"Indocti discant, et ament meminisse periti."

HÉNAULT, after POPE.
A GLOSSARY
OF
BOTANIC TERMS
WITH THEIR DERIVATION AND ACCENT

BY
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KNIGHT OF THE POLAR STAR, HON. PH.D. (UPSAL.)
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"Every other author may aspire to praise, the lexicographer can only hope to escape reproach."

Dr. Samuel Johnson.
The task of selecting the terms to be included in any branch of science offers many difficulties: in the case of botany, it is closely linked on with zoology and general biology, with geology as regards fossil plants, with pharmacy, chemistry, and the cultivation of plants in the garden or the field. How far it is advisable to include terms from those overlapping sciences which lie on the borderland is a question on which no two people might think alike. I have given every word an independent examination, so as to take in all, in fact, which might be fairly expected, and yet to exclude technical terms which really belong to another science. Words in common use frequently have technical meanings, and must be included; other technical words are foreign to botany, and must be excluded. Thus "entire" must be defined in its botanic sense, and such purely geologic terms as Triassic and Pleistocene must be passed by. The total number of rare alkaloids and similar bodies recorded in pharmacologic and chemical works, if included, would have extended this Glossary to an inconvenient size; I have therefore only enumerated those best known or of more frequent mention in literature, or interesting for special reasons. Many words only to be found in dictionaries have been passed by; each dictionary I have consulted contains words apparently peculiar to it, and some have been suspected of being purposely coined to round off a set of terms.

The foundations of the list here presented are A. Gray's "Botanical Text-Book," Lindley's "Glossary," and Henslow's "Dictionary," as set forth in the Bibliography. To these terms have been added others extant in the various modern text-books and current literature, noted in the course of reading, or found by special search. The abstracts published in the "Journal of the Royal Microscopical Society" afforded many English equivalents of foreign terms. In drawing up definitions, the terms
used to denote colour were found to be so discordant that I was compelled to make a special study of that department, and the result will be found in the "Journal of Botany," xxxvii. (1899), 97-105.

I have carefully considered the criticisms of this work which have come under my notice, and have adopted all those suggestions which could be taken up, so far as they did not contradict the plan on which this volume was drawn; some criticisms were mutually destructive, others were due to insufficient knowledge of the original definitions on the part of the critic, whilst others advocated radical changes, which would have made this, not my book, but some other person's product. I have tried to furnish the terms in use in various periods, so that a paper or book of any period can be read, and its special expressions understood; to cut down the volume would have been therefore unwise, and the attempt would have failed to gain the approval of competent judges, as no two teachers would have agreed upon the exclusion of given terms. In more than one case, an obsolete term has been lately revived.

In issuing a new edition of this book, I should have much preferred to blend old and new into one alphabet; but the increased cost of type-setting has made that impracticable from the publishing point of view, and has necessitated a reprint of the pages here numbered 1 to 414, by photo-zincography.

The total numbers included in this Glossary now amount to nearly 25,000, and if the various meanings were added, they would amount to about 1400 more. The derivations have been carefully checked, but as this book has no pretension to be a philological work, the history of the word is not attempted; thus in "etiolate" I have contented myself with giving the proximate derivation, whilst the great Oxford dictionary cites a host of intermediate forms deduced from stipella. The meaning appended to the roots is naturally a rough one, for to render adequately all that may be conveyed by many of the roots is manifestly impossible when a single word must serve. The accent has been added in accordance with the best discoverable usage; where pronunciation varies, I have tried to follow the
best usage; in some words such as “medullary” I have given
the accent as it is always spoken, though all the dictionaries,
except Henslow’s, accent it as “med’ullary.” When words have
become thoroughly anglicised, it would have been mere pedantry
to accent them otherwise; we say or’ator, not as in Latin, ora’tor.
The accent does not imply syllabic division, but when the accent
immediately follows a vowel, that vowel is long; if one or more
consonants intervene, then the vowel is short; thus ca’nus,
cas’sus, as though they were printed cd-nus, cd-sus; in a few
instances the pronunciation is also given when the word would
otherwise be doubtful as to sound.

It has been my duty to condense the definitions, often a difficult
matter when a longer explanation would have been easier to
draw up. I trust that I have in each case succeeded in setting
out the main or central meaning, but many writers have their
own modified or restricted meaning of even well-known terms.
To still further economise space, words drawn from the same
leading word have been grouped into paragraphs, thus obviating
the necessity of repeating the leading word with its meaning
many times over, and only requiring the additional root to be
given; occasionally this has led to the intentional neglect of
strict alphabetic sequence. The names of groups of plants have
given much trouble; whilst all proposed terms manifestly could
not be included, many have become so often quoted as to demand
recognition; as a rule I have not admitted groups of even ordinal
value, still less of lower rank. Compound terms have been left
out when intermediate between the meaning of the primitives;
those included seem to require mention on special grounds.

The number of recently-coined terms in ecology and genetics
will be noted; I have not included many compound terms, such
as “Carex-Sieversia-Polygonum-Coryphium,” or its vernacular
equivalent, “The Sedge-smartweed-Alpine meadow formation.”

Authors’ names in parentheses, following definitions, are those
who have been taken as authority for such definition, and when
the actual language is used, it is indicated by quotation marks;
the authority sometimes coincides with the inventor of the term.
As instances I may mention the use of “creek,” “blow-out,”
Preface

"sand-bar" in the American usage of those terms. Substantives in the headings have been shown by the use of a capital letter, adjectives and other parts of speech by a small letter; exceptions being adjectives drawn from a proper name as "Darwinian," and those which form part of such terms as "Conjoint Bundle." Greek is quoted in the original characters, Latin in italic, or where otherwise it would be doubtful, it is indicated; this is further explained on the page facing page 1 of the Glossary; the use of small capitals refers the reader to the word so printed for a definition of the term, or to a correlative term.

The Appendixes hardly need any detailed explanation; it will be seen that the Bibliography is a selected list of works chiefly in alphabetic form, arranged chronologically. General dictionaries, and large works in which technical terms form only a small proportion of the whole, have been omitted.

The pleasant duty now remains of acknowledging most gratefully the invaluable help I have received from a host of friends during the progress of the work. I must name as principal helpers, the following; the star prefixed shows help extended to this edition. Mr. L. A. Boodle, F.L.S., Mr. N. E. Brown, A.L.S., Mr. I. H. Burkhill, M.A., Sir Francis Darwin, F.R.S., Prof. J. B. Farmer, F.R.S., *Dr. R. R. Gates, F.L.S., Prof. M. M. Hartog, F.L.S., Mr. G. E. Massee, A.L.S., Dr. C. E. Moss, F.L.S., Prof. H. H. W. Pearson, F.R.S., Mr. R. A. Rolfe, A.L.S., Mr. E. S. Salmon, F.L.S., Dr. D. H. Scott, F.R.S., Mr. A. G. Tansley, F.R.S., Prof. J. W. H. Trail, F.R.S., Dr. Harold Wager, F.R.S., Mr. W. C. Worsdell, F.L.S., and Mr. C. H. Wright, A.L.S.; their help remains embodied in the text, though six of the helpers have passed away. To all, my indebtedness is great, the value of this Glossary being largely due to their ready aid.

In every volume of similar character to this which I have had to consult, I have found errors, sometimes numerous, occasionally serious. This much larger volume offers a greater chance of error, but I trust that comparatively few errors will be found.

B. Daydon Jackson.

Clapham: August, 1927.
PUBLISHER'S NOTE

At the time of his death, Dr. Daydon Jackson was completing the revision of the proofs of this, the fourth edition of his book.
EXPLANATION

Headings in black type; substantives are shown by the use of an initial capital letter; adjectives and adverbs by the use of a small initial letter (exceptions are explained in the Preface); the sign ~ is used to avoid repetition of the heading; ‡ was used by Lindley to denote a word which is obsolete or improperly formed, and is used here for undoubtedly obsolete terms.

Latin words are shown by being in Italic where practicable, elsewhere by the abbreviation Lat. appended; other languages are indicated by Fr. for French, Ger. or Germ. for German, Ital. for Italian.

