. p. 152.) stem branched, stiffish; leaves linear-lanceolate, narrow, acuminate, entire, pilose; tube of calyx pilose, small, hemispherical; lobes of calyx long, subulate; corolla tubular, 5-lobed at the apex, rather longer than the calyceine lobes. ○ H. Native of the Cape of Good Hope, where it was collected by Eklo. Stem slightly pilose. Peduncles dichotomous, diverging, rather pilose. Pedicels 1-flowered. Flowers drooping.

**Dunant's Wahlenbergia.** Pl. 1 1/2 foot.

38 W. massonii (Alph. D. C. mon. p. 153.) plant small; stem branched, pilose; leaves linear, narrow, entire; calyx pilose, with a hemispherical tube and capillary lobes; corolla narrow,
funnel-shaped, 5-lobed at the apex; 2 or 3 times longer than the calycine lobes; capsule spherical. O. G. Native of the Cape of Good Hope. Flowers racemose or panicled at the tops of the branches, numerous. Pedicels 1-flowered.

CAMPANULACEAE.

_Masson's Wahlenbergia._ Pl. 3 in foot.


_Paniced-flowered Wahlenbergia._ Pl. ½ to 1 foot.

41 W. Banksi_s (Alph. D. C. mon. p. 151.) stem glabrous, simple at the base, but panicled at the apex; leaves linear, narrow, remotely denticulated, acuminate; tube of calyx quite glabrous, spherical; calycine lobes linear, narrow, denticulated; corolla funnel-shaped, 5-lobed at the apex, one-half longer than the calycine lobes. O. H. Native of the Cape of Good Hope. Campânula paniculata, Smith. in herb. Banks. Peduncles and pedicels slender, but stiff and divericate. Flowers erect, 6-10 in number.

_Banks's Wahlenbergia._ Pl. ½ to 1 foot.


43 W. spinulosa (Alph. D. C. mon. p. 155.) plant humble, much branched; branches stiff, glabrous, or rather scabrous; leaves narrow-linear, glabrous or pilose, denticulated, stiff, ending each in a hard point; tube of calyx glabrous, ovoid; calycine lobes very revolute ciliated margins; corolla narrow, 5-lobed at the apex; capsule spherical.—Native of the Cape of Good Hope. Campânula spinulosa, Banks, herb. Flowers terminal and axillary, solitary; pedicels stiff, and appearing like spines after the capsules have fallen. _Spinulose Wahlenbergia._ Pl. 1 to 3 inches.


IX. Wahlenbergia.

HABIT—An humble annual herb. Leaves alternate, sessile, narrow. Flowers on short pedicels.

45 W. cervicina (Alph. D. C. mon. p. 156.) plant small; stem much branched; branches diverging, rather pilose; leaves linear-lanceolate, a little denticulated; tube of calyx rather pilose, ovoid; corolla tubular, rather longer than the calycine lobes; capsule spherical. O. F. Native of Egypt and Sénégal, in sandy and arid places. Cervicina campánuloides, Del. hfl. eygpt. p. 7. t. 5. f. 2. Leaves with white margins. Flowers numerous, pedicellate, solitary from the axils of all the leaves and tops of the branches.

_Throatwort Wahlenbergia._ Pl. ½ foot.


Linaria-like Wahlenbergia. Pl. 1 foot.


§ 1. Capsule 2-celled.

48 W. Fernándeziana (Alph. D. C. mon. p. 160.) stem rather woody, erect, glabrous or pilose, leafy in every part; leaves lanceolate, acute, serrated, glabrous or pilose; calyx with a glabrous obconical tube, and subsessile lobes; corolla funnelform, semiquinquefidi; 3 times longer than the calycine lobes; capsule obconical. 2. F. Native of the island of Juan Fernandez. Flowers panicled, numerous. Pedicels erect, terminal and axillary, with a small subulate bracteae at the base of each. Corolla white, with purplish nerves. 

Juan Fernandez Wahlenbergia. Pl. 1/2 to 1 foot.

49 W. foliös (Alph. D. C. mon. p. 160. t. 18.) stem woody, erect, very leafy in every part; glabrous, or rather pilose; leaves linear, acute, serrated, glabrous or pilose on the middle nerve; tube of calyx glabrous, obconical; lobes of calyx sessile; corolla cylindrical, semi-5-angled, one half longer than the calycine lobes; capsule turbinate. 2. G. Native of St. Helena and Ascension. Stem branched or simple, inflated at the origin of the leaves, as in many species of Scroéléa. Leaves sessile, an inch long, paler beneath. Peduncles terminating the branches, rather leafy; pedicels slender, erect, 1-flowered, reddish. (C. 128.)

Leaffy Wahlenbergia. Pl. 1 to 2 feet.

50 W. clivös (Alph. D. C. mon. p. 161.) glabrous; stems subherbaceous, procumbent, leafy at the origin of the peduncles; leaves linear-lanceolate, deeply serrated; calyx with an obconical elongated tube, and entire segments; corolla campanulate, 3 times longer than the calycine segments, 5-lobed at the apex; capsule obconical. 2. G. Native of St. Helena. Campanula clivosa, Banks, herb. Stems hanging from rocks, naked at the base. Flowers and capsules erect, but the albastra are drooping.

Craggy Wahlenbergia. Pl. procumbent.


Roxburgh's Wahlenbergia. Shrub.

52 W. angstiosifolia (Alph. D. C. l. c.) plant diffuse; branches elongated, slender, scabrous; leaves linear-lanceolate, remotely and acutely glabrously serrated; peduncles lateral, much longer than the leaves, dichotomous, many-flowered. 3. G. Native of St. Helena, in the fissures of rocks in Sandy Bay. Flowers pure white, erect, and rather large. Roellia angustifolia, Roxb. in Beasts. St. Hel. p. 320. Perhaps the same as W. clivös.

Narrow-leaved Wahlenbergia. Pl. procmount.


Flax-leaved Wahlenbergia. Shrub.

§ 2. Capsule 3-celled. Perhaps a proper genus.

54 W. ensifolia (Alph. D. C. mon. p. 163.) plant frutescent, simple; stem thick, erect, naked at the base, but very leafy in the middle; leaves long-lanceolate, acuminate, ciliolate, sharply serrated; teeth setaceous; calyx with a glabrous obconical tube, and entire ciliolate lobes; corolla large, campanulate, somewhat 5-angled, one half longer than the calycine lobes. 3. G. Native of Bourbon, on the Burning Mountains. Campanula ensifolia, Lam. diat. f. p. 382. Ill. no. 2518. Bracteas ciliolate. Flowers 1-3 at the top of each peduncle. Corollas large, an inch long, dirty yellow, marked with 5 purple spots at bottom. Habit between Misschia and Wahl. foliös.

Sword-leaved Wahlenbergia. Shrub 1 foot.

† A doubtful species.


Ovate-leaved Wahlenbergia. Pl. 1/2 foot.

Cult. For the culture and propagation of the annual species of this genus, see Microchon, p. 737. The frame and greenhouse perennial and shrubby species, as Lightfoictia, p. 735. The hardy perennial species should be grown in pots, in a mixture of peat and loam, and kept rather moist; and they are easily increased by division.


Lin. Syst. Pentándría, Moinogynía. Calyx 5-lobed, with a cylindrical elongated tube. Corolla 5-lobed at the apex. Stamina 5, alternating with the lobes of the corolla. Anthers distinct. Style permanent at the base; stigma 2. Capsule 2-celled, wholly inferior, prismatic or cylindrical, elongated, splitting from the top towards the base into 5 segments. Seeds inserted the whole length of the central placenta, ovoid, somewhat compressed, obtuse, dotted.—Subshrubs and stiff herbs, all natives of the Cape of Good Hope. Leaves alternate. Flowers sessile, solitary or appressive; always inserted in the axils of the leaves or bracteas.

* Corolla narrow. Style exerted. Leaves few on the upper parts of the plants.

1 P. diffúsus (Alph. D. C. mon. p. 164.) suffrutecent; leaves linear, very narrow, entire; flowers in loose panicles; peduncles diverging, stiff; bracteas subulate; calycine lobes


* * Corolla funnel-shaped. Style inclosed. Leaves few on the upper part of the plant.


**Panicled-flowered Prisomatocarpus.** Shrub 1 ft.


**Interrupted Prisomatocarpus.** Fl. May, July. Clt. 1818. Shrub 1 ft.


**Subulate-leaved Prisomatocarpus.** Shrub 1 1/2 foot.

5 P. acutiflorus (Lher. sert. angl. p. 1. Alph. D. C. mon. p. 167.) suffrutescent; leaves linear-subulate, entire, ciliated; flowers few, approximate at the tops of the peduncles; bracteas subulate; lobes of calyce ovate, acute, velvety. G. Native of the Cape of Good Hope. Roehla erecta, Banks, herb. Campanula aciculata, Poir. suppl. 2. p. 66.—Habit of P. paniculatus. Stem nearly simple, glabrous, naked at the base and top, but leafy in the middle, divided at the top into 2 peduncles. Leaves often having fascicles of smaller ones in their axils.

**High-flowered Prisomatocarpus.** Shrub 1 foot.

6 P. fruticosus (Lher. sert. angl. p. 2. Alph. D. C. mon. p. 167.) suffrutescent; leaves linear, very narrow, erect, entire, a little ciliated; flowers few, racemose; bracteas subulate; calyce lobes ovate, acute, glabrous. G. Native of the Cape of Good Hope. Roehla fruticosa, Lher. in herb. Banks, Campanula fruticulosa, Banks, herb. Stem nearly simple, glabrous, ending in a naked few-flowered raceme.


7 P. eklonii (Alph. D. C. mon. p. 168.) suffrutescent; leaves linear-subulate, long, erect, entire, glabrous; flowers disposed in loose spikes; bracteas subulate, broader than the leaves at the base; calyce lobes linear-lanceolate, glabrous. G. Native of the Cape of Good Hope. P. fruticosus, Eklon, in herb. Dunant, but not of Lher. Stem branched; branches erect, leafy at the base and rather velvety, and reddish at top. Flowers solitary in the axils of the bracteas.

**Eklon's Prisomatocarpus.** Shrub 1 1/2 foot.


**Curled-leaved Prisomatocarpus.** Fl. 1 1/2 foot.

9 P. linearifolius (Alph. D. C. mon. p. 169.) stem herbaceous; leaves few, linear, narrow, ciliated a little at the base; flowers in fascicled; bracteas ovate, acute, setaceous ciliated; lobes of calyce linear, acuminate, glabrous. G. Native of the Cape of Good Hope. Lightfooti sessiliflora, Spreng. in Zeyhr. fl. cap. no. 203. and probably of Spreng. syst. 1. p. 809. Stem simple, stiff, furnished at top with few-flowered peduncles, glabrous, very leafy from the base to the middle, but naked at top. Leaves decurrent. Flowers sessile, usually 2-3 in a fascicle, from the axils of the bracteas, at the upper part of the stem.

**Straight Prisomatocarpus.** Pl. 1 foot.

* * * Corolla funnel-shaped. Style inclosed. Leaves scattered equally over the whole plant.


12 P. seseformis (Eklon, in herb. Dunant. ex Alph. D. C. mon. p. 171.) plant rather woody, glabrous; leaves spreading, linear, narrow, entire; flowers solitary, in the axils of the upper leaves; calyce lobes subulate, glabrous. G. Native of the Cape of Good Hope. Stem much branched; branches diffuse, erect or ascending, reddish. Flowers small.

**Nuttal-flowered Prisomatocarpus.** Pl. 1 1/2 foot.

Cult. All the species of this genus are rather showy when in flower. A mixture of sand, loam, and peat is the best soil for them. They are readily increased by seed; or young cuttings grow freely if planted in the same kind of soil, with a handglass placed over them.

LIN. SYST. Pentádia, Monegineia. Calyx 5-clus. Corolla funnel-shaped or tubular, large, 5-lobed (129, 6). Stamens 5; filaments broad at the base. Anthers free. Stigmata 2, thick. Capsule cylindrical, 2-celled, wholly inferior, perforated by the permanent base of the style, and therefore appearing as if it was covered by an operculum, and at length discharging by a large hole at the apex, without valves. Seeds angular, scabrous, thick.—Subshrubs, rarely herbs. Leaves numerous, always alternate, scattered over the whole plant, usually narrow and stiff. Flowers sessile, terminal, and sometimes axillary. All the species are natives of the Cape of Good Hope. *

* Plants perennial. Stem woody, more or less erect. Leaves stiff. Tube of calyx covered by the leaves.

1 R. incúrva (Banks, herb. ex Alph. D. C. mon. p. 172.) leaves linear, acuminate, incurved at the apex; lower ones setaciously ciliated; superior ones laciniate toothed; flowers solitary; lobes of calyx glabrous, laciniate toothed; corolla variegated, length of the calyces lobes. G. Native of the Cape of Good Hope. Flowers solitary, terminal, surrounded by imbricate leaves.

Incurved-leaved Roella. Shrub 1 foot.

2 R. criúta (Lin. spec. 1. p. 241.) leaves erect, linear, acuminate, ciliated; superior ones longer and entire; flowers solitary; lobes of calyx ciliated, and laciniate toothed; corolla variegated, large, longer than the calyces lobes. G. Native of the Cape of Good Hope and Barbary. Gaertn. fruct. 1. p. 154. t. 21. f. 3. Lam. ill. t. 123. f. 1. Curt. bot. mag. t. 378. Lodd. bot. cab. 1156. Delam. herb. anat. 56. fasc. t. 232. Roell. Lin. hort. clff. p. 492. t. 35. Flowers solitary, terminal, surrounded by imbricate leaves. Corollas white at bottom, even to the base of the lobes, where there is a deep purplish circle, and above the circle pale violet, girded by white, and lastly the lobes themselves are rose-coloured (f. 129).


3 R. reticulátà (Lin. spec. 1. p. 241.) leaves erect, subulate, ciliated; flowers solitary; lobes of calyx ciliated, short, entire; corolla white, twice the length of the calyces lobes. G. Native of the Cape of Good Hope. Lam. ill. 2527. Petiv. mus. 21. f. 157. ex Lin.—Roy. hortg. 248. Stems or branches pilose, very leafy. Flowers solitary, terminating the branches, and axillary at the top of the stem.

Reticulated-leaved Roella. Shrub ½ to 1 foot.


FIG. 129.

Thunberg’s Roella. Shrub 1 foot.

5 R. Dunánthi (Alph. D. C. mon. p. 175.) leaves ciliate, linear, acuminate, ciliated; flowers solitary or glomerate; lobes of calyx downy inside, remotely toothed; corolla longer than the calyces lobes. G. Native of the Cape of Good Hope. Roella, Eklom, in herb. Dunant. Stem branched, naked at the base; branches diffuse. Leaves most numerous on the upper part of the branches. Flowers terminal, solitary, or 1-5 in a fascicle. Corollas white.

Dunant’s Roella. Shrub 1 foot.

6 R. cineára (Alph. D. C. mon. p. 175.) leaves ciliate, linear-subsulate, remotely dentilated, rather tomentose at the base; flowers solitary or in fascicles; lobes of calyx entire, glabrous; corolla twice the length of the calyces lobes. G. Native of the Cape of Good Hope. Campánula cínéreá, Thunb. prod. p. 38. mem. acad. peterb. 4. p. 368. t. 6. f. 4. R. glabrilla, Banks, herb. Stem simple. Leaves usually furnished with smaller ones in their axils. Flowers sessile, 4-6 at the top of each stem, surrounded by leaves.

Cinerea Roella. Shrub 1 foot.


Spiked Roella. Shrub decumbent.

8 R. squarrosá (Thunb. in Lin. suppl. p. 134.) leaves ovate, acute, decurrent, cuspitate at the apex, and recurved, with ciliated and setaciously toothed margins; flowers glomerate; bracteas broad, ovate, acuminate; lobes of calyx ovate, acuminate, ciliated, one-half shorter than the corolla, which is white. G. Native of the Cape of Good Hope. Lam. ill. 2579. Att. hort. kew. ed. 2d. vol. 1. p. 354. Stem branched, reddish; branches diffuse, reddish. Flowers disposed in terminal fascicles.


** ** Perennial, trailing, branched plants. Branches filiform, very leafy. Leaves stiff. Tube of calyx naked, filiform.

9 R. muscósá (Thunb. in Lin. suppl. p. 143. prod. p. 38.) leaves spreading, ovate, acute, remotely serrate, glabrous; flowers solitary; lobes of calyx ovate-acuminated, entire; glabrous, or a little ciliated, 3 or 4 times shorter than the corolla, which is blue. G. Native of the Cape of Good Hope, in a large ditch in front of the Table Mountain. Rœm. et Schultes, syst. 5. p. 75. Alph. D. C. mon. p. 177. R. esnótissa, Banks, herb. Burch. cat. pl. afr. no. 636. A humble trailing plant, with diffuse branches. Flowers terminal, sessile.


** ** Plant annual. Stem herbaceous, erect. Leaves thin, broad. Tube of calyx naked, ovoid.

10 R. decúrrentes (Lher. sert. angul. p. 2, t. 6.) leaves spreading, decurrent, ovate-oblong, ciliated at the base, nearly entire; flowers solitary; lobes of calyx acuminated, ciliated, 3 times shorter than the corolla. G. Native of the Cape of Good Hope. Att. hort. kew. ed. 1st. vol. 1. p. 236. Lam. ill. no. 2582. Rœm. et Schultes, syst. 5. p. 74. exclusive of syn. bot. rep. t. 238. Stem branched, very leafy, pilose. Flowers terminal, blue?


5.
CAMPANULACEÆ. XI. ROELLA. XII. PHYTLEUM.

† Doubtful species.


Peduncled-flowcred Roella. Shrub 1 foot.


Bracteate-flowcred Roella. Shrub 1 foot.

CAMPANULÆ (this tribe contains plants agreeing with the genus Campánula in the fruit dehiscing laterally. Capsules dehiscing at the sides.)


Lin. syst. Pentandria, Monogynia. Calyx 5-cleft. Corolla 5-parted; segments cohering together a long time, and in one species always. Stamens 5, alternating with the lobes of the corolla; filaments long, filiform, broadest at the base; anthers free; pollen vacuolous or reddish. Style filiform, pilose. Ovarium inferior, 2-3-celled. Capsule dehiscing laterally by 2-3 valves at the base or middle part. Seeds ovoid, sometimes a little compressed, usually shining. Perennial herbs. Leaves alternate; radical ones petiolate, different from the cauline ones, larger and broader. Flowers sessile, or on short pedicels, disposed in spikes or heads. —Natives of the temperate parts of Europe, or nearly in the same latitudes in Asia.

Sect. I. Syzygotama (from συζυγοϛ, συζυγοϛ, together; and τον, τον, a section; in reference to the cohesion of the segments of the corolla). Segments of corolla always cohering at the apex. Filaments hardly broader at the base. Stigmas 2. Capsule 2-celled.


Sect. II. Hydrastrum (from ἴδρα, ἴδρα, a seat; and ἄνθος, ἄνθος, a flower; in reference to the flowers being sessile). Segments of corolla cohering a long time at the apex, but at length becoming free. Filaments expanded at the base. Stigmas 2-3. Capsule 2-3-celled. Flowers sessile, densely crowded, usually many from the axil of each bractea.

§ 1. Heads at the time of blossoming hemispherical or globose, but at length either globose or somewhat egg-shaped.

* Bracteas numeros, equal, and broad.

2 P. globulariaefolium (Stemmb. in Hoppe, denk. bot. in regensb. 2. p. 109.) radical leaves crowded, obovate, broad, a little toothed at the apex: cauline leaves few, sessile, obovate-lanceolate, somewhat ciliated; heads few-flowered; bracteas very broad, obovate-roundish, ciliated, a little toothed at the apex. ‡ H. Native of Illyria, Carniola, and Carinthia, on the Alps, and on the Alps of Salisburgh. Rechb. icon. bot. cent. 4. p. 49. t. 178. Rem. et Schultes, syst. 5. p. 76. exclusive of syn. of All. Vill. Lam. and D. C. Hall. and Bauh. P. pauciflorum, Henke, in Jacq. coll. 2. p. 63. Host, fl. austr. l. p. 274. but not of Lin.—Mor. oxon. 2. p. 464. sect. 5. t. 5. f. 50. Plant glabrous, except the cilié at the base of the leaves. Corollas blue. Globularia-leaved Ramplion. Fl. May, July. Cit. 1820. Pl. 1 to 2 inches.


Few-flowered Ramplion. Fl. May, June. Cit. 1823. Pl. 2 to 5 inches.

6 P. hemisphæricum (Lin. spec. 1. p. 241.) leaves entire; radical ones narrow-linear; cauline ones linear-lanceolate; bracteas ovate, acuminate, nearly entire, ciliated. ‡ H. Native of the Alps from Provence to Carinthia, towards the east, even to Transylvania; and on the north, to the woods of Herceg and Hassia; and on the west, on the mountains of Auvergne and Cevennes, as well as of the Pyrenees and Arragone. Jacq. icon. rar. t. 333. Lam. ill. no. 2584. t. 124. f. 2. Rechb. icon. bot. t. 363. P. Michélii, Lapeyr. aabr. p. 109. P. pauciflorum, Lapeyr. aabr. p. 109. P. intermedium, Hegeschw. reis. 147. t. 17. P. graninifolium, Sieb. herb. fl. austr. no. 71.—Column. ephir. 2. p. 23. t. 26.—Mor. hist. 2. p. 465. sect. 5. f. 58. Plant glabrous. Heads of flowers globose; corollas blue. Far. §; flowers white or yellow. ‡ H. Native of Switzerland and Monaco.


5 P. carestei (Biroî, in act. taur. 5. p. 315. with a figure). radical leaves crowded, lanceolate, on long petioles, nearly quite entire; cauline leaves linear-lanceolate, somewhat serrated; bracteas spreading or reflexed, broad-ovate, acuminate, acutely serrated, glabrous. ‡ H. Native of Corsica, on the moun-

Carestia Rampon. Pl. 1/2 to 1/2 foot.


For, c, Colinaeus (Alph. D. C. mon. p. 188.) radical leaves small, ovate-cordate; lower cauline leaves lanceolate, serrated — Column. cephr. pt. 2. p. 223 t. 224.


* * * Bracteas few, unequal, narrow.*


10 P. Schenchzéri (All. pedem. no. 428. t. 59. f. 2.) radical leaves petiolate, ovate-lanceolate, bluntly serrated; lower cauline ones linear-lanceolate, acutely serrulated; upper ones linear, nearly entire; heads spherical; bracteas very long, reflexed. 2. H. Native of Vallais, and nearly throughout the whole southern declivities of the Alps from Piedmont, through Provence, even to Tyrol. Sims, bot. mag. 1797. Rechb. icon. bot. t. 366. P. ovatum, Lam. ill. no. 2585. exclusive of the syn. All. t. 7. f. 3. P. corculatum, Clairv. man. p. 63. Gaud. fl. helv. 2. p. 177. —Schenchz. in. 6. p. 400. Plant glabrous. Corollas deep blue.


§ 2. Heads cylindrical, conical, or ovate at the time of flowering, but at length they become more elongated.


Var. β; flowers deep blue. 2. H. P. scorzonerifolium, Sims, bot. mag. t. 2271.


12 P. Michelii (All. pedem. 1. p. 115. no. 427. f. 7–8.)


13 P. betonicifolium (Vill. dauph. p. 2. p. 518. t. 12. f. 3.) lower leaves oblong, acuminate, simply serrated; superior ones linear-lanceolate, nearly entire; spikes ovoid, almost bracteate; stigmas 3. 2. H. Native of the Pyrenees, Provence, alps of Dauphiny, Savoy, Switzerland, Apennines, Carniola, Bohemia, &c. Richb. Icon. bot. t. 250. but not of Sims. bot. mag. Stems glabrous. Leaves glabrous or pilose. Corollas blue.


Var. γ. sessilifolium (Alph. D. C. l. c.) radical leaves sessile, crowded, linear-lanceolate, not coriaceae. 2. H. Native of Savoy, on the mountain called Cranmont, and on St. Bernard.


14 P. veronicetifolium (Schr. in litt. ex Alph. D. C. mon. p. 196.) lower leaves on long petioles, coriaceae, linear-lanceolate, simply serrated; superior ones sessile, linear-lanceolate, serrulate; spikes cylindrical, acuminate; bracteae setaceous, glabrous; calyxes glabrous; stigmas 2-3. 2. H. Native of Salisbury, in the valley of Cillara. Root turnip-formed. Leaves pilose. Stem downy at the base, simple. Corollas blue.

Speedwell-leaved Rampon. Pl. 2 feet.


Peacht-leaved Rampon. Pl. 1 to 2 feet.


Var. β. bracteatum (Alph. D. C. mon. p. 198.) plant pilose; cauline leaves large, on long petioles; bracteae long. 2. H. Native of the Pyrenees. P. Hallér, D. C. et Dub. bot. gall. p. 313. but not of Lam.


Black-flowered Rampon. Fl. June, July. Cl. 1820. Pl. 1 to 2 feet.


Balbis's Rampon. Pl. 1/2 foot.

Sect. III. Podanthum (from ποδός, ποδός, a foot; and ἄνθος, ἄνθος, a flower; in reference to the flowers being pedicellate). Segments of corolla cohereing a long time at the apex, but not at length. Filaments expanded at the base. Stigmas 3. Capsule 3-celled.—Flowers on short pedicels, disposed in loose spikes, 2 or 3 rising from the axil of each bract.


22 P. collimum (Guss. pl. rar. p. 97. t. 10.) stem nearly simple; radical leaves lanceolate, attenuated at both ends, roughish, repandly denticulated; spikes somewhat interrupted; capsules turbinate, scabrous. 2. H. Native of Javgyra, on arid hills, by the sea side. Campánula virgata, Ten. fl. neap. 1. p. 66. but not of Labill. Stems downy, simple or a little branched. Leaves glabrous or downy. Corollas blue.

Hill Rampon. Pl. 1 foot.

23 P. lobeloides (Wild. phyt. 1. no. 20. t. 1. f. 2.) stem
nearly simple, roughish; leaves scabrous, petiolate, linear-lanceolate, acutely dentilicate; flowers scattered, on short pedicels; calyxes scabrous. \*II. H. Native of Armenia.—Tourn. cor. p. 4. Flowers solitary or twin, blue.

\*Lobelia-like Rampion. Pl. \(\frac{1}{2}\) foot.

24 P. \*Lanceolatum (Willd. spec. i. p. 924. Desf. in ann. mus. 11. p. 55. t. 5. or coirsi, des. pl. p. 84. t. 24.) glabrous; stems branched; radical leaves crowded, on short petioles, lanceolate, serrated; flowers scattered, solitary, on short pedicels. \*II. H. Native of Armenia. Alph. D. C. mon. p. 204.—Tourn. cor. p. 4. Stems 2-3, rising from the middle of the radical leaves, almost naked. Flowers scattered on the tops of the stems. Corollas white, with red nerves.

\*Lanceolate-leaved Rampion. Fl. June, July. Clt. 1826. Pl. \(\frac{1}{2}\) to 1 foot.

25 P. \*Rhipidium (Sibth. et Smith, prod. fl. græc. i. p. 149.) stem glabrous; radical leaves crowded, petiolate, elliptic-oblanceolate, repand, glabrous; petioles imbricate at the base; flowers spike-like; bracteas fringed. \*II. H. Native of Mount Olympus. Leaves rosulate, very like those of Globularia acadus. Flowers disposed in a loose spike.

\*Repand-leaved Rampion. Pl. \(\frac{1}{2}\) to \(\frac{1}{2}\) foot.

26 P. \*Sigillum (Willd. spec. i. p. 925. exclusive of the syn. of Tourn.) stem very simple, glabrous; radical leaves linear-lanceolate, furnished with very minute teeth on the edges; flowers scattered. \*II. H. Native of the Levant. Peduncles branched a little, 3-flowered.

\*Stiff Rampion. Pl. \(\frac{1}{2}\) foot.

27 P. \*Canescens (Waldst. et Kt. pl. hung. i. p. 12. t. 19.) plant scabrous; stems simple; cauleine leaves sessile, ovate-lanceolate, crenulat; flowers disposed in long spikes. \*II. H. Native of Hungary, Transylvania, Galicia, Podolia, Tauria, and Caucasus. Leaves greyish. Flowers 1-3 from the same bracteae, sessile. Corolla of a violet blue colour. Plant yielding a yellow viscid juice.


\*Willow-leaved Rampion. Pl. \(\frac{1}{2}\) to 1 foot.


30 P. \*Amplexicaule (Willd. spec. i. p. 925.) glabrous; stems simple; cauleine leaves somewhat stem-clasping, ovate-acute, broad, acutely serrated; spikes dense, fascicled; calyce capillary. \*II. H. Native of Armenia. Sibth. et Smith, fl. græc. t. 219.—Tourn. cor. p. 4. Flowers sessile, 1-3 from the same bracteae. Corollas blue.

\*Stem-clasping-leaved Rampion. Pl. 1 to 1\(\frac{1}{2}\) foot.

†Species little known.

31 P. \*Siérraen (Vest, ex Rom. et Schwantes, syst. 5. p. 77.) heads many-flowered; flowers all bracteate; bracteae oblong, stiff, acute; leaves all linear-cuneate, toothed; stem erect, leafy. \*II. H. Native of Siberia. P. pauciflorum, Johann. herb. ex Rom. et Schwantes. Stem 2 inches high. Leaves 3-4 lines long. Heads of flowers like those of some species of Scabiosa or Globularia.

\*Siérraen-leaved Rampion. Pl. 2 inches.

32 P. \*Inequatum (Kit. ex Schwantes, fl. austr. ed. 2d. no. 883.) heads nearly globose; radical leaves lanceolate, unequal at the base, cordate, serrated; cauleine leaves linear; superior leaves sessile, quite entire. \*II. H. Native of Austria. Rom. et Schwantes, syst. 5. p. 80. Very nearly allied to P. Charnelii.

\*Unequal-leaved Rampion. Pl. \(\frac{1}{2}\) to 1 foot.

33 P. \*Fistulorum (Reich. fl. desd. fl. bot. zeit. 5. p. 531.) leaves lanceolate, a little toothed, acuminated; stem erect, simple, striated; heads cylindrical. \*II. H. Native of Austria. P. Schuebërii, Schmidt, fl. bohem. f.i. f. fl. desd. ed. 2. P. orbiculare, Buch. fl. desd. f. fl. desd. ed. 1. P. orbiculare alpinum, Jacq. fl. austr. 437. left-hand figure. This plant has a very peculiar habit, but the flowers have not been seen.

\*Fistular Rampion. Pl. 1 foot.

34 P. \*Stylosum (Bess. cat. hort. crem. 1816. Rom. et Schwantes, syst. 5. p. 86.) Nothing is known of this plant but the name.

\*Long-styled Rampion. Pl.


\*Minute Rampion. Pl. decumbent.

36 P. \*Surisica (Sieb. in Spreng. syst. 1. p. 810.) stem creeping, diffuse; leaves spatulate, suberubinate; heads terminal; bracteae ovate, crenulat, equal in length to the flowers. \*II. H. Native of Asia Minor.

\*Sinue Rampion. Pl. creeping.

\*Cult. All the species of Phyteuma being hardy and ornamental, they are well fitted for decorating flower-borders, or rock-work. They grow in any common garden soil, and are readily increased by division or by seeds.

XIII. PETROMARULA (from πετροσ, petros, a rock; and μαρων, maron, a bitter herb; the plant is bitter, and grows on rocks by the sea side). Bellus. episc. 1. in Clus. hist. pt. 2. p. 299. Alph. D. C. mon. p. 209. Phyteuma species. Lin.

\*Lin. syst. Pentandria, Monogyza. Calyx 5-cleft. Corolla 5-parted. Stamens 5, alternating with the lobes of the corolla; filaments broad at the base, longer than the anthers; pollina violaceous. Style glabrous; stigma capitate, 3-lobed, rather pilose. Ovarium 3-celled, inferior. Capsule erect, dehiscing laterally by 3 pores in the middle part.—An herb, native of Candaia.—First radical leaves petiolate, ovate, acute; those afterwards pinnate, with the petioles margiunated and lobed. Flowers pedicellate, disposed in loose racemes.

1 P. \*Pinnata (Alph. D. C. mon. p. 203.). \*II. or \*III. H. Native of Candaia, on rocks by the sea side. Sweet, fl. gard. n.
CAMPANULACEAE. XII. PETROMARULA. XIV. MICHAXIA. XV. CAMPAANULA.


Var. 𝜋, pubescens (D. C. prod. 4. p. 209.) panicle and calyxes downy. §. or H. Native of Caudia. Phyteuma pinnatum. Rchb. hort. bot. t. 137. 


CULT. A light rich soil, and a warm sheltered situation, are the best for this plant. It is increased slowly by division, but plentifully by seed. The plant requires shelter in severe weather in winter.


LIN. SYST. OCTANDRIA, Monogyinia. Calyx 8-10-cleft, with the leaves covering by appendages. Corolla 8-10-parted, rotund. Stamens 8, free; filaments very broad, membranous, approxi- mately at the base; anthers yellow, capitate at the apex. Style covered by hairs, which are disposed in 16 rows; stigmas 8, filiform. Ovarium wholly inferior, 8-celled: cells opposite the calyce lobes. Capsule drooping, 8-10-valved, dehiscing at the base. Seeds numerous, ovate, rustic, inserted in fleshy receptacles, which are situated at the inner angles of the cells. —Handsome biennial herbs, natives of the Levant, with the habit of Campánula, but the racemes or sinuses of the calyx are covered, and the leaves are lyrate.


2 M. LEVIAGÁTA (Vent. cels. t. 81.) stem glabrous; leaves hispid, doubly toothed; radical ones ovate, on long petioles; cauline ones sessile, oblong, lower ones attenuated at the base, upper ones cordate; appendages of the sinuses of the calyx longer than the lobes. §. H. Native of Persia. Gärtn. fruct. suppl. p. 162. t. 211. f. 6. Hook. bot. mag. 3128. M. decándara, Fisch. Root branched. Stem and leaves glaucescent, the latter stigrose. Flowers on short pedicels, horizontal, solitary, and scattered along the top of the stem and branches, decandrous, whitish. Calyx, corolla, and stigma, 10-parted.


CULT. The seeds only require to be sown in the open ground, and the plants treated like other biennials. They require some protection in severe weather in winter.


LIN. SYST. PENTÁDRIA, Monogyinia. Calyx 5-cleft, having the sinuses usually covered by appendages. Corolla 5-lobed or 5-cleft at the apex, usually bell-shaped. Stamens 5, free; filaments broad at the base and membranous. Style covered by fascicles of hairs, except at the base; stigmas 3-5, filiform. Ovarium wholly inferior, 3-5-celled. Capsule 3-5-valved, dehiscing laterally. Seeds usually ovate, flattened, sometimes ovoid, and small.—Herbs usually perennial, rarely annual or biennial. Radical leaves usually different in form from the cauline ones, especially in size. Flowers for the most part pedunculate, usually racemose, rarely spicate or glomerate, blue or white.—All the species are inhabitants of the northern hemisphere.—The names Trachitrichia and Cerciáriæ are the oldest names used for this genus, which were given to it on account of its supposed efficacy in the cure of disorders of the neck and trachea; hence it has the name of Halskræut or Halawort in German, Halsurt in Danish, and Thröstur in English; and some European species have the name of Rapnículus, from the resemblance of the root to that of a turnip; hence they have the names Rápon, Rapúnit, Rapnucleus, &c., from whence spring the French name Raiponce, the German Rapunzel, the Spanish one of Rapúnchigo, and the English one of Rapunzel.


§ 1. Capsule 3-5-celled. Stigmas 5.—Stems many-flowered. Radical leaves on long petioles.—Inhabitants of Greece and the adjacent regions.

* Lower leaves irregularly lyrate or jagged; petioles marginated and lobed.

1 C. críspa (Lam. dict. 1. p. 581.) glabrous; stems simple; leaves smooth, coarsely and crenately toothed; radical ones bilate, jagged; cauline leaves sessile, ovate, acute; flowers pyramidal, racemose; calyx scabros, with the appendages of the sinuses small and tooth-formed; corolla broad, campanulate, roughish on the outside. §. H. Native of Armenia, about the city of Kas and Erzeroum. Alph. D. C. mon. p. 216.—Tourn. cor. 3. voy. 2. p. 370. Flowers disposed as in C. pyralidalis, rising from the lower or middle part of the stem to the apex from the axils of the leaves. Corolla very open, white or blue.

Curled Bell-flower. Fl. 1 to 1 ½ foot.

2 C. Crís'tis (Alph. D. C. mon. p. 217.) plant velutin; stem ascending; lower leaves irregularly lobed; terminal lobe crenated, ovate, acute; superior leaves sessile, obovate crenated; flowers disposed in long panicles; appendages of the sinuses of
the calyx small, tooth-formed; corolla tubular, velvety, 4 times longer than the calyceous lobes.  {5.} H. Native of Greece.


Celt's Bell-flower. Fl. 2 feet.

3. C. rupestris (Sibth. et Smith. prod. 1. p. 143. fl. grac. t. 213.) stems ascending, pilose; leaves hoary; radical ones irregularly pinnate, crenately toothed; terminal lobe roundish; cauline leaves sessile, ovate, a little toothed; flowers disposed in loose racemes; lobes and appendages of calyx triangular; corolla velvety, tubular, twice longer than the calyces.  6. H. Native of Spain and the Morea, among rocks. C. lauginoæa, Willd. in hort. berol. 1. p. 218. but not of Lam. Stems branched. Corolla pale blue, with a white throat.

Rock Bell-flower. Pl. ascending.

4. C. tomentosa (Lam. dict. 1. p. 584. ill. no. 2537.) plant clothed with hoaryomentum; radical leaves petiolate, irregularly lyrate, crenate-toothed; cauline leaves sessile, ovobate; upper ones lanceolate; flowers in loose racemes; appendages of the sinuses of the calyx ovate-lanceolate, one-half shorter than the lobes, which are long-acuminated; corolla tubular, silky, hardly twice the length of the calyceous lobes.  7. H. Native of the Levant. C. lauginoæa, Willd. in hort. berol. {1. t. 213} but not of Lam. Stem branched. Peduncles 1-3-flowered. Corollas white.

Var. ß; petals of radical leaves less lobed.  8. H. Native of Candia. C. tubulosa, Desf. pl. cor. in ann. mus. 11. p. 142. t. 17.—Tourn. cor. p. 3.

Tubular-flowered Bell-flower. Fl. 1 to 2 feet.

** Lower leaves regularly ovate or lanceolate; petals not margined.

10. C. betonicifolia (Sibth. et Smith. prod. 1. p. 141. fl. grac. t. 210. but not of Bieb.) stem erect; leaves elliptic-oblong or ovate, acute, crenate-toothed; radical leaves on short petioles; calyceous lobes ovate-acute, having the sinuses reflexed and length of the lobes; corollas tubular.  9. H. Native of Mount Olympus, in Bithynia. Plant pilose. Stem branched. Flowers terminal and axillary; the branches usually bearing 3 flowers. Corollas purplish-blue, with a pale yellow base.


11. C. corymbræs (Desf. pl. cor. in ann. mus. 11. p. 139. t. 15. choix. p. 49. t. 30.) stem erect; leaves ovate-acute, crenately toothed; radical ones petiolate; cauline ones sessile; lobes of calyx long-acuminated; appendages of the calyx ovate-acute, one-half shorter than the lobes; corolla campanulately tubular.  9. H. Native of Candia.—Tourn. cor. 3. Plant pilose. Stem branched. Flowers disposed in loose corymbs, 1-3 at the top of each branch. Corolla bluish violet.

Corymbos-flowered Bell-flower. Fl. May, July. 1820. Fl. 2 feet.

12. C. felvetorum (Lam. dict. 1. p. 586. Desf. choix. in ann. mus. 11. p. 141. t. 16.) stems ascending; radical leaves petiolate, ovate, crenate-toothed; cauline ones nearly sessile, ovate-acute; calyceous lobes ovate-acuminated; appendages of the recesses of the calyx length of the lobes, ovate-roundish; corolla large, campanulate.  9. H. Native of Candia.—Tourn. cor. inst. p. 3. Plant hairy. Flowers 1+ at the extremity of each branch. Corollas large, of a greyish-blue colour.

Borneo-flowered Bell-flower. Fl. May, July. Fl. 1 foot, ascending.

13. C. mædium (Lin. spec. 1. p. 236.) stem erect; leaves sessile, ovate-lanceolate, crenate-toothed; calyceous lobes ovate-acuminiated, with the appendages of the sinuses reflexed and large, but one-half shorter than the lobes; corolla campanulate, inflated.  9. H. Native of the south and east of Europe, as about Naples, Carniola, about Constantinople, north of Italy, Provence, Dauphiny at a place called Grande-Chartreuse, Bavaria, Thuringia, Austria, Transylvania, &c., on the mountains; and of Caucasus and Tauria, Hill. syst. 8. t. 7. St. Hil. pl. de. fr. t. 72. C. grandiflora, Lam. fl. fr. 3. p. 334. Mædio, Dioscor. Debray, floril. nov. t. 75. Tabern. icon. 315.—Swert, floril. t. 16. f. 6. —Park. parad. 355. f. 3.—Lob. icon. 324.—Besl. hort. syst. 1. t. 3. f. 2-3.—Mor. oxon. 2. p. 459. sect. 5. t. 3. f. 50.—Gard.
CAMPANULACEÆ. XV. Campanula.  

Aix. 1. p. 75. t. 13.—Weinm. phyt. t. 289. Plant hairy. Stem branched. Flowers numerous, large, disposed in racemes. Corollas blue, purple, and white, single and double. It is a very handsome and common border biennial.

Lactif., a monstrous polypetalous plant. Alph. D. C. mon. t. 3 f. A.


§ 2. Capsule 3-celled. Stigmas 3.—Flowers solitary, rarely capitulate, few or many.

* Stems 1-flowered. Radical leaves crowded.

14 C. Ada'mi (Bieb. fl. taur. 1. p. 153.) leaves ciliated a little: radical ones on long petiolae, ciliate-spatulate, coarsely toothed at the apex; cauline leaves sessile, obovate or linear, serrate-toothed; calyx rather pilose, with acuminate lobes, which are 3 times shorter than the corolla; appendages of the sinuses of the calyx 3 times shorter than the lobes, obtuse, acuminate. 2. H. Native of the Alps of Caucasus. Bieb. cent. pl. ross. 1. t. 16. Alph. D. C. mon. t. 9 f. 1. Plant to 1 ft. high. Roots woody. Stems simple. Flowers nearly erect, one on the top of each stem. Corolla funnel-shaped, bluish. Radical leaves tufted.


16 C. Filosâ (Pall. miss. Willd. ex Reem. et Schultes, syst. 5. p. 148.) leaves ciliated at the base; radical ones oblong-obovate, petiolate, crenulat: cauline ones linear, acuminate, sessile, entire; lobes of calyx ovate, acuminate, ciliat, 3 times shorter than the corolla; corolla funnel-shaped, with a bearded throat. 2. H. Native of Siberia. Ledeb. fl. ross. alt. ill. t. 209. Stems simple, hairy, 1-flowered. Corolla blue, form of those of C. saxifraga, bearded, drooping.

Phila Bell-flower. Pl. 1/2 to 2/3 foot.

17 C. saxifraga (Bieb. fl. taur. 1. p. 155.) stems smooth; leaves a little ciliated, pilose: radical ones on long petiolae, lanceolate-spatulate, crenulat: cauline leaves sessile, entire, ligulate; lobes of calyx broad, acuminate, glabrous, twice shorter than the corolla; appendages of the sinuses of the calyx ciliat, acuminate, doubly shorter than the lobes. 2. H. Native of Caucasus, on the upper part of Mount Beshtan, where it forms broad tufts. Alph. D. C. mon. p. 228. t. 10 f. 2. Leaves ciliat, with soft, hardly perspicuous hairs. Stem simple, 1-flowered. Flowers erect, blue.

Saxifrage Bell-flower. Fl. June, July. Pl. 1/2 to 2/3 foot.

18 C. ciliata (Stev. mem. soc. hortic. 3. p. 256.) stem rather pilose; leaves ciliated with stiff hairs; radical leaves almost sessile, obovate-lanceolate, crenulat, shining: cauline ones ligulate, ciliat, a little at the base: lobes of calyx ciliat, linear-acuminate, one-half shorter than the lobes of corolla; appendages of the sinuses of the calyx ovate-acute, 4 times shorter than the lobes. 2. H. Native of the higher alps of Caucasus, in stony places. Mèdium Saxifragum. Fisch. in litt. Stem solitary, 1-flowered. Lower leaves rosulate. Flower erect, blue.

Ciliated Bell-flower. Pl. 1/2 foot.

19 C. Altaica (Alph. D. C. mon. p. 229. t. 10 f. 3.) radical leaves petiolate, long-lanceolate, crenat, glabrous; calyces ligulate, a little toothed, smooth; tube of calyx downy, but with the lobes smooth and doubly shorter than the corolla, which is funnel-shaped; appendages of the sinuses of the calyx subulate, villous, 3 times shorter than the lobes. 2. H. Native of the Altai mountains, about Sayen; and of Persia. C. Sayenensis, Fisch. cat. hort. gorenk. 1808. p. 52, but not of Pall. Médium Sayanense, Fisch. in litt. C. frigida, Pall. in herb. Lam. Stems slender, 1-flowered, glabrous. Corolla blue, nutant.

Allais Bell flower. Pl. 1/2 foot.

20 C. dayynthia (Bieb. fl. taur. suppl. p. 117.) radical leaves ovate, acute, petiolate, crenat, smooth; cauline leaves sessile, lanceolate, entire, downy; calyces lobes ovate-lanceolate, 3 times shorter than the corolla, which is funnel-shaped; appendages of the sinuses small and subulate. 2. H. Native of the Aletun Islands; very frequent in the Unalaska, Behring's Island, and Behring's Straits. Rchb. icon. bot. 1. p. 70. t. 85. f. 178.—Gmel. sib. 3. p. 160. no. 28. Stem 1-flowered, pilose or glabrous, nearly naked. Flowers nearly erect, almost naked. Radical leaves rosulate. Corolla large, blue (f. 131).


White Bell-flower. Pl. ¼ to ½ foot. 27 C. calamensifolia (Linn. dict. 1. p. 588.) plant clothed with greyish down; stems decumbent, branched; leaves toothed: radical ones rosulate, somewhat spatulate: cauline leaves obovate; lobes of calyx lanceolate, one-half shorter than the corolla; sinuses of calyx short, tooth-formed. Y. H. Native of the island of Naxia. Desf. cor. in ann. mus. 11. t. 12. Stems numerous. Radical leaves rosulate. Flowers disposed in a loose leafy raceme, erect, pale rose-coloured.

Calaminit-leaved Bell-flower. Pl. decumbent. 28 C. edulis (Forsk. fl. aegypt. arab. p. 106. and 44. Alph. D. C. mon. p. 223.) plant hispid; root thick; stems erect, simple; leaves 1-flowered; leaves ovate-lanceolate, a little crenulated; calyceous lobes linear-lanceolate, equal in length to the corolla, which is hispid. Y. H. Native of Arabia Felix. Root thick, sapid, and is eaten by children like those of many other species under the names of chobs and okab. Corolla tubular, pale blue or white, with violeaceous veins.

Edible-rooted Bell-flower. Pl. ¼ foot. 29 C. strigosa (Russ. aegyp. ex Rœm. et Schultes, syst. 5. p. 142. Vahl. symb. 3. p. 34. 1831.) plant beset with stripy hairy roots; stem erect, with dichotomous branches; leaves lanceolate, entire; calyceous lobes subulate, equal in length to the corolla; appendages of the sinuses of the calyx obtuse. Y. H. Native of the Levant, especially in Syria, about Aleppo. C. Russeliana, Rœm. et Schultes, syst. 5. p. 142. Stem simple at the base, and branched at the apex. Flowers solitary, drooping, rising from the angles of the forks and tops of the branches. Calyx very hispid.

Strigose Bell-flower. Pl. ¼ to ½ foot. 30 C. decorticata (Linn. aegyp. acad. 4. p. 306.) plant clothed with stiff hairs; stem erect, with dichotomous branches; calyceous leaves ovate, acute, a little crenated; flowers sessile in the forks of the branches; calyceous lobes long, subulate, one-half shorter than the corolla; appendages of the sinuses of the calyx subulate, one-half shorter than the lobes. Y. H. Native in the region of the Mediterranean; near Athens; in the south of Italy, even to lat. 42°; frequent in Sicily; Spain; about Mogador; Tangiers, &c. Jacq. coll. 5. p. 26. t. 12. Sibth. et Smith. fl. grecce. t. 211. Sweet. brit. fl. gard. t. 280. C. mollis. Var. β, Willd. spec. 1. p. 910. C. Alva. Cav. ann. de cienc. 3. p. 21. Rœm. et Schultes, syst. 5. p. 147. C. decipiens, Rœm. et Schultes, syst. 5. p. 142.—Cupan. pamph. sic. 2. t. 259. Bocc. sic. p. 83. t. 45. f. 1. Moris. oxon. 2. p. 459, sect. 5. t. 3. f. 26. Flowers drooping, terminal, solitary in the forks of the branches and stem, bluish-purple, with a paler tube.


Dichotomous Bell-flower. Fl. July, Aug. Clt. 1820. Pl. ½ foot. 31 C. mollis (Linn. spec. 1. p. 237.) plant velvety from greyish down; stems ascending; leaves nearly entire: radical ones rosulate, spatulate; cauline ones ovate; flowers in loose panicles. Calyx velvety, with acuminated lobes, which are two-thirds shorter than the corolla, and with the appendages of the sinuses short and subulate. Y. H. Native of the region of the Mediterranean; about Tangiers; Candia; near Naples, at a place called St. Roch, and elsewhere in the kingdom of Naples; Spaiu, &c. Curt. bot. mag. t. 404. C. velutina, Desf. fl. atl. 1. p. 180. t. 51. Plant tufted. Stem downy, also often villous. Leaves more or less hoary on both surfaces, villous. Flowers 1 to 5 at the top of each stem, axillary and terminal. Corolla campanulate, pale blue.

Var. β, microphylla (Alph. D. C. mon. p. 238.) cauline leaves small, ovate, acute, a little toothed. Y. H. Native of Spain; in Murcia, about Elin.

Soft Bell-flower. Fl. May, Aug. Clt. 1788. Pl. ascending. 32 C. stricta (Linn. spec. p. 238.) stem branched, pilose; leaves ovate-lanceolate, acute, serrated, pilose; flowers almost sessile, few, solitary; lobes of calyx glabrous, lanculate, 4 times shorter than the corolla, which is tubular; appendages of the sinuses of the calyx ovate, length of lobes, but broader. Y. H. or 3. H. Native of Armenia; Syria, about Damascus, at the mountain called Djebl-cher; and of the island of Cos, on the mountains, and elsewhere in Greece. Desf. cor. in ann. mus. 11. t. 13. Flowers spicate. Corollas blue.

Var. β; leaves narrower, and nearly entire. Y. H. Native of Syria. C. stricta. Labill. pl. syr. dec. 5. t. 4. C. stricta, var. β. Rœm. et Schultes, syst. 5. p. 149.


Var. β, glabra (Alph. D. C. mon. p. 240.) stem leaves gla-
brous, as also the calyx. 2. H. C. Sarmática, Sims, bot. mag. t. 2019. Lodg. bot. cab. t. 581.


34. C. alliariifolia (Willd. spec. 1. p. 910. Salish. par. lond. t. 26.) stems simple, terete, downy; leaves crenulat, hairy beneath; lower ones petiolate, somewhat reniform; upper ones sessile, ovate, acute; flowers spicate racemose; lobes of calyx velvety, hoary inside, lanceolate, acuminate, 4 times shorter than the corolla; which is downy outside; appendages of the sinuses of the calyx ovate, acute, one-half shorter than the lobes. 2. H. Native of Siberia, Georgia, and Caucasus. Röhm. et Schultes, sst. 5. p. 143. C. lamiovii, Bieb. fl. cauc. 1. p. 154. Röhm. et Schultes, sst. 1. p. 754.—Buxb. cent. 5. p. 10. t. 18. Flowers sessile, second, disposed in a long, racemose, loose spike, with a few shorter floriferous branches at its base, the lower flowers often 3 from each bractea. Leaves hispid, and green above, but clothed with hoaryomentum beneath. Corollas white or cream-coloured.


Pl. 2 to 3 feet.

35. C. violacea (Lam. dict. 1. p. 587.) plant hulm, few-flowered, pilose; radical leaves petiolate, ovate-roundish, coriace, crenate: cauline leaves ovate-oblong, toothed; lobes of calyx lanceolate, ciliated, long-acuminated; appendages of sinuses of the calyx ovate, acute, one-half shorter than the corolla; corolla much longer than the calyce lobe. 2. H. Native of Siberia. C. violee, Pers.ench. 1. p. 192. Leaves rather pilose. Flowers 2-3, large, drooping, white, about the size of those of C. Medium.

Violet-leaved Bell-flower. Pl. $\frac{1}{2}$ to 3 foot.

36. C. punctata (Lam. dict. 1. p. 566.) plant pilose; stems simple, few-flowered, terete; leaves ovate, acute: radical ones on long petioles, cordate-ovate, acute, crenate; cauline ones almost sessile, toothed; lobes of calyx ciliated, long-lanceolate, 3 times shorter than the corolla; appendages of the sinuses of the calyx ovate, acute, one-half shorter than the lobes. 2. H. Native of Siberia, in the provinces called Okotok and Jakutsk; and of Dahuria, even to the Eastern Ocean; also of Japan. Sims, bot. mag. t. 1723. Schrank, pl. rar. fasc. 9. t. 87. C. Trachelium, Thunb. fl. jap. p. 88.—Gmel. sib. 3. p. 155. t. 30. no. 25. Stem usually downy, panicked at top. Flowers large, purplish. Corolla dirty-white, spotted with purple inside.


Pl. $\frac{1}{2}$ to 1 foot.


Diverging Bell-flower. Fl. June, July. Clt. 1814. Pl. 1$\frac{1}{2}$ foot.


Var. a. paniculata (Alph. D. C. mon. p. 244.) panicle divaricate. A broad-leaved garden variety, very like C. divergens.

Var. s. abortiva (Alph. D. C. mon. p. 241.) plant 2 inches high, 3-flowered; leaves linear-spatulate; flowers small. 2. H. Native of Vienna, in very dry places.

Siberian Bell-flower. Fl. July, Sept. Clt. 1783. Pl. 1 to 1$\frac{1}{2}$ foot.


Small-flowered Bell-flower. Fl. 1 to 2 feet.

40. C. caucasia (Bieb. capp. p. 140. append. no. 14. fl. taur. 1. p. 155. Stev. mem. soc. mosc. 3. p. 256.) plant hulmble; stems erect, branched, terete, scabrous, pilose; leaves crenulat, lower ones obovate, obtuse, petiolate; superior ones lanceolate, sessile; peduncles few-flowered, diverging; lobes of calyx acuminated, ciliated by hairs, 4 times shorter than the corolla; appendages of the sinuses of the calyx ovate-acuminated, one-half shorter than the lobes. 2. H. Native of Caucasus, in sub-alpine stony places. Root creeping. Leaves scabrous. Flowers few, terminal and axillary, drooping. Corollas glabrous outside, but bearded inside, of a violaceous blue-colour.


41. C. affinis (Röhm. et Schultes, sst. 5. p. 140.) stems hispid with deflexed bristles; cauline leaves linear-lanceolate, ciliate, very long. 2. H. Native of Spain, on Mount Lujo. Root horizontal. Stems numerous, simple. Leaves glabrous, but ciliated with reflexed bristles. Flowers at first erect, but at length drooping. Corolla above an inch long, blue.


42. C. barbata (Lin. spec. 236.) stems nearly simple, terete, pilose; leaves villous, nearly entire; radical leaves crowded, lanceolate: cauline leaves few, ligulate; racemes loose, few-flowered; calyx pilose, with triangular acuminated lobes; appendages of the sinuses of the calyx ovate, one-half shorter than the lobes; corollas bearded in the mouth. 2. H. Native of the alps of Dauphiny, Piedmont, Savoy, and even to the alps of Salisburgh and Austria; in the south towards Mount Baldo; as well as of Siberia, Saxony, Transylvania, &c. Jacq. obs. pt. 2. p. 14. t. 37. Krock. sil. t. 38. Sims. bot. mag. t. 1298. ex.
CAMPANULACE.A.E. XV. CAMPA\n
ulous of the synonyms. Lodd. bot. cab. t. 788.—C. Banh. prod. p. 36. with a figure.—Moris. oxon. p. 460. sect. 5. t. 3. f. 33. and f. 55. Root thick, white. Flowers nutant, disposed in a loose, often second raceme; pedicels 1-flowered, rising from the axis of the superior leaves. Corolla pale blue or white, glabrous outside, but woolly in the mouth. Pl. ¥/2 foot high. 


43 C. ALPINA (Jacq. enum. vind. 210.) humble; stem nearly simple, furrowed; leaves linear-lanceolate, repandly-crenate, woolly: radical ones crowded, narrowed at the base; flowers pyramidal racemose; calyce long-acuminated, woolly; appendages of sinuses oval-acuminate, ovobo, much shorter than the lobes. 2. H. Native of Europe, on the Alps, especially of Austria, Salzburg, Germany, Silesia, Transylvania, and the Carpathian mountains. Jacq. fl. austral. t. 118. Sims. bot. mag. t. 957.—Clus. hist. 5. p. 171. Root spongy, fusiform. Stem glabrous or woolly. Flowers few or numerous, scattered in a pyramidal manner along the whole of the stem. Corollas deep blue.


*** Flowers capitatus.

45 C. CICHORACE.A (Sibth. et Smith, fl. græc. t. 209.) plant pilose; stem angular, brached; leaves undulate crenated: radical ones obovate, irregularly jagged, petiolate; cauline leaves sessile, linear-oblong, obtuse; bracteas ovate, cordate; calyx pilose, with ovo acute lobes; appendages of sinuses of the calyx obtuse, very like the lobes; corolla tubular, 3 times longer than the calyx. 2. H. Native of Thessaly. C. capitata, Sims. bot. mag. t. 811.? Root fusiform. Leaves undulate. Flowers capitatus, terminal, and from the axils of the leaves. Corollas purplish blue.


46 C. LINGUIRATA (Waldst. et Kit. pl. h ung. 1. p. 65. t. 64.) plant hispid; stem nearly simple; leaves sessile, undulate crenated: lower ones lingually spatulate; superior ones linear-lanceolate; bracteas ovate, acute; calyce oblong, obtuse, setaceous ciliated: appendages of sinuses similar to the lobes; corolla tubular, twice longer than the calyx. 2. H. Native of Hungary, Croatia, and Dalmatia, in woods. Alph. D. C. mon. p. 250. Root branched. Stems many from the same root. Flowers in dense terminal heads, surrounded by setaceous ciliated bracteas.


SECT. I. EUÇONON (from eu, eu, well; and κυκος, kudos, a bell; this section is considered to contain the true species of *Campa\n

§ 1. Capsula erect, dehiscing at the base. Flowers sessile, capitata, or spicate.—*All the species are inhabitants of Europe.


47 C. Jacobinii (Alph. D. C. mon. p. 251.) glabrous; stem firm, glabrous; leaves remotely serrate: lower ones on short petioles, obovate: the rest ovate, bluish and larger; heads of flowers loose, bracteas; calyx velvety, with acuminated lobes much shorter than the corolla. 2. H. Native of the island of Candia, on walls on the Sphaceotic mountains. Phytéuma, Jacquinii, Sieb. herb. cret. Flowers disposed in a loose, terminal, spherical head, on short pedicles. Corollas blue? 

*Jacquinii’s Bell-flower. Pl. ¥/2 to ¥/2 foot.*

48 C. Foliosa (Tenor. fl. neap. 1. p. 71. t. 18.) rather pilose; stem terete; leaves doubly serrated: radical ones ovate, acute, subcordate: cauline ones acuminated; bracteas ovate, acuminated; calyce long-acuminated, ciliated, denticulate, one-third shorter than the corolla, which is tubular; lobes of corolla velvety inside. 2. H. Native of the kingdom of Naples, on the Apennines and Abruzzo. Heads of flowers globose, terminal. Corollas blue.

Leafy Bell-flower. Pl. 1 foot.

49 C. PETREA (Linn. spec. 236.) stem rather woody, hoary; leaves crenulated, hoary beneath: radical leaves petiolate, ovate-lanceolate: cauline ones sessile, linear-lanceolate; heads of flowers dense, surrounded by obtuse bracteas; calyx hoary, with linear obtuse lobes, doubly shorter than the corolla, which is campanulate. 2. H. Native of Mount Baldo, on rocks, in the wooded region; and of the south of France, at a place called Les Escaliers d’Egone. Doll. elem. bot. 2. p. 150. t. 5. f. 1.—Moris. oxon. p. 2. 163. sect. 5. t. 4. f. 44.—J. Bauh. hist. 2. p. 802, with a good figure.—Barrel. pl. gall. p. 10. t. 890.—Pluk. phyt. t. 132. f. 5. Pond. de- 


Rock Bell-flower. Fl. May. Pl. 1 foot, ascending.

50 C. GLOMERATA (Linn. spec. 235.) downy; stems terete; leaves serrulate: radical ones ovate, acute; bracteas ovate, acuminated; calyce oblong-acuminated, twice shorter than the corolla, which is funnel-shaped. 2. H. Native nearly throughout the whole of Europe; especially from Arragon, Pyrenees, south of France, Piedmont, northern part of the kingdom of Naples, Greece, even to Scotland, Sweden, &c.; collected also in Caucasus, Persia, Amtian mountains, and almost throughout Siberia, even to Kantschatka, &c. &c.; in shady rocky places, by river sides, and in dry, open, chalky pastures; plentiful in Britain, in like situations. Smith. engl. bot. t. 90. Gilib. demonstr. bot. t. 30. Oed. fl. dan. t. 1328. Gentianá collina, With. 282. t. 11. f. 3. C. barbata, Spreng. ex Steud. 

5 D 2
C. ciliata, minor, Dodon. pempt. 146. &c.  


**Var.** γ, Niceæensis (Alph. D. C. mon. p. 254.) leaves appressed, ovate, acute, sessile; flowers disposed in short dense spikes.  

**Var.** δ, elliptica (Alph. D. C. mon. p. 255.) leaves on long petioles, elliptic, less ciliate; flowers large, capitate; bracteae large, often longer than the flowers.  


**Var.** η, farniosa (Alph. D. C. mon. p. 268.) leaves sessile, hoary beneath; flowers disposed in terminal heads, and smaller axillary ones, all sessile.  

**Var.** θ, pellusa (Alph. D. C. mon. p. 255.) plant 1-3 inches high; leaves round, ciliate; flowers few, capitate.  

**Var.** υ, flore pleno; flowers double, blue or white.  

**Glomerate-flowered Bell-flower.** Fl. May, Sept. Britain. Pl. 1 to 2 feet.  

51 **C. Cericaria** (Lin. spec. 1. p. 235.) plant beset with stiff pili; stems tufted; leaves crenately serrated; radical ones linear-lanceolate, bluntish, on short petioles; cauline leaves linear, acuminate; bracteae ovate, acute; calyce lobes oblong, obtuse, shorter than the corolla, which is campanulate funnel-shaped.  

52 **C. Multiflora** (Waldst. et Kii. pl. hung. 3. p. 295. t. 283.) plant pilose; stems striated; leaves undulate crenated; lower ones ovate-lanceolate; cauline ones acuminate; spikes interrupted from the flowers being in fascicles; calyce lobes obtuse, 3 times shorter than the corolla, which is tubularly funnel-shaped; capsule bluntly triangular.  


53 **C. Scipicata** (Lin. spec. 1. p. 234.) hairy; stems striated; leaves nearly entire; radical leaves crowded, linear-lanceolate; cauline ones linear-acuminate; spike long, interrupted at the base; calyce lobes ovate, acuminate, 3 times shorter than the corolla, which is funnel-shaped; capsule spheric.  


54 **C. thyrsoides** (Lin. spec. 1. p. 233.) plant pilose; stem tufted; leaves entire, pilose; lower ones lanceolate, obtuse; cauline ones linear-lanceolate, acute; flowers disposed in a dense pyramidal spike; calyx with a glabrous tube, and linear-lanceolate ciliated lobes; corolla oblong, doubly longer than the calycine lobes; style erect; capsule spherical.  


**Species** of the genus **Campanula**. 

* Flowers on more or less elongated pedicels. Radical leaves usually ciliate, petiolate.—Species almost all perennial.  

A. Stems many-flowered. Corolla always glabrous. Capsule ovoid. Species all natives of Europe.  

55 **C. latifolia** (Lin. spec. 233.) stems simple, smooth; leaves large, doubly serrated; radical ones petiolate, corolla, ovate-oblong; cauline ones sessile, ovate-acuminate; flowers disposed in spicate racemes; pedicels erect, 1-flowered; calyce lobes long-acuminate, broad at the base, 3 times shorter than the corolla, which is campanulate funnel-shaped and large.  

56 **C. H.** Native of Europe, from the Pyrenées and north of Italy, even to Scotland; of Caucasus, Lopland, Nordland, Carpathian Mountains, Altai Mountains, and Nipal, always in moist woods and thickets. Frequent in the alps of France and Switzerland. Not unfrequent in Scotland and the north of England, but
more rare in the south: in moist woods and thickets, by the
sides of rivulets. Oed. fl. dan. t. 85. and t. 782. Smith, engl.
bot. 302. C. urticifolia, All. pedem. 1 p. 110. C. Brunonis,
Wall. cat. - Weim. phyt. t. 287. - Park. par. 355. f. 2. - Lob.
ic. 2. t. 278. Stem glabrous, rather a little hairy. Leaves
glabrous, rarely rather scabrous. Flowers solitary, rising from
the axils of the superior leaves. Corollas large, blue, but some-
times white, or bluish-white, glabrous outside, but sometimes
bearded inside. Lobes of calyx often dentilicate.

**Var. β. macráltha** (Alph. D. C. mon. p. 265.) stem and leaves rather plicate; teeth of leaves more distinct; calyx gla-
brose; corollas larger. 2. H. C. macráltha, Fisch. inded.
V. latifólia, var. macráltha, Sims. bot. mag. 2553.

**Var. β. ericócrápa** (Alph. D. C. mon. p. 265.) stem and leaves plicate and pale; leaves less acuminated; tube of calyx very
hispid. 2. H. Native of Caucasus. C. ericócrápa, Bieb. fl.
taur. 1. p. 149. C. latifólia, var. macráltha et ericócrápa,
Fisch, in litt.

**Broad-leaved Bell-flower.** Fl. July. Britain. Pl. 2 to 3 ft.
56 C. trachéllium (Linn. spec. 235.) stems angular, plicate;
leaves scabrous, acuminate, coarsely and crenately toothed:
radical ones petiolate, cordate; flowers disposed in loose rac-
emes; peduncles 1-3-flowered; calyx rather plicate, with trian-
gularly acuminate erect lobes. 1-3 times shorter than the corolla,
which is campanulate. 2. H. Native of Europe, from Spain,
Portugal, Piedmont, Naples, and Greece, even to Scotland,
Sweden, Russia, and the Carpathian Mountains; of Caucasus,
Tauria, Siberia, and even to Japan, in shady places. In Britain,
in groves, thickets, and hedges frequent. Smith, engl. bot. t. 12.
Oed. fl. dan. t. 1926. Hook. fl. lond. t. 109. C. gantéllce,
Jaun. St. HIl. fl. fr. t. 47. C. urticifolia or urticócrápa,
Schmidt, fl. bohem. no. 173. p. 75. Bieb. fl. canec. 1. no. 574.
Tenor. fl. neap. 1. p. 68.—J. Bauh. hist. 2. p. 805. with a figure.
C. Cervéricia, Fuchs, hist. p. 431. with a figure.—Moris. oxon.
2. p. 459. sect. 5. t. 3. f. 28. Stem simply or branched, red-
dish. Leaves often doubly toothed, roughish. Flowers droop-
ing a little, 1-4 together, terminating the branchlets. Corolla bluish
violet and white, and all the shades between these two colours,
bearded inside. The name Trachéllium is from τραχύς, the
neck; alluding to the reputed virtues of this plant in disorders of
the throat, to which the other appellations of old authors allude.
A decoction of the herb, which is bitter and somewhat ac-
cid, was used as a gargle.

**Var. β; flower solitary, terminal. Bieb. fl. taur. 1. p. 149.

**Var. γ, flòre pleno;** flowers double, blue and white, and all
the shades between these two colours. Theatr. flor. t. 69.

**Var. ε, monstròsà** (Alph. D. C. mon. p. 267.) flowers abortive,
degenerating into leaves. Hall. enum. p. 192.

**Great Throat-wort or Nettle-leaved Bell-flower.** Fl. July, Aug.
Britain. Pl. 2 to 3 feet.
57 C. rapiénciólòides (Linn. spec. 234.) stems rather scab-
rous; leaves scabrous, ovate, acuminate: radical ones petio-
late, cordate, crenululate: cauline ones serrulate; flowers dis-
posed in long spicate racemes, solitary; calyx rather scabrous,
with linear-lanceolate lobes, which are afterwards reflexed;
corolla funnel-shaped, 4 times longer than the calyceine lobes.
2. H. Native of Europe, from the Pyrenees, Dauphiny, Pied-
mont, Transylvania, even to Scotland, Sweden, and Lapland;
in the plains about the Carpathian Mountains; Caucasus, even
to the banks of the river Oby in Siberia. Frequent in Middle
Europe. In Britain, in woods and fields, but rare, in some woods
in Oxfordshire, among yew trees. It grows in Scotland, in
cornfields, 2 miles north-west from Kirkaldy. Smith, engl.
bot. t. 1369. fl. dan. 1327. Plenck, icon. t. 152. C. miátans,
Lam. fl. fr. 3. p. 336. but not of Waldst. et Kît. C. urti-
cifolia, Turr. prod. fl. ital. 64. no. 9. Vittm. summ. pl. 1. p. 454.

**Var. γ, macrófolia** (Alph. D. C. mon. p. 268.) stem and leaves
rather plicate; teeth of leaves more distinct; calyx gla-
brose; corollas larger. 2. H. C. macrófolia, Fisch. inded.

**Var. ε.** (Éuipoutánà) (Alph. D. C. mon. p. 268.) flowers few,
disposed in loose racemes; peduncles long, erect, usually 1-
flowered; calyceine lobes broader. 2. H. C. Éuipoutánà,
Morett. inded.

**Var. η, trachélidées** (Alph. D. C. mon. p. 269.) stem and leaves
beaten with stiff white hairs, but particularly the calyx.
2. H. Native of Caucasus. C. trachélidées, Bieb. fl. taur.
1. p. 150. no. 576. Stev. mem. nat. cur. mosc. 3. p. 255. C. Ucrá-
C. macrostécháya, Fanz. herb. C. setósà, Fisch. mss.

**Var. ζ, nánà** (Alph. D. C. mon. p. 269.) stems abortive, 1-3-
flowered. 2. H. 

to 4 feet.
58 C. Bononiësìm (Linn. spec. 1. p. 234.) scabrous; stems
simple; leaves serrated, ovate, acuminated, dark green above,
pale beneath: radical leaves cordate, petiolate: superior leaves
stem-clasping: flowers numerous, small, disposed in long ra-
cemes; calyceine lobes acuminated, 4 times shorter than the
 corolla, which is funnel-shaped. 2. H. Native of the east of
Europe and west of Asia, from 40° to 55° and, long. 15°
westerly, even to 60°; particularly in the northern elevated val-
ye downs in the kingdom of Naples; Upper Italy, Piedmont, Saxony,
Prussia, Bohemia, Silesia, Caucasus, the Ukraine, and near the
t. 2. t. 112.—Bauh. hist. 2. p. 806.—Moris. oxon. 2. p. 461. sect.
5. t. 4. f. 58. Tube of calyx blackish. Flowers smaller than in
any other nearly allied species, numerous, disposed in a simple
raceone, or the raceone is branched at the base. Corollas bluish-
violet, glabrous. Plant dark green. Leaves pale beneath.

**Var. β;** radical leaves very long. 2. H. Native of the
kingdom of Naples. C. obliquofólia, Tenore, fl. neap. prod. p. 15.

**Var. γ;** plant much branched, many-flowered. 2. H. Na-
ative of Caucasus. C. Bononíçias, var. ε, Bieb. fl. taur. 1. p.
151. C. multifóra, Hortl. C. lychnítis, Hort. hort. hafn.

**Var. ε;** leaves broader, tomentose beneath. 2. H. Native
of Tauria, Caucasus, and many parts of Russia, and the Levant.
Flowers bluish-violet.

**Var. θ;** stems very simple. 2. H. C. Bononíçias, All. fl.
Rhim. et Schultes, syst. 5. p. 129. C. Bononíçias, var. β, Bieb.

v. Stems few-flowered or 1-flowered. Corollas nearly always glabrous. Capsule ovoid, rarely spheroid.

59. C. collina (Bieb. fl. taur. 1. p. 152.) stems simple; lower leaves on long petioles, ovate-oblong, crenulated; middle ones lanceolate; superior ones linear-acuminate; flowers few, second, disposed in a long raceme; calyces lobes erect, lanceolate, acuminate, doubly shorter than the corolla, which is funnel-shaped. 2. H. Native of Caucasus and Tauria, on grassy hills. Bieb. Fl. rar. Ross. 1. t. 42. Stem rather pilose. Leaves smoothish. Calyx pilose. Corolla deep blue, twice the length of the calyceine segments.

Var. a; plant larger; petioles very long; germen hispid. 2. H. Native of Iberia, on the mountains, and of Tauria. Var. a, Bieb. l. c.


Var. c, piulna; plant dwarf.—Tourn. cor. p. 4. C. Ibérica, augustifolia, &c. var. b, Bieb. l. c.

Var. c; flowers white. 2. H.—Tourn. cor. p. 4.


60. C. Falciflora (Desf. choix. du. cor. p. 36. t. 26. ann. mus. 11. p. 57. t. 7.) stems branched; leaves dentately serrated; radical ones ovate-roundish, petiolate; cauline ones ovate, on short petioles; flowers few, terminal; calyceine segments subulate, erect; corolla funnel-shaped, twice the length of the calyceine segments. 2. H. Native of Candida, on the mountains, among bushes. Stem slender. Plant glabrous. Flowers hanging one way, solitary, terminating the branches and stem. Corolla campanulate, bluish-violet. The capsule is said to be 5-angled.

Few-flowered Bell-flower. Pl. 1 to 3/4 foot.

61. C. nemorosa (Alph. D. C. mon. p. 274.) stems simple; radical leaves on long petioles, cordate, ovate-oblong, crenated; cauline leaves sessile, long-acuminate, serrated; flowers disposed in loose racemes; calyceine segments subulate; corolla funnel-shaped, twice longer than the calyceal lobes. 2. H. Native of Austria and Moravia, in woods. C. elongata, Portenschl., but not of Wildf. nor others. Plant glabrous. Racemes often furnished with few-flowered peduncles at the base. Corollas blue.

Grote Bell-flower. Pl. 1 foot.

62. C. Rhamboidea (Lin. spec. p. 233.) stems almost simple; leaves sessile, ovate, acute, serrated; flowers few, disposed in loose racemes, pedunculate; segments of calyceal subulate, erect; corolla campanulate, twice longer than the calyceal capsules; capsule ovoid. 2. H. Native of the temperate parts of Europe, on the mountains; as of the Pyrenees, mountains of Auvergne, Alps of Provence, Dauphiny, Savoy, Switzerland, Germany, Carniola, &c.; and of Russia and Tauria. C. rhomboidea, Lin. spec. 333. Gillb. demonstr. bot. t. 27. Lodg. bot. cab. t. 603. C. azurea, Sims, Bot. mag. t. 551. Ait. Hort. Kew. ed. 2d. vol. 1. p. 348. C. venosa, Willd. comm. suppl. t. 10. —Barrel. icon. 78, t. 567.—Boeke. mus. p. 75. t. 61.—J. Bauh. hist. 2. p. 798. with a figure. Stem glabrous, or a little pilose, furnished with flower-bearing branches at top. Flowers usually drooping, but sometimes looking upwards, very like those of C. rotundifolia. Corollas hardly one-half longer than the calyceal lobes, blue, glabrous.


Var. γ, reflexa (Alph. D. C. l. c.) leaves broader; calyceal lobes reflexed. 2. H. Flowers blue.

Var. ε, polyphylla (Alph. D. C. l. c.) leaves long-lanceolate, nearly entire; corollas 5-parted. 2. H. Flowers blue.


63. C. trichocalycina (Ten. fl. neap. prod. p. 16. fl. neap. 67. t. 16.) stems simple; leaves on short petioles, ovate, acute, coarsely serrated; flowers few, racemose; calyceine segments reflexed, long-capillary, nearly equal to the corolla, which is profoundly 5-cleft, and funnel-shaped; capsule ovoid. 2. H. Native of the kingdom of Naples, on the mountains; of Sicily, on the Nebrodes; and of Candida. C. Althurmiana, Brigit. stirp. rar. in. ginn. encyl. sept. 1817. Root simple, fusiform. Stems glabrous, but hairy at the base. Flowers disposed in an almost simple terminal raceme, approximate at the top, 1-3 rising from each axil, at the time of flowering erect, but afterwards drooping. Corolla pale violet.


64. C. Carnica (Schiede. miss. ex Alph. D. C. mon. p. 277.) stems ascending, weak, few-flowered; leaves glabrous; lower ones obovate or lanceolate; upper ones linear; calyceine segments very long, reflexed; corolla tubular, elongated. 2. H. Native of Carniola and Carinthia, on the mountains. Root slender. Plant glabrous. Flowers few, on long peduncles, solitary, inclined. Corolla blue, glabrous.

Carniola Bell-flower. Pl. ½ to 3/4 foot.

65. C. Höstii (Baung. comm. 3. p. 842.) stems few-flowered; leaves with scarcely eiliated margins; radical ones few, roundish, cordate, broad, toothed; cauline leaves lanceolate and linear; flower-buds drooping; calyceine segments subulate, spreading or reflexed; corolla funnel-shaped. 2. H. Native of Transylvania, Austria, and Carinthia, in pastures, woods, and on the mountains; and on the Alps of Jura. Stems glabrous or scabrous, simple or branched at top. Flowers more or less numerous, pedunculate and pedicellate, as in C. rotundifolia, drooping. Corollas blue. Very like C. rotundifolia.

Var. b, uniflora (Alph. D. C. mon. p. 277.) stem 1-flowered, ascending, weak; cauline leaves few, linear-lanceolate, petiolate. 2. H.

Host's Bell-flower. Pl. 1 foot.

66. C. petiolata (Alph. D. C. mon. p. 278.) quite glabrous; stems simple, few-flowered; radical leaves on long petioles, cordate, ovate, reflexed; stem, hairy; cauline leaves, crenated; lower cauline leaves lanceolate, remotely toothed, petiolate; upper cauline leaves linear, entire; calyceal lobes erect, subulate; corolla campanulate, twice longer than the calyceal lobes. 2. H. Native of North America, near Slave Lake. Plant with the habit of C. rotundifolia. Root slender. Flowers 3-4, at the top of the stem, erect, but at length becoming recurved. Corollas blue.

Petiolate-leaved Bell-flower. Pl. 1 foot.

67. C. linifolia (Lam. dict. 1. p. 579.) stems erect; radical leaves few, petiolate, ovate, sinuated; cauline leaves linear, entire; calyceal segments long, erect, 2 or 3 times shorter than the corolla, which is large and campanulate. 2. H. Native of Europe, on the mountains; as of the Pyrenees, Auvergne, Dauphiny, Valais, Alsatia, Alps of Italy, Austria, Transylvania, and the Carpathian Mountains; but wanting in the more northern regions of Europe. Scop. carn. 1. p. 144. C. angustifolia, Lam. ill. 2499. —C. Schleicheri, Rut. fl. helv. 1. p. 124. C. rotundifolia linifolia, β et γ, Lap. ayrb. p. 104. C. rotundifolia, β, Wahl. helv. p. 39. but not of his fl. lapp. C. virgata, Rafin. in Rom. et Schultes. syst. 5. p. 100. —J. Bauh. hist. 2. p. 797. with a figure. Root slender, creeping. Plant quite glabrous, rarely a little downy. Flowers few at top of
each stem, but usually only one, drooping. Corollas large, blue, of a form between those of *C. rotundifolia* and *C. persicifolia*.


*Var. ε, albiflora*; flowers white.


70 C. Arista (Wall in Roxb. fl. ind. 2. p. 98.) plant quite glabrous; stems erect, 1-flowered; radical leaves petiolate, lanceolate, acute, undulated; cauleine leaves sessile, narrow-linear, glandularly denticulated; calycine segments long-subulate, twice longer than the corolla; capsule very long, obconical. 2. H. Native of the north of India, about Laddack. Root thickish, rather fusiform, divided at top. Flowers small, solitary, terminal, drooping. Tube of calyx very much elongated. Corolla funnel-shaped, pale blue.

Awned-calyx Bell-flower. Pl. 1 foot.