Cross-references in SMALL CAPITALS are employed to spare repeated definitions; they are usually preceded by the sign of equality, =. When variants do not differ save by the termination, that only is given, but if the accent varies, they are spelled out in full. A few well-known abbreviations are also employed, such as dissyll. for dissyllable, pr. for pronounced, and the like.
A GLOSSARY
OF BOTANIC TERMS

a, privative; in Greek compounds = without, as apetalous, without petals; modified into an- for euphony.

ab (Lat.), from; as abnormal, a deviation from rule.

abaxial (ab, axis, an axle); (1) applied to an embryo which is out of the axis of the seed by one-sided thickness of the albumen; (2) the side of a lateral organ away from the axis.

abbreviated, abbreviatus, shortened, as when one part is shorter than another; Abbreviation, a selection of those most frequently used will be found in the Appendix.

aberrant, aberrans (aberro, I go astray), differing from usual structure, departing from the type.

Aberration, non-typical structure.

abietio (Abies, a fir-tree), used of certain coniferous products which are not exclusively from Abies; ~ Anhydride, the resin in turpentine; ~ Acid, a compound of the last with water, forming a large proportion of the constituents of frankincense.

abietiform Hairs (forma, a form), having a uniseriate main axis, with whorls of ray-cells (Solereider);

Abietin, resin from Abies pectinata, DC., and Abietite, a sugar from the leaves of the same species;

abietineous, abietinean, allied to or resembling Abies; abietinus (Lat., made of fir), applied to cryptograms which (1) grow on firs, or (2) resemble a fir-tree in habit, as Alsia abietina, Sulliv.

Abiogenesis (a, not; Bios, life; γένεσις, beginning), spontaneous generation; the assumed origin of living organisms from non-living matter.

Abjection (abjectio, a throwing away), casting off spores from a sporophore.

abjoint' (ab + joint; a hybrid word), to delimit by septa or joints.

Abjunc'tion (abjunctus, unyoked), cutting off spores on portions of growing hyphae by septa.

Ablactation (ablacto, I wean), an inarching.

Ablaque'tion, Ablaguetio, loosening the soil round trees.

Ab'last (a, not; Βλαοτός, a bud or shoot), the entire suppression of an organ, as distinct from Abortion, in which it remains rudimentary or partially developed (Eichler);

ablastic, applied to parts of a flower or other organ which have not been developed; ablastous, without germ or bud.

Abnoda'tion (abnodo, to clear of knots), cutting away knots from trees.

abnorm'al, abnormalis (abnormis, irregular), deviating from rule, as when stamens are opposite the petals instead of being alternate.

aboriginal (ab, from; origo, a source), indigenous; not introduced.

Abortion (abortio, a miscarriage), non-formation or incompleation of a part; abortive, abortivus, imperfectly developed, as abortive stamens when filaments only; abort'iens, becoming abortive.

abra'ded,abra'dus, rubbed or scraped off.

abrupt', abruptus, suddenly ending as though broken off; abrupt'ly-acuminate, having a point arising from a broad extremity; ~ pin'rate, a pinnate leaf ending with a pair of leaflets.

Ab'sciss-layer'or, a layer of separation, especially with reference to the phenomena of defoliation.
Abscession (abscessus, cut off), detachment of spores from a sporophore by the disappearance of a connecting zone.

Absinth'ic, referring to Artemisia Absinthium, Linn.; Absinth' in, a bitter principle obtained from the same.

A'solute (absolutus, perfect, complete), actual, the opposite of relative. The absolute direction of an embryo may be inverted, but erect relatively to the carpel.

Absorption (absorptio, a swallowing), the act of imbibing liquids or gases.

Abstric'tion (ab', from, strictus, drawn together), a term which covers both Abjunction and Abscession.

Abys'sal (αβυσσός, bottomless), applied to organisms existing in the depths of the ocean (Warming).

Acalyc'a'lis (α, not; κάλυξ, a cup); (1) having no calyx; (2) having no adhesion to the calyx; acal'ycine, acaly'cious, acaly'cious, acaly'cious, destinute of calyx.

Acantha'ceous (ἐκανθός, a thistle-head; + ἀκήνον, used of prickly plants, such as thistles.

Acantha, Acan'th' on (ἐκανθά, a thorn), a spine or prickle; acantha'ceous (+ ἀκήνον), (1) armed with prickles; (2) belonging to the natural order Acanthaceae, the typical genus being Acanth'us, Tourn.; acan'thine, pertaining to that genus; acanthocarp'ous (καρπώδες, fruit), having spiny fruit; acanthocla'dous (κλάδος, a branch), acantho'cla'dus, with spiny branches; acanthophor'ous, (φόρος, I bear), acanthophor'ous, spine-bearing; acanthop'odous (πούς, ποδός, a foot), having petiole or peduncle furnished with spines or prickles; Acanth'osphe'res (σφαιρα, a sphere), ciliated bodies in the cells of Nitella, termed “Stachelkugeln” by the Germans.

Ac'aro-domat'ia (Acarus, the typical genus of mites; διωμάτιον, a little house), formations on plants adapted to shelter Acari when they are of service to the host.

Acaroph'ily (φιλέω, I love), mutual advantages between plants and mites; adj., acaroph'ilous; acaroph'y'tic (φύτον, a plant), harbouring mites; Acarophy'tism is the condition itself.

Acarop'tropic (+ Carpotropic), not throwing off its fruits.

Acar'ousel (a, not; καρπός, fruit), destinute of fruit.

Acaules'cent, acaules'cens, becoming stemless; acaul'ine, acaul'ose, acaul'ous, acaul'is, stemless or seemingly so; Acaulo'sia, abnormal deficiency of stem.

Acces'sorial, accessor'ious, specially applied to those branches of Pithophora arising from near the base of the mother-cell (Wittrock).

Access'sory (Accessio), an addition or appendage; ~ Buds, those additional to the axillary and normal buds, and frequently assuming their function; ~ Branches, those which spring from the foregoing; ~ Cell, the sister-cell of a guard-cell of a stoma; ~ Fruits, parts which are conspicuous but form no part of the pistil, as the enlarged torus of the strawberry; a pseudo-carp; ~ Gon'id'ia, formations occurring in Mucorini besides the typical gonidia; ~ Indu'sium, when the margin of a fern-frond is inflexed over the sorus.

Ac'cident'al = Adventitious.

Acci'sus (Lat.) denotes an end having an acute sinus between two rounded angles.

Acclima'tion (ac = ad, to, clima, climate), used by L. H. Bailey for the natural process of becoming inured to a climate at first harmful; Acclimatiza'tion, is preferred for scientific use, especially when denoting human action in inuring plants to a strange climate.

Accommoda'tion (accommodatio, an adjustment), Adaptation.

Accre'scent, accres'cens, increasing in size with age, as the calyx of some plants after flowering.

Accrete' (acre'tus, grown together),
African, naturally grafted.

Accret'ion, Accret'sio, (1) growing to one another; (2) increase by addition of particles to the outside.

Accumb'ent, Accumb'ens, lying against another body; ~ Cotyled'ons, those having their edges against the radicle, thus o =.

Accum'dent (Heining) = ACCUMEBENT.

Acells'tus (Lat.), somewhat acerose.

Acen'iun = ACHENE.

Aceph'alous, Aceph'alus (a, without; 
κεφάλη, a head), headless; used for an ovary which is not terminated by the stigma, as in Labiatea.

Acer, used by some authors instead of the generally adopted Acri, (1) sharp, pointed; (2) acrid, as in Ranunculus acris, Linn.

Acera'ceous, relating to the genus Acer, or its allies; aceric, pr. a-ser'-ik, pertaining to the genus Acer, the Maple or Sycamore.

Acerose, A'cerous, Acreo'sus (acer, sharp), needle-shaped, like the leaves of Pinus; Acre'sae, a term proposed by A. Braun for the Coniferae.

Acer'vate (acervus, a heap), heaped up; Acer'vulus (Lat., a little heap), pl. Acer'vuli, small clusters, as of Fungi appearing on bark or leaves.

Accent'uliform, Accent'uliform'is (Accentulum, a cup or vinegar-cruet; forma, shape), saucer-shaped, used for the fructification of some Lichens;

Accent'ulous, Accent'u'les, Accentu'lo'sus are variations in form of the word; Accent'u'ulum (Lat.), the receptacle of some Fungi.

Aceta'rious (acetaria, vegetables with vinegar), relating to salad herbs; Acet'ary, Grew's term for salading.

Acet'ic, pertaining to vinegar, acetum; ~ Fermentation, oxidation of alcoholic liquids, caused by the Fungus popularly known as "Mother of Vinegar," Bacterium xylinum, A. J. Brown; Acetose, acetosus, sour, acid.

A'ceus, a Latin suffix of resemblance, asolia'ceus, leaf-like; in English it becomes -aceous.

Achae'na, Achae'niun, = ACHENE.

Achae'nocarp (a, not; χαλις, I gape; καρπος, fruit), or Ache'nocarp, any dry indehiscent fruit.

Achasy'ophy'tum (a, privative; χαλις, I open; φυτον, a plant), a plant with indehiscent fruit.

Acheil'ary (a, without; χείλος, a lip), wanting a lip, as some Orchids.

Ache ne, pr. a-kēn', Ache'niun (a, not; χαλις, I gape), a small, hard, dry, indehiscent fruit, strictly of one free carpel as in the buttercup; occasionally consisting of more than one carpel as in Composites, in the latter case with adnate calyx. Also spelt Aken', Ake'niun, etc.; Acheno'dium, a double achenes, as the cremocarp of Umbelliferae.

Achlamy'deous, Achlamy'decus (a, without; χλαμίς, a cloak), destitute of perianth, as in willows.

Achlorophyll'a'ceous (a = without, + CHLOROPHYLLACEOUS), destitute of chlorophyll.

Achro'matic (a, without; χρῶμα, colour); (1) without colour, acherous; (2) not readily taking colour; ~ Spindle, the thread-like protoplasmic figures between the poles in karyokinesis; Achromatin, Fleming's term for the basic substance of the nucleus, less susceptible of staining than the chromosomes; the Nuclein of Strasburger; achoromat'ophile (φιλέω, I love), applied to a structure which does not take staining.

Achro'mus, aChro'os (ἀχρος, to be without colour, pale), colourless; hyaline; Achor'o'cyyst (κυττάρις, a cavity), Arbaumont's term for cells of the terminal meristem, which have clear contents: cf. Cyanocyst; Achoroodex'trin ( + Dextrin), one of the group of dextrins not coloured by iodine: cf. Erythrodextrin, Amylo'dextrin.

Achrophy'phum (ἀχρυφος, chaff; φυτον, a plant), a plant with glumaceous flowers, as grasses.

Acie'ula, (acus, a needle), the bristle
like continuation of the rhachilla of a grass; Aciculae, tooth-like processes of the hymenium of certain Hymenomycetous Fungi; aciculae, acicula'ris, (1) slender or needle-shaped, (2) a phase of Bacterium Termo, Cohn, when it becomes needle-shaped; ♀ Crystals, needle-shaped crystals; ♀ Fi'bres, fibrous cells or raphidias, occurring in Acanthaceae; aciculae, acicul'a'tus, aciculi'nus, superficially marked as if scratched with a pin; acicul'iform (forma, shape), needle-like.

acid'ous (ἀκίδωτος, pointed), when branches or organs end in a spine or hard point.

A'cies (Lat., edge), the edge or angle of certain stems.

ac'i'form (acus, a needle; forma, shape) = ACICULAR.

acic'a'ceous (acinus, a grape seed + ACGEOUS), full of kernels.

acic'a'ifolius (acinaces, a scimitar; folium, a leaf), a fleshy leaf, curved like a scimitar; acicina'iform, acica'ifolius, scimitar-shaped.

acic'inus (acinus, a grape-seed), when a stem is covered with vesicles resembling grape-seeds; Ac'i'ne, Ac'inus, a single member of such fruits, as the raspberry; a drupel; formerly used for a bunch of fruit, as of grapes; Acinod'en'drus (βενδρος, a tree), a plant whose fruit is in bunches; ac'inose, acino'sus, like grapes, or of granular bodies resembling them.

acic'phy'lus (ἀκή', a point; φυλλον, a leaf), a linear and pointed leaf.

Aola'dium (a, without; κλάδος, a branch), in Hieracium, the peduncle of the terminal flower-head; Ac'lythrophy'tum (κλασθρον (?) a door, φυτόν, a plant), plants whose seeds are supposed to be naked, without a pericarp; acond'y'lose, acond'ylous (κόνδυλος, a knuckle or finger-joint), said of plants which have no joints or nodes.

Ac'on'i'tin, the alkaloid derived from monkshood, Aconitum Napellus, Linn.

Ac'orin, a glucoside from Acorus Calamus, Linn., which is used in perfumery.

A'corn, the fruit of the oak.

Ac'spores, -ae (ἀκη', point, + SPORE), plants having awned seeds, as grasses (Clements).

Acotyle'don (a, without; κοτυλήδων, used for seed-lobe), a plant destined of cotyledons or seed-lobes; Cryptogams and such plants as Cuscuta; adj. acotyle'donous, acotyle'do'neus.

acqui'red (acquiero, I acquire), used of those characters which arise in the life-time of the organism as the result of the environment, in distinction to hereditary characters.

acramphib'rous (ἀκρόπ, apex; ἀμφί, on both sides; βρόω, to bud), plants producing lateral as well as apical buds; Acramphib'rya, a division proposed by Endlicher to embrace Dictyotyledons and Gymnosperms; Acran'dry (ἀνηρ, ἀνδρός, a man), when androtend the apex of a shoot in Bryophytes; adj. acran'-drous; Acran'thi, pl. (ἀνδρος, a flower), employed by W. Wilson to denote terminal inflorescences in Mosses.

acris, cf. ACER.

Acroblaste'sis (ἀκρός, apex; βλαστός, a bud), when the germ-tube of Lichens proceeds from an end of the spore; acrob'latic, Celakovsky’s term for the branch of an inflorescence which arises from a terminal bud; Acrob'r'ya (βρώ, to bud), plants growing at the point only, as all Acrogens having a distinct axis; adj. acrob'rous; acrocarp'ous (καρπός, fruit), terminal fruited; a main division of Mosses; Acrocecid'ium (+ CECIDIUM), a deformity of the terminal bud, due to gall-insects; Acrochlamy'deae (χλαμύδας, a tunic), a term proposed by Hoeck for all haplostemonous Gamopetalae exclusive of Cucurbitaceae, but inclusive of Umbelliferae; a group con-
sidered by him to stand at the head of Dicotyledons; Acroconid'ium (+ Conidium), used of those conidia which successively mature and break away from the apex of the conidiophore (A. Fischer); acro'd'romous (δρόμος, a course), venation-strands uniting at the apex of the leaf, as in Plantago;acrofu'gal (fügō, a flight), basipetal; Ac'tro'gam (γάμος, marriage), the same as chalazogamic; acrog'amous (γάμος, marriage), plants producing the egg-apparatus at the summit of the embryo-sac, as in most Angiosperms (Van Tieghem); Acrog'amy, may be double, as when the pollen tube and egg-apparatus are both apical; or partly basigamic, either of male (pollen-tube) or female (egg-apparatus) (cf. Basigamous); acrog' enous, (γάμος, race), (1) used of plants growing at the apex, such as Acrog'ens, Ferns; (2) produced at the end of a filament, as some fungus spores; Acrogen'esis (γένεσις, origin), terminal fructification; Acro gonid'ium (γόνος, offspring, εἶδος, form), a gonidium formed at the apex of a gonidiophore; acrog'y nous (γυνή, a woman), having the stem terminated by female organs, as archegonia; acrogyra'tus (γυρατος, turned round), having an elastic ring at the point (Lindley) as in Schiz'lea.

Acro'nus (perhaps from ἀκρόν, the highest point), Necker's term for an ovary without a basal disk.

Acronych'ius (ἄκρος, apex; ὄνος, a claw), curved like the claw of an animal; acrop'etal (πέτο, I seek), produced in a succession towards the apex, as applied to development of organs; the antithesis of basipetal; acrop'h'ilus (φιλέω, I love), dwelling in the alpine region; Acrophy'ta (φυτών, a plant), alpine plants; Acrophy'ta, alpine plant formations (Clements); Acrosar'cum (ἄροσ, σάρκος, flesh), Desvaux's term for a berry from an ovary with adnate calyx, as the currant; acro'scop'ic (ἀκροσκόπε, I see), looking towards the summit; the reverse of basiscopic; Acrosper'meae (σπέρμα, a seed), Acrosperms, those Angiosperms which are presumed to have begun with simple porogamous mode of impregnation; cf. Pleuro'sperm; Ac'rospire (αυτήτα, a coil), Grew’s name for the first sprout of a germinating seed, the extruded radicle; acrospi'red, germinated, as in maitling; Ac'rospore (σπορά, a seed), a spore formed at the summit of a sporophore or filament; acrothec'cal (ἐθηκα, a case), applied to virescent anthers when the polliniferous portion is confined to the apex, the lower portion becoming leaf-like (Celakovsky); Acro'tonous (τόνος, a cord), the tissue of the pollen-sac in Orchids prolonged to the upper end of the anther; Acrot'ropism (τρόπος, a turning), the continued direction of a root so long as its apex is uninjured.