71 C. Silvatica (Wall in Roxb. fl. ind. 2. p. 97.) plant scabrous from short stiff hairs; stems erect, straight, few-flowered; cauleine leaves linear, narrow, nearly entire; calycine segments erect, subulate; corolla campanulate, downy, twice longer than the calycine segments. 2. H. Native of Nipaul, in shady humid places. C. stricta, Wall. assis. res. 13. p. 374. C. integerrima, Don, prod. fl. nep. p. 155. Habit of *C. rotundifolia*, but probably without any roundish radical leaves. Stems simple or branched. Flowers terminal, on long peduncles, disposed like those of *C. rotundifolia*. Corollas blue.

Wood Bell-flower. Pl. 1/2 to 1 foot.

72 C. Vesula (All. pedem. 1. p. 108. no. 297. t. 7. f. 1.) stems 1-flowered; leaves glabrous, oval, toothed; stems nearly naked; calyx glabrous. 2. H. Native of Piedmont, on Mount Vesulus. Leaves many at the roots, petiolate, with a few scattered hairs beneath. Flowers campanulate, spreading.

*Vesulus Bell-flower*. Pl. 3/4 foot.

73 C. du Bia (Alph. D. C. mon. p. 286.) glabrous; stems 1-flowered; cauleine leaves erect, narrow: lower ones linear-lanceolate, petiolar: superior ones long-acuminate; calyce lobes subulate; corolla tubularly funnel-shaped, twice longer than the calycine lobes. 2. H. Native of Newfoundland. Flowers erect, terminal, very like those of *C. rotundifolia*.

Doubtful Bell-flower. Pl. 3 to 4 foot.

**CAMPANULACEÆ. XV. CAMANula.**

*Meadow Bell-flower.* Pl. ½ foot.  
75. *C. puLLa* (Lin. spec. p. 231.) stems humble, 1-flowered; leaves glabrous, cumately toothed; lower ones on short petioles, ovate-rounded; superior ones sessile, ovate, acute; calyce segments long-acuminate, erect, twice shorter than the corolla, which is campanulate.  

77. *C. pedunculata* (Michx. fl. amer. bot. 1. p. 109.) glabrous; stem panched at top, with branches diverging; leaves equally scattered over the stem, nearly sessile, ovate-lanceolate, acuminate at both ends, coarsely serrated, with rather scabrous edges; calyce lobes capillary, twice shorter than the corolla, which is tubularly campanulate; style a little exserted.  
78. *C. helv.*, native of Carolina, on high mountains. Stems erect, angular. Leaves very few at the base, but crowded at top. Flowers panicked, terminal and axillary. Corolla blue.  

80. *C. flexuosa* (Roem. et Schult. Syst. 5. p. 59.) plant glabrous, humble; stems slender, 1-flowered; lower leaves linear-acuminate; calyce lobes setaceous, spreading, at length reflexed, 3 times shorter than the corolla, which is funnel-shaped; sinuses of corolla cut; capsule obconical.  

82. *C. Waldsteinii* (Roem. et Schult. Syst. 5. p. 59.) glabrous; stems erect, flexuous, stiff, simple, few-flowered; leaves sessile, lanceolate, serrate; lower ones obtuse; superior ones long-acuminate; alabastra erect; calyce lobes subulate, subdenticulated, spreading, 4 times shorter than the corolla, which is campanulate.  
83. *C. Wall.* Native of Crotia, on the mountains, in the fissures of rocks. Rechb. icon. bot. cent. 1. t. 85. C. flexuosa, Waldst. et Klot. pl. rar. hung. 2. p. 145. t. 136. C. rupestris, Host, fl. austri. 1. p. 263. Stems numerous from the same root, stiff. Flowers 3-4 at the top of each stem, one of which is terminal, and the others from the axils of the superior leaves, always looking upwards. Corollas of a violaceous blue colour.  

85. *C. aparinoides* (Pursh. fl. amer. sept. 1. p. 159.) glabrous; stem weak, ascending, simple, few-flowered, having the angles beest with short retrograde bristles; lower leaves linear-ovate: the rest linear and acuminate: all remotely denticulated, and bent with retrograde short bristles; calyce lobes triangular, twice shorter than the corolla, which is campanulate; capsule spherical.  
86. *C. Moorcroftiana* (Alph. D. C. mon. p. 233.) stems erect; peduncles elongated, terminal and axillary; calyx with a very dilate, pilose-crenulated, tubular and triangular entire lobes, which are about equal in length to the corolla, which is tubular and velvety; capsule turbinate.  
87. *C. Hoary*. Native of Nipauel. Leaves variable in size, acuminate at both ends, sessile, downy. Peduncles nearly naked, or bearing a large bract each.  


89. *C. flexuosa* (Michx. fl. bor. amer. 1. p. 109.) glabrous; stem panicked at top, with erect branches; leaves most frequent in the middle and above, almost sessile, lanceolate, acuminate at both ends, coarsely serrated; calyce lobes capillary, twice shorter than the corolla, which is tubularly campanulate; style a little exserted.  
90. *C. helv.* Native of Carolina, on high mountains. Stems erect, angular. Leaves very few at the base, but crowded at top. Flowers panicked, terminal and axillary. Corolla blue.  

92. *C. flexuosa* (Michx. fl. bor. amer. 1. p. 109.) glabrous; stem panicked at top, with branches diverging; leaves equally scattered over the stem, nearly sessile, ovate-lanceolate, acuminate at both ends, coarsely serrated, with rather scabrous edges; calyce lobes capillary, twice shorter than the corolla, which is tubularly campanulate; style a little exserted.  
93. *C. Hoary*. Native of Carolina and Virginia, on the mountains; and of Kentucky, &c. Stems leafy to the middle, and almost naked in the upper part. Flowers small, drooping, terminating the branches and branchlets. Corolla azure blue.  

*Divaricate-paniced Bell-flower.* Pl. 2 to 4 inches.  
94. *C. Hoary*. Native of Nipauel, on the mountains near Gosiingsthan. Root fibrous. Stems many, ascending, densely covered with white hairs, as well as the upper surfaces of the leaves. Flowers on short peduncles, terminating the stem and branches. Corollas blue.  

95. *C. Case's* (Wall. cat. no. 1289.) plant hispid; stem erect; radical leaves crowded, lanceolate, cumately; cauline leaves remote, narrower, rarely denticulated; flowers racemose, often approximate, on short pedicels, small; tube of calyx spherical; lobes linear, entire; corolla tubular, pilose.  
96. *C. Hoary*. Native of Nipauel; and Hindostan, about Rampore. Alph. D. C. mon. p. 292. C. Benthamii, Wall. cat. no. 1290. Root slender. Stem branched from the base or simple. Flowers numerous, small, 4-6 at the top of each branchlet, the whole forming a many-flowered loose raceme.  

*Caneose Bell-flower.* Pl. 1 foot.  
97. *C. colorata* (Wall. in Roxb. fl. ind. 2. p. 101.) stem branched, downy; leaves scattered, lanceolate, acute, repandy denticulated; peduncles elongated, terminal and axillary; calyx with a very dilate, pilose-crenulated, tubular and triangular entire lobes, which are about equal in length to the corolla, which is tubular and velvety; capsule turbinate.  
98. *C. Hoary*. Native of Nipauel. Leaves variable in size, acuminate at both ends, sessile, downy. Peduncles nearly naked, or bearing a large bract each.  


*Coloured Bell-flower.* Pl. ½ foot.  
100. *C. palmata* (Wall. in asiat. res. 13. p. 375.) plant clothed with canescent pili; stem erect; bracted; leaves elliptic, sinuately crenated, petiolar: upper ones sessile; calyx bristly, with linear-lanceolate segments, which are about equal in length to the corolla.  

*Tall Bell-flower.* Pl. 1 to 2 feet.  
102. *C. ramulosa* (Wall. in Roxb. fl. ind. 2. p. 100.) stem erect, pilose, branched; leaves lanceolate, sessile, crenately...
toothed, with the nerves rather prominent beneath; flowers pedicellate, terminal and axillary; calyx pilose, with broad, acute, subulate lobes, twice or thrice shorter than the corolla, which is cylindrical and velvety. capsule turbinate. \( \text{V. H.} \) Native of Nipal. Root short, slender, simple or branched. Flowers inclinate, pedicellate. Leaves pilose. Corolla of a violaceous blue colour.

**Branched Bell-flower.** Pl. 1 to 2 feet.

8 G. C. Alphæus (Wall. cat. no. 1296. Alph. D. C. mon. p. 294.) stems humble, simple, 1-flowered, downy; cauline leaves sessile, lanceolate, acute, toothed a little, rather pilose above, and hoary beneath; calyx downy, with acute segments, twice shorter than the corolla, which is campanulate and downy. \( \text{V. H.} \) Native of the south of India, on the Nelligerry Mountains. Stems very leafy at top. Flowers drooping, terminal, large for the size of the plant.

Alphæus De Candolle’s Bell-flower. Pl. 2 to 3 inches.

**Flowers on very short pedicels, opposite the leaves. Capsule turbinate. Branches more or less dichotomous. Leaves small, sessile, oblong.—All annual humble herbs, inhabitants of the region of the Mediterranean.

87 G. erinus (Lin. spec. 240.) plant hisd; leaves obovate or ovate, toothed; flowers sessile; calycine lobes triangular, acuminate, erect, at length spreading, about equal in length to the corolla, which is small and tubular. \( \text{V. H.} \) Native about the Mediterranean Sea; very plentiful throughout the whole Spanish Peninsula, south of France, Provence, Sardinia, throughout the whole of Italy, Sicily, Dalmatia, Grecian Islands, Teneriffe, &c. on walls and rocky places. Sibth. et Smith. fl. græc. t. 214. Cav. valence. t. 2. Ranouël erinus, Dumont, comm. bot. p. 14. —J. B. Bauh. hist. 2. p. 799, with a good figure.—Mor. ex. sect. 5. t. 3. f. 25.—Colunn. phyt. t. 28, pl. nov. hist. p. 29. t. 31. Stem much branched. Flowers terminal and axillary, and situated in the angles of the forks of the branches. Corolla tubular, of a pale bluish rose-colour or white, pilose at the base.

Erinus-like Bell-flower. Fl. May, Aug. Clt. 1768. Pl. \( \frac{1}{2} \) to \( \frac{1}{2} \) foot.

88 G. drabétolia (Sibth. et Smith. pl. græc. t. 11. t. 215.) plant hisd; leaves elliptic-oblong, toothed; flowers pedicellate; segments of the calyx always erect; corolla inflated, much longer than the calyx. \( \text{O. H.} \) Native of the Island of Samos, and near Athens, in cotton plantations and vineyards. Habitat of G. erinus. Stem many times forked, erectish. Corolla with white tube, and a violaceous blue limb.


89 G. rodenis (Alph. D. C. mon. p. 297.) plant pilose; leaves entire, ovate; flowers terminal; calycine lobes triangular, erect, at length spreading; corollae large, campanulate. \( \text{O. H.} \) Native of the Island of Rhodes. Root simple. Stems from each root, reddish. Flowers numerous, erect, terminating the branches. Corollae elegant.

Rhodes’ Bell-flower. Pl. \( \frac{1}{2} \) to 3 inches.

§ 3. Capsule erect; valves dehiscing at the base.—Flowers pedicellate. Radical leaves petiole, usually cordate, having the base of the petiole usually expanded and permanent.

**Corolla downy or velvety, tubular, 5-lobed at the apex. Radical leaves crowded. Stems few-flowered.—Species all natives of the Levant.

90 G. damascen (Labill. pl. syr. dec. 5. p. 7. t. 5.) downy; radical leaves ovate-obovate, acute, nearly entire, hoary; cauline ones few, ovate, acute; calyx velvety, with subulate lobes, twice shorter than the corolla; capsule ovoid. \( \text{V. F.} \) Native of the Levant, near Damascus, on the mountain called Dgebel-cher. Root woody. Stems slender, 1 or few-flowered. Flowers erect, pedicellate. Corollae cylindrical.

Damascen Bell-flower. Pl. ascending.

91 G. argentea (Lam. dict. 1. p. 584.) humble; radical leaves linear-obovate, clothed with silvery tomentum, nearly entire: upper leaves few, oblong; calyx silvery, with triangular lobes, 3 times shorter than the corolla; capsule turbinate. \( \text{V. F.} \) Native of Armenia.—Tourn. cor. 3. Root hard, blackish. Stems erect, velvety, with short branches. Flowers 1 or few on the top of each branch erect. Corollae velvety.

Silvery Bell-flower. Pl. \( \frac{1}{2} \) foot.

92 G. syriaca (Roum. et Schultes, syst. 5. p. 133.) radical leaves oblong-spatulate; cauline leaves oval, sessile, somewhat sinuated; stem simple, few-flowered at top. \( \varnothing ? \) H. Native of Syria. There is nothing said of the flower and capsule by the authors.

Syrian Bell-flower. Pl. \( \frac{1}{2} \) foot.

**Corollae rotate, deeply 5-lobed, usually downy outside. Style exerted.—All natives of Italy.

93 G. gariganiaca (Ten. fl. neap. prod. 1827.) radical leaves reniform, on long petioles; cauline ones cordate, all crenately toothed, downy; flowers axillary, in fasicles; corollæ 5-parted. \( \text{V. H.} \) Native of Apulia, on Mount St. Angelo. Sweet, fl. gard. n. s. t. 252. C. elatines, Pentag. inst. bot. 2. p. 367. Plant pale green. Corollæ bluish. Habitat of C. Carpaticum.

Garigani Bell-flower. Fl. May, Sept. Clt. 1832. Pl. \( \frac{1}{2} \) to 3 foot.

94 G. elatinoïdes (Morett. pl. ital. dec. 3. p. 5.) plant tomentose; leaves acutely toothed, petiolate; lower ones oblong; superior ones ovate-acute; flowers disposed in dense racemes; tube of calyx ovoid: lobes subulate, spreading, about equal in length to the corolla. \( \text{V. H.} \) Native of Italy, on the mountains about Pisa, among stones and on rocks. C. elatines, Poll. fl. veron. 1. p. 278. no. 404. C. petra‘æ, Zantedesch. fl. brix. ined. but not of Lin. nor others.—Gerard. emac. p. 435. f. 2.—


Elatino-like Bell-flower. Pl. \( \frac{1}{2} \) to 3 foot.

95 G. elatines (Lin. spec. 1. p. 240.) stem ascending; leaves cordate, coarsely and acutely toothed, ovate-acute; lower ones roundish; flowers in loose racemes; tube of calyx spherical; lobes of calyx spreading, linear-lanceolate, twice shorter than the corolla. \( \text{V. H.} \) Native of the alps of Piedmont, Liguria, Naples, &c. in shady, rocky places. All pedem. no. 422. t. 7. f. 2. Plant downy. Stem branched. Flowers scattered over the upper part of the plant, sometimes racemose, and sometimes panicked. Corollæ bluish-purple, hardly one-half longer than the calycine lobes.


Elatine Bell-flower. Fl. June, Aug. Clt. 1823. Pl. \( \frac{1}{2} \) to \( \frac{1}{2} \) foot.

**Corolla campanulate, funnel-shaped, or tubular, 5-lobed at the apex, glabrous.—Roots for the most part thick. All natives of Italy.

96 G. macrorhiza (Gay, ined. ex Alph. D. C. mon. p. 392.) root thick; stems ascending; radical leaves petiolate, small, roundish-cordate, toothed; lower cauline leaves on short petioles, ovate, acute, toothed: superior ones sessile, linear-acuminated; flowers terminal and axillary; alabaster erect; calycine lobes acuminate, spreading or reflexed, twice shorter than the corolla, which is campanulate. \( \text{V. H.} \) Native of Nice, on dry rocks; Provence, on the mountain called Cousseau; and near

5 E
San Marco, in Calabria. C. Nicéonis and C. rupéstris, Risso, in herb. D. C. Root thick, marked by the vestiges of the fallen leaves, creeping among rocks. Stem simple or branched, glabrous. Leaves glabrous. Flowers more or less numerous, solitary, pedunculate and pedicellate, as in *C. rotundifolia*, looking upwards. Corolla broader than those of *C. rotundifolia*.


**Long-rooted Bell-flower.** Pl. 3½ to 1 foot.


**Portenschlag’s Bell-flower.** Pl. 3½ foot.

98 C. **BILLARDÉRE** (Alph. D. C. mon. p. 303.) glabrous; stems ascending; radical leaves on long petioles, small, cordate, 3-5-cleft; lobes toothed; flowers few, in loose racemes; calyce segments filiform, rather unequal, two shorter than the corolla, which is tubular. **γ. H.** Native of Syria. Flowers few, second, drooping. Corollas small, blue. Radical leaves numerous; calyce ones few. Habit of *Wahlenbergia hederacea*.

**La Billardère’s Bell-flower.** Pl. 3½ foot.

99 C. **MORETTIANUM** (Reehb. Icon. rar. cent. iv. p. 18. t. 320.) plant pilose, humble; stems 1-flowered; leaves crenately toothed, small; radical leaves petiolate, cordate, roundish; calyce leaves smaller, ovate, acute; calyce lobes lanceolate, 4 times shorter than the corolla, which is funnel-shaped. **γ. H.** Native of Dalmatia, on Mount Biocco; and of Tyrol, on Mount Vodoi, above Vigo, in the valley of Fosca. C. pulita, Parol. hort. sic. incd. but not of Lin. nor Jacq. C. filiformis, Morett. pl. ital. dec. p. 8. giorn. d. fisic. &c. di. Pavia 1826. vol. 9. p. 155. bot. ital. no. 11. p. 21. no. 4. Flowers erect, blue.

**Moretti’s Bell-flower.** Pl. 1 to 3 inches.

100 C. **RAINÉRI** (Peperti, in bibl. ital. 1817. 5. p. 134. with a figure) stems erect, firm, branched: branches 1-flowered; leaves almost sessile, ovate, remotely serrated; lower ones the smallest, obovate; calyce lobes long-acuminate, erect, twice shorter than the corolla, which is funnel-shaped; capsule obovate. **γ. H.** Native of Italy, on the Alps in the province of Brixo, and on the mountains surrounding Lake Como; on the alps of Biandino and Tremare, above Mandello and Resegone, from the termination of the Beech Woods, even to the elevation of 6000 feet and upwards. C. Perpétue, Morett. in herb. D. C. Plant tufted. Caulaflex creeping. Stems leafy, rather pilose. Leaves glabrous or downy. Flowers erect, blue.

**Rainier’s Bell-flower.** Fl. June, July. Cit. 1826. Pl. ½ ft.

*** Corollas large, campanulately rotate, somewhat 5-cleft, glabrous. Roots usually thick.

101 C. **ISOPHYLLA** (Moretti, append. to Schouv. prospett. fl. italic. p. 22. Rchb. icon. pl. cent. 3. t. 202. f. 344.) stems erectish, firm; leaves all about the same size, petiolate, crenately toothed; flowers corymbose; calyce lobes acuminate, broad, twice shorter than the corolla; style exerted; capsule ovoid. **γ. H.** Native of Liguria, at Cape Nauli and Caprazzoppa. C. floribunda, Viv. fl. lyb. append. fl. italic. p. 67.

Caudex woody. Plant glabrous or velvety. Flowers numerous, erect, disposed in a corymb. Corollas blue, rotate.

**Equal-leaved Bell-flower.** Pl. ½ to ¾ foot.

102 C. **FRAGILIS** (Cyril. pl. fasc. 1. p. 32. t. 11. f. 2.) stems ascending, diffuse, branched; radical leaves on long petioles, roundish-cordate, bluntly crenate-lobe: calyce leaves smaller, ovate and lanceolate; flowers panicled; calyce lobes linear-lanceolate, erect, about equal to the corolla; style exerted; capsule ovoid. **γ. H.** Native of the south of Italy, in the valley of Ananìa; near Naples, in Goat’s Island, about Cava; on Mount Polino and elsewhere in Calabria; and probably of Sicily. C. diffusa, Vahl. symb. p. 18. C. cochlearifolia, Vahl. symb. p. 18. C. crassifolia, Nee, synl. rath. 1. p. 6. and amen. bot. fasc. 2. p. 9. t. 4. —Barrel. icon. rar. p. 54. t. 27. Root thick. Plant glabrous. Flowers numerous, racemously panicled, terminating the branchlets, erect, pedicellate. Corollas large, pale blue.


103 C. **BARRELLE** (Presb, symb. bot. p. 30. t. 19. ex Linn. 7. p. 7.) villous; stems diffuse, procumbent, very simple, 1-flowered; leaves roundish-cordate, crenated; flowers terminal; segments of the calyx lanceolate, acute, longer than the tube, which is glabrous. **γ. H.** Native of Naples, on rocks by the sea side. C. diffusa, var. Röen. et Schultes, syst. 5. p. 92. Corollas blue.

**Barrelle’s Bell-flower.** Pl. procumbent.

104 C. **VERSICOLOR** (Sibth. et Smith, prod. fl. grece. 1. p. 138. grece. t. 207.) glabrous; stem ascending; leaves serrated; radical leaves petiolate, ovate, acute, rather cordate; calyce leaves on short petioles, ovate-lanceolate, acuminate; flowers disposed in long spicate racemes; calyce segments acuminated, spreading, at length reflexed, twice shorter than the corolla, which is variegated; style exerted; capsule spheroid. **γ. H.** Native of Greece. C. planiflora, Wild. enum. 1. p. 210. but not of Lam. C. Wilderowitha, Röen. et Schultes, syst. 5. p. 107. Root tuberous, thick, white, subdivided at top. Stems erect. Corollas campanulately rotate, of a deep violaceous color, blotched, pale in the middle, and the lobes pale violet. Flowers disposed in long racemes, like those of *C. pyramidalis*, of which this species has the habit.


**Tenore’s Bell-flower.** Pl. ½ to 1 foot.


**Campanula.**
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CAMPANULACEAE. XV. CAMpanula.

233.) glabrous; leaves glandular-toothed: lower ones petiolate, ovate-oblong, somewhat cordate; cauline leaves sessile, ovate-lanceolate; flowers numerous, pyramidal-racemose; calyces lobes acuminate, spreading; capsule spheroid, deeply furrowed. 2. H. Native on rocks and on walls in Carinthia, Carniola; of Dalmatia, in the island of Vigo; on the walls of Venice and Verona. The plant has been cultivated a long time in gardens, and consequently has become, as it were, indigenous in many parts of the south of Europe. J. Aust. St. Hil. pl. fr. t. 416.—Weinm. phyt. t. 289. f. b.—Moris, oxon. 2. p. 152. sect. 5. t. 1. f. 1.—Besl. hort. syst. t. 7. f. 1.—Tab. icon. 317.—Swett, floril. t. 16. f. 2.—Leb. hist. p. 177. icon. 387.—Dod. penat. 166. 100. Root large, turnip-formed, oblong, usually divided into fusiform branches. Flowers very numerous, pedicellate, usually 3 together from the same bracteae, the whole disposed in a large pyramidal raceme, which is loose at the base. Corolla pale blue, with a dark base. There is also a white-flowered variety of this.


§ 4. Capsule dehiscing laterally by the valves towards the apex, erect. Lobes of calyx usually dentilicated.—Radical leaves usually obovate, on short petioles, but never cordate. Flowers pedicellate.

* Valves situated between the middle and upper part of the capsule.—Branches not dichotomous.

108 C. Scouleri (Alph. D. C. mon. p. 312.) stem simple, few-flowered; leaves ciliatly, sharply serrated; lower leaves ovate, acute, petiolate; middle ones ovate-lanceolate, sessile; superior ones linear-lanceolate; flowers racemose; calyx glabrous, with capillary erect lobes, which are 3 times shorter than the 5-cleft, funnel-shaped corolla; style exerted; capsule ovoid. 2. H. Native of North-west America, about Fort Van Couver, on the banks of the Columbia river. Stems ascending at the base, glabrous or a little hairy, simple at bottom, and furnished with floriferous peduncules at top. Flowers 4 to 10 on each stem, terminal and axillary, loosely racemose. Habitat of a species of Adenophora. Scouler's Bell-flower. Pl. ½ foot.

* * Valves situated near the top of the capsule. Flowers usually on long peduncules, terminal or axillary. Branches not dichotomous.

109 C. planiflora (Lam. dict. 1. p. 580. ill. 2509.) quite glabrous; stems simple; leaves sessile, coriaceous, shining; radical ones crowded, ovate or obovate, obtuse, crenulated: cauline ones linear-lanceolate, acute, nearly entire; flowers disposed in spicate racemes; calyces lobes ovate, acute, broad, erect, 3 times shorter than the corolla, which is campanulate rotate. 2. H. Native of North America, probably towards Hudson's Bay. C. nifida, Ait. hort. kew. ed. 1. vol. 1. p. 346. Nutt. gen. amer. 1. p. 136. C. Americana, Mill. dict. no. 13. but not of Lin.—Tourn. inst. 1. p. 111. Munting, phyt. t. 123.—Do-dart, mem. ed. de mal. p. 621. t. 35. ed. fol. p. 119. t. v. flor. Floridae terminal and axillary, on short pedicels, approximate, disposed in a kind of spicate raceme. Corolla pale blue; there is also a variety with white flowers.


111 C. fulgens (Wall. in Roxb. fl. ind. 2. p. 99.) stem simple, erect, pilose; leaves lanceolate, acuminate at both ends, on short petioles, serrated; flowers almost sessile, disposed in a raceme, crowded at top; calyces segments linear-subulate, erect, entire, rather longer than the corolla, which is funnel-shaped; capsule ovoid, 10-nerved. 2. F. Native of Upper Nipaul, on the more elevated mountains. Root simple, glabrous. Stems usually undivided, but sometimes furnished with a few simple branches, angular, Leaves hispid. Petioles pilose. Flowers small, blue, in fascicles, from the axils of the upper leaves, the whole forming an oblong terminal raceme.

Falgent Bell-flower. Pl. 1 foot.

112 C. veresinna (Lin. syst. p. 301.) plant hispid; stem simple, many-flowered, angular; leaves crenated; lower ones obovate: superior ones ovate, acute; flowers disposed in a spicate raceme; calyces lobes acuminate, nearly entire, rather shorter than the corolla, which is spreading; capsule ovoid. 2. H. Native of Mount Lebanon, and near Aleppo. Jacq. hort. schoenbr. 3. p. 337. Sims, bot. mag. t. 1257. Hoffm. et Link. fl. port. 2. p. 15. t. 83. C. lanuginosa, Lam. dict. l. p. 584. but not of Willd. C. hispidissima, Guss. ined. Flowers sessile, solitary, disposed in a long dense spike. Corollas funnel-shaped, hardly one-half longer than the calycine lobes, of a dark violet colour at the base, of a less deep colour in the middle, and paler towards the margins.


113 C. primulifolia (Brot. fl. lus. 1. p. 288. phyt. lus. 1. t. 20.) stem hispid, many-flowered, simple; leaves unequally and doubly crenated: radical ones lanceolate, bluish: cauline 5 f. 2.
leaves ovate-oblong, acute; flowers disposed in a spicate raceme; calyces lobes acuminate, broad at the base, dentilculated; corolla connately rotate, twice longer than the calyce segments; capsule long, obovate. 2. H. Native of Portugal, in shady, humid places of the Algarves and Beira, and near Coimbra; above Fumete, and about Monchica. C. Trachelium, Broth. fl. his. 1. p. 287. Root oblique, branched, thickened into tubers at top. Leaves hispid on the ribs and veins. Flowers erect. Corollas nearly glabrous, blue, rarely purple, with a whitish downy bottom.

Primrose-leaved Bell-flower. Pl. 1 to 2 feet.

114 C. Alata (Desf. fl. atl. 1. p. 178. t. 50.) stem few-flowered, simple, glabrous; leaves irregularly toothed, glabrous: lower ones ovate, acute; calyces leaves lanceolate; flowers few, disposed in racemose heads; calyx with a hispid tube, and linear-lanceolate, acute, rather ciliated segments; corolla broadly campanulate, twice longer than the calyce segments; capsule spherical. 2. H. Native of the north of Africa, near Mai- ralu. Stem angular. Flowers sessile on the top of the stem. Corolla blue, size of that of C. pyramidalis.

Winged Bell-flower. Pl. 2 to 3 feet.

115 C. P. Various (Lin. spec. ed. 1. p. 579.) stems simple, many-flowered; racemes crowded, linear-lanceolate, serr- rulate; flowers sessile, disposed in a loose spike; calyx with a spherical tube and triangular lobes, which are thrice shorter than the tubularly-campanulate corolla. 2. H. Native of Armenia. Desf. choix. cor. p. 35. t. 25. or in ann. mus. 11. p. 56. t. 6. Radical leaves rosulate. Plant glabrous. Flowers erect, violaceous.

Sneezewort-leaved Bell-flower. Pl. 3 to 4 foot.

116 C. Capitata (Jacq. hort. vind. 1. p. 22. t. 57.) plant gla- bros, branched; lower leaves on long petioles, ovate-round- cordate, toothed; superior ones on short petioles, ovate, acute; flowers disposed in loose panicles, on long peduncles; calyces lobes erectish, triangular, acuminated, thrice shorter than the corolla, which is broadly campanulate; capsule ovoid-cylindri- cal. 2. H. Native of Transylvania, and at the sides and bottoms of the mountains of Liptov, to the south of the Carpathian mountains; among calcareous alpine rocks. Curt. bot. mag. t. 117. Root fibrous. Leaves branchy. Branches or peduncles elongated, naked, each terminated by an erect flower. Corollas blue, about the size of those of C. persicifolia.


117 C. Silicifolia (Fisch. ms. ex Alph. D. C. mon. p. 329.) stem simple, few-flowered; leaves ciliated; radical ones lanceolate, on long petioles, few; calyces leaves narrow, acuminated; calyces lobes erect, acuminated, ciliated, thrice shorter than the corolla, which is funnel-shaped; capsule long, obovate. 2. H. Native of Darabia; and at the river Lena, in Siberia. C. Bicalcalis, Pall. ms. in herb. Lamb. C. ciliata, Patrin, herb. Gmel. sib. 3. p. 159. t. 32. exclusive of the syn. of Tourn. Root slender, creeping transversely below the earth, and emitting slender fascicles of fibres. Stem glabrous. Flowers 1-3 on each stem, terminal and axillary, pedicellate. Corollas large, blue, with glabrous or ciliated lobes.

Catchfly-leaved Bell-flower. Pl. 4 foot.


Var. a. Silvestri (Alph. D. C. mon. p. 321.) stem few-flowered; corolla 5-leaf even to the middle, with ample lobes.


119 C. Persicifolia (Lin. spec. ed. 1. p. 164.) stems nearly simple; leaves glabrous, stiff, crenated: radical leaves lanceolate-ovate; calyces leaves linear-lanceolate; flowers racemose; calyces lobes acuminate, broad at the base, entire, twice shorter than the corolla, which is broadly campanulate; capsule ovoid, trisulcate, dehiscing by broad pores. 2. H. Native of the south and temperate parts of Europe; from Spain, Italy, Greece, even to Scotland; south of Sweden; about Petersburg and Moscow, and throughout Siberia, especially towards the east, and the Altaiian mountains; about Constantinople; delighting in subalpine shady places, and woods; in Scotland, in woods near Cullen. Bull. herb. t. 367. Oed. fl. dan. t. 1087. Sibth. et Smith, fl. greece. t. 205. C. decur- rens, Lin. spec. ed. 2. p. 232. C. speciosa, Gilib. pl. litt. p. 10. but not of Horn. C. amygdalifolia, Salisbury prod. p. 126.—Weinn. phyt. icon. t. 291. f. and b. and t. 290. f. c. and d.—Swett, floril. pt. 2. t. 16.—Besl. hort. syst. 1. t. 8. f. 2. and 3.—Tab. icon. t. 317.—Lob. icon. t. 327.—Moris. oxon. 2. p. 452. sect. 5. t. 1. f. 2. Plant glabrous. Flowers terminal and axillary, pedunculate, solitary, inclined, the whole forming a raceme. Corollas large, broad, campanulate, blue, and all the intermediate shades to white.


Var. φ. calycina (Alph. D. C. mon. p. 323.) plant monstrous; stems 1-flowered; calyces large, ovate-lanceolate; corolla narrowed at the base. 2. H. C. persicifolia calycina, Rehb. icon. cent. 1. t. 57.


120 C. Pyreneaica (Alph. D. C. mon. p. 324.) stems simple, 1-flowered, beset with soft hairs; leaves rather pilose: radi-
cal leaves roundish, a little crenated, on short pedioles: cauline leaves sessile, lanceolate, nearly entire at both ends; calyx glabrous: with subulate, spreading, entire lobes, which are rather shorter than the corolla. 2. H. Native of the Pyrenees, and of the Balkarian Islands. Flowers terminal, erect. Corolla blue?

Pyreanec Bell-flower. Pl. 1 to 1 ½ foot.

121 C. Raréculæ (Lin. spec. p. 232.) stem almost simple; lower leaves all, or short, petioled; cauline leaves sessile, linear-lanceolate, entire; flowers spicately racemose, solitary: calyce lobes erect, long-subulate, very slender, rather shorter than the corolla, which is funnel-shaped; capsule obconical, triloculate. 3. H. Native of Morocco and Barbary; as also of the south of Europe, and extending as far north as the county of Norfolk, in England; as well as of Transylvania and Caucasus. In Britain, on banks and about the borders of fields; not common. About old Buckingham Castle, Norfolk. In many parts of Kent and Surrey, as well as in other places on a gravelly soil; having formerly perhaps escaped from gardens. Smith, engl. bot. t. 233. Schrank, eno. no. 406. t. 39. Oed. fl. dan. t. 1326. Svensk, bot. t. 69. 164. 2. C. Britigiana, Gmel. reis. l. p. 153. t. 33. but not of Dufour, C. conyza, Giph. pl. l. p. 8. C. esculenta, Salisb. prod. p. 126. C. clatior, Link, et Hoffm. fl. port. 2. p. 11. t. 89. C. glandulosa, Banks, herb. Tourn. inst. 111. Morand. hist. p. 69. t. 39. f. 3.—Moris, oxon. sect. 5. t. 2.f. 20. and f. 1. Column. phyt. 102. with a figure. Lob. icon. t. 328. Root fusiform, thick, white. Stem simple, but sometimes furnished with a few branches towards the top, furrowed, glabrous, but pilose at the base. Leaves usually glabrous, but sometimes hairy. Flowers nearly sessile, or pedicellate, erect, forming a long raceme, which is branched at the base. Corollae blue or white. This plant varies in the stem being glabrous or pilose, in the length of the pedicels, in the tube of the calyx being glabrous or strigose, in the calyce teeth being entire or a little dentilicate at the base. The root is milky, thick, and edible, and, with the leaves, is mixed in salads; and, therefore, it was formerly cultivated for that purpose. In France and Italy the roots are boiled and eaten hot with sauce, or cold with vinegar and pepper. The seed is sown in the spring on deep light soils, in drills, and the plants are ready for use in the autumn of the same year. It is called Rapenorozza in Italy; Rapineco, in Portugal; Rapience, petite Rapiance, in France; Rampon, and Small Rampon, in England; Raspuzel, Rubeu, or Blau Bluhende Warzel, Raspuzel, Przutleizin, in Germany; Rzepka, in Bohemia; and Akla Raspuzel, in Sweden.


132 C. Lambertiana (Alph. D. C. mon. p. 327.) stem simple, many-flowered, pilose; cauline leaves sessile, oblanceolate, irregularly dentilicate, rather pilose; flowers disposed in a long spike, raceme; calyx glabrous: with nectariferous, spreading, coarsely, and acutely-toothed lobes, rather shorter than the corolla, which is obconical. 3. H. Native of Persia, in the province of Ghilan. Flowers disposed in a spike-formed raceme, furnished with a few branches at its base, as in C. Rapinclus. Corollae white?

Laubert's Bell-flower. Pl. 1 ½ to 2 feet.

123 C. Virgata (Labbil. pl. syr. dec. 2. p. 11. t. 6.) stem simple, many-flowered; radical leaves lanceolate, crenuliate, petiolo: caulis leaves sessile, linear-lanceolate; flowers spicate, usually twin or tern; calyx with a sebaceous tube, and erect subulate lobes, which are twice or thrice shorter than the funnel-shaped corolla; capsules obovate-fusiform. 3. H. Native of Mount Lebanon. Root thick. Stems hardly leafy, rather sebaceous below, but smooth at top. Leaves sebaceous. Flowers sessile, erect, 1-3 from each axil, forming a long interrupted spike, Corollas blue?

Twiggzy Bell-flower. Pl. 1 ½ to 2 feet.

124 C. Hermii (Hoffm. et Link, fl. port. 2. p. 9. t. 79. Rem. et Schultes, syst. 5. p. 328.) glabrous; stem ascending, simple; leaves nearly entire: radical ones lanceolate: caulis leaves linear-lanceolate, sessile, nearly entire; calyce lobes long-acuminated, spreading, serrated at the base, twice shorter than the corolla, which is funnel-shaped; capsule ovo-cylindrical. 3. H. Native of the south and temperate parts of Europe; as of the Pyrenees, Spain, throughout Italy, the Morea, and also in the region of Tunis; Levant, to the Carpathian Mountains, but not below them; Transylvania; about Petersburgh and Moscow, but is never to be found in Europe beyond lat. 61. In England, in pastures, borders of fields and hedges; rare in several parts in Kent; in many places about Alcester; in Worcestershire, and Staffordshire, &c. Oed. fl. dan. t. 373. Smith's engl. bot. t. 42. Hook. fl. lond. t. 51. C. bellidiifolia, Lap. ayr. arv. p. 36. C. decurrens, Lin. spec. ed. 1. p. 164. Diffuse Bell-flower, Hill. veg. syst. 8. t. 1. —Weinm. phyt. icon. t. 290. f. a. Dill. hort. elth. t. 58. f. 68. Besl. eyst. ordinat. 1. t. 5. f. 9. Root small, slender, branched. Stems glabrous, or sebaceous from pili on the angles. Branches divaricate, nearly naked. Leaves glabrous. Flowers pilose, terminal, and axillary, on long pedicels, large, erect. Corollas blue or white. This is a very polymorphous plant.


Var. γ, latifolia (Alph. D. C. l. c.) stem branched, glabrous, sebaceous on the angles; caulis leaves lanceolate, broad, serrulat.; calyce segments very long, rather longer than the corolla.

Var. ω, paniculata (Alph. D. C. l. c.) stem humble, branched a little, almost naked; flowers terminal, and axillary, few, large; corolla campanulate, one half longer than the calyce segments. Column. ephr. p. 24. with a figure. Tourn. inst. 111.

Var. s, neglecta (Alph. D. C. l. c.) calyceine lobes reflexed, serrulat, toothed at the base, acuminated, a half or a third the length of the corolla. C. neglecta, Rem. et Schultes, syst. 5. p. 104.


126 C. Erinoides (Lin. mant. p. 64.) Cav. anz. ciene. p. 29.) stem humble, few-flowered, with sebaceous angles; leaves small, linear-lanceolate, glabrous, crenulat.; lower ones obtuse: superior ones acuminat.: calyce lobes long, subulate,
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entire, rather shorter than the corolla, which is funnel-shaped; capsule long-obconical, nearly terete. 2 H. Native of Spain, about Madrid and elsewhere; and of Gibraltar and Tangiers. Root slender, filiform. Stem simple, but furnished at top with 1-flowered peduncles, which diverge more or less. Flowers erect, blue.


127 C. Matthiæ-nis (Alph. D. C. mon. p. 532.) stem humble, few-flowered; leaves linear-lanceolate, nearly entire; lower ones obtuse; superior ones acute; calyce lobes long-subulate, erect, entire, rather shorter than the corolla, which is narrow-funnel-shaped; capsule obconical, elongated, having the nerves rather prominent. 0 H. Native of Spain, about Madrid. Root filiform. Stem simple, but furnished with 1-flowered peduncles at the top, glabrous or pilose, hardly scabrous on the angles. Leaves glabrous or pilose. Corollas violaceous.

Madrid Bell-flower. Pl. 1/2 to 1/4 foot.

138 C. Ramosissima (Sibth. et Smith, fl. græc. t. 204.) stem branched, many-flowered, pilose; leaves ovate-lanceolate, crenated; lower leaves obtuse; upper ones acute; calyx with a pilose tube, and acuminate entire lobes, which are pilose outside, and rather shorter than the spreading corolla; capsule obconical, pilose, having the nerves rather prominent. 0 H. Native of Mount Olympus, in Bithynia, and in the island of Zante, &c. Root slender, fibrous. Stem angular. Leaves equally scattered over the stem, smoothish. Branches nearly naked, divaricate, each terminating in a single flower. Corolla bluish-pink, having the nerves more intensely coloured.


129 C. Loricì (Alph. D. C. mon. p. 333.) stem branched, few-flowered; leaves ovate-oblong, glabrous; lower ones ovate, crenated; middle ones ovate-lanceolate; superior ones linear, entire; calyx with a hispid tube, and long-acuminated glabrous spreading lobes, which are decumbent at the base, length of corolla, which is somewhat rotate; capsule spheroid, deeply furrowed, and beset with striose pili. 0 H. Native of the province of Verona, near Valleggio, where it was first collected by Lory; and on Mount Baldo, by Rainer. C. Loricà, Lorèii, or Lorìi, Poll. chem. bot. t. 2. p. 148. ultimate table, f. 1. Poll. fl. verr. 1. p. 271. t. 2. f. 4. Sims, bot. maj. t. 2581. C. Balendis, Balh. cat. hort. taur. 1813. p. 20. C. Ramosissima, Host, fl. austr. 1. p. 204, but not of Sibth. et Smith. Root slender, fibrous. Stem glabrous or hispid. Peduncles long, naked, glabrous, bearing each an erect flower at the apex; but the alabastrum is drooping before expansion. Corolla with a white base, middle part or base of the lobes pale blue, and the lobes bluish-violet.


150 C. decumæns (Alph. D. C. mon. p. 334. t. 12. f. A.) stem decumbent, nearly simple, few-flowered; radical leaves roundish-spatulate, sinuate; cauline leaves ovate, crenately-toothed; superior ones linear-lanceolate; calyx with a pilose tube; corolla funnel-shaped, twice longer than the calyce lobes; capsule spheroid. 0 H. Native of Spain, near Aranjuez. Root slender, fibrous. Stem glabrous or slightly pilose. Radical leaves with rather scabrous white subrevolute edges; middle ones quite glabrous. Flowers terminal, and axillary, on long peduncles, solitary, drooping before expansion, but afterwards erect. Corollas blue?

Decumbent Bell-flower. Pl. decumbent.

131 C. Loefelì (Brot. phyt. fasc. 1. no. 10. fl. lus. 1. p. 237.) stem much branched, many-flowered, rather scabrous on the angles; leaves crenulated; lower ones ovate-reniform, or roundish-cordate; superior ones ovate, stem-clasping; calyx glabrous, with an obconical tube, and long-acuminated spreading lobes, which are rather shorter than the corolla; capsule obconical, with prominent nerves. 0 H. Native throughout Portugal, in sandy places; of Spain, about Madrid; and of the territory of Mogador. Brot. phyt. hisp. sel. p. 11. t. 18. Hoffm. et Link, fl. port. 2. p. 14. t. 82. C. Broussettiannus, Roem. et Schultes, syst. 5. p. 104. Root slender, fibrous. Leaves glabrous. Flowers solitary, terminating the naked branchlets, loosely panicked, drooping. Corolla funnel-shaped, blue, or violaceous, with a deeper coloured zone beneath the middle, white at the base, both inside and outside. In one variety, the calyx is downy.


132 C. retrorsa (Labill. pl. syr. dec. 5. t. 3.) stem few-flowered, angular, scabrous from retrograde prickles or bristles on the angles; lower leaves roundish-obovate, petiolate, somewhat sinuated, glabrous; superior leaves ovate-lanceolate, entire, with scabrous edges; calycine lobes long-acuminated, spreading, scabrous from serrulations, longer than the corolla, which is funnel-shaped; capsule obconically elongated. 0 H. Native on Mount Lebanon. Root slender, fibrous. Branches elongated, naked, each terminated by an erect flower. Flowers drooping before expansion. Corolla mixed with white and violet.

Retrograde-bristled Bell-flower. Pl. 1/2 to 1/4 foot.

133 C. Zoysì (Wulf. in Jacq. coll. 2. p. 152.) plant tufted; stems erect, few-flowered; leaves entire; radical ones crowded, petiolate, ovately-obovate, obtuse; cauline leaves ovato-lanceolate, and linear; calyce lobes subulate; corolla long, cylindrically ventricose; capsule ovoid-spherical. 2 H. Native of the Upper Alps of Styria, Carniola, Carnibia, &c. Jacq. icon. rar. 2. t. 334. Plant small, glabrous, tufted. Root creeping, throwing out many small stems, which bear from 1 to 3 flowers each. Leaves crowded at the base. Flowers pedicellate, drooping. Corolla cylindrically, elongated, pale blue, with 5 deeper coloured lines; rarely white.


134 C. Cenìsìa (Lin. spec. suppl. p. 1669.) plant tufted; stems ascending, 1-flowered; leaves entire; radical ones rostrate, obvate, obtuse; cauline leaves ovato-oblong; calyx hairy, with linear-lanceolate lobes; corolla 5-lobed, hardly twice the length of the calyce lobes; capsule ovoid. 2 H. Native of the Higher Alps of Provence. Piedmont, Dauphiny, Savoy, Vallais; on Mount Cenis; and of Switzerland, on the mountains called Diablerets, &c. All, pedem. no. 395. t. 6. f. 2. Rchb. icon. bot. cent. 1. p. 85. All. rar. stipr. spec. 35. t. 5. f. 1. Root creeping, blackish. Stems numerous, glabrous, or slightly pilose. Flowers solitary, terminal, erect. Corolla deep blue, hardly one half longer than the calyce lobes.

Var. β, angustifolia (Schrad. prim. salsis. p. 70.) leaves narrow.


135 C. spatúlata (Sibth. et Smith, pro拾. fl. græc. 1. p. 137. fl. græc. t. 203.) stem ascending, 1-flowered, pilose; lower leaves petiolate, ovate, crenated; superior ones lanceolate; calyx with an obconical tube, and linear-acuminated toothed lobes; corolla subcampanulate, hardly longer than the calyce lobes; capsule spheroid. 2 H. Native on Mounts Olympus and Parnassus. Root slender, twisted. Stem solitary, angular. Leaves rather pilose, but becoming more smooth and entire as they ascend the stem. Flower terminal, erect, blue.

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136 C. ALEDOA (Fisch. mss. ex Alph. D. C. mon. p. 338.) plant humble; stems nearly naked, 1-flowered; radical leaves crowded, obovate-lanceolate, setately denticulated; petioles ciliated; calyx with a villous tube, and denticulated acuminate lobes; corolla campanulately funnel-shaped, ovate or longer than the calyence lobes; capsule somewhat cylindrical. 2. H. Native of Kamtschatka, Unalaschka, Kotzebue's Sound, Cadiak, and Sledge Island, as well as of the Rocky Mountains in America. C. lasiocephala, Cham. in Linnaea. 4. p. 39, exclusive of the syn. Camp. Sayenensis, Fisch. Root slender, white. Stem glabrous, or slightly pilose. Foot terminal, erect. Corolla large for the size of the plant, blue.

Algid Bell-flower. Pl. ½ to ⅓ foot.

157 C. V. D. FLOREA (Lin. spec. p. 231, but not of Vill.) stems 1-flowered; leaves nearly entire: lower ones obovate, petiolate; middle ones obovate-lanceolate: upper ones few, linear-lanceolate; calyx rather villous, with linear acuminate lobes, about equal in length to the corolla, which is funnel-shaped; capsule cylindrical. 2. H. Native of the polar region of America, as in the Island Unalaschka; north side of the Rocky Mountains; between Point Lake and the Arctic Sea; Kotzebue's Sound, Melville Island, Greenland; and of the north of Europe, as in Lapland, Sweden, Norway, &c. Svensk, bot. t. 526. Rottb. pl. greenl. in act. hafn. x. p. 52. t. 6. f. 19. Oedl. fl. dan. t. 1512.—Lin. fl. lap. no. 855. t. 9. f. 5-6. Root simple, blackish. Stems simple, glabrous. Leaves glabrous. Foot dropping; deep azure blue.


*** 1 Valves situated near the apex of the capsule. Flowers on short pedicels. Leaves opposite. Branches usually more or less dichotomous.

138 C. FASTIGIATA (Dufr. in herb. D. C. ex Alph. D. C. mon. p. 540. t. 12. f. B.) plant scabrous, humble; lower leaves obovate, nearly entire: middle ones obovate-lanceolate, coarsely 3-5-toothed: superior ones linear-lanceolate; corolla one half shorter than the calyence segments, which are linear-lanceolate; capsule obconical. 2. H. Native of Spain, in Arragon and about Aranjuez. Plant of a greyish colour. Stem branched, erect; branches diverging. Leaves rather dowlq or glabrous. Flowers sessile, erect, terminal, rising from the axil or above the axil of the branches, always opposite the leaves, particularly terminating the stem and branches. The flowers situated in the lower axils expand before the rest. Corollas small, blue.

Fastigiate Bell-flower. Pl. ⅛ foot.

† Species not sufficiently known.

139 C. LIGULARES (Lam. dict. 1. p. 582. ill. no. 2547.) leaves numerous, alternate, oblong, narrow, obtuse, entire, and ciliated; flower erect, terminal, middle-sized; calyx hispid, with nearly linear segments and covered sinuses; corolla tubularly campanulate, bearded a little; stem leafy, nearly glabrous, 1-flowered.

—Native of the Alps of Europe.

Ligulare-leaved Bell-flower. Pl. ⅛ foot.


Very rough Bell-flower. Pl. ¼ foot.

141 C. decurrens (Zuccagni in Roem. misc. p. 128.) stem winged; leaves decurrent, toothed, hispid; corolla tomentose and hispid on the outside.—Native country unknown. Stem flexuous, winged from the leaves being decurrent. Leaves spathulate, reticulated and tomentose, especially beneath. Flowers axillary, crowded, seated on a common peduncle. Bracteas cordate. Calyx hispid.

Decurrent-leaved Bell-flower. Pl. 2 feet.

142 C. A. SPEERA (Moench. supp. p. 188.) stem terete, straight, quite simple; leaves oblong, sessile, crenated; peduncles 3-flowered. 2. H. Native country unknown. Plant hispid from pili. Leaves obtuse, stiff; radical ones petiolate; cauline ones sessile, remote. Racemes loose, terminal. Flowers axillary; intermediate one pedunculate, lateral 2 adnate to the common peduncle. Corolla blue. Stigma trilid. Capsule 3-celled.

Rough Bell-flower. Pl. 3 feet.

143 C. CYMBALARIA (Sibth. et Smith, prod. fl. gracc. 1. p. 130.) leaves reniform, cut, quite glabrous, shining; stems diffuse. 2. H. Native of Mount Olympus, in Bithynia. Camp. folius cymbalariae crisipus montis Olympi Bithyni, Tour. cor. Perhaps this is either C. fragilis, or C. Billardieri.

Cymbalaria-leaved Bell-flower. Fl. diffuse.

144 C. Wanneri (Roch. pl. banat. var. t. 5. f. 12.) C. hetrophylla, Baumg. fl. trans. suppl. ex Fersiss. bull. se. frb. 1829. Nothing is known of this species.

Wanner's Bell-flower. Pl.

145 C. LANCEOLATA (Presl. ex Wanderoth, beitr. zu. fl. Von Hessen. p. 37. but not of Lapeyrès). Nothing more is known of this plant.

Lanceolate-leaved Bell-flower. Pl.

146 C. MONTANA (Delarb. fl. auvergn. p. 40.). Native of Auvergne. Nothing is known of this plant but the name.

Mountain Bell-flower. Pl.

147 C. RIGESCENS (Pal. ex Roem. et Schultes, syst. 5. p. 102.) leaves lanceolate: radical ones attenuated into the petioles, crenated: cauline ones sessile; stem straight, simple, downy; flowers terminal, racemose; calyces ciliated. Native of Siberia, about Lake Baical, in frigid places. Corolla 1½ inches long, twice the length of the calyx, with the segments ciliated a little. Style a little longer than the calyx. Stem a span high, few-flowered.


148 C. ASCÉDENS (Vest, in Roem. et Schultes, syst. 5. p. 90.) leaves scattered: lower ones on short petioles, ovate, toothed: superior ones oblong, quite entire, glabrous as well as the stem, which is asseriate; flowers solitary, drooping: calyx ciliated, subulate, a little shorter than the corolla. Native of Siberia. C. rotundifolia, Pall. ex herb. Lamb. Very nearly allied to C. uniflora.

Ascending Bell-flower. Pl. ascending, ⅛ foot.

149 C. HETERODÔXÁ (Vest, in Roem. et Schultes, syst. 5. p. 98.) leaves oblong, glabrous; flowers axillary, pedunculate, spreading; calyx short, with lanceolate-subulate segments, which are a little shorter than the corolla. 2. H. Native of Siberia. C. rotundifolia, Pall. herb. Peduncles axillary, capillary, 1-flowered, roughish, furnished with bracteoles.

Heterodox Bell-flower. Pl. ⅛ to 1 foot.

150 C. LUNÄRELLA (Wildl. rel. ex Roem. et Schultes, syst. 5. p. 92.) leaves ovate, deeply cordate, petiolate, double serrate; flowers small. 2. H. Native of Caucasus.

Lunatrix-leaved Bell-flower. Pl. 1 foot.

151 C. KITAIÈLLA (Roem. et Schultes, syst. 5. p. 90.) lower leaves obvate-cuneiform, crenated: superior one linear, quite entire; stem quite simple, 1-flowered. 2. H. Native of Austria. C. microphylla, Kit. in Schultes, fl. austr. 2. ed. no. 400.

2 C. Campanula (Rom. et Schultes, syst. 5. p. 105.) leaves linear-lanceolate, quite entire; lower ones the broadest, smooth, and tapering into the petioles; stem downy; flowers axillary, at length spicate; calyces segments setaceous, divaricate, rather pungent, length of corolla. 2. H. Native of Siberia. C. speciosa, Willd. rel. ex Roem. et Schultes, i. c. Stem simple, terete, weak. Flowers terminal, and rising from the axilile of the superior leaves, forming an interrupted spike, hardly pedunculate.


Kautscheta Bell-flower. Pl. ½ foot.

 Cult. All the species are elegant and handsome when in blossom, and are well adapted for decorating flower borders. They in general thrive well in common garden earth. The seeds of the biennial and annual kinds should be sown in the open border in spring. The perennial species may either be propagated by division or by seed. Some of the perennial and biennial species, natives of the warmer latitudes, require a little protection in winter, when the weather is severe. Some of the smaller perennial kinds answer well for decorating rockwork, or to be grown in pots, among other alpine plants.


Lin. syst. _Pentadâria_, _Monœgynia_. Calyx 5-lobed, with an elongated, prismatic, or long-oblacanal tube. Corolla rotate, 5-lobed. Stamens 5, free, one-half shorter than the corolla; anthers longer than the filaments, which are short, or membranous, and pilose. Style inclosed, pilose; hairs secund, disposed in 10 rows; stigma 3, filiform. Corolla long, prismatic, 0-celled, dehiscing by 3 valves at the apex, or a little above the middle part. Seeds ovoid or lenticular, rather compressed, shining. Dwarf annual herbs, natives of the region of the Mediterranean, and the temperate parts of Europe; one species alone a native of America. Leaves alternate, equally scattered over the stem, small; lower ones unlike the rest. Flowers terminal and axillary, erect, always sessile. Corollas blue, rose-coloured, white, grey, or variegated, shining in the sun; hence the generic name.

- Tube of calyx very long, prismatic, and angular. Capsule dehiscing towards the top, near the lobes of the calyx. Seeds ovoid. Leaves ovate-oblong or lanceolate, nearly entire, not stern-clasping.

1 S. pentagonaria (Alph. D. C. mon. p. 344.) stem branching, larger; flowers terminal, solitary; calyx becat with a few stiff hairs, having a long prismatic tube, and long linear-lanceolate, spreading lobes; corolla the length of the calyces lobes. 2. H. Native of the Levant, about Aleppo; in Carmania, Candia, Thrace, &c. Campanula pentagonia, Lin. spec. 1. p. 239. Desf. choix. cor. p. 44. t. 33, or ann. mus. 11. p. 134. t. 18. Ker. bot. reg. t. 56. Prismatoâcarpus pentagonia, Lher. sert. angl. p. 2. Stem glabrous or pilose on the angles. Leaves glabrous, nearly entire or crenulated, with revolute edges; lower leaves obovate; middle caliex ones lanceolate-ovate; upper calyce ones linear-lanceolate. The corolla before expansion is blunt and pentagonal, but when expanded large, white at the base, blue to the middle part, and violaceous at the extremity of the lobes.


2 S. falcataria (Alph. D. C. mon. p. 345.) stem nearly simple; flowers disposed in long spikes, or approximate at the tops of the branches; calyx glabrous or scabrous on the margins, with a prismatic tube, and very long lanceolate acuminate lobes, which are reflexed at the apex, and are twice the length of the corolla. 2. H. Native of the region of the Mediterranean; as of the Island of Chalcos or Eubæa; of Dalmatia; about Rome and Naples; and of Sicily, Corsica, and Sardinia; among corn, and on dry hills. Campanula falçata, Rom. et Schultes, syst. 5. p. 143. Guss. pl. rar. p. 96. Prismatoâcarpus falcatius, Tenore, prod. 16. fl. neap. 1. p. 77. t. 29. S-bas et Maur. fl. rom. prod. 1. p. 105.—Boxb. cent. 4. p. 24. t. 38.—Cupan. paup. 2. t. 29. Stem glabrous or a little scabrous on the angles. Leaves glabrous, rarely pilose, with rather revolute edges, crenulate. Flowers sessile, solitary, axillary, the whole forming a leafy spike. Corolla rose-coloured. Lobes of calyx falcate.


3 S. speculum (Alph. D. C. mon. p. 346.) stem branching; branches 3-flowered; calyx glabrous or downy, with a prismatic tube, which is narrow at the apex, and linear-lanceolate spreading lobes, which are at length reflexed; corolla length of the lobes of the calyx. 2. H. Native of the temperate parts of Europe, and throughout the region of the Mediterranean Sea, in corn-fields; in Germany, Transylvania, Pyrenées, Spain, Italy, Greece, Syria, Barbary, &c. Campanula speculum, Lin. spec. p. 238. Curt. bot. mag. t. 102. Smith, fl. græcë. t. 216. Lagozëa arvensis, Durand, fl. bourg. 1. p. 57. Prismatoâcarpus speculum, Lher. sert. angl. p. 2. Campanula palchella, Salisb. prod. p. 137. Legouzîa Durandii, Delarb. fl. suvergn. p. 45. Campanula miroir de Venus, Jaume, pl. fr. t. 73. Camp. corr., Visianii. stirp. dalm. spec. 5. p. 12.—Weinn. phyt. t. 286. Besl. syst. 7. t. 1. f. 1.—Gesn. tabl. phyt. 9. t. 76.—Lob. icon. t. 418.—Dodd. pempt. p. 168. t. 1.—Mor. oxon. 2. p. 457. sect. 5. t. 2. f. 21. Branches glabrous or scabrous on the angles. Leaves crenulated, glabrous or scabrous; lower ones obovate; middle ones ovate-acute; superior ones lanceolate, nearly entire. Flowers terminal and axillary, showy. Corolla greenish-white at bottom, deep violet towards the middle part, and the lobes less violaceous, paler on the outside. There is also a variety with white flowers.

Var. ë, Libinica (Alph. D. C. mon. p. 347.) stem humble, simple, erect; leaves erect; flowers approximate at the apex.


Pl. ½ to 1 foot.

4 S. hybrida (Alph. D. C. mon. p. 348.) stem nearly simple; flowers approximate at the top of the stem; calyx scabrous, with a prismatic tube, which is narrower at the apex, and short erect ovate-lanceolate lobes; corolla one-half shorter than the calyceine lobes. O. H. Native of the region of the Mediterranean, and the temperate parts of Europe, and of Cauca-sius, in corn-fields; from Barbary, Spain, Sardeonia, Italy, Sicily, and Morea, even to England, Germany, and Siberia; in Tauria, Georgia, and Transylvania. Campânula híbrida, Lin. spec. 239. Smith, engl. bot. t. 375. Prísmaticòcoccus híbrídus, Lher. sert. angl. p. 2. Ten. fl. neap. l. p. 77. Prísmaticòcárpus confréntus, Mœnch, meth. p. 496. Legózíida híbrida, Delarb. fl. auvergn. p. 47. Camp. spúria, Wall. ined. Réem. et Schult, syst. 5. p. 154. Legózíida parvi-fóra, Gray, nat. arrang. brit. Pl. 2. p. 410. — Cyp. par. p. 1. t. 100. Raf. t. 100. f. 2.— Mor. oxon. 2. p. 457. sect. 5. t. 2. f. 22. Stem more or less scabrous from pili on the angles. Leaves crenated, more or less pilose; lower ones obovate; middle ones ovate, acute; superior ones smaller and ovate-lanceolate. Flowers 3–6, crowded towards the top of the stem, sessile, rising from the axils of the upper leaves and top of the stem. Corollas rose-coloured, or of a bluish rose-colour.


5 S. Côa (Alph. D. C. mon. p. 350.) stem humble, nearly simple; flowers few, approximate towards the top of the stem; calyx downy, with prismatic tube, and erect lanceolate-subulate lobes; corolla twice longer than the calyceine lobes. O. H. Native of the Island of Côa, in the coast by the sea side. Campánula spéculum, var. D'Urâv. enum. pl. arch. in mem. Lin. par. 1. p. 280. Prísmaticòcárpus hírtus? or a new species? D'Urâv. in herb. D. C. Stem pilose, downy at the base. Leaves pilose, greyish; lower ones obovate; middle ones sessile, ovate-acute; superior ones narrower and lanceolate. Flowers 5–6 towards the top of the stem, sessile, axillary, and terminal. Corolla blue or white.

Cois Venus’s Looking-glass. Pl. ½ to ¼ foot.

6 S. Ghlâneënís (Alph. D. C. mon. p. 350.) stem simple or a little branched; leaves lanceolate, acuminate, serrated, flowers subbracteose; segments of the calyx acuminate, serrated, longer than the corolla. O. H. Native of Persia, in the province of Ghlân. Campánula Ghlâneënîs, Pall. ined. ex Réem. et Schultes, syst. 5. p. 154. Very like S. spéculum, but differs in the stem being simple and much higher, in the calyceine segments being serrated, and ending each in a long setaceous twisted nucrane.

Ghílan Venus’s Looking-glass. Pl. 1 foot.

** Tube of calyx long, obconical, smooth. Capsule dehiscing towards the middle part. Seeds rather lenticular. Leaves ovate-roundish, clasping the stem.


Cult. All the species are showy border annuals, and are therefore worth cultivating in every garden. The seeds only require to be sown in the open ground, where the plants are intended to remain. By sowing the seeds in the autumn, the plants will blossom early in summer, and by successive sowings in spring, at intervals of a fortnight or three weeks, a succession of blossoming plants may be kept up.

XVII. TRACHELUM. XVIII. ADENOPOHRA.

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Narrow-leaved Throat-wort. Pl. 1 foot.

Cult. The species are very showy when in blossom. They grow best in a light soil, against a south wall, or in front of a hot-house; and they may either be increased by seed or by cuttings, planted under a hand-glass in spring.


5 F.
**CAMPANULACEÆ.**

Lin. syst. Pentándria, Monogýnia. Calyx 5-cleft, Corolla campanulate or funnel-shaped, 5-lobed at the apex. Stamens 5, free; filaments erect, membranous, long, very much ciliated, conning so closely as to appear coherent. Nectary cylindrical, girding the base of the style. Style usually exerted, plorate while in the bud, the hairs disposed in 10 rows, but afterwards it becomes glabrous; stigmas 3. Capsule 3-celled, dehiscing laterally at the base by 3 valves. Seeds ovate, more or less flat. —Perennial, rarely biennial herbs, with usually edible roots (ex Fisch.). Stems erect. Leaves alternate, very rarely subverticillate; radical ones roundish, petiolate; cauline ones usually sessile, becoming narrower and shorter to the top of the stem. Flowers racemose or panicked, terminal and axillary, pedicellate, drooping; clavate while in bud. —Natives of Siberia, China, and Japan, and one of the east of Europe.

* Leaves broader, ovate-lanceolate, more or less ciliately serrated.

1 A. Síno'sis (Alph. D. C. mon. p. 354.) leaves alternate, ovate-lanceolate, glabrous, acutely serrated; flowers disposed in separate racemes; calyce lobes linear-lanceolate, entire, glabrous; corolla funnel-shaped; style a little exerted. 2. H. Native of China. Stem branched, glabrous or velvety. Leaves glabrous, deep green above. Flowers disposed in a loose few-flowered raceme, which is furnished with branches at the base. Corolla blue, glabrous.


**Whorled Adenophora.** Fl. June, July. Chl. 1783. Pl. 2 to 3 feet.


**Lily-leaved Adenophora.** Fl. Aug. Sept. Chl. 1784. Pl. 1 to 1 1/2 feet.


**Loug-styled Adenophora.** Fl. May, July. Chl. 1820. Pl. 1 to 1 1/2 foot.


**Leaves narrower, linear, entire or nearly so.**


† A species hardly known.


*Cult.* All the species are elegant border-flowers, and are therefore worth cultivating in every garden. They grow in common garden soil, and are to be increased by seeds, as dividing at the root is almost sure to kill the plants.


**Linx. sytr. Monádélphiá, Pestándía,* Calýx* 3-fl., Corolla 5-lobed at the apex, usually velvety, and cream-coloured. Stamens 5; filaments free, membranous, ciliated; anthers combined into a long tube, which is 5-lobed at top. Style cylin-drical, pilose; stigmas 3, filiform. Capsule 3-celled, debiscing by 3 valves at the base. Seeds ovate, more or less flattened, shining.—Herbaceous perennial or woody plants. Leaves alternate, petiolate, cordate; lower ones larger and on longer petioles. Flowers terminal and axillary, pedicellate, usually racemose, rather large.—Three of the species inhabit the region of Caucasian, and one the Island of Candia.

**Sect. I. Sinuses of *calýx* not covered by the appendages.


**Sect. II. Sinuses of *calýx* covered by the appendages.

Camp. Vandéssii, G. Don, in Loud. hort. brit. p. 77. Roots rather creeping, throwing out many stems. Flowers drooping, showy, cream-coloured, disposed in a loose panicle, intermixed with the leaves; peduncles 1-3-flowered.


5. S. ? Oscetica (Alph. D. C. mon. p. 368.) stem humbly, simple; leaves petiolate, coriaceous, doubly serrated; calyxes glabrous, with the segments long and dentilculated, much shorter than the sinuses, which are reflexed; corolla somewhat 5-cleft, having the segments pilose inside. 2. H. Native of Iberia, in Ossetia, on Mount Kaischar. Campánula Oscetica. Bieb. fl. taur. suppl. p. 145. Habit of S. pendula, but is destitute of branches, and is wholly glabrous. Flowers solitary, axillary, erect, disposed in a crowded simple raceme from the middle of the stem to its top. Corollas blue.

Oscetica Symphyandra. Pl. ½ to 1 foot.

Cult. These plants have much the habit of the large bellflowered species of *Campanula*, as *C. punctata* and *C. medium*. They are of easy culture, and are increased by dividing at the root, or by seed; and being showy, are worth cultivating as border-flowers.

**XX. MUSSCHIA** (so named by Alphonse de Candolle, in honour of J. J. Mussche, director of the botanic garden at Gaudz.). Alph. D. C. mon. p. 368. t. 6. f. 4.—*Campanula* species of Lin. and others.

**Linn. syst. Pentándria, Monogynia**. Calyx 5-cleft. Corolla deeply 5-cleft, of a golden yellow colour. Stamens 5, cuspitate at the apex, free; filaments broadest at the base, glabrous. Stigmas 5. Capsule 5-celled, 10-nerved, debouching by numerous transverse lateral fissures between the nerves; cells alternating with the calyceal lobes and stamens. Seeds numerous, small, ovoid, shining.—A small glabrous shrub, native of Madeira and Teneriffe, altogether different in habit to any other campánulaceous plant. Stem thick. Leaves alternate, large, serrated. Flowers numerous, pyramidal racemose, yellow.


1 G. Native along the coast of Madeira, on rocks. Campánula atresca. Jacq. hort. schoenbr. 4. t. 472.


**Cult.** This remarkable shrub thrives very well in a mixture of loam and peat; but is only to be increased by seed, of which abundance is produced in the gardens.

† A genus not sufficiently known, and it is not quite certain whether it belongs to *Campanulaceae*.


**Linn. syst. Pentándria, Monogynia**. Calyx 5-cleft, with an ovoid tube. Corolla 5-loned, caducous, with a very narrow tube. Stamens 5, free; filaments very slender at the base, much longer than the anthers. Style filiform, usually exserted, glabrous; stigmas 2, very short. Ovarium inferior, 1-celled, probably always. Ovula usually 4, placed in the bottom of the ovary. Capsule indehiscent.?—Small Cape shrubs, with the habit of *Roëlla*. Stems erect, branched; branches very woolly, rather woody, redish. Leaves sessile, alternate, crowded, linear-subulate, more or less ciliated, stiff, and very similar to those of *Roëlla*. Flowers sessile, solitary, simple, always axillary. Inflorescence centripetal. Calyx with a very hispid tube, and lanceolate acute smoothish segments. Corolla like that of *Trachelium*, long, tubular, and narrow. The character of the capsule still remains unknown; this is, however, without doubt inferior, and probably 1-celled, and contains 4 ovula in the bottom. The capsule is without any indication of dehiscence in the specimen examined by Alph. D. C.


**Fine-leaved Merciera.** Shrub 1 foot.

2 M. brevifolia (Alph. D. C. mon. p. 371.) leaves ciliated a little; corolla white, length of leaves, 5-lobbled at the apex: lobes lanceolate, spreading, pilose; style doubly longer than the corolla. H. G. Native of the Cape of Good Hope. Roëlla lateriflora, Banks, herb. Very like the preceding. Flowers numerous, lateral, solitary, in the axis of the leaves.

**Short-leaved Merciera.** Shrub 1 foot.


**Slender-lobe-flowered Merciera.** Shrub 1 foot.

**Cult.** A mixture of peat and sand is a good soil for the species of *Merciera*; and they may be increased either by cuttings under a hand-glass, or by seed.

† Plants referred to the genus *Campánula*, but it is doubtful to what genera they belong.

1 Campánula stelláta (Thunb. phytt. bl. p. 20. mem. acad. petersb. 4. p. 377.) a short, linear, entire; flowers axillary, pedunculate; stem frutescent, white, glabrous, branched, erectish, a hand high; branches alternate, simple, a little curved; leaves sessile, acute, imbricated, angular; flowers solitary, at the tops of the branches; peduncles
capillary, flexuous, an inch long. §. G. Native of the Cape of Good Hope. This is certainly not a species of *Campánula*, but it may be a species of *Ligustória*, *Roëlla*, or *Prismato-carpus*.

**Stellate Bell-flower.** Shrubs \( \frac{1}{2} \) to 1 foot.

2. *Campánula lanceolata* (Roschb. fl. ind. 2, p. 96) branches, glabrous; leaves alternate or nearly opposite, on short peti-oles, lanceolate, serrated, acuminate; flowers terminal; calyce- segments lanceolate and jagged; capsule obovate, 5-celled. ○ H. Native of Chittagong, in humid valleys. Plant delicate, 1½ foot high, simple or branched at the top, sending out 2 or 3 1-flowered peduncles. Flowers inclined, size and form of *Corolla*. Radical leaves not seen. Perhaps this plant is allied to *Platycoðon*.

**Lanceolate-leaved Bell-flower.** PI. 1 to 1½ foot.

3. *Campánula phyteumoides* (Zuccagni, cent. 1. obs. bot. in Rœm. et Schultes, syst. 1. p. 84.) plant small; radical leaves numerous, lanceolate, obtuse, running down the petioles, undu- lated; cauline leaves few, remote, sessile, stem-clasping, mucro- nate; flowers sessile, crowded into a short spike or in a head; calyx with a tetragonal base, and erect, lanceolate, smooth seg- ments; corolla campuluate,-violaceous, larger than the calyx; style elevated, exserted; capsule tetragonal.—Native of Mount Olympus, in Bithynia. Perhaps a species of *Phyteum*. Deharengia-like Bell-flower. PI. small.

4. *Campánula glauca* (Thumb. fl. japo. p. 88.) leaves sessile, ovate, serrated, glaucous beneath; stem angular, panicled; ped-uncles 1-flowered.—Native of Japan, near Nagasaki; also culti- vated. Kekko Kempf, amoen. v. p. 822. Stem suffruticos, angular, glabrous, paniculately branched at top. Leaves green above, with rather reflexed edges. Flowers axillary, and on the tops of the branches solitary. Peduncles bracteate. Corollas large, blue. The roots are excent, like those of *Rampion*. It is, perhaps, a species of *Campánula*, but more probably of *Platycoðon* or *Adénophora*.

**Glaucous Bell-flower.** PI. 2 feet.

5. *Campánula montevideana* (Spreng. syst. 1. p. 788.) stem erect, downy, branched at the base; leaves obsolescently cre- nated; lower ones spatulate; superior ones cordate; pedi-uncles 3-flowered.—Native of Monte Video, where it was collected by Sello.

**Monte-Video Bell-flower.** PI. erect.

6. *Campánula carnosa* (Wall. in Roschb. fl. ind. 2, p. 102.) plant smooth, fleshy, procumbent; leaves ovate, cespitously ser- rated, petiolate; flowers axillary, on capillary peduncles, which are about equal in length to the leaves; filaments linear, not dilated at the base. ○ H. Native of靳paul on Mount Shepo- pore, towards the middle, on rocks near rivulets. Stems creeping, obscurely 3-cornered. Flowers very small, of a pale blue. Calyceine segments entire, erect. Corolla funnell-shaped, more than twice the length of the calyx, with a quinqued lib-biate limb; segments oblong, acute, equal, the two uppermost ones more parallel and erect; the rest spreading. Stamens distinct, distant, a little shorter than the corolla; filaments flat, not valvate at the base, inserted together with the corolla on the disc of the ovarium; anthers erect, linear. Ovarium oblong, obscurely triangular, 3-celled, many-seeded; its vertex not elongated, as is usual in the genus, but covered by a fleshy yellowish disc. Style filiform; stigmas 3, linear. Capsule club- shaped, prismatic, bursting towards the base by 3 round valves. This is certainly not a species of *Campánula*, but from the characters given, it appears to be a new genus, connecting *Campánulaceae* with *Adénophoraceae*.

**Fleshy Bell-flower.** PI. creeping.

**Order CXXXVIII. EPERIDEÆ.** (this order contains plants agreeing with *Eperis* in important characters). R. Br. Prod. p. 535.

Calyx 5-parted, (rarely 4-parted), usually coloured, perma- nent. Corolla hypogynous, monopetalous, with the tube sometimes divisible into 5 parts; limb 5-cleft, rarely 4-cleft, equal, and sometimes bursting transversely from the segments, co- hering, valvate or imbricate in aestivation, deciduous or mar- crescent. Stamens equal in number to the segments of the corolla, and alternating with them, rarely fewer; filaments epipetalous or hypogynous; anthers simple, with a single polliniferous receptacle, constituting a complete, rarely a marginate sepiment, undivided, dehiscing longitudinally. Pollen subglobose, rather angular, or composed of 3 com- bined globules. Ovarium sessile, usually girded by 5 dis- tinct or combined scales, many-celled, rarely 1-celled. Seeds solitary or indefinite. Style 1; stigma 1, sometimes toothed. Fruit drupaceous, baccate, or capsular. Seeds albuminous. Embryo straight, slender, longer than the half of the albumen.—*Shrub* or small trees. Leaves alternate, very rarely opposite, entire, rarely serrated, usually petiolate, or with a simple base; having the bases broader, imbricated, ciliate, and sheathing a little. Flower spicate or racemose, terminal: or solitary and axillary. Calyces or pedicels furnished with 2 or more bracte- ates, which are of the same texture as the calyx. Flowers white or purple, rarely blue. This order is chiefly distinguished from *Eriéæ* in the anthers being awnless and 1-celled. The shrubs are all elegant, of a dry prickly habit, with tubular or campulate flowers.

**Synopsis of the genera.**

**Trabe.**

**Styphylleæ.** Cells of ovarium 1-seeded. Pericarps closed, rarely capsular.

1. *Styphylle*la. Calyx with 4 or more bracteas. Corolla long, tubular; tube furnished on the inside near the base with 5 fasci- cles of villi: segments of the limb revolute, bearded. Filaments exerted.

2. *Astroloma*. Calyx imbricated by 4 or more bractes. Corolla with a ventricose tube (f. 132. b.), furnished with 5 fasci- cles of villi near the base, inside; limb short, spreading, bearded (f. 132. c.). Filaments inclosed.


4. *Melichrus*. Calyx many-bracteate. Corolla rotate or urceolate, furnished with 5 fascicles of glands near the base inside; segments half bearded.


12 Pentachondra. Calyx with 4 or more bracteas. Corolla funnel-shaped; limb spreading, longitudinally and densely bearded.


Tribe II.

EPACRIÉÆ. Cells of ovarium many-seeded. Pericarp capsular.

15 Epacris. Calyx coloured, many-bracteate (f. 133. a.); bracteas texture of calyx. Corolla tubular (f. 133. c.), with a beardless limb. Stamens epipetalous (f. 133. b.). Anthers peltate above the middle. Hypogynous scales 5. Placentas adnate to the central column.

16 Lysine'ma. Calyx coloured, many-bracteate; bracteas texture of the calyx. Corolla salver-shaped: with the tube sometimes divided into 5 parts to the base; segments of the limb beardless, bent to the right. Stamens hypogynous. Anthers peltate above the middle. Hypogynous scales 5. Placentas adnate to the central column.

17 Physo'tes. Calyx bractless. Corolla tubular, with an open throat, and a beardless limb. Stamens hypogynous; filaments half adhering to the tube. Anthers with a complete dissepiment. Hypogynous scales 5.


19 Anderso'nia. Calyx coloured, imbricated by 2 or more foliaceous bracteas. Corolla length of calyx; segments of the limb bearded at the base. Stamens hypogynous. Anthers fixed beneath their middle. Hypogynous scales 5. Placentas adnate to the central column.


1 Stryphelia: Cells of ovarium 1-seeded. Pericarp closed, rarely capsular.

1. Stryphelia (from στρυφήλος, strophelos, rough or harsh; from the stiff, compact, harsh habit of the shrubs). B. Br. prod. p. 537. Stryphelia species, Smith.

Linn. syst. Por-ti-cae, Monogynia. Calyx girded by 4 or more bracteas. Corolla elongated, tubular; tube furnished with 5 fascicles of villi near the base inside: segments of the limb revolute, bearded. Filaments exerted. Ovarium 5-celled. Drupe nearly dry, containing a solid bony putamen.—Erect or ascending, branched, smoothish, shrubs. Leaves scattered, on short petioles, mucronate. Flowers axillary, drooping, or divaricate, showy. Peduncles 1-flowered, rarely 2-3-flowered. Hypogynous scales 5, distinct, rarely combined.


2 S. la'ta (B. Br. prod. p. 537.) leaves elliptic, or oblong-lanceolate, flat, glaucous, imbricated, with sebaceous denticulated edges; branchlets downy; stem erect. G. Native of New South Wales, about Port Jackson. Flowers red.


3 S. adsc'ëndens (B. Br. prod. p. 537.) leaves lanceolate, flat, with sebaceous dentilicate margins, glaucous beneath and manifestly striated; stems diffuse, with ascending branches. G. Native of Van Diemen's Land. Flowers scarlet.


4 S. latifolia (B. Br. prod. p. 537.) leaves broadly ovate, acute, imbricated, rather concave above, with sebaceous edges; flowers erectish. G. Native of New South Wales, about Port Jackson. Flowers pink.


5 S. viridiflora (B. Br. prod. p. 537.) leaves obovate-
oblong, obtuse, mucronulate, flat, smooth above, with the margins rather scabrous, and are, as well as the flowers, divaricate. G. Native of New South Wales, about Port Jackson. Andr. bot. rep. 312. Flowers green, with brown anthers.


6 S. tubiflora (Andr. bot. rep. 72.) leaves elliptic or oblong-lanceolate, flat, glaucous, smooth every where, as well as on the margins; branchlets glabrous; flowers coriaceously approximate; peduncles 1-3-flowered. G. Native of New South Wales, about Port Jackson. R. Br. prod. p. 537. Sims, bot. mag. 1297. Flowers pink, with a cream-coloured limb.


7 S. tubiflora (Smith, new holl. 45. t. 14.) leaves linear, ovate, mucronate, rather scabrous above, with revolute edges; flowers drooping. G. Native of New South Wales, about Port Jackson. R. Br. prod. p. 537. Lodd. bot. cab. 1938. Flowers scarlet.


8 S. glaucescens (Siebl. pl. nov. holl. ex Spreng. syst. add. p. 67.) leaves lanceolate, mucronate, quite entire, smooth, finely striated, glaucous; peduncles short, 1-flowered. G. Native of New Holland.