Ac'rose = Fructose.

Ac'tad (ἄκτη, rocky coast; ἄθη, patro-nymic suffix), a plant of a rocky shore (Clements).

Actinench'yma (ἄκτη, a ray; ἀγχύμα, an infusion), cellular tissue formed in a star-shaped manner, as seen in a cross-section of Juncus; actin'ic, used of certain rays of the spectrum, which have a powerful effect on growth; Act'ininism, the chemical action of sunlight; Act'inocarp, a fruit which is actinocarp'ic (καρπός, fruit), having the carpels or placentas radiating like the spokes of a wheel; actinod'romous (δρόμος, a course), when veins are palmately or radially arranged, as in Acer;

Actinomer'phy (μορφή, a change), an actinomorphic arrangement; actinomorph'ic, ous, having flowers of a regular or star pattern, capable of bisection in two or more planes into similar halves; Actinomycos'sis, a disease in the jaw-bone of man and animals attributed to a Fungus, Nocardia Actinomycosis, Trev.;

Act'ino'stele (+ Stele), the stele of most roots and certain stems, consisting of alternating or radial groups of xylem and phloem within a
pericycle (Brebner); actinost'omous (στόμα, a mouth), radiate structure round the ostioles of Lichens and other Cryptogams.

Actinop'h'ryds (Actinophrys, Ehrenb., a genus of Rhizopods, Gobi's term for globes with radially-arranged pseudopodia in Pseudospora, a parasite on Vaucheria.

Acti'um, pl. Act'i'a (ἀκτή, rocky coast), a rocky seashore plant formation; actoph'ilus (φιλέω, I love), growing on the seashore; Actinoph'ya, plants of the rocky shore (Clements).

ac'tive, in a growing condition; not dormant.

acu'late, aculea'tus (aculeus, a sting or prickle), armed with prickles, as the stem of a rose; acu'leiform, aculeiform'is (forma, shape), prickle-shaped; acu'leolate, aculeola'tus, somewhat prickly; aculeo'sus, decidedly prickly; Acu'leus (Lat.), a sharp epidermal emergence, a prickle; pl. Acu'lei; Acu'leolus, a diminutive of the last.

Acu'men (Lat., a point), a tapering point; acu'minat'e, acumin'a'tus, having a gradually diminishing point; acuminif'o'ius (folium, a leaf), with acuminate leaves; acu'minose, acumin'o'sus, approaching acuminate; acumin'ulate, having a small terminal point.

acutang'ular, acutang'ul'us, (Lat.), when stems are sharply angular; acu'tate' (acu'tus, sharp), slightly sharpened, as at the apex; acu'te, acu'tus, distinctly and sharply pointed, but not drawn out; acu'tiflor'us (Lat., flos, floris, a flower), with acute perianth segments; acu'tifo'lius (Lat., folium, a leaf), with pointed leaves; acu'tilob'us (Lat., lobus, a lobe), composed of lobes which are acute; acu'tiuscul'us (Lat.), somewhat acute.

acyanophor'ic(s, not; κίανος, dark blue, φόρος, bearing), applied to plants which do not produce cyanogen; acyc'lic (κύκλος, a circle), used of flowers whose parts are arranged spirally, not in whorls.

Actinostele

-ad (-ad בן, patronymic suffix) used by Clements as an addition meaning Ecad.

Adap'ti'ion (adaptatus, fitted), the means by which an organism adapts itself to changed surroundings; ~ Direct'or, employed to denote an advantageous change by reaction to a stimulus (Lotsy); cf. Biasiomet'rophosis; adap'table, "able to originate Ecads" (Clements); adap'tive modifications are those which obviously fit an organism to exist in given environments, and perhaps produced by the latter; ~ Par'asites, saprophilous fungi become parasitic; ~ Ra'ces, morphologically identical, but differing physiologically; cf. Biologic Ra'ces.

dadax'ial (ad, to; axis, an axle), the side or face next the axis, ventral.

adduc't'ia Va'sa (ad, to; duco, I lead), the spirals in tracheids, which spirals were formerly supposed to be vessels; Adduc'to'res, Hedwig's term for archegonia.

Adeloga'm'icae, (ἀδηλός, unknown; γάμος, marriage), Radkofser's term for Fungi and Lichens; adelosi'den's'ic (σφών, a tube), applied to a Dicyosto'le when complex, and ceasing to be tubular (Brebner).

Adel'phi'as (ἀδελφός, a brother); (1) a fraternity; a collection of stamens by their filaments into one bundle; pl. Adelph'i'aes, two or more similar bundles; (2) used by Galton for fraternities in variation; adelph'ic, adelph'i'ous, adelph'us, having brotherhoods of stamens; Adelphog'am'y (γάμος, marriage), fertilization between neighbouring plants of the same species; Adel-ph'o'phy'agy (φάγος, a glutton), the union of two gametes of the same sex (Giard); Adelphota'x'y (taxi, order), used by Hartog to express the mutual attraction of spores of Achyla and of Pedastreae after extrusion.

Ad'le'ome (possibly from ἀδηλός, concealed) = Albu'knum (Lindley).

Aden (ἀδήν, a gland), a gland or
tuber
cle: aden'iform (forma, shape),
a hybrid term for gland-shaped;
adeno'ca'lyx (καλύξ, a 
cup), where the  
calyx is studded with glandular  
spots; Adé'no'cyst (κύστης, a cavity),  
the membrane of a cell or cells  
surrounding a gland (Villemien);  
ad'enoid (ειδός, like), gland-like;
Adé'nophoré (φορέω, I bear), a stalk  
supporting a gland; adenoph'orous,  
bearing glands; adenophyl'ious  
(φύλλον, a leaf), glandular leaved;
adénop'odons, adenóp'tus (πούς, ποδός,  
a foot), with the petiole or peduncle  
glandular; adénoste'mon (στήμον, a  
stamen), having glands on the sta-
mens; ad'enose, ad'énous, glandular.
Adé's'my (a, without; δεσσάος, a bond),
Morren's term for congenital separa-
tion of parts normally united.
Adé'flux'ion (ad, to; fluxio, a flowing),  
the attraction by which sap is drawn  
towards the leaves.
adé'lu'tinate, adglu'tinat'us (ad, to;  
glutino, I glue), grown together,  
accrete.
adhe'rent, adhe'rens (ad'hæero, I stick  
to), the union of parts usually  
separate; Adhe'ren'tion, when the  
bases of Fern-froonds are continu-
ous with the caudex; Adhe'ren'ce.
Adhé's'ion, the state of union with  
some other organ or part; Goebel  
restricts it to union of dissimilar  
parts; cf. Cohesión.
Adi'chog'amy (a, without + Di-chog-
m amy), both sexes developed at the  
same time (Knuth).
Adi'pocel'u losses (ad'ops, adipis, fat, +  
Cellulose), a group of bodies which  
constitute the cuticular tissues of  
leaves and fruits; cf. CELLULOSE.
adisca'lis (a, without; δίσκος, a quoit),  
destitute of a disk.
Adjust'ment (ad, to; iustus, right, just),  
used for the functional response to a  
stimulus.
adil'gangs (ad, to; ligō, I tie), holding  
fast or binding, as the aerial hold-
fasts of ivy; ad'il'igant, ad'il'igant  
(Heinig); cf. ADLIGANS.
Ada'mics'um (Lat., a prop) = Ful-
CRUM.
admotiv'us (ad, to; moreo, I move),  
when in germination the albumen  
remains attached to the sheath of  
the cotyledon.
Adnas'cent, adnas'cens (adnascor, to  
grow to), growing to or upon some-
thing else; Adnas'cens; (1) a young  
bulb, as a "clove" of garlic; (2)  
a sucker of some Monocotyledons.
Ad'nate, adná'tus (adnascor, I grow  
to), attached the whole length;
Ad'native, the state in question.
Adnexed' (adnexo, I tie), used of the  
lamellae of some Agarics, which  
reach the stem, but are not adnate  
to it.
ad'pressed, adpress'us = APPRESSED.
Adscend'ent = ASCENDENT.
Ad'surg'ent, ad'surg'ens = ASSURGENT.
adunc'ate, adunc'ous (aduncus, hooked),  
bent or crooked as a hook.
adust'us (Lat., swarthy), soot-coloured,  
fuliginous.
Adventit'ious, adventit'ius (ad, to;  
venio, I come), applied to plants  
lately introduced; Ad'vänt'ious.
Adven'ti'tious, adventit'ius (ad, to;  
venio, I come), applied to plants  
lately introduced; ~ Buds, those  
produced abnormally, as from the  
stem instead of the axils of the  
leaves; ~ Roots, those which do  
not arise from the radicle or its  
subdivisions, but from another part;  
Advent'ive = ADVENTITIOUS.
ad'verse (ad, to; verso, I turn); (1)  
opposite; (2) facing the main axis  
or other object; adver'si'fo'liate, ad-
ersi'fo'lius (folium, a leaf), having  
opposite leaves; adver'sus'us (Lat.),  
opposite.
Adyn'aman'dry (adýva'ula, weakness;  
άνηψ, áνδρος, a man), Delpino's  
term for self-sterility; that is,  
when a flower does not set seed  
from its own pollen.
Aec'ial, aecid'ial, relating to or resem-
bling the form-genus Aecidium; ~
Form, a fungus in that stage of development; Aecid'iolium, in Uredineae, a small form and usually a later development of the Aecidium-stage; a spormogonium.