Glaucescent Styphelia. Shrub. Cult. This is a very handsome genus of shrubs. A mixture of one-third sandy loam, and two-thirds sandy peat, answers the species best; and young cuttings, planted in sand under a bell-glass, will strike root.

II. ASTROLOMA (ἀστρολα, astron, a star, and λάμα, lama, a fringe; in reference to the bearded limb of the corolla. R. Br. prod. 538.). Ventenátia species, Cav. Styphélia, Spreng. syst. 1. pp. 657, 658.

Lin. syst. Pentádria, Monogynía. Calyx inbricated by 4 or more bracteas (f. 132. a.). Corolla with a ventricose tube (f. 132. b.), which is doubly longer than the calyx, and furnished with 5 fascicles of hairs near the base inside; limb short, spreading, half bearded. Filaments inclosed, fleshy, broader than the anthers. Ovarium 5-celled. Drupe nearly dry; containing a solid bony putamen.—An erect shrub. Leaves much crowded, acerose. Flowers axillary, erect, with a scarlet tube, and a greenish-yellow limb. Hypogynous disk cup-shaped, entire.


Pine-leaved Stenanthéra. Fl. May, July. Clt. 1811. Shrub 4 to 6 feet. Cult. This is a beautiful shrub when in blossom. A soil composed of one-third very sandy loam, and two-thirds sandy peat, suits it best. The pot in which it is grown should be well drained with shreds, or the mould is apt to get soddened from too much wet. It should not be too much exposed to the sun in summer. Cuttings from the young shoots root readily in sand, under a bell-glass.

III. STENANTHERA (στενός, stenos, narrow; and ἀνθερα, anthera, an anther; the filaments are broader than the anthers, which makes them appear narrow). R. Br. prod. p. 538.


Pine-leaved Stenanthéra. Fl. May, July. Clt. 1811. Shrub 4 to 6 feet. Cult. This is a beautiful shrub when in blossom. A soil composed of one-third very sandy loam, and two-thirds sandy peat, suits it best. The pot in which it is grown should be well drained with shreds, or the mould is apt to get soddened from too much wet. It should not be too much exposed to the sun in summer. Cuttings from the young shoots root readily in sand, under a bell-glass.

IV. MELICHRUS (from μέλιχρος, melichros, honey-coloured; in reference to the colour of the glands of the flowers). R. Br. prod. p. 539.


1 M. rotatus (R. Br. prod. p. 539.) corollas rotate; calyx villous; leaves lanceolate-linear, pilose on both sides and on the margins. G. Native of New South Wales, and of tropical New Holland. Ventenatía procumbéns. Cav. icon. 4. p. 28. t. 349. f. 1. Flowers scarlet.


V. CYATHODES (from κυάθος, kyathos, a cup; and ὀδος, odos, a tooth; in reference to the disk, which is cup-shaped and 5-toothed). R. Br. prod. p. 539.—Cyathodes species, Labill.—Styphelia species, Labill. Solander, and Spreng. Linn. syst. Pentandria Monogyna. Calyx with many bracteas. Corolla funnel-shaped; tube hardly exceeding the calyx, without any fascicles of villi or glans; limb spreading, with or without any beard. Filaments inclosed. Ovarium 5-10-celled. Drupe baccate.—Erect branched shrubs, with the habit of small trees. Leaves striated on the underside. Flowers axillary, erect, or drooping a little, small. Hypogynous disk cup-shaped, 5-toothed.

§ 1. Segments of the corolla bearded; axis simple inside.
1 C. glauca (Labill. nov. holl. l. p. 57. t. 81.) drupe 8-10-celled; leaves crowded at intervals, somewhat verticillate, spreading or divaricate, linear-lanceolate. $\psi$. G. Native of Van Diemen's Land. R. Br. prod. p. 539. Trochocarpus glauca, Spreng. syst. 1. p. 660.

2 C. staminea (R. Br. prod. p. 539.) drupe 5-celled; leaves crowded at intervals, somewhat verticillate, oval, obtuse, awnless, spreading, many-nerved beneath; stem erect. $\psi$. G. Native of Van Diemen's Land.

Stram Cyathodes. Shrub.
3 C. dealbata (R. Br. prod. p. 539.) drupe 2-5-celled; leaves linear, erectly spreading, margined with very short cilia, 5-nerved beneath: nerves all simple. $\psi$. G. Native of Van Diemen's Land.

Whitened Cyathodes. Shrub procumbent.
4 C. Tamei'male (Cham. et Schlecht. in Linnae, l. p. 539.) drupe 5-8-celled; leaves narrow, cuneate-obovate, petiolate, mucronate, many-nerved beneath. $\psi$. G. Native of the Sandwich Islands. Habitat of Leucopogon obovatus, Labill. Cy. Banksii, Gaud. in Freyc. voy. pt. bot. p. 265. is perhaps the same as this. Dr. R. Brown speaks of 2 other species from the Sandwich Islands, having the segments of the corolla naked, while this is bearded.

Tanei'mae's Cyathodes. Shrub or small tree.

§ 2 Segments of corolla beardless; axis usually elevated inside. Lissânté, Spreng. syst. 1. p. 660.

1 C. parvifolia (R. Br. prod. p. 540.) leaves linear-lanceolate, not half an inch long, spreading, margined with very short cilia, 5-nerved beneath: nerves all simple. $\psi$. G. Native of Van Diemen's land.

Small-leaved Cyathodes. Shrub or small tree.

6 C. oxycedrus (R. Br. l. c.) leaves linear, more than half an inch long, spreading, with naked margins, 3-5-nerved beneath: nerves all simple. $\psi$. G. Native of Van Diemen's land. Styphelia Oxycedrus, Labill. nov. holl. l. p. 49. t. 69. Flowers white. Red Cedar-like Cyathodes. Fl. April, June. Ct. 1822. Shrub 6 ft.


8 C. acriosa (R. Br. prod. p. 539. and 540.) leaves linear-spreading, with naked margins, 3-5-nerved beneath: outer nerves pectinately branched. $\psi$. G. Native of Van Diemen's Land.? Styphelia acerësa, Banks and Solander. ms. Ardisia acerësa, Gurrin.


VI. LISSANTHE (from λισσός, lissos, smooth, and ὀδος, odos, a flower). R. Br. prod. p. 540.


§ 1. Calyx bibracteate. Racemes axillary, few-flowered; pedicels bibracteate at the base. Tube of corolla villous inside.
1 L. sâpida (R. Br. prod. p. 540.) racemes 2-5-flowered, recurved; leaves oblong-linear, mucronate, with revolute margins, whitened and striated beneath. $\psi$. G. Native of New South Wales. Lindl. bot. reg. 1275. Hook. bot. mag. t. 3147. Flowers white, tipped with green. The berries are red and acid, and are made into tarts in New South Wales, under the name of cranberries.

2 L. subula'ta (R. Br. l. c.) racemes 4-5-flowered, erect; leaves linear-subulate, half an inch long; branchlets glabrous; drupe 10-striped. $\psi$. G. Native of New South Wales. Subulate-leaved Lissanthe, Fl. April, July. Ct. 1823. Shrub.


§ 2. Calyx bibracteate. Corolla urceolate, having the tube and throat naked. Spikes axillary, few-flowered.
4 L. montâna (R. Br. l. c.) leaves oblong-linear, obtuse, mutic, glaucous beneath. $\psi$. G. Native of Van Diemen's Land.

Mountain Lissanthe. Shrub.

§ 3. Calyx bibracteate. Corolla funnel-shaped, having the throat closed by deflexed villi. Flowers axillary, solitary.
Daphne-like Lissanth. Fl. June, July. Clt. 1818. Shrub. 6 L. cillata (R. Br. l. c.) leaves elliptic-lanceolate, flat, with serrrately ciliated margins, ending each in a pellucid mucrone; limb of corolla roughish. \( \hat{r} \). G. Native of Van Diemen's Land.


Cult. For culture and propagation see Stypheilla, p. 775.

VII. LEUCOPOGON (from λευκός, leucos, white; and πογός, pogon, a beard; the limb of the corolla is bearded with white hairs). R. Br. prod. p. 541. Stypheilla, Spreng. syst. 1. p. 656, 657, 658, and 659.


1. L. lanceolatus (R. Br. prod. p. 541.) spikes nodding, aggregate; ovaries 2-celled; drupes oval; leaves lanceolate, flat, 3-nerved; branchlets glabrous. \( \hat{r} \). G. Native of New South Wales, on mountains. Sweet. Fl. austral. t. 47. Stypheilla lanceolata, Smith, new holl. p. 49. exclusive of the synonyms. Stypheilla parviflora, Andr. bot. rep. 287. Flowers white.


2. L. Malaya nus (Jack, mal. misc. vol. 1. Wall. in Roxb. fl. ind. 2. p. 301.) spikes axillary, many-flowered, erect, short; drupes globose, 5-celled; leaves lanceolate, mucronate, nearly veinless, glaucous beneath. \( \hat{s} \). S. Native of the plains of Singapore, abundant; where it is called by the Malays Mentata. A small, branching, dry shrub, exhibiting the peculiar habit of the family. Corollas funnel-shaped, downy, having the segments bearded above beyond the base. The discovery of this species is remarkable as forming an exception to the general geographical distribution of the order Epacridae, a family almost exclusively confined to Australia, or at least to the southern hemisphere. Singapore, situated at the extremity of the Malay peninsula, and forming as it were the connecting link between continental or Western India and the plains of the great Eastern Archipelago, partakes of this character in its Flora, which exhibits many remarkable points of coincidence with the Flora of both regions. A resemblance has been observed between its productions and those of the northern frontier of Bengal, on the one hand, and of the Moluccas on the other, while the present plant connects it with the still more distant range of New Holland.

Malay Leucopogon. Shrub 3 feet.

3. L. Australianus (R. Br. l. c.) spikes erect; drupes depressed, globose, 5-celled; leaves linear-lanceolate, more than an inch long, 3-5-nerved, with recurved smooth margins. \( \hat{r} \). G. Native of the south coast of New Holland and Van Diemen's Land. Flowers white.

Southern Leucopogon. Shrub.

4. L. Richei (R. Br. l. c.) spikes erect, many-flowered, a little shorter than the leaves; drupes ovate, 5-celled; leaves glabrous, oblong-lanceolate, hardly an inch long, broadest beyond the middle, 3-5-nerved, convex above, with subrecurved margins. \( \hat{r} \). G. Native of New South Wales, the south coast of New Holland, and Van Diemen's Land. L. polystasychus, Lodd. fl. cab. t. 1436. L. apiculatus, Smith in Rees. cyc. L. parviflorus, Lindl. bot. reg. 1560. Stypheilla Richei, Labill. nov. holl. 1. p. 44. t. 60. Stypheilla parviflora, Andr. bot. rep. 287. Stypheilla Gnidium Vent. malm. t. 23. Flowers white.


5. L. affinis (R. Br. l. c.) spikes erect; drupes oval, 2-3-celled; leaves long-lanceolate, more than an inch long, flat. \( \hat{r} \). G. Native of Van Diemen's Land. Flowers white.

Allied Leucopogon. Shrub.

6. L. interruptus (R. Br. l. c.) spikes nearly terminal; leaves elliptic, spreading, many-nerved, \( \frac{1}{2} \) inch long, crowded in whorles. \( \hat{r} \). G. Native of the south coast of New Holland. Lodd. bot. cab. 1451. Flowers white.


7. L. cyphus (Labill. sert. caled. p. 36 t. 39.) spikes axillary, erect; segments of the corolla bearded with rufous hairs; leaves an inch long, oblong-lanceolate, rufous, concave. \( \hat{r} \). G. Native of New Caledonia. Flowers furnished each with an orbicular, lacernately ciliate scale, beside 2 opposite boat-shaped ones above it.

Boat-leaved Leucopogon. Shrub 1 to 2 feet.

8. L. verticillatus (R. Br. l. c.) spikes nearly terminal, aggregate, nodding while bearing the fruit; drupes 5-celled; putamen pentagonal; leaves oblong-lanceolate, attenuated at the apex, disposed in interrupted whorles, 2 to 4 inches long. \( \hat{r} \). G. Native of the south coast of New Holland. Flowers white.

Whorled-leaved Leucopogon. Shrub.

§ 2. Spikes axillary, but sometimes terminal. Flowers three or more together. Calyx and bracteas coloured. Drupe nearly dry. Leaves never cordate.

9. L. apiculatus (R. Br. prod. p. 542.) spikes terminal, rather aggregate, 5-7-flowered; bracteas lanceolate; leaves lanceolate-oblong, erect, rather concave, with smooth margins, ending each in a callous point; drupe crustaceous, depressedly turbinate, shorter than the calyx. \( \hat{r} \). G. Native of the south coast of New Holland. Flowers white.

Var. \( \alpha \), branchlets and leaves glabrous.

Var. \( \beta \), branchlets and leaves pubescent. Perhaps a distinct species.

Apiculatus-leaved Leucopogon. Shrub.

10. L. polystachys (R. Br. l. c.) spikes axillary or terminal, aggregate, 7-10-flowered; leaves linear-lanceolate, mutic, convexasly concave; branchlets glabrous, twigg; drupes dry, oval, depressed at the apex. \( \hat{r} \). G. Native of the south coast of New Holland. Flowers white.


11. L. multiflorus (R. Br. l. c.) spikes axillary, shorter than the leaves; leaves lanceolate, a little acuminate, mucronate, imbricated, rather convex beneath, with smooth edges; calyx and bracteas smooth; leaves linear-oblong, obtuse, mutic, smooth, rather convex above, with somewhat recurved denticulated edges; branchlets glabrous; drupes oblong. \( \hat{r} \). G. Native of the south coast of New Holland. Flowers white.

Many-flowered Leucopogon. Shrub.

12. L. Rudercauldis (R. Br. l. c.) spikes nearly terminal, aggregate, 4-5-flowered; calyxes and bracteas smoothish; leaves linear-oblong, obtuse, mutic, smooth, rather convex above, with somewhat recurved denticulated edges; branchlets glabrous; drupes oblong. \( \hat{r} \). G. Native of the south coast of New Holland. Flowers white.


5 G
13. **L. villus**us (Br. l. c.) spikes nearly terminal, aggregate; leaves linear-oblong, bluish, mucilaginous, erectly spreading, villos on both surfaces as well as on the branches, with denticated subrecurved margins. \( \varphi \). G. Native of the south coast of New Holland. Flowers white. Very nearly allied to *L. ruifikacaitis."

**Villos Leucopogon.** Shrub.

14. **L. obovatus** (Br. l. c.) spikes terminal, nearly simple; leaves obovate-oblong, obtuse, mucronulate, with sub-recurved margins; drupes nearly globose, 5-celled. \( \varphi \). G. Native of New Holland, on the south coast. Stypheia obovata, Labill. nov. holl. 1. p. 48. t. 67. Flowers white.


15. **L. revolutus** (Br. l. c.) spikes nearly terminal, aggregate, 4-5-flowered; calyxes and bracteas clothed with fine down; leaves moderately spreading, linear-oblong, obtuse, mucilaginous, tipped by a callous obtuse point, convex and scabrous above, linear and glabrous beneath, with recurved naked margins; bracteas clothed with minute down; drupes dry, 5-celled, obovate. \( \varphi \). G. Native of the south coast of New Holland. Flowers white.

**Revolute-leaved Leucopogon.** Shrub.

16. **L. margaridens** (Br. l. c.) spikes axillary, usually 3-flowered; leaves moderately spreading, linear-oblong, obtuse, mucilaginous, with recurved smooth margins; drupes 2-celled, dry and compressed above. \( \varphi \). G. Native of New Holland, within the tropic. Flowers white.

**Pearl-toothed Leucopogon.** Shrub.

17. **L. muticus** (Br. l. c. prod. p. 543.) spikes axillary, erect, 3-6-flowered; leaves linear-oblong, obtuse, rather mucilaginous, erectly spreading, with smooth rather recurved margins; drupes 5-celled, angular, glabrous. \( \varphi \). G. Native of New South Wales, in rocky situations. Flowers white. Very nearly allied to the following.

**Awnless-leaved Leucopogon.** Shrub.

18. **L. trichocarpus** (Br. l. c.) spikes axillary, nodding a little, 3-flowered; leaves linear-oblong, obtuse, mucronulate; drupes 5-celled, angular, pilose. \( \varphi \). G. Native of Van Diemen's Land. Stypheia trichocarpa, Labill. nov. holl. 1. p. 47. t. 66. Flowers white.

**Hair-fruited Leucopogon.** Shrub 3 feet.

19. **L. ericoides** (Br. l. c.) spikes axillary, approximate, 3-4-flowered; leaves oblong-linear, moderately spreading, mucronate, with recurved margins, rather scabrous above; bracteas mucilaginous; drupes dry, angular. \( \varphi \). G. Native of New South Wales and Van Diemen's Land. Stypheia ericoides, Smith, nov. holl. p. 48. E'pacris spuria, Cav. icon. 4. p. 27. t. 347. f. 1. Flowers reddish.

**Heath-like Leucopogon.** Fl. ? Clt. 1815. Shrub 4 to 6 feet.

20. **L. tropips**us (Br. l. c.) spikes axillary, usually 3-flowered, pedunculate; leaves lanceolate-linear, setaceous mucronate, smooth above, with revolute margins, which are dentilated from without; bracteas cupulately. \( \varphi \). G. Native of the south coast of New Holland

**Allied Leucopogon.** Shrub.

21. **L. atenuatus** (Cunningh. in Field's New South Wales, p. 341.) peduncles very short, erect, usually 1-flowered; leaves ovate-lanceolate, moderately spreading, rather convex, striated, setaceous mucronate, when young imbricated and ciliately dentilated. \( \varphi \). G. Native of New South Wales, on hills at Cox's River.

**Attenuated-leaved Leucopogon.** Shrub.

22. **L. virga**us (Br. l. c.) spikes terminal and axillary, almost aggregate, few-flowered; calyxes and bracteas rather membranous; leaves linear-lanceolate, attenuated at the apex, very acute, convexly concave, imbricated and spreading, with ciliated margins; bracteas glabrous. \( \varphi \). G. Native of New South Wales, south coast of New Holland, and Van Diemen's Land. Stypheia virgata, Labill. nov. holl. 1. p. 46. t. 64. Flowers white.

**Twiggy Leucopogon.** Fl. May, July. Clt. 1824. Shrub 2 feet.

23. **L. collins**us (Br. l. c.) spikes terminating the short lateral branches; lower bracteas sheathed a little, foliaceous, equalling the calyx in length; leaves oblong-linear, acutish, mucilaginous, smooth and rather convex above, with recurved dentilicate edges. \( \varphi \). G. Native of Van Diemen's Land. Stypheia collins, Labill. nov. holl. 1. p. 47. t. 65. Flowers white.

**Hill Leucopogon.** Fl. May, June. Clt. 1824. Shrub 1 foot.


**§ 3. Spikes axillary and terminal. Leaves cordate. Calyxes and bracteas membranous and foliaceous.**

25. **L. amplexicaulis** (Br. l. c.) spikes axillary and terminal, spreading, pedunculate, exceeding the leaves; leaves cordate, stem-clasping, mucilaginous, clothed with minute down beneath; with recurved margins, which are as well as the branches villos; drupes lenticular, 2-celled. \( \varphi \). G. Native of New South Wales. Stypheia amplexicaulis, Rudge, in Lam. trans. 8. p. 292. t. 8. good. Flowers white.

**Stem-clasping-leaved Leucopogon.** Clt. 1815. Shrub.

26. **L. alternifolius** (Br. l. c.) spikes axillary and terminal, few-flowered; leaves alternate, reiform, stem-clasping, acute, mucilaginous, a line and a half long, and as well as the branches glabrous; drupes crustaceous, lenticular, 2-celled. \( \varphi \). G. Native of the south coast of New Holland. Flowers white.

**Alternate-leaved Leucopogon.** Shrub.

27. **L. distans** (Br. l. c. prod. p. 544.) spikes terminal, aggregate, flexuous; flowers distant; leaves ovate, subcordate, divericate, mucilaginous, one line long, convex above and downy beneath; drupes crustaceous, 5-celled, obovate, depressed. \( \varphi \). G. Native of the south coast of New Holland. Flowers white.

**Distant-flowered Leucopogon.** Shrub.

28. **L. reflexus** (Br. l. c. prod. p. 544.) spikes terminal, crowded, few-flowered; flowers imbricated; leaves ovate, almost cordate, divericate, mucilaginous, a line long, convex above, and concave beneath, pilose, lined; drupes crustaceous, 5-celled. \( \varphi \). G. Native of the south coast of New Holland. Flowers white.

**Reflexed-leaved Leucopogon.** Shrub.

29. **L. glabellus** (Br. l. c. prod. p. 544.) spikes terminal, almost solitary; bracteas foliaceous, and are as well as the calyxes glabrous; leaves alternate, broadly cordate, acute, mucilaginous, flatish, and are, as well as the branches, glabrous. \( \varphi \). G. Native of the south coast of New Holland. Flowers white.

**Smooth Leucopogon.** Shrub.


30. **L. microphyllus** (Br. l. c.) spikes crowded, few-flowered; leaflets of calyx acuminated, semi-foliaceous; bracteas foliaceous, nerved; leaves oval, obtuse, mucilaginous, flat, of the same colour on both surfaces; drupes crustaceous, 1-2-celled.
Flowers. bracteas leaves leaves leaves leaves.  1. G. Native of the south coast of New Holland. Flowers white.

**Leucopogon.**

Flowers white.

**Striated-leaved Leucopogon.** Fl. May, Aug. Clt. 1820. Shrub 2 to 3 feet.

35 L. Nervosus (Br. l. c.) spikes crowded, few-flowered; bracteas and calyces foliaceous and quite glabrous; leaves elliptic, imbricate, on short petioles, mucic, flat above, and rather convex beneath, with elevated nerves; branchets downy.  1. G. Native of the south coast of New Holland. Flowers white.

Nerved-leaved Leucopogon. Shrub.

36 L. Carinatus (Br. prod. p. 545.) spikes solitary or aggregate; bracteas and calyces foliaceous, quite glabrous; leaves lanceolate, mucic, imbricate, flat above, and keeled beneath, with the lateral nerves obsolete, and the margins dentilicate; branchets downy.  1. G. Native of the south coast of New Holland. Flowers white.

Keeled-leaved Leucopogon. Shrub.

37 L. Assimilis (Br. prod. p. 545.) spikes aggregate; leaves lanceolate-linear, imbricated, adpressed, mucic, and striated beneath, of the same colour on both surfaces, with dentilicate margins; ovary 5-celled.  1. G. Native of New Holland, on the south coast. Flowers white.

Similar Leucopogon. Shrub.

38 L. Cucullatus (Br. l. c.) spikes aggregate, 4-6-flowered; bracteas foliaceous; leaves ovate, obtuse, mucic, cucullate, imbricata, sessile, lined, with naked margins; drupes 5-celled.  1. G. Native of the south coast of New Holland. Flowers white.

Cuculate-leaved Leucopogon. Shrub.

§ 5. Peduncles axillary, 2-flowered, or 1-flowered every where from abortion: when this is the case, the calyx is many-bracteate. Drupes dry.

39 L. Pendulus (Br. prod. p. 545.) peduncles usually 2-flowered, recurved; tube of corolla equal in length to the calyx; leaves spreading, linear-lanceolate, flat, 3 lines long, each ending in a pungent point, with smooth margins.  1. G. Native of New South Wales. Flowers white.

Pendulous-flowered Leucopogon. Shrub.

40 L. Biflorus (Br. l. c.) peduncles 2-flowered, recurved; tube of corolla equal in length to the calyx; leaves spreading, linear-lanceolate, flat, 3 lines long, each ending in a pungent point, with smooth margins.  1. G. Native of New South Wales. Flowers white.

Two-flowered Leucopogon. Shrub.

41 L. Setiger (Br. l. c.) peduncles 2-flowered, recurved, longer than the calyx; leaves spreading, lanceolate-linear, acuminate, half an inch long, ending in a setaceous pungent mucrone, with recurved oblong dentilicate margins.  1. G. Native of New South Wales. Flowers white.

Bristle-bearing Leucopogon. Fl.? Clt. 1824. Shrub 2 to 3 feet.

42 L. Acuminatus (Br. l. c.) peduncles very short, erect, usually 2-flowered; leaves erectis, linear-lanceolate, very acute, flat, ending in a setaceous mucrone, with scabrous dentilicate margins.  1. G. Native of New Holland, within the tropic. Flowers white.

Acuminated-leaved Leucopogon. Shrub.

43 L. cuspidatus (Br. l. c.) peduncles very short, erect, 1-2-flowered; leaves moderately spreading, obovate-oblong, acute, cuspidate, flat, with scabrous dentilicate edges.  1. G. Native of New Holland, within the tropic. Cuspidate-leaved Leucopogon. Shrub.

44 L. Imbricatus (Br. l. c.) peduncles very short, erect, 1-2-flowered; leaves imbricate, oval, obtuse, cuspidate, rather concave, with smooth toothless edges.  1. G. Native of New Holland, within the tropic. Flowers white.

Imbricated-leaved Leucopogon. Shrub.

45 L. Ruscifolius (Br. l. c.) peduncles very short, erect, usually 2-flowered; leaves erectis, spreading, obovate-elliptic, acute, rather concave, mucronate, with smooth obliquely dentilicate edges.  1. G. Native of New Holland, within the tropic. Flowers white.

Ruscous-leaved Leucopogon. Shrub.

46 L. Faecifolius (Br. prod. p. 546.) peduncles very short, erect, usually 2-flowered; leaves linear-lanceolate, moderately spreading, flat, ending each in a very short cally mucrone, with smooth margins; stem arborescent.  1. G. Native of New Holland, within the tropic. Flowers white. Fen-flowered Leucopogon. Shrub.

47 L. Leptospermoides (Br. prod. p. 546.) peduncles very short, erect, usually 2-flowered; leaves linear-lanceolate, moderately spreading, flat, ending each in a very short cally mucrone, with smooth denticulated margins; flower white.  1. G. Native of New Holland, within the tropic. Flowers white.

Leptospermum-like Leucopogon. Shrub.

48 L. Roundipulius (Br. l. c.) peduncles very short, erect, 1-2-flowered; leaves roundish or obovate, petiolate, spreading moderately, flat, mucronate, with pellucid finely ciliated edges.  1. G. Native of New South Wales. Flowers white.

Round-leaved Leucopogon. Shrub.


50 L. Fastigiatus (Sieb. l. c.) leaves lanceolate, cuspidate, serrulate at the apex, striate; calyx glabrous; flowers axillary, almost solitary.  1. G. Native of New Holland. Staphylinia fastigiata, Spreng. l. c. Fastigiata-Leucopogon. Shrub.
VIII. MONOTOC'A (from πύρος, monos, alone, and τόκος, tokos, a birth; in reference to the fruit being one-seeded). R. Br. prod. p. 546.


3 M. linea' a (R. Br. l. c.) spikes axillary, few-flowered, nodding, pedunculate; leaves oblong, and often obovate, acute, flatish, mucronate. ü. G. Native of Van Diemen's Land. Styphelia glauca, Labill. nov. holl. l. p. 45. t. 61. Where the plant is represented as having erect spikes, and a 5-celled ovary.

VIII. MONOTOC'A. IX. ACROTRICHE.


§ 2. Bracteas extending, permanent. Shrubs with hermaphrodite flowers.

4 M. scop'era (R. Br. l. c.) spikes axillary, few-flowered, nearly sessile, nodding; leaves oblong-linear, with revolute edges; stem erect. ü. G. Native of New South Wales. Styphelia scoparia, Smith, new holl. p. 48.


5 M. empet'rifolia (R. Br. l. c.) spikes axillary, nodding; 2-3-flowered; leaves oblong-oval, mucronate, divaricate, convex above, white and striated beneath; stem prostrate. ü. G. Native of Van Diemen's Land. Emptetrum-leaved Monotoca. Shrub.

Cult. For culture and propagation see Leucopogon, above. The pots in which the species are grown require to be well drained with shers.

IX. ACROTRICHE (from ἀκρος, akros, the uttermost, and ἁπλος, thrinc, hirsch, a hair; the tips of the corolline segments are bearded). R. Br. prod. p. 547. Styphelia species. Spreng.


2 A. aggrega'ta (R. Br. l. c.) leaves oblong-lanceolate, rather concave, glaucous beneath, with smooth margins. ü. G. Native of New Holland, within the tropic. Aggregated Acrotriche. Shrub 1 foot.

3 A. ra'miflora (R. Br. l. c.) leaves linear-lanceolate, mucronate, divaricate, of a different colour beneath, nerved, with recurved margins; spikes on the branches. ü. G. Native of New Holland, on the south coast. Ramiflorous Acrotriche. Shrub 1 foot.

4 A. serrulata (R. Br. l. c.) leaves linear-lanceolate, cuspitate, spreading, pilose or smoothish, with serrately ciliated edges; spikes axillary. ü. G. Native of the south coast of New Holland, and Van Diemen's Land. Serrulato-leaved Acrotriche. Shrub 1 foot.

5 A. pula'(a (R. Br. l. c.) leaves ovate lanceolate, acuminate, mucronate, flatish, and are as well as the branches divaricate; spikes axillary. ü. G. Native of New Holland, on the south coast. Spreading Acrotriche. Shrub.


7 A. corda'ta (R. Br. l. c.) leaves cordate, flat, striated below; flowers axillary, twin or solitary. ü. G. Native of New Holland, on the south coast. Styphelia cordata, Labill. nov. holl. l. p. 46. t. 63. Perhaps belonging to a different genus.
Epacridiæ. X. Trochocarpæ. XI. Decaspæra. XII. Pentachondra. XIII. Needhamia. XIV. Oligarrhena, &c. 781

Cordate-leaved Acrotiche. Fl. April, July. Cht. 1833. Shrub 1 foot.]

8. A. depresse'sa (R. Br. l. c.) leaves ovate, rather cordate, mucronate, divericate, convex above, and veiny beneath; stem decussate; spikes on the branches. 9. G. Native of New Holland, on the south coast.

Depressed Acrotiche. Shrub depressed. Cult. For culture and propagation see Leucopogon, p. 780.

X. TROCHOCARPÆ (from τροχός, trochos, a wheel, and κάρπος, karpos, a fruit; in reference to the putamen of the fruit, which is wheel-shaped and 10-lobed). R. Br. prod. p. 518.

Linn. syst. Pentandria, Monogynia. Calyx bracteate. Corolla funnel-shaped; limb spreading, bearded. Ovarium 10-celled. Drupe baccate, containing a wheel-shaped, 10-lobed putamen, which is at length divisible into as many parts.—A small glabrous tree, with very hard wood. Leaves scattered, petiolate, nervet very like those of a species of Lauræus. Spikes slender, terminal, and axillary, solitary or aggregate. Flowers small, white. Hypogynous disk cup-shaped, 5-celled. Drupe depressedly globose, smaller than a pea. The genus approaches Decæspæra in character and habit.


XI. DECA'SPÆRA (from είκος, deca, ten, and σπόρα, spora, a seed; the fruit contains 10 pyrenes or seeds). R. Br. prod. p. 548.


1 D. DISTICA (R. Br. prod. p. 548.) leaves lanceolate, very acute, flat, nervet beneath, 8 times longer than the petals; branches glabrous. 9. G. Native of Van Diemen's Land. Cyathodes Disticha, Labill. nov. holl. 1. p. 58. t. 82.

Distich-leaved Decaspæra. Shrub 4 to 6 feet.

2 D. THYMIFOILÀ (R. Br. prod. p. 548.) leaves ovate, acutish, mutic, hardly 4 times longer than the petals, obliquely 3-nerved beneath; branches downy. 9. G. Native of Van Diemen's Land.

Thymæ-leaved Decaspæra. Shrub. Cult. For culture and propagation see Leucopogon, p. 780.

XII. PENTACHO'NDRA (from πέντε, pente, five, and χόρτος, chórtos, a grain; in reference to the berry containing 5 pyrenes or seeds). R. Br. prod. p. 549.


1 P. INVOLUCRATA (R. Br. prod. p. 549.) filaments exerted; calyxes ciliated, furnished with 8 bractes; leaves elliptic-lanceolate, flatish, many-nerved; branches downy; stem erect.


Involucrated-flowered Pentachondra. Shrub.

2 P. ru/milsa (R. Br. l. c.) stamens inclosed; calyx furnished with 4 bractes; leaves nearly elliptic, 5-nerved, with naked margins; branches glabrous; stem prostrate, much branched. Ovarium 5-celled. Drupe dry. Leaves opposite.—A small erect shrub. Leaves minute, adpressed. Spikes terminal, erect, solitary; bractes extending, foliaceous. Flowers white. Hypogynous disk saucer-shaped.


Dwarf Needhamia. Shrub. Cult. For culture and propagation see Astroloma, p. 775.


Dwarf Needhamia. Shrub. Cult. For culture and propagation see Astroloma, p. 775.

XIV. OLIGARRHENÆ (from ὀλίγος, oligos, few, and ἀίγος, a'igos, a G. Native of New Holland, on the south coast. Small-flowered Oligarrhena. Shrub. Cult. See Astroloma, p. 775, for culture and propagation.

Tribe II.

Epacridiæ. (The genera contained in this tribe agree with Epacris in many particulars). Cells of ovary many-seeded. Fruit capsular.


Linn. syst. Pentandria, Monogynia. Calyx coloured, many-bracteate; bractes of the same texture as the calyx. Corolla tubular; limb beardless. Stamens epipetalous. Anthers peltate above the middle. Hypogynous scales 5. Capsule having the placenæ adnate to the central column.—Small branched, usually glabrous shrubs. Leaves scattered, petiolate or simple at the base. Flowers axillary, white or purplish, usually disposed in leafy spikes.
**Leaves cordate.**

1. *E. purpurea* (R. Br. prod. p. 550.) segments of calyx acuminate, about equal in length to the tube of the corolla; leaves cucullate, nearly sessile, ending each in a recurved mucrone, which exceeds the base of the leaf; floral leaves equaling the corollas in length. \( \tau \). G. Native of New South Wales. E. \( \pi \) unguens, Sims, bot. mag. t. 814. Epacris attenuatum, Lindl. Lodd. bot. cab. t. 38. Corollas purplish.

*Var. \( \beta \) radiata* (Loddl. bot. cab. 876.) flowers red.


**Small-leaved Epacris.** Fl. April, June. Ch. 1822. Shrub 1 to 2 feet.

3. *E. siparia* (R. Br. l. c.) segments of calyx setaceous acuminate, about equal in length to the tube of the corolla; leaves flat, acuminate, spreading. \( \tau \). C. Native of New South Wales.

**River-side Epacris.** Shrub.

5. *E. grandiflora* (Smith, exot. bot. 75. t. 59. Sims, bot. mag. t. 982.) corollas cylindrical, 4 times longer than the calyx; flowers pendulous; leaves flat, acuminate. \( \tau \). G. Native of New South Wales. Lodd. bot. cab. 21. Epacris longiflora, Cav. icon. 4. p. 25. t. 344. Flowers scarlet and white.


6. *E. campanulata* (Lodd. bot. cab. 1925.) leaves ovoate, reflexed; flowers axillary, the whole forming a spike; corolla twice or thrice longer than the calyx, campanulate. \( \tau \). G. Native of Van Diemen's Land. Corollas red.

*Var. \( \alpha \) alba* (Lodd. bot. cab. 1931.) Flowers white. **Campanulata-flowered Epacris.** Fl. March. Ch. 1830. Shrub 1 to 2 feet.

7. *E. apiculata* (Cunningh. in Field's New South Wales, p. 340.) calycine segments lanceolate, acuminate, about equal in length to the tube of the corolla; leaves cucullate, hairy, sessile, arched at the base; superior leaves imbricated, ending each in a callous obtuse point; branches downy. \( \tau \). G. Native of New South Wales; on boggy moist declivities, in the ravines of King's Table Land.

**Apiculata-flowered Epacris.** Fl. April, July. Ch. 1823. Shrub.

* * Leaves simple at the base, not cordate.**

8. *E. recurvifolia* (R. Br. prod. p. 550.) flowers scattered, pendulous; leaves elliptic-lanceolate, petiolar, acuminate; corollas cylindrical, having the tube twice longer than the calyx. \( \tau \). G. Native of Van Diemen's Land.

**Ruscus-leaved Epacris.** Fl. April, June. Ch. 1824. Shrub.

9. *E. rivulina* (Sieb. pl. nov. holl. ex Spreng. syst. add. p. 64.) leaves almost sessile, ovate, acuminate, reflexedly spreading; calyxes acute, about equal in length to the corolla. \( \tau \). G. Native of New Holland.

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**Rienlet Epacris.** Shrub.

10. *E. impressa* (Labil. nov. holl. l. p. 43. t. 55.) flowers pendulous, spicate; having all one way; leaves lanceolate, nearly sessile, attenuated at the apex, mucronate, with scabrous edges; peduncles 3 times shorter than the calyx; corollas cylindrical; tube of corolla prismatic, twice longer than the acute ciliate calyx. \( \tau \). G. Native of the south coast of New Holland, and Van Diemen's Land. R. Br. prod. p. 551. Sweet, fl. austr. t. 4. Lodd. bot. cab. 1931. Flowers beautiful crimson.

**Impressed Epacris.** Fl. April, July. Ch. 1824. Shrub 1 to 3 feet.

11. *E. variabilis* (Lodd. bot. cab. 1818.) leaves ovate, sessile, tapering to the apex; corolla tubular, 3 or 4 times longer than the calyx. \( \tau \). G. Native of Van Diemen's Land. Flowers drooping, pale red or blush, spicate. Like *E. impressa.*


12. *E. nivalis* (Lodd. bot. cab. 1821. Lindl. bot. reg. 1531. Graham, in bot. mag. 3253.) leaves ovate-lanceolate, spreading much, nakedish, nerved beneath, attenuated at the apex, mucronate, with scabrous margins; flowers axillary, solitary, secund; disposed in a leafy raceme or spike; tube of corolla campanulate, much longer than the segments of the calyx, which are ciliated, as well as the bracteas. \( \tau \). G. Native of New Holland. Flowers white.

**Snowy Epacris.** Fl. April, May. Ch. 1829. Shrub 2 to 3 feet.

13. *E. cerifolia* (Graham, in bot. mag. t. 3243.) leaves lanceolate, spreading much, nakedish, attenuately mucronate at the apex, with scabrous edges; flowers spreading, axillary, solitary, secund; tube of corolla ovate, exceeding the acute ciliated segments of the calyx. \( \tau \). G. Native of Van Diemen's Land. Flowers white, collected near the extremities of the branches, much shorter than those of *E. nivalis.*

**Wax-leaved Epacris.** Fl. April, May. Ch. 1831. Shrub 1 to 3 feet.

14. *E. sparsa* (R. Br. prod. p. 551.) flowers unknown; peduncles scattered, about equal in length to the acute calyx; leaves oblong-lanceolate, petiolar, mucronate, veinless. \( \tau \). G. Native of New South Wales. Flowers white.

**Scattered-flowered Epacris.** Shrub.

15. *E. kiinda* (Sieb. l. c.) leaves ovate-oblong, bluish, nearly sessile, cartilaginous, spreading, keeled; calyxes obtuse, about equal in length to the tube of the corolla. \( \tau \). G. Native of New Holland.

**Stiff Epacris.** Shrub.

16. *E. obtusifolia* (Smith, exot. bot. p. 77. t. 40.) flowers nodding; leaves lanceolate, erect, a little imbricated, ending in a bluntness callous point; segments of the calyx obtuse, length of the tube of the corolla; stamens inclosed. \( \tau \). G. Native of New South Wales, south coast of New Holland, and Van Diemen's Land. R. Br. prod. p. 551. Lodd. bot. cab. 293. Flowers white.

**Bulbin-leaved Epacris.** Fl. April, June. Ch. 1804. Shrub 2 to 3 feet.

17. *E. heteromea* (Labil. nov. holl. l. p. 42. t. 56.) leaves elliptic-lanceolate, acuminate, rather concave, striated beneath; segments of calyx very acute, naked, length of tube of the...
corolla; stamens inclosed; style glabrous; branches hairy.

G. Native of Van Diemen's Land, and of New Holland.

Variable-stamened Epacris. Fl. May, June. Clt. 1825. 3 feet.

22 E. lucidoi (Br. prod. p. 551.) leaves lanceolate, acuminate, to 2.5 cm. long; corolla white; flowers white. Clt. 1825. 2 to 3 feet.

19 E. lanuginosa (Labill. nov. holl. 1. p. 42. t. 57.) leaves ovate, acute, acuminate, flat, obtuse; flowers white. Clt. 1825. 2 feet.

Woolly Epacris. Shrub 2 feet.

21 E. oonteseflora (Cunningh. in Field's New South Wales, p. 340.) leaves elliptic-lanceolate, acuminated, cuneately concave, 2-nerved, mucronate, petiolate, with ciliated margins; base subulate, hairy; corolla cylindrically ventricose, with the tube exserted; calyx, which is very acute. G. Native of New South Wales, in boggy moist declivities on the King's Table Land. Nearly allied to E. lanuginosa, Labill.


21 E. myrthiflora (Labill. nov. holl. 1. p. 41. t. 55.) leaves ovate, acute, mucronulate, flat, thick; flowers to 3 cm. long, in length to the corolla; calyx segments acutish, naked, length of tube of the corolla; bracteas bluish; stamens inclosed. G. Native of Van Diemen's Land. R. Br. prod. 551.

Myrtle-leaved Epacris. Shrub.

22 E. semivillifolia (R. Br. prod. 551.) leaves ovate, acute; flowers to 1.5 cm. long, in length to the corolla; calyx segments acutish, naked, length of tube of the corolla; bracteas bluish; stamens inclosed. G. Native of Van Diemen's Land.

Wild-Thyme-leaved Epacris. Shrub.

23 E. exsata (R. Br. prod. 551.) leaves lanceolate, acute, erect, flat above, and rather convex beneath; calyx segments bluish, equaling the tube in length; stamens clearly exerted. G. Native of Van Diemen's Land. Flowers white.

Exsated-stamened Epacris. Fl. April, July. Clt. 1812. Shrub 1 to 3 feet.

24 E. cressiflora (R. Br. l. c.) leaves ovate or obovate, obtuse, mutic, flat, cartilaginous, acute at the base; calyxes pedunculate, with woolly margins; stem procumbent, with ascending branches. G. Native of New South Wales.

Thick-stemmed Epacris. Shrub procumbent.

25 E. mucronulata (R. Br. prod. p. 552.) leaves lanceolate, very acute, erectly spreading, ending each in a pungent, plumuloid mucron; calyx segments acute, with naked margins. G. Native of Van Diemen's Land. Flowers red.


Cult. All the species of this genus are delicate and handsome small shrubs; and many of them, on that account, are cultivated by nurserymen and florists. A sandy peat soil suits them best, and the rougher and more turfy it is, the better the plants will thrive. They should be always shifted into fresh pots and mould just before they are placed out of doors for the summer from the green-house, as the roots become matted, and being so very fine, the hot sun against the pots is apt to destroy the points, and thus often kills the plants altogether. Cuttings taken from the tips of young shoots, and planted in pots filled with sand, with a bell-glass placed over them, either in autumn, winter, or spring, will readily strike root; but they will not strike so freely in summer. When the cuttings are rooted, they should be potted singly in small pots, and set in a close frame for some time, and hardened off to the air only by degrees.

XVI. LYSINEMA (from λυσις, lysis, a freeing, and ρητη, riηη, a filament; in reference to the stamens being hypogynous, and therefore free from the corolla, not as in Epacris epipetalous). R. Br. prod. p. 552.


XVII. PRIONOTES (from πριόν, prior, a saw, and ος ονος, ou stos, an ear; in reference to the serrated leaves). R. Br. prod. p. 552.

EPACRIDEA. XVIII. Cosmelia. XIX. Andersonia. XX. Ponceletia. XXI. Sprengelia.

1 P. cerinthoides (R. Br. prod. p. 553.). G. Native of Van Diemen’s Land. Epacris cerinthoides, Labill. nov. holl. 1. p. 43. t. 59.

Cerinthe-like Prionotes. Shrub 4 to 5 feet.

Cult. This is an elegant and delicate shrub, bearing showy pendulous flowers. For culture and propagation, see Epacris, p. 783.

XVIII. COSMELIA (from xosmelos, Kosmeo, to adorn; beauty of flowers.) R. Br. prod. p. 553.


Red-flowered Cosmelia. Fl.? Clt. 1826. Shrub 1 to 2 feet.

Cult. See Epacris, p. 783. for culture and propagation.

XIX. ANDERSONIA (named in memory of William Anderson, a surgeon of the Royal Navy, who accompanied Captain Cook; he paid great attention to botany. Descriptions of the genera of Van Diemen’s Land plants, written by him, are still in the Banksian Library. The genus is also intended to commemorate the late Alexander Anderson, formerly Director of the Botanic Garden at St. Vincent; and William Anderson, the present Curator of the Apothecaries’ Botanic Garden at Chelsea.) R. Br. prod. p. 553.

Lin. syst. Pentandria, Monogyenia. Calyx coloured, imbricated by 2 or more foliaceous bracteas. Corolla length if feally; segments of the limb bearded at the base. Stamens hypogynous: anthers fixed beneath the middle. Hypogynous scales 5, sometimes connate. Capsule with the placentas adnate to the central column.—Small squarrose shrubs, having the branches not annulated while naked. Bases of leaves succulente, half sheathing. Flowers terminal, spicate, or solitary, erect. Placentas short, rising from the bottom of the capsule. Seeds few when mature, erect.

* Flowers biflbracteate, spicate.


2 A. farfollia (R. Br. l. c.) leaves adpressed, ending in a triquetrous point each. G. Native of the south coast of New Holland.

Small-leaved Andersonia. Shrub.

** Flowers many-bracteate; terminating the short branches.

3 A. cerulea (R. Br. l. c.) leaves moderately spreading; young leaves and outside of calyxes downy. G. Native of New Holland, on the south coast. Flowers blue.

Blue-flowered Andersonia. Shrub.

4 A. squarrosea (R. Br. prod. p. 554.) leaves squarrose, divaricate or recurved, glabrous, with naked margins; calyces and styles glabrous; stem erect. G. Native of New Holland, on the south coast.

Square-rose-leaved Andersonia. Shrub.

5 A. depressa (R. Br. l. c.) leaves squarrose, divaricate or recurved, downy, with ciliated margins; calyces glabrous; style pilose in the middle; stem depressed. G. Native of New Holland, on the south coast.

Depressed Andersonia. Shrub depressed.

6 A. microanthia (R. Br. l. c.) leaves adpressed; style downy beneath the middle. G. Native of New Holland, on the south coast.

Small-flowered Andersonia. Shrub.

Cult. The species of this genus are very elegant and delicate plants. They grow freely in a sandy peat soil, having the pots well drained with sherds. Care should be taken not to give them too much water, as when the mould gets sodden, the plants are almost sure to die. They are increased by cuttings in the same way as Epacris, which see, p. 783.

XX. PONCELETTIA (to the memory of Mr. Poncelet, author of treatise on Triticum or Wheat.) R. Br. prod. p. 554.


1 P. sprengeliiodes (R. Br. prod. p. 554.). G. Native of New South Wales. A suffruticose dense habit plant, adhering to rocks perpetually damp.


Cult. For culture and propagation, see Epacris, p. 783.


Lin. syst. Pentandria, Monogyenia. Calyx coloured a little. Corolla 3-parted, rotate, beardless. Stamens hypogynous. Anthers connate or free, with an immarginate dissepiment. Hypogynous scales wanting. Capsule having the placentas adnate to the central column.—Small, erect, branched shrubs; branches hardly annulated while naked. Bases of leaves succulente, half sheathing. Flowers terminating the short lateral branches. Corolla purplish, length of calyx: with the tube very short, and at length cleft into 5 to the base.


2 S. montana (R. Br. l. c.) anthers free, beardless; calyx half coloured; leaves short-acuminated. G. Native of Van Diemen’s Land. Flowers purplish.
Mountain Sprengelia. Shrub 1 foot.

Cult. These are elegant and delicate shrubs, with much the habit of *Andersonia*, which see, p. 784, for culture and propagation.

XXII. CYSTAN'THE (from κυστάς, kysta, a box or coffier, and κυστος, kystos, a flower; in reference to the closed hooded flowers.) R. Br. prod. p. 555.

Lin. syst. Pentândria, Monogyniâ. Calyx foliaceous. Corolla closed, calyptraeform, dehiscing transversely; with a truncate permanent base. Stamens hypogynous, permanent. Hypogynous scales wanting. Capsule having the placenta loose, and hanging from the top of the central column.—A shrub with the habit of *Sprengelia, Cosmidia*, and *Poncetâlia*; unless that the branches are annulated while naked.

1 C. Sprengeloides (R. Br. prod. p. 555.), Ε. G. Native of Van Diemen's Land. Flowers pale red. 

Var. a, leaves much shorter. Growing on the shady sides of mountains.

Var. β, leaves much shorter. Growing on the tops of mountains.

Spraycelia-like Cystanthe. Shrub 1 to 2 feet.

Cult. For culture and propagation, see *Andersonia*, p. 784. It is an elegant and delicate shrub.

XXIII. RICHEA (named in memory of M. Riche, one of the naturalists who accompanied the expedition in search of La Perouse). R. Br. prod. p. 553 but not of Labill.

Lin. syst. Pentândria, Monogyniâ. Calyx membranous, bracteate. Corolla closed, calyptraeform, dehiscing transversely; with a truncate permanent base. Stamens hypogynous, permanent. Hypogynous scales 5. Capsule having the placentas loose and hanging from the top of the central column.—A shrub with the habit almost of *Dracophyllum montanum*, Labill, but differing in the singular economy of the flower. It comes nearest to *Cystanthe*, in the corolla being calyptraeform; but that genus differs in the inflorescence, foliaceous calyx, and want of hypogynous scales. Richea of Labill. v. 1. p. 187. t. 16. in Craspèdia, Forst. prod. no. 306. and Willd. spec. 3. p. 2393.

1 R. Dracophylla (R. Br. prod. p. 555.), Ε. G. Native of Van Diemen's Land. This shrub differs much in stature according to stations of its natural growth; for on the tops of mountains it is a humble shrub, 1/2 foot high; but on the sides of the mountains it grows to 10 feet high.

Dracophylled Richea. Shrub 1 to 10 feet.

Cult. For culture and propagation, see *Andersonia*, p. 784.

XXIV. DRACOPHYLLUM (from ἐγκρεα, drakon, a dragon; and φυλλον, phyllon, a leaf; so named because the leaves have some resemblance to those of *Draceâna Dracos*, or Dragon's Blood Tree.) Labill. fil. 2. t. 40. R. Br. prod. p. 555. Rchb. hort. 2. t. 108.

Lin. syst. Pentândria, Monogyniâ. Calyx bracteate. Corolla tubularly funnel-shaped; with a 5-parted aecus spreading beardless limb, a somewhat ventricose tube, and a hardly contracted throat. Stamens 5, hypogynous. Hypogynous scales 5. Capsule having the placenta loosened and hanging from the top of the central column.—Shrubs or small trees having the branches annulated while naked. Leaves imbricate, ciliate at the base, and half sheathing. Spikes or racemes terminal, simple, or compound. Bracteas subtending the pedicels, beardless.


Long-leaved Dracophyllum. Shrub.


Rosmary-leaved Dracophyllum. Shrub.

Cult. See *Andersonia*, p. 784. for culture and propagation.

XXV. SPHENOTOMA (from σφένος, sphenos, to cleave, and τομη, tome, a section; in reference to the deep divided limb of the corolla). Sweet, fl. austr. t. 44. Dracophyllum, sect. Sphenotoma, R. Br. prod. p. 555.

Lin. syst. Pentândria, Monogyniâ. Corolla salver-shaped, with a slender tube, a coarctate throat, and an obtuse beardless limb (f. 134. c.) Stamens epipetalous. Hypogynous scales 5. Capsule having the placenta loose, and hanging from the top of the central column.—Shrubs having the branches annulated when naked. Leaves imbricate, ciliate and half sheathing at the base. Spikes simple, terminal. Bracteas stretched out, permanent.

1 S. squarrosa; floriferous branches hardly the length of the spikes; leaves squarrose, ensiform, lanceolate. Ε. G. Native of New Holland, on the south coast. Dracophyllum squarrosum, R. Br. prod. p. 556.

Squarrose Sphenotoma. Shrub.

2 S. capitata; floriferous branches much longer than the spikes, which are ovate; cauline leaves lanceolate-ensiform, erectish; of the branches adpressed. Ε. G. Native of New Holland, on the south coast. Dracophyllum capitatum, R. Br. prod. p. 556.

Capitate-flowered Sphenotoma. Shrub.

3 S. gracilis (Sweet, fl. austr. t. 44.) floriferous branches much longer than the spikes, which are ovate; cauline leaves lanceolate-subulate, spreading, or recurved; of the branches adpressed. Ε. G. Native of New Holland, on the south coast. Dracophyllum gracilis, R. Br. prod. p. 556. Flowers white. Leaves withering when long hairs. (f. 134.).

Slender Sphenotoma. Fl. April, May. Clt. 1823. Shrub 1 to 2 feet.

Cult. For culture and propagation, see *E' pacris*, p. 783. or *Andersonia*, p. 784.


Flowers hermaphrodite, subsymmetrical, regular. Calyx 1-5-cleft. Corolla 4-parted, rarely 5-parted. Stamens 4-5-8-10, 5 ll
ERICACEÆ.

Synopsis of the genera.

 Tribe I.


1 Erica. Calyx 4-parted, naked at the base. Corolla globose or urceolate, with a 4-lobed limb. Stamens inclosed; with capillary filaments and bifid anthers; cells of anthers short, opening by an oblong hole, awned or crested at the base, rarely mutic. Stigma peltate.—Leaves acerosæ. Pedicels scaly.

2 Gymso'callis. Calyx 4-parted, glumaceous, naked at the base. Corolla campanulate, or short-tubular, with a dilated 4-lobed mouth. Stamens exserted, with flattened filaments and bipartite anthers; cells of anthers mutic at the base, distinct, subdeterminate, opening by an oblique hole. Stigma simple.—Leaves acerosæ.

3 Ble'r'ia. Calyx 4-parted. Corolla short, tubular, with a 4-cleft limb. Stamens 4-6, with linear flattened glabrous filaments, and bipartite anthers; cells of anthers attenuated at the base, mutic, dehiscing by an oblong foramen at the apex. Stigma obtuse.—Leaves whorled. Flowers terminal, glomeratus.


5 Pachy'ya. Calyx deeply 4-parted, coriaceous. Corolla nearly globose, coriaceous, with a contracted 4-lobed mouth. Stamens inclosed, with dilated filaments, and bifid anthers; cells of anthers short, crested at the base, opening by an oblong foramen. Stigma obtuse.—Leaves loosely imbricated, compressed. Pedicels bracteolatus.

6 Ce'ramia. Calyx 4-parted, glumaceous. Corolla urceolate, with a 4-lobed limb. Stamens inclosed, with dilated flat filaments and bifid anthers; cells of anthers short, horned at the base. Stigma capitata.—Leaves scattered, bluntish, flat.

7 De's'mia. Calyx 4-lobed. Corolla globose, with a contracted 4-toothed mouth. Stamens exserted, with flat filaments; cells of anthers short, opening by an oblong hole, simple at the base, and confluent in the filament. Stigma capitata.—Leaves scattered, subulate.

8 Euryflep'sis. Calyx 4-parted, coriaceous, bibracteolate at the base. Corolla tubular, coriaceous, ventricose at the base, with an erect 4-parted limb. Stamens inclosed, with dilated channelled filaments, and bipartite anthers; cells of anthers coriaceous, opening by an oblong hole, auricled at the base. Stigma chavate.—Leaves scattered. Flowers terminal, solitary.

9 Euryste'gia. Calyx 4-parted, large, glumaceous. Corolla...
urceolate, with a contracted 4-toothed mouth. Stamens inclosed, with dilated flat filaments and bipartite anthers; cells of anthers opening by an oblong foramen, biappendiculate at the base; appendages flat, crested, crenated. Stigma capitate.—Leaves subulate. Flowers subsolitary, pendulous.

10 **Lophandra.** Calyx 4-parted, furnished with 4 bracteas at the base: segments scarious, rounded, ventricose outside. Corolla campanulate, 4-lobed. Stamens inclosed, with dilated flat filaments and bifid anthers; cells of anthers beaked at the apex, winged, crested, and crenulated at the sides, dehiscing by an oblong hole in the middle. Stigma truncate.—Leaves short, obtuse, glaucous. Flowers terminal.

11 **Lamprosia.** Calyx 4-parted, large, glumaceous, coloured, bibracteate at the base. Corolla urceolate, with a small 4-lobed limb. Stamens inclosed, with capillary filaments; cells of anthers short, dehiscing lengthwise, mutic, or crested at the base. Stigma capitate.—Leaves adpressed, opposite, or 3 in a whorl. Flowers terminal.

12 **Calyx.** Calyx 4-parted, foliaceous. Corolla salver-shaped, with a cylindrical or ventricose tube, and a dilated, spreading, 4-cleft limb. Stamens inclosed, with capillary filaments; cells of anthers short, dehiscing lengthwise, mutic at the base. Stigma capitate.—Leaves acerose. Flowers terminal.

13 **Eurytoma.** Calyx 4-parted, foliaceous. Corolla funnel-shaped, with a revolute 4-lobed limb. Stamens exerted, with capillary filaments, and truncate anthers; cells of anthers elongated, parallel, awned at the base. Stigma simple, obtuse.—Leaves 3 in a whorl, linear, awned. Flowers terminal.

14 **Cheona.** Calyx 4-parted, foliaceous. Corolla funnel-shaped, with a revolute 4-lobed limb. Stamens exerted, with capillary filaments, and truncate anthers; cells of anthers elongated, parallel, awned at the base. Stigma simple, obtuse.—Leaves 3 in a whorl, linear, awned. Flowers terminal.

15 **Stenogoea.** Calyx 4-leaved, glumaceous. Corolla long-tubular, with a short 4-lobed limb. Stamens usually inclosed, with capillary filaments, and bipartite anthers; cells of anthers short, obtuse, mucic or awned at the base, dehiscing by an oblong foramen. Stigma simple or capitate, in some annulated by an elevated disk.—Leaves loose, acerose. Flowers crowded at the tops of the branches.

16 **Dasynthus.** Calyx 4-parted, bibracteate at the base. Corolla tubular, hispid, with a 4-lobed erect limb. Stamens inclosed, with capillary filaments, and bipartite anthers; cells of anthers mutic at the base, dehiscing lengthwise. Stigma large, peltate.—Leaves loosely imbricated, hispid. Flowers in terminal fascicles.

17 **Ecta.** Calyx 4-leaved, glumaceous. Corolla tubular, a little ventricose at the base, with a 4-toothed limb. Stamens much exerted, with dilated filaments and bipartite anthers; cells of anthers elongated, tubular, dehiscing by a longitudinal fissure, having the base continuous in the filament, and mutic. Stigma clavate, truncate.—Leaves loosely imbricated. Flowers terminal or lateral.

18 **Eriodea.** Calyx large, 4-parted, bibracteate at the base. Corolla campanulate, with a 4-lobed revolute limb. Stamens exerted, with dilated filaments, and bifid obtuse scabrous anthers; cells of anthers dehiscing by an oblong pore, continuous in the filament at the base.—Leaves 3 in a whorl, obtuse, hairy. Flowers terminal.

19 **Octoera.** Calyx 4-parted, reflexed, naked at the base. Corolla globose, with a contracted bluntly 4-lobed mouth. Stamens inclosed, with flattened filaments; cells of anthers very short, dehiscing by an ample hole, and furnished at the base by a solitary lanceolate acuminated appendage.—A downy procumbent shrub. Leaves verticillate. Flowers terminal, subumbellate. Pedicels scaly.

20 **Ecalama.** Calyx 4-parted, with imbricated bracteas at the base; segments orbicular, coriaceous, ciliated. Corolla urceolate, with a small 4-lobed limb. Stamens inclosed, with capillary filaments, and bipartite anthers; cells short, mutic at the base, dehiscing by an oblong hole. Stigma capitate. Cells of capsule 1-seeded.—Leaves spreading, bristly. Flowers glomerate.

21 **Salax.** Calyx 4-leaved, irregular. Corolla campululate, 4-cleft. Stigma peltate. Capsule drupaceous, 3-celled, 3-seeded.—Leaves 3-6 in a whorl. Flowers subumbellate at the tops of the branches.

22 **Callena.** Calyx 4-parted, membranous, coloured, furnished with 4 bracteas at the base. Corolla shorter than the calyx, campululate, 4-lobed. Stamens inclosed, with dilated filaments, and bipartite anthers, which are biappendiculate at the base; cells mucronulate, dehiscing lengthwise. Stigma capitate.—Leaves short, imbricated, in 4 rows. Flowers terminal, spicately racemose.

**Subtribe II. Andromedeæ.** *Corolla deciduous.*

23 **Andromeda.** Calyx 5-cleft; segments acute, simple at the base. Corolla globose, with a contracted 5-toothed mouth. Stamens 10, inclosed, with bearded filaments; cells of anthers short, one-awned. Stigma truncate. Capsule with a loculicidal dehiscence; placenta 5-lobed.

24 **Cassiope.** Calyx 5-leaved; segments imbricate at the base. Corolla campululate, 5-cleft. Stamens 10, inclosed, with glabrous filaments; cells of anthers short, tumid, one-awned. Style dilated at the base; stigma obtuse. Capsule with a loculicidal dehiscence; valves bifid at the apex; placenta 5-lobed.

25 **Cassandra.** Calyx 5-leaved, bibracteate at the base; segments imbricate at the base. Corolla oblong, with a contracted 5-toothed mouth. Stamens 10, inclosed, with glabrous filaments; cells of anthers elongated at the apex, tubular, mutic. Stigma annulated. Capsule with a loculicidal dehiscence; placenta 5-lobed.
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26 Zenobia. Calyx 5-toothed. Corolla campanulate, with a revolute 5-lobed limb. Stamens 10, with very short glabrous filaments; cells of anthers elongated, tubular, biauriate at the apex. Stigma truncate. Capsule with a loculicidal dehiscence; placenta 5-lobed.

27 Lyonia. Calyx 5-parted. Corolla ovate or tubular, with a contracted 5-toothed mouth. Stamens inclosed, with short, flattened, downy filaments; cells of anthers membranous, dehiscing lengthwise, mucit. Style pentagonal; stigma obtuse. Capsule pentagonal, with a loculicidal dehiscence.


29 Pieris. Calyx 5-parted. Corolla tubular or ovate, with a contracted, 5-toothed, revolute mouth. Stamens 10, inclosed, with dilated filaments, which are biserose at the apex; cells of anthers short, incumbent, dehiscing lengthwise. Style pentagonal; stigma truncate. Capsule with a loculicidal dehiscence.


31 Bryandus. Calyx 5-leaved, imbricated. Corolla deeply 5-parted, spreading. Stamens 10, shorter than the corolla, with flattened glabrous filaments; cells of anthers short, mucit, or awned behind, dehiscing by a terminal foramè. Stigma obtuse. Capsule with a septicidal dehiscence.

32 Daboecia. Calyx 4-parted. Corolla oval, ventricose, with a 4-toothed mouth. Stamens 8, inclosed, with dilated glabrous filaments, and linear anthers, which are sagittate at the base; cells of anthers parallel, loosened at the apex, dehiscing lengthwise. Stigma truncate. Capsule 4-celled, with a septicidal dehiscence.

33 Erica. Calyx small, 5-parted. Corolla campanulate, with a 5-parted limb, and 5 nectarial pits at the base. Stamens inclosed; anthers 2-horned. Berry 5-celled, many-seeded.

34 Arrétes. Calyx small, 5-parted. Corolla globose or ovate, with a small, contracted, 5-cleft, reflexed border. Stamens 10, inclosed, with flattened filaments; anthers compressed at the sides, dehiscing at the apex by 2 pores, fixed by the back beneath the apex, and there furnished with 2 reflexed awns. Stigma obtuse. Berry globose, granular.

35 Actostaphylos. All as in Arbutus, except that the fruit is 5-celled, and the cells 1-seeded, and not granular on the outside.

36 Perénétya. Calyx 5-parted. Corolla globose, with a contracted 5-parted revolute limb. Stamens 10, inclosed, having the filaments thickened at the base; anthers 2-celled, 2-lobed at the apex; lobes bifid. Hypogynous scales 10, 3-lobed, sur-rounding the ovary. Stigma convex. Berries globose, 5-celled, many-seeded.

37 Agerista. Calyx 5-lobed. Corolla ovate, with a contracted 5-toothed mouth. Stamens 10, inclosed, with flattened villous filaments, and bipartite anthers; cells of anthers short, mucit at the base, diverging at the apex, and dehiscing by a terminal pore. Capsule globose, 5-celled, with a loculicidal dehiscence; placenta thick, oblong.

38 Drymocé. Calyx girded by a calyculus, which is composed of 2 combined bracteas, 5-cleft. Corolla campanulate, with a 5-cleft reflexed limb. Stamens 10, inclosed, inserted in the disk of the calyx. Anthers bifid at the apex. Stigma truncate. Capsule nearly globose, depressed, inclosed in the baccate calyx, 5-celled, many-seeded.

39 Gaultheria. Calyx 5-cleft or 5-toothed, bifractate at the base. Corolla ovate, ventricose, with a 5-cleft revolute border, diaphanous at the base. Stamens 10, inclosed, with flat filaments; anthers bifid at the apex; lobes biauriate. Hypogynous scales 10, usually united at the base. Ovarium half inferior. Capsule 5-celled, with a loculicidal dehiscence.

40 Epigéa. Calyx large, 5-parted, furnished with 3 bracteas at the base. Corolla salver-shaped, with a 5-parted spreading border, and with the tube villous inside. Stamens 10. Capsule 5-celled; placenta 5-parted.


42 Clethra. Calyx 5-parted. Corolla so deeply 5-parted as to appear 5-petalied. Stamens 10, with membranous filaments; anthers at length inflexedly pendulous, obverse, and corolate at the base, and mucronate at the apex, but mucit. Stigma trispid. Capsule 3-celled, many-seeded, with a loculicidal dehiscence.

TYPHE II.


44 Vireya. Calyx obsolescently 5-toothed. Corolla subcampanulate, or funnel-shaped, regularly 5-lobed, adnate to the disk of the calyx. Stamens 10, inserted in the calycine disk; anthers dehiscing by terminal pores, mucit. Stigma capitulate, 5-furrowed. Capsule siliqua-formed, 5-angled, 5-celled, 5-valved. Placenta 5-lobed. Seeds numerous, expanded at both ends into a bristle-formed awn.


46 Hymenanthus. Calyx small, obsolescently denticulated.
Ericaceae.

Corolla subcampanulate, with a short compressed tube, and a 7-parted limb. Stamens 14, hypogynous; anthers mutic, opening by two terminal pores. Stigma obtuse, with 7 crenatures. Capsule oblong, 7-valved, 7-celled, many-seeded.

47 Kalima. Calyx 5-parted. Corolla salver-shaped; border producing 10 protuberances on the under side, and a corresponding number of cavities on the upper side, in which the anthers are concealed. Capsule 5-celled; dissepiments marginal.

48 Menzie'sia. Calyx 4-cleft. Corolla globose, 4-cleft. Stamens 8, hypogynous. Capsule 4-celled, 4-valved, having the dissepiments formed from the inflexed margins of the valves.


51 Le'rum. Calyx minute, 4-toothed. Corolla 5-petalled, spreading. Stamens 5-10, exerted; anthers opening by 2 pores at the apex. Capsule subovate, 5-celled, 5-valved, pedicellate, dehiscing at the base. Seeds ending in a wing at both ends.

Tribe III.


52 Vaccinium. Limb of calyx 4-5-toothed. Corolla urceolate or campanulate, 4-5-cleft. Stamens 8-10, hypogynous. Berry globose, 4-celled, many-seeded.

53 Oxycoccus. Calyx 4-cleft. Corolla 4-parted, with the segments somewhat linear and revolute. Stamens 8; filaments connivent; anthers tubular, bipartite. Berry 4-celled, many-seeded.

54 Gaylussacia. Limb of calyx 5-cleft. Corolla tubular, with a ventricose base and a 5-cleft limb. Stamens 10, inserted in the limb of the calyx; anthers mutic, drawn out into 2 little tubes from the top. Stigma capitate. Berry nearly globose, 10-celled; cells 1-seeded.

55 Thribedia. Calyx urceolar, 5-lobed. Corolla tubular, with a contracted 5-toothed mouth. Stamens 10, inserted in the calyx, inclosed; anthers elongated, mutic, drawn out into 2 little tubes at the apex. Berry 5-celled, many-seeded.

56 Agapetes. Limb of calyx 5-cleft. Corolla tubular, with a 5-cleft limb. Stamens 10, with very short flattened filaments; anthers mutic, very long, auricled at the base, exerted, narrow, emarginate at the apex, with the cells confluent. Stigma clavate. Berry 5-celled, many-seeded.

57 Ceratostema. Limb of calyx large, 5-parted, foliaceous. Corolla tubular, contracted and 5-lobed at the apex. Stamens 12, with very short, flattened, hairy filaments; anthers bluntly spurred at the base, having the cells elongated at the apex and filiform, dehiscing by a terminal pore. Stigma simple. Berry 5-celled, many-seeded.

Tribe IV.


58 Pyrola. Calyx 5-cleft or 5-parted. Petals 5. Stamens 10, slightly united at the base. Style exerted. Stigma 5-lobed. Capsule 5-celled, dehiscing at the angles near the base, having the margins of the valves connected by intricateomentum.


Tribe V.


62 Hyppóptes. Calyx 3-5-parted. Corolla 4-5-petalled; petals or segments each with a cucullate nectariferous base. Anthers small, horizontal, at length opening flat. Stigma orbicular, with a bearded margin. Capsule 5-celled, 5-valved, many-seeded.

63 Monótopa. Calyx none. Corolla 5-petalled; petals or segments each with a cucullate nectariferous base; anthers reflexed, horizontal. Stigma orbicular, naked. Capsule 5-celled, 5-valved, many-seeded.

64 Petérosópha. Calyx 5-parted. Corolla ovate, with a reflexed 5-toothed border. Anthers peltate, adnate to the filaments by the margin, bisepalous. Capsule 5-celled; placenta 5-lobed. Seeds terminated each by a wing.

ERICACEÆ. 1. ERICA.

1. ERICA (Erica of Pliny is altered from ἔρικα of Theophrastus, which is derived from ἐπικώ, erico, or ἐπικώ, erico, to break; from the supposed quality of some species in breaking the stone in the bladder). D. Don. in edinb. phil. journ. 17. p. 152.—Erica species of Lin. and other authors.

LIN. Syst. Octandria, Monogynia. Calyx 4-parted, with a naked base. Corolla globose or urceolate, with a 4-lobed limb. Stamens inclosed; filaments capillary; anthers bifid; cells of anthers opening by an oblong hole, awned or crested at the base, or mutic. - Sigma petalate. Capsule 4-celled, many-seeded.—Shrubs, natives of Europe and Africa. Leaves scattered or verticillate, acerate. Flowers terminal, fascicled or racemose. Pedicels scaly.

§ 1. Anthers awned at the base. Normal species.

* Leaves 3 in a whorl. Corollas campanulate.

1 E. LEVÍS (Andr. heath. 3. t. 6.) leaves glabrous, 3-4 in a whorl, spreading; branches slender; flowers terminal by threes, drooping; corollas small, bell-shaped; awns of anthers falcate. 5 G. Native of the Cape of Good Hope. Lodd. bot. cab. 1593. E. cyaritiformis, Salis. in Lin. trans. 6. p. 376. Flowers white. Plant glabrous. Anthers black. Perhaps only a variety of E. perfoliata.


2 E. callosa (Wendl. eric. ex Spreng. syst. 2. p. 194.) leaves glabrous, 3 in a whorl, linear-oblong, with revolute edges, spreading, white beneath; flowers terminal, usually by threes, erectish; calyx coloured, viscid; corollas campanulate; awns of anthers short. 5 G. Native of the Cape of Good Hope. E. canaliculata minor, Andr. heath. 3. t. 39. Corollas red.


3 E. deflexsæa (Thumbl. diss. no. 50. with a figure); leaves glabrous, 3 in a whorl, linear, revolute; flowers terminal; corolla bell-shaped; spars of anthers long, subulate and hairy; bracteae remote from the calyx. 5 G. Native of the Cape of Good Hope. E. rapicrastris, Andr. heath. 3. t. 9. E. haimilis, Salish. in Lin. trans. 6. p. 329. Branches decumbent. Flowers small, white.


4 E. nofiflora (Bedf. eric. wob. p. 16. but not of Sal.) leaves 3 in a whorl, slightly hispid; flowers subaxillary; bracteae remote from the calyx; corolla campanulate, with deep segments; anthers awned. 5 G. Native of the Cape of Good Hope. Erica glomerata, Hort. Flowers white.


5 E. sicifolia (Sal. in Lin. trans. 6. p. 326.) leaves 3 in a whorl, mucronate; corolla 1½ lines long, hairy outside, with a cup-shaped tube; flowers terminal; spars of anthers linear; fruit glabrous. 5 G. Native of the Cape of Good Hope.


6 E. montana (Bedf. eric. wob. p. 15.) leaves 3 in a whorl; flowers axillary, by threes; bracteae broad, approximating the calyx, loose, angular; corolla bell-shaped; anthers awned; style inclosed. 5 G. Native of the Cape of Good Hope. E. confertifolia, Wendl.? Flowers purplish-red.


7 E. villosiúscula (Lodd. bot. cab. 1841.) hairy; leaves acicular, ciliate with long hairs; flowers disposed in racemose terminal fascicles; corollas campanulate. 5 G. Native of the Cape of Good Hope. Flowers small, pale red. Anthers unknown.

Rather-eillous Heath. Fl.? Clt.? Shrub.

8 E. scamnæa (Sal. in Lin. trans. 6. p. 329.) leaves lanceolate, 3 in a whorl; flowers terminal; corolla bell-shaped; bracteae remote from the calyx; anthers awned, glabrous. 5 G. Native of the Cape of Good Hope. E. scamnæa, Thumb. diss. 84. Flowers small, reddish-purple. Corolla 4-5 lines long.


9 E. assucægens (Hort. Bedf. hort. eric. wob. p. 2.) leaves 3-4 in a whorl, villous; flowers terminal; corolla bell-shaped; bracteae approximating the calyx; anthers awned. 5 G. Native of the Cape of Good Hope. Flowers white. Bractes villous. Style inclosed.


10 Deflexsæa (Bedf. hort. eric. wob. p. 8.) leaves 3 in a whorl, rough; flowers terminal, umbellate; corolla deflexed, openbell-shaped; bracteae minute, remote from the calyx; anthers awned. 5 G. Native of the Cape of Good Hope. Flowers white. Style exerted.


11 E. ortesæa (Lodd. bot. cab. 1027.) glabrous; leaves 3 in a whorl, obtuse; flowers terminal, by threes; corollas campanulate; genitils inclosed. 5 G. Native of the Cape of Good Hope. Flowers purplish-red. Anthers unknown.


12 E. glomerata (Lodd. ex Bedf. eric. wob. p. 11.) leaves 3 in a whorl; flowers terminal, capitate; corolla small, bell-shaped; bracteae approximating the calyx; anthers awned. 5 G. Native of the Cape of Good Hope. Flowers small, purplish-red. Style exerted.


13 E. verna (Lodd. bot. cab. 1608.) glabrous; leaves 3 in a whorl; flowers terminal; corollas campanulate; style exerted. 5 G. Native of the Cape of Good Hope. Flowers purple-red. Anthers unknown.


14 E. parciflora (Bedf. hort. eric. wob. p. 17.) leaves 3 in a whorl; flowers terminal, almost sessile; corolla campanulate; bracteae remote from the calyx; anthers awned. 5 G. Native of the Cape of Good Hope. Flowers small, reddish-purple. Style inclosed.


15 E. tenuis (Sal. in Lin. trans. 6. p. 329.) leaves 3 in a whorl, linear, glabrous; flowers terminal, subsolitary; bracteae remote from the calyx; corolla bell-shaped; anthers awned; style exerted. 5 G. Native of the Cape of Good Hope. Flowers white. Anths of anthers linear, attenuated; filaments very short.


16 E. Schollia (Bedf. bot. cab. 538.) leaves alternate, scattered; flowers subterminal and axillary; corolla campanulate; bracteae remote from the calyx, anthers awned. 5 G. Native of the Cape of Good Hope. Flowers purple, drooping, and are as well as the calyces coloured. Style inclosed.


17 E. acteæa (Bedf. hort. eric. wob. p. 1.) leaves 3 in a whorl, glabrous; flowers terminal; bracteae remote from the calyx; corolla oblong-bell-shaped; anthers awned. 5 G. Native of the Cape of Good Hope. Erica Láudéræa, Hort. but not of Andr. Corollas white. Style exerted.

ERICACEÆ.  I. ERICA.

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18 E. purescens (Lin. spec. 506.) leaves linear, 3 in a whorl, downy; flowers terminal; pedicles hardly the length of the flowers; corolla 2 lines long, urceolate, downy both inside and outside; spurs of anthers short. ñ. G. Native of the Cape of Good Hope. E. pubescens, var. pilosa, Thumb. eric. no. 61. E. pâlida, Sal. in Lin. trans. 6. p. 326. Sides of calyx redundant. Flowers pale red. Style inclosed.


19 E. hirta (Thumb. eric. no. 56. t. 2.) leaves 3 in a whorl, linear, bristly; flowers terminal; pedicles more than twice the length of the flowers; corolla 3 lines long, downy outside, with an urceolar tube; spurs of anthers linear attenuated. ñ. G. Native of the Cape of Good Hope. E. düra, Hort. E. urceolaris, Sal. in Lin. trans. p. 326. Corolla pale green, with greenish yellow apex. Style inclosed.

Hairy Heath. Fl. April, July. Cult. 1795. Shrub 1 to 2 feet.

20 E. suaveolens (Lodd. bot. cab. t. 24.) leaves 3 in a whorl, oblone-lanceolate, ciliate; flowers terminal; bracteas remote from the calyx; corolla urceolate; anthers a little exserted, black; style much exserted. ñ. G. Native of the Cape of Good Hope. Flowers pale red.


21 E. grandiflora (Lodd. bot. cab. 627.) glabrous; leaves linear, 3 in a whorl; flowers terminal, drooping, by threes; corolla irregularly ovate, inflated, small, anthers awned; calyx reflexed. ñ. G. Native of the Cape of Good Hope. Bedd. hort. eric. wob. p. 11. Flowers small, white. Style inclosed.

Hailstone-flowered Heath. Fl. April, May. Cult. 1810. Shrub ½ to 1 foot.

22 Ñ. ñeucova (Andr. heath. 3. t. 1.) leaves linear, 3 in a whorl, rather falcate, with revolute ciliated edges; flowers terminal by threes; calyx ciliolate; corolla globose; anthers awned. ñ. G. Native of the Cape of Good Hope. E. camphyliphylla, Spreng. syst. 2. p. 190. Plant downy. Flowers small, red. Style exserted.


23 E. globosa (Andr. heath. 3. t. 24.) leaves linear-lanceolate, oblong, 3–4 in a whorl, ciliate, recurved; flowers terminal, aggregate, drooping; corolla globose; calyx coloured, beset with glandular hairs; awns of anthers small. ñ. G. Native of the Cape of Good Hope. Flowers small, pink.


24 E. tubuscula (Bedd. hort. eric. wob. p. 26.) downy; leaves 3 in a whorl; flowers terminal; corolla tubular, very small; anthers awned; bracteas remote from the flower. ñ. G. Native of the Cape of Good Hope. Lodd. bot. cab. 1157. E. pubescens minima, Andr. heath. 2. t. 8. Flowers small, purplish red. E. pubescens, Wendl. eric. p. 8. no. 7. Style inclosed.


26 E. frymilla (Andr. heath. vol. 4. icon.) leaves 3 in a whorl, subulate, glabrous, square or branches decumbent; flowers terminal, generally by four, downy; calyces short, adpressed; corolla globose; anthers awned. ñ. G. Native of the Cape of Good Hope. E. sanguinolenta, Ker. in bot. mag. 2263. Lodd. bot. cab. 468. Flowers small, blood-red or purple. Bracteas remote from the calyx. Style inclosed.


Urectoral-flowered Heath. Fl.

28 E. tomentosa (Sal. in Lin. trans. 6. p. 327.) clothed with hoary tomentum; leaves 3 in a whorl, narrow-linear, ciliate, imbricated; flowers terminal by threes; calyx flattish, fringed; corolla ½ line long, tomentose both inside and outside; spurs of anthers long, recurved. ñ. G. Native of the Cape of Good Hope. Bracteas situated at the base of the pedicels, and are, as well as the calyces and corollas, purple.


29 E. alopecuroides (Wendl. eric. no. 20. p. 119.) leaves linear, 3 in a whorl; flowers terminal; corolla ovate; bracteas remote from the calyx; anthers awned. ñ. G. Native of the Cape of Good Hope. Lodd. bot. cab. 874. Flowers small, purplish red. Plant downy. Calyx coloured, inclosed. Style inclosed.


30 E. adenophora (Spreng. syst. 2. p. 188.) leaves 3 in a whorl, glandularly hispid, spreading, remotish; flowers terminal, aggregate, glabrous; calyces viscid, coloured, adpressed. ñ. G. Native of the Cape of Good Hope. Anthers coiled.

31 E. laevis (Salisb. in Lin. trans. 6. p. 335. Ait. hort. kew. 2. p. 387.) leaves 3 in a whorl, ovate, obtuse, imbricated, downy; flowers terminal, sub-capitate; corolla ovate, 2 lines long, with a recurved limb; spurs of anthers long and narrow-cuneated, smooth. ñ. G. Native of the Cape of Good Hope. E. lâchen, Andr. heaths. 3. t. 2. Flowers middle-sized, white. Style exserted.

32 E. pulvifera (Lodd. bot. cab. t. 263.) glabrous; leaves 3 in a whorl; flowers terminal; corolla globosely campanulate; bracteas remote from the calyx; anthers awned. ñ. G. Native of the Cape of Good Hope. Bedd. eric. wob. p. 3. f. 1. E. nivalis, Andr. heath. vol. 4. Flowers small, white, downy. Genitalis included.

33 E. pulviflora (Bedd. eric. wob. 20.) clothed with powderly down; leaves 3 in a whorl; flowers terminal; corolla ovate; bracteas imbricate; anthers awned. ñ. G. Native of the Cape of Good Hope. Flowers purplish-red. Style inclosed.


34 E. purpusii (Bedd. f. c.) leaves 3 in a whorl; flowers terminal; corolla globose; anthers awned, a little exserted. ñ. H.
Native of the Cape of Good Hope. Flowers reddish-purple, small. Style exserted.


36 E. *rubella* (Lodd. bot. cab. 658. Sims, bot. mag. 2165.) leaves 3 in a whorl; flowers terminal, capitate; corolla ovate, ventricose, length of calyx; bracteas approximating the calyx. 1. G. Native of the Cape of Good Hope. Flowers small, purplish-red. Style inclosed.


41 E. *lasophyllílla* (Spreng. syst. 2. p. 195.) leaves 4 in a whorl, linear, scabrous, glandularly ciliated, spreading, aristate at the apex; flowers racemose, drooping; calyx adpressed; corolla campanulate; anthers awned. 1. G. Native of the Cape of Good Hope. Flowers reddish-purple. Style inclosed.


42 E. *floribúndá* (Lodd. bot. cab. 176.) glabrous; leaves 4 in a whorl; flowers terminal; corolla bell-shaped, open; anthers awned. 1. G. Native of the Cape of Good Hope. Flowers small, axillary and terminal, pale red. Style exserted.


47 E. *blándordjíana* (Ait. hort. kew. 2. p. 392.) leaves linear, 4 in a whorl, spreading; flowers terminal, almost solitary; corolla ovate-globose, or urceolar; anthers awned. 1. G. Native of the Cape of Good Hope. Curt. bot. mag. 1793. Lodd. bot. cab. 115. E. Blandordian, Andr. heath. 3. t. 8. Corollas yellow, small. In the hortus eric. wob. the anthers are said to be mutic; this must be wrong.


49 E. *tárden Nóra* (Sal. in Lin. trans. 6. p. 572.) leaves 4 in
ERICACEAE. I. \textit{Erica}.

a whorl, linear, revolute, downy; flowers terminal, umbellate; corolla urceolate, downy, with a short recurved limb; anthers awned; fruit hairy. \(\text{G} \). Native of the Cape of Good Hope. E. pubescens, Curt. bot. mag. 480. E. hirtiflora, \(\beta\). Ait. hort. kew. 2. p. 406. Calyxes adpressed, narrow, ovate, cuneated. Corollas red. Style inclosed.

\textit{Late-flowered Heath}. Fl. year. Ct. 1800. Shrub 1 to 2 feet.

50 E. canescens (Wendl. eric. ex Spreng. syst. 2. p. 195.) leaves 4 in a whorl, linear, canescent, erect; flowers terminal, sessile; corolla urceolate-campanulate; calyxes foliaceous, ovate, acuminate, adpressed; awns of anthers linear. \(\text{G} \). Native of the Cape of Good Hope. E. pubescens minor, Andr. heath. 2. t. 7. E. exigua, Sal. in Lin. trans. 6. p. 373. E. pubescens parviflora, Thumb. diss. no. 61. Corolla with an ovate tube, and a short limb. Flowers small, pale purple.


51 E. fusilla (Salisb. in Lin. trans. 6. p. 374.) downy; leaves 4 in a whorl; calyxes adpressed, broad, ovate-cuneated; corolla very small, downy, with a cup-shaped tube, and the limb the length of the tube; anthers awned; fruit glabrous. \(\text{G} \). Native of the Cape of Good Hope, in Baaey Fals. Flowers terminal.

\textit{Least Heath}. Shrub.

52 E. cónica (Lodd. bot. cab. 1179.) leaves 4 in a whorl, linear, glabrous; flowers axillary, racemose; genitals inclosed. \(\text{G} \). Native of the Cape of Good Hope. Flowers purplish-red.


53 E. pubigera (Sal. in Lin. trans. 6. p. 372.) downy; leaves 4 in a whorl; flowers terminal; calyxes spreading; ovate-acuminate; corolla \(\frac{1}{2}\) line long, downy, with a longish recurved obtuse limb; anthers awned; fruit hairy. \(\text{G} \). Native of the Cape of Good Hope, on Mount Tafelfberg.

\textit{Down-bearing Heath}. Shrub.

54 E. catervuliflora (Sal. l. c.) hairy; leaves 4 in a whorl; stem angular; flowers terminal; corolla 2 lines long, downy, with a narrow obovate tube; anthers awned, dehiscing by long holes. \(\text{G} \). Native of the Cape of Good Hope, on the summit of Mount Tafelfberg. E. pubescens villosa, Thumb. diss. no. 61.

\textit{Company-flowered Heath}. Shrub.

55 E. turbiniflora (Sal. in Lin. trans. 6. p. 377.) stem glabrous; leaves 4 in a whorl; flowers terminal; corolla \(\frac{1}{3}\) line long, smooth, with a turbinate 8-shaped tube, and an incurved limb; spurs of anthers glabrous. \(\text{G} \). Native of the Cape of Good Hope. Flowers pale purple.


56 E. trauquiliflora (Sal. in Lin. trans. 6. p. 374.) leaves 4 in a whorl; flowers terminal; calyx involute; corolla \(\frac{2}{3}\) lines long, with an urceolar tube, and a recurved limb; anthers hairy, broadly foraminose; spurs hairy. \(\text{G} \). Native of the Cape of Good Hope.


57 E. plumosa (Andr. heath. 2. t. 6.) leaves 4 in a whorl, linear, hairy, erect, imbricated; flowers disposed in axillary whors; corolla ovate-globose; calyxes hairy; anthers awned. \(\text{G} \). Native of the Cape of Good Hope. Erica amoenà, Wendl. eric. 17. p. 73. Corollas purplish-red. Branches erect. Style exserted.


58 E. tenùissima (Wendl. eric. fasc. 6. p. 9, with a figure) leaves 4 in a whorl, linear-liliform, glabrous, erect, somewhat imbricated; flowers terminal, aggregate; calyx short, naked; corolla urceolate, with an erect limb; anthers appendiculate. \(\text{G} \). Native of the Cape of Good Hope. Flowers red.


59 E. curvirostris (Sal. in Lin. trans. 6. p. 375.) leaves 4 in a whorl, linear; flowers terminal; calyxes adpressed; corolla \(\frac{1}{2}\) line long, with a spherical tube; spurs of anthers downy; style curved. \(\text{G} \). Native of the Cape of Good Hope.

\textit{Curved-beaked Heath}. Shrub.

60 E. piluliformis (Lin. spec. ed. 2. p. 582.) leaves 4 in a whorl, linear, glabrous, ciliated; flowers terminal; corolla globose, \(\frac{3}{4}\) lines long, having the tube length of the calyx; calyx-cines segments ovate, acuminated, deeper coloured at the apex; spurs of anthers linear-attenuated; fruit glabrous. \(\text{G} \). Native of the Cape of Good Hope. E. madrocíalis, Berg. pl. cap. p. 113. E. pilulíformis, Sal. in Lin. trans. 6. p. 370. Flowers red. Style exserted.


61 E. imbecilla (Hort. Loud. hort. brit. no. 9716. p. 150.) leaves 4 in a whorl; bracteas remote from the calyx; calyx minute; flowers terminal; corolla with an ovate tube and a recurved limb; spurs of anthers linear-attenuated, hairy. \(\text{G} \). Native of the Cape of Good Hope. E. grácilis, Salisb. in Lin. trans. 6. p. 375. Flowers small, red or purple.


62 E. intervallaris (Sal. in Lin. trans. 6. p. 375.) stem slender; leaves 4 in a whorl, remote; flowers terminal; corolla \(\frac{1}{2}\) to 2 lines long, with an ovate-cylindrical tube, and a broad mouth; anthers awned; pericarp hairy. \(\text{G} \). Native of the Cape of Good Hope. Erica elongata, Roxb. ms. Flowers small, red, drooping.—A very pretty species.


63 E. mucosa (Andr. heath. 1. t. 6.) leaves 4 in a whorl, glabrous; flowers terminal; corolla glabrous, viscid, having the interstices of the limb rather tumid; calyx-cines segments ovate, obtuse, coloured, tipped with green; anthers awned. \(\text{G} \). Native of the Cape of Good Hope. Lodd. bot. cab. 35. Icon. pl. kew. t. 15. Flowers pale purplish-red. Corolla with the tube more or less obovate. Style inclosed.

\textit{Mucous-flowered Heath}. Fl. March, July. Ct. 1787. Shrub 1\(\frac{1}{4}\) foot.

64 E. mucosoioides (Bedd. hort. eric. wob. p. 15.) leaves short, 4 in a whorl; flowers terminal; corolla glabrous; calyx-cines segments coloured, tipped with green; anthers awned. \(\text{G} \). Native of the Cape of Good Hope. Lodd. bot. cab. 1202. Flowers small, purplish red. Style inclosed.


65 E. lateralis (Wildl. spec. 2. p. 380. but not of Andr.) leaves 4 in a whorl, linear-attenuated, glabrous; flowers terminal; bracteas remote from the calyx; calyx-cines segments ciliated; corolla conical, having the segments anointed with drops of waxy matter at top; corolla of anthers downy. \(\text{G} \). Native of the Cape of Good Hope. E. gulliflora, Sal. in Lin. trans. 6. p. 374. Corollas small, red. Style exserted.

\textit{Fur. a} stem fastigite; corolla 1 or \(\frac{1}{4}\) line long, with a hemispherical tube; stigma much exerted. \(\text{G} \). E. late-

\textit{ralis, Wildl. l. c.}

\textit{Fur. b} stem low; corolla 2 lines long, with an ovate tube; stigma hardly exerted. \(\text{G} \). E. incarnàta, Andr. heath. 1. t. 19. Lodd. bot. cab. 1655.

\textit{Fur. c} stem dwarf; corolla 2 lines long, with an ovate tube; stigma a little exerted. \(\text{G} \). E. rubens himilus, Wendl. eric. fasc. 3. p. 13. with a figure.

\textit{Lateral Heath}. Fl. March, July. Ct. 1791. Shrub 1\(\frac{1}{4}\) to 2 feet.

66 E. řeústa (Sal. in Lin. trans. 6. p. 371.) leaves 4 in a 5 1
whorl; stem angular; flowers axillary at the tops of the branches; corolla viscid, 2½ lines long, with a narrow urceolate tube; filaments mutic; anthers appendiculate. G. Native of New Holland. Flowers fulvous.


67 E. *CANTHAREFORMIS* (Lodd. bot. cab. 1961.) leaves obsolete; flowers terminal; pedicels about 3 together; calyx reflexed; corolla ovate, ventricose. G. Native of the Cape of Good Hope. Flowers white. Anthers unknown. Nearly allied to *E. reflexa*.


68 E. *BONPLANDIANA* (Sims, bot. mag. t. 2926.) leaves 4 in a whorl, imbricate, aceroso; flowers terminating the small branches, solitary or by threes, sessile; bracteas close to the calyx; corolla large, with an urceolar tube, and an acute spreading limb; genitals inclosed. G. Native of the Cape of Good Hope. Flowers white. Perhaps a species of *Catasetum*.

*Var. f. flavus; flowers buff-coloured.


69 E. *CUFRESKINSA* (Hort. Beddf. eric. wob. p. 6. pl. 3. f. 10.) leaves 4 in a whorl, slightly ciliolate; flowers terminal; corolla ovate-globose; bracteas remote from the calyx; calyx recurved; anthers awned. G. Native of the Cape of Good Hope. *E. tarrigera*, Sal. in Lin. trans. 6. p. 577. É. procmumens, Hort. Flowers middle-sized, pale purplish-red. Corolla 2 lines long, with a hemispherical tube, and with the segments imbricate at the base.


70 E. *MORESTA* (Beddf. eric. wob. p. 15. but not of Salisb.) leaves 4 in a whorl; flowers terminal; corolla globose; bracteas approximating the calyx; anthers awned. G. Native of the Cape of Good Hope. Flowers small, purplish-red. Style inclosed.


71 E. *VOLIS* (Beddf. eric. wob. p. 15.) downy; leaves 4 in a whorl; flowers terminal; bracteas remote from the calyx; corolla globose; anthers awned. G. Native of the Cape of Good Hope. Flowers purplish-red. Style inclosed.


72 E. *OLULIA* (And. heath. vol. 4.) leaves 4 in a whorl, sessile, crowded, linear, glabrous; flowers terminal, umbellate; corolla ovate-globose; awns of anthers recurved. G. Native of the Cape of Good Hope. Flowers reddish-purple. Style inclosed.


73 E. *SUBULATA* (Wendll. eric. ex Spreng. syst. 2. p. 190.) leaves 4 in a whorl, linear-subulate, a little incurved, elongated; branches rather hairy; flowers terminal, crowded; corolla urceolate; calyxes subulate, adpressed; anthers awned. G. Native of the Cape of Good Hope. Flowers purple. Style exerted.


74 E. *FLORIDA* (Thumb. diss. 64. t. 6.) leaves 4 in a whorl, linear; flowers terminal, umbellate, glabrous; calyxes villous, reflexed; corolla 2 lines long, urceolate; awns of anthers lancéolate. G. Native of the Cape of Good Hope. Corolla red, with a globose tube, and the segments imbricate at the base. Bracteas very minute. Style inclosed.


75 E. *SMITHIANA* (Loj. bot. cab. 1614. Beddf. eric. wob. p. 4. leaves 4 in a whorl; flowers subterminal, axillary, drooping; corolla globose, bell-shaped; bracteas remote from the calyx; anthers awned. G. Native of the Cape of Good Hope. Flowers purplish-red.

*Smith’s Heath*. Fl. April, May. Clt. 1791. Shrub 1 to 2 feet.

76 E. *CORTOLOIA* (Beddf. eric. wob. p. 29, but not of Ait.hort. kew.) leaves 4 in a whorl; flowers terminal; corolla ovate; bracteas remote from the calyx; anthers awned; style inclosed. G. Native of the Cape of Good Hope. Flowers white. Style inclosed.


77 E. *PECTINIFOLIA* (Sal. in Lin. trans. 6. p. 367.) leaves 4 in a whorl, narrow, ovate-cuneated, pectinated; flowers terminal; calyxes segments spatulate; corolla 5-7 lines long, woolly inside; anthers inclosed, appendiculate. G. Native of the Cape of Good Hope. Erica cerinoides, Thumb. diss. no. 35.


§ 2. Anthers crested.

* Leaves 3 in a whorl. Corollas campanulate.

78 E. *NIVEA* (Beddf. hort. eric. wob. p. 16.) leaves 4 in a whorl, glabrous; flowers terminal; corolla bell-shaped; bracteas remote from and approximating the calyx, large, loose; calyx large; anthers crested. G. Native of the Cape of Good Hope. Flowers pure white. Style subeverted.


79 E. *LEUCANTHAEA* (Lin. suppl. p. 223. Andhr. heath. 3. t. 15.) glabrous; leaves 3 in a whorl, erect; branches twitty; flowers terminal, drooping; peduncles glabrous; bracteas remote from and approximating the calyx; corolla oblong-bell-shaped, having the limb as long as the tube; anthers crested. G. Native of the Cape of Good Hope. E. spiracéfolia, Sal. in Lin. trans. 6. p. 350. Corollas 1½ line long, white as well as the anthers. There is a variety of this, which is rather downy, and larger in the flowers. Style inclosed.


*Var. f. styloosa; style very long.

*Var. g. squarrosa (Hort.) leaves squarrose.

*Var. c. minima (Hort.) plants small.*


81 E. *POLYTRICHUMFLORIA* (Sal. in Lin. trans. 6. p. 329.) leaves 3-5 in a whorl; stem tomentose; flowers terminal; bracteas remote from the calyx; calyxes gradually narrowed at the base; corolla 1-2 lines long; spurs of anthers cuneated. G. Native of Portugal, about Lisbon. Fruit pear-shaped. Perhaps only a variety of *E. arborea.*

*Polychromum-leaved* Heath. Shrub.

82 E. *LUCIDA* (Andhr. heath. 2. t. 16.) leaves 3 in a whorl, filiform; branches spreading; flowers terminal, by threes; co-
rollas short, bell-shaped, subglobose; calyx coloured, bracteate, scurilated; bracteas imbricate, sessile. ½ G. Native of the Cape of Good Hope. Flowers small, reddish purple. Anws of anthers a little crested. Style exerted. 


* * * Leaves 3 in a whorl. Corollas urceolate.

83 E. nitida (Andr. heath. 3. t. 18.) leaves 3 in a whorl, scabrous, spreading; flowers terminal, drooping; pedicels downy; bracteas sessile, close to the calyx; corolla urceolate globose; anthers crested. ½ G. Native of the Cape of Good Hope. Loddi. bot. bot. cab. 1181. E. reflexa rubra, Hort. Flowers white, tinged with red. Style exerted.


84 E. peduncularis (Sal. in Lin. trans. 6. p. 329.) leaves 3 in a whorl, linear, hispid; flowers terminal; corolla 3 lines long, with a globose tube; anthers woolly, dehiscing by long chinks, crested. ½ G. Native of the Cape of Good Hope. E. rufens, Thumb. diss. no. 83, but not of Andr. Pedicels an inch long. Flowers purplish red.

Peduncular-flowered Heath. Shrub.

85 E. fausta (Sal. in Lin. trans. 6. p. 326.) leaves 3 in a whorl, hispisty; flowers terminal; corolla 2½ lines long, downy outside, with an urceolate tube; spurs of anthers serrated, attenuated, crested. ½ G. Native of the Cape of Good Hope. Very like E. hirta, Thumb. Flowers pale purple.

Fortunate Heath. Fl. April, July. Clt. 1795. Shrub 1 to 2 feet.

86 E. incana (Wendel. eric. fasc. 18. p. 89, with a figure,) leaves 3 in a whorl, linear-oblong, obtuse, hairy, white beneath; bracteas remote from the calyx; flowers terminal, downy; corolla urceolate; anthers awned. ½ G. Native of the Cape of Good Hope. Flowers white. There is also a red-flowered variety of this species. Style exerted.


87 E. ovata (Lodd. bot. cab. 417.) downy; leaves 3 in a whorl; flowers terminal; bracteas remote from the calyx; corollas ovate; anws of anthers crested a little. ½ G. Native of the Cape of Good Hope. Flowers purplish red. Style inclosed.


88 E. reflexa (Link, enum. 1 p. 371. Lodd. bot. cab. 1787.) leaves 3 in a whorl, glabrous, lanceolate, obtuse; flowers terminal, usually 3 in a fascicle; calyx, bracteas, and pedicels coloured; corolla ovate, ventricose at the base, clamyd; crests of anthers plumose. ½ G. Native of the Cape of Good Hope. Calyx spreading. Corollas white, waxy, middle sized. Anthers black. Very nearly allied to E. nitida, and probably only a variety of it. The young leaves are said by Link to be glandularly ciliated. Style inclosed.


Var. β, atropúrpürase (Lodd. bot. cab. 1409.) plant dwarf; flowers deeper purple.

Var. γ, dálba (Bedd. l. c.) flowers white.

Var. ð, pálítica (Lodd. bot. cab. 1507.) flowers pale purple.


90 E. vernícilía (Sal. in Lin. trans. 6. p. 355.) leaves 3 in a whorl, viscid; corolla 2½ lines long, with a recurved limb; flowers terminal; spurs of anthers car-formed and cuculate, hairy; fruit smooth. ½ G. Native of the Cape of Good Hope. E. glûnibus, Roxb. mas. The leaves are bluntly acuminated, densely clothed with glands in the reduplicate part; hence they appear shining and clammy.

Furnished-flowering Heath. Shrub.


* * * Leaves 4 in a whorl. Corollas campánulate.


93 E. declinás (Bedd. hort. eric. wob. p. 7,) leaves 4 in a whorl; flowers axillary, subspicate; corolla bell-shaped; bracteas remote from the calyx; anthers crested. ½ G. Native of the Cape of Good Hope. Loddi. bot. cab. 1662. Flowers white, tinged with red. Style a little exerted.


* * * Leaves 4 in a whorl. Corollas urceolate.

94 E. margaritáceæ (Sal. in Ait. hort. kew. 2. p. 401.) glabrous; leaves 4 in a whorl; flowers terminal; bracteas remote from the calyx; anthers crested; corolla with a spherical tube. ½ G. Native of the Cape of Good Hope. Andr. heaths. 1. t. 17. Wendel. eric. 8. p. 11, with a figure. E. ovata, Sal. in Lin. trans. 6. p. 375. Calyx incurredly spreading. Corollas nearly 2 lines long, white. Crests of anthers glabrous. Style exerted.


95 E. lachneóides. This species is very distinct from Eria lachneæa, Andr.; but we have not means of giving any description of it. Anthers crested. ½ G. Native of the Cape of Good Hope. E. lachneæa purplææa, Andr. heaths. 3. t. 3. Flowers red.


96 E. racemífera (Andr. heath. 3. t. 12.) leaves 4 in a whorl, and are as well as the calyces glabrous; flowers axillary, verticillate; corollas ovate-globose; anthers crested. ½ G. Native of the Cape of Good Hope. Flowers small, red. Style inclosed.


97 E. solaðhc (Andr. heath. 2. t. 17. Ait. hort. kew. 2. p. 399,) leaves 4 in a whorl, hispid; branches decumbent; flowers terminal, capitate, or umbellate; bracteas sessile, linear, ciliated, near the calyx; corollas globose bell-shaped; anthers crested.
\( \text{Ericaceae} \).

**1. Erica.**

G. Native of the Cape of Good Hope. Flowers reddish-purple. Style inclosed.


98 E. acu'ta (Andr. heath. 2. t. 19. Ait. hort. kew. 2. p. 399.) leaves 4 in a whorl, stiff, glabrous, spreading; flowers terminal, usually by threes, drooping; bracteas approximating the calyx; corolla ovate-globose; anthers crested. \( \text{G.} \) Native of the Cape of Good Hope. Flowers small, deep purplish-red. Calyx ciliated. Style inclosed.

*Acute-flowered Heath.* Fl. May, Aug. Clt. 1799. Shrub \( \frac{1}{2} \) to 1 foot.

99 E. re'uens (Andr. heath. 2. p. 21.) leaves 4 in a whorl, hirsut, spreading; flowers terminal; bracteas remote from and approximating the calyx; anthers crested or awned; corolla ovate-globose. \( \text{G.} \) Native of the Cape of Good Hope. Lodd. bot. cab. 557. Flowers small, purplish-red. Style exserted.


Shrub 1 foot.


101 E. barbăta (Andr. heath. 2. t. 23.) leaves 4 in a whorl, ciliate; flowers terminal, umbellate, drooping; corolla short, urceolate; bracteas remote from the calyx; calycine segments spathulate, ciliates; anthers crested. \( \text{G.} \) Native of the Cape of Good Hope. Lodd. bot. cab. 124. Erica barbata major, Andr. heath. 2. t. 23. Flowers pale yellow, with brown anthers. Style exserted.

*Var. his microscopic* (Andr. heath. 2. t. 24.) flowers white, with black anthers; but according to the hort. eric. wob. they are red, flowering Feb. Aug.


103 E. ce'ñua (Lin. suppl. p. 222.) leaves 4 in a whorl, hoary, villous or ciliate, aristate: those of the branches ovate; flowers terminal, drooping, umbellate; bracteas deciduous; calyx much fringed; corolla ovate-globose; anthers crested. \( \text{G.} \) Native of the Cape of Good Hope. Montin, in act. ups. 2. p. 291. t. 9. f. 3. Flowers purplish-red or pink. Corolla \( \frac{2}{3} \) lines long.


104 E. verec'undá (Sal. in Lin. trans. 6. p. 379.) leaves 4 in a whorl, linear, incurvedly spreading, glabrous; branches hairy; spikes coarctate; flowers drooping; bracteas and calyces fringed; corolla \( \frac{2}{3} \) lines long, with an amphiroid-formed tube, and crenulated limb; anthers hairy; spars cuneate, hairy. \( \text{G.} \) Native of the Cape of Good Hope. Erica cernua, Andr. heath. 1. t. 20. Lodd. bot. cab. 822. but not of Lin. Flowers flesh-coloured. Style inclosed.

*Reddish-flowered Heath.* Fl. April, Sept. Clt. 1793. Shrub. 105 E. pę'dulá (Wendl. eric. 10. p. 13, with a figure) leaves 4 in a whorl, glabrous; flowers terminal, drooping; bracteas remote from the calyx; calycine segments lanceolate, adpressed; corolla ovate, angular; anthers crested. \( \text{G.} \) Native of the Cape of Good Hope. Ait. hort. kew. 2. p. 400. E. arbuscula, Lodd. bot. cab. 843. Flowers purple: in hort. kew. there are said to be 3 bracteas on each pedicel; 2 near the calyx, and the third remote from it. Style inclosed.

*Pendulous-flowered Heath.* Fl. July, Aug. Clt. 1791. Shrub \( \frac{1}{2} \) foot.

106 E. nutans; leaves 4 in a whorl; flowers terminal, drooping; bracteas remote from the flower; calyx ribbed, green; corolla ovate-globose; anthers crested. \( \text{G.} \) Native of the Cape of Good Hope. E. pendula, Hort. Bedd. eric. wob. p. 18. but not of Wendl. Flowers reddish-purple. Style a little exserted.

*Nodding-flowered Heath.* Fl. Spring and Summer. Clt. 1791.

107 E. ribúla (Link. enum. 1. p. 368.) leaves 4 in a whorl, finely ciliate, flowers terminal; bracteas remote from the calyx; corolla oblong-globose; anthers crested. \( \text{G.} \) Native of the Cape of Good Hope. Flowers purplish-red. Style exserted.


108 E. lactífołá (Lodd. bot. cab. t. 901.) leaves 4 in a whorl, and are as well as the branches scabrous; flowers terminal, erectish; corolla ovate; bracteas remote from the calyx; anthers crested. \( \text{G.} \) Native of the Cape of Good Hope. E. lacticola, Roll. cat. E. tricoló, Spreng. syst. 2. p. 193. Limb of corolla connivent and drawn out. Flowers white. Style inclosed.


109 E. t'únc (Spreng. syst. 2. p. 188.) leaves 4 in a whorl, crowded, ciliated, erect; flowers terminal, umbellate, drooping; bracteas remote from the calyx; calyx minute, colour, ciliated; corolla urceolate or globosely bell-shaped; anthers crested. \( \text{G.} \) Native of the Cape of Good Hope. E. pedunculata, Andr. heath. 4. icon. but not of Wendl. E. ciliátá, Hort. Flowers purplish-red. Style inclosed.


**• • • • Leaves 3-6 or more in a whorl.**

111 E. empetrifólia (Lin. mant. p. 375.) leaves 6-7 in a whorl, oblong-linear, ciliate, erect; flowers disposed in glomerate racemose whorls; bracteas and calyces lanceolate; corolla 2 lines long, hairy, with an urceolar tube, and a recurvedly spreading limb; anthers awned or crested; stigma exserted. \( \text{G.} \) Native of the Cape of Good Hope. Lin. diss. no. 15, with a figure. Thumb. diss. no. 76. Curt. bot. mag. 447. Lodd. bot. cab. 1875. Calyx 4-lobed. Style exserted. Flowers purplish-red.
ERICACEÆ. 1. ERIKA.


139 E.? Colletter (Spreng. syst. 2. p. 192.) branches straight, hairy; leaves linear-oblong, obtuse, revolute, rather hispid, spreading; flowers axillary, drooping, clamy; corolla urceolate; style excised; stigma peltate. ñ. G. Native of the Cape of Good Hope.

Collett Heath. Shrubs.

* * * Leaves 4 in a whorl. Corollas campanulate.

140 E. odorata (Andr. heath. 3. t. 64.) leaves 4 in a whorl, glandularly ciliated, spreading; flowers terminal, umbellately verticillate, drooping; pedicels coloured; bracteas remote from the calyx; corolla campanulate, viscid. ñ. G. Native of the Cape of Good Hope. Lodd. bot. cab. 633. Sims, bot. mag. 1899. Corolla white, very like those of some species of Anùraíac. Style inclosed.


141 E. propéndens (Andr. heath. 2. t. 45. Sims, bot. mag. 21408.) downy; leaves 4 in a whorl, short, ciliated; branches flexuous; bracteas approximating the calyx; flowers terminal, solitary or by threes; corolla bell-shaped. ñ. G. Native of the Cape of Good Hope. Lodd. bot. cab. 63. Calycine segments jagged or serrated. Corolla purple, or deep red. Style inclosed.


142 E. palestris (Andr. heath. 2. t. 46.) leaves 4 in a whorl, linear, obtuse, downy; flowers terminal, umbellate; bracteas

nulate, with a cup-shaped tube; bracteas remote from the calyx. ñ. G. Native of the Cape of Good Hope. E. fucata, Thunb. diss. no. 6. E. viridipupurea, Hort.—Clus. hist. 1. p. 42. Stem downy. Corollas very small, green. Style inclosed or exserted.

VVAR. ß. minima (Hort.) plant smaller than the species.


129 E. corniculata (Nois. et Spreng. syst. 2. p. 196.) branches flexuous; leaves 3 in a whorl, linear, stiff, glandularly ciliate; flowers terminal, sessile, by threes, erect; calycine segments foliaceous, downy. ñ. G. Native of the Cape of Good Hope. Flowers red, small, campanulate. Stigma peltate, much exserted.


130 E. antennata (Spreng. syst. 2. p. 196.) branches hispid; leaves linear, obtuse, 3 in a whorl, glabrous; flowers terminal, usually by threes, drooping; bracteas close to the calyx, inflated; corolla wide, campanulate; anthers mutic. ñ. G. Native of the Cape of Good Hope. E. florída, Lodd. bot. cab. 234. Flowers purplish-red. Style a little exserted.


131 E.? spasa (Bedd. eric. wob. p. 22.) leaves 3 in a whorl, glabrous; flowers terminal; bracteas approximate and remote from the calyx; corollas small, bell-shaped, with deep spreading segments; anthers a little exserted. ñ. G. Native of the Cape of Good Hope. Lodd. bot. cab. 1467. Flowers purplish-red. Style excised.


132 E. passerina (Lin. suppl. p. 221. Thunb. diss. no. 16. prod. 70.) leaves 3 in a whorl, ovate, glabrous; flowers terminal, almost solitary; pedicels and calyces tomentose; corolla campanulate; style excised. ñ. G. Native of the Cape of Good Hope. Montin. in. nov. act. ups. 2. p. 289. t. 9. f. 1. E. passerinæfolia, Sal. in Lin. trans. 6. p. 332.—Petit. gen. t. 3. f. 7. Corolla 2½ lines long; pericarp tomentose.—Perhaps a species of Ceränãia.


* * Leaves 3 in a whorl. Corollas urceolate.

133 E. ericopeiíla (Andr. heath. 2. t. 37.) leaves 3 in a whorl, and are as well as the calyces and corollas woolly; bracteas remote and approximating the calyx; anthers a little exserted; flowers terminal, umbellate; corolla urceolate. ñ. G. Native of the Cape of Good Hope. Lodd. bot. cab. 1270. E. canadensæn, Ait. hort. kew. 2. p. 407. E. gnáphaloides, Hortul. Flowers with a purplish-red calyx, and a white corolla. Style excised.


134 E. tubérculaíris (Sal. in Lin. trans. 6. p. 330.) leaves 3 in a whorl; flowers terminal; corolla 1½ line long, rough from tubercles, with a glabrous tube; filamenta mutica; pericarp on a long stipe. ñ. G. Native of the Cape of Good Hope. Erica inclyta, Sól. mas. Anthers minute, smooth. Flowers purple.
remote from the calyx; corollas cylindrically bell-shaped; anthers a little exserted. GH. Native of the Cape of Good Hope. Lodd. bot. cab. t. 4. Branches divaricate. Corollas reddish-purple.

Marsh Heath. Fl. April, June. Clt. 1799. Shrub 1 ft. 143 E. visca'ria (Andr. heath. 1. t. 43.) leaves 4 in a whorl, linear, glabrous, spreading; flowers axillary, disposed in verticillate spires or racemes, drooping; corolla campanulate, clothed with clammy down; bracteae approximating the calyx, sessile; calyce segments ciliated; fruit silky. GH. Native of the Cape of Good Hope. Lodd. bot. cab. 726. Icon. pl. kew. t. 1. E. viscidia, Sal. in Lin. trans. 6. p. 372. Corolla pale purplish-red, 3 lines long, with a cup-shaped ribbed tube. Style inclosed.

Var. a, incana; leaves hoary, 13 to 3 lines long. GH. E. viscaria, Thunb. diss. no. 40. Lin. mant. 321. diss. no. 45. with a figure.

Var. β, glabra; leaves green, 3-5 lines long. GH. E. viscária, Andr. heath. 1. t. 43. Icon. pl. kew. t. 1.

Clammy Heath. Fl. April and Autumn. Clt. 1774. Shrub 2 feet. 144 E. pyramidi'formis (Wendl. ex Spreng. syst. 2. p. 198.) leaves linear, hispid, spreading, 4 in a whorl; flowers terminal, usually by threes, erect; calyces adpressed, hispid; stigma quadridrilid. GH. Native of the Cape of Good Hope. Flowers purplish-red, campanulate.


Beautiful Heath. Fl. Jan. Oct. Clt. 1800. Shrub 1 ft. 147 E. sty-la'ris (Spreng. syst. 2. p. 198.) leaves 4 in a whorl, linear, obtuse, much spreading, and as are also as the branches hispid; flowers terminal, glomerate, erectish; calyces coloured, spreading, ciliated; corolla campanulate; style much exserted: stigma capitulate. GH. Native of the Cape of Good Hope. Anthers mutic.


Bearded Heath. Fl. June, Oct. Clt. 1816, Shrub. 149 E. const'x'tia (Bedf. eric. wob. p. 6.) leaves 4 in a whorl; flowers terminating the branches; bracteae remote from the calyx; corolla bell-shaped. GH. Native of the Cape of Good Hope. Style exserted.

Constantia Heath. Clt. 1810. Shrub 2 feet. 150 E. con'stita (Wendl. eric. fasc. 17. p. 75.) leaves 4 in a whorl, linear, pilose, spreading; flowers axillary, capitate, drooping; calyx foliaceous, imbricate, toothed; corolla campanulate, open; bracteae sessile; anthers mutic. GH. Native of the Cape of Good Hope. Flowers white. Style exserted.

Crowded-flowered Heath. Fl. July. Clt. 1820. Shrub 1 foot. * * * * Leaves 4 in a whorl. Corollas urceolate.

151 E. flexicaulis (Dry, in hort. kew. 2. p. 395.) leaves linear, 4 in a whorl, spreading, oblong, glandularly ciliate; flowers terminal, umbrilute; calyces coloured, glandularly ciliate. GH. Native of the Cape of Good Hope. E. glandulosa, Andr. heath. 2. t. 58. but not of Thumb. Corollas purple, urceolate. Style inclosed.


Honey-bearing Heath. Shrub.

155 E. Sic'i ca (Schonberg, in Linnaea. 2. p. 614.) leaves 4 in a whorl, petiolate, linear, nearly terete, canescent; flowers terminal, on long pedicels, subumbellate, canescens, erect; calyces segments and bracteae membranous, coloured, about equal in length to the corolla; corollas ovate-oblong, downy. GH. Native of Sicily. Flowers red.

Sicilian Heath. Fl. April, June. Clt. 1819. Shrub 2 to 3 feet. 156 E. aggrega'ta (Wendl. eric. fasc. 13. p. 11.) leaves 4 in a whorl, linear, hairy, spreading; flowers terminating the small branches; bracteae remote from the calyx; corolla globose, downy, with an erectish limb. GH. Native of the Cape of Good Hope. Lodd. bot. cab. 1678. Flowers purplish-red the whole forming branched racemes. There is also a white-flowered variety of this. Style exserted.

Aggregato-flowered Heath. Fl. June, July. Clt. 1820. Shrub 1 foot. * * * * Leaves 5-6 or more in a whorl. Corollas campanulate.

157 E. de'côra (Andr. heath. 3. t. 66. Alit. hort. kew. t. 392.) leaves 6 in a whorl, elongated, recurved; flowers axillary, mutant, disposed in spikes or racemes; bracteae remote from the calyx; corolla campanulate; anthers a little exserted. GH. Native of the Cape of Good Hope. Lodd. bot. cab. 1383. E. spiralis, Hortul. Flowers pale red.


Beaumont's Heath. Fl. June. Clt. 1820. Shrub 1 foot. * * * * * Leaves 5-6 in a whorl. Corolla urceolate.

159 E. cerintheoides (Lin. spec. ed. 2. p. 505. diss. no. 43.}
with a figure) leaves 5–6 in a whorl, linear-lanceolate, pilose and ciliolate, bearded at the apex; flowers terminal, capitate, drooping; corolla oblong, with an inflated tube, clothed with viscid hairs outside; bracteas sessile, larger than the calyx; segments of calyx cuneated. \( G \). Native of the Cape of Good Hope. Andr. heath. 1. t. 50. Curt. bot. mag. t. 220. Lodd. bot. cab. 1679. Berg. pl. cap. p. 104.–Breyn. cent. p. 25. t. 13. Wendl. eric. 7. p. 9, with a figure. E. crinifolia, Sal. in Lin. trans. 6. p. 367. Corollas scarlet or crimson, 8–10 lines long. There are several trifling varieties of this species in the gardens.


§ 4. Anthers coriunculate. Leaves 3 or 4 in a whorl.

160 E. magnifica (Andr. heath. vol. 4. icon.) leaves 3 in a whorl; flowers terminal by threes or fours; corolla ovate; bracteas remote from the calyx; anthers coriunculate. \( G \). Native of the Cape of Good Hope. Flowers purplish-red. Style inclosed. 


162 E. tenella (Andr. heath. 2. t. 31.) leaves 4 in a whorl, glabrous; flowers terminal by fours; corolla urceolate; anthers incluculate. \( G \). Native of the Cape of Good Hope. Lodd. bot. cab. 375. Flowers small, pale purplish-red. Style inclosed. 


163 E. gracilis (Andr. heath. 1. t. 2.) stem and branches glabrous; leaves glabrous, 4 in a whorl, linear; flowers terminal; corolla ovate-globose, or urceolate; anthers coriunculate. \( G \). Native of the Cape of Good Hope. Lodd. bot. cab. 244. Flowers small, purplish-red. Style inclosed. 


164 E. precox (Bedl. hort. eric. p. 19. Lodd. bot. cab. 1413.) leaves 4 in a whorl, aciculately spreading; flowers small, glabrously bell-shaped, disposed in terminal racemose fascicles; bracteas remote from the flower; anthers coriunculate. \( G \). Native of the Cape of Good Hope. Lodd. bot. cab. 1047. Flowers red. 


166 E. setacea (Andr. heath. 1. t. 24.) leaves 3–4 in a whorl; flowers terminal; corolla globose, bell-shaped; bracteas remote from the calyx; anthers coriunculate. \( G \). Native of the Cape of Good Hope. Flowers small, purplish-red. Style inclosed. 


† Species, not known to which genera of the Normal Ericae they belong.

167 E. Lavandulifolia (Sal. in Lin. trans. 6. p. 335.) stem hoary; leaves 3 in a whorl, hoary?; flowers terminal; bracteas close to the calyx; corollas 2 lines long, with a 4-angled tube, and an incurved limb; filaments very broad at the base; anthers inclosed, mutic. \( G \). Native of the Cape of Good Hope. 


168 E. crestedflora (Sal. in Lin. trans. 6. p. 332.) leaves 3 in a whorl; flowers terminal; calyx 4-toothed; corolla 2 lines long, having the limb 3 times longer than the tube, entire at the base; anthers inclosed, pericarp smooth. \( G \). Native of the Cape of Good Hope. Erica melanthera, Thunb. diss. no. 12. but not of Lin. Perhaps a species of Lophandra. 


169 E. cumuliflora (Sal. in Lin. trans. 6. p. 336.) leaves 3 in a whorl; fascicles 7–12-flowered, terminal; calyx hoary; corolla 2½ lines long, having the limb ciliated at bottom; anthers mutic, inclosed; pericarp hairy; stigma narrow. \( G \). Native of the Cape of Good Hope. Erica aggregata, Roxb. 

—Perhaps a species of Lamprotus. Flowers purplish-red. 


170 E. genistifolia (Sal. in Lin. trans. 6. p. 337.) flowers terminal, by threes; calyx viscid; corolla 2 lines long, having the limb ciliated at bottom; anthers mutic, inclosed; pericarp smooth; stigma broad. \( G \). Native of the Cape of Good Hope. Erica tetraloba, Roxb. 

—Perhaps a species of Lamprotus. 


171 E. perfoliataflora (Sal. in Lin. trans. 6. p. 337.) leaves 3 in a whorl, lanceolate-cuneated; flowers terminal, on long pedicels; calyxes short, orbicular; corolla 1½ lines long; anthers appendiculate, inclosed; stigma narrow. \( G \). Native of the Cape of Good Hope. Flowers deep purple. Filaments with short cuneate spurs. —Perhaps a species of Lamprotus.

Periplaca-flowered Heath. Fl. May, Dec. Clt. 1812. Shb. Cult. Elegant shrubs when in blossom, like all the other genera of the order. Turfy peat, mixed with sand, is the best soil for the species; and young tops root readily, if planted in a pot of sand in spring, with a bell-glass over them, in a moderate heat. When the plants have grown a considerable size, the balls of earth should be raised a little above the surface, so as to prevent water from remaining at the top of the stem, and the pots in which they are grown should be well drained.

II. GYPSCOLLIS (from γυπος, gypsos, lime, and κυλλος, kallos, most beautiful; the plants are very elegant, and generally inhabit calcaneous districts). Sal. mss. D. Don, in edinb. phil. journ. 17. p. 153.—Erica species of authors.

L. syn. Octandria, Monogynia. Calyx 4-parted, glumaceous, naked at the base. Corolla campanulate, or short-tubular, with a dilated mouth. Stamens exserted; filaments flattened or filiform; anthers biparite; having the cells mutic at the base, distinct and subitestate, dehiscing by an oblique pore. Stigma simple. Capsule 4-celled, many-seeded. —Small shrubs, natives of Europe and Africa, with whorled acerose leaves, and lateral or terminal crowded flowers. This genus is easily distinguished from Erica in the exserted anthers, flattened filaments, and simple stigma.

§ 1. Anthers mutic at the base, that is, without any horns, awns, or spurs.

* Leaves 4 in a whorl. Corollas campanulate. 

1 G. vaegans (Salisb. mss. ex Don, in edinb. phil. journ. 17. p. 153.) leaves 4–5 in a whorl, glabrous; flowers axillary, racemose; bracteas remote from the calyx; pedicels usually thin; corolla short, campanulate. \( G \). Native of England, in Cornwall; and of the south of France and north of Africa.

Var. 1. alba; flowers axillary, white.
Var. 2. tubulosa; flowers pale red.


2 G. purpureascens (D. Don, in edinb. phil. journ. 17. p. 153.) leaves 3-4 in a whorl, linear, glabrous; flowers axillary; corollas tubular or campanulate; andthers deeply bifid; calyce segments awl-shaped. 15. H. Native of the south of Europe. Erica purpurascens, Lin. spec. 509. Seg. veron. 250. Thunb. mon. no. 44. Flowers pale purplish-red.

Purplish-flowered Moor-Heath. Shrub 1 to 2 feet.

3 G. raste'lum; branches flexuous, hispid; leaves linear, in fascicles, reflexed; flowers terminal, tetragonal, drooping a little; calyces coloured, adpressed; corolla campanulate. 15. G. Native of the Cape of Good Hope. Erica rastellum, Spreng. syst. 2. p. 190.

Rastellum Moor-Heath. Shrub.

4 G. microstôma; leaves 4 in a whorl, clothed with woolly hairs, linear, hispidly ciliated, spreading; flowers axillary, pedicellate, aggregate; corolla campanulate. 15. G. Native of the Cape of Good Hope. Erica microstoma, Berg. pl. cap. p. 97. Flowers purplish-red.


5 G. pilosa; leaves 3-4 in a whorl, linear, spreading; pilose; flowers terminal, few, villous, pedicellate, erect; bracteas remote from the calyx, spreading, very villous; corollas campanulate. 15. G. Native of the Cape of Good Hope. Erica pilosa, Lodd. bot. cab. 606. Flowers greenish-yellow.


** Leaves 4-5 in a whorl. Corollas urceolate.


8 G. Medîterrânea (D. Don, l. c.) leaves 4-5 in a whorl, linear-cuneate, glabrous; flowers axillary, racemose, secund, nutant; bracteas above the middle of the pedicels; corolla urceolar; anthers foraminose from the middle. 15. H. Native of the south of Europe, in the region of the Mediterranean; and of Ireland, &c. Erica Mediterranea, Lin. mant. p. 229, diss. no. 55. with a figure of the flower. Wendl. eric. 7. p. 11. Curt. bot. mag. 471. Erica lugubris, Sal. in Lin. trans. 6. p. 344. Flowers red, with dark anthers. Corolla 1½ to 2 lines long.


9 G. horizontâlis; leaves 4 in a whorl, linear, spreading; flowers terminal, sessile, usually by threes, drooping; calyce segments spatulate, serrated; corolla conical. 15. G. Native of the Cape of Good Hope. Erica horizontalis, Andr. heath. 2. t. 52. Flowers white, with brown anthers.


10 G. procumbens; leaves 4 in a whorl, linear, spreading; glabrous; flowers terminal, subaggregate, villous; bracteas remote from the calyx, corolla globose ovate. 15. G. Native of the Cape of Good Hope. Erica prostrata, Lodd. bot. cab. 1992. Flowers reddish-purple.


11 G. hispida; leaves 4 in a whorl, hispidly ciliated, linear, spreading, obtuse; flowers terminal, racemose, pendulous; bracteas remote from the calyx; corolla urceolate, globose. 15. G. Native of the Cape of Good Hope. Erica hispida, Andr. heath. 2. t. 56. Lodd. bot. cab. 1982. Corollas red.


12 G. flexilis; branches villous; leaves 4 in a whorl, beset with glandular hairs; flowers axillary, racemose, drooping; pedicels viscid; corolla 1½ line long, with an ovate tube; fruit woolly. 15. G. Native of the Cape of Good Hope. Erica flexilis, Wendl. diss. no. 47, with a figure. Erica flexilis, Sal. in Lin. trans. 6. p. 342. Calyce segments ciliated with glands.

Best Moor-Heath. Shrub.

** ** ** Leaves 3 in a whorl. Corollas campanulate.


Handful-flowered Moor-Heath. Shrub.


15 G. leucanthêra; leaves 3 in a whorl, linear, glabrous, erect; branches twiggie; flowers terminal, drooping; pedicels glabrous; corolla 1½ line long, funnel-shaped, having the limb quite entire, and length of tube; anthers foraminose near 5 K.
ERICACEÆ.

G. ericaceae, Link. 

G. bracteas 

flowers terminal on short pedicels; bracteas approximating the calyx; calyx one half shorter than the corolla, with ovate segments, furnished with a green line; anthers exerted; stigmas very. 

G. G. Native of the Cape of Good Hope. 

Erica Actea, Link. 

16. G. Actea; leaves 3 in a whorl, glabrous; flowers terminal on short pedicels; bracteas approximating the calyx; calyx one half shorter than the corolla, with ovate segments, furnished with a green line; anthers exerted, mutic; stigmas very. 

G. G. Native of the Cape of Good Hope. 

Erica Actea, Link. 

17. G. xigricans; leaves 3 in a whorl, spreading, a little reflexed, linear, glabrous, awned at the apex; flowers terminal, usually by threes; pedicels bracteate, and are as well as the calyx coloured and viscid; corolla campanulate rotate, with a revolute limb. 

G. G. Native of the Cape of Good Hope. 

Erica nigritta, Lodd. bot. cab. t. 54. Flowers white; anthers black.

Blackish Moor-Heath. 

18. G. Parthen; leaves 3 in a whorl, oval-oblong, ciliated, spreading; branches hairy; flowers terminal, usually by threes; calyx coloured, ciliated; corolla campanulate rotate; anthers connivent, sebaceous. 

G. G. Native of the Cape of Good Hope. 

Erica pâtenis, Andr. heath. t. 35. Lodd. bot. cab. 1228. Flowers red.

Spreading-flowered Moor-Heath. 

19. G. Concava; leaves 3-4 in a whorl, linear, glabrous, spreading; flowers axillary; corolla campanulate; anthers a little exerted. 

G. G. Native of the Cape of Good Hope. 

Erica concava, Ker. in bot. mag. 2149. Flowers pale red.

Concave-flowered Moor-Heath. 

20. G. Acutangula; leaves 3 in a whorl, linear; flowers terminal, usually by two or three; corolla campanulate, with a short tube, and a reflected limb. 

G. G. Native of the Cape of Good Hope. 

Erica acutangula, Lodd. bot. cab. 1868. Flowers white; anthers black, exerted. Bracteas approximating the calyx, sessile.

Acute-angled Moor-Heath. 

21. G. Melanthera; leaves 3 in a whorl, obtuse, smooth, spreading; flowers terminal, subumbellate, nutant; bracteas remote from the flower; corolla bell-shaped; bracteas and calyces coloured; stigma obtuse; fruit silky. 

G. G. Native of the Cape of Good Hope. 

Erica melanthera, Lin. mant. 232. Lodd. bot. cab. 867. Erica lysimachiaeflora, Sal. in Lin. trans. 6. p. 332. Corolla 2 lines long, having the limb twice the length of the tube. Flowers red, with black anthers. Calyx large, and is, as well as the pedicels, coloured.

Black-angled Moor-Heath. 

22. G. Thalictriflora; branches hairy, straight; leaves 3 in a whorl, linear, glabrous, erect; flowers terminal, 2-3 together, erect, almost sessile; bracteas approximating the calyx; corolla short, campanulate, with deep open segments. 

G. G. Native of the Cape of Good Hope. 

Erica thalictriflora, Lodd. bot. cab. t. 1294. Flowers yellow.

Meadow-Rue-flowered Moor-Heath. 

23. G. Umbellata (D. Don, l. c.) branches downy; leaves 3 in a whorl, linear, short, slightly ciliated; flowers terminal, umbellate; bracteas unilateral, pressed to the calyx; corolla pea-shaped, with an 8-angled base; anthers foraminose near the apex. 

G. G. Native of the Cape of Good Hope. 


Umbellate Moor-Heath. 

24. G. Villosa; leaves 3 in a whorl, linear, spreading, villous; flowers axillary or terminal, on long pedicels, drooping, usually by threes; calyces segments ovate, villous; corollas urceolate, with the limb a little connivent. 

G. G. Native of the Cape of Good Hope. 

Erica villosa, Andr. heath. 3. t. 53. Corollas white, with black anthers.

Villous Moor Heath. 

25. G. Dumosa; leaves 4 in a whorl, oval, with revolute edges, spreading, hispid; flowers terminal, corymbose, drooping; calyces adpressed, foliaceous; bracteae close to the calyx; corollas urceolate. 

G. G. Native of the Cape of Good Hope. 

Erica dumosa, Andr. heath. 4. icon. Flowers pale red.

Bushy Moor Heath. 

26. G. Nudiflora (D. Don, in edinb. phil. journ. 17. p. 153.) leaves 3 in a whorl, linear-cuneated, ciliated, or slightly hairy, spreading; flowers axillary and terminal, aggregate, erect; corolla ovate-cone-shaped; bracteas minute, remote from the calyx; fruit smooth. 

G. G. Native of the Cape of Good Hope. 


Naked flowered Moor Heath. 

27. G. Staminea; leaves 3 in a whorl, linear, glabrous, erect; flowers axillary, scattered; bracteas approximating the calyx; corolla subrotate, about equal in length to the calyx; stamens divaricate, much exerted. 

G. G. Native of the Cape of Good Hope. 

Erica staminea, Andr. heath. 3. t. 48. Flowers sulphur-coloured.

Long-stamened Moor Heath. 

28. G. Tiareflora; leaves 3 in a whorl, stiff, spreading, obtuse; flowers terminal, glomerate, drooping; calyx bracteate; corolla covered by the calyx, having the tube dilated at the base; filaments gradually dilated. 

G. G. Native of the Cape of Good Hope. 


Tiar-flowered Moor Heath. 

29. G. Imbricata; leaves 3 in a whorl, linear, erect, imbricated; branches rather hairy; calyx imbricated by bracteas; corolla urceolate, 1 line long, length of calyx; flowers terminal, aggregate, erectish; pericarp gegartoid. 

G. G. Native of the Cape of Good Hope. 

Erica imbricata, Lin. mant. 372. diss.


30 G. squamiflora; leaves 3 in a whorl, linear; flowers terminal; bracts scattered above the middle of the pedicels; corolla ⅓ of a line long, shorter than the calyx; anthers acuminate; fruit broad, ovate. η. G. Native of the Cape of Good Hope. Erica squamiflora, Sal. in Lin. trans. 6. p. 349. Erica imbricata, Roxb. miss. but not of Lin.


31 G. cæsia; leaves 3 in a whorl, short, linear, glabrous; flowers terminal, twin, erect; calyx imbricate by bracteae; corolla campanulate, ⅛ of a line long, shorter than the calyx; anthers oblong, with a broad dissipation; fruit ovate; stigma broadish. η. G. Native of the Cape of Good Hope. Erica cæsia, Sal. in Lin. trans. 6. p. 349.

Grey Moor Heath. Shrub.

32 G. flexuosa; leaves 3 in a whorl, linear, glabrous, erect, short; flowers terminal, usually by three, erect; bracteae scattered above the middle of the pedicels, imbricate, small; corolla bell-shaped, 1 line long, longer than the calyx, which is coloured; anthers oblong, with a narrow dissipation; nectarium large; fruit imbricate. η. G. Native of the Cape of Good Hope. Erica flexuosa, And. health. 1. t. 23. Sal. in Lin. trans. 6. p. 349. Lodd. bot. cab. 1495. E. divaricata, Wendl. eric. 7. p. 5. Flowers white, with red anthers.

Flexuous Moor Heath. Fl. April, July. Cl. 1792. Shrub 1 to 2 feet.

33 G. lasciva; leaves 3 in a whorl, linear; flowers terminal; calyx imbricate by bracteae; corolla ⅓ of a line long, a little shorter than the calyx; anthers foraminose from the base; stigma peltate. η. G. Native of the Cape of Good Hope. Erica lasciva, Sal. in Lin. trans. 6. p. 349. Erica imbricata, Thumb. diss. no. 11.


34 G. dioteflora; leaves 3 in a whorl; flowers axillary at the top of the branches; calyce segments cuneate; corolla 1⅓ line long, with an urceolate tube; anthers a little exerted; pericarp downy. η. G. Native of the Cape of Good Hope. Erica dioteflora, Sal. in Lin. trans. 6. p. 342. Erica pistillaris, Sol. miss.


35 G. stylosa; leaves 3 in a whorl; flowers terminal; pedicels long, furnished with bracteae near the calyx; corolla line long, a little longer than the calyx; anthers pointed; fruit oval; style very long. η. G. Native of the Cape of Good Hope. Erica stylosa, Sal. in Lin. trans. 6. p. 350. Erica bracteata, Roxb. miss. but not of Lin.


36 G. Pohlmannii; leaves 3 in a whorl, 7 obuse, imbricate; flowers terminal; corolla with a globose tube, and a 4-parted limb; anthers a little exerted. η. G. Native of the Cape of Good Hope. Erica Pohlmannii, Lodd. bot. cab. 1852. Flowers pale red, with deep red anthers.


37 G. longipedunculata; leaves oval, mucronate, 3 in a whorl, hispid; flowers terminal, umbellate, on long pedicles, pendulous; bracteae remote from the calyx, deciduous; calyceae adpressed; corolla ovate; anthers mutic. η. G. Native of the Cape of Good Hope. Erica longipedunculata, Lodd. bot. cab. 103. Flowers large, purple, pedicellate, and are, as well as the calyxes, henset with glandular hairs.


38 G. rostellata; leaves 3 in a whorl; flowers terminal; bracteae imbricate; corolla ovate-globose. η. G. Native of the Cape of Good Hope. Erica rostellata, Bedf. eric. wob. p. 21. Flowers white.


39 G. felata; leaves 3 in a whorl; flowers terminal; bracteae remote from and approximating the calyx; corolla round, with deep, loose segments. η. G. Native of the Cape of Good Hope. Erica felata, Andr. health. 4. icon. Erica exserta, Bedf. eric. wob. p. 9. Flowers pale purplish-red.

Peltate Moor-Heath. Fl. Spring, Autumn. Cl. 1810. Shrub 1 to 2 feet.


* Leaves 3 in a whorl. Corollas campanulate.

40 G. articulata; leaves 3 in a whorl, glabrous; flowers terminal, umbellate; bracteae remote from the calyx; anthers corniculate; corollas slender, campanulate. η. G. Native of the Cape of Good Hope. Erica articulata, Bedf. hort. eric. wob. p. 2. but not of Thumb. nor Curt. Flowers reddish-purple.

Jointed Moor-Heath. Shrub.

41 G. Loddigesii; leaves 3 in a whorl, downy; flowers terminal; bracteae approximating the calyx, sessile; corolla campanulate, with deep segments; anthers awned. η. G. Native of the Cape of Good Hope. Erica concava, Lodd. bot. cab. 134 but not of Ker. Flowers pale purplish-red, spreading. Probably a species of Erica.


42 G. intertexta; leaves 3 in a whorl, ciliated with long hairs; flowers sessile; bracteae approximating the calyx, which is ciliated; corolla round, campanulate; anthers awned. η. G. Native of the Cape of Good Hope. Erica intertexta, Lodd. bot. cab. 1034. Flowers yellow. Anthers black.


43 G. paniculata; leaves 3 in a whorl, linear, triqueterous, glabrous; branches tomentose; flowers terminal, by threes; corolla ⅓ of a line long, campanulate, having the segments imbricate at the base; spars of anthers linear, smooth; style exserted. η. G. Native of the Cape of Good Hope. Erica paniculata, Lin. spec. ed. 2. p. 508. Lodd. bot. cab. 1194. Erica millefolia, Berg. pl. cap. p. 96. Sal. in Lin. trans. 6. p. 550. Flowers red. There is also a white-flowered variety of the species.


44 G. Bedfordiana; leaves 3 in a whorl; flowers terminal; bracteae remote from the calyx; corolla bell-shaped; anthers awned, exserted, as well as the style. η. G. Native of the Cape of Good Hope. Erica mellifera, Bedf. eric. wob. p. 15. Duke of Bedford's Gypsocalis. Fl. Spring. Cl. 1812. Shrub.

** Leaves 3 in a whorl. Corollas urceolate.

45 G. fra'grans; glabrous; leaves opposite, or 3 in a whorl, 5 k 2
subulate; flowers terminal or lateral, usually by twos; corolla campanulate, with a revolute limb; anthers exerted, black, mucic. \( \text{G} \). Native of the Cape of Good Hope. Erica fragrans, Ker, in bot. mag. 2181. Flowers pale red, with blackish anthers. Perhaps a species of Lampros.

**Fragrant Moor-Heath.** Fl. Spring. Clt. 1803. Shrub.

46 G. nigéita (D. Don, in edinb. phyll. journ. 17. p. 153.) leaves 3 in a whorl, linear, trisetious, glabrous, shining, spreading; flowers terminal, usually by three; pedicels pilose, with broad imbricate bracteae, which are coloured like the calyx; corolla globosely bell-shaped, or urceolar, with a revolute limb; fruit tomentose. \( \text{G} \). Native of the Cape of Good Hope. Erica nigrita, Lind. diss. mant. 65. Thunn. diss. no. 53. Andr. heath. 1. t. 32. Wendl. eric. fase. 12. p. 11. with a figure. Erica laricina, Berg. pl. cap. p. 94. E. volubilia, Sal. in Lin. trans. 6. p. 835.—Seb. thes. 2. p. 11. t. 9. f. 7. Sides of calyx recurved at top. Corolla white, with black corniculate anthers.

**Black-anthered Moor-Heath.** Fl. April, July. Clt. 1790. Shrub 1 foot.

47 G. lyríceera; leaves 3 in a whorl, shining, linear, trigonal; flowers terminal; corolla urceolate, with a revolute limb; spurs of anthers serrate; anthers lyre-form, hairy; fruit tomentose. \( \text{G} \). Native of the Cape of Good Hope. Erica lirigera, Sal. in Lin. trans. 6. p. 836. Erica nigrita, Roxb. but not of Sal. Flowers white, with black anthers.


***Leaves 4 in a whorl. Corollas campanulate.***

48 G. cistifòlia; leaves 4 in a whorl, beset with glundular hairs; flowers terminal; bracteae remote from the calyx; corolla bell-shaped, with reflexed segments; anthers corniculate. \( \text{G} \). Native of the Cape of Good Hope. Erica cistifolia, Link. enytum. 1. p. 369. Bedf. eric. wob. p. 5. Corollas white. Calyx hairy.

**Cistus-leaved Moor-Heath.** Fl. April, May. Clt. 1823. Shrub 1 to 2 feet.

49 G. exzîmpîta; leaves 4 in a whorl, linear, spreading, reflexed, hairy, bearded at the apex; branches woolly; flowers aggregate, terminal, drooping; corolla campanulate; anthers asned or corniculate. \( \text{G} \). Native of the Cape of Good Hope. Erica exzîmpîta, Spreng. syst. 2. p. 195.

**Draw-out-anthered Moor-Heath.** Fl. April, Sept. Clt. 1811. Shrub 1 to 2 feet.

Cult. See Erica, p. 800, for culture and propagation of the greenhouse species; and Calluna, p. 828, for those of the hardly kins.


**L. syst. Tetra-Pentândria Monogânia.** Calyx 4-parted. Corolla short-tubular, with a 4-cleft limb. Stamens 4-6, inserted in the receptacle; filaments linear, flattened, glabrous; anthers bipartite; cells of anthers attenuated at the base, mutic, dehisceing by an oblong hole. Stigma simple, obtuse. Capsule 4-celled, many-seeded.—Much branched shrubs, natives of the Cape of Good Hope. Leaves verticillate, with revolute margins. Flowers terminal, glomerate.

**Anthers mutic.***


**Var. ß. pâllida;** (Lodd. bot. cab. 85.) Flowers pale red.


2 B. depresâtâ (Licht. mss. ex Rœhm. et Schultes, syst. 3. p. 168.) leaves 3-4 in a whorl, linear, spreading, hairy; anthers exerted. \( \text{G} \). Native of the Cape of Good Hope. Corolla cylindrical, rufescent.


**Scarbrus Bleria.** Fl. May, June. Clt. 1824. Shrub 1 foot.

4 B. fâsciculâta (Willd. spec. 1. p. 629.) leaves 4 in a whorl, lanceolate, ciliate scarous; stamens 4, exerted. \( \text{G} \). Native of the Cape of Good Hope. Erica fâsciculâta, Thunn. prod. 72. fl. cap. 2.

**Fasciculated Bleria.** Fl. June, July. Shrub 1 foot.

5 B. antîcublata (Lin. mant. 198.) leaves 4 in a whorl, ovate or linear, glabrous, shining; bracteae solitary; calyx funnel-shaped, hairy; stamens 4-5, exerted. \( \text{G} \). Native of the Cape of Good Hope. Erica antîcublata, Thunn. prod. 71. Wendl. coll. 2. p. 19. t. 44. Erica palâeacea, Sal. in Lin. trans. 6. p. 341. Erica eriozêpha, Lam. enyc. no. 73. ill. 78. Flowers reddish. Heads drooping.


7 B. mucîôsa (Willd. spec. 1. p. 630. Att. hort. kew. 1. p. 150.) leaves 4 in a whorl; calyx pilose; corolla campanulate, pilose above; flowers axillar; stigma petalate. \( \text{G} \). Native of the Cape of Good Hope. Erica mucîôsa, Thunn. prod. 70. Branches downy. Leaves scarous.

**Least Bleria.** Shrub.

9 B. hersútxa (Licht. in Rœhm. et Schultes, syst. 3. p. 170.) leaves 3 in a whorl, fleshy, nearly terete, spreading; calyx pilose; corolla cylindrical; anthers 4, exerted. \( \text{G} \). Native of the Cape of Good Hope. Corolla flesh-coloured. Anthers black.

**Hairy Bleria.** Shrub.

10 B. paçîflôra (Wendl. coll. 2. p. 17. t. 43.) leaves 3 in a whorl, ovate, glabrous; corolla clavate, glabrous; calyx
ERICACEÆ. III. BLERIA.


20 B. ciliata (Lin. suppl. 123.) leaves 4 in a whorl, glabrous, minute; calyx very hairy; corolla 1½ line long, hairy; stamens 4-5, included; filaments spurred. *G*. Native of the Cape of Good Hope. Wendl. coll. 2. p. 35. t. 49.

ERICACEÆ. IV. SYMPIEZÄ. V. PACHYSA.

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21 B. buxodesa (Wendl. coll. 2. p. 3. t. 38.) leaves 3-4 in a whorl, linear, obtuse cresent, 1 line long; corolla 1½ line long, glabrous; anthers crested, exerted. *G*. Native of the Cape of Good Hope. Flowers rose-coloured, drooping.


22 B. bruneifolia; leaves 6 in a whorl, long; bracts near the calyx, the outer one very long; corolla 1½ line long; stamens 6, exerted; filaments spurred. *G*. Native of the Cape of Good Hope. Filaments brunnifolia, Sal. in Lin. trans. 6. p. 341. Erica hemisphérica, Sal. mss.

Brunia-leaved Bleria. Shrub.

Cult. Pretty little shrubs, deserving a place in every collection of greenhouse plants. A mixture of turfy peat and sand is the best soil for them; and young tops root readily, planted in a pot of sand in spring, with a bell-glass over them.

IV. SYMPIEZÄ (from συμπειζω, sympizeo, to press; in reference to the stamens, which adhere to the tube of the corolla.) Licht. mss. ex Rœn. et Schultes, syst. 3. p. 8. no. 447. and p. 171.

LIN. SYST. Tetrandria Monogyneia. Calyx turbinate, compressed, bilabiata, fringed. Corolla tubular, sub-bilabiata, longer than the calyx. Stamens 1-5, inserted in the tube of the corolla, exerted; anthers erect; style length of stamens; stigma simple. Capsule 4-celled, many-seeded.—A small branched shrub, native of the Cape of Good Hope. Leaves adpressed, erect, imbricated, 3 in a whorl, linear, trilobed, glabrous, engraved by a line above. Flowers drooping, disposed in terminal heads, purplish.


Cult. See Bleria above for culture and propagation.

V. PACHYSA (from παχυς, pachys, thick; in reference to the thick substance of the corolla.) D. Don, in edinb. phil. journ. 17. p. 153.—Erica species of authors.

LIN. SYST. Octandria Monogyneia. Calyx deeply 4-parted, (f. 153 a.) coriaceous. Corolla nearly globose, (f. 153 c.) coriaceous, with a contracted 4-lobed mouth, (f. 153 d.) Stamens included; filaments much dilated; anthers bifid; cells of anthers short, crested at the base, opening by an oblique foramen. Style dilated at the base; stigma simple, obtuse. Disk hypogynous, elevated. Capsule 4-celled, many-seeded.—Small erect shrubs, natives of the Cape of Good Hope. Leaves loosely imbricated, compressed, 3 in a whorl. Flowers large, terminal, ststoborymbose, drooping; pedicels bracteolate.


Ardent Pachysea. Fl. April, June. Cl. 1800. Shrub 1 to 2 feet.
ERICACEE. V. PACHYSA. VI. CERAMIA.


3 P. aristata; leaves 3 in a whorl, linear, spreading, roughish; corolla ovate-globose, clammy; bracteas approximating the calyx; cells of anthers awned. f. G. Native of the Cape of Good Hope. Erica vernix, var. coccinea, Bedd. eric. wob. p. 27. t. 3. f. 22. Corolla reddish-orange, tipped with green. This species differs from the rest in the anthers being awned, not crested. 

Annealed-anthered Pachysa. Fl. May, June. Clt.? Shrub 1 to 2 feet.

4 P. lambertiana; leaves 3 in a whorl, linear, sebaceous, spreading; corolla glabrous, ovate-globose; bracteas 3 or 2 near the calyx, and 1 remote from it. f. G. Native of the Cape of Good Hope. Erica lamberti, Andr. heath. 2. t. 16. Eric Lambertiana, Sol. in Ait. hort. kew. 2. p. 391. Lodd. bot. cab. 3. Calyx red. Corolla white. 


6 P. formaosa; leaves 3 in a whorl, oblong, obtuse, spreading; calycine segments ovate; corolla ovate-globose, clammy. f. G. Native of the Cape of Good Hope. Erica formaosa, Thumb. disp. no. 80. t. 3. f. 3. Corolla white. 


Bery-flowered Pachysa. Fl. April, July. Clt. 1774. Shrub 1 to 2 feet.

8 P. vesiculatias; leaves 3 in a whorl, besprinkled with black vesicles; corolla 1 line long, clothed with viscid pubescence; anthers inclosed; spurs of anthers parallel, cuneated; fruit silky. f. G. Native of the Cape of Good Hope. Erica vesiculatias, Sol. in Lin. trans. 6. p. 335. Erica conaeca, Hortul.


9 P. glomeriflora; leaves 3 in a whorl, narrow-cuneated; flowers terminal; calyx imbricated by bracteas; corolla 2½ lines long, viscid, with a spherical tube; spurs of anthers very villous. f. G. Native of the Cape of Good Hope. Erica glomeriflora, Sal. in Lin. trans. 6. p. 330. Erica viscaria, Sol. mss. Tufted-flowered Pachysa. Shrub. 

Cult. See Erica, p. 800. for culture and propagation.

VI. CERAMIA (from κεραμίς, kerámis, a pitcher; shape of flowers). D. Don, in edinb. phil. journ. 17. p. 153. — Erica species of authors. 


2 C. auricularias; leaves 3 in a whorl, linear-lanceolate; corolla 3 lines long, downy outside, with an ovate tube; spurs of anthers minute, ear-formed. f. G. Native of the Cape of Good Hope. Erica auricularias, Sol. in Lin. trans. 6. p. 327. Like the preceding, but differs in the spurs of the anthers. 


4 C. helianthemifolia; leaves opposite, obovate; corolla urceolate, 3 lines long, downy both inside and outside; spurs of anthers long. f. G. Native of the Cape of Good Hope. Erica helianthemifolia, Sal, in Lin. trans. 6. p. 328. Corollas white. 


Var. β; authors exserted.  h. G. Erica planifolia, Wildl. spec. 2. p. 362.—Pluck. mant. p. 69. t. 847. f. 1.


6 C. thyrsiflora; leaves 3 in a whorl, ovate, spreading, reticulata, ciliate; flowers axillary, solitary; spurs of anthers short; corolla globose, urceolate, downy.  h. G. Native of the Cape of Good Hope. Erica thyrsiflora, Andr. heath. 2. t. 29. Ait. hort. kew. 2. p. 402. Bracteas remote from the calyx. Corollas white, but in Andrew's figure they are red or purple.


7 C. thymiflora; leaves 3 in a whorl, lanceolate, rather villous, spreading; flowers axillary, cymose.  h. G. Native of the Cape of Good Hope. Erica thymiflora, Spreng. syst. 2. p. 109.


8 C. cordata; leaves 3 in a whorl, ovate, sub-cordata, villous above and woolly beneath; branches divaricate, hairy; corollas globose; anthers mutic.  h. G. Native of the Cape of Good Hope. Erica cordata, Andr. heath. 3. t. 41. Corollas white, with black anthers.


9 C. calathiflora; leaves 3 in a whorl, ovate, imbricated; flowers terminal; calyx corymbosus; corolla campanulate, 1 line long, smooth; spurs of anthers cuneate, hairy; fruit tomentose; style exerted.  h. G. Native of the Cape of Good Hope. Erica calathiflora, Sal. in Lin. trans. 6. p. 338. Erica bicolor, Thunb. diss. no. 57. Willd. spec. 2. p. 363.


10 C. latiflora; leaves 3 in a whorl, oblong-lanceolate, villous above and white beneath, as in the rest of the species; flowers axillary, aggregate; corollas conical; genitals exserted; anthers mutic.  h. G. Native of the Cape of Good Hope. Erica latiflora, Andr. 2. t. 41. Flowers dark red or purple. Branches flexuose.


11 C. deliqua; leaves obliquely verticillate, linear, truncata, with glandular margins; spikes of flowers terminal, coarctate; corollas urceolate, viscid, having the interstices of the limb ending in a tumid hook each; anthers awned.  h. G. Native of the Cape of Good Hope. Erica deliqua, Thunb. diss. no. 73. with a good figure. Baur. pl. kew. t. 3. Andr. heath. 1. t. 23. Wendl. eric. 17. p. 77. with a figure. Bracteas remote from the calyx; calyce segments linear-oblong. Corollas pale purple.


12 C. oxycoeciflora; stems decumbent, filiform; leaves 3 in a whorl, ovate; corolla 1½ line long, campanulate, hairy; filaments mutic.  h. G. Native of the Cape of Good Hope. Erica oxycoeciflora, Sal. in Lin. trans. 6. p. 322.—A very pretty species, with the habit of Oxycoccus palustris. Flowers red.


13 C. bleenfa; leaves 4-5 in a whorl, ovate, cuneate; corolla urceolate, 4½ lines long, viscid, having the segments imbricated at the base; filaments very broad; anthers corniculate.

h. G. Native of the Cape of Good Hope.—A very fine species. Corollas yellow, with a green mouth. Perhaps a species of Pachyta.

Bleüna Cerámia. Shrub.

14 C. serpylliflora; leaves 3 in a whorl, ovate, ciliate, sessile; flowers terminal; branches hairy.  h. G. Native of the Cape of Good Hope. Erica serpylliflora, Loddel. bot. cab. 744. Corollas white.


15 C. humifusa; leaves opposite, or 3 in a whorl, ovate; corolla 1½ line long, with an ample limb; flowers terminal; anthers mutic, inclosed; style much exerted.  h. G. Native of the Cape of Good Hope. Erica humifusa, Sal. in Lin. trans. 6. p. 332.


Cult. See Erica, p. 800. for culture and propagation.

VII. Desinia. VIII. Eurylepis.

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VII. DESMIA (from icsm, icsne, a fascicile; in reference to the glomerate flowers). D. Don, in edinb. phil. journ. July, 1834.—Erica species of authors.


2 D. eûalias (D. Don, l. c.) umbels pedunculate, aggregate; filaments dilated.  h. G. Native of the Cape of Good Hope.

Égal Desmia. Shrub.

3 D. polifôlia (D. Don, l. c.) leaves 3 in a whorl, aristate; flowers fasciculate; corolla oblong, with a dilated throat; filaments dilated; stigma nearly simple.  h. G. Native of the Cape of Good Hope.

Polium-leaved Desmia. Shrub.

Cult. See Erica, p. 800. for culture and propagation.

VIII. EURYLEPIS (from eûrops, eûry, broad, and Ŀèpis, a scale; in reference to the dilated scales of the calyces). D. Don, in edinb. phil. journ. 17. p. 154.—Erica species of authors.

Lin. syst. Octândria, Monogyânia. Calyx 4-parted, coriaceous, bifractate at the base. Corolla tubular, coriaceous, ventricose at the base, with a 4-cleft erect limb. Stamens inclosed; filaments dilated, canaliculate; anthers bipartite; cells of anthers coriaceous, desiccatio from an oblong foramen, auricled at the base. Stigma clavate, with a 4 tuberculatæ disk and a crenulatæ ring. Capsule 4-celled, many-seeded. Segments of placenta 2-lobed. Seeds oval, ventricose.—Difusely branched shrubs, natives of the Cape of Good Hope. Leaves scattered, with revolute margins. Flowers terminal, solitary, large, pendulous.
§ 1. Anthers mutic at the base. Normal species.

1. **E. malacábara** (D. Don, l. c.) leaves 3 in a whorl, linear, glabrous, spreading; flowers terminal, solitary, or by threes; corolla ovate-tubular, glabrous; bracteas ovate, near the calyx; fruit spherical; calyx adpressed. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica malacábara, Thumb, diss. no. 51. Lin. diss. no. 3. with a figure of the flower. spec. ed. 2. p. 507. amoen. acad. 5. p. 82. Andr. eric. 2. t. 36. Wendl. eric. 6. p. 7. with a figure. Erica rupestris, Sal. in Lin. trans. 6. p. 353. Corolla 7-8 lines long, sulphur-coloured, or yellowish-green.


2. **E. azaleífera**; leaves 3 in a whorl, lanceolate; flowers terminal; corolla 1½ line long, hairy; anthers mutic, exerted, foraminose the whole length. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica azaleífera, Sal. in Lin. trans. 6. p. 354.


4. **E. tetragóna**; leaves 3 in a whorl, linear, acuminate, adpressed, erectly spreading; flowers axillary, erect; corolla 4 lines long, with a pyramidul 4-angled tube; calyce segments cuipitate and adpressed. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica tetragóna, Thumb. diss. no. 5. with a figure. Lodd. bot. cab. 1239. Erica pugioniformis, Sal. in Lin. trans. 6. p. 387. Flowers yellow.


Shrub 1 foot.

6. **E. bractea-tá**; leaves 3 in a whorl, lanceolate, glabrous, adpressed; flowers terminal, umbellate; bracteas large, obovate, and are, as well as the calyces, coloured; corolla 2 lines long, having the segments crenulate. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica bracteata, Thumb. diss. no. 3. Erica ovbrallóalis, Sal. in Lin. trans. 6. p. 387. Filaments spurred.


7. **E. mucronáta**; leaves 3 in a whorl, linear-lanceolate, cuspidate, spreading, glabrous; flowers terminal, racemose; calyx bracteate, coloured, about equal in length to the corolla, which is campanulate. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica mucronata, Andr. heath. 3. t. 43. Flowers reddish-purple.


VIII. *Euryeleps.*

8. **E. petiolóata**; leaves 3 in a whorl, lanceolate-linear spreading, on cuneated fringed petioles; flowers terminal, by threes; bracteas broad, imbricated, ribbed, about equal in length to the corolla, which is bell-shaped, 2½ lines long, and yellow at apex. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica petiolóata, Sal. in Lin. trans. 6. p. 334. Erica petiolóata, Thumb. diss. no. 7. with a figure. Andr. heath. 3. t. 40. Lodd. bot. cab. 1150. Bracteas pale red. Corollas white, with black anthers.


9. **E. oecordóta**; leaves 3 in a whorl, lanceolate, keeled, broad, erect, with scabrous margins; floral leaves or bracteas dilated; flowers terminal; calyces spreading, about equal in length to the corolla, which is urceolate; bracteas loose, ribbed. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica oecordóta, Link. Bedf. eric. wob. p. 17. Calyx and corolla purplish-red.


10. **E. croosenta**; leaves opposite, or 3 in a whorl, linear, cuspidately awned, glabrous, spreading; flowers terminal, usually by threes; peduncles, bracteas, and calyces fringed; corolla conical. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica croosenta, Spreng. syst. 2. p. 201.


§ 2. Anthers annu or convolute at the base.

11. **E. frágrans**; leaves 3 in a whorl, subsulate, glaucous, erect; flowers drooping, terminal, usually by threes; bracteas large, calyx coloured, about equal in length to the corolla, which is campanulate and spreading; anthers bident at the base, convolute; stigma obtuse. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica frágrans, Andr. heath. 2. t. 27. Lodd. bot. cab. 288. Ait. hort. kew. 2. p. 407. Calyx and corolla purplish-red.


12. **E. gláabra**; leaves 4 in a whorl, spreading, glabrous; flowers terminal, on short pedicles; bracteas remote from the calyx; calyx foliaceous; corolla 7-8 lines long, white; anthers subinclosed. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica glabra, Link. enum. 1. p. 362. Corolla white.