Aecid'iospore (Aecidium, infa; σπόρα, a seed), a spore formed in the following: Aecidi'um (probably from οικίδιον, a little house), a sporocarp consisting of a cup-shaped envelope, its interior surface consisting of a hymenium, from whose basidia the aecidiospores are successively thrown off; the name was pre-ouyed by Persoon as a genus of Fungi, but it is now regarded as only a form-genus of Uredineae.

Aeco'spore (+ Spore) = Aecidi'o'spore; Ae'cium, Arthur's term for Aecidi'aum.

Aecol'ogy = Ecology Of Ecolog'y.

Aegagropi'lae, pl. (ἀγαγρόπος, a wild goat; πέλος, felt), Lagerheim's term for those marine Algæ which are more or less spherical, and freely driven about in the sea.

Aelor'philous (αιλοφιλός, storm-wind; φιλέω, I love), applied to plants disseminated by wind.

Aelor'lian (αἰλόλιος, shifting), used of sandy soils liable to rapid removal by wind (Clements).

Aelor'nes (Lat., bronze), used for brass-coloured; sometimes for verdigris.

Ae'qualis, Ae'quans (Lat.), equal or equalling; similar in size, uniform; Aequisl'eral, Aequisl'eralis, equal-sided, of equal length; Aequisl'flor'us (Lat.), with flowers alike in form and character; Aequisl'mag'rus (+ (Lat.), equal sized; Aequisl'noc'tial, Aequisl'noc'tialiis, pertaining to the equinox; used of flowers, which open or close at stated hours; Aequisl'valis (Lat.), having valves of flowers or fruit of similar size; Aequisl'venius (Lat.), all the veins of equal distinctness.

Aerating (aer, air) Roots, peculiar roots rising out of the mud, covered with a loose, corky tissue, and having large intercellular spaces; Aerench'yma (ἐγχύμα, that poured out), Schenk's term for a tissue of thin-walled cells, and large intercellular spaces, found in the stems of some marsh-plants, serving for aeration or floating tissue: adj. aere'nchymat'ous; ae'tral, aer'ius, used for plants (or parts of plants) living above the surface of the ground or water; ~ Plants, epiphytes as, Tillandsia and many tropical orchids; ~ Roots, those which vegetate altogether above the ground.

Aer'ous (Lat.), copper-coloured or bronzed.

Aérobe (Blás, life), a suggested abbreviation of Aerobi'um; aéro'bic, pertaining to such organisms; ~ Energe'sis, the disruptive process by which energy is released (Barnes); cf. Respiration; Aerobi'ont, a plant dependent upon free oxygen for its respiration; aérob'stic, needing air for existence; Aérobio'sis, life in atmospheric air; Aérob'ium, an organism which thrives only in the presence of air or free oxygen; applied to certain bacteria; Aéro'car'py (καρπός, fruit) producing fruit above ground; cf. Amphicarp'y, Geocarp'y; Aé'rocyst (κύστις, a bag or pouch), the air-bladders of such algæ as Fucus vesiculosus, Linn.; Aé'rogams (γάμος, marriage), phanerogams; Aeroidot'ropism (τρόπος, a turning) = Aërotropism; Aeromorph'o'sis (μορφώσις, a shaping), changes in water plants induced by growth in air (Herbst); aéroph'ilous (φιλέω, I love), (1) Beyerinck's term for essentially aërobic organisms; cf. Microaëроphilous; (2) Are'schou's term for renovation buds produced above ground; cf. Pho'tophilous; ~ Shoot, the growth from such; Aé'ropyly (πῦλη, a gate), a pore at the base of the pod in certain Leguminosae, as Faba vulgaris (A. H. Church); Aë'rophyte (φυτόν, a plant), air-plant, epiphyte; Aerota'xic is (tdc is, arrangement), used by Hartog to express positive stimulus by oxygen to the irritability of zoospores, adj. aërotact'ic; Aërotropism.
Aerotropism

(\textit{τροπή}, a turning), the influence of gases on growth and curvature; it is a form of Chemotropism; adj. aerotrop'ic.

aeru'ginose, aeru'ginous, aeru'gin'eous, aeru'ginou'sus, (aerugo, the rust of brass), the blue-green colour of verdigris.

\textit{Aesc'ulin}, an alkaloid from the horse-chestnut; \textit{Aesculus Hippocastanum}, Linn.

Aestatified'ta, pl. (\textit{aestas}, the hot season; \textit{fruticetum}, a thicket), deciduous bush formation; Aestati'sil'vae, pl. (\textit{silia}, a wood), deciduous forests.

Aesthe'sia (\textit{aisthēsia}, perception by sense), Czapek's expression to denote the capacity of an organ to respond to definite physical stimuli; Aesthe'sis, the apparent perception on the part of a root (Czapek).

Aestival, aestiva'lis, belonging or peculiar to summer; Aestiv'aria, the summer quarters of plants in botanic gardens.

Aestivation, Aestivatio, the manner in which the parts of a flower are folded up before expansion.

Aestuar'ium (Lat., a tidal estuary), applied to a flat shore which is flooded with sea-water at spring-tides (Warming).

Aete'rio = \textit{Etaerio}.

Aetha'lium (aëthalōs, soot), a compound sporiferous body, formed from a combination of plasmodia in Myxogastres; \textit{Ae. septicum}, Fr., is known as "Flowers of Tan"; aetha'lioid (\textit{aëthalos}, form), like the last.

aëthe'os (\textit{aëthes}, unusual), in compounds = unusual; aëthe'ogam'ic, aëthe'ogam'ous (\textit{gamous}, marriage), synonymous with cryptogamic.

aëthe'rens (Lat.), aerial:

aetiog'enos (\textit{aëtio}, cause; \textit{genōs}, offspring), caused externally; cf. Aeti'o; \textit{Aetiology} (\textit{aëtōs}, discourse), the doctrine of the cause of disease, as of Vegetable Galls; also spelled Aitiology and Etiology.

Affin'ity (affin'itas, near alliance), the closeness of relation between plants as shown by similarity of important organs.

affixed (\textit{affix'us}, fastened to), fixed upon.

afo'liate (\textit{a}, without; \textit{folium}, a leaf), leafless; a hybrid word for \textit{aphyl'loous}.

After-ri'pening, applied to the period of dormancy in many seeds before germination, as those of \textit{Crataegus}.

Ag'ad (\textit{āγ}, beach), a beach plant; Ag'ium, an association of beach plants (Clements).

Ag'amae (\textit{a}, without; \textit{γαμος}, marriage) = Cryptogamae; Agamandro'e'cism (+ Androecium), in Compositae, having male and neuter flowers in the same individual; agam'ic, ag'amous, Necker's term for cryptogamous; Agamob'iurn (\textit{bios}, life), Harvey Gibson's term for the asexual generation in organisms showing alternation of generations; the sporophyte; Agamogenen'esis (\textit{γένεσις}, origin), asexual reproduction by buds, gemmae, etc.; Agamogynenae'cism (+ Gynaecium), in Compositae, having female and neuter flowers in the same individual; Agamogynono'moe'cism, the presence of neuter, female, and perfect flowers in the same individual; Agamom'ermaphro'ditism (+ Hermaphro'dite), with hermaphrodite and neuter flowers in the same plant; Agamono'moe'cia (+ Monoecia), used by Engler and Prantl for those plants which have hermaphrodite and barren flowers in the same inflorescence, as \textit{Viburnum Opulus}, Linn.; Agamono'moe'cism, the condition named; Agamophy'ta (\textit{φυόν}, a plant), C. MacMillan's term for protophytes; Agam'ospore (\textit{σπόρα}, a seed), a spore or gonidium produced asexually; agamotrop'ic (\textit{trope}, a turn), applied to flowers which remain open without closing.

A'gar, a gelatinous product from Agaragar, or Agal-agal, which consists of various marine Algae from tropical Asia; also called "Ceylon Moss" and "Bengal Isinglass."
Agaric Acid (Agaricus, Tourn., a genus of Fungi), found in Polyporus officinalis, Fr.; agaricicola (colo, I inhabit), applied to a parasite on Hymenomycetous Fungi; J. S. Henslow prints it as agariccolus.

Agennus (a, without; γένος, sex, race) = neuter; a genus, used of cellular Cryptogams, "which are enlarged by the addition of new parts."

Ageotrop'ic (+ geotropic), negatively geotropic.

Aggeres (Lat.), banks or rockwork in botanic gardens.

Agglomerate, agglomerated, agglomeratus (Lat., crowded together), collected into a head, as the flowers of Scabious.

Agglutinate (agglutino, I glue), glued together, as the pollen-masses of Asclepiads or Orchids; acerate.

Aggregates, aggregates, aggregatus (Lat., assembled), collected together, as the flowers of Cuscuta; ~ Flowers, those gathered into a head, as Dipsacus, but not as in Compositae, which are capitulate; ~ Fruits, collection of separate carpels produced by one flower, the product of a polycarpellary apocarpous gynaecium; ~ Species, a super-species, which may be compounded of more than one true species; Aggregation, (1) condensation of cell-contents under some stimulus; (2) the coming together of plants into groups (Clements).

Ag'rad (άγρος, a field), a cultivated plant (Clements).

Aigr'ian (agrar'ius, pertaining to the field), H. C. Watson's term for the cultivable portion of Great Britain; ~ Region, divided into three ~ Zones, the super-, mid-, and inter-agrarian zones.

Agrest'at (agrestis, belonging to the field); (1) Watson's term for plants growing in arable ground; (2) rural generally.

Agricola (Lat., a rustic), a native or country dweller.

Agricultural Botany (agricul'tura, husbandry), that part of economic botany which relates to farm plants; agricultural Species, so-called, are constant forms or varieties of cultivated plants, as maize, wheat, etc.

Agri'um (άγρος, a field), "a culture formation"; Agro'ola (Clements) = Agricola, a native of the fields; agrophilus, "dwelling in grain fields"; Agrophy'ta, "culture plants" (Clements).

Agropyre'tum, a formation of Agropy'rum grasses.

Agrostography (άγρωστος, grass; γραφή, writing), the description of grasses; Agrostologist, an expert or writer on grasses; Agrostology (άγρος, discourse), the botany of grasses.

Agyna'rius (a, without; γυνή, a woman); agynicus; (1) sail of stamens which are free from the ovary; (2) pistils wanting, destitute of pistils; agynous. monstros flowers with pistils missing.

Aheliotrop'ic (a, not; ἥλιος, the sun; τρώψιμον, a turn), neutral to light, neither attracted to nor repelled by it; more correctly Apheliotropic.

Aianth'ous (ἀεί, ever; ἄνθος, a flower), (1) constantly flowering; (2) everlasting flowers, as Helichrysum.

Aigaili'um (aiγαλάς, seashore), a beach-plant formation; aigialo'philus (φιλός, I love), beach-loving; Aigialophy'ta (φυτών, a plant), beach or strand plants (Clements).

Aig'ret (Fr., Aigrette, tuft of feathers), the pappus of Compositae; Englished by T. Martyn as Egret.

Aima, in Greek compounds = blood-coloured; properly hæma (from αἷμα, blood).

Aio'phylius (αιών, eternity; φύλλον, a leaf), evergreen.

Aiphyll'ium (αἰφυλλάς, evergreen), an evergreen forest formation; aiphyll'ophilus (φυλέω, I love), growing in such forests; Aiphyllophy'ta (φυτών, a plant), plants forming
evergreen forests; Aiphyti'a, ultimate or fixed formations (Clements).

Air-Bladders, intercellular spaces in some Algae, serving as floats; ~ Cavity = ~ Chambers (2); ~ Cells, ~ Chambers, (1) intercellular spaces occurring in aquatic plants, usually prismatic in form, (2) the intercellular space beneath a stoma; ~ Passage, = ~ Chamber; ~ Plants, epiphytes, as Bromeliads and some Orchids; ~ Pores, (1) = Stoma-

Alba'dium = Acladium.

A'la (Lat., wing), (1) formerly an axil, but now obsolete in that sense; (2) a lateral petal of a papilionaceous flower; (3) a membranous expansion of any kind, as in the seed of Bignoniaceae; (4) employed by Wm. Smith for the marginal processes in Surirella: (5) the outer segment of the coronal lobes in some Asclepiads; (6) in Mosses, the al'ar cells are those at the basal angle of a leaf.

Alabas'trum (Lat., bud), a flower-
bud.

a'lar, ala'ris (ala, wing), (1) formerly used for axillaris; (2) ~ Cells, cf. Ala (6).

alate', ala'tus (Lat., winged), furnished with an expansion, as a stem or petiole; alatepinna'tus, when the common petiole of a pinnate leaf is marginally winged.

alba'tus (Lat.), whitened; Albe'do (Lat.), whiteness; Albefac'tion (facio, I make), blanching; albes'cent, albes'cens, becoming white; al'bicant, al'bicans, tending to white; Albi-

cation, becoming blanched or varie-
gated with white; albid'u1us, al'bidus, albin'eus (Lat.), whitish; Al'binism, a disease from absence of normal colouring, producing an Albi'no: albin'uus, al'bulus (Lat.), somewhat white.

Al'bumen (Lat., white of an egg), the nutritive material stored within the seed, and in many cases surrounding the embryo. (Note. Not to be confounded with animal Albumen.) Restricted by Van Tieghem to the result of the development of the Trop'home, the central nucleus of the embryo-sac; Al'bumin, in plants, the protoids which readily coagulate from their aqueous solutions by the action of heat or acids; Albu'mi-
nates, nitrogenous substances insoluble in water, soluble in dilute acids or alkalies, e.g. gluten of
wheat; Albu'minoids (εἰδός, resemblance), nitrogenous organic substances, proteids; albu'minous, albu'minos, albumino'sus, containing albumen, a term restricted to seeds; Albumo'sses, similar to albuminates, but soluble in water; common constituents of aleuron.

Albur'nitas (alburnum, sap-wood), a disease in trees, a tendency to remain soft like the recent wood; albur'rous, relating to the sap-wood; Albur'num, the outermost and youngest portion of the wood, still permeable by fluids.
al'bus (Lat.), dead white, without lustre.

A'caliot'ropism (alkali, Fr.; τροπή, a turning), chemiotropism induced by alkalies (Massart).

Alchemille'tum, an association of Alchemilla plants.

Alcohol'ase, the same enzyme as Zymase.

alcohol'ic Fermenta'tion, see Fermentation.

Al'der-Will'ow association, a wood usually showing a dominance of alder, with a mixture of willows, and sometimes of ash and oak.

alector'iod (Alectorria, Ach., εἰδός, resemblance), filamentous, as the thallus of the genus after which it is named.

alepido'tus, (a, not; λεπίδωτος, scaly), destitute of surfr or scales.

Ale'tophytes (άλητης, vagrant; φυτόν, a plant), ruderal or wayside plants (Clements).

Ale'ur'on, or Aleu'tone (άλευρον, wheaten flour), proteid granules of globulins and peptones, present in seeds, ~ Lay'er, a special peripheric layer in most seeds, especially in grasses; adj., aleur'onic.

Alex'ine (άλεκ'in, I ward off), a substance hypothetically assumed to be formed by plants for protection against bacteria; antitoxine.

Al'gae (alga, seaweed), chlorophyll-containing Thallophytes, which usually grow immersed in water, fresh or marine; known popularly as "Seaweeds," or "Waterweeds";
al'gal, relating to Algae; ~ -Layer, the green band of gonidia in the thallus of heteromeric lichens, also styled ~ -Zone; algi'nus, resembling a thread like Alga; Al'gist = Al gol'gist, a student of Algae; al'goid (εἰδός, resemblance), like an Alga; Al'go-li'chenes, Lindsay's term for certain transitional forms between Algae and Lichens; al'gous = Alg'al; Algol'ogy, (αὐγός, discourse), the science of Algae; Alga, F. von Mueller's word for Algae.