13. **E. sexfária** (D. Don, in edinb. phil. journ. 17. p. 154.) leaves 3 in a whorl, linear, glabrous, spreading, placed so as to appear in 6 ranks; flowers terminal, nearly sessile, drooping; bracteas imbricate, angular; corolla campanulate, a little shorter than the calyx, glabrous, searious; stigma obtuse; fruit smooth; spurs of anthers long. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica sexfária, Bauer, pl. kew. t. 11. Andr. heath. 2. t. 28. Ait. hort. kew. 2. p. 364. Erica spinussa, Thumb. diss. no. 14. Flowers white; anthers black, a little exerted.


14. **E. pyrolélfóra** (D. Don, l. c.) leaves 3 in a whorl, linear-cuneated, glabrous; flowers terminal, agglomerate; calyx bracteate, equal in length to the corolla, which is urceolate; segments of the calyx ovate, cuneated; spurs of anthers broad, cartiform. \( \varepsilon \). \( \text{G.} \) Native of the Cape of Good Hope. Erica trifóla, Wild, spec. 2. p. 356, exclusive of the synonymes. Erica pyrolélfóra, Sal. in Lin. trans. p. 2. Flowers white. Corolla 2 lines long, with a 4-angled spherical tube.

16. E. pallíflófða; stem angular; leaves lanceolate-cuneated, glabrous; flowers terminal; corolla 1 1/2 line long, a little longer than the calyx; spurs of anthers ear-formed, glabrous. G. Native of the Cape of Good Hope. Erica pallíflófða, Sal. in. Lin. trans. 6. p. 351. Erica çándida, Sol. mss. Flowers white.


18. E. rigídfólia; leaves 3 in a whorl, linear, stiff; shining, erectly spreading; flowers terminal, aggregate, drooping; calyces coloured, about equal in length to the corolla, which is campanulate; anthers appendiculate. G. Native of the Cape of Good Hope. Erica rigídfólia, Wendl.

19. E. pachyphy'fìllâ; leaves 3 in a whorl, petiolate, elliptic, thick, short, quite glabrous, shining, with scabrous edges; flowers aggregate, terminal, glabrous; calyx equal in length to the corolla, which is urceolate. G. Native of the Cape of Good Hope. Erica pachyphy'fìllâ, Ñpréng, syst. 2. p. 190.


Lady Monson's Broad-scaled Heath. Fl. April, Sept. Clt. 1787. Shrub 2 to 3 feet.

Cult. For culture and propagation see Erica, p. 800.

IX. EURYSTEGIA (from evreu, evry, broad, and stå, stego, a cover; in reference to the large calyx). D. Don, in edinb. phil. journ. 17. p. 154.—Erica species of authors.

LIN. SYST. Ocatadria Monogy'ñîa. Calyx 4-parted, large, glaucous. Corolla urceolate, with a contracted 4-toothed mouth. Stamens included; filaments dilated, flat; anthers bifurate, opening by an oblong foramen, biappendiculate at the base: appendages flattened, decurrent, crossly crenated. Stigma capitâte. Capsule 4-celled, many-seeded.—Densely branched shrubs, natives of the Cape of Good Hope. Leaves loose, subulate, with revolute margins. Flowers almost solitary, drooping, white or rose-coloured.


4. E. lasúgníosa; leaves 3 in a whorl, linear, ciliated; flowers solitary, axillary; bracteas ovate, near the calyx; corolla hardly twice longer than the calyx, tomentose; anthers awned. G. Native of the Cape of Good Hope. Erica lasúgníosa, Andr. heath. 3. t. 5. Ait. hort. kw. 2. p. 382. Corollas brownish-red, or reddish-green.

5. E. émaróginá'ta; leaves 3 in a whorl, oblong, channelled, recurved, ciliated; flowers terminal, by threes; bracteas near the calyx, and are, as well as the calyces, ciliated. G. Native of the Cape of Good Hope. Erica émaróginá'ta, Andr. heath. 3. t. 20. Flowers white, with black anthers. Very like E. nigíra, and E. lachñerfóflùa.

6. E. tráceps; leaves 3 in a whorl, somewhat trigonal, ciliated, erectly spreading; branches downy; flowers terminal, by threes; bracteas imbricate; calyceal segments oblong, scarious, a little shorter than the corolla; anthers ciliated, mucic, and are, as well as the style, which is capitate, exserted; corolla ovate. G. Native of the Cape of Good Hope. Erica tráceps, Link, enum. 1. p. 371. Bedf. eríc. wob. p. 25. Lodd. bot. cab. 962. Flowers white. Calyx white.

7. E. triübíphâns; leaves 3 in a whorl, ciliated; flowers axillary; bracteas remote from the calyx; calyx large, inflated, angular; corolla ovate, inflated; anthers crested; style inclosed. G. Native of the Cape of Good Hope. Erica triübíphâns, Lodd. bot. cab. 257. Bedf. eríc. wob. pl. 3. f. 19. Flowers large, white.

8. E. teggulefóflâ; leaves oval, downy; flowers terminal; 5 L
corolla 1½ line long, with a turbinate, rather 4-angled limb; spurs of anthers large, orbicular. \( \text{G}\). Native of the Cape of Good Hope. Leaves broad, imbricated in the straight order.

**Title-leafed Large-calyxed Heath.** Cl. 1800. Shrub.

0 E. corýdalís; leaves 3 in a whorl, lanceolate-euneate; flowers terminal; corolla 2 lines long, having the limb entire at the base, obtuse; anthers inclosed, urceolate. \( \text{G}\). Native of the Cape of Good Hope. Erica corýdalís, Sal. in Lin. trans. 6. p. 334.


10 E. ? pànnôsa; leaves 3-5 in a whorl, a little reduplicate; flowers terminal; corolla 2 lines long, woolly; filaments broad, with short spurs; style exserted. \( \text{G}\). Native of the Cape of Good Hope. Erica pànnôsa, Sal. in Lin. trans. 6. p. 336.

—This leaves is very like *Eriódesmia capitata*, but differs in the leaves being 3-5 in a whorl, and greatly in the anthers.


11 E. ? lâchinchéfoliа; leaves 3 in a whorl, ovate, imbricated, downy; flowers terminal, subcapitate; bracteas imbricated, approximating the calyx; anthers crested; corolla ovate, rather longer than the calyx. \( \text{G}\). Native of the Cape of Good Hope. Erica lâchinchéfoliа, Sal. in Lin. trans. 6. p. 335. Ait. Hort. kew. 2. p. 387. E. lâchinchéfoliа, Andr. heath. 3. t. 2. Flowers white.


**Cult.** For culture and propagation see *Erica*, p. 800.

**X. LOPHÁN'DRA** (from *lóphos*, *lophos*, a crest, and *ávros*, *aner andros*, a male; in reference to the cells of the anthers being crested). D. Don, in edinb. phil. journ. 17. p. 154.

—Erica species of authors.

**Lin. syst. Octándria Monogyniа.** Calyx 4-parted, furnished with 4 bracteas at the base; segments roundish, sericeous, ventricose on the outside. Corolla campanulate, 4-lobed. Stamens inclosed; filaments dilated, flat; anthers biseri; cells of anthers beaked at the apex, opening by an oblong foramen in the middle; with the sides winged, crested, and crenulated. Stigma truncate. Capsule 4-celled, many-seeded.—Erect, much branched shrubs, natives of the Cape of Good Hope. Leaves spreading, short, obtuse, glaucous. Flowers terminal, usually by threes, rose-coloured.

1 L. cu'êica (D. Don, in edinb. phil. journ. 17. p. 154.) leaves 4 in a whorl, semicylindrical; bracteas remote from the calyx, which is coloured; calyceine segments serrulated. \( \text{G}\). Native of the Cape of Good Hope. Erica cuêica, Andr. heath. 1. t. 27. Ait. Hort. kew. 2. p. 397. Erica cuêica major, Hortul. Erica huttoniôfóra, Sal. in Lin. trans. 4. p. 531. Calyx and corolla purplish-red.—The flowers are at first disposed in a terminal fascicle, but when the terminal branches grow, they in consequence appear axillary and verticillate.

**Var. β, minor** (Andr. heath. 2. t. 49). This is probably a distinct species.

**Cube-flowered Lophandra.** Fl. April, Sept. Cl. 1790. Shrub 1 foot.

2 L. blán'da; leaves 3 in a whorl; flowers terminal, glomerate; corolla 1½ line long, having the limb one half longer than the tube, with semi-ornicular segments; stigma broad; cells of anthers drawn out into a crest beyond the foramen. \( \text{G}\). Native of the Cape of Good Hope. Erica blán'da, Sal. in Lin. trans. 6. p. 331. Erica cornuta, Roxb. mss. Flowers pale red.

**Blush-flowered Lophandra.** Shrub.

3 L. ? seriphírolió; leaves 5 in a whorl; calyceine segments minutely ciliated; corolla 1½ line long, having the limb entire at the base, obtuse; anthers inclosed, urceolate. \( \text{G}\). Native of the Cape of Good Hope. Erica seriphírolió, Sal. in Lin. trans. 6. p. 331. Erica scariôsa, Berg. pl. cap. 102. Corolla white, 1½ line long, with sub lanceolate segments.

**Treathy Lophantis.** Fl. May, July. Cl. 1786. Shrub.

**XI. LAMPROTIS** (from *lýmptos*, *lampros*, splendour in reference to the shining calyx). D. Don, in edinb. phil. journ. 17. p. 154.—Erica species of authors.

**Lin. syst. Octándria Monogyniа.** Calyx large, 4-parted, glaucous, coloured, adnicate at the base. Corolla urceolate, with a 4-lobed limb. Stamens inclosed; filaments capillary; cells of anthers short, dehiscing lengthwise, mucronate, or created at the base. Stigma capitate. Capsule 4-celled, many-seeded. Seeds round, scrobiculate.—Small, much branched shrubs, natives of the Cape of Good Hope. Leaves opposite, or 3 in a whorl, terminal, subulate, glabrous, always adpressed to the branches. Flowers numerous, terminal.

* Leaves 3 in a whorl.


**Var. β, minor** (Andr. heath. 3. t. 15.) smaller.

**Large-calyced Lamprotis.** Fl. June, Sept. Cl. 1799. Shrub 1 foot.


**Cori-es-leaved Lamprotis.** Fl. May, Dec. Cl. 1774. Shrub 1 foot.

3 L. pa'llíida; leaves 3 in a whorl, linear, imbricate, glabrous, acute, glaucous; flowers terminal, erect; bracteas large, loose, coloured; calyx exceeding the corolla, which is urceolate; anthers crested. \( \text{G}\). Native of the Cape of Good Hope. Erica pallida, Wendl. eric. with a figure. Flowers red.

**Pale Lamprotis.** Fl. April, July. Cl. 1812. Shrub.

4 L. tu'érêida; leaves 3 in a whorl, mucronate, with white margins, glabrous as well as the branches; flowers terminal; bracteases remote from the calyx; calyceine segments purplish, acute, longer than the corolla; style inclosed; anthers crested. \( \text{G}\). Native of the Cape of Good Hope. Erica türêida, Link, enum. 2. p. 365. Flowers purple.

**Turgid Lamprotis.** Fl. April, July. Cl. 1821. Shrub.

5 L. bu'mosá; leaves 3 in a whorl, erectly spreading, glabrous; flowers terminal, by threes, erect; calyx spreading, about equal in length to the corolla; bracteaces nearly orbicular, imbricate; stamens a little exserted; anthers crested; stigma narrow. \( \text{G}\). Native of the Cape of Good Hope. Erica bu'mosá, Lin. spec. ed. 2. p. 508. Berg. pl. cap. 103, but not of Loddl. Erica scarìosa, Berg. pl. cap. 102. Corolla white, 1½ line long, with sub lanceolate segments.
ERICACEE.

6 L. ? Loddigesii; leaves 3 in a whorl, erectly spreading; flowers terminal, by twos or threes; bracteas imbricate, angular; genitils exserted, with black corneiculate anthers. G. Native of the Cape of Good Hope. Erica spumosa, Lodd. bot. cab. 566. but not of Lin. Flowers purplish-red.


7 L. flagellaria; leaves 3 in a whorl, linear-lanceolate, glabrous, finely ciliated, adpressed; branches zigzag, downy; flowers terminal, usually by threes, erect; calyx bracteate, exceeding the corolla; anthers crested. G. Native of the Cape of Good Hope. Erica flagellaries, Link, enum. 1. p. 365. Flowers dirty-yellow. Calycine segments lanceolate, keeled, purple.


8 L. flagelliformis; leaves 3 in a whorl, imbricate, smooth; flowers terminal, umbrellate, erect; bracteas remote from the calyx; calyx coloured, larger than the corolla, which is urceolate; anthers crested. G. Native of the Cape of Good Hope. Erica flagelliformis, Andr. eric. 4. icon. Flowers reddish-purple.


9 L. caulicinoides; leaves 3 in a whorl, linear, subulate, imbricate, glabrous; flowers terminal, glomerate or capitulate; bracteas imbricate; calyx coloured, rather shorter than the corolla, which is urceolate; anthers almost mutic. G. Native of the Cape of Good Hope. Erica caulicinoides, Bedf. eric. wob. p. 4. Erica glomerata, Andr. heath. vol. 4. Erica calycina capitata, Hortul. Flowers purplish-red.


10 L. caulisaladum; leaves 3 in a whorl, ovate, glabrous, imbricate; flowers in terminal fascicles; calyxes spreading, with exquisitely ciliately glandular margins; corolla 1 line long, hardly longer than the calyx; fruit smooth; stigma large, 4-cleft; anthers crested. G. Native of the Cape of Good Hope. Erica caulisaladum, Lin. dist. no. 25. Berg. pl. cap. 119. Thumb. diss. 75. Erica caulisalado, Sal. in Lin. trans. 6. p. 337. Flowers white.


11 L. ? phyllioideae; leaves 3 in a whorl, imbricating in 6 rows, glabrous; flowers axillary, drooping; calyx large, elongated; anthers awned. G. Native of the Cape of Good Hope. Erica phyllioideae, Willd. spec. 2. p. 361. Corolla campanulate, purple, 1-2 lines long.—Perhaps a species of Eurypleps.


12 L. ? holosericea; leaves 3 in a whorl, sharply reduplicate; flowers terminal; corolla 3 lines long, silky, with an ovate tube; anthers crested, hairy. G. Native of the Cape of Good Hope. Erica holosericea, Sal. in Lin. trans. 6. p. 332. Flowers red.

Whole-silky Lamproitis. Shrub.

13 L. lucida; leaves 3 in a whorl; flowers terminal; calyx minutely ciliated, shining; corolla 1 line long; crests of anthers ear-formed, deeply serrated; stigma narrow. G. Native of the Cape of Good Hope. Erica lucida, Sal. in Lin. trans. 6. p. 337.

Shining-calyxed Lamproitis. Shrub.

14 L. munda; leaves 3 in a whorl, imbricate; bracteas and calyxes quite entire; corolla 1 line long; crests of anthers ear-formed, ciliated; fruit hairy. G. Native of the Cape of Good Hope. Erica munda, Sal. in Lin. trans. 6. p. 337.


15 L. fabellis; leaves 3 in a whorl, densely imbricating; flowers terminal; corolla 1 line long, hardly longer than the calyx; crests of anthers quite entire; anthers minute. G. Native of the Cape of Good Hope. Erica fabellis, Sal. in Lin. trans. 6. p. 338. Flowers reddish-purple.


16 L. chlamydiflora; leaves 3 in a whorl, linear, hairy, imbricate, flowers terminal; corolla 2 lines long, hardly longer than the calyx; crests of anthers ear-formed. G. Native of the Cape of Good Hope. Erica chlamydiflora, Sal. in Lin. trans. 6. p. 338. Flowers reddish-purple.


17 L. selaginifolia; stem tomentose; leaves linear, 3 in a whorl; flowers terminal; corolla 1 1/2 line long, with a globose tube; crests of anthers very broad, orbicular. G. Native of the Cape of Good Hope. Erica selaginifolia, Sal. in Lin. trans. 6. p. 338.

Selago-leaved Lamproitis. Shrub.

18 L. breviflora; leaves 3 in a whorl, ovate; flowers terminal; corolla 1 1/2 line long, hardly longer than the calyx; spurs of anthers linear, attenuated. G. Native of the Cape of Good Hope. Erica breviflora, Sol. mss. ex Sal. in Lin. trans. 6. p. 338.


19 L. hyssopifolia; leaves 3 in a whorl, densely ciliated; corolla 2 lines long, hairy towards the apex, with curled retuse segments; anthers crested. G. Native of the Cape of Good Hope. Erica hyssopifolia, Sol. in Lin. trans. 6. p. 337. Erica pigna, Sol. ex Salisb. Flowers red.


20 L. modesta; leaves 3 in a whorl, densely imbricating; corolla tomentose, 3 1/2 lines long, with a broad ovate tube and a recurved limb; flowers terminal; spurs of anthers linear, attenuated. G. Native of the Cape of Good Hope. Erica modesta, Sal. in Lin. trans. 6. p. 359. Flowers very pale red.

Modest Lamproitis. Shrub.

21 L. paniculata; leaves 3 in a whorl, adpressed; flowers terminal, drooping; bracteas close to the calyx; corolla ovate, ventricose, equal in length to the calyx; anthers cornute; style incurved. G. Native of the Cape of Good Hope. Erica paniculata, Lodd. bot. cab. 419. but not of Thumb. Bedf. eric. wob. p. 17. Flowers pale purplish-red.


22 L. Bedfordiana; leaves 3 in a whorl, linear, glabrous; flowers terminal; bracteas remote from the calyx; corolla ovate-campanulate; anthers awned. G. Native of the Cape of Good Hope. Erica Bedfordiana, Bedf. eric. wob. p. 14. Flowers pale yellow.


23 L. taxifolia (D. Don, in edinb. phil. journ. 17. p. 154.) leaves 3 in a whorl, trigonal, glabrous, spreading; flowers terminal, umbrellate; corolla with a cone-shaped tube and a spreading limb; bracteas remote from and approximating the calyx; calyx coloured, about equal in length to the corolla; anthers mutic. G. Native of the Cape of Good Hope. Erica taxifolia, Wendl. eric. fass. 2. p. 19. with a figure. Bauer, pl. kew. t. 19. Andr. heath. 1. t. 35. Erica turgida, Hortul. Flowers pale red. Leaves mucronate. Corolla 3 lines long, with ovate, cuneate, bifid segments.


24 L. ru'dida; leaves 3 in a whorl, linear, glabrous; flowers
terminal, capitate; bracteas approximate, 3 large and 2 small; calyx equal to the corolla in length, which is ovate-ventricose; anthers awned. *G. Native of the Cape of Good Hope. Erica rubella, Bedd. eric. wob. p. 22. Flowers red.


* * Leaves 4 in a whorl.

25 L. squamosa; leaves 4 in a whorl, inbricated, serrated; flowers terminal, drooping; bracteas imbricate; calyx large, coloured, about equal in length to the corolla, which is urceolate; anthers crested. G. Native of the Cape of Good Hope. Erica squamosa, Andr. heath. 3. t. 22. Flowers pale red.


* * * Leaves opposite.


27 L. lutea; leaves opposite, linear, inbricate, glabrous; flowers nearly terminal; bracteae imbricate; branches flexuous; calyce segments narrow, ovate-cuneated; corolla 2½ lines long, ovate, ventricose; fruit obovate; anthers mutic or awned? G. Native of the Cape of Good Hope. Erica luteca, Lin diss. no. 2. mant. p. 234. Berg. pl. cap. 115. Wendl. eric. 1. p. 13. with a figure. Andr. eric. 1. t. 31. Erica imbellis, Sal. in Lin. trans. 6. p. 385. Flowers yellow.—There appears to be two species confounded under this name; one with crested or awned anthers, and another with mutic anthers.


28 L. bifilora; leaves opposite, canaliculate, adpressed, glabrous; flowers terminal, twin, on short pedicles; bractees approximating the calyx; calyce segments ovate, acute, white; anthers crested. G. Native of the Cape of Good Hope. Erica bifilorus, Don. Lodd. bot. cab. 683. Calyx white.


29 L. borboniæfolia; leaves opposite; flowers axillary; calyce segments broad, ovate-acuminate, equal in length to the corolla, which is urceolate; fruit obovate; anthers crested or awned. G. Native of the Cape of Good Hope. Erica borboniæfolia, Sal. in Lin. trans. 6. p. 386. Flowers red, 3½ lines long.


30 L. oppositifolia; leaves opposite, filiform, inbricate; flowers terminal, crowded, erect; bractees sessile; corolla urceolate, about equal in length to the calyx, which is spreading; anthers mutic. G. Native of the Cape of Good Hope. Erica oppositifolia, Andr. heath. 3. p. 35. Lodd. bot. cab. 1343. Flowers white.

Var. L. ribra (Andr. heath. 3. t. 36. Lodd. bot. cab. 1060.) flowers red.


32 L. rubella; leaves opposite, or 3 in a whorl, linear, inbricate; flowers terminal, capitate; corolla with a ventricose tube and a spreading limb; calyx about equal in length to the corolla, bracteae; anthers mutic. G. Native of the Cape of Good Hope. Erica rubella, Ker. bot. mag. 2165. Lodg. bot. cab. 658. Flowers red.


33 L. taca; leaves opposite, linear, inbricate; flowers terminal; bractees remote from the calyx; broad; calyx coloured, large, cup-shaped; corollas urceolate, with a spreading limb; anthers mutic. G. Native of the Cape of Good Hope. Erica taca, Sims, bot. mag. 1626. Flowers fine red.


34 L. dianthifolia; leaves opposite, long; flowers terminal; calyce segments ovate-cuneated; corolla 3 lines long; spurs of anthers serrated; pericarp glabrous. G. Native of the Cape of Good Hope. Erica dianthifolia, Sal. in Lin. trans. 6. p. 338. Flowers pale purple.


Cult. See Erica, p. 800, for culture and propagation.—Pretty little shrubs, easily distinguished from the other genera broke off from Erica by the large coloured calyx and small adpressed leaves.

XII. CALLISTA (from καλλιστος, kallistos, very beautiful; flowers). D. Don, in edinb. phil. journ. 17. p. 155.—Erica species of authors.

LIN. SYST. Oëtandria, Monogyneia. Calyx 4-parted, foliaceous. Corolla salver-shaped, with a dilated spreading 4-cleft limb, and a ventricose or cylindrical tube. Stamens inclosed; filaments capillary; cells of anthers short, deliscing lengthwise, mutic at the base. Stigma capitulate. Capsule 4-celled, many-seeded.—Small, much branched shrubs, natives of the Cape of Good Hope. Leaves acerose, loosely imbricate. Flowers terminal, almost solitary, or in fascicules.

* Leaves 3 in a whorl.


Var. L. albula (Andr. heath. 3. t. 50.) flowers white, sub-axillary, or terminating the small branches, sweet-scented.


2 C. tetragonosa; leaves 3 in a whorl, linear, pointed, ciliated, erectly spreading; flowers terminating small branches; calyx bracteate, with ciliate cuspidate segments; corolla with
ERICACE.

XII. CALLISTA.

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4 C. Bandônâ; leaves 3 in a whorl, linear-lanceolate, glabrous, spreading; flowers terminal, umbellate, on long pedicels, erect; bracteas remote from the calyx; calycine segments broad; tube of corolla ovate, ventricose; style exerted. ɣ. G. Native of the Cape of Good Hope. Erica Bandônâ, Andr. heath. vol. 4. Corolla reddish-purple.  


5 C. MAGNIFICA; leaves 3 in a whorl, linear, obtuse, spreading; flowers terminal, usually by threes, drooping; bracteas remote from the calyx; calyx coloured; corolla with an ovate tube, and an erect limb; style inclosed. ɣ. G. Native of the Cape of Good Hope. Erica magnifica, Andr. heath. vol. 4. Corollas pale red. Antlers cornute.  


6 C. Broadleyana; leaves 3 in a whorl, linear, fasciculated, spreading; flowers axillary, on long pedicels, drooping; calycine segments foliaceous, narrow; corolla ventricose, contracted at the mouth, with hardly any limb; style exerted. ɣ. G. Native of the Cape of Good Hope. Erica Broadleyana, Andr. heath. vol. 4. Flowers red.  

**Broadley’s Callista.** Fl. June, July. Clt. 1800. Shrub 1 to 2 feet.  


8 C. Celsiâna; glabrous; leaves 3 in a whorl; flowers terminal; bracteas remote from the calyx; corolla with a globose tube; style exerted. ɣ. G. Native of the Cape of Good Hope. Erica Celsiâna, Lodd. bot. cab. 1777. Corolla with a pale red tube and a deep red border.  


9 C. Armaâta; leaves 3, sometimes 5, in a whorl, linear, erect, spinulose; flowers terminal, aggregate, clothed with yellow stigmas; calycine segments foliaceous, spinose; style exerted. ɣ. G. Native of the Cape of Good Hope. Erica armaâta, Spreng. syst. 2. p. 184.  


10 C. Humeana; leaves 3 in a whorl, linear, glabrous; flowers terminal, by threes; bracteas sessile; corolla with a short ventricose tube, and a large limb; style exerted. ɣ. G. Native of the Cape of Good Hope. Erica Humeana, Lodd. bot. cab. 389. E. Humea, Hortul. Corolla with a red tube, reddish-purple segments, and a dark eye.  


11 C. Carnuôla; leaves 3-4 in a whorl, linear, glabrous; flowers terminal, racemose; calyx bracteate; corolla with an inflated tube, and a short limb. ɣ. G. Native of the Cape of Good Hope. Erica carnuôla, Lodd. bot. cab. 926. Flowers pale red.  


12 C. Sainsburyana; leaves 3 in a whorl, filiform, elongated, glabrous, erectly spreading; flowers terminal, umbellate; bracteas remote from the calyx; corolla oblong-ovate, with a short limb; anthers awned. ɣ. G. Native of the Cape of Good Hope. Erica Sainsburyana, Andr. heath. vol. 4. Flowers pale red. Style a little exerted.  


13 C. Comptoniana; leaves 3 in a whorl, subulate, glabrous, spreading, recurved; flowers terminal, aggregate, pedicellate. ɣ. G. Native of the Cape of Good Hope. Erica Comptoniana, Andr. heath. vol. 4. Style inclosed.  

**Compton’s Callista.** Fl. May, July. Clt. 1802. Shrub.  

14 C. Infundibuliformis; leaves 4 in a whorl, filiform, obtuse, glabrous, erect; flowers terminal, aggregate; bracteas sessile; corolla with a slender tube, and large segments. ɣ. G. Native of the Cape of Good Hope. Erica infundibuliformis, Link. enum. 1. p. 364. Andr. heath. vol. 4. Lodd. bot. cab. 589. Flowers pale red, or pale purplish-red. Style inclosed.  


15 C. Vária; leaves 3 in a whorl; flowers terminal; bracteas approximating the calyx; corolla short, with revolute segments; style exerted. ɣ. G. Native of the Cape of Good Hope. Erica vária, Lodd. bot. cab. 1325. Erica Cassoni, Hortul. Flowers purplish-red.  


16 C. Umbulata; glabrous; leaves 3-4 in a whorl; flowers terminal, by fours, sessile; corolla with an elongated, ventricose, twisted tube, and a spreading limb. ɣ. G. Native of the Cape of Good Hope. Erica umbulata, Lodd. bot. cab. 1792. Flowers deep red.  

**Umbrella Callista.** Fl. Summer. Clt. 1827. Shrub.  

* * Leaves 4 in a whorl.  

17 C. Prefângna; leaves 4 in a whorl, linear, ciliate, spreadingly recurved; flowers terminal, crowded; bracteas remote from the calyx; calycine segments acute; corolla ventricose at the base. ɣ. G. Native of the Cape of Good Hope. Erica praëgnana, Andr. heath. 3. t. 32. Lodd. bot. cab. 945. Corolla pale red, almost white. Very like C. ventricosa, and probably only a variety of it. Style inclosed.  

**Swelled-flowered Callista.** Fl. April, Aug. Clt. 1796. Shrub 1 to 2 feet.  

18 C. Metuleflora; leaves 4-5 in a whorl, subulate, spinulose; flowers terminal, umbellate; bracteas remote from the calyx; corolla ventricose at the base. ɣ. G. Native of the Cape of Good Hope. Erica metuleflora, Sims, bot. mag. t. 614. Andr. heath. 3. t. 33. Lodd. bot. cab. 1753. Flowers red, with a paler border. Style a little exerted.  


19 C. Acuminaâta; leaves 4 in a whorl, trigonal, cuspidate, recurved; flowers terminal, nearly sessile, aggregate; calycine segments acuminate; corolla with an inflated acuminate tube, and a short revolute limb; bracteas close to the calyx. ɣ. G. Native of the Cape of Good Hope. Erica acuminaâta, Andr. heath. 3. t. 54. Lodd. bot. cab. t. 216. Flowers reddish-purple. Style inclosed.  


20 C. Ferruginea; leaves 4 in a whorl, linear, secund, ciliated with rusty hairs; flowers terminal, umbellately verticillate, horizontal; calyx bracteate, with the segments bearded at the
ERICACEE.

apex; filaments terminating in a flat glandular substance; corolla with an acuminated inflated tube.  h. G. Native of the Cape of Good Hope. Erica ferruginea, Andr. heath. 3. t. 57. Corolla with a red tube, and a greenish-yellow limb; but in the figure given by Andrews it is white, tipped with red. Style inclosed.

Rusty Callista. Fl. May, July. Ct. 1798. Shrub 1 ft. 21 C. hyacinthoides; leaves 4 in a whorl, shining, spreading; flowers aggregate; calyx bracteate, having the segments serrated or ciliated; corolla with a ventricose tube.  h. G. Native of the Cape of Good Hope. Erica hyacinthoides, Andr. heath. 3. t. 55. Alt. hort. kew. 2. p. 384. Flowers red. Style subexcised.

Hyacinth-like Callista. Fl. June, Aug. Ct. 1798. Shb. 1 ft. 22 C. fastigiiata; leaves 4 in a whorl, shining, erect, imbricated; flowers terminal, crowded, sessile; bracteas serrated; calyces segments serrated; corolla with a narrow tube.  h. G. Native of the Cape of Good Hope. Erica fastigiiata, Lin. diss. no. 44. mant. 66. Thunb. diss. no. 37. Andr. heath. 2. t. 57. Lodd. bot. cab. t. 207. Erica fariiforia, Sal. in Lin. trans. 6. p. 382. Corolla white, with the limb mealy inside, according to Sal. l. c. In bot. mag. t. 2084, the corollas are pointed pale red; it is therefore perhaps a distinct species.


Pellucid-flowered Callista. Shrub. 24 C. Walkeriana; stem glabrous; leaves 4 in a whorl, linear, shining; flowers terminal, almost sessile; bracteas approximating the calyx, ciliated; calyx segments lanceolate, serrated; corolla 4-5 lines long, with an ovate ventricose tube, and a wide-spread limb, which is doubly shorter than the tube.  h. G. Native of the Cape of Good Hope. C. pulchra, G. Andr. Native of the Cape of Good Hope, Erica pullicida, Sal. ex Sal. in Lin. trans. 6. p. 384. Flowers pink or pale red. Style inclosed. Var. β, rubra (Andr. heath. 2. t. 43,) flowers red.


Bedford's Callista. Fl. May, June, July. Ct.? Shrub. 27 C. Templeiana; leaves 4 in a whorl, linear, ciliated? flowers terminal, almost sessile; bracteas approximating the calyx, ciliated, as well as the calycine segments; anthers curved; corolla with an oblong ventricose tube, and a small limb.  h. G. Native of the Cape of Good Hope. Erica Templea, Hort. Bedf. eric. wob. p. 24. pl. 4. f. 17. Corolla about the size and shape of those of C. ventricosa, pale red, or reddish-purple. Style inclosed.


33 C. daphniefolia; leaves 4 in a whorl, short, glabrous, acerose, crenately spreading; bracteas sessile; calyces segments lacerated a little; flowers terminal, usually by fours; corollas with an ovate ventricose tube, and a spreading obtuse limb. L. G. Native of the Cape of Good Hope. Erica daphniefolia, Lodd. bot. cab. 345. Bedd. eric. wob. p. 7. Flowers small, white or deep red. Style exerted.


34 C. daphnoïdes; leaves 4 in a whorl, linear, glabrous; flowers terminal by fours; bracteas sessile; corolla with an ovate ventricose tube and a large limb. L. G. Native of the Cape of Good Hope. Erica daphnoïdes, Lodd. bot. cab. 154. Erica mirabilis, Hortul. Flowers pale red. Style a little exerted.


35 C. Coventryana; leaves 4 in a whorl, linear-trigonal, ciliated, as well as the calyxes and bracteas; flowers terminal, aggregate, sessile; bracteas sessile; calyces segments foliaceous, narrow; corolla with a slender tube, and large segments. L. G. Native of the Cape of Good Hope. Erica Coventryana, Andr. heath. 4. icon. Lodd. bot. cab. 453. Corolla with a greenish-yellow tube, and a red limb, with ovate segments. Style a little exerted.


36 C. verucunda; leaves 47 in a whorl, linear, obtuse; flowers lateral, verticillate; corolla with a ventricose tube, and a spreading limb. L. G. Native of the Cape of Good Hope. Erica verucunda, Lodd. bot. cab. 1827. but not of Sal. Flowers red.


37 C. stellifera; leaves 4 in a whorl, linear-lanceolate, subulate, pilose, spreading; flowers axillary and terminal, racemose, erect; bracteas remote from the calyx; limb of corolla 6-cleft. L. G. A hybrid. Erica stellifera, Andr. heath. vol. 4. Lodd. bot. cab. 1622. Flowers reddish-purple.


39 C. munda; leaves 4 in a whorl, subulate, spreading, shining, glabrous; flowers terminal, usually by fours, sessile; bracteas sessile; calyx naked; corolla with a short narrow tube, and a wide limb; style inclosed. L. G. Native of the Cape of Good Hope. Erica munda, Andr. heath. vol. 4. Lodd. bot. cab. 114. Flowers reddish-purple.


40 C. rigida; glabrous; leaves 4 in a whorl, linear, spreading; flowers terminal, pedicellate; corolla ventricosely tubular, with a blunt border; pedicels red; bracteas remote from the calyx. L. G. Native of the Cape of Good Hope. Erica rigida, Lodd. bot. cab. 286. Erica metuliflora bicolor, Bedd. eric. wob. p. 15. Corolla red. Limb short, white.


41 C. trussula; leaves 4 in a whorl, linear, glabrous; flowers terminal; bracteas approximating the calyx; corolla with an ovate ventricose tube. L. G. Native of the Cape of Good Hope. Erica trussula, Lodd. bot. cab. 1742. Flowers white. Var. b, rabra; flowers red.


42 C. struthiolefolia.—This species has not yet been described or figured. L. G. Native of the Cape of Good Hope. Erica struthiolefolia, Lodd. bot. cab. p. 25.

Struthiola-flowered Callista. Shrub.

43 C. clisifolia; leaves 4 in a whorl, glabrous; flowers terminal; bracteas rather remote from the calyx; corolla with a slender ventricose tube; style inclosed. L. G. Native of the Cape of Good Hope. Erica clisifolia, Lodd. bot. cab. 34. Flowers white.


44 C. fayettelefolia; leaves 4 in a whorl, linear; flowers terminal; pedicels very short; corolla 9-10 lines long, having the limb mealy inside; filaments spurred near the top of the anthers. L. G. Native of the Cape of Good Hope. Erica fayettelefolia, Sal. in Lin. trans. 6. p. 382. Erica infundibuliformis, Roxb. mss.


45 C. nidiflora; stem pubescent; leaves 4 in a whorl, linear; flowers terminal; calyces segments obovate, serrated; corolla 3 lines long, with the limb one-half shorter than the tube; spurs of anthers very minute, ear-formed. L. G. Native of the Cape of Good Hope. Erica nidiflora, Sal. in Lin. trans. 6. p. 383. Erica denticalata, Roxb. mss.


46 C. parmentierii; leaves 4 in a whorl; flowers terminal; bracteas sessile; corolla with a cylindrically ventricose tube, and broad-spreading segments. L. G. Native of the Cape of Good Hope. Erica parmentierii, Lodd. bot. cab. 197. Flowers reddish-purple. Style a little exerted.


47 C. moschata; glabrous; leaves 4 in a whorl; ? flowers terminal; corolla short, with a ventricose tube, and a small spreading limb. L. G. Native of the Cape of Good Hope. Erica moschata, Andr. heath. 4. icon. Lodd. bot. cab. 014. Corollas yellow.


48 C. calostoma; glabrous; leaves linear, 4 in a whorl; flowers terminal, crowded; corolla with a ventricose elongated tube, a dark neck, and a white limb. L. G. Hybrid. Erica calostoma, Lodd. bot. cab. 1759.


49 C. russelianna; leaves 4 in a whorl, linear, glabrous; flowers terminal; bracteas remote from the calyx; corolla ovate-globose, with large open segments. L. G. Native of the Cape of Good Hope. Erica russelianna, Lodd. bot. cab. 1013. Bedd. eric. wob. p. 22. Flowers reddish-purple.


50 C. vexusta; leaves 4 in a whorl, ciliated; flowers terminal, sessile; bracteas sessile, prenorse, membranous, ciliated, as well as the calyxes; corolla ovate, ventricose, with broad segments. L. G. Native of the Cape of Good Hope. Erica venusta, Hortul.


*** Leaves 5-6 in a whorl.

51 C. blaenda; leaves 6 in a whorl, spreadingly reflexed, imbricate; flowers terminal, umbellate, horizontal; calyx bracteate; genitals a little exerted; corolla with an oblong tube, and small border. L. G. Native of the Cape of Good Hope. Erica blanda, Andr. heath. 3. t. 34. Flowers reddish-purple or bluish.—Perhaps a species of Syringioidea. Style exerted.

Charming Callista. Fl. April, Sept. Clt. 1800. Shrub $\frac{2}{3}$ foot.

Primrose-like-flowered Callista. Fl. May, July. Cl. 1802. Shrub 1 to 2 feet.

53. C. swainsoni; leaves 5-6 in a whorl, linear, obtuse, crowded, erect; flowers terminal, umblellate; bracteas sessile; calyceine segments lanceolate; corolla with a cylindrical furrowed tube, and a spreading border; anthers somewhat exserted. L. G. Native of the Cape of Good Hope. Erica Swainsoni, Andr. heath. t. 3. t. 65. Flowers reddish-purple or buff-red.


Cult. For culture and propagation see Erica, p. 800. — Elegant shrubs when in blossom. The wood being harder than that of the species of Erica, cuttings are more difficult to root.

XIII. EURYLOYMA (from eurye, eurye, wide, and loma, loma, a margin; in reference to the wide limb of the corolla). D. Don, in edinb. phil. journ. 17. p. 155. — Erica species of authors.

Lin. syst. Octandria Monogyonia. Calyx 4-parted, foliaceous. Corolla salver-shaped, with an elongated filiform or ventricose tube, and a 4-parted dilated limb. Stamens included; filaments dilated, membranous, channeled; anthers bipartite; cells of anthers membranous, dehiscing lengthwise, and drawn out at the base into a short minutid spur. Stigma with an elevated 4-lobed disk. Capsule 4-celled, many-seeded. — Diffusely branched shrubs, natives of the Cape of Good Hope. Leaves adpressed, semi-cylindrical, minutely dentilicate. Flowers terminal, solitary or by threes, large, showy, on short pedicles, clanny.

* Leaves 3 in a whorl.
1. E. Aitoni (D. Don, l. c.) leaves 3 in a whorl, linear, serrulat, erect; flowers terminal, usually by threes; bracteas remote from the calyx; corolla viscid, with a cylindrical tube, which is ventricose at top, and large ovate segments; style exserted. L. G. Native of the Cape of Good Hope. Erica Aitoni, Andr. 1. t. 25. Curt. bot. mag. 429. Erica Aitoniāna, Alt. hort. kew. 2. p. 372. Lodg. bot. cab. 144. Erica Aitoni, Willd. spec. 2. p. 398. Erica jasminiflora, Sal. in Lin. trans. 6. p. 382. Corolla pale red, or nearly white, 16 to 19 lines long.


2. E. jasminiflora (D. Don, l. c.) leaves 3 in a whorl, linear-oblong, serrulat, recurved, imbricated in 6 rows; flowers terminal, aggregate; bracteas ciliolate, remote from the calyx; corolla viscid, with an ovate tube, which is ventricose at the apex, and ovate segments; style exserted. L. G. Native of the Cape of Good Hope. Erica jasminiflora, Andr. heath. t. 26. Erica loganfliora, Sal. in Lin. trans. 6. p. 382. Corolla 12-14 lines long, with a reddish tube, and a yellow-green border. 

Var. "alba;" flowers pure white.

Jasmine-flowered Euryloma. Fl. June, Nov. Cl. 1794. Shrub 1 to 2 feet.

3. E. tricolor; leaves 3 in a whorl, linear, recurved, ciliolate, as well as the bracteas and calyces: the terminating hairs the longest; pedicels bibracteate near the base; flowers terminal, usually about 6 together; corolla viscid, with a large ventricose tube, and ovate-cordate slightly crenulated segments; style exserted. L. G. Native of the Cape of Good Hope. Erica tricolor, Nois. Bedd. hort. eric. wob. p. 25. Corolla red at the base, white at top, but greenish-yellow below the contraction of the limb.

Var. major (Bedd. eric. wob. p. 26.) leaves adpressed, slightly ciliolate; corolla oblong, inflat-ed, with a red tube and segments, and yellowish-green below the contraction.


Var. minor (Bedd. eric. wob. p. 26.) leaves 4 in a whorl; style inclosed; corolla inflated, viscid. L. G. Corolla with a red tube, greenish-yellow top, and red segments.


4. E. xiridnalis; leaves 3 in a whorl, obtuse; flowers terminal, disposed in umbrallate fascicles; corolla viscid, with a ventricose base, a contracted neck, and a wide-spreading border. L. G. Native of the Cape of Good Hope. Erica mirabilis, Lodg. bot. cab. 1804. Corollas white, tinged with red.


5. E. ampullacea; leaves 3-4 in a whorl, lanceolate, ciliolate, reflexed; flowers terminal, usually by fours; bracteas approximating the calyx, ciliolate, as well as the calyceine segments; corolla viscid, with a ventricose tube, ribbed neck, and ovate-cordate slightly crenulated obtuse segments; style exserted. L. G. Native of the Cape of Good Hope. Erica ampullacea, Curt. bot. mag. 303. Andr. heath. l. t. 29. Lodg. bot. cab. 508. Erica ampullifōrum, Sal. in Lin. trans. 6. p. 381. Leaves imbricate at the base, moderately spreading at top. Corolla 8-10 lines long, red. Anthers incurved at top.


5. E. T. Hope's, leaves 3 in a whorl, ciliate, with seaborous margins, erect; bracteas remote from and approximating the calyx; flowers terminal, umbrallate; corolla viscid, with a cylindrical ventricose tube, and large segments; style exserted; anthers mucilaginous. L. G. Native of the Cape of Good Hope. Erica irbyana, Andr. heath. t. 3. t. 25. Lodg. bot. cab. 816. Flowers white.

Var. "rubra;" flowers reddish-purple.


7. E. novā NASIS; leaves linear-oblong, 3 in a whorl, serrulately ciliolate, short, adpressed; branches slender, flexuous; flowers small, terminal, aggregate, viscid; corolla tubular, with a contracted neck, and small limb. L. G. Native of the Cape of Good Hope. Erica notabilis, Wendl. Licht. ex Spreng. syst. 2. p. 184. Style inclosed.


8. E. curtifolia; leaves 3 in a whorl, recurved, ciliolate?; spikes coarctate; corolla 4 lines long, viscid, with an ovate pyramidal tube; spurs of anthers linear-attenuated; petiole hairy. L. G. Native of the Cape of Good Hope. Erica curtifōlia, Sal. in Lin. trans. 6. p. 380. Flowers lateral.

Crested-leafed Euryloma. Shrub.

9. E. shannoniāna; leaves 3-4 in a whorl, stiff, spreading,
ERICACEÆ. XIII. Euryloma. XIV. Chona. 817

ending each in a hair; flowers terminal, umbellate, drooping; calyx coloured; bracteas remote from the calyx; corolla with a ventricose ribbed tube; style exerted. G. Native of the Cape of Good Hope. Erica Shannónita, Andr. heath. vol. 4. Erica Shannóniana, Lodg. bot. cab. 168. Spreng. syst. 2. p. 185. Flowers red.


* * Leaves 4 in a whorl.

10 E. Hartnelli; leaves 4 in a whorl, lanceolate, imbricated, finely ciliated: the terminating hairs the longest; corolla viscid nearly tubular, rather ventricose at the base, with ovate-triangular lobes. G. Native of the Cape of Good Hope. Erica Hartnelli, Roll. cat.


11. E. Ampullaceoides; leaves 4 in a whorl, ciliate; flowers terminal; bracteas remote from the calyx; corolla with a ventricose curved tube. G. Native of the Cape of Good Hope. Erica ampullaceoides, Beddf. eric. wob. p. 2. Erica ampullaceae, Hort. Corolla with a red tube, and a greenish-yellow neck.


12. E. raíscens; leaves 4 in a whorl, linear, ciliate, recurved; flowers terminal, umbellate; bracteas approximating the calyx, ciliated, as well as the calycine segments; corolla viscid, with a ventricose tube, and a hairy top; style inclosed. G. Native of the Cape of Good Hope. Erica princeps, Andr. heath. 2. t. 44. Lodg. bot. cab. 647. Corollas reddish-purple.

Var. G. cràncæ; flowers pale red.


Var. G. alba; corolla white, Sal. l. c.


16. E. aristállæ; leaves 4 in a whorl, hispid, awned, imbricated, subsecund; flowers terminal; bracteas approximating the calyx; corolla with an oblong acuminate tube; anthers mu tic. G. Native of the Cape of Good Hope. Erica


Small-awned Euryloma. Fl. June, July. Clt. 1806. Shrub. E. oblonga; leaves 4 in a whorl, linear, ciliate, recurved; flowers terminal, umbellate; bracteas approximating the calyx; ciliated, as well as the calyxes; corolla viscid, with a globose-ventricose ribbed tube, and spreading obtuse segments. G. Native of the Cape of Good Hope. Erica oblonga, Andr. heath. 2. t. 33. Corolla with a reddish-purple tube, a greenish-yellow neck, and a pale limb.

Tar. ß, umbellata (Andr. heath. 3. t. 20.) flowers terminal, umbellate, white. G. Native of the Cape of Good Hope.


18. E. oblonga (Beddf. eric. wob. p. 17.) leaves 4 in a whorl, linear, ciliate, recurved; flowers terminal, umbellate; bracteas approximating the calyx; ciliated; calyx inflated, ciliated; corolla oblong; ruffled; anthers mucous. G. Native of the Cape of Good Hope. Erica oblonga, Beddf. eric. wob. p. 17. Erica obhátæ rossæ, Hortul. Flowers reddish-purple.


* * Leaves 6 in a whorl.

19. E. squarrosà; leaves 6 in a whorl, squarrose; flowers terminal; corolla viscid, 5–6 lines long, with an ovate pyramidal tube, and an obtuse limb; anthers smooth; spurs marginal. G. Native of the Cape of Good Hope. Erica squarrosà, Sal. in Lin. trans. p. 380. Leaves very dense.


20. E. imperialis; leaves 6 in a whorl, filiform, erect, imbricated; flowers terminal, corymbose, drooping; corolla viscid, with a discoloured limb. G. Native of the Cape of Good Hope. Erica imperialis, Andr. heath. 4. icon.


21. E. recurvata; leaves 6 in a whorl, linear, flexuous, recurved; flowers terminal, nearly sessile, drooping, capitulate; bracteas sessile; corolla curved, ovate-oblong; style exerted; anthers mucous. G. Native of the Cape of Good Hope. Erica recurvata, Andr. heath. vol. 4. Flowers pale red.

Recurved-flowered Euryloma. Fl. April, June. Shrub.

22. E. crinita; leaves crowded, lanceolate, terminated each by a hair; flowers nearly terminal, drooping; pedicels red; corolla cylindrical, contracted at the neck. G. Native of the Cape of Good Hope. Erica crinita, Lodg. bot. cab. 1432. Corolla purplish-red, with a pale border.


Cult. For culture and propagation see Erica, p. 800. Most elegant shrubs when in blossom. The wood of the species being more hard than that of Erica, the cuttings do not strike root so freely.

XIV. CHO'NA (from woryn, chone; a funnel; from the figure of the corolla). D. Don, in edinb. phil. journ. 17. p. 155.—Erica species of authors.

Lin. syst. Octándria Monogyinia. Calyx 4-parted, foliaceous. Corolla funnel-shaped, with a 4-lobed revolute limb. Stamens exserted; filaments capillary; anthers truncate, combined; cells of anthers elongated, parallel, anwéd at the base. Stigma simple, obtuse. Capsule 4-celled, many-seeded.—A small diffuse shrub, native of the Cape of Good Hope. Leaves 3 in a whorl, linear, anwéd, with revolute cestously-ciliated margins. Flowers terminal, corymbose, blood-red. Anthers black. Perhaps Syringóidea mathiissii belongs to this genus.

I. C. Sanguineæ (D. Don, l. c.) G. Native of the Cape of Good Hope. Erica Sanguinæ. Philipp. bot. 2. t. 26. 5 M
§ 1. Anthers mutic at the base. Normal species.

* Leaves 3 in a whorl.

1 S. costata; leaves bluntish, downy, spreading; flowers terminal, by threes; bracteas close to the calyx, calyce segments serrate, corolla glabrous, curved, ribbed; style a little exerted. \( \beta \). G. Native of the Cape of Good Hope. Erica costata, Andr. heath. 1 t. 40. Corolla pale red, with a greenish border. 

Var. \( \beta \), supræba (Andr. heath. vol. 4.) corolla larger, reddish-purple, with a greenish-yellow mouth.


2 S. diaephra; leaves spreading, glabrous; flowers terminal, by threes, pendulous, glabrous; bracteas foliaceous, close to the calyx, calyces obverse, foliaceous, corolla with a clavate inflated tube; style exerted. \( \beta \). G. Native of the Cape of Good Hope. Erica transparens, Andr. heath. vol. 4. with a figure. Lodd. bot. cab. 177. Erica diaphra, Spreng. syst. 2. p. 178. Corollas deep reddish-purple.


3 S. clamata; leaves erect; flowers terminal, by threes; drooping; bracteas close to the calyx, adpressed; genitils exerted a little. \( \beta \). G. Native of the Cape of Good Hope. Erica clamata, Andr. heath. 3 t. 40. Corolla green, cylindrically clavate. Anthers black.


4 S. fallens; leaves linear, hoary, spreading; flowers disposed in terminal racemes, horizontal; bracteas close to the calyx. \( \beta \). G. Native of the Cape of Good Hope. Erica tellins, Andr. heath. 3 t. 45. Corolla sulphur-coloured.


5 S. decibus; leaves 3-4 in a whorl, villous; flowers terminal, by threes; bracteas close to the calyx, calyces coloured, ciliated; corolla cylindrical; style exerted. \( \beta \). G. Native of the Cape of Good Hope. Erica dichrus, Spreng. syst. 2. p. 179. Erica bicolor, Andr. heath. 2 t. 39. Lodd. bot. cab. 1001, but not of Thunb. nor Wildl. Erica dichromata, Lodd. bot. cab. 1813. Corolla purplish-red, with a greenish-yellow mouth.


6 S. linnea (D. Don, l. c.) leaves ciliated, spreading; flowers axillary, numerous, nearly sessile, horizontal; corollas clavate, downy or villous; bracteas close to the calyx, and are as well as the calyce segments serrate; style subexserted. \( \beta \). G. Native of the Cape of Good Hope. Erica Linneaëa, Lodd. bot. cab. 102. Erica Linnea, Andr. heath. 2 t. 34. Erica perspicua \( \beta \), Ait. hort. kew. 2. p. 371. Corolla white, with a red base. Anthers bearded on the back at top. In this and S. abietina the ovarium is 6-8-celled.

Var. \( \beta \), supræba (Lodd. bot. cab. 1778.) flowers large, white tinged with red, erect. \( \beta \). G. Native of the Cape of Good Hope. Erica versicolor, Andr. heath. 1 t. 39. Lodd. bot. cab. 208. Corolla purplish-red, with a greenish-yellow mouth.

Var. \( \beta \), major (Lodd. bot. cab. 1316.) flowers larger.


7 S. versicolor; leaves glabrous, spreading; flowers terminal, by threes; calyces coloured; bracteas close to the calyx, denticulated, as well as the calyce segments; corolla nearly cylindrical; style exerted. \( \beta \). G. Native of the Cape of Good Hope. Erica versicolor, Andr. heath. 1 t. 39. Lodd. bot. cab. 208. Corolla purplish-red, with a greenish-yellow mouth.


9 S. broadleyana; leaves linear, spreading; flowers axillary, on long pedicels, drooping; calyce segments narrow, foliaceous; bracteas remote from the calyx; style exerted. \( \beta \). G. Native of the Cape of Good Hope. Erica Broadleyana, Andr. heath. 3 t. 44. Corolla deep red, with a yellow mouth. Anthers mutic.


10 S. insulsæ; leaves 5 in a whorl; flowers terminal; bracteas close to the calyx, foliaceous; corolla with a cylindrical incurved tube, and ciliated segments; style a little exerted. \( \beta \). G. Native of the Cape of Good Hope. Erica insula, Hortul. Bedf. eric. wob. p. 12. Lodd. cat. p. 25. Flowers yellowish-green.


* * Leaves 4 in a whorl.

11 S. refugiens; leaves glabrous, spreading; flowers terminal, drooping, by fours; calyces coloured, subulate, adpressed; style exerted. \( \beta \). G. Native of the Cape of Good Hope. Erica refugens, Andr. heath. vol. 4. with a figure. Corollas scarlet or deep purplish-red.


12 S. transparens; leaves ovate-cuneate, shortly pectinated; calyce segments cuneate; corolla 6-7 lines long, chiefly towards the apex outside; filaments spurred. \( \beta \). G. Native of the Cape of Good Hope. Erica transparens, Thum. prod. p. 71. Erica cerinuthoides \( \gamma \), Thum. diss. no. 53. Erica strigilifolia, Sal. in Lin. trans. 6. p. 367. Corollas white. ?


13 S. pellucida; leaves linear, horizontal, ciliated; flowers terminal, pedicellate, drooping; bracteas close to the calyx; corolla with an oblong inflated tube, subpellucid; style exerted. \( \beta \). G. Native of the Cape of Good Hope. Erica pellucida, Andr. heath. 3 t. 60. Lodd. bot. cab. 276. Corolla white. Calyce segments linear-subulate.

Var. \( \beta \), rubra (Bedf. eric. wob. p. 18. but not of Andr.) co-
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14 **S. Bedfordiâna;** leaves linear, ciliated; flowers terminal, pedicellate, drooping; bracteas remote from and approximating the calyx; corolla cylindrical, curved; style subexserted. ½, G. Native of the Cape of Good Hope. Erica pellucida Bedf. eric. wob. p. 18. Corollas reddish-purple.


15 **S. extãdans;** leaves linear, obtuse, spreading, clamy from glands; flowers terminal, subaggregate, drooping; bracteas subulate, close to the calyx; corolla oblong, curved, ribbed; style exserted. ½, G. Native of the Cape of Good Hope. Erica exsudans Lodd. bot. cab. 287. Erica rosa sólis, Hortul. Corollas reddish-purple. Bracteas awned.


16 **S. sulfureâ;** leaves linear, obtuse, villous; flowers fasciculate, axillary and terminal, nearly sessile, horizontal; bracteas close to the calyx; corolla cylindrical, trumpet-shaped, villous; style exserted. ½, G. Native of the Cape of Good Hope. Erica sulphureâ, Andr. heath. vol. 4. with a figure. Sims, bot. mag. 1884. Lodd. bot. cab. 1762. Corollas pale yellow or sulphur-coloured.


17 **S. ? flavâ;** leaves 3 in a whorl, filiform, glabrous, short, erect; flowers horizontal, axillary, crowded; calyx bracteate; corolla urceolate tubular, short; style exserted. ½, G. Native of the Cape of Good Hope. Erica flavâ, Lodd. bot. cab. 882. Andr. heath. vol. 2. t. 38. Flowers yellow.

**Yellow-flowered Syringodea.** Fl. April, Sept. Clt. 1795. Shrub.

18 **S. erubescens;** leaves linear-lanceolate, with revolute ciliated margins; floriferous branches pendulous; bracteas awned, close to the calyx, and as are also as the calycine segments dentately fringed; corolla cylindrical, inflated, beset with glandular hairs both inside and outside, with a revolute limb; style exserted. ½, G. Native of the Cape of Good Hope. Erica erubescens, Andr. heath. 3. t. 56. Lodd. bot. cab. 1826. Erica elongâta, Hortul. Corolla from pale purplish-red to white. Calycine segments ovate, roundish.


19 **S. elaâta;** leaves filiform, bluntish; branches spreading; flowers axillary or terminating small branches, crowded in the manner of a spike; bracteas remote from and approximating the calyx; corolla curved, trumpet-shaped, villous, with a rather revolute limb; gentils exserted. ½, G. Native of the Cape of Good Hope. Erica elâta, Andr. heath. 2. t. 18. Lodd. bot. cab. 1785. Erica longiflora, Sal. in Lin. trans. 6. p. 359. Corolla orange-red, 15-20 lines long, downy, with an obtuse limb. Herb powdery. Pedicels glabrous. Calyx recurved spreading, convex on the outside at the base.


20 **S. ? linkii;** leaves spreading, beset with a few hairs; flowers terminal, umbellate; bracteas remote from the calyx; calycine segments ovate, white; anthers mutic, subexserted. ½, S. ? Native of the Cape of Good Hope. Erica protrudens, Link. enum. 1. p. 373. Corolla 2-3 lines long, white.—Probably a species of *Gypsophâlia.*

**Link’s Syringodea.** Fl. April, May. Clt. 1805. Shrub.

21 **S. stægnalis;** leaves linear, hairy; flowers terminal; pedicels glabrous; corolla 10-11 lines long, hairy; anthers straight, papillose, mutic. ½, G. Native of the Cape of Good Hope. Erica stagnâlis, Sal. in Lin. trans. 6. p. 359. Erica tubiflora, Roxb. mss.


22 **S. flâmâea;** leaves filiform, erectish, glabrous; flowers sub solitary, terminating the small branches, spike-like, horizontal; bracteas close to the calyx; calycine segments subulate, imbricated, unequal; corolla 8 lines long, downy, with a clavate tube, and the segments of the limb imbricated at the base; gentils a little exserted. ½, G. Native of the Cape of Good Hope. Erica flâmâea, Andr. heath. 2. t. 53. Erica bilaxa, Sal. in Lin. trans. 6. p. 358. Erica curviflora, Thumb. diss. no. 30. Corollas pale yellow.


23 **S. linençeae;** leaves linear-lanceolate, pilose, spreading; flowers almost sessile, terminating small branches; bracteas close to the calyx; calycine segments lanceolate; corolla villous, cylindrical, swollen at top; style subexserted. ½, G. Native of the Cape of Good Hope. Erica linençeae, Andr. heath. 2. t. 42. Erica Limneæa, Hort. kew. 2. p. 577. Lodd. bot. cab. 102. Corollas with a purplish-red base, and a white top.


24 **S. radiaâta;** leaves filiform, spreading; flowers terminal, umbellately verticillate; bracteas remote from the calyx; calyx adpressed; corolla 9-10 lines long, glabrous, with a cylindrical tube, and recurved limb; style exserted; fruit glabrous. ½, G. Native of the Cape of Good Hope. Erica radiâta, Andr. heath. 1. t. 46. Erica calaminÆum, Sal. in Lin. trans. 6. p. 350. Flowers reddish-purple.


25 **S. spîrâ;** leaves linear, subciliated, erectly spreading; flowers aggregate, terminating the small branches; bracteas remote from the calyx; calycine segments ovate, acuminate; corolla 7-8 lines long, downy, with a cylindrical tube, and a spreading border; gentils inclosed; pericarp obpyramidal. ½, G. Native of the Cape of Good Hope. Erica spirâia, Andr. heath. 1. t. 54. Erica ealectiflora, Sal. in Lin. trans. 6. p. 357. Corolla red.

**Var. ? transâlina;** corolla purplish-red, rather ventricose at the base.—Erica transâlina, Andr. heath. vol. 4. with a figure.


26 **S. exsægêns;** leaves filiform, spreading recurved; flowers axillary, verticillate, horizontal, crowded; bracteas remote from and approximate to the calyx; corolla cylindrically clavate, 13-15 lines long, viscid, with ovate cuneated segments; filaments exserted; pericarp 4-furrowed. ½, G. Native of the Cape of Good Hope. Erica exsægêns, Andr. heath. 1. t. 57. Lodd. bot. cab. 835. Erica grandiflora breviflora, Wendl. eric. 7. p. 7, with a figure. Erica pharetraformis, Sal. in Lin. trans. 6. p. 361. Corollas orange-red. This species differs from all others in the corolline segments being attenuated at the apex, and bifid. There are several varieties of the species in the gardens, besides those mentioned before, differing in the colour of the flowers.


27 **S. curviflóra;** leaves linear, spreading, glabrous; flowers usually solitary, terminating small branches; bracteas close to the base.
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the calyx; corolla glabrous, 10-11 lines long, with a curved cylindrical tube, and an erect or spreadingly reflexed limb; style exserted. 老师的 Native of the Cape of Good Hope. Erica curtiviflora. Lin. diss. no. 41. a. Andr. heath, t. 52. Lodd. bot. cab. 1668. Wendl. eric. fasc. 3. no. 3. p. 3, with a figure. Erica fastiavosa, Sal. in Lin. trans. 6. p. 359. Flowers orange-yellow. Fruit broadly turbinate.

**Var. β, räbra** (Andr. heath. 3. t. 61.) corolla orange-red, cylindrically trumpet-shaped. 老师的 Native of the Cape of Good Hope. Erica ericiflora, Houtt.


29 S. tubiflora; leaves linear, obtuse, downy, erect; flowers usually solitary, terminating the small branches; bracteas almost close to the calyx; corolla downy, cylindrical, 9-10 lines long, a little curved, with a revolute limb; calycine segments oblong; style exerted. 老师的 Native of the Cape of Good Hope. Erica tubiflora, Lin. diss. no. 40. spec. ed. 2. p. 505. Andr. heath. t. 53. Wendl. eric. 4. p. 7, with a figure. Icon. hort. Kew. 28. Sal. in Lin. trans. 6. p. 337. Flowers purplish-red. Pedicels glabrous.

**Var. α, cocinea** (Sal. in Lin. trans. 6. p. 357.) flowers deeper red. 老师的 Native of the Cape of Good Hope. Erica cocinea, Lin. diss. no. 42, with a figure of the flower.


30 S. hone'scens; leaves linear, glabrous, spreading; flowers solitary, terminating the small branches, drooping; calycine segments ovate, acuminate, a little ciliolate; bracteas ovate, ribbed, close to the calyx, or rather remote; corolla cylindrical, rather plicate at top, with a revolute limb; style exerted. 老师的 Native of the Cape of Good Hope. Erica ignescens, Andr. heath, t. 57. Corollas reddish-orange. Calycine segments ovate, acuminate.


31 S. sordida; branches scattered, hairy; leaves linear, oblique, woolly, spreading; flowers usually solitary, terminating the small branches, drooping; bracteas remote from the calyx; calyxes adpressed, convex outside at the base; corolla 12 lines long, cylindrical, curved, villous, with a revolute limb; petals inclosed. 老师的 Native of the Cape of Good Hope. Erica sordida, Andr. heath. t. 55. Lodd. bot. cab. 1793. Erica lamiflora, Wendl. eric. fasc. 19, no. 4, with a figure. Erica floccosa, Sal. in Lin. trans. 6. p. 350. Flowers dirty orange-red. Style exerted.


32 S. brachialis; leaves linear, hairy; flowers terminal; corolla 6-8 lines long, hairy both inside and outside, with a curved pyramidal tube; anthers mutic, very long. 老师的 Native of the Cape of Good Hope. Erica brachialis, Sal. in Lin. trans. 6. p. 367.


33 S. serratifolia; leaves linear, acute, spreading, with plumose margins; flowers aggregate, terminal; bracteas close to the calyx; calyxes foliaceous, glabrously ciliolate, a little recurved; corolla 9 lines long, glabrous, cylindrical, with a spreading limb; anthers a little exerted; style exerted. 老师的 Native of the Cape of Good Hope. Erica serratifolia, Andr. heath. t. 48. Lodd. bot. cab. 1703. Erica cylindrificifora, Sal. in Lin. trans. 6. p. 356. Erica plumosa, Wendl. eric. no. 12. p. 5. Corolla greenish-yellow at top, and orange-red at base. Leaves 4-6 in a whorl.


**Var. α, minora** (Bedd. eric. wob. p. 14.) corolla smaller, with an inflated clavate tube. 老师的 Native of the Cape of Good Hope. Erica procera, Wendl. eric. with a figure. Corollas white?


35 S. ruscica; leaves linear, erect, downy; flowers solitary, terminating the small branches, erectish; corolla constricted in the middle, with a spreading limb; style exerted. 老师的 Native of the Cape of Good Hope. Erica ruscica, Sal. in hort. kew. 2. p. 375. Willd. spec. 2. p. 404. Pl. kew. t. 12. Andr. heath. t. 1. 10. Wendl. eric. 4. p. 9, with a figure. Corollas orange-yellow.


37 S. glandulosal; leaves linear, acute, beset with glandular hairs, spreading; flowers nearly terminal, crowded, disposed in a verticillate crown; bracteas close to the calyx, and are as well as it ciliate with glandular hairs; corolla glabrous, with a clavate tube; style exerted. 老师的 Native of the Cape of Good Hope. Erica glandulosa, Thumb. prod. p. 71. diss. no. 32. Corollas orange-red?


38 S. gémíFERA; leaves oblong, adpressed, ciliolate, aristate, 4-5 in a whorl; branches thickened at top; bracteas remote from and approximating the calyx; flowers drooping, crowded, disposed in a verticillate crown; corolla villous, cylindrical, inflated; petals inclosed. 老师的 Native of the Cape of Good Hope. Erica geminifera, Sims, bot. mag. t. 2366. Lodd. bot. cab. 457. Erica Massonii minor, Houtt. Corollas reddish-purple or scarlet, with a green apex.


39 S. lituiflorá; leaves linear, nearly smooth; flowers solitary or by threes terminating the branches; bracteas close to the calyx; corolla 6-8 lines long, downy or villous, with the tube ciliate; filaments bearded on the back at the apex. 老师的 Native of the Cape of Good Hope. Erica lituiflora, Sal. in Lin. trans. 6. p. 356. Erica perspicua, Wendl. eric. fasc. 1. p. 7, with a figure. Corolla white, tinged with red.

40 S. Persicicu; leaves linear, nearly smooth; flowers terminating in the small branches, spike-formed; bracteae remote from the calyx; pedicels hairy; corolla cylindrical, erect; genitals inclosed. $. G. Native of the Cape of Good Hope. Erica perspicuca. Hort. Bedf. eric. wob. p. 18. Corolla reddish-purple.

**Var. $, nigro (Bedf. l. c.) leaves hairy; pedicels slightly hairy; tube of corolla cylindrical, straight. $. G. Corollas purplish-red.**


41 S. Bedforiana; leaves linear, ciliated, hairy; flowers terminal, subcapitate; pedicels slightly hairy; bracteae remote from the calyx; corolla downy, with a cylindrical subventricose tube; genitals inclosed. $. G. Native of the Cape of Good Hope. Erica perspicucoides, Bedf. eric. wob. 18. Flowers reddish-purple.


42 S. cirelliflorea; stem slender; leaves linear, glabrous? corolla 2-3 lines long, downy, with a narrow campanulate tube, and a short limb. $. G. Native of the Cape of Good Hope. Erica cirellifloera, Sal. in Lin. trans. 6. p. 357. Flowers pale scarlet.


43 S. obpyramidalis; leaves pubescent, spreading; flowers terminal, usually by threes; bracteae remote from the calyx, broad at the base; corolla funnel-shaped, with a spreading border, having the interstices of the limb tumid on the outside; fruit spherical. $. G. Native of the Cape of Good Hope. E. pyramidalis, Andr. heath. t. 45. Sims, bot. mag. 366. kew. Lodd. bot. cab. 319. Ait. hort. kew. 3. p. 401. Icon. pl. t. 27. Wendl. eric. 5. p. 3. with a figure. Erica obpyramidalis, Sal. in Lin. trans. 6. p. 356. Corollas purplish-red, 1/3 to 4 lines long. Style exserted.


44 S. verticillata; leaves linear, glabrous; flowers crowded, nearly terminal, verticillate, drooping; bracteae linear, remote from the calyx; corolla with a cylindrical inflated tube, glabrous, constricted at top; genitals inclosed. $. G. Native of the Cape of Good Hope. Erica verticillata, Andr. heath. t. 7. Lodd. bot. cab. 145. Erica mammiosa, $, verticillata, Ait. hort. kew. 2. p. 369. Flowers scarlet.


45 S. colo-rans; leaves linear, spreading, ciliated; flowers crowded, terminating the small branches; bracteae close to the calyx; corolla cylindrical, claveate, glabrous; style almost inclosed; calyces coloured, subulate. $. G. Native of the Cape of Good Hope. Erica colo-rans, Andr. heath. vol. 4. with a figure. Lodd. bot. cab. 224. Ker. bot. reg. 601. Bedf. eric. wob. pl. 4. f. 11. Corollas varying from white to red.

**Colouring Syringodea. Fl. April, June. Clt. 1827. Shrub.**

**x x x Leaves 6 or more in a whorl.**

46 S. splendens; leaves linear, obtuse, spreading; flowers densely crowded, drooping; calyx segments ovate; corolla, with a subrevolute limb; genititals exserted. $. G. Native of the Cape of Good Hope. Erica splendens, Wendl. eric. f. se. 8. p. 5. with a figure, but not of Andr. Corolla deep red.


47 S. longitudinalis; leaves long, linear, incurvingly spreading, with sebaceous edges; flowers crowded in whorls, drooping; bracteae close to the calyx; corolla pubescent, clamy, calyxine segments linear; genitals inclosed. $. G. Native of the Cape of Good Hope. Erica longifolia, Fl. hort. kew. t. 4. Willd. spec. 2. p. 398. Erica longifolia, Sal. in Lin. trans. 6. p. 363. Erica pinéa, Wendl. eric. 1. p. 11. with a figure. Corolla more or less incravate, deep red.


48 S. vestita; leaves linear, erect, with sebaceous edges; flowers crowded, verticillate, nearly sessile, spreading; bracteae close to the calyx; corolla cylindrical, more or less incravate, 9-11 lines long, downy, with a revolute limb; style exserted; pericarp silky at top. $. G. Native of the Cape of Good Hope. Erica vestita, Thunb. diss. no. 25. Erica longifolia, var. a, Sal. in Lin. trans. 6. p. 363. Erica serissa, Alba, Andr. heath. t. 1. p. 62. Wendl. eric. no. 12. p. 3. with a figure. Calyculine segments ciliated with glandular hairs. Corolla white, cylindrical, curved.

**Var. $, lattea (Andr. heath. 3. t. 72.) leaves 6-8 in a whorl; corolla cylindrical, pale yellow.**

**Var. $, incana (Andr. heath. 2. t. 66.) Lodd. bot. cab. 1693. leaves 7 in a whorl; genitals a little exserted; corolla cylindrical, almost straight, pale reddish-purple. Erica longifolia, Curt. bot. mag. 706.**

**Var. $, rosea (Andr. heath. 2. t. 67.) leaves 7-8 in a whorl; anthers a little exserted; corolla cylindrical, subcalvate, reddish-purple.**

**Var. $, falcigera (Andr. heath. 2. t. 68.) anthers a little exserted; flowers nearly terminal; corolla with a cylindrical tube, and straight segments, reddish-purple, or deep red. Erica fulgida, Bedf. eric. wob. p. 11. Lodd. bot. cab. 1633.**

**Var. $, purpurea (Andr. heath. 1. t. 65.) anthers a little exserted; corolla cylindrical, subcalvate, purplish-red. Lodd. bot. cab. 217. Wendl. eric. 10. p. 7. with a figure.**

**Var. $, cocinea (Andr. heath. 1. t. 6.) bot. mag. 402. Wendl. eric. 11. p. 5. with a figure.) anthers a little exserted; corolla erectly cylindrical, curved, deep red, not exactly scarlet.**


49 S. pinéa; leaves linear, obtuse, spreading; flowers crowded, verticillate, almost sessile, spreading; bracteae close to the calyx; calyxine segments dilated at the base, and linear-subulate at the apex, imbricate; corolla 6-7 lines long, glabrous, with a cylindrical clavate tube, and a serrulate spreading limb; pericarp glabrous; style exserted. $. G. Native of the Cape of Good Hope. Erica pinéa, Thunb. diss. no. 26. Andr. heath. 1. t. 61. Erica pinifolia, Sal. in Lin. trans. 6. p. 362. but not of Andr. Flowers deep red and blue.

**Var. $, purpurea (Lodd. bot. cab. 1259.) corollas purple.**

There are several other varieties in the gardens.


50 S. pinifolia; leaves filiform, elongated, glabrous, spreading, 6-8 in a whorl; flowers nearly terminal, crowded, horizontal, verticillate; bracteae close to the calyx; calyx villous, with linear segments; corolla tomentose, cylindrically club-shaped, inflated, ribbed; style exserted. $. G. Native of the Cape of Good Hope. Erica pinifolia, Andr. heath. 3. t. 69. Erica pityophylla, Spreng. syst. 2. p. 181. Corolla white, with dark anthers.

**Var. $, discolor (Andr. heath. 3. t. 70.) corolla with a cylindric ribbed tube, reddish-purple or pale red.**

**Var. $, spirítuá (Hort. Bedf. eric. wob. 19.) corolla with a clavate inflated tube, white and purplish-red.**

**Var. $, cocinea (Andr. heath. 2. t. 65.) flowers scarlet.**

51. **S. au-réea**; leaves linear, recurvedly spreading; flowers horizontal, crowded, verticillate, nearly terminal; bracteas close to the calyx, aristate; corolla cylindrical, with reflexed segments; style exerted; calycine segments ovate, acuminate. **†**, **G**. Native of the Cape of Good Hope. Erica atorea, Andr. heath. 2. t. 61. Corollas orange-yellow.

*Var. ψ*, *floré pallidó* (Andr. heath. 3. t. 71.) flowers pale red, with dark anthers; corolla downy, viscid, with a cylindrical inflated tube; calycine segments serrulate, as well as the bracteas; style exerted. **†**, **G**. Native of the Cape of Good Hope. Erica aréti-a, Andr. heath. 2. t. 61. Corollas orange-yellow.


52. **S. virídis**; leaves linear, spreading, subrecurved; flowers crowded, verticillate, horizontal; bracteas one-half shorter than the calyx; corolla cylindrical, ribbed, dilated in the middle, with a revolute limb; style exerted. **†**, **G**. Native of the Cape of Good Hope. Erica viridi-s, Andr. heath. 2. t. 59. Ait. hort. kew. 2. p. 370. Flowers green-yellowish.


53. **S. Híbbertiá'na**; leaves 4-6 in a whorl, linear, glabrous, spreading; flowers horizontal, crowded, disposed in a whorled crown; bracteas 3, two of which are close to the calyx, and the third remote; corolla glabrous, cammy, cylindrical, curved, clavate, with an erect limb; anthers a little exerted. **†**, **G**. Native of the Cape of Good Hope. Erica Híbbertiá-na, Andr. heath. 3. t. 68. Erica Hibbertiana, Ait. hort. kew. 2. p. 378. Sins. bot. mag. 1728. Corollas dark red or purplish-red, with a yellow mouth.


54. **S. onosmóflórà**; leaves linear, spreading, glabrous; flowers crowded, axillary, subverticillate; corolla viscid, with a cylindrical tube and spreading limb; bracteas one-half shorter than the calyx. **†**, **G**. Native of the Cape of Good Hope. Erica glutinnósà, Andr. heath. 1. t. 60. Erica viscósa, Wendl. eric. with a figure. Erica onosmáflóra, Sal. in Lin. trans. 6. p. 363. Corolla sulphur-coloured; tube clavate, 9-10 lines long. Calycine segments ovate-oblong.


55. **S. echíflórà**; leaves 5-7 in a whorl, linear, downy, with rough margins, spreading; flowers axillary, horizontal, spicate; bracteas close to the calyx; corolla with a short inflated ribbed tube, cammy; style exerted. **†**, **G**. Native of the Cape of Good Hope. Erica echíflóra, Andr. heath. 3. t. 62. Lodd. bot. cab. 356. Erica echíflóra, var. superba, Bedf. eric. wob. p. 8. Corollas deep red or reddish-purple.

*Var. ψ*, *purípara* (Bedf. eric. wob. p. 8.) corolla purple, with a short equal tube, that is not inflated.

*Var. γ*, *cocinée* (Lodd. cat. p. 25.) corollas deep red or scarlet.


56. **S. argéntiflórà**; leaves linear, glabrous, spreadingly incurved; flowers axillary, horizontal, spicate, rather pellucid; bracteas close to the calyx; style exerted. **†**, **G**. Native of the Cape of Good Hope. Erica argéntiflóra, Andr. heath. vol. 4. with a figure. Corolla tubular, short, white.


57. **S. Archèriá'na**; leaves 6-7 in a whorl, serrately ciliated, spreading; flowers axillary and terminal, crowded, verticillate; pedicels triradiate, 2 of the bracteas near the calyx, and the third remote; corolla downy, viscid, with a cylindrical inflated tube; calycine segments serrulate hispid, as well as the bracteas; style exerted. **†**, **G**. Native of the Cape of Good Hope. Erica Archéria, Andr. heath. 2. t. 66. Erica Archériá-na, Ait. hort. kew. 2. p. 378. Lodd. bot. cab. 1466. Corolla deep reddish-purple or scarlet. Ovarium cylindrical.

**Lady Archer’s Syringodæa.** Fl. April, Sept. Clt. 1796. Shrub.

58. **S. rósea**; leaves filiform, erect, 5-6 in a whorl; flowers sessile, terminating small branches; bracteas close to the calyx; corolla glabrous, with a cylindrical cylindrical segments; calycine segments subulate; anthers inclosed. **†**, **G**. Native of the Cape of Good Hope. Erica rósea, Andr. heath. 2. t. 13. Lodd. bot. cab. 782. Flowers red.


59. **S. Salsibúriá'na**; leaves linear, erect, with revolute margins, white beneath; flowers axillary, racemose spicate, tufted, crowded, drooping; corollas cylindrically clavate; style exerted. **†**, **G**. Native of the Cape of Good Hope. Erica Salsibúria, Andr. heath. vol. 4. with a figure. Erica rósea, Hort. Bedf. eric. wob. p. 132. Flowers purplish red.


60. **S. grandíflórà**; leaves linear, bluntish, glabrous, reclinate; flowers axillary near the tops of the branches and stem, verticillate; bracteas small, close to the calyx; calycine segments ovate-lanceolate; corolla long, curved, trumpet-shaped, viscid, with a revolute limb; anthers exerted. **†**, **G**. Native of the Cape of Good Hope. Erica grandíflóra, Bl W. jun. suppl. 223. Curt. bot. mag. 189. Pl. hort. kew. t. 8. Andr. heath. 1. t. 50. Erica grandiflora longiflora, Wendl. eric. 6. p. 5. with a figure. Lodd. bot. cab. 498. Corolla orange-yellow outside, yellow inside. Leaves from 4 to 6 in a whorl, but usually the latter number.

*Var. ψ*, *formósà*; leaves 8 in a whorl; pedicels bracteate, 2 of the bracteas close to the calyx, and the third remote from it; corollas reddish-orange. Erica formósà, Bedf. eric. wob. p. 10.

*Var. γ*, *hámítis*; leaves 4 in a whorl. Shrub dwarf.

59. **S. Andréusí**; flowers scarlet. **†**, **G**. Erica formósà, Andr. heath. 2. t. 64.


61. **S. Lééà’na**; leaves linear, filiform, stiff, obtuse, spreading; flowers axillary, verticillate; bracteas close to the calyx, and length of it; corolla 5-6 lines long, viscid, with a calyptra 4-ribbed tube, and a spreading limb; calyx adpressed; style exerted. **†**, **G**. Native of the Cape of Good Hope. Erica Lééà, Andr. heath. 1. t. 59. Erica Lééà, Ait. hort. kew. 2. t. 376. Pl. kew. 24. Lodd. bot. cab. 298. Erica costéflóra, Sal. in Lin. trans. 6. p. 363. Corollas orange-red.

**Lee’s Syringodæa.** Fl. May, Jan. Clt. 1788. Shrub.

62. **S. cethálótes**; leaves linear; flowers disposed in capitate whorls; calyx downy; corolla tubularly clavate; anthers inclosed; style exerted. **†**, **G**. Native of the Cape of Good Hope. Erica cethálótes, Thunb. diss. no. 23. prod. 70. Willd. spec. 2. p. 398. Corolla purple.