A'lien, used by H. C. Watson for introduced plants which have become naturalised in Britain.
al'ferous (ada, a wing; fero, I bear), having wings; al'iform (forma, shape), wing-shaped; alig'erous (gero, I bear) = Aliferous (Crozier).
alig'ular (α, from; ligula, strap), Russow's term for that leaf-face in Selaginella which is turned away from the ligule and stem.

Alimo'nia (Lat., nourishment) = ascending sap.

Al'quote (aliquot, some, in numbers), the constant of temperatures for a given event in the life-cycle of an organism; the sum-temperature of the event divided by the total sum-temperature of the year (Linsser).

-alis, Latin termination indicative of belonging to; thus radic-alis, belonging to the root, radix.
alis'ma-ceous (Alisma, Dill., + ceous), belonging to the order Alismaceae, of which the genus named is the type.

Aliz'arine (Lat., madder-root), the colouring matter of the root of madder, Rubia tinctoria, Linn.

Alkachlor'o phyll (Alkali + Chlorophyll), a presumed constituent of chlorophyll, produced by the action of an alkali; alkales'cent, of the nature of an alkali; Alk'aloids (εἰδός, resemblance), general term for the organic bases in many plants, markedly medicinal or poisonous, as Morphia, Strychnia.
allogany (allogania, another; σπέρμα, a seed), an embryo arising through Allogamy (MacMillan); Allospore (+ Spora), a spore which gives rise ultimately to a gametophyte (Radiokoff); Allotrophy (τροφή, nourishment), (1) when plants are not in a condition to assimilate CO₂ (Pfeffer); (2) the condition of flowers of low adaptation to insect-visitors (Loew); allotropous (τροφή, a turn), MacLeod’s term for plants having stores of honey open to all insect-visitors; Allotropy, otherwise turned or formed; adj. allotrop’ic; allotyp’ic, proposed by Strasburger in place of atypic mitosis; heterotypic followed by homotypic nuclear division; Allozy’gote (+ Zygote), a homozygote displaying recessive characters exclusively (K. Pearson).

Alu’ring Glands of Nepenthales, glands in the pitchers which tempt insects down the tube (Macfarlane).

Alne’tum, an association of alder plants, Alnus.

Alpe’s’trine, alpe’s’tris, strictly applicable to plants growing above the limit of forest growth, on the Alps, but practically synonymous with Alpine; alpes’ter (Lat.) is used by some botanists for the more usual form.

Alphitomorph’ous (αλφιτον, pearl barley; μορφή, form), like barley-meal; applied to certain fungi.

Alpi’gene (alpig’ena, bred in the Alps) = Alpine.

Alpi’ne, alpi’nus, properly denoting plants belonging to the Alps (alpes, mountains), but frequently used in a wider sense, embracing alpestrine, as well as the higher situated plants;
Amalthea

— Regions, defined thus by Schimper; ba'sal ~, hygrophilous warmth-loving plants of the foothills; mon'tane ~, the same as the last, but able to endure cooler temperature; alpine ~, restricted to actual alpine plants.

Al'sad (Azásos, a groove, + AD), a groove plant; Al'sium, a groove formation; alsoph'īlus (φιλέω, I love), groove-loving plants; Al'sophy'ta (φυτν, a plant), groove plants (Clements); also'cōlus (Clements) = also'cōla, dwelling in groves.

Alsina'ceous (Alsine, Tourn., + cēous), (1) used of a petal having a short, but distinct claw; (2) belonging to, or resembling the group of plants of which Alsine is the typical genus.

al'ter na'rioid (elōs, likeness), resembling the genus Alter'naria; Al'ter na'riose, a disease caused by the same fungus genus.

al'ter na'te, al'ter'nus; al'terna'tus, alter'nans, (1) placed on opposite sides of the stem on a different line; (2) when between other bodies of the same or different whorls, as in Umbelliferae, where the stamens are alternate with the petals, that is, between them; Alter'na'tion, Al'terna'tio. (1) interchange, by turns; (2) the heterogeneous arrangement of plant groups and formations (Clements); ~ of General'tions the reproduction by organisms which do not precisely resemble the parent, but the grand-parent, applied especially to the regular succession of sexual and asexual phases, as in Ferns, etc.

al'ter na'tive, al'terna'tivus, in aestivation when the perianth segments are in two rows, and the inner so covered by the outer, that each exterior member overlaps the half of two interior members.

al'tern nip'et alous (alernus, every other; πτάλων, a flower leaf), applied to stamens alternating with the petals; al'ter nisep alous (+ skē'palum), used of petals alternating with the sepals. al'ternipin'ate, or al'tern'ately-pin'ate, when the leaflets of a pinnate leaf are not exactly opposite each other.

Al'theine, a principle from the marshmallow, Althaea, Tourn., analogous to Asparagin.

Al'titūde, Alt'i'tu'do (Lat., height), used to specify the height above the sea of the vegetation in question.

Al'to her'bi prā'ta, pl. (alīus, high; herba, a plant; pra'tum, a meadow), a division of Ter'riprata characterised by the dominance of tall-growing herbs.

Al'u'mina Bod'ies, substances found in the mesophyll and cortex of Sympliocos (Radlkofer).

aluta'ceous, aluta'ceus (aluta, soft leather + cēous), (1) the colour of buff leather, or light tan; (2) leathery in texture, coriaceous.

Al'var, applied to peculiar dwarfed growth, resembling steppe vegetation, in Uland, etc. (Sernander).

Al've'o'la (alveolus, a hollow vessel), pl. Al'veolae; (1) cavities on the surface, as the pits on the receptacle of many Compositae, honeycombed; (2) the pores of such Fungi as Polyporus; (3) the perithecia of certain other Fungi; adj. al'Veolar.

~ Theory, applied to Bütschi's theory of protoplasm as a foam-like substance; Al'Veolar plas'ma (πυλαςμα, modelled), term used by Strasburger in place of Tro'phoplas'ma, granular protoplasm; al'Veolate, al'Veolat'us, al'Veola'ris, marked as though honeycombed; Al'Veoli, the pit-like markings on the valves of many Diatomaceae; Al'Veoliza'tion, the process of becoming granular or honeycombed; al'Veo'liized, the process named.

Amadou' (Fr.), (1) the substance of certain Fungi used as tinder, as Polyporus fomentarius, Fr.; (2) as a styptic when from the pubescence of the Phanerogam Melastoma hirta, Linn.

Amalthe'a ‡ (άμα, together; άλθεω, I increase), used by Desvaux for an aggregation of dry fruits within
Amalthea

a calyx which does not become fleshy, as Alchemilla, and Sanguisorba.

Aman'itin (from Amanita, Dill.), (1) the red pigment of the pileus of the Fly-Agaric, (2) the poisonous alkaloid from the same, also written Am'antine.

Amath'ad (άμαθος, sandy soil + AD), a sand-hill plant; Amathi'um, a sand-hill formation; amathoc'olus (i.e. = amathoc'ola), a sandy dwelling plant (Clementa); amathoph'ilus (φιλέω, I love), dwelling on sand-hills or sandy plains; Amathophy'ta (φυτέω, a plant), sand-plain plants.

Am'ber, the English name of Suc-cineite.

ambig'enus (ambo, both; genus, offspring), applied to a perianth whose exterior is calycine, and interior corolline, as Nymphaea.

ambiguiflor'us (ambigus, doubtful; flos, floris, flower), applied by Cassini to flowers of an indeterminate form; ambig'uous, (1) said of an organ when its origin is uncertain, thus the dissipations of an orange may belong to the axis or the paries; (2) of a plant when its position is doubtful.

ambip'arous, -rus, (ambo, both; pario, I bring forth), producing two kinds, as when a bud contains both flowers and leaves, as the Horse-chestnut; ambisporang'iate (+ Sporangium), hermaphrodite flowers, otherwise macro- and micro-sporangiate, that is, bearing ovules and pollen-sacs; cf. Ambisporangiate.

Amb'itus (Lat., a going round), the outline of a figure, as of a leaf.

amblecocar'pus (ἀμβλεκομαί, to be abortive; καρπός, fruit), when most of the ovules abort, a few only becoming perfect seeds.

Ambro'sia (ἀμβρόσια, divine food), the mycelial or oidial stage of a Fungus, probably of some Ascomycete, found in the burrows of some beetles in fruit-trees, and believed to be used as food; ambros'iacus, possessing a strong scent of Ambrosia; fragrant.