*Var. ψ*, *Bedfordiana*; bracteas coloured; calyx woolly; genitils exerted; flowers nearly terminal, verticillate; corolla with
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§ 2. Anthers awned or crested. Aberrant species.

* Leaves 3 in a whorl.

71 S. discolor; leaves linear, spreading, ciliated; flowers terminal, by threes; bracteas close to the calyx; calycine segments serrulatated; corolla 9-10 lines long, anointed with gluten, cylindrical, having the tube finely striated; awns of anthers short, glabrous. ♂ G. Native of the Cape of Good Hope. Erica discolor, Andr. heath. t. 1. t. 3. Wendl. eric. p. 5. p. 9. with a figure. Loddd. bot. cab. 1452. Erica cupressiformis, Sal. in Lin. trans. 6. p. 354. Corollas pale red.


72 S. mucosa; leaves crowded, linear, spreading reflexed, 3-5 in a whorl; flowers axillary, verticillate, near the tops of the branches; bracteas broad at the base, remote from the calyx; calyx foliaceous; corolla with a wrinkled tube; awns of anthers long, downy. ♂ G. Native of the Cape of Good Hope. Erica mucosa, Andr. heath. vol. 4. with a figure. Flowers reddish-purple.


73 S. densifolia; leaves linear-oblong, imbricated, glabrous; flowers axillary, ciliated; corolla cylindrically-clavate, downy; style exerted. ♂ G. Native of the Cape of Good Hope. Erica densifolia, Wildl. spec. 2. p. 359. Flowers purplish-red.


74 S. Ewerana; leaves linear, scabrous, spreading; flowers subspicate; bracteas remote from the calyx; calyx flat, with thick margins; corolla cylindrical, 8-10 lines long, clothed with viscid down, curved and clavate; style exerted; awns of anthers long, downy. ♂ G. Native of the Cape of Good Hope. Erica Ewerana, Dry. in Ait. hort. kew. 2. p. 368. Loddd. bot. cab. 303. Erica Ewerana, Hort. Erica Uhlria, Andr. heath. 2. t. 3. Wendl. eric. 18. p. 91. Erica decora, Sal. in Lin. trans. 6. p. 354, with a figure. Corolla dark red, or reddish-purple, with a greenish-yellow mouth.

Var. β, pilosa (Andr. heath. 2. t. 4.) leaves pilose; bracteas close to the calyx; flowers terminating small branches; corolla slightly curved and clavate, purplish-red, with a greenish-yellow mouth.


75 S. hirta; leaves linear, ciliated; flowers terminal; bracteas sessile, close to the calyx, ciliated; corolla cylindrical; style exerted; anthers awned. ♂ G. Native of the Cape of Good Hope. Erica hirta, Andr. heath. 3. t. 5. Loddd. bot. cab. 1116, but not of Thumb, nor Wildl. Corolla reddish-purple, with a greenish-yellow mouth.


76 S. crevulens; leaves linear, subulate, glabrous, spreading; flowers terminal, by threes; bracteas remote from the calyx; calyx serrated; corolla 9-12 lines long, shining, smooth, with a clavate, more or less compressed, curved tube; style exerted; pericarp ovate. ♂ G. Native of the Cape of Good Hope. Erica cruenta, Pl. kew. t. 13. Loddd. bot. cab. 1656. Erica mellifiens, Sal. in Lin. trans. 6. p. 354. Corolla reddish-purple or blood-coloured.

Var. β; calyx slightly serrated; corolla deep red or scarlet. ♂ G. Erica cruenta, Andr. heath. 1. t. 9. Sol. in Ait. hort. kew. ed. 1. vol. 2. p. 16. Wendl. eric. 4. p. 11. with a figure.
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77 S. viridiflora; leaves 3 in a whorl, or alternate, ciliated; flowers terminal, drooping; bracteas imbricate; corolla with a cylindrical clavate tube; style exserted; anthers a little exserted, suberistate. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica hispa var. C. G. Lodd. heath. 3. t. 7. Lodd. bot. cab. 917. Flowers deep green.

78 S. scoposa; leaves linear, downy, spreading; flowers terminal, by threes; bracteas close to the calyx; calyceine segments broad, short, imbricate, with woolly edges; corolla with a cylindrical, infulated, curved tube, and an erect limb; style exserted, incurved at the top; anthers awned, about the length of the corolla. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica speciosa, Andr. heath. 3. t. 2. Lodd. bot. cab. 575. Ait. hort. kew. 2. p. 569. Corollas dark red or reddish-purple, with a greenish-yellow mouth.

79 S. Dickensii; leaves glabrous; flowers terminating the small branches; bracteas imbricate, angular; corolla with a bell-shaped tube, and large spreading segments; anthers a little exserted, crestted; style exserted. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica Dickensëa, Bedf. eric. wob. p. 8. Lodd. bot. cab. t. 1816. Flowers yellow.

Var. \( \beta \), albâ; flowers white.
Var. \( \gamma \), râbra; flowers red.

80 S. mutabilis; leaves linear, ciliated, spreading, 3-4 in a whorl, the terminal hairs the longest; flowers terminal, umbellate; pedicels downy; bracteas 3, 2 near the calyx, and the third remote from it; calyceine segments ciliated, with glandular hairs; corolla cylindrical, inflated; filaments awned; anthers a little exserted; style exserted. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica mutabilis, Andr. heath. 3. t. 31. Sims, bot. mag. 2518. Lodd. bot. cab. 46. Corolla purplish-red, deeper towards the top. The hairs or down on the plant are tipped with black glands in the young state.

Changeable-flowered Syringodea. Fl. Year. Ct. 1798. Shrub 1 to 2 feet.
81 S. cuspidaëra; leaves linear, pedicels glabrous; calyceine segments ovate, cuspidate; flowers terminal; corolla 11-12 lines long, downy, having the interstices of the limb lanceolate at the base; anthers hairy, awned; filaments rather villous. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica cuspidaëra, Sal. in Lin. trans. 6. p. 358.

82 S. densâ; leaves 4-5 in a whorl, linear, somewhat imbricated, spreading; flowers axillary, crowded, nearly sessile; bracteas close to the calyx; calyx adpressed; corolla with an oblong-cylindrical tube, and a short spreading limb; anthers awned; style a little exserted. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica densa, Andr. heath. 3. t. 30. Corolla pale red, with a deep spreading border, like a Callista, of which it may probably be a species.

83 S. naëna; stem trailing; leaves linear, spreading, obtuse; flowers terminal; bracteas close to the calyx, imbricated, ciliated; corolla 9-11 lines long, downy outside, with a clavate compressed tube; style exserted; awns of anthers long. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica naëna, Sal. in Lin. trans. 355. Erica depressa, Andr. heath. 2. t. 12. but not of Thub. nor Wild. Corollas yellow-green.

84 S. ostrina; leaves 4-5 in a whorl, glabrous; flowers terminal; corolla cylindrical, curved, widened to the throat. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica ostrina, Lodd. bot. cab. 1218. Corolla purplish-red.

85 S. hybrida; leaves linear, glabrous, flowers terminal; bracteas close to the calyx; corolla glabrous, with a cylindrical, slightly curved tube; style exserted; anthers aristate. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica hybrida, Hort. Flowers purplish-red. Nearly allied to S. cylindrica.

86 S. nitens; leaves hairy, flowers terminal; pedicels triciliate; bracteas 2 of the bracteas near the calyx, and the third remote; calyx coloured, hairy; corolla with a curved subclavate tube; glands aristate, a little exerted. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica nitens, Hort. Bedf. eric. wob. p. 16. Corolla purplish-red, with a green top.

87 S. sanguinea; leaves linear, glabrous; flowers nearly terminal, crowded, verticillate; calyxes broad; bracteas remote from the calyx; corolla cylindrical; anthers a little exerted, suberistate; style exerted. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica sanguinea, Lodd. bot. cab. 86. Flowers deep red.

88 S. virens; leaves linear, incurved erect, hairy; flowers terminal, sessile; bracteas close to the calyx; corolla clammy; style exerted, incurved. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica virens, Lodd. bot. cab. 225. Corolla greenish-yellow. Anthers awned.

89 S. ambigua; leaves linear, rather hairy, spreading; flowers terminal, usually solitary; bracteas close to the calyx; calyceine segments subulate, adpressed; corolla striated, glabrous, with a cylindrical tube and short reflexed limb; style a little exerted; anthers awned. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica ambigua, Wendl. eric. fasc. 16. p. 61. with a figure. Erica cylindrica, Andr. heath. 3. t. 30. Lodd. bot. cab. 1734. Corolla reddish-purple.

90 S. cuciciformis; leaves linear, downy; flowers terminal; pedicels downy; corolla 2-10 lines long, downy, with a recurved spreading limb; filaments downy; anthers awned. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica cuciciformis, Sal. in Lin. trans. 6. p. 359. Erica tubiflora, Thunb. diss. no. 31. Flowers reddish-purple.

91 S. claviflora; leaves linear, glabrous, spreading; flowers axillary, nearly sessile, spicate; bracteas imbricate; calyx fleshy, with orbicularly spatulate entire segments; corolla downy, 10-12 lines long, clavate; style exerted; anthers awned. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica claviflora, Sal. in Lin. trans. 6. p. 205. Erica sessiliflora, Andr. heath. 2. t. 10. Corollas greenish-yellow.

92 S. epistomia; leaves glabrous; flowers terminal; bracteas remote and close to the calyx; calyx green, large, inflated; corolla with an oblong inflated tube; genitils inclosed, aristate. \( \frac{7}{4} \). G. Native of the Cape of Good Hope. Erica epistomia,

93 S. sacculiflora; leaves linear, flowers terminal; calycine segments broad, ovate, acuminate; corolla 6-8 lines long, glabrous, with a cylindrical tube; awns of anthers long; anthers linear, papillose. \( \beta \). G. Native of the Cape of Good Hope. Erica sacculiflora, Sal. in Lin. trans. 6. p. 355.

94 S. Patersonii; leaves dense, linear, straight, spreading, glabrous; flowers crowded, axillary; bracteas close to the calyx; calycine segments ciliated at the base, and cuspidate at the apex; corolla 6-8 lines long, glabrous, with a cylindrical tube and a short reflexed limb; style exserted; awns of anthers long. \( \gamma \). G. Native of the Cape of Good Hope. Erica Patersonii, Andr. heath. 1. t. 10. Wendl. eric. fasc. 1. p. 16. with a figure. Erica Patersonii, Ait. Hort. kew. 2. p. 379. Lodd. bot. cab. 1729. Erica abietina, Lin. spec. ed. 2. p. 506. diss. no. 20. Erica spissaflora, Sal. in Lin. trans. 6. p. 355. Flowers yellow.

Var. \( \beta \), moustrousa (Bedf. eric. wob. p. 17.) corolla larger.

Var. \( \gamma \), Major (Andr. heath. 3. t. 10.) calyx slightly toothed.

95 S. velitatis; leaves linear; flowers terminal; corolla 2 to 3 lines long, downy, with an obovate tube and a recurvedly spreading limb; crests of anthers long, cucurited, and a little serrated. \( \gamma \). G. Native of the Cape of Good Hope. Erica velitatis, Sal. in Lin. trans. 6. p. 357.

96 S. glava; leaves linear, triquetrous, stiff, glabrous; spreading; flowers axillary, verticillate, pendulous, crowded; pedicels glabrous; bracteas lanceolate, close to the calyx, ribbed; calycine segments lanceolate; corolla downy, 7-9 lines long, with a cylindrical inflated tube, 4-angled at the base; genitils incised; anthers awned. \( \beta \). G. Native of the Cape of Good Hope. Erica glava, Wendl. eric. with a figure. Erica gelida, Andr. heath. 2. t. 11. Att. Hort. kew. 2. p. 370. Lodd. bot. cab. 699. Erica alveiflora, Sal. in Lin. trans. 6. p. 366. Flowers green. Leaves 4-6 in a whorl.

Var. \( \beta \), abinesis (Bedf. eric. wob. p. 11.) corolla with a white base and a green top.

Var. \( \gamma \), giliea (Wendl. eric. fasc. 12. p. 13. with a figure); bracteas remote from the calyx; flowers disposed in a verticillate crown, greenish-yellow. Leaves 4-5 in a whorl.

97 S. mammosa; leaves linear, subulate, glabrous, erect, spreading; flowers drooping, axillary, crowded, verticillate, near the tops of the branches; bracteas linear, remote from the calyx; calyx coloured; pedicels downy; corolla downy, 8-10 lines long; with a cylindrical inflated tube, having 4 pits near the base; genitils incised; anthers awned. \( \gamma \). G. Native of the Cape of Good Hope. Erica mammosa, Lin. mant. 294. diss. 21. Andr. heath. 1. t. 8. Lodd. bot. cab. 125. Erica mammosa, \( \beta \). Sal. in Lin. trans. 6. p. 366. Erica abietina, Thumb. diss. no. 68. Schrev. pl. no. 23, with a figure. Berg. pl. cap. 105.—Buxh. cent. 4. p. 25. t. 41-42. Corollas pale purplish-red, or dark pink.

Var. \( \beta \), minor (Andr. heath. 3. t. 9.) corolla more slender, purplish-red.

Var. \( \gamma \), pallida (Lodd. bot. cab. 931.) flowers paler.

98 S. tumida; leaves linear, obtuse, hairy, reflexed; flowers terminal, usually by fours; pedicels trichoblate, 2 of the bracteas close to the calyx, and the third remote; corolla downy, with an oblong-cylindrical tube; calyx spreading; style somewhat exserted; anthers anawnd. \( \beta \). G. Native of the Cape of Good Hope. Erica tumida, Ker. bot. reg. t. 65. Erica spiculata, Andr. heath. vol. 4. with a figure. Erica spiculata, Hort. Loud. hort. brit. p. 116. Flowers red.

99 S. Bowieana; leaves linear, glaucous, glabrous; bracteas remote from the calyx; flowers crowded, axillary, verticillate, near the tops of the branches, pendulous; corolla cylindrical, with an inflated tube, and contracted mouth; genitils inclosed; anthers awned. \( \beta \). G. Native of the Cape of Good Hope. Erica Bowieana, Lodd. bot. cab. 842. Erica Bowiana, Bedf. eric. wob. p. 4. Erica Baiiana, Andr. heath. vol. 4. with a figure. Flowers white.—Habit of S. mammosa, and S. verticillata, &c.


*** Leaves 5-6 to 8 in a whorl.

100 S. cerviciflora; leaves 5-6 in a whorl, linear; flowers axillary, crowded; corolla 5-6 lines long, downy, with a very narrow urceolate tube and a spreading limb; filaments minutely spurred. \( \beta \). G. Native of the Cape of Good Hope. Erica cerviciflora, Sal. in Lin. trans. 6. p. 362. Erica impetaria, Hort. Pedicels trichoblate.

101 S. Patersonioides; leaves linear, glabrous, 5-6 in a whorl; flowers crowded, verticillate; bracteas close to the calyx, toothed; corolla with a cylindrical, clavate, curved tube; style exserted; anthers aristate. \( \gamma \). G. Native of the Cape of Good Hope. Erica patersonioides, Bedf. eric. wob. p. 18. Erica Patersonia coccinea, Andr. heath. 3. t. 11. Corolla deep redish-orange or scarlet.

102 S. cahinata; leaves 5 in a whorl, reflexed, woolly; flowers terminal; bracteas remote from the calyx; corolla with a cylindrical, inflated, ribbed tube; crests of anthers plumose; style a little exserted. \( \gamma \). G. Native of the Cape of Good Hope. Erica carninata, Lodd. bot. cab. 1071. Corollas reddish-purple.

103 S. rotundus. We know nothing further about this species. \( \gamma \). G. Native of the Cape of Good Hope. Erica foliaca, or foliacea, Andr. heath. vol. 4. with a figure. Flowers of an orange-yellow colour.

104 S. spicata; leaves linear, subulate, hispid, spreadingly reflexed, 6 in a whorl; pedicels very short; bracteas sessile; flowers axillary, crowded, verticillate, spicate, drooping; calycine segments ciliolate, spatulate, entire; corolla downy, 7-9 lines long, cylindrical; genitils incised; anthers awned. \( \gamma \). G. Native of the Cape of Good Hope. Erica spicata, Thumb. diss. no. 71. with a figure. Wendl. eric. fasc. 2. p. 27. with a figure. Erica sessiliflora, Lin. suppl. 222. Erica favosa, Sal. in Lin. trans. 6. p. 365. Corollas yellowish-green.

Var. \( \beta \); corolla 5-7 lines long, having the segments contiguous at the base. \( \gamma \). G. Erica spicata, Andr. heath. 1. t. 11. Lodd. bot. cab. 1203. Flowers greenish-yellow.

105 S. fascicularis; leaves 8 in a whorl, narrow-linear, obtuse, glundularly ciliated, spreading, a little recurved; bracteas remote from the calyx; flowers crowded, axillary, verticillate, near the tops of the branches, horizontal; corolla 13 lines 5 N
long, viscid, with a cylindrical clavate tube and an erect limb; pedicels and bracteas glandular; style a little exserted; anthers subulate. \( \text{G} \) Native of the Cape of Good Hope. Erica fasciculāris, Lin. suppl. 219. Phl. kew. t. 6. Erica corenāta, Andr. t. 1. Bedd. eric. wob. pl. 11. f. 17. Erica oc-}


106 S. spectriformis; leaves 8 in a whorl; stem straight; pedicels very short, axillary, crowded; calyx callous, with broad, spathulate, deeply serrated segments; corolla 7-10 lines long, downy. \( \text{G} \) Native of the Cape of Good Hope. Erica spectriformis, Sal. in Lin. trans. 6. p. 365. Erica enneaphylλa, Roxb. mas.


107 S. ? Doliiformis; leaves hairy, linear, 6 in a whorl; bracteas close to the calyx; flowers terminal; corolla 4-5 lines long, viscid, with an urceolate tube; anthers of anthers short, exserted. \( \text{G} \) Native of the Cape of Good Hope. Erica doliiformis, Sal. in Lin. trans. 6. p. 368. Erica nannmosa, Thumb. diss. no. 69, with a figure.


† Species hardly known.


109 S. ruvida; leaves linear, 4 in a whorl, glabrous; flowers terminal and axillary; bracteas distant from the calyx; corolla tubular, drooping; anthers. \( \text{G} \) Native of the Cape of Good Hope. Erica ruvida, Lodd. bot. cab. 1166. Pedicels and calyces red. Corollas white. Reddish-calycexed Syringodea. Fl. May, June. Cl. 1826. Shrub.

110 S. exoπīta; leaves 4 in a whorl, hairy, calyx, bracteas, and pedicels, clothed with glandular hairs; flowers terminal, by threes or fours; corolla cylindrical. \( \text{G} \) Native of the Cape of Good Hope. Erica exoπīta, Lodd. bot. cab. 1521. Flowers red.


XVI. DASYANTHES (from čaπe, dasys, hairy, and anthus, a flower; in reference to the corolla, which is hairy). D. Don, in edinib. phil. journ. 17. p. 136.—Erica species of Lin. Līn. sīst. Octandria, Monogynia. Calyx 4-parted, bibrac-}
teate at the base; Corolla tubular, hispid, with an erect 4-lobed limb. Stamens included; filaments capitellate; anthers bipartite; cells of anthers mutic at the base, debasing longitudinally. Stigma large, flat. Capsule 4-celled, many-seeded. —An erect shrub, native of the Cape of Good Hope. Leaves loosely

imbricate, hispid from bristles, with revolute margins. Flowers terminal, fascicled, yellow.

1 D. sparmannii (D. Don, l. c.). \( \text{G} \) Native of the Cape of Good Hope. Erica sparmannii, Lin. suppl. 219. in act-}

XVII. ECTASIS (from ἐκτασία, ectasis, extension; from the stamens being much exserted). D. Don, in edinib. phil. journ. 17. p. 156. Erica species of authors. Lin. sīst. Octandria, Monogynia. Calyx 4-leaved, glama-}
ceous. Corolla tubular, rather ventricose at the base, with a 4-toothed limb. Stamens much exserted; filaments dilated; anthers bipartite; cells of anthers elongated, tubular, dehiscing by a longitudinal fissure, continuous, with the base of the filaments mutic. Stigma clavate, truncate. Capsule 4-celled, many-seeded. Seeds ovate, compressed, smooth, shining—Much-branched shrubs, natives of the Cape of Good Hope. Leaves loosely imbricate, with revolute edges, flat above, or 3 or 4 in a whorl, but mostly the latter number. Flowers terminal, solitary or numerous.


Var. β; corollas of a dirty rufous colour. \( \text{G} \) Erica petiveri, Thumb. diss. 21.

Var. γ; hirsuta (Andr. heath. t. 72.) leaves hairy; corollas deep red.


2 E. pluknetii (D. Don, l. c.) bracteas cuneate, remote from the calyx; corolla ovate, pyramidal or conical, smooth. \( \text{G} \) Native of the Cape of Good Hope. Erica pluknetii, Līn. spec. ed. 1. p. 356. Erica fusiformis, Sal. in Lin. trans. 6. p. 346. Corolla scarlet, 6-7 lines long, leaves spreading, linear. Var. β; calyx 2½ to 3 lines long; corolla purple, with orange-coloured anthers, 6-7 lines long. \( \text{G} \) Erica pluknetiiāna, Pl. kew. t. 9. Erica pluknetii, Līn. spec. ed. 2. p. 506. exclusive of the synonyms. Erica pluknetiiāna, Andr. heath. t. 67. Erica pluknetiiāna, Wendl. eric. 1. p. 9, with a figure.

Var. γ; calyx 1 line long; corolla white, 3 to 3½ lines long. \( \text{G} \) Erica petiveri, Thumb. diss. no. 21.

Var. ζ; calyx 2½ lines long; corolla white, 3 to 3½ lines long. Sal. in Lin. trans. 6. p. 346.

Var. ε; calyx 5 lines long; corolla white, 5-8 lines long. \( \text{G} \) Sal. l. c. This is said to be the most showy variety.

Var. ζ, penicellata (Ait. hort. kew. 2. p. 361.) corolla red-}
dish purple, with orange-red anthers. \( \text{G} \) Erica penicel-}
atica, Andr. heath. t. 69. Lodd. bot. cab. 1918. Erica Pluk-}
netia integerrima, Wendl. eric. 2. p. 21. with a figure.

Pluknet's Ectasis. Fl. April, May. Cl. 1774. Shrub.

3 E. bruniflora; leaves 3 in a whorl, linear-oblong, erect, short, villously tomentose; flowers terminal, subumbellate, drooping; bracteas remote from the calyx, 4-leaved; corolla campanulata, much longer than the calyx, which is very villous and silky; nectarium astragalo-}
form, silky. \( \text{G} \) Native of the Cape of Good Hope. Erica bruniflora, Līn. mant. p. 378. diss. no. 82, with a figure of the flower. Wendl. eric. 16. p. 53. with a figure. Lodd. bot. cab. 1365. Erica carbasina, Sal. in
4 Ericovalleaeflora; leaves 3 in a whorl, linear, downy or 
hairy, spreading, rather remote; flowers terminal, by threes; 
bracts remote, quadrifid; corollas globose, urceolar, a little 
longer than the calyx, which is large, and densely clothed with 
silky hairs; nectarium cotyliform, glabrous.  ²·G. Native 
of the Cape of Good Hope. Erica callunaeflora, Sal. in Lin. 
trans. 6. p. 333. Ait. hort. kew. 2. p. 365. Erica brunniflora, 
Andr. heath. 1. t. 37. Erica villaflora, Pluk. mant. 69. t. 347. 
f. G. Wendl. eric. fasc. 16. p. 65, with a figure. Erica capitaflora, 
Thumb. eric. no. 15. Calyx and corolla pale red. Anthers 
black. Corolla 1½ line long.

§ 2. Flowers terminal. Calyx imbricated by numerous scales 
at the base. Abract species.
5 Erico Banksia (D. Don, l. c.) leaves mucronate; corolla 
cylindrical, with a reflexed limb; pericarp bearded.  ²·G. 
Native of the Cape of Good Hope. Erica Banksia, Andr. 
heath. 1. t. 66. Erica Banksia, Ait. hort. kew. 2. p. 361. Erica 
frigilis, Sal. in Lin. trans. 6. p. 346. Corolla greenish-yellow, 
with brown anthers.
Var. ²·G. Albiflora; flowers white.
6 Erico vestiflora; leaves recurvedly spreading, pilose when 
young; flowers solitary, terminal; corolla with a cylindrical 
tube, 7-9 lines long. ²·G. Erica vestiflora, Sal. in Lin. trans. 

7 Erico Saba (D. Don, l. c.) leaves recurvedly spreading; 
tube of corolla cylindrical, incurved, ventricose at the base; 
pericarp oval; calyx and bracteas glabrous. ²·G. Native of 
the Cape of Good Hope. Erica Seba, Pl. kew. t. 10. Erica 
coccinea, Lin. spec. ed. 2. p. 505. Erica cothornaillii, Sal. in 
by threes. Corolla pale brown.
Var. ²·G. Alba; bracteas and calyx downy. ²·G. Erica Pluk-
Var. ²·G. Rubra; flowers reddish-orange at top and redish-
purple at the base; anthers orange-yellow.
Var. ²·G. Atrorubens; flowers reddish-purple. ²·G. 
Seba's Ectasis. Fl. April, Nov. C1774. Shrub
8 E. eccipientflora; leaves recurvedly spreading; corolla coni-
cal; flowers by threes; fruit ovate. ²·G. Native of the 
Cape of Good Hope. Erica socciiflora, Sal. in Lin. trans. 
heath. 1. icon. Corolla greenish-yellow; anthers orange-yellow.

Pomp-flowered Ectasis. Fl. April, May. C1799. Shrub
9 Erica subflorosa; leaves recurvedly spreading, downy; flowers 
by threes; corolla viscid, cylindrical; filaments very broad; 
nectarium cotyliform. ²·G. Native of the Cape of Good Hope. 
Erica subflorosa, Sal. in Lin. trans. 6. p. 348. Erica mona-
delphla, Andr. heath. t. 1. 65. Sims. bot. mag. 1370. Corolla 
white, with a red border, and orange-yellow anthers.

10 Erica monadelphla; corolla with a cylindrical tube, and re-
flexed segments; filaments very broad. ²·G. Native of the 
Cape of Good Hope. Erica monadelphla, Bedfl. eric. wob. 
p. 15. pl. 2 f. 12. Erica Banksia purpurea, Andr. heath. 3. t. 37. 
Corolla greenish-white or yellow, with a purple border, and 
yellow anthers.—Perhaps the same as the preceding.

11 Erica follicularis; leaves spreading; flowers solitary, 
spike-like; corollas conical. ²·G. Native of the Cape of 
Corolla yellow-green or orange-red, 5-7 lines long, with brown 
anthers. Nectarium quadrangular.

12 E. melastoma; leaves 4 in a whorl, stiff, secund; flowers 
terminal, solitary; corolla cone-shaped. ²·G. Native of 
the Cape of Good Hope. Erica melastoma, Andr. heath. 1. icon. 
Erica follicularis ²·G. Sal. in Lin. trans. 6. p. 348. Corolla with 
a greenish-yellow tube, a brown dark mouth, and orange 
anthers.

Black-mouthed Ectasis. Fl. May, July. C1795. Shrub
13 E. rictra; leaves 4 in a whorl; corolla cylindrical, 
incurved. ²·G. Native of the Cape of Good Hope. Erica 
orange-yellow tube, and orange anthers.

14 E. penicilliflora; leaves ciliate, erect; flowers by 
threes; corolla 2 lines long, covered by the calyx, with a 
spherical tube; anthers converging into a pencil-form. ²·G. 
Native of the Cape of Good Hope. Erica penicilliflora, Sal. in 
calyculata, Wendl. eric. 4. p. 5, with a figure. Bracteas and 
calyces white. An elegant species.

15 Erica placentaflora; leaves very obtuse; corolla covered 
by the calyx, with a turnip-formed tube; filaments gradually 
dilated; stigma narrow. ²·G. Native of the Cape of Good 
Hope. Erica placentaflora, Sal. in Lin. trans. 6. p. 348. Herb 
pale, hoary.

Placenta-flowered Ectasis. Shrub
16 E. pudibunda; leaves 3-4 in a whorl, rather viscid; 
flowers terminal, by threes; calyxes ciliate; corolla conical, 
viscid. ²·G. Native of the Cape of Good Hope. Erica 
eric. fasc. 3. p. 5, with a figure. Corolla 2 lines long; anthers 
round, hoary. Fruit turbinate, hoary. Flowers pale red?

17 E. filiformis; leaves 3 in a whorl, remote, narrow, re-
curved, clothed with viscid pubescence; calyx bracteas; corolla 
1 line long, glabrous, with a recurved tube; filaments broad at 
the top; stigma narrow; fruit smooth. ²·G. Native of the 
Cape of Good Hope. Erica filiformis, Sal. in Lin. trans. 
18 E. urceolata; hoary; leaves 4-5 in a whorl, linear, 
spreading, a little incurved, ciliate; flowers almost sessile, 
terminal, capitate; bracteas near the calyx; calyce segments 
linear, ciliate. ²·G. Native of the Cape of Good Hope. Erica 
urceolata, Nois. Lodd. bot. cab. 393. Erica stellatula, Bedfl. eric. 
Corolla urceolate.

Starly Ectasis. Fl. April, June. C1810. Shrub
19 E. demissa; leaves linear, 3 in a whorl; flowers termi-
nal; bracteas imbricate; corolla cone-shaped. ²·G. Native of 
the Cape of Good Hope. Erica demissa, Hort. Bedfl. eric. 

Low Ectasis. Fl. Spring. C1818. Shrub
20 E. ? tubrida; leaves 3 in a whorl; flowers terminal; 
pedicels very short; corolla hairy, 1½ line long, with a bulged 
tube; spurs of anthers cuneate; anthers very short. ²·G. 
Native of the Cape of Good Hope. Erica turgida, Sal. in Lin. 
trans. 6. p. 343. Erica fusco-rubens, Roxb. ms. Flowers 
brownish-red.

Turbid-flowered Ectasis. Shrub

Cult. For culture and propagation see Erica, p. 800.
XXVIII. ERIODE’S MIA (from ἐρώς, erion, wool, and κρώνη, desme, a fascicle; the flowers resemble a fascicle of wool). D. Don, in edinb. phil. journ. 17. p. 156. Erica capitata, Lin. & c.

XXIX. OCTOPERA (from οκτώ, octo, eight, and παπο, petra, a sack; in reference to the 8-celled capsule). D. Don, in edinb. phil. journ. 17. p. 156.—Erica Bergiana, Lin.

Cult. For culture and propagation see Erica, p. 800.

XX. EREMIA (from ἐρώς, eresos, solitary; from the seeds being solitary in the cells). D. Don, in edinb. phil. journ. 17. p. 156.—Erica Totta, Thunb.

Cult. For culture and propagation see Erica, p. 800.

XXI. SALAXIS (from salax, uncouth; but the application is not evident). Sal. Mss. spec. 2.

Cult. For culture and propagation see Erica, p. 800.

Leaves from 3 to 6 in a whorl, with revolute margins. Flowers somewhat racemose at the tops of the branches.

1 S. ARBORESCENS (Willd. ex. Spreng, syst. 2. p. 20.) leaves 3 in a whorl, adpressed; pedicels downy. \( \times \). G. Native of the Mauritius.

Arborescent Salaxis. Shrub.

2 S. MONTANA (Willd. l. c.) leaves 3 in a whorl, glabrous; flowers racemose; corollas glabrous; branches tomentose. \( \times \). G. Native of the Mauritius.

Mountain Salaxis. Shrub.

3 S. AXILLARIS (Salisb.) leaves generally 3 in a whorl, linear, spreading. \( \times \). G. Native of the Mauritius.

Erica axillaris, Th. diss. no. 10.

Axillary flowery Salaxis. Shrub.

Cult. Turfy peat mixed with rough sand is the best soil for the species of Salaxis; and young cuttings of them strike root readily in sand, under a bell-glass, in a little heat.


Cult. For culture and propagation see Erica, p. 800.

Cult. The varieties of Calluna vulgaris are very ornamental when planted in a border or clump, along with the dwarf hardy species of Erica and their varieties, as Erica ciliaris, E. tetrax, E. cineraria, and Gypsophila multiformis, G. vagans, &c. The border in which they are grown requires to be composed of peat soil. All are increased by layers, or young cuttings under a bell-glass.

SUBRIBE II.

ANDROMEDA. (This Subvirtae contains plants agreeing with Andromeda in the Corolla being dead.) D. Don, in Edinb. phil. journ. 17. p. 157. Corolla deciduous.

XXIII. ANDROMEDA (named from the daughter of Cepheus, rescued from the sea-monster by Perseus). D. Don, in
phil. journ. 17, p. 157. Andromeda, species of Authors. Polyfolia, Buschbaum, cent. 5. p. 5. t. 55. f. 1.

Linc. syst. Decandria, Monogynia. Calyx 5-leaved; segments acute, simple at the base. Corolla globose, with a contracted 5-toothed mouth. Stamens 10, inclosed; filaments bearded; cells of anthers short, tumid, furnished with one awn each. (f. 136 g.)


* Leaves flat.

1 C. hypnoides (D. Don, l. c.) leaves loose, acerose. H. Native of Lapland, Denmark, and Siberia, on the mountains, where it covers tracts of land; and on the north-west coast of America. Andromeda hypnoides, Linn. spec. 659. fl. lapp. 165. t. 1. f. 3. Ord. fl. dan. t. 10. Pall. fl. ross. p. 55. t. 73. f. 2. Hook. bot. mag. t. 2936.—A small creeping shrub, resembling a moss. Flowers small, with a red calyx, and white corolla.


Club-moss-like Cassiope. Shrub creeping.

** * Leaves imbricated in 4 rows, adpressed, with revolute margins, tumid, somewhat bilocular.

3 C. tetragona (D. Don, l. c.) leaves obtuse, muticately ciliated; peduncles glabrous. H. Native of Lapland and Siberia; of North America, in Canada, Labrador, and the north-west coast; Island of St. Lawrence, Kotzebue Sound. Andromeda tetragona, Linn. spec. 565. fl. lapp. 166. t. 1. f. 4. Pall. fl. ross. p. 50. t. 73. f. 4. Hook. bot. mag. t. 3181. Flowers white.


Mertens' Cassandra. Shrub ½ foot.

5 C. ericoides (D. Don, l. c.) leaves awnned, setose-ciliated; peduncles glabrous. H. Native of Dahuria and Kamtschatka. Andromeda ericoides, Pall. fl. ross. p. 56. t. 73. f. 3. Flower.?

Heath-like Cassiope. Shrub ½ foot.


Fastigate Cassiope. Shrub procumbent.

7 C. Redowskii; leaves scale-formed, shining, smooth, fringed, imbricating in 4 rows, making the branches appear exactly tetragonal; pedicels axillary, glabrous. H. Native of the cast of Siberia. Andromeda Redowskii, Cham. et
ERICACEÆ. XXV. CASSANDRA.

Schlecht. in Linnaea. 1. p. 517. Shrub procumbent, much branched. Flowers drooping. Calyx deeply 4-parted. Corolla campanulate, quadi- riform, with very blunt segments. Stamens 8, very short; anthers 3-celled, biariastate, the cells opening by a pore at the apex. Capsule 4-valved; valves septiciduous in the middle.

Redowski’s Cassiope. Shrub procumbent.

Cult. All the species are delicate little shrubs: they grow well in a peat border, or in pots well drained with shreds in the same kind of soil; and may be increased by layers.

XXV. CASSANDRA (a mythological name of the daughter of Priamus and Hecuba). D. Don, in edinb. phil. journ, July, 1834. Andromeda species, Lin. and others.

Lin. syst. Decandria, Monogynia. Calyx 5-leaved, bifractate at the base; leaves imbricated at the base. Corolla ob-long, with a contracted 5-toothed mouth. Stamens 10, inclosed; filaments glabrous, simple at the base; cells of anthers elongated, and tubular at the apex, nutia. Stigma annular, with a 5-tubercled disk. Capsule with a loculicidal dehiscence. Placenta 5-lobed: lobes simple.—An evergreen shrub, common in North America, north of Europe, and the north of Asia. Branchlets recurved, pubescent. Leaves on short pedioles, elliptic-oblong, dentate-ciliate, coriaceous, veinless, lepadotid on both surfaces by peltate scales, when young silvery beneath. Flowers axillary, on short pedioles, drooping, snow white, disposed in the manner of racemes at the tops of the branches.

1 C. calyculata (D. Don, l. c.) leaves elliptic-oblong, bluish, obsolescent serruluted, rusty beneath; racemes recurved, leafy; bracts of calyx broad, ovate, acuminated; corollas oblong-cylindrical. H. Native of North America, from Canada to Virginia, in bogs and swamps, on the mountains. It grows also in Sweden, Prussia, Siberia, &c. Andromeda calyculata, Lin. spec. 565. Pall. fl. foss. 2. p. 53. f. 71. f. 1. Loddi. bot. cab. 1464.

Var. a, ventricosa (Sims, bot. mag. 1286.)
Var. b, latifolia (Lodd. bot. cab. 530.)
Var. c, obtusiloba (Sims, bot. mag. 862. Lodd. bot. cab. 836.)

Calyculata-flowered Cassandra. Fl. April, May. Clt. 1748. Shrub 1 to 3 feet.

2 C. angustifolia; leaves linear-lanceolate, acute, with sub-dulvedulate revolute edges, rusty beneath; racemes recurved, leafy; bracts of calyx minute; corollas oblong-ovate. H. Native of Carolina and Georgia, in open swamps. Andromeda angustifolia, Ait. hort. kew. 2. p. 70. Andromeda angustifolia, Pursh. fl. am. sept. 1. p. 291. Andromeda crispa, Desf. and Link.

Narrow-leaved Cassandra. Fl. April, May. Clt. 1748. Shrub 1 to 2 feet.

Cult. For culture and propagation, see Lyonia, p. 813.


Lin. syst. Decandria, Monogynia. Calyx 5-lobed. Corolla campanulate; limb revolute, 5-lobed. Stamens 10; filaments glabrous, dilated at the base; cells of anthers elongated, tubular, biariastate at the apex. Stigma truncate. Capsule with a loculicidal dehiscence. Placenta 5-lobed: lobes cuneate, thick, a little arched. Seeds angular, with a lateral oblong hylum.—Evergreen shrubs, natives of North America. Leaves scattered, dilated, with the margins usually toothed. Flowers racemose; pedioles solitary or aggregate.


Var. a, nitida (Pursh. fl. amer. sept. 1. p. 294. under Andromeda); leaves oblong—ovate, serrated, green on both surfaces. H. Andromeda cassinefolia, Vent. malm. 79. Flowers white.


Cult. See Lyonia, p. 831. For culture and propagation.

XXVIII. LYONIA (in memory of John Lyon, an indefatigable collector of North American plants, who fell a victim to a dangerous epidemic amidst those savage and romantic mountains, which had so often been the theatre of his labours). Nutt. gen. am. 1. p. 268. D. Don, in edinb. phil. journ. 17. p. 158.

Lin. syst. Decandria, Monogynia. Calyx 5-parted. Corolla ovate or tubular, with a 5-toothed contracted mouth. Stamens inclosed; filaments flattened, dilated, very short, downy; cells of anthers membranous, dehiscing lengthwise, altogether matric. Style robust, pentagonal, fusiform, thickened at bottom; stigma simple, truncate. Capsule pentagonal, 5-celled, with a loculicidal dehiscence; margins of valves closed by 5 other external narrow valves. Seeds acicular, imbricated.—Shrubs, natives of North America. Leaves usually membranous and downy. Flowers for the most part terminal, disposed in racemose panicles.

* Leaves evergreen.

1 L. ferruginea (Nutt. gen. am. p. 266.) shrubby; leaves on long pedioles, coriaceous, ovate, usually obtuse, quite entire, with hardly revolute edges, covered with brown umbilicate furfuraceous scales, as well as every other part of the plant; pedioles axillary, collected into threes or fives; corollas small, ovate-globose. H. Native of Georgia, Florida, and Mexico, in pine woods. Andromeda ferruginea, Wltl. fl. car. 138. Vent. malm. t. 80. Andromeda ferruginea, β, fruticosa, Michx. fl. amer. bor. 1. p. 252. Corollas white inside, and rusty outside.


2 L. nigida (Nutt. gen. am. p. 266.) arborescent; leaves coriaceous, stiff, crowded, on short pedioles, cuneate-lanceolate, acute, quite entire, convex, with revolute edges, clothed with brown, umbilicate furfuraceous scales, as well as every other part of the plant; pedioles aggregate, axillary; corollas globose. H. Native of Carolina and Florida, in barren sandy woods. Andromeda ferruginea, Wildl. spec. 2. p. 609. Ait. hort. kew. 2. p. 67. Andromeda ferruginea, a, arboreccens, Michx. 1. p. 252. Andromeda rigida, Pursh. fl. Amer. sept. 1. p. 292. Loddi. bot. cab. 430. Corollas white inside. This species is very nearly allied to the preceding; but their habits, and particularly their flowering time, differ so materially, that they are actually distinct.


3 L. marginata (D. Don, in edinb. phil. journ. 17. p. 159.) quite glabrous; branchlets somewhat 3-sided; leaves coriaceous, oval, acuminate, quite entire, smooth, having the midrib running through the deflexed margin; pedioles axillary, aggregate; corollas cylindrical; calyces segments elongated, linear, coloured. H. Native of Carolina and Florida, in sandy forests. An-


* * Leaves deciduous.

4 L. MARIA'NA (D. Don, in edinb. phil. journ. 17, p. 159.) leaves oval, acutish at both ends, quite entire, glabrous, rather coriaceous, paler beneath; floriferous branches almost leafless; pedicles aggregate; corolla ovate-cylindrical; calyx foliaceus; capsule conoid. & H. Native from New England to Florida, in woods and dry swamps, particularly in sandy soil. Andrómeda Mariána, Lin. spec 564. Sims, bot. mag. 1057.—Phk. mant. 448. A dwarf shrub. Flowers large, white, sometimes tinged with red. This plant has a number of very striking varieties.


5 L. RACEMÓSA (D. Don, l. c.) leaves oval-lanceolate, acute, serrated, membranous, glabrous; spikes terminal, second, elongated, simple, or branched; bracteas linear, acute; corollas cylindrical; calyces acute, bifracteate at the base. & H. Native from Canada to Carolina, in bogs and swamps. Andrómeda racemósa, Lin. spec. 564. Lher. stirp. 2. t. 13. Andr. paniculátal. Wart. carol. 138.—Grn. virg. 67. Flowers white. A middle-sized shrub, which may be reckoned one of the finest in North America, not only for the graceful appearance of its flowers, but also for the fine odour they have. The cells of the anthers are said to be bistratate at the apex; it is, therefore, probably, a species of *Zenobia*. There are several varieties of the plant.


6 L. ARBÓREA (D. Don, l. c.) branches terete; leaves oblong, acuminate, mucronately serrated, glabratus; panicles terminal, or many spikes; corollas ovoid-cylindrical, downy. & H. Native from Pennsylvania to Florida, in the valleys of the Alleghany Mountains. Andrómeda arbórea, Lin. spec. 565. Sims, bot. mag. 905.—Catesb. car. 1. t. 71. A beautiful tree, from 40 to 60 feet high. Flowers white. The leaves have a very pleasant acid taste, from which it has been called sorrel-tree. They are frequently made use of by hunters in those mountains, to alleviate thirst.


7 L. PANCíLÁTAL (Nutt. gen. amer. 1. p. 266.) downy; leaves obovate-lanceolate, subacuminate at both ends, and almost entire; floriferous branches terminal, panicled, nearly naked; clusters of flowers pendunculate; corollas nearly globose, downy. & H. Native from Canada to Carolina, common in all swamps and woods. Andrómeda paniculátal. Lin. spec. 564. Lher. stirp. nov. 2. t. 12. Wats. dendr. brit. 37. Flowers small, white. There are a number of varieties of this species, differing in size, pubescence, shape of leaves, &c. Upper surfaces of the older leaves nearly smooth.


8 L. FRONDÓSA (Nutt. gen. amer. 1. p. 267.) every part of the plant is densely clothed with powdery villi; leaves oblong, or oblong-ovate, blunt, or acutish, clothed with furfuraceous villi, often rusty, prominently veined: with revolute, entire, scarious margins; panicle terminal, frondose or leafy; corollas globose, hispid or downy. & H. Native of the lower counties of Virginia and Carolina. Andrómeda frondósal., Pursh. fl. amer. sept. 1. p. 295. Flowers white. Pursh says the anthers are awned; but Nuttall thinks this must be a mistake, or that his plant must be different from that of Pursh.


9 L. MULTÍFLÓRA (Wats. dendr. brit. t. 128.) leaves narrow-lanceolate, serrated, sprinkled with hair-like atoms; panicle terminal, composed of numerous fascicled racemes. & H. Native of North America. Flowers numerous, small, white. Perhaps only a variety of *L. paniculátal*.


10 L. JAMAICÁNSIS (D. Don, in edinb. phil. journ. 17, p. 159.) branches smooth; leaves broad—lanceolate, quite entire, cinereous beneath from dot-like scales, but shining above; pedicles aggregate, on long leafless branches, scaly as well as the calyces; corollas ovate. & S. Native of Jamaica, on the tops of the mountains. Andrómeda Jamaicánésis, Swartz. fl. ind. occ. 2. p. 838. Flowers white.

Jamaica Lyonia. Shrub 6 feet.

11 L. FASCICULÁTAL *; leaves ovate-lanceolate, bluish, a little crenated, coriaceous; racemes shorter than the pedioles; pedicels aggregate, reflexed. & S. Native of the south of Jamaica, on the mountains. Andrómeda fasciculátal, Swartz, fl. ind. occ. 2. p. 836. Flowers white.

Fascicled-flowered Lyonia. Tree.

12 L. CAPELÉÁPOLIS (Wats. dendr. brit. 127.) leaves coriaceous, elliptic, short-acuminated, serrated, sprinkled with short fleshy hairs; corollas rather silky, globular, coarctate; racemes and coryumbs mixed, lateral, leafy. & H. Native of North America. Flowers white. Perhaps only a variety of *L. paniculátal*.


13 L. RUBÉGÍNÓSA *; leaves ovate, coriaceous, quite entire, obtuse, downy beneath, rusty when young; racemes lateral, erect; corollas cylindrical. & S. Native of the West Indies, in the Island of St. Thomas. Andrómeda rubégína, Perss. ench. 1. p. 481. Andr. pubécens, Poir. Leaves shining above, resembling those of *Salix capreá*. Racemes very short, in fascicles.

Rusty Lyonia. Shrub.

14 L. RHONBÍDÓIDALIS *; shrubby; floriferous branches triquetrous; leaves somewhat rhomboid-oblong, cartilaginous, glabrous, rusty beneath, quite entire, callous at the apex; peduncles axillary, aggregate, elongated, filiform. & H. Native of Florida and Carolina. Andrómeda rhombídóidális, Duham. ed. nov. abr. 192.

Rhombid-leavedd Lyonia. Shrub.

Cult. The species thrive best in peat soil, or a sandy loam. Being very ornamental, they are desirable shrubs in every garden. They may either be increased by layers or by seeds. The seeds should be sown in pots or pans in sandy peat soil; they should be covered slightly with earth, as they are extremely small.

XXVIII. LEUCOTHOE (e a mythological name). D. Don, in edinb. phil. journ. 17, p. 159. *Andrómeda* species of authors.

Lin. syst. Deciduas, Monogyná. Calyx 5-leafed; leaves imbricated at the base. Corolla turbular, 5-toothed. Stamens inclosed; filaments dilated, flattened, downy; cells of anthers short, truncate, mutic. Stigma ample, capitate. Capsule with a loculicial dehiscence.—Evergreen shrubs, natives of North
ERICACEÆ. XXVIII. LEUCOTHEA.

America. Leaves coriaceous, dentately spinulose. Flowers white, racemose, axillary, or terminal.

1. L. axilla'ris (D. Don, l. c.) leaves oblong or oval, acuminate, upper part cartilagiously and mucronately serratulate, covered by scattered glandular hairs on the under surface; young branches clothed with powdery down; racemes axillary, spicate, sessile, beset with scaly bracteas; corollas ovate-cylindrical; filaments ciliated, very short. \( \text{fl.} \) H. Native from Virginia to Georgia, on the mountains. Andromeda axillaris, Solander in Hort. kew. 2. p. 392. Pursh. fl. amer. sept. 1. p. 292. Leaves glabrous. Flowers in short spikes, white. Capsule depressed, globose.


3. L. acumin'a'ta; quite glabrous; leaves ovate-lanceolate, gradually narrowed to the top, acuminate, quite entire or unequally serrate, glabrous, shining, reticulately veined, coriaceous; racemes sub-pedicellate, axillary, or terminal, ciliate, the young, with scaly bracteas; corollas short, ovate-cylindrical. \( \text{fl.} \) H. Native of Georgia and Florida, in sandy swamps. Andromeda acuminatæ, Ait. hort. kew. 2. p. 79. Pursh. fl. amer. sept. 1. p. 293. Smith, exot. bot. 89. And. fl. Carolina, Michx. fl. Amer. bot. 1. p. 253. Flowers white, in great abundance, which gives the shrub a fine appearance. The stems are hollow, and are used by the natives for making their pipe stems, from whence the name [Pipes]stem-wood.


5. L. spic'a'ta; glabrous; leaves elliptic-lanceolate, acute, ovate or attenuated at the base, serrate; racemes long, lateral and terminal, secund; branches beset with short white hairs. \( \text{fl.} \) H. Native from Canada to Florida. Andromeda spicata, Wats. undr. brit. 36. Flowers white.


Cult. For culture and propagation see Lyonia, p. 831. Elegant shrubs, worth cultivating in every shrubbery for the sake of the beauty of their blossoms.

XXIX. PIERIS. XXX. PHYLLODOCE.

XXIX. PIERIS (one of the Muses) D. Don, in edinb. phil. journ. 17, p. 159. Andromeda species, Wall.


1. P. form'o'sa (D. Don, l. c.) leaves lanceolate, acuminate, crenulate, glabrous, acute at the base; racemes erectly spreading, disposed in a terminal thyside; pedicels recurved, drooping, and are, as well as the calyxes, prunose; calyce segments ovate-oblong, margined, shining; corollas ovate. \( \text{fl.} \) F. Native of Nipal, where it is called Sheabogee and Chemata.—An evergreen tree, with the habit of Arbutus or Chithera. Pedicels unilateral. Flowers rose-coloured, each furnished with a small bractea at the base. Andromeda formosa, Wall. in asiat. res. 13. p. 395. D. Don, prod. fl. nep. 119. Beautiful Pieris. Tree.


Lanceolate-leaved Pieris. Tree small.


Japan Pieris. Shrub.

Cult. Sandy peat and a little loam is the best soil for the species of Pieris; and they may be increased by cuttings not too young, planted in sand, with a bell-glass over them.


1 P. taxifolia (Salisb. par. t. 36.) leaves with denticulated margins; peduncle aggregate, glandular; calyce segments lanceolate, acuminate; anthers 3 times shorter than the filaments. *H.* Native of Europe; and the north of Asia, at the fountain of Uda. In Scotland, in dry heathy moors, rare; near Aviemore, in Strathpey, ex Mr. H. Brown, of Perth; in the Western Isles of Shiant, G. Don. In North America, on the White Hills of New Hampshire; and on the north-west coast, and of Labrador. Menziesia corneula, Swartz, in Lind. trans. 10. p. 377. t. 30. f. a. Smith, engl. bot. 2469. Lodg. bot. cab. 164. Andrómeda corneula, Lind. spec. p. 563. fr. lapp. 165. t. 1. f. 5. Edfl. d. ian. 57. Andr. taxifolia, Pall. fl. ross. p. 54. t. 72. f. 2. fl. lapp. ed. 2. p. 133. t. 1. f. 5. fl. lapp. t. 57. Erica corneula, Willd. spec. 2. p. 388.—Gmel. sb. 4. p. 131. t. 57. f. 2. Flowers blue or purple, but Pursh says they are red in the American plant.


Pallas's Phyllodoce. Shrubs 1/2 foot.


Cult. Phyllodoce is a genus of elegant, small, heath-like shrubs; they will only thrive in peat soil, and are increased by layers.


1 B. Gmelini (D. Don, in edinb. phil. journ. 17. p. 160.) branchlets pruinose; leaves with denticulated margins; pedun-


Gmelini's BRYANTUS. Pl. trailing.

2 B. STELLÆE'rt (D. Don, l. c.) branchlets glabrous; leaves with ovate-crescented oblong; flowers solitary, nearly sessile; anthers biaristate behind; style conical. *H.* Native of the west coast of North America; on the Rocky Mountains, and near the mouth of the Columbia river; and of the Island of Sitchea. Andrómeda Stelleriana, Pall. fl. ross. p. 58. t. 74. f. 2. Menziesia empetrifórmis, Pursh, fl. amer. sept. 1. p. 265. but not of others. Flowers pale red.

Steller's BRYANTUS. Shrub trailing.

Cult. For culture and propagation see Phyllodoce, p. 583.

XXXII. DABECIA (Called St. Dabec'oe's Heath, in Ireland). D. Don, in edinb. phil. journ. 17. p. 100.—Andrómeda species, Lind.—Menziesia species, Juss.—Erica species, Lind.

Lin. syst. Octândria, Monogynia. Calyx 4-parted. Corolla oval, ventricose; limb 4-toothed. Stamens 8, inclosed; filaments dilated, glabrous; anthers linear, sagittate at the base; cells of anthers parallel, loosened at the apex, dehiscing lengthwise. Stigma simple, truncate. Capsule 4-celled, with a septical dehiscence.—A dwarf, bushy, evergreen shrub, native of Ireland and the Pyrenees. Leaves elliptic, flat, clothed with white tomentum beneath. Flowers terminal, racemose, purple.


Polium-leaved St. Dabecoe's Heath. Fl. June, Sept. Ireland. Shrubs 1 to 2 feet. Cult. This shrub is well fitted for decorating the front of shrubberies, or to be grown on rock-work or banks. It has much the habit of a species of Heath, and is very pretty when in blossom. As the shrub grows in large dense tufs, it may be increased by division; it is also easily increased by layers or cuttings.

XXXIII. ENKIAN'THUS (from ἐνκιάνθος, enkianthos, pregnant, and ἀνθός, anthos, a flower; flowers swollen). Lour. cochin. 276. Melodora. Sal. in hort. trans. 2. p. 156.

Lin. syst. Decândria, Monogynia. Calyx 5 cleft, furnished with coloured bracteas. Corolla campanulate; with a 5-cleft limb, and with 5 pits at the base of the tube. Stamens 10, inserted in the base of the corolla; filaments toothed, pilose at base; cells of anthers awned, opening by a pore at the apex. Style filiform. Berry 5-celled, many-seeded.—Elegant shrubs. Leaves broad, opposite, oblong-elliptic-acuminate, glabrous, green and shining on the upper surface, pale beneath, and frequently red. Bud scales red. Flowers large, terminal, drooping, showy. The species are held in high veneration by the Chinese.
FIG. 138.


2 E. biflorus (Lour. coeh. p. 276.) stem shrubby; flowers twin, terminal. G. Native of the south of China. Flowers red.

Two-flowered Eukianthus. Shrub.

Cult. Elegant green-house plants while in blossom, but rather difficult of culture. The best soil for them is said to be an equal mixture of sandy loam and peat, but care must be taken not to over-water them when not growing freely. Cuttings taken from ripened wood are found to strike root freely, if planted in sand, with a band-glass placed over them. When they grow to a considerable size, they are the greatest ornaments for a green-house or conservatory.


Lin. syst. Decandria, Monogynia. Calyx 5-parted. Corolla globose, or ovately campanulate: limb 5-ellipt, reflexed. Stamens 10, inclosed; anthers compressed on the sides, dehiscing by 2 pores at the apex, fixed by the back beneath the apex, where they are furnished with 2 reflexed awns. Ovarium seated on a hypogynous disk, or half immersed in it, 5-celled; cells many-seeded. Style 1; stigma obtuse. Berry nearly globose, granular.—Trees and shrubs, with alternate laurel-like leaves. Racemes terminal, panicked. Flowers pedicellate, bracteate. Corollas white or flesh-coloured.

1 A. unedo (Lin. spec. 366.) arborescent; branchlets clothed with glandular hairs; leaves oblong-lanceolate, glabrous, serrated; peduncles smooth, nodding. H. Native of the south of Europe, as of Spain, Italy, Greece; Palestine, and many other parts of Asia. It is also found in the west of Ireland, in the County of Kerry, near the Lake of Killarney, on barren limestone rocks, where the country people eat the fruit. Mill. fig. t. 48. Cam. epiti. 1681. Barrel. icon. t. 674. Smith, engl. bot. 2977. The common Arbutus, or Strawberry-tree, rises to the height of 20 or 50 feet, but rarely with an upright stem. It is one of the greatest ornaments in the month of October and November, that being the season when it is in flower; and the fruit of the former year is ripe. When there is plenty both of fruit and flowers upon the trees, they make a handsome appearance at a season when most others are past their beauty. The fruit is said to have constituted part of the food of mankind in early ages. That it was not in any esteem among the ancients, we may suppose from the name Unedo, if Pliny's reason for that name be the true one,—" cui nomen ex argumento fit unum tantum edendi." Virgil recommends the twigs as good for goats in winter:—"Jubeo frondentia capris Arbuta succulere;" and for baskets, "Arbuticl crates et mystica vannis laecli." Horace celebrates the shade of it:—"Nunc viridi membra sub Arbuto stratus." The tree is named, in Greek, Kouspoc, and the fruit M. myssouc; in Latin, Arbatus, and the fruit Unedo; in Italian, Arbuto, Albatro, Albatro, Corzzezolo; in French, L'Arbouier commun. The Greek name is almost preserved at Constantinople, in Komaria.

Var. α, alba (Ait. hort. kew. 2. p. 71.) flowers white.

Var. β, rubra (Ait. hort. kew. 2. p. 71.) flowers reddish.

Var. γ, plena (Ait. l. c.) flowers semi-double.

Var. ε, chizoptelea; petals cut.

Var. t, integrifolia; leaves entire. Sims, bot. mag. 2319.

Var. η, crispa; leaves curled and cut.

Var. θ, salicifolia; leaves narrow.


2 A. Canarensis (Lam. delt. vol. 1.) leaves oblong-lanceolate, serrated, glaucous beneath; panicles erect, clothed with hispid hairs. G. Native of the Canary Islands. Sims, bot. mag. 1577. Flowers greenish white.


3 A. hybrida (Ker. bot. reg. 619.) leaves oblong, acute, serrated, glabrous; branchlets pilose; panicle terminal, pendulous, downy; calyx glabrous. H. Native country unknown. A. andrachnoides, Link. enum. 1. p. 395. Flowers white.


4 A. serratifolia (Nois. ex Lodd. bot. cab. t. 580.) leaves serrated, narrower than those of A. Andraeae; flowers disposed in terminal clusters. H. Native country unknown. Flowers yellowish. Perhaps only a variety of the following.


5 A. Andraeae (Lin. spec. 366.) leaves oblong, bluntish, quite entire, and a little serrated, glabrous; panicles terminal, erect, clothed with viscid down. H. Native of Greece, Asia Minor, Tauria. Belon says it is common in Crete, and between Aleppo and Antioch. Wheeler observed it near Athens, and saw the fruit in the market of Smyrna. About Magnesia it is so plentiful, that it is used as the principal fuel by the inhabitants. Ehret, act. angl. vol. 57. p. 114. t. 6. Ker. bot. reg. 113. Sims, bot. mag. t. 2024. A. integrifolia, Lam. Andraéchne Theophrasti, Chis. hist. 1. p. 48. Andraeae, Park. theatr. 1490. f. 2. Flowers greenish-white. Fruit like that of the common sort. This is the Λεύκαρη of Theophrastus, and is called Λεβρδολα in modern Greek. It is a fine ornamental tree; the largest of the kind in Britain is growing in the botanic garden at Edinburgh. Tournefort enumerates three varieties of it which he observed in the Levant; one with serrated leaves; a second with a large oblong fruit; and a third with large compressed fruit.

Andraeae Strawberry-tree. Fl. March, April. Ch. 1734. Tree 10 to 14 feet.

6 A. laurifolia (Lin. syst. 407. suppl. 238.) leaves oblong, acuminate at both ends, acutely serrated, glabrous; racemes axillary, second, sessile, solitary. H. Native of North America, but what part is unknown, as nothing can be found respecting it in the Linnaean herbarium.

Laurifolia Strawberry-tree. Tree.

7 A. Menziesii! (Pursh. fl. amer. sept. 1. p. 282.) arborescent; leaves broad-oval, quite entire, glabrous, on long petioles; racemes axillary and terminal, panicked, dense-flowered. H. Native of the north-west coast of America, where it was collected by Mr. Menzies. Hook. et Arn. in Beech. voy. pt. bot. p. 143.
Menzie's Strawberry-tree. Tree.

8 A. tomenss (Pursh. fl. amer. sept. 1. p. 282.) shrubby; branches hispid; leaves oval, acute, subcordate at the base, clothed with white tomentum beneath, on short petioles; peduncles axillary, shorter than the leaves, somewhat capitately racemose; flowers campanulately unrevolute, bracteate. \( G. \) Native of the north-west coast of America, where it was collected by Mr. Menzies. Hook. bot. mag. t. 2320. Hook. fl. am. text. bot. 129. f. 1. Flowers pure white. The whole herb, except the flowers, is downy, while young. Petioles and mid-rib of leaves hispid.

Var. \( \beta \), \( \mu \) \( \text{du} \) (Hook. et Arn. in Beech. voy. pt. bot. 144. Hook. fl. amer. bot. 129 fl.) shrub quite destitute of long stiff hairs.


9 A. xalapensis (H. B. et Kunth, nov. gen. amer. 3. p. 279.) leaves oblong, acute, quite entire, glabrous above, but clothed with fuscous tomentum beneath; panicle terminal, composed of many racemes. \( G. \) Native of Mexico, in mountain woods near Xalapa, and at Malpays de Joya. Epidermis separating, brownish purple. Young branches glabrous, but beset with ramenta. Leaves oblong at the base, 2 inches long, petiolate. Corollas ovate, white. Filaments villous, dilated at the base.

Xalapa Strawberry-tree. Tree.

10 A. mollis (H. B. et Kunth, nov. gen. amer. 3. p. 280.) leaves oblong, acute, sharply toothed, coriaceous, clothed with soft pubescence above, and canescent tomentum beneath; panicle terminal, crowded, composed of racemes. \( G. \) Native of Mexico, near Guanaxauto. Branchlets purplish brown, angular, downy. Leaves petiolate. Flowers drooping? like those of the preceding.

Soft Strawberry-tree. Tree.

11 A. densiflora (H. B. et Kunth, nov. gen. amer. 3. p. 280. t. 260.) leaves on long petioles, oblong, acute, sharply toothed, coriaceous, glabrous above and shining, but clothed with fuscous down beneath, and the middle nerve with rusty villi; panicle terminal, composed of approximate racemes; flowers crowded. \( G. \) Native of Mexico, on the eastern declivities of the mountains between La Pileta and Xalapa. Branches angular, pilose. Petioles pilose. Leaves 4-5 inches long. Pedicels furnished with 3 bracteas at the base. Corollas oval, white. Filaments dilated and pilose at the base.

Dense-flowered Strawberry-tree. Clt. 1826. Tree 20 feet? 12 A. petiolaris (H. B. et Kunth, l. c. p. 281.) arboreous; leaves on long petioles, oblong, acutish, mucronate, with dentilicate margins, membranous, glabrous above, but clothed with canescent tomentose pubescence beneath; racemes short, crowded, forming a terminal panicle. \( G. \) Native of Mexico, on the western declivities of mountains between Cuichuaca and Guichilaque. Epidermis separating. Branchlets hairy. Leaves rounded at the base, or \( \frac{1}{2} \) inches long. Petioles hairy, red. Ramata numerous at the base of the branches. Pedicels villos, canescent. Corollas ovate-globose, white. Filaments villos, dilated at the base.

Petiolate-leaved Strawberry-tree. Tree tall.

13 A. ferruginea (Linn. syst. 408. suppl. 238.) arboreous; leaves oblong, obtuse, smooth, quite entire; racemes terminal. \( G. \) Native of New Granada. Branches angular, smooth. Leaves petiolate. Racemes axillary, and terminating the branches, solitary. Pedicels bracteate. Flowers remote, nodding, longer than the corollas in the other sorts, almost like those of \( A. \) \( \text{andrina} \).

Rusty Strawberry-tree. Tree.

14 A. phyllotricha (Pers. ench. 1. p. 483.) stem much branched; leaves lanceolate, acuminate, acutely serrate; flowers axillary. \( G. \) Native of Peru. Leaves small. Perhaps a species of \( \text{Pernettya} \).

Phyllotrich-leaved Strawberry-tree. Shrub.

15 A. furcens (Hook. et Arn. in Beech. voy. pt. bot. p. 33.) stem nearly simple, downy; leaves oval, on short petioles, dentilicate, coriaceous, with revolute edges, shining above, and glandular on both surfaces, the glands terminating in hairs; racemes axillary; rachis and pedicels downy and scaly; calyx glabrous; corolla glabrous outside, and hairy inside. \( G. \) Native of Chili, about Conception. Qued-Qued, Fl. 3. p. 56. t. 43. A low-growing shrub. The fruit is described by Feuille to be a reddish brown berry, which is dangerous when eaten, causing delirium; whence the Indian name, which signifies madness.

Raging Strawberry-tree. Shrub low.

16 A. punctata (Hook. et Arn. in Beech. voy. pt. bot. p. 33.) much branched; branchlets downy; leaves nearly sessile, ovate-lanceolate, dentilicate, coriaceous, with revolute margins, besprinkled with plicate glands; racemes axillary, downy, scaly; calyx glabrous; corolla glabrous outside, but pilose inside. \( G. \) Native of Chili, about Conception. Apparently a large shrub, and probably the A. phyllotricha, Pers.

Dotted-leaved Strawberry-tree. Shrub.

Cult. The hardy species of this genus being all ornamental trees or shrubs, are proper for conspicuous places in shrubberies, or to stand singly on lawns. \( A. \) \( \text{andraeae} \) must be protected by a mat in severe weather in winter. They are to be increased by seeds, or by budding or inarching on the comminer kinds. The green-house kinds require the treatment of common green-house plants.

XXXV. ARCTOSTAPHYLUS (from \( \text{aptos} \), \( \text{arctos} \), a bear, \( \sigma \) \( \text{phyllos} \), \( \text{stephyle} \), a grape). Gal. Alans. fam. H. B. et Kunth, nov. gen. amer. 3. p. 277. Spreng. syst. 5. p. 297.—Uva-\( \text{ursi} \), D. Tourn.—Arbutus species, Linn.

Linn. syst. Deciduous, Mauvegynia. Calyx 5-parted (f. 139. a.) Corollia globose (f. 139. b.) or ovate-campanulate; limb 5-cleft, reflexed. Stamens 10, inclosed; filaments dilated at the base, and pilose; anthers compressed at the sides, dehiscing by 2 pores at the apex (f. 139. b.), fixed by the back beneath the middle, where they are furnished with 2 reflexed awns. Ovarium seated on the hypogynous disk, or half immersed in it, usually 5-celled (f. 139. g.), rarely 6-9-celled; cells 1-seeded. Style 1; stigma obtuse. Drupe nearly globose.—Shrubs or subshrubs. Leaves alternate. Racemes terminal. Flowers pedicellate, bracteate. Corollas white or flesh-coloured. Drupes red or black.

1 A. \( \text{uva-ursi} \) (Spreng. syst. 2. p. 287.) stems procumbent; leaves permanent, obovate, quite entire, coriaceous, shining; flowers fasicelate; drupe 5-celled. \( G. \) Native of North America, in the pine barrens of New Jersey, and in mountainous and rocky situations of Canada and New England; and the Island of Unalasc. It is abundant on the continent of Europe, as in Sweden, Denmark, and most parts of the north; also in Switzerland, Germany, Carniola, Dauphinay, Savoy, Sibera, &c. With us it is common upon dry, heathy, mountainous and rocky places throughout the Highlands and Western Isles of Scotland; also in the north of England and Wales. \( \text{Arbutus} \) \( \text{iva-ursi} \), Linn. spec. 506. fl. lapp. no. 162. t. 6. f. 3. Woodv. med. bot. 194. t. 70. Fl. dan. t. 33. Blackew. t. 352. Smith, engl. bot. 714. Arbutus buxifolia, Stokes, bot. 509. \( \text{Uva-ursi} \) buxifolia Sal in Gray arr. 2. p. 400.—Schmidt. arb. t. 138. Planch. icon. 340. It is called in English \( \text{Bear berries} \) and \( \text{Bear-whortle berries} \), from the German, \( \text{Baren-} \) 

traube or \( \text{Barekbeere} \); in Dutch, \( \text{Beerenbruin} \); in French, \( \text{La} \) 

Busserole; in Italian, \( \text{Uva d'orzo} \); in Spanish, \( \text{Uba de oso} \); in
Portuguese, *Uva de urso*; and by most old botanists, *Uva-ursi*. Leaves like those of box. Flowers pale red, or white with a red mouth, growing in small clusters at the extremities of the branches. The leaves have been much celebrated in calculous and nephritic complaints, and other disorders of the urinary passages; the dose is half a drachm of the powder of the leaves every morning, or 2 or 3 times a day. The trials, however, made in this country by no means answered expectation. Perhaps, upon the whole, it will be found no better than other vegetable astringents; some of which have long been used by the country people in gravelly complaints, and with very great advantage. On the plains of the Mississippi, the Indians smoked the leaves under the name of *Sacacommis*, and consider them of great medicinal virtue. But whatever may be its medicinal qualities, the whole plant is certainly very serviceable in dying an ash-colour, but particularly in tinning leather. In this view, it may deserve attention in those countries where whole mountains are covered with it. The berries are red when ripe, filled with an austere mealy pulp; they serve as food for grous and other game.

**Bear-berries.** Fl. May, June, Britain. Shrub trailing.

2 *A. alpina* (Spreng. syst. 2. p. 287.) stems procumbent; leaves obovate, acute, wrinkled, serrated, deciduous; racemes terminal. ½. H. Native of Denmark, Switzerland, Dauphiny, Savoy, Siberia, &c. In many places of the Highlands of Scotland, in dry barren moors. Nothing is more common, says Linnaeus, in all the Lapland Alps, in Dalecarlia, from their tops to their bases, round the White Sea, especially in very sandy places. It is also found in Canada, and the northern parts of America, Aleutian Islands, &c. *A. arbutus alpina*. Lin. spec. 566. Oed. fl. dan. 73. Smith, engl. bot. 2050. Lightf. fl. scot. 215. t. 11. f. a. b. Pedicles rather hairy. The flowers grow in reflexed racemes, and are pure white. The berries are black when ripe, and of the size of a sloe, with a taste somewhat resembling that of black currants, but more mawkish, inomuch that Linnaeus says the Laplanders will scarcely eat them. Haller, on the contrary, thinks the flavour not unpleasant. Mr. Miller describes them as of a pleasant taste, so as frequently to be eaten by the inhabitants of those countries where the plant grows wild.

**Alpine Bear-berry.** Fl. April, June, Scotland. Shb. trailing.

3 *A. polifolia* (H. B. et Kunth, nov. gen. et spec. 277. t. 25.) erect; leaves linear-lanceolate, acute, with quite entire and revolute margins, coriaceous, glabrous above, but downy and glaucous beneath. ½. F. Native of the temperate parts of Mexico, near Villalpan- do. Andromeda ledifolia, Humb. profl. p. 41. A much branched shrub. Racemes terminal, erect, an inch long, downy. Flowers nodding. Corolla scarlet (f. 139.)

**Foliolus-leaved Bear-berry.** Shrub 4 to 6 feet.

4 *A. glaucescens* (H. B. et Kunth, l. c. p. 278.) erect; leaves lanceolate-oblong, obtuse, submacronate, quite entire, coriaceous, glabrous and shining above, but downy and glaucous beneath; racemes terminal, solitary, erect; flowers scarlet. ½. F. Native of Mexico, between Guanaxauto and Valenciana. Racemes 3 inches long, beset with glandular villi. Corollas scarlet?

*Glaucuscent Bear-berry. Shrub.*

5 *A. pu'gens* (H. B. et Kunth, l. c. p. 278. t. 259.) leaves ovate-oblong, acute, mucronate, rather pungent, quite entire, coriaceous, clothed with fine down on both surfaces; racemes short, at most terminal, but at length lateral. ½. F. Native of Mexico, in high places near Moran and Villalpando. A dwarf, much branched shrub. Branchlets angular, downy. Pedicels approximate, fastigate. Corollas white.

**Pungent-leaved Bear-berry. Shrub 1 foot.**

6 *A. hookeri*; branches prostrate, rather downy; leaves petiolate, permanent, oval or obovate, coriaceous, shining, minutely reticulated, mucronately pungent, smoothish, finely margined, almost quite entire; racemes terminal, short; flowers bracteate. ½. F. Native of Chili. *A. arbutus pingens*, Hook. et Arn. in Beech. voy. pt. bot. 144. Habit of *A. uva ursi*, and with the leaves of the same size. Flowers small, urceolate; young leaves white from down beneath, more or less serrated.

*Hooker's Bear-berry. Shrub prostrate.*

**Cult.** The hardy species of this genus grow well in a mixture of sand, loam, and peat, or in a peat border. They are increased by layers, put down in the spring. The green-leaved kinds require the treatment of other hardy green-house shrubs.

XXXVI. PERNETTYA (named after M. Pernetty, author of a history of his voyage to the Falkland Island). Gaud. in Freyc. voy. p. 454. t. 67.

Lin. syst. Decandria, Monogynia. Calyx inferior, 5-parted. Corolla glbose: limb 5-parted, revolute. Stamens 10, almost hypogynous, inclosed; filaments thickened at the base; cells of anthers bifid, and dehiscing at the apex. Ovarium free, depressed, glbose, 5-celled; cells many-seeded. Hypogynous scales or glands 10, 3-lobed, forming a ring round the ovary, and alternating with the stamens. Style terminal, short. Stigma convex, obsoletely 5-lobed. Berry propped by the rather fleshy calyx. Seeds minute, oblong-obvate.—Small, much branched shrubs, with small alternate approximate leaves; axillary, solitary, pedunculate, dropping white flowers, and bracteate peduncles. This genus agrees with Epaacideae in the presence of hypogynous scales.


**Crowberry-leaved Pernettya.** Shrub 2 to 3 feet. 2 *P. mxrona'ta* (Gaud. in ann. sc. 5. p. 102.) leaves ovate, cuspidate, denticulately serrulate, stiff, shining on both surfaces; pedicels axillary, bracteate, about equal in length to the leaves. ½. H. Native of Terra del Fuego, Cape Horn, and Straits of Magellan. Lindl. bot. reg. 1675. *A. arbutus mucronata*. Lin. fil. suppl. p. 239. Forst. in comm. geot. 9. p. 31. Graham in bot. mag. t. 3093. Lam. ill. t. 306. f. a. Lodh. bot. cab. 1858. Flowers white, drooping.

**Mucronate-leaved Pernettya.** Fl. May. Clt. 828. Shrub 2 to 3 feet.


**Small-leaved Pernettya.** Shrub 2 to 3 feet.

4 *P. myrsinites*; leaves ovate-lanceolate, serrated, sat-
tered; pedicels solitary, axillary, very short. $H$. Native of the Straits of Magellan, in woods on the mountains. Andrómeda myrsinitis, Lam. ill. gen. t. 363. $f$. 2. Leaves small.

Myrtle-like Pernettya. Shrub 2 to 3 feet.

5 P. Cavanillesiana; leaves ovate, acute, glabrous, obtusely serrated; pedicels axillary, solitary, furnished with two scales at the base; stems trailing. $F$. Native of South America. Andrómeda prostrata, Cav. cv. gen. 6, p. 483. $f$. 2. Leaves green above, and rusty and veiny beneath, on very short peduncles. Cavanilles's Pernettya. Shrub prostrate.

6 P. filosa; stem pilose, procumbent; leaves ovate-elliptic, ciliately-serrulated, ciliately-serrulatus, coriaceous, mutic at the apex and callous; pedicels axillary, 1-flowered, elongated, nutate; corolla ovate, with blunt revolute teeth. $H$. Native of Mexico. Arbustus pilosa, Graham, in bot. mag. 3177. Corolla white.


7 P. Purpurea (D. Don, ms. in herb. Lamb.) branchlets setose; leaves lanceolate, acute, dentate, glabrous, veiny beneath; pedicels scabrous, glandular; corollas ovate. $F$. Native of Peru. Flowers purple. Purple-flowered Pernettya. Shrub.

8 P. ciliata (D. Don, i. e.) branchlets setose; leaves ovate-lanceolate, acute, having the margins denticulated, and ciliated with bristles; peduncles glandular. $F$. Native of Mexico.

Ciliated Pernettya. Shrub.

Cult. For culture and propagation see Phyllodoce, p. 833.

XXXVII. AGAR'ISTA (a mythological name, the beautiful daughter of Clithenes; in reference to the beauty of the flowers). D. Don, ms.—Andrómeda species of Comm. and other authors.

Lin. syst. Decandra Monogynia. Calyx fleshy, 5-lobed; lobes imbricate on the base. Corolla ovate, with a contracted, 5-toothed, conical mouth. Stamens 10, inclosed; filaments flattened, dilated at the base, and villous; anthers biparite; with short membranous cells, which are mutic at the base and diverging at the apex, opening by a terminal hole. Style robust, terete; stigma capitate. Capsule globose, pentagonal, 6-celled, with a loculicidal dehiscence. Placenta thick, oblong. Seeds angular, curved.—Evergreen shrubs. Natives of the Mauri-
tius and South America. Leaves coriaceous, reticulately veined, quite entire. Flowers racemose, terminal, very beautiful. In-
termediate between Gaultheria and Andrómeda.


2 A. salicifolia; leaves lanceolate, attenuated at both ends, white beneath; racemes simple, secund, glabrous. $H$. S. Native of the Mauritius. Andrómeda salicifolia, Comm. ms. Lam. cv. l. 1. p. 159. Smith, com. ined. 1. 58. Hook. exot. fl. 3. t. 192. bot. mag. 3266. Leaves 2-4 inches long. Ra-
cemes simple. Corolla oblong, ovate, beautiful purple.

Willow-leaved Agarista. Shrub 2 to 3 feet.

3 A. Subrotunda; leaves roundish-elliptic, cordate at the base, mucronate at the apex, glabrous above, but clothed with ferruginous tomentum beneath; racemes terminal, solitary, or fasci-cled, secund, downy. $H$. G. Native of Brazil, in the prov-
ince of Minas Geraes, on rocks about Villa St. Joo d'el Rey.

Andrómeda subrotunda, Pohl. pl. bras. 2. p. 32. t. 121. Branches tomentose. Leaves on very short peduncles, approxi-
mate, setosely denticulated on the nerves and margins, and termi-
inating in a spine mucronate. Corolla ovate, ventricose, pur-
red or scarlet, with almost erect segments. Ovaries villous.

Roundish-leaved Agarista. Shrub 3 feet.

4 A. Multiflora; leaves lanceolate, rounded at the base, glabrous; racemes axillary, suprabryanose; ovariun glabrous. $H$. G. Native of Brazil, in the province of Minas Geraes, in mountainous places; in Serra Matsuqueira. Andrómeda multiflora, Pohl. pl. bras. 2. p. 33. t. 122. Shrub much branched. Leaves petiolate, remote, 2½ inches long and 8 lines broad. Racemes many-flowered, secund. Bracteas oblong, acute, ciliated. Corolla elliptic, ventricose, white, with erect seg-
ments.

Many-flowered Agarista. Shrub 6 to 10 feet.

5 A. Polhill; leaves ovate, acute at the apex, emarginate at the base, glabrous, painted beneath on the sides of the nerve with dots; racemes axillary. $H$. G. Native of Brazil, in the prov-
ince of Minas Geraes, in dry mountainous places of Itambe. Andrómeda crassifolia, Pohl. pl. bras. 2. p. 54. Leaves on short peduncles, orbicular, 1½ inch long and 8 lines broad. Ra-
cemes many-flowered, secund; bracteas linear, glabrous. Co-
rollas unknown.

Pohl's Agarista. Tree.

6 A. Brachamorosia; leaves ovate-oblong, obtuse, obso-
letely mucronate, with revolute margins, coriaceous, glabrous, shining above; racemes axillary and terminal, approximate at the tops of the branches. $H$. G. Native of New Grandua, in the province of Bracamoros, near St. Felipe, and Paramo de Ynamo. Andrómeda Brachamorosia, H. B. et Kunth, nov. gen. aner. 3. p. 288. t. 263. Andrómeda myrtilloides, Willd. her. Branch-
lets angular. Leaves 6-7 lines long. Bracteas minute at the base of the pedicels. Corollas scarlet, with ovate, revolute teeth. Stigma ciliated, hardly thicker than the style.

Bracamoros Agarista. Tree 10 to 15 feet.

7 A. Sprengelii; leaves ovate-oblong, obtuse, mucronate, coriaceous, with revolute margins, glabrous on both surfaces; racemes axillary, drooping. $H$. S. Native of Brazil, within the tropic. Andrómeda revoluta, Spreng. neunt. entd. 2. p. 131. syst. 2. p. 291. Young leaves and young branches rather downy.

Sprengel's Agarista. Shrub.

8 A. Eucalyptoides; glabrous; leaves on long petioles, oblong, acuminate, obliquely rounded at the base, with revolu-
tes margins; racemes lateral, approximate towards the tops of the branches. $H$. S. Native of Brazil, at Rio Grande do Sul. Andrómeda eucalyptoides, Cham. et Schlecht, in Linnea. 1. p. 519. An elegant shrub. Young branches angular. Leaves ½ inch long. Corolla arcuata, 3 lines long, with ob-

Eucalyptoides-like Agarista. Shrub or small tree.

9 A. Pumila; glabrous; leaves petiolate, ovate, mucronate, coriaceous, with revolute margins; racemes secund, axillary and terminal, glabrous, approximate at the tops of the branches; ovariun glabrous. $H$. S. Native of Brazil, within the tropic. Andrómeda pumila, Cham. et Schlecht. in Linnea. 1. p. 521. Branches angular. Leaves more than an inch long, larger than those of A. nummularia. Style length of corolla. Corolla urce-
late, with short obtuse spreading teeth, scarlet.

Fair Agarista. Shrub 1 to 2 feet.

10 A. Nummularia; leaves on short petioles, coriaceo, broad-
ate, rather retuse, mucronate, coriaceous; racemes axillary and terminal, and are, as well as the young branches, hispid;

ovarium downy. $H$. G. Native of the south of Brazil, in the province of Rio Grande do Sul. Andrómeda nummularia,
Cham. et Schlecht. in Linn. I. p. 520. Leaves shining above, ciliated with long stiff hairs on the nerves beneath, and margins while young. Larger leaves 8 lines long. Racemes approximate at the tops of the branches. Calyx hairy. Style exserted. Corolla urceolate, with short, obtuse, reflexed teeth, scarlet.?


Cham. et Schlecht. in Linn. I. p. 504.—Flowers scarlet, with white filaments and yellow anthers. There are varieties of it having the inflorescence either hairy or glabrous.

Cham. et Schlecht. in Linn. I. p. 506. Corollas scarlet, with obtuse spreading teeth.

Cham. et Schlecht. in Linn. I. p. 508. Leaves 15 lines long. Corollas ovoid, coriaceous, scarlet, much larger than those of A. pulchra. Style woolly at the base.

Cham. et Schlecht. in Linn. I. p. 508. A box-like shrub, with the habit of A. Bracanomastia and A. revoluta. Corollas white, green at the apex, glabrous.

Cham. et Schlecht. in Linn. I. p. 508. A box-like shrub, with the habit of A. Bracanomastia and A. revoluta. Corollas white, green at the apex, glabrous.


Cham. et Schlecht. in Linn. I. p. 504.—Flowers scarlet, with white filaments and yellow anthers. There are varieties of it having the inflorescence either hairy or glabrous.

Cham. et Schlecht. in Linn. I. p. 506. Corollas scarlet, with obtuse spreading teeth.

Cham. et Schlecht. in Linn. I. p. 508. A box-like shrub, with the habit of A. Bracanomastia and A. revoluta. Corollas white, green at the apex, glabrous.

Cham. et Schlecht. in Linn. I. p. 508. A box-like shrub, with the habit of A. Bracanomastia and A. revoluta. Corollas white, green at the apex, glabrous.

Cham. et Schlecht. in Linn. I. p. 508. A box-like shrub, with the habit of A. Bracanomastia and A. revoluta. Corollas white, green at the apex, glabrous.

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Cham. et Schlecht. in Linn. I. p. 508. A box-like shrub, with the habit of A. Bracanomastia and A. revoluta. Corollas white, green at the apex, glabrous.

Cham. et Schlecht. in Linn. I. p. 508. A box-like shrub, with the habit of A. Bracanomastia and A. revoluta. Corollas white, green at the apex, glabrous.
**ERICACEÆ. XXXIX. GAULTHERIA.**

3 D. heterophylla (Blum. l. c. p. 585.) leaves oblong or lanceolate, acuminate at both ends, nearly veinless, glabrous, dotted beneath; pedicels flescled. \(\text{G. }\) Native of Java, on the higher mountains, on the west side of the island.

Var. \(\beta\): leaves cuneate-oblong, acutish or obtuse.

Variable-leaved Diplocosia. Fl. Year. Shrub par.

 Cult. For culture and propagation, see *Agarista*, p. 838.


Lin. syst. Decandria, Monogynia. Calyx 5-5-3. corolla ovate, with a short 5-3-3 limb (f. 140. h.). Stamens 10, inclosed; anthers bifid at the apex; lobes biauriculate (f. 140. c.). Style 1; stigma obtuse. Hypogynous scales 10, obsolete or connate at the base. Capsule depressed globose, 5-celled, 5-furrowed, covered by the calyx, which is sometimes baccate; valves septiferous in the middle. Placentas adnate to the base of the column. Seeds numerous, covered by a reticulated testa.—Small trees or shrubs. Leaves alternate. Flowers axillary and terminal, racemose, rarely solitary; pedicels bracteolate. Corollas white, rose-coloured, or scarlet. Filaments usually hairy.

*Flowers axillary, solitary.* Peduncles or pedicels browsed with some imbricated bracteas at the base.

1 G. prolemus (Lin. spec. 565.) stem procumbent; branches erect, naked at bottom, but with crowded leaves at top; leaves obovate, acute at the base, finely and ciliately toothed; flowers few, terminal, nutant. \(\text{G. }\) Native of North America, in dry woods, on mountains, and in sandy plains from Canada to Virginia. Andr. bot. rep. 116. Kalm. amen. 3. p. 14. t. 1. f. 6. Duhum. arb. 1. p. 286. t. 113. Lodd. bot. cab. t. 82. Sims. bot. mag. 1866.—A little shrubby plant, resembling seedling plants of *Kalmia latifolia*. Flowers white. Berries red, entire, and known by the name of partidge berries. The leaves, if properly cured, make a most excellent tea, for which reason it is likewise known by the name of Mountain Tea.

*Prolemus* Gaultheria. Fl. July, Sept. CIt. 1762. Shrub \(\frac{1}{2}\) foot, procumbent.

2 G. repens (Blum. bidr. p. 857.) stem creeping, rather pilose; leaves minute, rather pilose beneath, ovate, acute, coriaceous; peduncles axillary, 1-flowered. \(\text{G. }\) Native of Java, on the top of Mount Gede.

Creeping Gaultheria. Fl. Year. Shrub.

3 G. nummularóides (D. Don, prod. fl. nep. p. 150.) branches filiform, procumbent, very bristly; leaves coriaceous, mucronulate, nearly sessile, naked above, but hirsut from hairs beneath and on the margins; pedicels axillary, very short, coriaceous. \(\text{G. }\) Native of Nipaul, on the Alps. Shrub much branched. Flowers drooping. Pedicels and calyces glabrous. Calyces segments broad-ovate, mucronulate, with connivent margins. Corolla ovate, longer than the calyx.

*Moneywort-like* Gaultheria. Shrub procumbent.

4 G. buxifólia (Willd. in nov. act. berol. vol. 4.) stem erect; branches hairy; leaves roundish-ovate, obtuse, toothed, coriaceous, scabrous from dots beneath; pedicels filiform. \(\text{G. }\) Native of Caraccas. Branches hairy, erect.

*Box-leaved* Gaultheria. Shrub.


Pedicels pilose, furnished with 5-7 imbricated bracteas at the base. Corollas ovate, glabrous, white.

*Anastomosis* Gaultheria. Shrub.

6 G. perpuraéscens (H. B. et Kunth, nov. gen. amer. 3. p. 282.) procumbent! branchlets and leaves clothed with bristly hairs; leaves elliptic-oblong, acute at both ends, serrulated, 1-nerved, purplish beneath; flowers axillary, solitary. \(\text{G. }\) Native of New Granada. Hairs or bristles dark purple. Leaves green above. Peduncles or pedicels bracteate at the base. Fruit drooping.

*Purpurl-leaved Gaultheria. Shrub procumbent.*

7 G. myrsínóides (H. B. et Kunth, l. c. p. 283.) branches and leaves glabrous; leaves oblong, acute, obtuse at the base, crenated at top, shining above; flowers axillary, solitary. \(\text{G. }\) Native of New Granada, near the town of Almuguer. Branchlets angular. Peduncles downy, furnished with imbricated bracteas at the base. Corollas ovate-globose, glabrous, white.

*Myrtille-like* Gaultheria. Shrub.

8 G. myrtílides (Cam. et Schlecht, in Linneæa, vol. 1. p. 523.) branches beset with bristles, as well as the under sides of the leaves and calyces; leaves broad-lanceolate, with the margins ciliately serrulated and somewhat reflexed; flowers axillary, solitary, on short pedicels near the tops of the branches. \(\text{G. }\) Native of Brazil, within the tropic. Scales at base of pedicels ciliated. Corolla urceolate, pilose inside, glabrous outside, with reflexed teeth. Filaments dilated at base.

*Myrtile-like* Gaultheria. Shrub \(\frac{1}{2}\) to 1 foot.

9 G. ciliata (Cam. et Schlecht, in Linneæa. 5. p. 125.) shrubby, glabrous; flowers axillary, solitary; peduncles downy, bracteolate at the base; leaves coriaceous, nearly sessile, lanceolate, acute, sharply serrulated; teeth setigerous in the young state. \(\text{G. }\) Native of Mexico, on Mount Orizaba, along with *Solanum tuberosum*; and at Chiconquiqua and Malpaus de Joya. Leaves \(\frac{1}{8}\) inch long. Flowers white. Berries black.

*Ciliated-leaved* Gaultheria. Shrub.

** Racemes axillary and terminal at the tops of the branches. Pedicels bracteate.**

10 G. Shallón (Pursh. fl. amer. sept. 1. p. 283. with a figure); procumbent, hairy; leaves ovate, subcordate, serrated, glabrous on both surfaces; racemes second, bracteate, clothed with rusty down. Fl. H. Native of North America, on the falls of the Columbia, and near the Western Ocean.

Hook. bot. mag. t. 2843. Lindl. bot. reg. 1411. Lodd. bot. cab. 1373. Branches warty, clothed with rusty down while young. Leaves broad, abruptly acuminate. Pedicels scaly. Corolla white, tinged with red, downy, urceolate, with a closed limb. Berries globose, acute, fleshy, purple. This plant grows in the shade of cloverine forests, where hardly any thing else will grow, which makes it a very desirable shrub for plantations. The berries of the Shallon are much esteemed by the natives, on account of their agreeable flavour.

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**FIG. 140.**
**ERICACEÆ. XXXIX. GAUTHHERIA.**


**Very fragrant Gauthheria.** Ch. 1824. Shrub.

13 G. punctata (Blum. bl. drj. p. 856.) leaves lanceolate, terminated by a gland, serrated, dotted beneath, glabrous as well as the branches; racemes panicled, terminal; calyces ciliated. F. G. Native of Java, very common on the top of Mount Gede, where it is called by the natives Tjutagie-wangie.

**Dotted-leaved Gauthheria.** Shrub.

15 G. leucocarpa (Blum. bl. drj. p. 856.) branches and leaves glabrous; leaves ovate-oblong, long-acuminated, bluntly serrated; racemes axillary and terminal, drooping; calyces a little ciliated. F. G. Native of Java, in woods on the higher mountains, where it is called Zangtig badas by the natives.

**White-fruited Gauthheria.** Fl. Year. Shrub.

14 G. Sprengeli; leaves oblong, rounded at both ends, callous at the apex, quite entire, with revolute edges, lispid on both surfaces; branches hairy; racemes terminal, straight, second, clothed with ciliate hairs. F. S. Native of Brazil, where it was collected by Sello. G. hispida, Sprengel, syst. 2. p. 288. but not of R. Br.

**Sprengel's Gauthheria.**

16 G.? bracteata; branches beset with rusty hairs; leaves ovate-acute, obscurely denticulated, shining above and rusty beneath; racemes terminal, simple; corollas and calyces hairy. F. G. Native of Quito, near the Crater of Tunguragua, and on Mount Chimborazo. Andromeda bracteata, Cav. icon. 6. p. 42. t. 562. f. 1. Hairs on the under side of the leaves, hulbous at the base. Leaves ⅓ inch long, and 1 inch broad. Bracteas at the base of the pedicels concave, ovate-acute, and the pedicels are bibracteolate. Stamens 10; villous; anthers beariata at the base. Corollas tubular, pale red, with erect ovate-acute teeth.

**Bracteate Gauthheria.** Shrub ½ foot.

18 G. elliptica (Cham. in Linnaea. 8. p. 502.) racemes, corollas, and capsules, downy; bracteas and calyces ciliated, the rest of the plant glabrous; leaves elliptic, acute at both ends, mucronate, marginated, rather coriaceous, finely and equally serrulate, smooth and shining above, and beset with black dots beneath, reticulately veined; racemes terminal and axillary, forming a panicle; bracteas ovate-orbicular, obtuse, concave, at first imbricated, and therefore the racemes appear strobiliforme. F. S. Native of the south of Brazil, where it was collected by Sello. Very like G. acuminata, Cham. in Linnaea. 5. p. 126. and G. vernalis, Popp. pl. chir. exsic. 3. no. 119. Prostrate and rooting. Corollas ovate-urceolate, inflected, downy outside and villous inside.

**Elliptic-leaved Gauthheria.** Shrub creeping.

17 G. acuminata (Schlecht. et Cham. 5. p. 126 and 7. p. 524.) shrubby, glabrous; flowers racemose, axillary; leaves on short petioles, ovate, acuminated, acute, finely serrulate, coriaceous, reticulately veined, discoloured, full of black dots beneath, but scabrous on both surfaces from elevated dots; sertacmes mucronate. F. G. Native of Mexico, on Serra Colorado; and at St. Salvador and Malpays de Joya. Flowers white. Fruit black. Leaves ⅓ inches long.

**Acuminated-leaved Gauthheria.** Shrub.

18 G. reticulata (H. B. et Kunth, nov. gen. 3. p. 284.) branches and leaves glabrous; leaves oblong, acutish at both ends, serrately crenulately, shining above; racemes crowded at the tops of the branches, axillary and terminal; corollas glabrous. F. G. Native of the Andes of Quito, between Ona and Loxa, in Paramo de Saragurum. Andromeda reticulata, Humb. pro.l. p. 30. Leaves terminated by a sessile gland, shining above. Racemes involucrated by some bracteas at the base, downy. Corolla ovate, tubular, white, glabrous. Fruit capsular.

**Reticulated-leaved Gauthheria.** Shrub.

19 G. cocinea (H. B. et Kunth, 1. c. p. 284.) branches rather pilose; leaves roundish-ovate, acutish, rounded at the base, denticulated, glabrous, shining above and dotted beneath; racemes terminal and axillary at the tops of the branches; corollas clothed with glandular hairs. F. S. Native of Caracas, on Mount Avila. Andromeda cocinea, Humb. pro.l. p. 39. Leaves with black dot-like glands beneath. Racemes involucrated by imbricate bracteas at the base. Flowers secund, on long pedicels; pedicels clothed with glandular hairs. Bracteas at the base of the pedicels concave, coloured, glandularly ciliated. Corollas ovate, scarlet, clothed with glandular hairs. Fruit capsular.?

**Scarlet-flowered Gauthheria.** Shrub.

20 G. odorata (Humb. trav. l. p. 397. and 599. nov. gen. 3. p. 285. Pers. ench. 1. p. 482.) branches beset with glandular viscid hairs; leaves ovate-oblong, acuminately ciliate, coriaceous, to the base, sharply denticulate, glabrous and shining above, a little ciliate from the base beneath; corollas axillary and terminal at the tops of the branches; corollas pilose. F. S. Native of New Andalusia, on Mount Tunmiriquí; and on the southern declivity of Mount Silla de Caracas, where it is called Pejo by the natives; and of Mexico, at Cuesta Grande de Chiconcuaca. G. scabra, Wild. herb. Shrub much branched. Leaves aromatic, ⅔ inches long, glandularly ciliated while young. Racemes involucrated by some bracteas at the base. Flowers secund, nutant. Pedicels beset with glandular hairs as well as the rachis. Bracteas red, lanceolate, length of pedicels. Coollas ovate, pale red. Fruit capsular.

**Sweet-scented Gauthheria.** Shrub 4 to 5 feet.

21 G. cordifolia (H. B. et Kunth, nov. gen. am. 3. p. 285. t. 526.) branchlets ciliate; leaves ovate, acute, ovate, ciliate, denticulated, rugose, glabrous and shining above, but hairy beneath; racemes axillary and terminal at the tops of the branches; corollas clothed with ciliate hairs. F. G. Native of New Granada, on the Andes near Almaguer and Pansitara, in rather frigid places. Branches twining, ex Bompl. Leaves ⅔ inches long; Pedicels and flowers beset with glandular hairs and ciliate. Bracteas oblong, acute, concave, ciliate with glandular hairs, and clothed with adpressed hairs outside, longer than the pedicels. Calyx ciliate, clothed with glandular hairs. Corollas ovate, scarlet or purple.

**Heart-leaved Gauthheria.** Shrub.

22 G. rigidia (H. B. et Kunth, l. c. p. 286.) branches puberulous; leaves ovate-oblong, acute, ciliate at the base, sharply denticulate, glabrous, but a little ciliate; racemes axillary and terminal at the tops of the branches; corollas glabrous. F. S. Native of the province of Cumana, on Mount Cocollar. Andromeda rigidia, Humb. trav. p. 397. Leaves terminated by a sessile gland. Racemes involucrated by many imbricated bracteas. Bracteas oblong, concave, ciliated, glabrous, coloured, longer than the pedicels. Pedicels and rachis downy. Corollas ovate, scarlet.

**Stiff Gauthheria.** Tree small.

23 G. tomentosa (H. B. et Kunth, l. c. p. 287. t. 262.)
branches and under sides of leaves clothed with rusty tomentum; leaves glabrous and shining above, lanceolate-oblong, acute, obuse at the base, with quite entire revolute margins; racemes axillary and terminal at the tops of the branches; corollas tomentose. S. Native of the Andes, about Quito, in Paramo de Saraguro. Leaves tomentose on both surfaces while young. Pedicels and calyces clothed with rusty down. Bracteas tomentose, ovate-oblong, much shorter than the pedicels. Corolla ovate.

**Tomentose Gaultheria.** Tree 10 to 15 feet.

24 G. ferruginea (Cham. et Schlecht. in Linnaea, 1. p. 524.) leaves ovate, acute, shining above, with serrately scabrous margins, clothed with rusty tomentum beneath, as well as the racemes and flowers. G. Native of Brazil, within the tropic. Leaves often coriaceous at the base. Racemes bracteate, erect, rising from the axils at the tops of the branches, the whole forming a panicle. Corolla 3 lines long, with erect teeth.

**Rusty Gaultheria.** Shrub.

25 G. scabra (Willd. in nov. act. soc. berol. 4.) leaves ovate-cordate, acute, toothed, scabrous, reticulately veined beneath; racemes axillary, simple; calyx and bracteas clothed with glandular hairs. G. Native of Caraccas. Calyx baccate, black.

**Scabrous Gaultheria.** Shrub.

26 G. erecta (Vent. hort. eels, p. 5. t. 5.) leaves oval, mucronate, acute, shining above; branches and racemes clothed with glandular clamydial hairs. G. Native of Peru. Leaves with revolute denticulated margins.

**Erect Gaultheria.** Shrub.

27 G. hysteda (R. Br. prod. p. 553.) leaves long-lanceolate, serrulately, pilose beneath as well as on the petioles; branchlets hispid; racemes axillary and terminal, shorter than the leaves; rachis and pedicels downy; calyces baccate; fruit and ovaries glabrous; stem erect. F. Native of Van Diemen's Land. Corollas white.?

**Hispid Gaultheria.** Shrub. erect.

28 G. rupestris; racemes simple, bracteate; corollas campanulate; leaves oblong, serrulately. G. Native of New Zealand. Androdéma rupestris, Forst. prod. no. 195. Nearly allied to the preceding.

**Rocky Gaultheria.** Shrub erect.

29 G. antipoda (Forst. prod. no. 186.) leaves roundish-ovate, serrate-toothed, glabrous, reticulately veined; branches downy; stem diffuse; racemes panicled, rather hairy; corollas glabrous. G. Native of New Zealand. Flowers white.?

**Antipodal Gaultheria.** Shrub.

**Cult.** The species are ornamental: they thrive best in a peat soil, and are readily increased by dividing or by layers. The greenhouse species should be treated as other hardy greenhouse shrubs.


1 E. repens (Lin. spec. 565.) branches, petioles, and nerves of leaves very hairy; leaves cordate-ovate, quite entire; corollas cylindrical. G. Native from Canada to Carolina, on shady rocks and in stony woods, sides of hills and roots of pines. Andr. bot. rep. 102. Lam. ill. t. 367. f. 1. Lodd. bot. cab. 160.—Pluk. alm. t. 107. f. 1. Flowers white, tinged with red, very fragrant.

**Creeping Epigaea.** Fl. May, July. Ch. 1736. Shrub creeping.

2 E. cordifolia (Swartz, prod. 73. fl. ind. occ. 2. p. 842.) stem erectish, strigose; leaves cordate, roundish, stiff, hispid, serrated, convex; corollas ovate. G. Native of Guadalupe and Cayenne. Lam. ill. t. 367. f. 1. Flowers white.?

**Heart-leaved Epigaea.** Shrub erect.

**Cult.** E. repens is a beautiful procumbent shrub: it will thrive only in peat soil and shady situations, and, being rather tender, should have a hand-glass or frame placed over it in frosty weather; indeed, it grows best under a hand-glass or frame the whole year: it is increased by layers or separating the rooted shoots; or by cuttings, which root readily in sand with a hand-glass over them. For the culture of E. cordifolia see Agarista, p. 833.


**LIN. SYST.** Octándria Monogyniæ. Calyx 4-cleft, bifracate at the base. Corolla short, campanulate, 4-cleft. Stamens 8; filaments hairy. Hypogynous disk 8-toothed. Anthers seminiforous.—A small creeping plant with hispid branches, small, roundish-oval, acute leaves; and axillary, solitary, nearly sessile, white flowers. Habit of Wild Thyme.

1 P. serpyllifolia; G. Native from Canada to Pennsylvania. Mr. Nuttall has observed this plant north-westward of Lake Michigan; and, as Mr. Pursh very justly remarks, abounding where evergreens are predominant, keeping pretty constant pace with the northern forests of pines, larches, and firs, growing always amidst sphagnum. Vaccinium ripens, Lin. spec. 500. Michx. fl. 6. bor. amer. 1. p. 228. t. 23. Gaultheria serpyllifolia, Pursh. fl. amer. sept. 1. p. 283. t. 13. Arbatus filiformis, Lam. dict. 1. p. 228. Berries white, produced in inconsiderable quantities. They are aromatic, not very acid, and rather insipid than agreeable. The shrub has the same aromatic taste and smell as Gaultheria procumbens.

**Wild Thyme-leaved Snowberry.** Fl. April, May. Ch. 1815. Shrub creeping.

**Cult.** See Oxyccocus, p. 858, for culture and propagation.


**LIN. SYST.** Decándria, Monogyniæ. Calyx 5-parted. Corolla so deeply 5-parted as to appear pentapetalous. Stamens 10, inclosed, or nearly so; anthers behind, at length indifferently pendulous and obverse, cordate, mucronate at the apex, obtuse. Ovarium free. Style straight. Stigma trifid. Capsule girdled by the calyx, 5-celled, with a loculicular dehiscence; cells many-seeded. Shrub or trees. Leaves alternate. Racemes terminal, solitary or panicled. Flowers bracteate, white.

1 C. allintifolia (Lin. spec. 566.) leaves cuneate-obovate, acute, coarsely serrated above, glabrous on both surfaces, and of the same colour; racemes spicate, simple, bracteate, clothed with hoary tomentum. G. Native from New England to Virginia, in swamps, frequent. Schmidt, arb. 47. Lam. ill. 369. Duh. arb. 1. p. 176. t. 71. Mill. fig. 28. Catesba. ear. 1. t. 66. C. allintifolia, var. a, denudata, Ait. hort. rew. 2. p. 73.

**Alder-leaved Clethra.** Fl. July, Sept. Ch. 1731. Shrub 3 to 4 feet.

5 P
ERICACEÆ. XLI. Clethra.

2 C. tomentosa (Lam. dict. 2. p. 46.) leaves cuneate-obovate, acute, finely serrated at top, clothed with white tomentum beneath; racemes spicate, simple, bracteate, villously tomentose. \( \text{H} \). Native of Virginia and Carolina, in swamps. W. abd. Brit. N. 29. C. alnifolia, \( \beta \), pubescent, Ait. hort. kew. 2. p. 73. C. incana, Pers. enh. 1. p. 482. This is a very distinct species, although it has been considered by some as a mere variety of the preceding.


3 C. scabra (Pers. ench. 1. p. 482.) leaves broad, cuneate-ovate, acute, scabrous on both surfaces, coarsely serrated; serrations hooked; racemes spicate, subpanicled, bracteated, finely tomentose. \( \text{H} \). Native of the western parts of Georgia, where it was collected by Mr. Lyon.


C. paniculata (Ait. hort. kew. 2. p. 73.) leaves narrow, cuneate-lanceolate, acute, acuminate, glabrous on both surfaces; racemes terminal, elongated, composed of racemes, and clothed with white tomentum. \( \text{H} \). Native of Carolina.


5 C. aemina (Michx. fl. amer. bor. 1. p. 250.) leaves oval, acuminate, bluntish at the base, serrated, glabrous on both surfaces, rather glaucous beneath; racemes spicate, almost solitary, bracteate, clothed with white tomentum. \( \text{H} \). Native of Carolina, on the high mountains. Lodd. bot. cab. 1427. C. montana, Betr. cat. Grows to the size of a tree.

Flowers resembling those of C. alnifolia.


6 C. brasiliana (Cham. in Linnaea. 8. p. 510.) leaves obovate, obtuse, rather retuse, acutish at the base, cuneate, glabrous above and tomentose beneath, almost quite entire, or serrulately-toothed at the apex; teeth and apex mucronate; racemes forming panicles at the tops of the branches, tomentose; segments of corolla fringed; genitals inclosed. \( \text{s} \). Native of tropical Brazil. The leaves vary much in form and size. Tomentum of a rusty-colour.

Brazilian Clethra. Shrub or tree.

7 C. tajofolia (H. B. et Kunth, nov. gen. amer. 3. p. 289.) arboreous; leaves obovate, sharply and remotely toothed, coriaceous, glabrous; racemes clustered at the tops of the branches. \( \text{S} \). Native of South America, in woods near Bonavista, between Caracas and La Victoria. Young branches angular, and densely clothed with rusty down. Leaves 3-4 inches long, paler beneath. Racemes clothed with rusty tomentum. Corollas white, about the size of those of the lily of the valley.

Beach-leaved Clethra. Tree.

8 C. nicolai (H. B. et Kunth, l. c. p. 289.) arboreus; leaves oblong, coarsely and undulately crenated, coriaceous, glabrous above, but clothed with white tomentum beneath; racemes in fascicles at the tops of the branches. \( \text{S} \). Native of South America, near Santa Fe de Bogota. Cuellaria floribunda, Wildl. herb. Branchlets angular, clothed with rusty down, intermixed with stiff hairs, as well as the racemes. Leaves 3-4 inches long, having the teeth intermixed with glandular denticulations, while young having a few dot-formed stellate hairs above. Corollas white.

Two-coloured-leaved Clethra. Tree.

9 C. tinnberræata (H. B. et Kunth, l. c. p. 290. t. 264.) arboreous; leaves elliptic-oblong, quite entire, coriaceous, glabrous above, but clothed with white tomentum beneath; racemes in fascicles at the tops of the branches; stamens hardly inclosed, \( \text{s} \). Native along with the preceding. Cuellaria rugosa, Wildl. herb. Branches glabrous, brown. Flowers sub-second, nutant, about the size of those of C. alnifolia. Pedicels, calyces, and rachis clothed with rusty tomentum. Corolla white, having the segments emarginately 2-lobed, and lacinately fringed at the apex.

Fringed-flowered Clethra. Tree.


11 C. obovata (Ruiz et Pav. fl. per. 4. t. 381.) leaves obovate, wrinkled, denticulated. \( \text{G} \). Native of Peru, in forests about Cuchero. Cuellaria obovata, Ruiz et Pav. syst. p. 193. Racemes long, fascicled at the tops of the branches. Branches and leaves downy. Flowers small.—A tall tree. The wood is very hard, and is made into utensils by the natives.

Obovate-leaved Clethra. Tree tall.

12 C. revoluta (Ruiz et Pav. fl. per. 4. t. 380. f. a.) leaves oblong, denticulated, revolute and excavated at the base. \( \text{G} \). Native of Peru, in forests towards Pillao. Cuellaria revoluta, Ruiz et Pav. syst. p. 193. Branches, leaves, and racemes downy. Racemes simple, fascicled at the tops of the branches.

Revolute-leaved Clethra. Tree 30 feet.

13 C. canescens (Herb. Reinw. et ex Blum. bjudr. p. 863.) leaves cuneate-oblong, acute, serrated at the apex; panicle terminal, clothed with canescent scar; calyces segments ovate, acute. \( \text{G} \). Native of the Celebes, in woods, on the mountains. Canescens paneled Clethra. Fl. Sept. Shrub.

14 C. tinnifolia (Swartz, fl. ind. occ. 2. t. 845.) arboreous; leaves oblong-lanceolate, quite entire, hoary beneath; racemes spike-formed, panicled at the tops of the branches, tomentose. \( \text{G} \). Native of the south of Jamaica; also of Mexico, near Chiconquiaco. Tinus occidentalis, Lin. spec. 530. Volkâmeria, P. Browne, jam. 214. t. 21. f. 1. Sloan, jam. 2. p. 86. t. 198. f. 2. Flowers white. Sloane calls this tree Bastard Locust tree.

Laurestine-leaved Clethra. Clt. 1825. Tree 12 to 14 feet.

15 C. foliacea (Ait. hort. kew. 2. p. 73.) leaves oblong, attenuated, lanceolate, glabrous on both surfaces, serrated; racemes spike-formed, panicled at the tops of the branches; calyces segments obtuse. \( \text{G} \). Native of Madeira. Sims, bot. mag. 1057. Flowers white. There are several varieties of this species; a smaller variety, and a variegated-leaved one.


Cult. All the species of this genus are very ornamental. The hardy kinds thrive best in peat earth, or a very light sandy loam: they are dwarf shrubs, and are therefore well fitted for the front of shrubberies, where the soil will suit. By layers is the usual mode of increasing them, but they also strike root readily from cuttings in sand under a hand-glass. The greenhouse kinds are well adapted for large conservatories, and they thrive in the same kind of soil recommended for the hardy species. Cuttings taken from wood not too ripe will strike root readily in sand under a hand-glass. All may be raised from seeds, which in most of the species ripen in plenty.

Trize 11.

**XLI. RHODODENDRON** (from po'kow, rhodon, a rose, and éx'kpyor, dedron, a tree; in reference to the terminal bunches of flowers, which are usually red). Lin. gen. no. 548. Schreb. gen. no. 746. Gaertn. fruit. 1. p. 304. t. 63. Juss. gen. 158. D. Don, in edinb. phil. journ. prod. fl. nep. p. 152.—Azalea species of authors.—Rhodora, Lin.—Chamerohododendron, Torn. inst. t. 373.

**Linn. syst. Penta-Dccándria, Monogénia.** Calyx 5-parted. Corolla somewhat funnel-shaped, or campanulate; rarely rotate or 5-parted; limb 5-cleft, somewhat bilabiate; upper lip the broadest, and usually spotted. Stamens 5-10, usually exserted, declinate; anthers opening by 2 terminal pores. Capsule 5-celled, 5-valved, rarely 10-celled and 10-valved, as in *R. arboreum*, with a septical dehiscence at the apex. Placentas simple, angle. Seeds compressed, sphaeriform, winged.—Shrubs or trees, usually evergreen. Leaves alternate, quite entire, terminated by a spacieal apex, or yellow gland. Flowers terminal, corymbose, showy.


1 R. *Po'nticum* (Lin. spec. 562.) leaves oblong-lanceolate, glabrous on both surfaces, attenuated towards the thick petals, with a streak on the upper surface, of a wide lanceolate form; racemes short, corymbose.  h. H. Native of Asia Minor, at Pontus; and of Gibraltar, Iberia, and Caucasus, in wet places in beech and alder copices. Pall. fl. Росс. 1. p. 43. t. 29. Jacq. icon. rar. 1. t. 78. Lam. ill. 504. Curt. bot. mag. 650. Leaves sometimes becoming ferrugineous beneath. Corolla purple, large, with ovate, acute, or lanceolate segments. Calyx minute, 5-toothed, somewhat cartilagineous. This is a very common plant, and there are a great many varieties. The most remarkable are those with white, red, or bluish flowers, and striped leaves. Tournefort has related that the flowers of this species were reputed to impart a noxious quality to honey; this Guldentadt contradicts, and imputes it to *Azalea Pontica*.

Var.  *ê. obtùsum* (Wats. dendr. brit. t. 162.) leaves subcoritate, coriaceous, obtuse; calyx very short, unequally and undulately crenated.  h. H. Native of Pontus. Shrub 3-4 feet high. Flowers purple.

Var.  *ê. myr'git'folium* (Lodd. bot. cab. 909.) leaves small; flowers purple.  h. H. Native of Gibraltar.

Var.  *ê. Smíthii* (Sweet, fl. gard. n. s. t. 50.) leaves lanceolate, clothed with white tomentum beneath; corymbas many-flowered; ovarium tomentose, 10-celled; flowers of a rose purple, approaching to crimson, elegantly spotted with black.  h. H. A hybrid, raised by Mr. Smith, of Coombe Wood, from the seed of *R. Ponticum*, impregnated by the pollen of *R. arboreum*.

**Pontic** Rhododendron or Rose-bay. Fl. May, June. Clt. 1763. Shrub 6 to 12 feet.

2 R. *Máxi'mum* (Lin. spec. p. 563.) arboreous; leaves elliptic-oblong, acute, convex, bluish at the base, whitish or rusty beneath, glabrous; calyce segments oval-obtuse; segments of corolla roundish.  h. H. Native from Canada to Carolina, on the mountains near rivulets and lakes. Sims, bot. mag. 951. Lam. ill. 361. Schmidt, abr. t. 121.—Mill. fig. 229. —Catesus, caric. 3. t. 17. f. 2. Flowers pale red, in umbellate corymbs, studded with green, yellow, or purple protuberances.


3 R. *fur'pereum*; arboreous; leaves large, oblong-elliptic, flatish, acute, bluish at the base, green and glabrous on both surfaces; segments of corolla oblong, obtuse.  h. H. Native of Virginia and Carolina, on the highest mountains, near lakes. R. *Máxi'mum*  cà. purpur'ereum, Pursh, fl. amer. sept. 1. p. 297. Flowers large, purple. Calyce segments obtuse. This shrub approaches near to *R. Ponticum*, but it differs in its foliaceous calys, and otherwise. It grows to an immense size; its stem is often found 18 inches and more in diameter, and its foliage triple the size of any other species.


5 R. *Macrophy'llum* (D. Don, miss. in herb. Lamb.) leaves lanceolate, acute, glabrous on both surfaces, as well as the peduncles, rounded at the base; ovarium bristly.  h. H. Native of the north-west coast of America, where it was collected by Menzies. Petioles an inch long. Leaves 7-8 inches long. Flowers copious, smaller than those of *R. maximum*, white. Calyce lobes short, rounded. Filaments glabrous.

**Long-leaved** Rhododendron. Shrub.

6 R. *Catawbi'ense* (Michx. fl. bor. amer. 1. p. 258.) leaves short-oval, rounded, and obtuse at both ends, glabrous, of a different colour beneath; calyce segments elongated, oblong.  h. H. Native on the high mountains of Virginia and Carolina, particularly on the head waters of the Catawba River. Sims, bot. mag. 1671. Lodd. bot. cab. 1176. Flowers purple, disposed in umbellate coryms.

Var.  *ê. Russel'li'annum* (Sweet fl. gard. n. s. t. 91.) leaves oblong, finely tomentose beneath; corymbas many-flowered; flowers of a bright rose red, approaching to crimson.  h. H. A hybrid, raised from the seed of *R. Catawbi'ense*, impregnated by the pollen of *R. arboreum*, by Mr. Russell, of Battersse.


7 R. *Brachycar'rum* (D. Don, miss. in herb. Lamb.) leaves elliptic-oblong, obtuse, clothed with rusty tomentum beneath, rounded at the base; ovaries 5-celled, and are as well as the peduncles hairy.  h. H. Native of Japan. Petioles half an inch long. Leaves 3 inches long. Calyce lobes very short, roundish, revolute, callous. Style elongated. Stigma clavate.

**Short-fruited** Rhododendron. Shrub.

8 R. *Chrysanth'um* (Linn. syst. 405. suppl. 237.) leaves acutish, attenuated at the base, oblong, glabrous, reticulately veined, and of a rusty colour beneath; flowers and buds clothed with rusty tomentum; pedicels hairy; calyce hardly any; segments of the corolla rounded; ovarium tomentose.  h. H. Native of Siberia, on the highest mountains, and of Caucasus. Pall. itin. append. p. 729. no. 87. t. n. f. 1-2. fl.Ross. 1. p. 44. t. 30. Woodv. med. bot. 433. t. 149. Plenk, 5 p 2.
par. Lond. t. 80.—Gmel. sib. 4. t. 54. R. officinale, Salisb. p. 191. t. 54. Branches decumbent, beset with rusty stipular-lobed segments. Flowers handsome, large, drooping, revolute, rather irregular, yellow. Stigma 5-lobed. The plant and its effects were first described by Gmelin and Steller, who mention it as used in Siberia for the cure of rheumatism; with us it is used in decoction as a substitute for Colchicum. (F. 141.)

ERICACEE. XLIII. Rhododendron.

20 R. formosum (Wall. pl. rar. asiat. 3. p. 3. t. 207.) leaves lanceolate, acute, attenuated at the base, beset with rusty dots beneath; segments reflexed; ovary 10-celled. ♀. F. Native of Nipaul. Leaves an inch and a half long. Flowers about the size of those of R. Ponticum, white, suffused with red. Limb of calyx short.

Showing Rhododendron. Shrub.

Sect. III. _Pogonanthum_ (from πογον, pegon, a beard; and ἀνθος, anthos, a flower; throat of corolla woolly inside). Limb of calyx short, 5-lobed. Corolla salver-shaped, with a cylindrical tube, and a spreading limb. Stamens 8, included. Ovary 5-celled.—Leaves evergreen, coriaceous.


Bearded, flowered Rhododendron. Fl. April, May. Clt. 1820. Shrub 1 to 1½ feet.

Sect. IV. _Leptophorum_ (from λεπτός, lepis, a scale; and θερός, pheho, to bear; leaves covered with small scales). Limb of calyx dilated, 5-lobed. Corolla campanulate or rotate. Stamens 10. Ovary 5-celled.—Leaves membranous, sometimes deciduous.

22 R. _Lepidoptera_ (Wall. cat. 733.) every part of the plant is beset with ferruginous scale-like dots; leaves spatulate or lanceolate, attenuated at the base, beset with round scale-like dots, as well as the branchlets, ferruginous beneath; calycine segments rounded; corollas short, campanulate, lepidotomous, with roundish entire lobes; capsules also lepidotomous; filaments woolly at the base. ♀. F. Native of Nipaul. A widely-branched shrub, with the habit of _R. Dnatricum_. Leaves of a thinner texture, about an inch long. Flowers as well as the capsule covered with round rust-coloured scales. Flowers deep pink, solitary or 2-5 together, terminal, on short filiform pedicels.

Scaly-dotted Rhododendron. Shrub 2 to 3 feet.


Flowers crimson, disposed in umbellate corymbs, 5-6 together, surrounded by large dotted scales or bracteae. Calyx covered with yellow scales, ciliate. Segments of corolla unequal, undulate. Stamens 5-8, equal in length to the corolla. Stigma capitate, 5-lobed. Filaments hairy at the base.


24 R. _Dauricum_ (Lin. spec. 562.) deciduous; leaves oblong, attenuated at both ends, glabrous, lepidotomous from rusty scales, particularly beneath; limb of calyx 5-toothed; corollas rotate. ♀. H. Native of Siberia, peculiar to the alpine tracts of Eastern Asia; it appears first at the mouth of the river Yenesei, and beyond that, especially from the river Ula, in the pine woods, it begins to be common; but about the Baikal it is most abundant, and extends through the deserts of the Mongols to China and Thibet; at the Lena it becomes more rare, and beyond that it is much dwarfer, with more slender flowers and narrower leaves. Pall. fl. rosse. 1. p. 47. t. 32. Andr. bot. rep. t. 4. Curt. bot. mag. t. 636. Lodd. bot. cab. 605.—Amn. ruth. 151. t. 21. Roots knotted, bound by fibres. Stems twisted and knotted in the wild state. Petioles downy. Leaves dotted on both surfaces, but ferruginous beneath; before the fall in autumn they become of a dusky red colour. The flowers rise before the leaves from the tops of the branches, from buds which are composed of concave downy scales. Corollas purple.

Var. _β._ atrorubens (Ker. bot. reg. t. 134.) evergreen; leaves deep green and shining above. ♀. H. Native of Siberia. Sims. bot. mag. 1888.


Sect. V. _Chameleitrus_ (from χαμαι, chamai, on the ground; and cistus, the rock-rose: plants with the habit of _Helianthemum_. Limb of calyx foliaceous, 5-celled. Corolla rotate. Stamens 10. Ovary 5-celled.—Leaves small, membranous, evergreen.


26 R. _Chameleitrus_ (Lin. spec. 562.) leaves oblong-lanceolate, attenuated at both ends, stiifo, glanularily ciliated; peduncles usually twin, and are as well as the calyces beset with glandular hairs. ♀. H. Native of the Alps of Europe; as of Austria, Carniola, Mount Baldo, and near Salzburg; and in Eastern Siberia. Jacq. fl. austr. 3. t. 217. Curt. bot. mag. t. 488. Lodd. bot. cab. 1491.—Mich. gen. 225. t. 106.—Plak. phyt. t. 23. f. 4. Corollas rotate, pale purple. A dwarf tufted shrub, with small leaves, about the size of those of a species of _Helianthemum_.


27 R. _Indicum_ (Sweet. fl. gar. n. s. 128.) branches strigose; leaves cuneate-lanceolate, finely crenulated, strigose, attenuated at both ends; calyceate teeth long-lanceolate, obtuse, ciliated, spreading; flowers terminal, solitary or twin, decandrous. ♀. H. Native of China. Much cultivated in Japan for the sake of its elegant flowers. Azaela Indica, Lin. spec. 214. Thunb. jap. 84. Sims. bot. mag. 1480. Lodd. bot. cab. 275.—Hern. lutea. 152. t. 128. Tsutsuji, kwempf. amoen. 714. t. 146. Flowers showy, scarlet or red.

Var. _β._ plicatum (Sweet. fl. gar. n. s. 117.) calyx very hairy, with subulate segments; leaves elliptic, acute; flowers decandrous, terminal, 2-3 together. ♀. G. A hybrid between _R. edulis_ and _R. indicum_. R. Indicum, var. _γ._ Smithii, Sweet, horit. brit. 2. p. 343. Corollas large, of a deep rosy purple, spotted with deep red inside.

Var. _γ._ ignescens (Sweet. fl. gar. n. s. 128.) The four lower segments of the corolla flame-coloured, and the superior one lilac, and absolutely dotted. ♀. S. Native of China.
**Ericaceae. XLI. Rhododendron.**

Var. ē, aurantiacum; flowers of orange-red colour. ½. G. Native of China.

Var. ē, luteum (Sweet. I. c.) flowers double, yellow.

Var. ē, variegatum (Blum. bijdr. 851.) leaves oblongate, covered with white silky bristles; flowers rose-coloured, variegated with white. ½. G. Native of China and Japan.

Var. ē, spatulatum (Blum. bijdr. 852.) leaves spatulate, mucronate, beset with rusty stigae; flowers rose-coloured. ½. G. Native of China and Japan.

Var. ē, grandiflorum (Blum. bijdr. 853.) leaves oblongate, mucronate, beset with white bristles or stigae; flowers large, solitary, deep rose-coloured. ½. G. Native of China and Japan.

Var. ē, augustifolium (Blum. I. c.) leaves narrow-lanceolate.

Var. κ, floribundum (Blum. I. c.) leaves narrow, cuneate-lanceolate, beset with rusty stigae; stem much branched. ½. G. Native of China and Japan.

**Indian Rhododendron.** Fl. March, May. Clt. 1808. Shrub 3 to 6 feet.

28 R. scabrum; leaves ovate, mucronulate, acute at the base, ribboned beneath, beset with adpressed bristles, as well as the branchlets and peduncles; flowers deciduous; filaments papillose; anthers corniculate at the base; stigma dilated. ½. G. Native of Japan, in woods on mountains. R. maximum, Thunb. fl. jap. p. 181. Flowers deep rose-coloured, campanulate, usually twin. Lobes of corolla oblong, obtuse, twice longer than the tube. Stamens exerted. Calyces segments oval, obtuse, ciliated. Leaves 1 ½ to 3 inches long, coriaceous. Corolla 3 inches in diameter.

Scabrous Rhododendron. Shrub.

29 R. macranthum; leaves opposite or 3 in a whorl, obovate or lanceolate, mucronulate, shining, clothed with adpressed bristles; flowers pentandrous; calyces segments lanceolate, acute, deeply toothed, bristly; filaments glabrous. ½. G. Native of Japan. Azalea macranthum, Bunge, in mem. acad. peteb. 2. p. 115. R. nitens, D. Don, mss. Stems several, rising from the root-stocks, 2-4 feet long, procumbent, naked. Branches fascicled, leafy at the tips, beset with adpressed silky bristles, which change to brown, as well as the calyces. Flowers solitary or in pairs, nearly sessile, involucrated by bracteae. Corollas large, of a brilliant salmon-colour, glabrous outside; the limb spreading with oblong blunt lobes; the upper lobes marked with deeper coloured spots. There is a variety of this species, having the flowers pale pink and striped.

Descr. 1833. Shrub procumbent, 2 to 3 feet.

30 R. reticulatum (D. Don, mss.) leaves broadly ovate, acute, rather coriaceous, sparingly hairy, glaucous and reticulately veined beneath. ½. G. Native of Japan, on the mountains, and has been lately introduced by Mr. Knight, of King’s Road, Chelsea. Stems erect, a foot or 2 feet high, stiff. Leaves stiff, 1 ½ inch long, rounded at the base, bright green and shining above, beset with a few adpressed bristles as well as the young shoots. Flowers not seen.


31 R. Farrer(e) (Tate, in Sweet. fl. gard. n. s. t. 95.) branches stiff, villous while young, but glabrous in the adult state; leaves stiff, coriaceous, ovate, obtuse, ending in a short ciliarginous mucrone, attenuated at the base, nerved and reticulately veined, hairy on both surfaces, with somewhat recurved ciliated edges; petioles ciliated at the base; flowers terminal, solitary. ½. G. Native of China, from whence it was brought by Capt. Farrer. Calyx pilose, 5-lobed. Corolla spreading, with undulate segments, lilac or pale purple-red. A dwarf deciduous shrub. Flowers deciduous.


32 R. phœnicium; hairy, leaves oblong-obovate, tapering into the petioles at the base; flowers collected at the tops of the branches, large, deciduous; stamens short; calyx erect, glan-

Var. β, flore pleno (Hook. bot. mag. 2509.) flowers double, purple. Lodd. bot. cab. 1461.

**Purple Rhododendron.** Fl. May. Clt. 1824. Shrub 3 to 10 feet.


34 R. mucrona-tum; much branched; branches pilose; leaves cuneate-oblong, mucronate, clothed with cream hairs; flowers in fascicles; calyces segments long-acuminate, pilose; flowers octandrous and deciduous. ½. G. Native of China. Flowers white. Azalea mucronata, Blum. bijdr. p. 853.—Perhaps the same as R. ledifolium.

Mucronate-leaved Rhododendron. Shrub.

35 R. Burman’s; leaves linear-lanceolate, long-acuminate, with recurved margins, clothed with silky villi on both surfaces. ½. G. Native of Japan. Azalea rosamarniformis, Burm. ex Blum. bijdr. p. 853. but not of Roth. Flowers pentandrous.

**Burman’s Rhododendron.** Shrub.

36 R. mollis; branchlets pilose; leaves oblong-lanceolate, acute, narrowed at the base, ciliated, very soft beneath; flowers in fascicles; calyx very short; tube clothed with silky tomentum; flowers pentandrous. ½. G. Native of China. Azalea mollis, Blum. bijdr. p. 853.

Soft Rhododendron. Shrub.

37 R. Lowereîîâna; leaves lanceolate, quite entire, rugose about the edges, smooth; corolla white, dotted with red, as also the calyx, anthers, and gynaeae. ½. G. Native of Cochin-China. Azalea punctata, Lour. coeb. p. 113. Flowers disposed in terminal heads.

**Lowereîî’s Rhododendron.** Shrub 4 to 5 feet.

38 R. decumens (D. Don, mss.) stems decumbent; leaves ovate, acute; flowers pentandrous; segments of the calyx ovate, acute, ciliated. ½. G. Native of China, from whence it has been lately introduced by Knight and Tate. Flowers crimson.


39 R. Simone (Sweet. fl. gard. 290.) leaves slowly deci-
duous, elliptic, acutish, pilose, pubescent, feather-nerved, with ciliated margins, crenate beneath; corollas downy; stamens equal in length to the limb of the corolla. ½. G. Native of China. Azalea Sinensis, Lodd. bot. cab. 885. Flowers flame-coloured, pentandrous.

Var. β, flavescens (Sweet. fl. gard. 290.) flowers yellow.

**Chinese Rhododendron.** Fl. May, June. Clt. 1823. Shrub 3 to 4 feet.

**Sect. VII. Pentanthera** (from πεντε, pente, five; and ανθηρα, anthera, an anther; flowers pentandrous). Limb of calyx short, 5-lobed. Corolla funnel-shaped. Stamens 5. Ovarium 5-celled. Leaves deciduous.
40 R. flava; flowers leafy, clamy; leaves ovate, oblong, pilose, ciliated; corolla funnel-shaped; stamina very long. H. Native of the Levant, at Pontus; Caucasus, Turkey, &c. Azalea Pönica, Lin. spec. 1669. Curt. bot. mag. t. 433. Azalea arborea, Lin. spec. ed. 1. p. 150.—Buxb. cont. 5. p. 36. t. 69. Flowers fine yellow. Leaves shining. There are a great variety of species of this species in the gardens, differing principally in the colour of the flowers, and the hue of the leaves. The flowers are of all shades, from yellow to copper or orange-coloured. They are sometimes white, (see Sims, bot. mag. 2383.), and are sometimes striped with yellow and red.

Yellow-flowered Rhododendron. Fl. May, June. Ch. 1793. Shrub 4 to 6 feet.

41 R. nudiflorum (Torr. fl. un. st. 1. p. 140.) leaves lanceolate-oblong, nearly smooth and green on both surfaces, ciliate on the margins, having the mid-rib bristly beneath, and woolly above; flowers rather naked, not clammy; tube of corolla longer than the divisions; teeth of calyx short, rather rounded; stamina much exerted. H. Native from Canada to Georgia, on the sides of hills. Azalea nudiflora, Lin. spec. 214. Azalea periclymenoides, Michx. fl. bor. amer. 1. p. 151. This beautiful shrub has a great many varieties, besides those mentioned below, for which see Loud. hort. brit. p. 66. and supplement, among which is one with double flowers. Flowers scarlet, pink, white, striped, variegated, red, purple, &c., disposed in terminal clustered racemes, appearing before the leaves. The variety η proves clearly that Azalea and Rhododendron are not generically distinct.

Var. a, coccineum (Sims, bot. mag. 180.) flowers scarlet; leaves lanceolate. H. Native of Georgia, near Savannah.


Var. γ, carneum (Pursh, l. c.) corollas pale red, having the tube red at the base; calyx foliaceous. H. Ait. l. c. Ker. bot. reg. 120.

Var. ε, album (Pursh, l. c.) flowers white; calyx middle-sized. H. Ait. l. c.

Var. µ, papilionaceum (Pursh, l. c.) flowers reddish, with the lower segment white; calyx foliaceous. H. Ait. l. c.

Var. ζ, partitum (Pursh, l. c.) flowers pale red, 5-parted even to the base. H. Ait. l. c.

Var. η, polyandrum (Pursh, l. c.) flowers rose-coloured, short; stamina 10-20. H. Native near Philadelphia.

Var. θ, Gallohero (Pursh, l. c.) branches tomentose-dowly; leaves evergreen are deciduous, oblong, acute, downy white, glabrous, in the adult state, and recurved at the apex; tube of corolla a little longer than the segments. H. A hybrid, raised from the seed of R. nudiflorum, impregnated by the pollen of a hybrid raised between R. Pönicum and R. Catawbineum. Flowers delicate light purple, disposed in terminal racemose corymbs. R. Govenián, Sweet, fl. gard. 3. t. 283.

Var. ι, rufum (Lodd. bot. cab. t. 51.) flowers red. H. Naked-flowered Rhododendron. Fl. April, June. Ch. 1734. Shrub 3 to 4 feet.

42 R. viscósum (Torr. l. c.) leaves oblong-ovobate, acute, smooth and green on both surfaces, ciliated on the margins, having the mid-rib bristly; flowers clammy, leafy, hairy; tube of corolla as long as the segments; teeth of the calyx short, rounded; stamina hardly longer than the corolla. H. Native from Canada to Georgia, in swamps and shuddy woods. Azalea viscosa, Lin. spec. 214.—Pluck. alm. 106. t. 161. f. 4. Catesb. car. l. t. 57. Flowers white, sweet-scented, in terminal clusters, downy. There are a great number of varieties of this species, (see Loud. hort. brit. p. 66.), varying in the colour of the flowers, and otherwise. The flowers are white and red, and variegated with these colours. There is a downy variety with red flowers figured in Lodd. bot. cab. t. 441.

Var. β, ornánatum (Sweet, fl. gard. n. s. 137.) A hybrid raised from the seed of R. viscosum β rubéscens, fertilized by the pollen of R. Pönicum.


Var. β, Mortérí (Sweet, fl. gard. n. s. t. 10.) A hybrid between R. caeruleuca and one of the red varieties of R. nudíflora. There are also two kinds of this; one with a flesh-coloured corolla, having the upper segment orange-coloured, edged with flesh-colour, called R. Mortérí cárnea; and another called Mortérí, var. práestans, with pale copper-coloured flowers, tinged with blush.

Marygold Rhododendron. Fl. May, June. Ch. 1806. Shrub 2 to 6 feet.

44 R. arbórescens (Torr. l. c.) leaves obovate, rather obtuse, smooth on both surfaces, glaucous beneath, ciliated on the margins, having the mid-rib almost smooth; flowers not clammy, leafy; tube of corolla longer than the segments; calyx leafy, with the segments oblong and acute; filaments exerted. H. Native of Pennsylvania, on the sides of rivulets near the Blue Mountains. Azalea arbórescens, Pursh, fl. amer. sept. 1. p. 153. Flowers large, reddish; leaves of flower-buds large, yellowish brown, surrounded with a fringed white border.

Arborescens Rhododendron. Fl. May, July. Ch. 1818. Tree 10 to 20 feet.

45 R. sérínæ (Torr. l. c.) branches smoothish; leaves obovulate, rather mucronate, coriaceous, smooth on both surfaces, shining above, having the nerve bristly beneath, with revolute ciliated margins; flowers clammy, leafy; tube of corolla a little longer than the segments; calyx very short; filaments exerted. H. Native from New York to Virginia, in deep mossy swamps on the mountains. Azalea nitidã, Pursh, fl. amer. sept. 1. p. 153. Ker. bot. reg. 414. Flowers white, tinged with red. Leaves dark green, shining, smaller than any other species of the present section.


46 R. hispidum (Torr. l. c.) branches straight, very hispid; leaves long-lanceolate, hispid above, and smooth beneath, glaucous on both surfaces, ciliated on the margins, having the nerve bristly beneath; flowers very clammy; leafy; tube of corolla wide, scarcely longer than the segments; teeth of calyx oblong, rounded; filaments exerted. H. Native of New York and Pennsylvania, on the borders of lakes on the highest part of the Blue Mountains. Azalea hispidã, Pursh, fl. amer. sept. 1. p. 154. Watts. dendr. brit. 6. Azalea viscosa, var. glátea, Ait. hort. kew. 1. p. 219. Flowers white, with a red border, and a tinge of red on the tube, which makes them appear to be of a rose-colour before expansion. Stamens sometimes 10. This species may be distinguished from the rest of the present section by its bluish appearance.


47 R. nicolor; leaves oblong, clothed on both surfaces with fine hoary pubescence, not bristly on the nerve; flowers small,
not clanny, naked; tube of corolla hardly longer than the segments; calyx very short: having one of the segments linear, and 4 times longer than the rest; filaments exserted; branchlets hispid.  ♂. H. Native of Carolina and Georgia, on barren sandy hills. Azalea bicolor, Pursh, fl. amer. sept. 1. p. 153. Azalea nudiflora, var. bicolor, Ait. hort. kew. 1. p. 319.—Trew. chrest. t. 48. Flowers slender and smaller than the rest, of a pale rose-colour, or nearly white, with a deep red-coloured tube.


48 R. glaucus; branchlets hispid; leaves oblongate, acute, glabrous on both surfaces, glaucous beneath, ciliated on the margins, having the mid-rib bristly; flowers very clanny, leafy; tube of corolla twice longer than the segments; calyx very short; filaments about equal in length to the segments of the corolla. ♂. H. Native from New England to Virginia, in swamps of a clayey soil. Azalea glauca, Pursh, fl. amer. sept. 1. p. 154. Lam. ill. p. 493. Wats. dendr. brit. 5. Azalea viscosa, var. florifluida, Ait. hort. kew. 1. p. 319. Flowers white, very fragrant. The shrub is dwarfer than other species of the present section, and flowers in great abundance. Nuttall considers this as only a variety of A. viscosa, differing in nothing but in the under sides of the leaves being glaucous.


49 R. canescens; leaves ovate-oblong, downy above, and tomentose beneath, not bristly at the middle nerve; flowers not clanny; nearly naked; tube of corolla hardly shorter than the segments; teeth of calyx very short, rounded, obtuse; stamens hardly exserted. ♂. H. Native of Lower Carolina, on the banks of rivers; and of Virginia, on the mountains of the Cacapon Springs, near Winchester. Azalea canescens, Michx. fl. bor. amer. 1. p. 150. Wats. dendr. brit. 116. Flowers rose-coloured.


50 R. spectosum; branches hairy; leaves lanceolate, ciliated, acute at both ends; calyx pubescent; corolla silky, with obtuse, ciliated, lanceolate, undulated segments; stamens exserted. ♂. H. Native of North America. Azalea speciosa, Willd. enum. p. 66. Lodd. bot. cab. 1244. Wats. dendr. brit. 116. A cocinea, Lodd. Flowers scarlet and orange-coloured. There are several varieties of this species, varying in the shape of the leaves and the colour of the flowers; see Loud. hort. brit. p. 66. Lodd. bot. cab. 1255.


Sect. VIII. Rhodora (from ρόδος, rhodon, a rose; colour of flowers). Leaf of calyx 5-toothed. Corolla bilabiate; upper lip broadest, and 2-3-eleft; lower one bidentate. Stamens 10. Capsule 5-celled, 5-valved.—Leaves deciduous. Habit of last section.


Cult. Of all the genera in existence, Rhododendron comprises the most handsome, elegant, and showy shrubs, well fitted for adorning shrubberies, or to be grown singly on lawns. All the species grow best in peat soil, or very sandy loam, or vegetable mould: they are either increased by layers or by seeds. When raised in the latter way, the seeds must be sown early in the spring, in flat pans or pots, filled with peat earth, and covered very slightly; the pots or pans should then be set in a close frame, or at the front of a hot-house, till the plants come up, watering them very slightly when dry; and as soon as the seedlings have grown high enough to be laid hold of, they should be planted out into other pans or pots, filled with the same kind of mould; after which they may stand in a close frame for a few days, until they have struck fresh roots, and afterwards hardened to the air by degrees. The smaller kinds of Rhododendron may be propagated freely by cuttings, taken off from young wood, and planted in sand, placing a bell-glass over them. There are now in the gardens a great many hybrid kinds of Rhododendron, and are still increasing in number; some of which outvie the species in splendour. The species natives of Nipaul, China, and Japan, in mild winters, would probably succeed in the open air, but they will not survive a severe winter without protection; they are therefore best kept in pots, and placed among other greenhouse or frame plants. R. arboreaum and R. album are among the most showy of the species, and are well adapted for conservatories, or to be placed in large tubs in the greenhouse. Young cuttings of the tender kinds, if torn off close to the stem, and planted in a pot of sand, will strike root readily; the pot should be plunged in heat under a hand-glass.

XLIV. VIREYA (named by Blume after M. Virey, a French physician). Blum. bijdr. p. 854.

Lin. Syst. Decauaria, Monogynia. Calyx small, absolutely 5-toothed. Corolla subcampanulate, or funnel-shaped, regular, 5-lobed, adnate to the disk of the calyx. Stamens 10, inserted in the calyceine disk; alternate filaments the shortest; anthers oblong, bursting inwardly, naked, delisising by two pores at the apex. Style filiform; stigma capitate, 5-furrowed. Capsule silique-formed, 5-angled, 5-celled. Placentae 5-lobed. Seeds numerous, expanded into a bristle-formed awn at both ends.—This genus differs from Rhododendron in the calyx being small, and in the stamens not being attached to the corolla in any way.—Mostly parasitical shrubs. Leaves scattered and verticillate, quite entire, coriaceous, covered with scaly dots beneath. Flowers disposed in terminal fascicles.

* Corollas subcampanulate.

1 V. Javaica (Blum. bijdr. 854.) leaves oblong-lanceolate, clothed with fine rusty dots beneath; flowers showy, deep orange. ♂. G. Native of Java, at the foot of Mount Salak, where it is called by the natives Gaja Mirka. Var. 3; flowers citron-coloured, smaller.

Java Vireya. Fl. Year. Shrub.

2 V. solea (Blum. bijdr. 855) leaves lanceolate, densely clothed with rusty scales beneath; flowers white, middle-sized. ♂. G. Native of Java, on Mount Salak, parasitical upon trees. Rhododendron album, Blum. cat. hort. butinz. p. 72.

White-flowered Vireya. Fl. Year. Shrub.

* * Corollas funnel-shaped.

3 V. tubiflora (Blum. bijdr. 855.) leaves lanceolate, densely clothed with rusty dot-like scales beneath; flowers scarlet. ♂. G. Native of Java, on the higher mountains.

Tub-flowered Vireya. Fl. Year. Shrub.

4 V. Celebica (Blum. i. c.) leaves broad, lanceolate, clothed with rusty dot-like scales beneath; flowers scarlet. ♂. G. Native of the Celebes, in mountain woods.

Celebes Vireya. Fl. Year. Shrub.

5 V. retusa (Blum. bijdr. 856.) leaves spatulate, retuse, with recurved margins, beset with rusty dots beneath; branches
ERICACEÆ. XLV. BEJARIA. XLVI. HYMENANTHES.

rough; flowers scarlet. ½. G. Native of the west of Java, on high mountains.

_Recuse-leaved_ Vireya. Fl. Year. Shrub.

_Cult._ For culture and propagation, see _Agarista_, p. 838.


_Lin. syst._ Dodecándria, Monogónia. Calyx deeply 7-cleft. Corolla so deeply 7-cleft as to appear of 7 petals, spreading. Stamens 14, hypogynous; anthers oblong or pendulous, awnless. Ovarium free, 7-furrowed. Style elongated; stigma depressedly capitate, 7-furrowed. Capsule depressedly globose, girded by the permanent calyx, and terminated by the style, 7-celled, 7-valved, with a sepicalid dehiscence; cells many-seeded.

—_Elegant alpine shrubs_; with scattered, crowded, quite entire, coriaceous leaves; racemose or corymbose, bracteate flowers. Corollas usually purple.

1 B. _resinosă_ (Mutis, Amer. 1. t. 8. Lin. syst. 443. suppl. 246.) branches downy; leaves ovate, smooth; corymb terminal, simple; pedicels downy; corollas resinous and viscid; filaments downy near the base. ½. G. Native of New Granada. Branches prolificous. Leaves an inch long. Corollas purple.

_Resinosus-leaved_ Bejaría. Shrub 3 to 5 feet.


3 B. _glauca_ (Humb. et Bonpl. pl. aquin. 2. p. 118. t. 177.) glabrous; leaves oblong, obtuse, glaucous beneath; racemes terminal and auxiliary; pedicels somewhat fastigate. ½. G. Native of South America, in the alpine region of the province of Venezuela, near the top of Silla de Caracas. Shrub much branched; branchlets angular. Corolla flesh-coloured, glabrous; filaments glabrous.


4 B. _coarctata_ (Humb. et Bonpl. pl. aquin. 2. p. 125. t. 121.) branches clothed with pubescent tomentum; leaves oblong, glabrous, glaucous beneath; corymbs terminal, simple; peduncles, pedicels, raci, and calyxes clothed with rusty tomentum. ½. G. Native of Peru, in cold places near the city of Caxamarca. Shrub much branched. Flowers purple. Filaments glabrous, but dilated and pubescent at the base.

_Coarctata-corymbose_ Bejaría. Shrub 4 to 5 feet.

5 B. _graniflora_ (Humb. et Bonpl. pl. aquin. 2. p. 120. t. 119.) leaves ovate, glabrous above, but clothed with rusty tomentum beneath, as well as the pedicels, pedicels, raci, calyxes, and branchlets; corymb terminal, branched a little, many-flowered. ½. G. Native of the province of Quito, in cold places between Loxa and Oxa, in Paramo de Saraguro; and near Alto de Pulla, and Vinacuac. Shrub much branched; branches subverticillate. Corollas purple, about the size of those of _Dictamnus albus_. Filaments glabrous, but dilated and ciliated at the base.

_Great-flowered_ Bejaría. Shrub 3 to 4 feet.

6 B. _x'estusANS_ (Mutis, in _Lin. fl._ suppl. 247. mant. 242. Humb. et Bonpl. pl. aquin. 2. p. 120. t. 118.) leaves elliptic, rather glabrous above, but downy and glaucous beneath, while young clothed with rusty tomentum, and ciliated with glands; coryms terminal, simple; peduncles, pedicels, raci, calyxes, and branchlets clothed with clammy glandular hairs. ½. G. Native of New Granada, near Gonzauama. Much branched; branchlets subverticillate. Flowers smaller than those of the preceding, purple. Filaments villous at the base.

_Heating_ Bejaría. Shrub 10 to 15 feet.

7 B. _ledifolia_ (Humb. et Bonpl. pl. aquin. 2. p. 124. t. 120.) leaves oblong, somewhat mucronate, with revolute edges, glaucous beneath, beset with glandular hairs on both surfaces along the middle nerve; racemes terminal; peduncles, pedicels, raci, branchlets, and calyxes clothed with clammy glandular hairs. ½. G. Native of South America, on the top of Silla de Caracas. Shrub much branched; branches purplish. Flowers about the size of those of _B. glauca_, purple.

_Ledum-leaved_ Bejaría. Shrub 3 to 4 feet.

8 B. _Caxamarcaësis_ (H. B. et Kunth, nov. gen. amer. 3. p. 294.) branches pilose; leaves oblong, glabrous above, pubescently hairy and glaucous beneath; corymb terminal, simple; peduncles, pedicels, and rachi, clothed with rusty pilose tomentum; calyxes hairy. ½. G. Native of Peru, on the Andes, about Caxamarca. A much-branched shrub. Flowers size of those of the preceding, purple; petals narrow.

_Caxamarca_ Bejaría. Shrub 5 to 4 feet.

9 B. _lançolata_ (Ruiz et Pav. fl. per. 4. t. 1513. f. 3.) branches and racemes hairy; leaves ovate-lanceolate; corymbs simple, racemose; pedicels short. ½. G. Native of Peru, on the high hills of Rodos Pilloa and Huassa-Huassì, where it is called _Rosa-Rosa, or Rosa Huagetta_. Acúmn lanceolata, Ruiz et Pav. syst. p. 124. Flowers purple or rose-coloured.


10 B. _oblonga_ (Ruiz et Pav. fl. per. 4. t. 1513. f. a.) leaves oblong, with revolute margins; flowers corymbose; pedicels long. ½. G. Native of Peru, in the province of Tarum, at Churupallana; and of Pantañaha, at Acónaya and Macora, where it is called _Rosa-Rosa, from the copious rose-coloured flowers_. Acúmn oblonga, Ñuñahu, Ruiz et Pav. syst. p. 123. Flowers purple or rose-coloured. Branches, petioles, and corymbs downy. Corymbs compound.

_Oblong-leaved_ Bejaría. Shrub 4 to 5 feet.

_Cult._ For culture and propagation see _Agarista_, p. 838. Extremely elegant plants, with the habit of some species of _Rhododendron_, and are therefore well worth the cultivator's care.

XLVI. HYMENANTHES (from ἱμενα, hymen, a membrane; and ἄνθος, anthos, a flower; in reference to the thin corollas). Blum. bijdr. 862.

_Lin. syst._ Dodecándria, Monogónia. Calyx small, obsolescently denticulated. Corolla campanulate, with a short compressed tube, and a 7-parted limb; segments of the limb imbricated. Stamens 14, hypogynous; alternate ones shortest. Anthers fixed by the back, mutic, opening by 2 pores at the apex. Ovarium free, girded by a nectariferous tumb margin at the base. Style long; stigma obtuse, 7-crenated. Capsule oblong, 7-celled, 7-valved, many-seeded.—Nearly allied to _Bejaría_, but differs from it in the small calyx and monopetalous corolla.

1 H. _Jarógiaca_ (Blum. l. c.) shrub a little branched; leaves subverticillate, 3 to 4 in a whorl, petiolate, oblong, acuminate, narrower at the base, quite entire, coriaceous, glabrous, reticulated above, veinless and yellowish beneath; flowers disposed in dense, terminal, bracteate spikes. ½. G. Native of Japan, from whence it was received by Blume under the name of _Rhododendron máximum._

_Japan_ Hymenantes. Shrub.

_Cult._ For culture and propagation see _Agarista_, p. 838.
ERICACEÆ. XLVII. KALMIA. XLVIII. MENZIESIA. XLIX. AZALEA.


LIN. SYST. DECIDUIRA, Monogynia. Calyx 5-parted. Corolla salver-shaped; under side of limb producing 10 corneous tuber- tendrums, and as many cavities on the upper side, in which the anthers lie, or are concealed. Capsule 5-celled, many-seeded; dissections marginal.—Evergreen shrubs, with alternate or ternately verticillate leaves. Flowers disposed in terminal, raceme, compound corymb; but in one species the flowers are solitary and axillary. Pedicels long, 1-flowered, trichobraciate at the base; external bractea originating from the rachis. Buds naked. Anthers opening by two oblique truncate pores.—This genus is considered poisonous, and is often fatal to cattle.

1 K. LATIFOLIA (Lin. spec. 560.) leaves on long petioles, scattered, or in a whorl, oval, coriaceous, smooth and green on both surfaces; corymb terminal, downy, and viscid. H. Native from Canada to Carolina, on the sides of stony hills. Curt. bot. mag. 175. Bigel. med. bot. p. 133. Wangh. amer. t. 25. f. 50.—Catesb. ear. 2. t. 98.—Trew. chhr. t. 38. f. l.—Pluk. mant. t. 379. f. 6. A very elegant shrub when in flower: in America it is called Laurel, and on the mountains Calico-bush. Flowers red. It is not improbable that the delatereous honey in Philadelphia might have been collected from the bees from the flowers of the Calico-bush, which in some places pervades, in rocky woods and depressed summits of mountains, almost in a similar manner with Calluna vulgaris of Europe.


2 K. ANGUSTIFOLIA (Lin. spec. 561.) leaves petiolate, scattered, or 3 in a whorl, oblong, obtuse, rather rustly beneath; coryambre lateral; bracteas linear; peduncles and calyces clothed with glandular pubescence. H. Native from Canada to Carolina, in bogs, swamps, and sometimes in dry mountain lands. Curt. bot. mag. 331. Loddd. bot. cab. 502.—Catesb. ear. 3. t. 17. f. 1.—Trew. chhr. t. 38. f. 2. Flowers dark red. The shrub is known by the name of Sheep Laurel in North America, being considered very poisonous when fed upon by sheep. There are several varieties of this species besides the one mentioned, differing in the size of parts, and in the deeper and lighter shade of the corolla. See Loud. hort. brit. p. 171.

Var. 3, ovata (Pursh, fl. amer. spec. 1. p. 296.) leaves broader; stems taller. H. Native of New Jersey, on the mountains.


3 K. GLAUCA (Ait. hort. kew. ed. 2. p. 64.) branchlets 2-edged or triquetrous; leaves opposite, on short petioles, oblong, smooth, glaucous beneath, with revolute edges; coryambre terminal, compound, bracteate; pedicels and calyces glabrous. H. Native of bogs in Canada; and on the borders of mountain lakes of New York and Pennsylvania; and of the Island of Sitcha. Curt. bot. mag. 177. Lam. ill. t. 303. Lich. stirp. nov. 2. t. 9. Loddd. bot. cab. 1503. K. polifolia, Wangh. act. soc. herol. 8. p. 129. t. 5. A very handsome upright small shrub, with pale red flowers. According to Nuttall, the flowers are disposed in terminal compound corymb, each corymb composed of 3 racemose coryambules; and the pedicels and calyces are said by him to be clothed with powdery viscid pubescence.

Var. β, rosmarinifolia (Pursh, fl. amer. spec. 1. p. 296.) leaves linear, more revolute on the margins, and having the under surface green. H. Mr. Pursh discovered this variety in a bog near Albany, and is inclined to think it a distinct species.


4 K. CUNEATA (Michx. fl. bor. amer. 1. p. 257.) leaves scattered, sessile, cuneate-oblong, glabrously pubescent beneath, minutly awned at the apex; coryambre lateral, few-flowered. H. Native of Carolina, on the mountains. Branches twigg. Leaves deciduous. Flowers white, red at the bottom, disposed in sessile, lateral, fastigiate clusters.


Cult. Handsome shrubs when in blossom. They grow best in peat soil, and are increased either by layers or by seeds. When raised by seeds, they are reared and otherwise treated in the manner recommended for Rhododendron, which see, p. 848.


LIN. SYST. OCTODRURA, Monogynia. Calyx 4-lobed. Corolla tubular or globose: limb very short, 4-lobed, revolute. Staments 5, inclosed; filaments subulate, glabrous; cells of anthers parallel, connate, mutic at the base, and opening each by an oblique foramen at the apex. Stigma obtuse. Capsule ligneous, 4-celled, with a septical dehiscence. Placenta 4-lobed. Seeds scrobiform.—Deciduous shrubs, natives of North America. Leaves membranous, glaucous beneath. Pedicels numerous, terminal, 1-flowered, fascicled.

1 M. FERRUICNEA (Smith, icon. indec. 1. p. 56. t. 56.) corolla urceolate, with rounded lobes; leaves and branches hairy. H. Native of the north-west coast of America, particularly on the Columbia River; and of the Island of Sitka. Lam. ill. t. 285. M. urceolaris, Salisb. par. Lond. no. 44. Leaves ovate-lanceolate. Flowers of a rust-colour.


Three-flowered Menziesia. Shrub tall.

Cult. For culture and propagation see Azalea, p. 851.

XLIX. AZALEA (from αζαλεος, azaleos, dry, arid; habita-

LIN. SYST. Pentandria, Monogynia. Calyx 5-parted. Corolla short, campanulate, 5-cleft. Stamens 5, equal, shorter than the corolla; cells of anthers opening by a terminal pore. Style straight, inclosed. Capsule 5-celled: with 5 cloven-pointed valves, whose inflexed edges form the double partitions.—A small, evergreen, glabrous, procumbent shrub, with the habit of Thyme. Leaves opposite, small, elliptic, glabrous, with revolute margins. Flowers pedicellate, rising in fascicles from the axils of the upper leaves, small, red.


Cult. This small shrub grows well in a peat border, or in pots in sandy peat earth; it is easily increased by layers or by seeds.


LIN. SYST. Decandria, Monogyna. Calyx deeply 5-parted. Corolla 5-petalled. Stamens 10, exserted; anthers opening by 2 terminal pores. Capsule 5-celled, 5-angled, dehiscing at the apex.—A small, erect, bushy shrub. Leaves small, convex, oval, glabrous, shining. Flowers white, disposed in terminal corymbs; the delicacy of the leaves, and the abundance of its white flowers, are highly ornamental.


Cult. For culture and propagation see Ledum below.

LI. LEDUM (λάδος, ledon, was a name applied by the ancients to a plant producing the substance called Ladanum, and now known by the name of Cistus Ladanum; in foliage, the Ledum of modern botanists agrees with the plant of the ancients). Lin. gen. no. 846. Gaertn. fruct. 2. p. 145. t. 112. Juss. gen. 159. Nutt. gen. amer. 1. p. 975.  

LIN. SYST. Decandria, Monogyna. Calyx minute, 4-toothed. Corolla 5-petalled, spreading. Stamens 5-10, exserted; anthers opening by 2 terminal pores. capsule subovate, 5-celled, 5-valved, opening at the base, pedicellate. Seeds numerous, flat, linear, scarious, furnished with a membranous wing at each extremity. —Dwarf evergreen shrubs. Leaves coriaceous, with revolute margins, and tomentose on the under surface. Flowers white, disposed in terminal corymbs; pedicels bracteate at the base. Shrubs exhalng a peculiar scent when bruised.


2 L. latifolium (Ait. hort. kew. 2. p. 65.) leaves linear-oblong, with replicate margins, clothed with rusty tomentum beneath; stamens 5, about the length of the corolla. H. H. Native of Canada, in sphenogous swamps; Greenland, Labrador, Newfoundland, Hudson's Bay. This or the preceding species has lately been found in Ireland. Jacq. icon. 3. t. 464. Schmidt, arb. t. 164. Lam. ill. t. 363. f. 1. Lodl. bot. cab. 534. L. Grenlandicum, Retz, obs. 4. p. 26. Fl. dan. t. 567. L. païistre, Michx. fl. bor. amer. 1. p. 239. Flowers white. A larger and broader leaved shrub than the last; commonly called Labrador Tea; and the leaves are said to be a good substitute for it. Bees are very fond of the flowers.


3 L. Canadensis (Lodl. bot. cab. 1049.) leaves ovate petiolate, white beneath; flowers disposed in terminal umbellate corymbs, large. H. H. Native of Canada, in swamps. Flowers white.

Canadian Wild-Rosmary. Fl. April, May. Ct.? Shrub ½ to 1 foot.  

Cult. A peat soil, or very sandy loam answers best for the species of this genus; and they are readily increased by layers and seeds. The seeds should be sown, and the seedlings afterwards managed in the manner recommended for Rhododendron, p. 848.

Tribe III.  


LIN. SYST. Octo-Decandria, Monogyna. Calyx 4-5-toothed (f. 142. a.) Corolla urceolate or campanulate (f. 142. b.), more or less deeply 4-5-cleft; limb reflexed. Stamens 8-10, hypogynous. Anthers 2-horned (f. 142. d.), dehiscing at the summit, and sometimes furnished at the back with 2 spreading spurs or bristles. Style longer than the stamens; stigma obtuse. Berry globose (f. 142. e.), depressed at top, 4-5-celled (f. 142. f.), many-seeded.

—The species of Vaccinium are mostly confined to Europe and North America, but are peculiarly abundant in the latter country. They are suffruticos, shrubby, gemmaceous plants. Bud-scales often permanent, on the base of the small branches. Leaves alternate, membrosum, often beset with resinous dots, either permanent or deciduous. Flowers pedicellate, either solitary, simply racemose, or tufted, drooping, inodorous, generally very elegant, tinted with various shades of red or pink, never blue, scarcely yellowish.

3 a 2
Berries black, purple, bluish, or red, generally eaten, though not always pleasant, nor wholesome in a crude state. The species of this genus were all understood by Linnaeus, who therefore has led all following authors astray. In reviewing the whole, we find something to add, though we have many specimens that are dubious. We are obliged to follow the distribution of Linnaeus, into the evergreen and deciduous species, though some uncertainty must always attend that character respecting species known from dried specimens only.

§ 1. Leaves deciduous.

* Pedicels 1-flowered, usually solitary, rarely twin or fasciculated.

1 V. myrtillus (Linn. spec. 498.) pedicels solitary, 1-flowered; leaves serrated, ovate, smooth; stem acutely angular, smooth; calyx hardly divided. H. Native on heaths, stony moors, and mountain woods throughout most parts of Europe, especially the more northern; plentiful in Britain. Dr. Sibthorp gathered it on the Bithynian Olympus. It is common on the hills in the Island of Unalascha. Smith, engl. bot. 456. Fl. jap. 1794.—Gemmellinae 115. Math. valva. 1. p. 210. "The juice of them has been employed to stain paper or linen purple. In autumn the wood game chiefly live upon the product of this shrub. Mr. Menzies brought from the west coast of North America what can scarcely be considered more than a gigantic variety, 7 or 8 feet high, larger in every part, with less distinctly serrated leaves.

Myrtle-like or Common Bilberry, or Bleaberry. Fl. May. Britain. Shrub ½ to 2 feet.


Chamissonis’s Whortle-berry. Shrub 1 foot.

3 V. ovatifolium (Smith, in Rees’ cycl. no. 2.) pedicels solitary, 1-flowered; leaves elliptic, obtuse, pointless, entire, smooth, strongly veined beneath; stem angular; calyx hardly divided. H. Native of the north-west coast of America, where it was collected by Mr. Menzies; and in the Island of Sitcha by Bongard. Branches smooth, as acutely angled as in V. myrtillus. The leaves agree most in shape with V. ovatifolium, but are not a quarter the size, even when full grown. The berries are red, and make excellent tarts. They appear to be smaller than the last, and crowned with a similar calyx.

Small-leaved Bilberry. Shrub 8 to 10 feet.

5 V. geminifolium (H. B. K. Thunb. nov. gen. amer. 3. p. 287.) flowers axillary, twin, drooping, decandrous; leaves oblong, bluntish, crenulated, reticulately veined, rather membranous, glabrous; anthers furnished with 2 awns on the back. H. Native of Mexico, between Omitlan and Moran. Habit and stature of V. myrtillus. Branchlets angular, downy. Leaves 8-10 lines long, paler beneath. Corolla campanulate, ventricose at the base, with short ovate bluntish segments. Filaments membranous, glabrous.

Twin-flowered Whortle-berry. Shrub 1 foot.

6 V. hirtum (Thunb. jsp. 155.) pedicels solitary, 1-flowered; leaves ovate, serrated, hairy all over, as well as the young branches. H. Native of Japan, on the hills between Maaco and Jedo. Branches terete. Flowers on very short stalks.

Hairy Bilberry. Fl. April. Shrub 8 to 3 feet.

7 V. uliginosum (Linn. spec. 499.) pedicels somewhat aggregiate, 1-flowered; leaves obovate, entire, smooth; branches terete. H. Native of Sweden, Germany, Siberia, Switzerland, Savoy, Scotland, and the north of England; as well as in the more northern parts of America, and on its west coast; and in the Island of Sitcha, on marshy mountain heaths and alpine bogs. Smith, engl. bot. t. 581. Fl. dan. 231. Myrtillus grandid, Bauh. hist. 1. p. 518. Taller than the Common Bilberry, and of a more glaucous hue. Leaves glaucous beneath. Flowers flesh-coloured, with 8 long-horned stamens. Berries large, juicy, black, covered with a mealy bloom; they are eatable, but not either very grateful or wholesome. A variety with slightly pointed leaves was published by an apothecary at Berne, in 1757, as V. nuerronatum, an imaginary species.

Bog or Great Bilberry. Fl. April, May. Britain. Shrub 2 feet.

8 V. calycina (Smith, in Rees’ cycl. no. 7.) pedicels solitary, 1-flowered; leaves obovate, serrated, smooth, with downy ribs; branches angular; calyce segments deep, ovate. H. Native of the Sandwich Islands, in woods upon lofty mountains. Leaves 1½ inch long, and near an inch wide. Corolla oblong, with 5 angles.

Large-calycised Bilberry. Shrub 2 to 3 feet.

9 V. angustifolium (Ait. hist. kew. ed. 2. vol. 2. p. 356.) pedicels scattered, mostly solitary, 1-flowered, naked; leaves lanceolate, nearly entire, down at the ribs and margins. H. Native of Canada, about Hudson’s Bay and Labrador. Berries large, bluish black, known by the name of Blusets. V. myrtilloides. Michx. fl. bor. amer. 1. p. 234. Michaux says this species has the habit of V. myrtillus; its leaves being membranous, of a narrow lanceolate form.


10 V. salicifolium (Cham. et Schlecht. in Linnaea. 1. p. 525.) flowers axillary, solitary, on short pedicels; leaves cuneate-lanceolate, cuspidate, quite entire, rather coriaceous, reticulately veined; corolla cylindrically urceolate, with a 4-cleft revolute limb. H. Native of Unalascha, on mossy hills. Shrub trailing, glabrous, habit of Salix alpigena, creeping under the moss. Branches angular, cinnamon-coloured. Flowers drooping; calyptra leaves 4-5, short, ovate, acute. Stamens 8, included. Anthers biaristate on the base.

Willowy Whortle-ber. Shrub creeping.

11 V. cespitosa (Michx. fl. bor. amer. 1. p. 234.) flowers
leaves ovate, acute, with slight glandular serratures, polished above, and rather downy beneath; corollas bell-shaped, acute; stamens the length of the tube.  

**Flowers in sessile tufts.**

12 V. gale'zans (Michx. fl. bor. amer. 1. p. 292.) flowers on very short stalks, in sessile tufts; leaves sessile, lanceolate-wedge-shaped, slightly serrated, downy; calyx pointed; corollas ovate, much contracted at the mouth; style prominent.  

13 V. tenu'lem (Ait. hort. kew. ed. 2. vol. 2. p. 358.) flowers in dense sessile tufts; leaves nearly sessile, ovate-lanceolate, acuminate, finely serrated, smooth, except the rib and margins; branches angular, with a downy line on each side; calyx of 5, deep, acute segments.  

**Shrub.**  

Native of Virginia and Carolina, in shady woods and swamps.  

14 V. liq'u'strum (Michx. fl. bor. amer. 1. p. 283.) flowers nearly sessile, in tufts; leaves nearly sessile, erect, lanceolate, mucronate, finely serrated, veiny, downy; corolla longish, ovate; branches angular.  

15 V. pal'idium (Ait. hort. kew. ed. 2. vol. 2. p. 355.) racemes bracteate; corolla cylindrically bell-shaped; leaves ovate, acute, finely serrated.  

**Tree.**  

May, June.  

16 V. arbor'eum (Marsh. in Michx. fl. bor. amer. 1. p. 230.) pedicels axillary and solitary, or terminal and racemose, naked;}

lateral, solitary, nearly sessile; leaves somewhat wedge-shaped, rounded, obtuse, serrated, membranous, very smooth.  

**Trunk.**  

Native of America, in the more northern regions, particularly about Hudson’s Bay; also in the Island of Sitcha. A little shrub, with many crowded stems, from 2 to 4 inches high, very smooth in every part.  

Corolla of a short urceolate form.  

**B.**  

Native from North Carolina to Florida, in dry woods on the rocky banks of rivers.  

17 V. sta'mi'num (Lin. spec. 498.) racemes downy, with oval bracteas as long as the flowers; anthers biaristate on the back, twice as long as the spreading bell-shaped corolla; leaves elliptic, acute, entire, and glaucous rather downy beneath.  

**H.**  

Native from New England to Florida.  

18 V. dum'osum (Ait. hort. kew. ed. 2. vol. 2. p. 356.) racemes downy, with oval bracteas; and the pedicels with 2 lanceolate bracteoles; leaves ovate, mucronate, entire, dry and viscid; ovary hairy; corolla bell-shaped, obtuse, longer than the stamens.  

**B.**  

Native from New England to Florida, in dry sandy woods, particularly in pine-forests.  

**Bushy Whortle-berry.**  

Fl. June, July.  

19 V. cor'ybos'mum (Lin. spec. 499.) flowering branches almost leafless; racemes corymbose, drooping, with membranous bracteas, which are shorter than the downy flower-stalks; leaves elliptic, acute, minutely serrated, smooth, with downy ribs.  

**H.**  

Native from Canada to Carolina and Georgia, in swamps and wet woods.  

**Tree.**  

1765.  

18 feet to 20 feet.  

**Tree.**  

May, June.  

This species joins the solitary flowered species with the racemose flowered species; the axillary flowers being solitary and pedicellate, and the terminal ones racemose.  

Shrub.  

2 feet to 3 feet.  

Fl. May, June.  

2.  

123.  

1772.  

12 feet to 20 feet.  

Fl. May, June.  

Shrub.  

2 feet to 3 feet.  

Fl. June, July.  

Shrub.  

2 feet to 3 feet.  

Fonte de 1772.
ERICACEÆ.

LIII. VACCINIUM.

feet high, with numerous roughish terete branches, which are somewhat angular and downy while young. Leaves 1½ to 2 inches long, tipped with a glandular point. Racemes rising from the branches of the preceding year, seldom accompanied by leaves. Bracteas reddish, membranous, fringed. Calycine segments broad and shallow. Corollas white or reddish, cylindrically urceolate, rather angular, contracted at the mouth. Stamens 10, downy; anthers inclosed, having a double pouch at the base, but no spurs. Berries black, insipid. This species has a variety of sizes, shape, and colour.

Var. \( \beta \), virgatum (Ait. hort. kew. ed. 2. vol. 2. p. 358.) flowers white, tinged with crimson or pale red, very elegant, smaller than the species. \( \gamma \). H. Native of Virginia and Carolina; in swamp. Andr. bot. rep. 181. Wats. dendr. brit. t. 32. In Andrews' plate of \( V. \) virgatum, the racemes are accompanied by leaves, of which we have seen no example in \( V. \) corymbosum. Shrub 2½ feet high. Racemes short, lateral and terminal.

Var. \( \gamma \), fuscum (Ait. hort. kew. l. c.) flowers striped with red and white; calyx downy. \( \eta \). H. Native of Lower Carolina and Georgia, in swamps. F. ornlosus; Andr. bot. rep. t. 97.

Var. \( \varepsilon \), angustifolium; leaves narrow-lanceolate, acuminate at both ends, sessile, bespangled with brown minute pedicellate glands beneath, and hairy on the mid-rib above. \( V. \) virgatum, var. angustifolium, Wats. dendr. brit. t. 34. Flowers almost white.


20 V. MARIA'NEM (Wats. dendr. brit. t. 124.) racemes terminal, 3-4 flowered; corollas cylindrical, contracted at the mouth; leaves elliptic, coriaceous, glabrous, distinctly and minutely denticulated. \( \eta \). H. Native of North America. Flowers deciduous, white.


21 V. GRANDIFLORUM (Wats. dendr. brit. 125. f. a.) racemes terminal, 3-4 flowered; corollas cylindrical, contracted at the mouth; leaves lanceolate, finely serrated, attenuated at both ends, glabrous. \( \eta \). H. Native of North America. Flowers white, deciduous.


22 V. ELONGATUM (Wats. dendr. brit. t. 125. n.) corymbs few-flowered, bracteal; pedicels downy; leaves elliptic-lanceolate, serrated, tipped by a glandular hair each, and with a few hairs on the nerves; branchlets downy. \( \eta \). H. Native of North America. Corollas white, with reflexed teeth.


24 V. GLABRUM (Wats. dendr. brit. t. 125. n.) spikes lateral; corollas campanulate cylindrical; leaves elliptic, entire, glabrous. \( \eta \). H. Native of North America. Flowers white.


25 V. BRACATEUM (Thumbl. fl. jap. 156.) racemes axillary, longer than the glabrous, acute, serrated leaves; bracteas lanceolate, serrated; pedicels furnished with 2 awl-shaped bracteoles. \( \eta \). F. Native of Japan, in the Island of Niphon. Branches smooth, angular while young. Racemes 2-3 inches long; pedicels secund, drooping. Corollas cylindrical, white. The leaves may be evergreen.

Bracteate-flowered Whortle-berry. Shrub.

26 V. CILIA'TUM (Thumbl. fl. jap. 156.) racemes axillary, longer than the ovate, bristly, nearly entire leaves; bracteas lanceolate, smooth. \( \eta \). F. Native of Japan, &c. where it is called Susa-jub. The stem is smooth, and the branches villous. Leaves 1½ inches long, unequal. Flowers red, unilateral.

Ciliate-leaved Whortle-berry. Shrub.

27 V. FRONDOSUM (Lin. spec. 499.) racemes loose; bracteas obvate, not half so long as the slender pedicels, which bear 2 small linear bracteoles in the middle; leaves ovate-oblong, obtuse, entire, smooth. \( \eta \). H. Native from New Jersey to Carolina, in open woods. Andr. bot. rep. 140. V. glaucum, Michx. flor. Amer. 1. p. 231. Flowers small, almost globular, white. Berries large, blue, globular, edible, called by the country people Blue Tangles. Branchlets terete, smooth, and slender. Leaves 2½ inches long, glaucous beneath, and sprinkled with minute resinous dots. Racemes lateral from the former year's wood. Flowers drooping, greenish-white, shaped like those of the Lily of the valley, but smaller; anthers inclosed.

Var. \( \beta \), venustum (Ait. hort. kew. ed. 2. vol. 2. p. 357.) leaves lanceolate, acute at both ends. \( \eta \). H. V. frondosum, var. \( \beta \), lanceolatum, Pursh, flor. Amer. 1. p. 786.


Var. \( \beta \), rubescens (Pursh. flor. Amer. sept. 1. p. 286.) corollas redish. \( \eta \). H. Curt. bot. mag. 1288.

Var. \( \gamma \), lutescens (Pursh. l. c.) leaves lanceolate; flowers redish-yellow. \( \eta \). V. parviflorum, Andr. bot. rep. 125.


29 V. ARCTOSTAPHYLOS (Lin. spec. 500.) racemes lateral; bracteas all at the base of the pedicels; leaves elliptic, acute, minutely serrated, hairy beneath; stamens as long as the corolla, which is bell-shaped, with very hairy filaments; calyx slightly 5-lobed. \( \eta \). H. Native on the coast of the Black Sea, where it was gathered by Tournefort, who describes it as a shrub about the height of a man, with a trunk as thick as a man's arm. Young branches downy on two opposite sides. Leaves 2½ inches long. Racemes from the wood of the preceding year, below the fresh leafy shoots, drooping, rather hairy, each composed of 8-10 pendulous flowers, of a dirty white colour, tinged with purple. Anthers spurred at the base. Corollas bell-shaped, hairy. Tournefort judges this to be, with great probability, the elephantopus, or Bear's Grape, of Galen. What the var. \( \beta \) of Linnaeus may be, we know not, as nothing answerable to it is to be found in Tournefort's Corollarium.


30 V. PADI FOLIUM (Smith, in Rees' cyclo. no. 22.) racemes lateral; bracteas all at the base of the pedicels; leaves ovate-
lanceolate, acute, serrulaped, smooth on both surfaces, except the mid-rib; stamens nearly as long as the bell-shaped corolla, with smooth slightly fringed filaments; calyx 5-lobed. \( \gamma \). F. Native of Madeira, on the loftiest part of the island, where it forms impenetrable thickets. V. arctostaphylos, Andr. bot. rep. t. 30. Curt. bot. mag. 974. V. Madèreuse, Link. enum. 1. p. 675. Corollas larger than those of the preceding, pale green, with a purple tinge; sometimes it appears to be all over purple externally. The Caucasian plant, discovered by Pallas, is said not to differ from that of Madeira. Pallas says the berries are black, juicy, catabile, and gratefully acid; and he sometimes found the flowers 4-cleft.


Shrub 6 to 10 feet.

31 V. *cylindræcum* (Smith, in Rees' cyc. no. 23.) racemes lateral; bracteas serrated, all at the base of the pedicels; leaves elliptic-lanceolate, acute, serrulaped, quite smooth, except the base of the mid-rib; stamens half the length of the cylindrical corolla, with hairy filaments; calyx slightly 5-toothed. \( \gamma \). H. Native of the Azores, on the mountains, where it is called *Uva de Serra*, or Mountain-berry. Apparently arborescent. Branches downy on the opposite sides. Racemes numerous, rising from the wood of the preceding year. Flowers drooping, nearly an inch long, apparently red or purple.

*Cylindrical* flowered Bear's Grape. Shrub or tree.

32 V. *ledifolium* (Pohl, pl. bras. 2. p. 36. t. 123.) racemes axillary and terminal, loose, downy; flowers uniserial; leaves sessile, linear, attenuated at the base, ciliated, glabrous above, but yellowish-brown beneath, with the nerves downy. \( \gamma \). G. Native of Brazil, in the province of Minas Geraes, on the higher mountains, in dry places. Stem dark, hoary. Leaves deciduous. Bracteas of two forms, acute, ciliated. Corolla white, glabrous, having the teeth reflexed.

*Ledum-leaved* Whortle-berry. Shrub 1 foot.

§ 2. Leaves evergreen.

*Flowers racemose.*

33 V. *meridionaee* (Swartz, fl. ind. occ. p. 676.) racemes erect, downy; bracteas coloured, solitary, ovate, at the base of the pedicels; leaves ovate, crenate, smooth; stem arborescent. \( \gamma \). G. Native of Jamaica, on the Blue Mountains. Tree with a very straight trunk and hard wood. Branches downy when young. Leaves 1 inch long. Flowers drooping, reddish-white. Corollas ovate, quadrangular before expansion, contracted at the mouth, with 4 acute, recurved segments. Stamens 8, as long as the corolla: their filaments hairy in the middle. Berries roundish, juicy, pleasantly flavoured, pale red, resembling those of *V. vitis-idaea*. The flowers are rarely 5-cleft, and decandrous. Racemes rising from the top of the wood of the preceding year.


34 V. *coniferum* (H. B. et Kunth, nov. gen. amer. 3. p. 265. t. 250.) racemes axillary, solitary, short, sessile, drooping, about equal in length to the leaves; leaves ovate elliptic, bluish, crenulate, coriaceous, glabrous; flowers decandrous; anthers mutic. \( \gamma \). H. Native of Mexico, on high mountains near Moran and Cerro de Oyamel. Branchlets angular, glabrous. Leaves 5-6 lines long, beset with scattered, brown, minute dots beneath. Pedicels bracteate at the base. Corolla campanulate, white, with ovate, acute, recurved segments.

*Crowded-leaved* Whortle-berry. Shrub 1 foot.

35 V. *floribundum* (H. B. et Kunth, nov. gen. amer. 3. p. 266. t. 251.) racemes terminal and axillary, drooping, much longer than the leaves; leaves oblong, acute, coriaceous, glabrous, crenulate; flowers octandrous and decandrous; anthers mutic. \( \gamma \). G. Native of Peru, on the mountains near Caxamarca. Branchlets angular, downy. Leaves 6-7 lines long, besprinkled with a few black dots beneath. Corolla campanulate, white, having a quadridril or quinquedril limb, with oval bluntish segments. Flowers about the size of those of *V. vitis-idaea*. Filaments membranous, ciliated. Racemes approximate at the tops of the branches, bracteate (f. 142.)

*Bottle-flowered* Whortle-berry. Shrub.

36 V. *leucants* (Cham. in Linnaea, 7. p. 554.) arboreous; branches angular, sometimes downy; leaves coriaceous, on short petioles, oval-lanceolate, acute, glandularly serrated, having the petioles and mid-rib downy above, the rest glabrous; racemes second, rising from the branches of the preceding year, leafless; flowers drooping; corollas unequally campanulate; anthers biastrate. \( \gamma \). F. Native of Mexico, below St. Salvador. Flowers white. Fruit black and edible. Nearly allied to *V. Meridionaee*.


37 V. *Caraccasaeeum* (H. B. et Kunth, nov. gen. amer. 3. p. 266.) racemes axillary, twice longer than the leaves; flowers second, octandrous or decandrous; leaves elliptic, acute, crenulate, coriaceous, glabrous, shining above; anthers biastrate on the back. \( \gamma \). H. Native on the southern declivity of Mount Silla de Caraccas. Branchlets angular, glabrous. Leaves shining above, 9-10 lines long. Racemes crowded at the tops of the branches. Corolla campanulate, glabrous, reddish-white, with a 4-5-parted limb; segments ovate, acutish. Filaments membranous, ciliated.


38 V. *vitis-idaee* (Lin. spec. 500.) racemes terminal, drooping, with ovate concave bracteas, which are longer than the pedicels; leaves obovate, revolute, minutely toothed, dotted beneath; corolla bell-shaped. \( \gamma \). H. Native of dry, barren, stony woods and heaths in the north of Europe; plentiful in Scotland, Westmoreland, Derbyshire, and Wales. Mr. Parry says it occurs on rocks near the sea-coast, from Canada to New England; but the American plant is more robust than the European, with considerably larger leaves. Lodg. bot. cab. 416. It has also been found in the islands of Kamtschatka, Unalaska, and St. Lawrence. Smith, engl. bot. 598. Fl. dan. t. 40. Lodg. bot. cab. 1023. — Vitis-idae'æ râbra, Cam. epit. 136. Root creeping, woody. Stems ascending a span high; young branches triteae, downy. Leaves like those of box, but darker. Flowers pale pink, 4-cleft, octandrous. Anthers without spurs. Berries blood-red, acid, auster, and bitter, less palatable in tarts than either the Cranberry or Bilberry, but excellent in a rob or jelly, for colts and sore throats, as well as to eat with roast meat; to which latter purpose this jelly is universally applied by the Swedes, and forms a sauce to venison which is thought superior to currant jelly. In Wales it is used with roast mutton. It may be cultivated in a moist shady border of bog-earth, like the *Bleaberry*. 

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**FIG. 142.**
**Ericaceae**

**Cow-berry** or Red Whortle-bery. Fl. June. Britain. Shrub \( \frac{3}{4} \) foot.

39 V. MYRTIFOLIUM (Michx. fl. bor. amer. 1. p. 229.) creeping, quite smooth; leaves petiolate, oval, shining, revolute, sparingly and minutely toothed; racemes axillary, nearly sessile, of few flowers; corolla bell-shaped, somewhat inflated, minutely 2-toothed; bracteas without dorsal horns. \( \frac{1}{2} \) H. Native of Carolina. Michaux describes the berries as small, globose, crowned by the calyx, black, on short stalks. *Myrtle-leaved Whortle-bery.* Fl. May. July. Cl. 1812.

Shrub creeping.

40 V. CRASSIFOLIUM (Andr. bot. rep. t. 105.) racemes lateral and terminal, corymbose; bracteas shorter than the pedicels; leaves elliptic, crenated, smooth, paler and veiny beneath; corolla bell-shaped; stem diffuse. \( \frac{1}{2} \) H. Native of Carolina. Curt. bot. mag. 1152. A hairy shrub, requiring some shelter from our variable winters and springs. Leaves not an inch long, with a little minute pubescence on the mid-rib and petals. Flowers 5-cleft, decandrous, prettily variegated with pink and white, drooping, on red corymbose stalks. Stems hairy. *Thick-leaved Whortle-bery.* Fl. May. June. Cl. 1787.

Shrub trailing.

41 V. VILLIUM (Smith, in Rees's cycl. no. 29.) racemes longer than the leaves; pedicels, calyx, corolla, and lanceolate bracteas densely hairy; leaves elliptic, entire, revolute, coriaceous, with a blunt point, hairy on the upper side. \( \frac{1}{2} \) F. Native of Mexico, from whence specimens were sent by Mnis to Linnæus. Branches densely hairy when young. Leaves crowded, an inch long, on thick downy petals, scarcely hairy beneath, except on the mid-rib. Racemes towards the ends of the younger branches, axillary, drooping, very hairy. Pedicels bracteate. Corolla purplish, with 5 hairy angles, and as many recurved teeth. Perhaps a species of *Gaylussacia.*

**Villosus** Whortle-bery. Shrub.

42 V. MYRTUM (Andr. bot. rep. t. 480.) racemes terminal, corymbose; bracteas shorter than the pedicels; leaves elliptic-obovate, acute, crenated, smooth and shining; corollas cylindrical. \( \frac{1}{2} \) H. Native of Carolina. Curt. bot. mag. 1550. Stems either erect or diffuse. Leaves \( \frac{3}{4} \) to 1 inch long, paler and veiny beneath. Pedicels, bracteas, and calyx very smooth, of a shining red or purple colour. Calyx of 5 broad, or rather shallow segments. Corollas ovate, oblong, white or pink, with 5 slight spreading teeth, decandrous. The branches are downy on two opposite sides. *Shining-leaved Whortle-bery.* Fl. May. June. Cl. 1794.

Shrub 1 foot, or decumbent.

43 V. Schlechtendalii; racemes elongated, erect, and are as well as the pedicels, peduncles, and ribs of leaves on the under surface, downy; leaves rather coriaceous, permanent, with the nerves and veins prominent on both surfaces, lanceolate or obovate-lanceolate, acute, adpresstly serrated, callously mucronate at the apex as well as the serratures, and running into the short pedicels, at the base; fruticose branches nearly leafless. \( \frac{1}{2} \) F. Native of Mexico, near Jalapainga, in woods. Vaccinium, nov. spec. Cham. et Schlecht. in Linnæa, 6. p. 395. An erect, much-branched, evergreen, smoothish shrub. Leaves 2 inches long, and 9 lines broad. Bracteas linear, acute, caducous; calyx bibracteate at the base. Berries drooping, umbonate, crowned by the minute calycine teeth. *Schlechtendal's Whortle-bery.* Shrub.

44 V. BREVIFOLIUM (Salish. par. t. 4.) racemes axillary, of few flowers; leaves petiolate, obovate, toothed or crenated, smooth on both surfaces; stems tufted; corollas roundish-ovate; filaments glandular; stigma capitate. \( \frac{1}{2} \) H. Native of the western parts of Virginia, near Winchester and the Sweet Springs. Curt. bot. mag. 928. Lodde. bot. cab. 648. V. bra-chyceurum, Michx. fl. bor. amer. 1. p. 234. A handsome little shrub, in stature and general aspect, resembling *V. vitis-ideæ.* The leaves are, however, smooth, even, and not dotted on the under side. Corollas globular, contracted at the mouth, not bell-shaped. Stamens 10. Anthers sparse at the base, discharging their pollen by lateral, not terminal aperitures. Flowers white, delicately striped with red. *Box-leaved Whortle-bery.* Fl. June. Clt. 1794. Shrub \( \frac{3}{4} \) foot.

45 V. OVA TUM (Pursh, fl. amer. sept. 1. p. 290.) racemes axillary and terminal, bracteate, short; leaves on short pedicels, oblong, ovate, acute, revolute, serrated, smooth, coriaceous; corolla cylindrical, campanulate; calyxes acute. \( \frac{1}{2} \) H. Found by Governor Lewis on the banks of the Columbia River, and by Mr. Menzies on the north-west coast of America. Hook. et Arn. in Beech. voy. pt. bot. p. 144. Shrub much branched; branches hairy, as well as the pedicles. The foliage is like that of *Pernettya mucronata.* *Ovate-leaved Whortle-bery.* Fl. May. Cl. 1826. Shrub.

46 V. CANADENSE (Richards. in Franklin. 1st journ. append.) leaves lanceolate, quite entire, downy; racemes terminal; flowers fasciculate; style inclosed. \( \frac{1}{2} \) H. Native of Arctic America. *Canadian Whortle-bery.* Shrub.

47 V. SCABREUM (Pohl. pl. bras. 2. p. 37. t. 124.) racemes terminal and axillary, longer than the leaves, beset with glandular hairs; leaves on short pedicels, oblong, mucronate, with revolute ciliate edges, scabrous, having the nerves hispid beneath. \( \frac{1}{2} \) G. Native of Brazil, in turfy bogs at Registo Velho and Villa de Barbacena. Stems many from the same root, leafy at the tops. Leaves scabrous above, and glabrous beneath, permanent. Pedicels pilose, bracteate at the base. Bracteas of two forms, deciduous. Corolla glabrous, campanulate, white. *Scabrous Whortle-bery.* Shrub 1 foot.

48 V. MONTANUM (Pohl. pl. bras. 2. p. 38. t. 125.) racemes axillary, bracteate, pilose; leaves on short pedicels, oblong-elliptic, mucronate, hardly narrowed at the base, glabrous, but having the nerves on the under side rather pilose. \( \frac{1}{2} \) G. Native of Brazil, in the province of Minas Geraes, in dry places on Serra de Pinheiro. Leaves permanent, dark green above, and yellowish-green beneath, 8 lines long and 4 broad. Flowers unilateral. Corolla campanulate, glabrous, white. *Mountain Whortle-bery.* Shrub diffus.
flowered, furnished with 2 lanceolate bracteas about the middle; leaves roundish-ovate, serrated; calyx of 5 broad ovate pointed segments. \( \varphi \). F. Native of Otago and Owalu. Andrómeda créa, Lin. fil. suppl. 288. Branches terete, slightly downy when young. Leaves mucronate, about an inch long. Corolla ovate-oblong, with 5 angles, and 5 cleft small segments. Stamen 10. Anthers with 2 dorsal horns, according to Linnæus. Perhaps a species of *Pernettya*.

**Wirzy Whortle-berry.** Shrub small, \( \frac{1}{2} \) foot.

52. *V. reticulatum* (Smith, in Rees' cyc. no. 30.) pedicels axillary, solitary, 1-flowered, downy; leaves obovate, more or less serrated, coriaceous, with a blunt point, strongly reticulated on both sides, and nearly smooth. \( \varphi \). F. Native of the Sandwich Islands, on the high mountains, in woods, where it was collected by Mr. Menzies. Branches when young angular and downy. Leaves an inch long, with revolute margins. Pedicels bracteate, swelling upwards. Calyx in 4 or 5 deep-coloured segments, at length involute. Corolla cylindrical, twice as long as the calyx, purple, slightly hairy, with 4 or 5 cleft blunt teeth. Style hairy. Berries globular, depressed, nearly smooth.

**Reticulated-leaved Whortle-berry.** Shrub.


**Trailing Whortle-berry.** Fl. May, June. Ch. 1827. Shrub creeping.

55. *V. penduliflorum* (Gaud. in Freyc. voy. pt. bot. p. 454.) pedicels axillary, solitary, 1-flowered, elongated, pendulous in the fruit-bearing state; flowers deciduous; calyce segments lanceolate, one-half shorter than the corolla, which is campanulate and 5-angled; anthers awned; branches angular, leafy; leaves oblong, sharply serrated, rather coriaceous. \( \varphi \). F. Native of the Sandwich Islands, at the altitude of 500 hexapods. An erect glabrous shrub.

**Pendulous-flowered Whortle-berry.** Shrub.

54. *V. microphyllum* (Hrb. Reinwdt. ex Blum. bijdr. p. 851.) stem shrubby; branchlets puberulous; leaves ovate-obtuse, quite entire, with recurved margins, veiny, coriaceous, glabrous; pedicels almost solitary, axillary, 1-flowered; corollas urceolate; anthers mutic; calyx bractless. \( \varphi \). G. Native of the Celebes, on the mountains.

**Small-leaved Whortle-berry.** Shrub.

55. *V. dentatum* (Smith, in Rees' cyc. no. 31.) pedicels axillary, solitary, 1-flowered, smooth; leaves obovate, with sharp tooth-like serratures, coriaceous, veiny, very smooth; calyx longer than the smooth ovarium. \( \varphi \). F. Native of the Sandwich Islands, on the lofty mountains, where it was found by Mr. Menzies. The branches are angular, and always smooth, like every other part. Leaves rather longer than the *V. reticulatum*, with less prominent veins. Calyce segments keeled.

**Tooth-leaved Vaccinium.** Shrub.

56. *V. obtusum* (Pursh, fl. amer. sept. 1. p. 290.) pedicels axillary, solitary, 1-flowered; leaves small, oval, rounded, and blunted at each end, mucronate, entire, coriaceous, smooth; stem creeping. \( \varphi \). H. Native of the north-west coast of America, where it was gathered by Mr. Menzies.

**Blunt-leaved Whortle-berry.** Shrub.

57. *V. empetrifolium* (H. B. et Kunth, nov. gen. amer. 3. p. 263. t. 268.) creeping, quite glabrous; leaves approximate, subimbricated, obtuse, quite entire, coriaceous, glabrous; pedicels solitary, axillary, 1-flowered; flowers octandrous; corollas tubularly campanulate; anthers mutic; calyx bicracteate at the base. \( \varphi \). G. Native of the western declivity of the burning Mount Antisana, between Pintac and Pinantura. Leaves 2½ lines long. Corolla scarlet, glabrous; with ovate, acute, spreading segments. Anthers dehiscing lengthwise. Filaments ciliated.

**Emetrum-leaved Whortle-berry.** Shrub creeping.

58. *V. penéœides* (H. B. et Kunth, nov. gen. amer. 3. p. 264.) creeping, glabrous; leaves approximate, subimbricated, oblong, acute, obsolescently crenulated, still, glabrous, a little ciliated; pedicels short, axillary, solitary, 1-flowered; flowers octandrous; calyx bicracteate; anthers mutic. \( \varphi \). G. Native of the province of Quito, at Mount Tunguragua, near Cuchilla de Guambispa. Leaves 3 lines long. Branchlets downy. Flowers solitary, on the tops of the branches. Corolla tubularly campanulate, scabrous, with ovate acutish segments. Filaments pilose.

**Penea-like Whortle-berry.** Shrub creeping.

59. *V. acuminatum* (H. B. et Kunth, nov. gen. amer. 3. p. 264.) arboreus; leaves approximately subimbricated, ovate, acuminated, quite entire, coriaceous, glabrous; flowers axillary, solitary, on a stem or branch, about as long as the ovary; leaves oblong, sharply serrated, rather coriaceous. \( \varphi \). F. Native of the Sandwich Islands, on the altitude of 500 hexapods. An erect glabrous shrub.

**Acmone-leaved Whortle-berry.** Shrub 10 to 15 feet.


**Acmone-leaved Whortle-berry.** Shrub 10 to 15 feet.


**Atemon-leaved Whortle-berry.** Shrub or small tree.
Nutt. gen. amer. 1. p. 250.—Vaccinium species of Lin. and others.

Linn. syst. Octandria, Monogyonia. Calyx 4-toothed. Corolla 4-parted, with nearly linear revolute segments. Stamens 8, with connivent filaments; anthers tubular, 2-parted. Berries many-seeded.—Small, prostrate, creeping, evergreen shrubs, with small leaves, growing in sphagnose morasses. Branches filiform, proliferous. Flowers produced at the base of the spring branches, in short gemmaeous racemes; pedicels filiform, conspicuously bibracteate. Berries red, rarely white, acid.

1 O. palustris (Pers. ench. 1. p. 419.) stems filiform, creeping; leaves small, ovate, entire, acute, smooth, with revolute margins; pedicels terminal, 1-flowered; segments of corolla oval. \( \varphi \). H. Native of turfy mossy bogs in the mountainous parts of Europe; common in Switzerland, Russia, Scotland, Ireland, and the north of England, as well as in Lincolnshire and the neighbouring part of Norfolk. Mr. Pursh speaks of it as common on the boggy mountains of North America, from Canada to Pennsylvania, Island of Ungaskeba. O. vulgaris, Pursh. fl. amer. sept. 1. p. 263. O. Europeus, Nutt. gen. amer. 1. p. 251. Vaccinium Oxyccæus, Lin. spec. 500. Smith, engl. bot. t. 319. Oed. fl. dan. t. 80. Vaccinium Oxyccæus, var. \( \varphi \), ovalifolium, Michx. fl. bor. amer. 1. p. 228. Vaccinia palustris, Ger. emac. 1419. Lob. icon. 2. t. 109. Oxycoccum, Cord. hist. 140. 2 f. 1. Leaves convex, and dark shining green above, and glaucous beneath. Stems reddish. Pedicels few together, about the tops of the branches, red, slightly hoary. Corolla pink, with reflexed oblong segments. Stamens with purple downy filaments and yellow anthers. Berries pear-shaped, globular, often spotted, crimson, of a peculiar flavour, with a strong acid, grateful to most people in the form of tarts, for which purpose they are largely imported from Russia. Not long since, cranberries from Lincolnshire and the north-west corner of Norfolk were sold in the streets of Norwich by cart-loads; but the extensive inclosures have in many parts destroyed and drained their native bogs. Lightfoot records, that at Longtown, on the borders of Cumberland, not less than 200. or 300. worth were sold each market day, for 5 or six weeks together, and dispersed over different parts of the kingdom. In Sweden, these berries serve only to boil silver plate to its due degree of whiteness, their sharp acid corroding the superficial particles of the copper alloy.

2 O. macrocarpus (Pursh, fl. amer. sept. 1. p. 263.) stems prostrate, filiform, creeping; leaves elliptic-oblong, nearly flat and obtuse, distantly sub serrated on the margins, glaucous beneath, downy at the points when young: segments of the corolla linear-lanceolate; flower-bearing branches erect, proliferous; pedicels lateral. \( \varphi \). H. Native from Canada to Virginia, in bogs, principally on a sandy soil, and on high mountains. Wats. dendr. brit. t. 122. Vaccinium macracarpum, Ait. hort. kew. ed. 1. vol. 2. 13. t. 7. Hook. bot. mag. 2506. Lam. ill. t. 286. f. 4. Vaccinium hispidulum, Wangh. amer. t. 50. f. 67. Vaccinium oxyccæus \( \beta \), oblongifolium, Michx. fl. amer. bor. 1. p. 229. Points of young leaves, peduncles, and thise larvae and receptacles hairy. Berries spherical, red, often remaining throughout the winter. This is a larger and more robust plant than the preceding. Several flowers come forth at the ends of the last year’s branches, surmounted by the shoots of the present year. The bracteas are situated in the upper part of the pedicels in this, while in the preceding they are situated at the lower part. The berries are larger, and of a brighter red than the last, and are collected in great abundance for making tarts in America, and exported from thence to Europe; but they always prove here far inferior in quality to the Russian cranberries, however excellent in America. The best way of having American cranberries in Europe is by cultivation in an artificial bog, with great plenty of water, as first contrived by Sir Joseph Banks. A very few square yards of ground thus employed will yield as many cranberries as any family can use. If allowed to hang until they are full ripe, as late as October, they are even better than the common cranberry, and may be kept dry in bottles throughout the year. Our wild cranberries have generally been gathered too early; as may also be the case with those brought from America. "Wherever there is a pond," Mr. Neill observes, "the margin may, at a trilling expense, be fitted up for the culture of this plant, and it will continue productive for many years. All that is necessary is to drive in a few stakes 2 or 3 feet within the margin of the pond, and to place some old boards within these, so as to prevent the soil of the cranberry-bed from falling into the water; and lay a parcel of small stones or rubbish in the bottom, and over it peat or bog earth, to the depth of about 3 inches above and 7 inches below the surface of the water. In such a situation the plants grow readily; and if a few be put in they entirely cover the bed in the course of a year or two, by means of their long runners, which take root at different points. From a very small space a large quantity of cranberries may be gathered; and they prove a remarkable regular crop, scarcely affected by the state of the weather, and not subject to the attack of insects.

Large-fruited or American Cranberry. Fl. May, July. Ct. 1760. Shrub creeping.


Erect Cranberry. Fl. May, June. Ct. 1806. Shrub 2 feet. Cult. When any of the species are grown for the sake of their berries, they should be planted in an artificial bog, as mentioned under O. macrocarpus. But when grown only for having a specimen of the plants, they will grow well in pots filled with peat and sand, having sphagnum set round their roots: the pots should be well drained with sherd, and set in deep pans of water.


Linn. syst. Pentandria, Monogyonia. Liam of calyx 5-cleft. Corolla tubular, ventricose at the base; limb 5-toothed. Stamens 10, inserted in the limb of the calyx, inclosed; anthers mucous, drawn out from the top into 2 little tubes. Style erect; stigma depressedly capitate. Drupes nearly globose, clothed by the calyx, 10-seeded; cells 1-seeded. Seeds lenticular, smooth. —Evergreen or deciduous shrubs. Leaves scattered, coriaceous, each terminated by a mucron or gland. Racemes axillary, approximate. Flowers scarlet, bracteate. Very nearly allied to Thibadia, but very distinct.

* Corollas treculata, or cylindrical.

1 G. runifolli (H. B. et Kunth, nov. gen. amer. 3. p. 276.
Rhododendron Gaylussacia. Shrub. 9 G. pseudo-vaccinum (Cham. et Schlecht. in Linnaea. 1 p. 530.) glabrous or downy; leaves elliptic-lanceolate; racemes terminal, aggregate; corollas cylindrical; ovarium glabrous. 

Native of Brazil, within the tropic, in open sandy places; near Caravellos Freireis. Vaccinium Brasilíenis, Spreng. nov. prov. p. 42. syst. 2 p. 212. Leaves obsolescent serrated towards the top, with a few cilia at the base of the younger leaves. Racemes axillary, erect, summed, racemose, of a fine crimson colour, as well as the corolla, which are cylindrically urceolate; calycine teeth roundish, acuminate. There are glabrous and downy varieties of this species.

False-vaccinium Gaylussacia. Shrub 1 to 2 feet. 10 G. myrtifolia (Cham. et Schlecht. in Linnaea. 8 p. 494.) leaves obovate-lanceolate, acute, terminated by an obuse callous point, with serrated reflexed margins, an inch long; racemes crimson, usually solitary, nearly terminal, erect, exceeding in leaves; calycine segments short, ovate, acuminate. 

Native of Brazil, within the tropic. Corolla tubular, petricose. Young branches pilose. Young leaves ciliolate. Leaves yellow beneath, pilose on the petiole and midrib.

Myrtle-leaved Gaylussacia. Shrub. 11 G. salicifolia (Cham. et Schlecht. in Linnaea. 1 p. 532.) quite glabrous and pruinose; leaves oblong-lanceolate, acute, terminated by a callous point, with serrated reflexed margins, a half inch long, and tr Cirrus-nerved, and entire. Native of Java, on trees on the mountains. Anthers biaristate on the back, beneath the apex. Stigma truncate, simple. Capsule 10-celled; cells 1-seeded. Lanceolate-leaved Gaylussacia. Shrub. 12 G. lanceolata (Blum. biijdr. p. 861.) stem parasitical; leaves oblong-lanceolate, acuminate, coriaceous, glabrous, reticularly veined, and triple-nerved beneath; racemes axillary, simple, and are, as well as the calyces, tomentose; pedicels tribracteate at the base. Native of Brazil, within the tropic. Branchlets, petioles, and rachis canescent from down, with the nerves and margin densely ciliolate, as well as the bracteae and calyces. Corolla glabrous, rarely pilose on the nerves.

Far. 

Myrtle-like Gaylussacia. Shrub. 15 G. palidula (Cham. in Linnaea. vol. 8 p. 499.) branches marked by cicatrises occasioned by the falling of the leaves; leaves nearly sessile, quite entire, usually acute, terminating in 5 n 2.
ERICACEÆ. LIV. GAYLUSSACIA. L.V. THIBAUDIA.

each in an inflamed white mucrone; flowers pale, clothed with glandular down; bracteas foliaceous, green, length of flowers; bracteoles somewhat foliaceous, lanceolate, situated under the calyxes; calycine segments lanceolate, about a third the length of the corolla; filaments villous, about a fourth the length of the anthers. \( h \). S. Native of Brazil, within the tropic.

\* Pulexifloria Gaylussacia. Shrub.

16 G. anxustifolia (Cham. in Linnaea. 8. p. 499.) branches, petioles, inflorescence, and calyxes downy; leaves coriaceous, linear-lanceolate, narrowed into the short petioles at the base, ending each in a callous acute point, with reflexed inconspicuously serrated edges, shining above and rufescent beneath; racemes axillary, nearly terminal, erect, exceeding the leaves; lower bracteas foliaceous; superior ones coloured; calycine segments ovate, acuminated, or acutely triangular, and are, as well as the bracteas, ciliate; corollas cylindrical, downy on the nerves; filaments villous, shorter than the anthers. S. Native of equinoctial Brazil. Ineffoscent coloured.

\* Narrow-leaved Gaylussacia. Shrub.

17 G. porphyria (Cham. et Schlecht. in Linnaea. 1. p. 536. and L. p. 560.) quite glabrous and pruinose; leaves linear, acute at both ends, crenated; peduncles axillary, 1-3-flowered, furnished with small glandularly serrated bracteas; corolla urceolate, with short erect teeth. S. Native of equinoctial Brazil. The young leaves at the tops of the branches and flowers are crimson. Calycine teeth ovate, acuminated, cuspidate, with glandularly ciliated edges.

\* Pine-leaved Gaylussacia. Shrub \( \frac{1}{2} \) to 1 foot.

\* * \* Corollas campanulate.

18 G. proo-do-gaultheria (Cham. et Schlecht. in Linnaea. 1. p. 535.) branches straight, hispid; leaves narrow-elliptic, subcordate, sebrons on both surfaces, obsolescently serrated towards the top; racemes axillary and terminal at the tops of the branches, approximate, second, erect, hispid, bracteate. S. Native of Brazil, within the tropic. Leaves rising from the root, biennial or triennial, about a foot high, branched. Flowers white, hardly crimson. Corollas campamulate, with hairy angles. Calycine teeth narrow, lanceolate. Ovarium hairy, glabrous.

\* False Gautheria Gaylussacia. Shrub 1 foot.

19 G. decipiens (Cham. in Linnaea. 8. p. 500.) branches hairy; leaves coriaceous, elliptic, obtuse, attenuated at the base, obsolescently crenated towards the apex; racemes from the axis of the ultimate leaves, second, erect; calycine teeth triangular, acuminated; corolla campamulate, pilose on the angles, with erect triangular teeth. S. Native of Brazil, within the tropic. G. buxifolia, Cham. et Schlecht. in Linnaea. 1. p. 328, but not of H. B. et Kunth. Leaves glabrous above, but pubescent on the nerves beneath. Corollas white, campamulate, not scarlet. This species has been referred to G. imbricata by Pohl, but it differs in its flowers being campamulate and white, not scarlet.

\* Deceiving Gaylussacia. Shrub 1 to 1 \( \frac{1}{2} \) foot.

20 G. ameana (Cham. in Linnaea. 8. p. 501.) branches, petioles, and inflorescence downy; calyxes glabrous, but are, as well as the bracteas, ciliated with glandular hairs; leaves on very short petioles, ending each in a callous mucrone, serrated in front, with reflexed margins covered with resinous dots beneath, having thick veins and nerves prominent beneath; racemes nearly 1 inch long, erect, elongated; calycine segments ovate, acuminated; corolla campamulate, glabrous, filaments ciliated, half the length of the anthers; bracteas foliaceous. S. Native of Brazil, within the tropic. Flowers white.

Var. a; leaves obovate-cuneated, rounded.

Var. b; leaves narrower, blunt at the base, acuter at the apex, obovate or lanceolate.

\* Pleasant Gaylussacia. Shrub 4 to 6 feet.

21 G. incana (Cham. in Linnaea. 1. p. 535.) clothed with hoary tomentum; leaves oblong, with revolute margins, quite entire; racemes axillary and terminal, approximate at the tops of the branches, second, erect; corollas campamulate, downy. S. G. Native of Brazil, within the tropic. Leaves ciliiform above and white beneath. Calycine teeth lanceolate. Corolla downy, as well as the filaments.

\* Hoary Gaylussacia. Shrub 1 foot.

\* Cult. For culture and propagation see Agarista, p. 838. All the species are extremely elegant when in blossom, and are therefore very desirable plants in every collection.


1 T. bracteata (Ruiz et Pav. f. fl. per. 4. t. 388. ined.) leaves ovate-lanceolate, acuminated, 5-nerved; bracteas large, permanent, coriaceous, 2-lobed; anthers spurred at the base. S. Native of Peru. Branches angular, glabrous. Leaves rounded at the base, 2-3 inches long, petiolate. Flowers disposed in terminal thyridoid corymbs at the tops of the branches. Corollas scarlet, nearly an inch long. Bracteas imbricate. Filaments bearded at the apex.

\* Bracteate Thibaudia. Shrub.

2 T. melifera (Ruiz et Pav. f. c. t. 387. f. b.) branches terete, downy; leaves oblong, obtuse, feather-nerved, acute at the base; flowers axillary, coriaceous, bracteate; limb of calyx nearly entire; corollas short. S. Native of Peru. Leaves 2-3 inches long, on short petioles, glabrous. Bracteas small. Peduncles downy. Limb of calyx obliquely 5-lobed. Filaments glabrous.

\* Honey-bearing Thibaudia. Shrub.

3 T. punctatifolia (Ruiz et Pav. f. c. t. 387. f. a.) leaves oblong-lanceolate, acuminated, 5-nerved, rounded at the base, dotted beneath; calyx bluntly 5-lobed; racemes elongated, nodding; bracteas large, oblong, mucronate, adpressed; corollas ventricose; filaments glabrous. S. Native of Peru. Leaves a hand long, glabrous. Petioles short, robust. Branchlets angular. Racemes a span long, many-flowered. Flowers drooping. Corolla ventricose, an inch long.

\* Dotted-leaved Thibaudia. Shrub.

4 T. coractata (Ruiz et Pav. t. c. t. 385.) branches angular, glabrous; leaves lanceolate, acuminated, 5-nerved, rounded at the base; flowers aggregate; bracteas 2-lobed, roundish, coriaceous; calycine teeth acute; filaments glabrous. S. Native of Peru. Bicolor, Dunal. in herb, Lamb. Leaves 3-4 inches long, marked with white veins above. Flowers peduncu-
late, subcoriaceous, 5-10 together, drooping. Berries large. Corolla 1½ inch long.

**Coarctate-flowered Thibaudia.** Shrub.

5 T. Cauila (Ruiz et Pav. l. c. t. 380.) branches angular; leaves nearly sessile, coriaceous-oblong, obtuse, denticulated; racemes few-flowered; bracteas lanceolate, acuminate; calyce teeth short, acute; filaments glabrous. \( \beta \). S. Native of Peru. Leaves 4 inches long, feather-nerved. Bracteas permanent, lanceolate, coriaceous. Corolla an inch long.

**Wing-stemmed Thibaudia.** Shrub.

6 T. Elliotica (Ruiz et Pav. l. c. t. 384. f. b.) branches angular; leaves elliptic-oblong, with revolute margins; flowers aggregate; calyces teeth acutish, very short. \( \beta \). S. Native of Peru. Leaves 3 inches long, attenuated at the base, on short petioles, feather-nerved. Peduncles half an inch long.

**Elliptic-leafed Thibaudia.** Shrub.

7 T. Emarginata (Ruiz et Pav. l. c. t. 384. f. a.) branches terete, glabrous; leaves obovate, emarginate, bristly beneath; flowers solitary; calyx obsolescent, 5-toothed; corollas conical; filaments glabrous. \( \beta \). S. Native of Peru. Leaves 1½ inch long, 3-nerved, acute at the base. Corolla ventricose, 3 lines long. Flowers pendulous. Peduncles glabrous.

**Emarginate-leaved Thibaudia.** Shrub.

8 T. Floribunda (H. B. et Kunth, nov. gen. amer. 3. p. 269. t. 254.) branches terete, glabrous; leaves lanceolate, acuminate, reticulately veined, glabrous, as well as the inflorescence; racemes axillary, solitary; bracteas imbricated; filaments glabrous. \( \beta \). S. Native of New Granada, near Santa Fe de Bogota. Leaves 5 inches long. Calyce teeth ovate, acute. Corolla ventricose, scarlet.

**Bundle-flowered Thibaudia.** Shrub.

9 T. Longifolia (H. B. et Kunth, l. c.) branches pentagonal, glabrous; leaves long-lanceolate, acuminate, obtuse at the base, reticulately triple and quintuple-nerved, and are, as well as the calyces and corollas, glabrous. \( \beta \). G. Native of the Andes, about Quindiu, near La Seja. Leaves 6-7 inches long. Racemes axillary, shorter than the leaves. Flowers size and structure of those of the preceding species.

**Long-leaved Thibaudia.** Shrub.

10 T. Falcata (H. B. et Kunth, l. c.) branches terete, glabrous, fuscous; leaves lanceolate, acuminate, falcate at the apex, acute at the base, reticulately quintuple-nerved, and are, as well as the calyx and corollas, glabrous. \( \beta \). S. Native of the Andes, about Popayan, near Pondaman and Palace. Leaves on short petioles, 8-9 inches long. Racemes axillary, solitary, nearly sessile, 3 or 4 times shorter than the leaves. Corollas large, tubular, white, but red and ventricose below. Calyce teeth short, acute.

**Falcate-leaved Thibaudia.** Shrub.

11 T. Macrophylla (H. B. et Kunth, l. c. p. 270.) branches terete, glabrous; leaves ovate-lanceolate, acuminate, rounded at the base, reticulately quintuple-nerved, and are, as well as the calyx and corolla, glabrous. \( \beta \). S. Native of the Andes, about Popayan, near Pondaman and Palace. Leaves on short petioles, 8-9 inches long. Racemes axillary, solitary, nearly sessile, 3 or 4 times shorter than the leaves. Corollas large, tubular, white, but red and ventricose below. Calyce teeth short, acute,

**Long-leaved Thibaudia.** Shrub 10 feet.

12 T. Supraestus (H. B. et Kunth, l. c. p. 270.) branches downy, striated a little; leaves lanceolate, bluish, acute at the base, reticulately veined, glabrous above and downy beneath, especially on the nerves; calyxes glabrous. \( \beta \). S. Native of New Granada, in Paramo de Saragura, near Loja and Alto de Pulla. Leaves 3 inches long. Racemes axillary. Fruit nearly globose, about the size of those of *Prunus spinosa*.

**Rock Thibaudia.** Shrub.

13 T. Nitida (H. B. et Kunth, l. c. p. 271.) branches trigo-
nated, acute at the base, reticulately quintuple-nerved; branches, calyxes, and corollas glabrous. H. S. Native of South America, in the province of Choco, in one place near the town of Cali, towards Cerro de San Antonio, where it is called Quercem de Cali. Leaves 3 or 3½ inches long. Pedicels trichractate at the base, red. Corollas tubular, ventricose at the base, red. Calyces teeth ovate, acute, short. The flowers, bracteas, and wood, are very sweet scented when dried, and which scent is easily communicated to water, spirits, or wine. Spirits of wine saturated with this aroma smells like cloves, and is useful in mitigating tooth-ache.

Quercem Thibaudi. Shrub 5 to 6 feet.

20 T. ardisioides (H. B. et Kunth, l. c. p. 274.) branches terete, glabrous; leaves opposite, sessile, oblong, obtuse, subcordate, reticulately nerved, and are, as well as the branches, calyxes, and corollas, glabrous. H. S. Native of New Grenada, near Fusagarriga, in woody places. Leaves 3½ inches long, with diaphanous edges. Racemes axillaries, sessile, solitary, pendulous, girded by small imbricated bracteas at the base. Corollas cylinically tubular, scarlet, with a white limb. Calyces teeth ovate, acute, ciliate.

Ardisia-leaved Thibaudi. Tree 16 to 20 feet.

Cult. For culture and propagation see Agarista, p. 538. Extremely elegant shrubs when in blossom.

LVI. AGAPETES (from agapetos, agapetes, beloved; in reference to the plants being showy). D. Don, ms. in herb. Lamb. Thibaudia species, Wall and Blume. Ceratosemen species, Roxb.


1 A. setolera (D. Don, in herb. Lin. soc.) leaves scattered, lanceolate, petiolate, acuminate, obtuse at the base; flowers disposed in racemose corymb; peduncles and calyces hispid; filaments bearded; anthers bifid; segments of corolla ovate-oblong. H. G. Native of the East Indies, on the Pundua mountains. Thibaudia setigera, Wall. cat. no. 752. Leaves about 4½ inches long, on very short robust petioles, obliquely denticulated. Flowers numerous, in lateral and terminal corymbose racemes, furnished with bristly hairs. Corolla about 1 inch long. Bristle-bearing Agapetes. Shrub.

2 A. verticillata (D. Don, l. c.) leaves verticillate, lanceolate, acuminate, finely denticulate, acute at the base; flowers corymbose; peduncles and calyces hispid; corolla glabrous, with short blunt lobes; filaments nearly smooth; anthers bifid. H. G. Native of the East Indies, on the Pundua mountains. Thibaudia verticillata, Wall. cat. no. 753. Leaves on very short petioles, disposed in interrupted verticillate fascicles. Corolla scarcely an inch long. Stigma almost simple. Whorled-leaved Agapetes. Shrub.

3 A. loranthifolia (D. Don, l. c.) leaves sessile, lanceolate, bluntly acuminate, quite entire; flowers generally solitary; segments of the corolla elongated; anthers emarginate at the apex; filaments and corollas smoothish. H. G. Native of the East Indies. Thibaudia loranthifolia, Wall. cat. no. 754. Leaves 3 inches long, cuneate-lanceolate. Calyx with ovate acute teeth, and is, as well as the peduncles, rather bristly. Segments of corolla ovate at the base. Loranthus-flowered Agapetes. Shrub.


§ 2. Corollas short, ovate.


6 A. sprengeri; leaves petiolate, ovate-lanceolate, acuminate, denticulated, attenuated at the base, woolly; flowers racemose, glabrous, peduncles glabrous; calyce segments ovate, denticulate; filaments downy; anthers bifid. H. G. Native of the East Indies. Thibaudia sprengeri; Wall. cat. no. 6298. Leaves 3 inches long. Flowers drooping, from 5 to 7 in a cluster. Corolla ovate-oblong, about 1½ inches long. Sprengel's Agapetes. Shrub.

7 A. serrata; leaves verticillate, petiolate, lanceolate, acuminate, serrate, attenuated at the base; flowers racemose, pendulous, and are, as well as the filaments, glabrous; branchlets chaffy. H. G. Native of the East Indies. Thibaudia serrata, Wall. cat. no. 6299. Leaves 2 inches long, on very short foot stalks. Calyces teeth very short, mucronate. Corolla ovate-oblong, 2 inches long. Serrate-leaved Agapetes. Shrub.

8 A. symphyocladia (D. Don, l. c.) branchlets downy; leaves ovate, mucronate, serrulate; flowers and calyces downy; calyce segments rounded, mucronulate; filaments bearded. H. G. Native of the East Indies. Andromeda symphyocladia, Wall. cat. no. 1522. Corolla a line long. Symphoeclade-leaved Agapetes. Shrub.

9 A. elliptica; stem parasitical; leaves elliptic-oblong, acutish at both ends, biglandular at the base, coriaceous, veiny, glabrous; racemes second, finely tomentose. H. G. Native of Java, on Mount Salak, upon trees. Thibaudia elliptica, Blum. bijdr. p. 859. Elliptic-leaved Agapetes. Fl. Year. Shrub parasitical.

10 A. floribunda; leaves elliptic-oblong, acuminate at both ends, coriaceous, glabrous, veiny; calyces ciliate. H. G. Native of Java, on the tops of the mountains, where it is called Prun by the natives. Thibaudia floribunda, Blum. bijdr. l. c. Bundic-flowered Agapetes. Shrub.

11 A. laurifolia; stem parasitical; leaves cuneate-oblong, bluntish, coriaceous, glabrous, almost veinless; racemes glabrous. H. G. Native of Java, on the top of Mount Burangrang, upon trees. Thibaudia laurifolia, Blum. l. c. Laurel-leaved Agapetes. Shrub parasitical.

12 A. varioleatolia; leaves oblong-lanceolate, acutish coriaceous, glabrous, nearly veinless; racemes leafy, and are, as
well as the calyces, downy. \( \ddagger \). G. Native of Java, on Mount Gede, where it is called by the natives *Jatigie-belot*. Thibaudia xaringiefolia, Blum. bijdr. p. 860.


13 A. *Lucretta*; stem sometimes parasitical; leaves small, obovate, rather retuse, with recurved margins, coriaceous, glabrous, a little veined; racemes, calyces, and corollas downy. \( \ddagger \). G. Native of Java, in the higher woods. Thibaudia lucida, Blum. l. c.

Shining Agapetes. Fl. Year. Shrub parasitical.

14 A. *coriacea*; stem parasitical; leaves elliptic or oblong-lanceolate, much acuminated, coriaceous, somewhat 3-nerved, and are, as well as the racemes, calyces, and corollas, glabrous. \( \ddagger \). G. Native of Java, on the mountains, upon trees, where it is called *Kilagiday* by the natives. Thibaudia coriacea, Blum. l. c.

Coriaceous-leaved Agapetes. Shrub parasitical.

15 A. *cuneifolia*; leaves cuneiform, obtuse, sometimes retuse, with recurved margins, coriaceous, nearly veinless, and are, as well as the racemes and calyces, glabrous. \( \ddagger \). G. Native of Java, on the higher mountains, in woods. Thibaudia cunei-

folia, Blum. bijdr. p. 861.

Wedge-leaved Agapetes. Fl. Year. Shrub.

16 A. *Myrtoida*; branches downy; leaves ovate-elliptic, bluish, with recurved margins, coriaceous, nearly veinless, downy on both surfaces at the midrib; racemes glabrous. \( \ddagger \). S. Native of the Moluccas, on the tops of the burning mountains. Thibaudia myrtoides, Blum. bijdr. 861.

Myrtle-like Agapetes. Shrub.

Cult. For culture and propagation see *Agarista*, p. 838.

LVII. CERATOSTEMA (from κέρας, keros, a horn, and στῆμα, stema, a stem; in reference to the anthers being bluntly spurred at the base). Juss. gen. p. 163. Ruiz et Pav. fl. per et Chil. vol. 4. ined.

LIN. SYST. *Decandria Monogyna*. Limb of calyx large, 5-parted, foliaceous. Corolla tubular, coarctate at the apex, 5-lobed. Stamens 12; filaments very short. Anthers bluntly spurred at the base; cells elongated at the apex, filiform, almost wholly free, dehiscing by a terminal pore each. Stigma simple, obtuse. Berry 5-celled, many-seeded. Seeds small, angular.—Evergreen shrubs, natives of Peru. Leaves oblong, on short petioles, almost veinless, coriaceous, rounded and subcordate at the base. Flow-

ers almost sessile, lateral and terminal, pedunculate. Corollas large, scarlet.

1 C. *grandiflora* (Ruiz et Pav. fl. per. 4. t. 383. f. b.) branches and peduncles downy; leaves lanceolate or ovate, usually mucronate; calyce segments acuminated; corollas longer than the peduncles. \( \ddagger \). G. Native of Peru. Leaves an inch or an inch and a half long, obtuse.

*Great-flowered* Ceratostema. Shrub.

2 C. *hiroshita* (Ruiz et Pav. fl. per. 4. t. 383. f. a. ined.) branches and peduncles downy; leaves oval-oblong, obtus-

ate; calyce segments ovate, mucronate, reticulated; corollas about equal in length to the peduncles. \( \ddagger \). G. Native of Peru. C. cordifolia, Dunal, in herb. Lamb. Leaves 1½ inch long.

Hairy Ceratostema. Shrub.

Cult. See *Agarista*, p. 838, for culture and propagation.—Elegant shrubs, worth cultivating in every collection.

Trib. IV.

PYROLEÆ (this tribe only contains the genus *Pyrola*). D.

Don, in edinb. phil. journ. 17. p. 152. Anthers 2-celled. Ova-

rium free. Hypogynous disk naked. Seeds peltate, samaroid. Embryo dicotyledonous. Plants leafy, terrestri-

al.


LIN. SYST. *Descandra Monogyna*. Calyx 5-parted. Petals 5.

Stamens 10. Anthers dehiscing at the base by 2 holes. Stigma 5-lobed. Capsule 5-celled; valves connected by fine intricate tomentum. Placenta lunate, with simple lobes. Cells many-seeded. Seeds narrow, seboiform, winged at both ends. Embryo transverse. Umbel evergreen herbs with wide creeping roots. Leaves petiolate, alternate, smooth, and usually shining, coriaceous, crenulated, toothed or serrated. Scapes erect, furnished with a few scales, usually triquetrous or quad-

rangular, convolute. Flowers pedicellate, bracteate, pendulous, globose or campanulate, white or red, disposed in terminal racemes. All the *Pyrole* are possessed of strong astringent qualities, and were formerly much esteemed for supposed healing properties; they are now wholly disused.


1 P. *rotundifolia* (Lin. spec. 567.) leaves roundish, quite entire or crenulated, shorter than the dilated petioles; scape triquetro-

us; calyce segments lanceolate, acute; stigma clavate, bluntly 5-toothed. \( \ddagger \). H. Native of Asia, Europe, and North America, in old woods, in stony or sandy soil. In Britain, in dry heathy woods, but rare; in the north of England and High-

lands of Scotland. Smith, engl. bot. 213. exclusive of the syn. of fl. dan. Lam. ill. t. 397. f. 1. P. grandiflora, Radd. diss. p. 27. t. 3. f. 2.—Riv. mon. t. 137. and 136. f. 2.—Mor. ox. sect. 12. t. 10. f. 1. Leaves numerous. Scapes furnished with 2-3 lanceolate-acute scales. Racemes 10-16-flowered. Pedic-

les secedum, rather remote, scattered. Flowers rather large, milk-white.


2 P. *asarifolia* (Michx. fl. bor. amer. 1. p. 251.) leaves re-

iform, coriaceous, repandely crenated, twice shorter than the dilated petioles; scapes acutely triquetro-

us; racemes many-flowered; calyce segments ovate, acuminated, adpressed; stigma clavate, with an elongated 5-lobed disk. \( \ddagger \). H. Na-

tive of Canada, in pine woods; and on the mountains of Pennsyl-

vania, in beech woods. Leaves numerous. Scapes furnished with a few scarios convolute scales. Racemes elon-

gated. Pedicels remote, scattered. Flowers greenish-white or yellowish-green, about the size of those of the preceding.


3 P. *chlorantha* (Swartz, in Stockh. trans. 1810. t. 5. Nutt. gen. amer. 1. p. 375.) leaves orbicular, retuse, obso-

letely narrowed to the narrow petiole; racemes few-flowered; calyce segments very short, obtuse; petals oblong; openings of anthers tubular; stigma clavate, with an elongated 5-lobed disk. \( \ddagger \). H. Native of Sweden and Upper Canada. Lodd. bot. exp. 1542. P. convolvula, Bart. prod. fl. phil. p. 50. P. asarifolia, Rad. diss. p. 23. t. 4. f. 1. exclusive of the synonyme of Michaux. P. rotundifolia, \( \beta \), nunmularia, Muhl. cat. P. minor, Pursh. miss. and perhaps of fl. amer. sept. 1. p. 299. Scapes tetragonal, furnished only with one minute scale in the middle. Pedicels curved, scattered. Flowers cam-

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pandulate, about the size of those of *P. elliptica*, greenish-white, pendulous.


4 P. **occidentalis** (R. Br. mss. in herb. Banks, ex D. Don, in wern. mem. 5. p. 232.) leaves roundish, membranous, obsolescent denticulated, twice longer than the simple petals; racemes few-flowered; calycine segments oblong, obtuse; disk of stigma 5-lobed. 2. H. Native of Sedge Island, on the north-west coast of America, where it was collected by D. Nelson. Leaves numerous, one-half smaller than those of *P. rotundifolia*.

**Western Winter-green.** Pl. ½ foot.

5 *P. elliptica* (Nutt. gen. amer. 1. p. 273.) leaves elliptic or ovate, membranous, serrulatate, longer than the dilated petals; racemes few-flowered; bracteas lanceolate, subulate, recurved at top; calycine segments very short, ending each in a recurved mucrone; petals oval; stigma clavate, with an erect 5-lobed disk. 2. H. Native of both Canadas, in woods; and around Philadelphia; and in the woods of New Jersey. Rad. diss. p. 81. t. 5. f. 1. P. ovalifolia, Pursh, mss. in herb. Lamb. Scapes acutely triquetrous, furnished with a solitary scarious scale near the base. Pedicels scattered, distant. Flowers campanulate, white, with a grateful smell, smaller than those of *P. rotundifolia*.


6 *P. dentata* (Smith in Rees’ cyc. D. Don in wern. mem. 5. p. 235.) leaves cuneate-oblong, coriaceous, acute at the base, twice as much longer than the narrow petals, having the margin remotely toothed or quite entire; racemes elongated, few-flowered, rather secund; petals oval; disk of stigma elongated, 5-lobed. 2. H. Native of the Island of Nootka, on the north-west coast of America, where it was collected by Mr. Menzies. Leaves crowded. Scapes angular, naked. Racemes drooping at the apex, secund. Flowers campanulate, drooping, milk-white.

**Toothed-leaved Winter-green.** Pl. 1 foot.

7 *P. vicosa* (Smith in Rees’ cyc. D. Don in wern. mem. 5. p. 235.) leaves ovate, mucronulate, coriaceous, somewhat serrated, equal to the narrow petals in length, red beneath, but dark green, and marked along the veins with whitish bands above; racemes many-flowered; petals roundish; stigma clavate, with a 5-lobed disk. 2. H. Native of the Island of Nootka, on the north-west coast of America; and of Japan, near the town of Nagasaki. Scapes acutely triquetrous, reddish, never convolute, furnished with scarious scales. Pedicels scattered. Flowers globose campanulate, pendulous, white.

**Painted-leaved Winter-green.** Pl. ¼ foot.

8 *P. aphyllea* (Smith in Rees’ cyc. D. Don in wern. mem. 5. p. 237.) leafless; scape angular, furnished with numerous scales at the base; racemes many-flowered, rather secund; calycine segments ovate, acute, crenulatate; petals roundish; disk of stigma elongated, 5-crenated. 2. H. Native of Nootka Island, on the north-west coast of America, where it was collected by Mr. Menzies. Scapes numerous. Flowers globose, pendulous, milk-white. This remarkable species, although wholly destitute of leaves, is not, strictly speaking, leafless; their place is supplied by a kind of foliaceous scales, of a greenish colour. In some of the fine specimens preserved in the Banksian herbarium, an approach to leaves may be distinctly observed.

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**Leafless Winter-green.** Pl. ¼ foot.

§ 2. Stamens erect, bent towards the pistilum. Style decurrent, longer than the petal. Stigmas without a ring. Scapes erect. Flowers racemose, globose, pendulous, scattered, never secund.


§ 3. Stamens erect. Style straight; stigma exanastomized, or without a ring. Scapes erect. Flowers pendulous, racemose.

10 *P. minor* (Lin, spec. 567.) leaves roundish or oval, coriaceous, repandly crenulated, longer than the petal, which are dilated; racemes spicate; bracteas lanceolate, somewhat much longer than the pedicels; calycine segments very short; style inclosed; stigma flattish, 5-lobed. 2. H. Native of the colder parts of Europe, and the north of Asia, on heaths, in bushy places, and in woods; in Britain, in mossy woods and thickets, in mountainous situations; in Yorkshire, and common in many parts of Durham; woods near Brodie House, and at the Falls of Clyde, and many other places of Scotland. Fl. dan. t. 55. Smith, engl. bot. 158. Rad. diss. p. 15. t. 1. P. rosea, Smith, engl. bot. 2543. Rad. diss. p. 18. t. 2. P. rotundifolia, Pall. ind. taur.—Gmel. sib. 4. p. 128. no. 16. t. 56. f. 1.—Riv. mon. t. 136. f. 1. Leaves numerous, mucronulate at the apex. Scapes quadrangular, furnished with a lanceolate membranous scale in the middle. Racemes spicate, dense. Flowers globose, with a contracted mouth, white tinged with red. A variety of this species has been gathered in the Island of Unalaska.

**Smaller Winter-green.** Fl. June, July. Britain. Pl. ¼ to ½ foot.

11 *P. secundiflora* (Lin. spec. 567.) leaves ovate, acute, membranous, sharply serrated, longer than the narrow petals; raceme secund or unilateral; calycine segments rounded; petals oblanceolate; style exserted; stigma flattish, 5-lobed. 2. H. Native of Europe, Asia; and North America, from Canada to New Jersey; among bushes and in alpine woods, particularly in dry, mossy, pine woods; in Britain, in mossy alpine woods; in Yorkshire; in many fir or birch woods in Scotland; on the hill of Dunnain; in Darway forest, near Brodie House. Fl. dan. t. 402. Smith, engl. bot. t. 517.—Gmel. sib. 4. p. 129. t. 56. f. 2. Riv. mon. t. 128. f. 2.—Mor. hist. 1. sect. 12. t. 10. f. 4. Stems rather woolly. Leaves mucronulate. Peduncles bluntly angular. Racemes elongated, many-flowered. Flowers campanulate, white, tinged with pale green.

**Second-flowered Winter-green.** Fl. June, July. Britain. Pl. ½ to ¼ foot.
ERICACEE. LIX. CHIMAPHLA. LX. MONESES. LXI. CLADOATHANUS.

865

Cult. All the species of Winter-green are very pretty when in blossom, but are extremely difficult to cultivate in gardens. They grow best in a sandy or gravelly soil, in a shady situation. They should be mulched with moss, and a hand-glass placed over them. They may be increased by division.

LIX. CHIMAPHLA (from χήμα, chéma, winter, and φέλος, phéló, to love; the plants are green in winter). Pursh, fl. amer. sept. 1. p. 300. Nutt. gen. amer. 1. p. 374.
—Chimáza, R. Br. in herb. Banks—Pyrola species, Lin. and others.


Umellata-flowered Winter-green. Fl. June. Cht 1752. Pl. 143 to 144 foot. 2 C. maculata (Pursh, fl. amer. sept. 1. p. 300. Nutt. gen. amer. 1. p. 275.) leaves lanceolate, acute, with white bands on the upper surface along the nerve and veins, opposite, or 4 in a whorl; peduncles downy, bearing a 2-3-flowered corymb at the apex; bracteoles linear; appendages of filaments woolly; style very short. 5. H. Native of North America, from Canada to Carolina, in sandy or gravelly woods; on the north-west coast. Pyrola maculata, Lin. spec. 568. Sims, bot. mag. 897. Chimáza maculata, R. Br. in herb. Banks.—Pluk. mant. 157. t. 349. f. 4. Plant subfrutescent, evergreen. Root creeping. Stem procumbent at base and ascending at apex. Lower surface of leaves red. Pedicels and calyces red, clothed with clamyd down. Flowers pendulous, white. Anthers yellow. This plant is in high esteem for its medicinal qualities among the Indians; they call it sipo-si-acne. Mr. Pursh tells us, that he has witnessed the beneficial effects of a decoction of this plant in a very severe case of hysterics; and he says it is a plant eminently deserving the attention of physicians. We are also informed that its decoction has proved very serviceable in scrophulous diseases.


3 C. Menziesii (Sprung, syst. 2. p. 317.) leaves alternate, or 3 in a whorl, lanceolate, acuminate, serrated, discolorous; peduncles 2-flowered, glabrous; bracteae broad-roundish; calyx segments elliptic, acule; style distinct. 5. H. Native of the north-west coast of America, where it was collected by Mr. Menzies. Pyrola Menziesii, R. Br. in herb. Banks ex Don, in memor. mém. 5. p. 245. Plant subfrutescent, evergreen. Root creeping. Stems ascending, red. Pedicels glabrous. Flowers pendulous, white. Leaves deep green above and red beneath. This species has a striking resemblance to P. maculata.

Menzies' Winter-green. Plant ascending, 2 to 3 inches long.

Cult. See Pyrola, for culture and propagation, above.

LX. MONESES (from μοιρος, moiros, alone; flowers solitary on the tops of the scapes). Sal. mss. in Gray, brit. arrang. 2. p. 403. Pyrola uniflora, of authors.


1 M. grandiflora (Sal. mss. in Gray, brit. arrang. 2. p. 403.) flowers solitary, at the top of the scape; cells of anthers elongated and tubular; stigma acutely 5-toothed; leaves orbicular, serrated. 5. H. Native of Europe, Asia, and North America, in alpine mossy woods; in Britain, in alpine woods and by the sides of trickling rills; in the western islands of Harris and Skye. In a firt wood near Brodie House, by Forres. Pyrola uniflora, Lin. spec. 568. Fl. dan. t. 8. Smith, engl. bot. t. 146.—Moris. hist. 3. p. 505. sect. 12. t. 10. f. 2.—Riv. mon. t. 189. f. 1. Leaves 3, rarely 4 in a whorl, longer than the dilated petioles. Scape furnished with an ovate scale above the middle. Flowers large, solitary, drooping, white, very sweet-scented. Stamens recurring.


Cult. For culture and propagation, see Pyrola, above.

LXI. CLADOATHANUS (from κλάδος, klados, a branch, and δαύμος, thamos, a shrub). Bongard, in mem. acad. petersb. 2. p. 155. t. 1.—Pyrola fruticosa, Eschholz. mss.

Margins of the valves septifertous. Placenta 5-lobed; lobes roundish. Seeds numerous, small, involved in membranous aril.—A much branched shrub. Leaves sessile, entire, elliptic or oblong, glabrous, but when young finely ciliated, glaucous beneath, 1½ inch long and 5 lines broad. Flowers axillary, solitary.

1 C. pyroliflorus (Bougard, l.c.). B. H. Native of the north-west coast of America, and of the Island of Sitcha. Pyrola-flowered Cladothamnus. Shrub 4 to 6 feet.

Cult. For culture and propagation see Azalea, p. 531.

Tribe V.


—Leafless parasitical herb.

LXII. HYPO PitY S (from ὑπό, under; and πυτίς, a pine-tree; the species are parasitical on the roots of pine-trees). Dill. gen. 7. Nutt. gen. amer. 1. p. 270.—Monotropa species, Lin. and others. Orobanchoideae, Tourn. mem. acad. 170.

Lin. syst. Decândria, Monogynîa. Calyx 3 to 5-parted. Corolla permanent, so deeply 4-5-cleft as to appear of 4-5 petals; each segment with a cucullate nectareiferous base. Stamens 8-10. Anthers small, horizontal, with 2 obtuse horns at their base, at length opening flat. Stigma orbicular, naked. Capsule 5-celled, 5-valved. Seeds numerous, minute, surrounded by a wing.— Parasitical plants, mostly upon the roots of trees, destitute of proper leaves and verdure. Root roundish, composed of an agglomeration of intricate succulent fibres, producing many 1-flowered scaly scapes or stems. Flowers at first nuttant. Plants white and smooth, destitute of the musky odour of Hypopitys, but having a nauseous liqueaceous scent when bruised. Habit of Orobanche.

1 M. Morisoniana (Michx. fl. bor. amer. 1. p. 266.) scapes elongated, very straight, 1-flowered, furnished with distant scales; flower erect. 2. H. Native of Virginia and Carolina, in shady woods, parasitical on the roots of trees.—Mor. hist. 3. sect. 12. t. 16. f. 5. Flowers larger than in the following species, frequently with 12 stamens.


2 M. uniflora (Lin. spec. 553.) scape short, thick, 1-flowered, furnished with approximate scales; flowers drooping.


Cult. The species are not cultivable.

LXIII. MONOTROPA (from μονή, monos, one; and τρόπος, tropo, to turn; flowers turned one way). Nutt. gen. amer. 271.—Monotropa species, Lin. gen. no. 596. Juss. gen. 450.

Lin. syst. Decândria Monogynîa. Calyx none. Corolla permanent, so deeply 5-parted as to appear 5-petalled; each segment with a cucullate nectareiferous base. Stamens 10; anthers reinfra, horizontal, with 2 obtuse horns at their base, emitting the pollen near the middle by 2 transverse chinks. Stigma orbicular, naked. Capsule 5-celled, 5-valved. Seeds numerous, minute, surrounded by a wing.— Parasitical plants, mostly upon the roots of trees, destitute of proper leaves and verdure. Root roundish, composed of an agglomeration of intricate succulent fibres, producing many 1-flowered scaly scapes or stems. Flowers at first nuttant. Plants white and smooth, destitute of the musky odour of Hypopitys, but having a nauseous liqueaceous scent when bruised. Habit of Orobanche.

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Cult. The species are not cultivable.

LXIV. PTEROSPORA (from πτερός, pteron, a wing; and σπόρος, spora, a seed; the seeds are surrounded by a membranous margin or wing). Nutt. gen. amer. 1. p. 209. Lindl. coll. with a figure.

Lin. syst. Decândria, Monogynîa. Calyx 5-parted. Corolla ovate, with a 5-toothed reflexed border. Stamens 10. Anthers excentrically pettate, 2-celled, adnate to the filaments by the margin, bifidose at the base. Capsule 5-celled, imperfectly 5-valved; dissepiments and valves united towards the base, and joined with the central axis. Placenta 5-lobed. Seeds very numerous and minute, each furnished with a terminal wing.—An evanescent annual plant, destitute of verdure, with the habit of Monotropa, to which it is nearly allied. Leaves none. Stem simple, racemose. Flowers numerous, scattered, reddish, resembling those of some species of Andromeda. Peduncles rather long, 1-flowered, drooping.

1 P. andromeda (Nutt. gen. amer. 1. p. 27.) O. H. Native of Upper Canada, near the Falls of Niagara, in clay soils; banks of Seneca lake; and near Albany, in the state of New
York. Plant covered with brownish viscid hairs. Stems brownish red or purple, furnished with lanceolate scales at the base. Peduncles filiform, mutant. Corollas white, with a red border.

Andromeda-flowered Pterospora. Fl. July. Pl. 1 to 2 feet.

Cult. The plant is not cultivatable.


1 S. Caroliniana (Ell. fl. car. vol. 2.) ©. H. Native of North Carolina, in rich shady woods. Flowers sweet-scented, reddish-white.


Cult. The plant is not cultivatable.