Ambu'la'rum (Lat.), a walk laid out in a botanic garden.

ameliorating (Fr., amélioration, an improvement) ~ Plants, those bacteria which cause nodules on the roots of Leguminosae.

Am'ènt, Ament'um (Lat., a strap), a catkin, a spike of flowers usually bracteate, and frequently deciduous; ament'a'ceous, -ceus (+ CEUS), amen'tiform (forma, shape); amentif'erous (fero, I bear), catkin-bearing; catkin-like; Amentiflo'rae (flos, floris, a flower), wind-fertilized, catkin-bearing plants, as the hazel or willow (Delpino).

Ament'ula (diminutive), the so-called catkins of the male inflorescence in Sphagnum.

ameris'tic (a, not; μερίστος, divisible) ~ Ferns, are those whose prothalli being insufficiently provided with nutriment are destitute of meristem, and produce antheridia only.

Am'erosporae (a, without; μερός, a part, + Spora), applied to pluricellular spores, subdivided into Allantosporae, Hyalosporae, Phaeospora (Traverso).

ametab'olous, ametabol'Olus (a, without; μεταβολή, change), used of species of Equisetum where fertile shoots die away after dispersal of the spores (Goebel).

amethyst'eus, amethyst'ius (Lat.), the colour of amethyst, violet.

ametoe'cious (a, not; μετώπος, with, after; οίκος, house), a parasite which does not change its host; the reverse of Metoecious.

amicron'ic (a, not; μικρός, small), applied to particles beyond the powers of the microscope.

Am'idases (+ Amide), enzymes occurring in the mycelium of Aspergillus, which split off ammonia from urea, etc., but are not proteolytic (Shibata); and diffuse into the air, such as the hawthorn and elder.

Am'ides (Am[monia] + ide), certain
substances occurring in plants, soluble in water, diffusible, crystallizable, not coagulating on boiling; those of common occurrence are Asparagin, Leucin, and Tyrosin; Amphi- ulin, soluble starch, existing in small quantity in ordinary starch-grains; Amido'plast (πλαστός, modelled), an error for AMYLOPLAST; am'inoïd (είδος, resemblance), used by Kerner for those scents which have an amine as their foundation.

Amit'o'sis (a, without; μύτος, a web), defined as degenerate mitosis, when nuclear division takes place directly without the phenomena of karyokinesis; adj. amito'tic.

Am'me (Ger., nurse), cf. Tropho-.

Am'moch'thad (dìμος, sand; ὅχθη, bank + AD), a sand-bank plant.

Am'mo'o'chthi'um, a sand-bank formation; am'mo'o'chtho'ph'ilus (φιλέω, I love), plant dwelling on sand-banks; Am'mo'o'chtho'phy'ta (φυτόν, a plant), plants of sand-banks (Clements);

Am'mody'tes (δώ, I sink in), living in sandy places; am'mo'ph'ilous, -lous (φιλέω, I love), sand-loving.

Am'mo'o'nia (Ammon, the Libyan Jupiter; first found near his temple), a pungent gas; the so-called volatile alkali; Am'mon'i'fic'ation (facio, I make), the production of ammonia by certain bacteria; Am'mon'io'bac'ter'ia (+ Bacterium), organisms capable of producing ammonia from nitrogen compounds (Lipman).

Am'mo'phile'tum, an association of Am'mo'phil'a arundinacea, on sand-dunes.

Am'm'ion, Am'm'iosis (ἀμιος, foetal membrane), a viscous fluid which surrounds certain ovaules in an early stage; amni'o'tic Sac = EMbry'o-Sac.

Amoe'bo'oid (ἀμοιβατός, interchanging), applied to the jelly-like plasmoidium of Myxogastres when in motion, resembling an Amoe'bo, a protanoid-shaped rhiizopod; Amoe'bo'id'esae, used by Gobi for the lowest forms of plant-life which are destitute of chlorophyll; Amoe'bulae, the separa-

tion of plasma round each nucleus in Sorosphaera (Schwartz).

Amorph'o'us, amor'ph'us (a, without; μορφή, form), shapeless, the form not regular or definite; Amorph'o'phy'te (φυτόν, a plant), a plant with anomalous flowers.

Am'pel'id, (ἀμπελός, a vine; ἀδος, like), used by J. Smith for any climbing plant; Ampel'o'graph'ist (γραφω, I write), a writer on vines.

Am'phanth'i um (ἀμφί, around; ἄνθος, flower), the dilated receptacle of an inflorescence, as in Drosenien; clinanthium; Am'phi'hiast (ἀστήρ, a star), the combined nuclear-spindle and cytasters; also for the combined cytasters only (Crozier); amphib'i'ous (βίος, life), growing on dry land or in water equally well; ~ Alterna'tion, the adaptation of organism, originally of aquatic habit, to subaerial conditions; Am'phib'r'ya (ἀρβώ, to sprout), Endlicher's name for Monocotyledons; amphib'ry'ous, -yus, growing by increase over the whole surface; amphil'car'pic, -pous, -pus (κάρπος, fruit), possessing two kinds of fruit, differing in character or time of ripening; Amphil'car'pin'um, an archegonium persisting as a fruit-envelope, after fertilization; amphilcar'pos'ens'us (γενός, offspring), producing fruit above ground, which is subsequently buried beneath; cf. hy'popo'carp'ous; Amphi'chrome (χρώμα, colour), used for plants which abnormally produce flowers of two different colours on the same stock (Lindman); cf. polychrome, heterochrome, metachrome; Amphil'chro'matism, the condition named; amphil'o'cos'lous (κοίλος, hollow), concave on both sides (Heing); Amphil'co'tyle'don (κοιλοτύληδων, a hollow), De Vries's term for cotyledons united so as to form a cup; Amphil'co'tyly, cf. Amphi'syncot'yly; amphi'cri'b'ral (κριβρον, a sieve), applied to a hodoscentric bundle (Haberlandt).

Amphige'al (ἀμφί, around; γῆ, the earth), applied to a plant which
amphigean

bears dimorphic flowers, the upper from the stem, the lower from the root or root-stock, as _Krascheninnikowia_; **amphigaeus**, _amphigean_ (1) plants which are natives of both Old and New worlds; (2) used of flowers which arise from the rootstock; _Amphigamae_ (γάμος, marriage), plants whose fructification is unknown, possibly of both sexes; _amphigameous_, _amphigamous_, supposed to be destitute of sexual organs, or where their presence has not yet been ascertained; it has been applied to Cryptogams; _Amphigastria_ proposed alteration of the following: _Amphigastria_ (γαστρὶς, belly), stipular organs in Hepaticae, which clasp the stem; _amphigénous_ (γένος, offspring), growing all round an object; used of Fungi when the hymenium is not restricted to any particular surface; ~ _Castra'tion_, the action of _Ustilago antherarum_, DC., when it mingles the characters of both sexes by developing in each some of the characters of the other; _Amphigenesis_ (γένεσις, beginning), Haeckel's term for sexual reproduction; _Amphig'ony_ (γόνος, offspring), sexual reproduction (Haeckel); _Amphigeni'um_, Kerner's term for _Archegonium_; _Amphilepis_ (Ἀμφίληπις, a receiving), the ordinary result of fertilization; cf. _Monolepis_ (Bateson); _Amphimixis_ (μίξις, a mingling); (1) sexual reproduction (Weismann), (2) the union of parental characters in the embryo (Sargents); _Amphinucleus_ (+ _Nu'cleus_), Goldschmidt's term for the nucleus when it possesses both generative and somatic functions; _amphiphlo'ic_, applied to the central cylinder of stems, with phloem on both sides of the xylem; cf. _Ectophilo'ic_ (Jeffrey); ~ _Pro'tosteole_ (or ~ _Hap'losteole_), a stele in which the solid central xylem is traversed by a continuous internal strand of phloem, connecting with the external phloem at the nodes (Chandler); ~ _Phyllosiphony_, when the tubular central cylinder exists with foliar gaps, and without external phloem; _Amphi'phyte_ (φυτόν, a plant), a plant on boundary zone of wetland, amphibious in life and hydrophytic in adaptation (Schröter); _Amphiphy'renin_ (πυρήνη, stone of fruit), the membrane of the pyrenin, the body of the nucleus; _Amphisarc'a_ (σάρκας, flesh), an indehiscent multifolocular fruit, dry without, pulpy within, as a melon; _Amphisor'us_ (+ _Sorus_), a group or patch of _Amphispores_ (Arthur and Holway); _Amphispер'mium_ (σπέρμα, a seed), a fruit which is _amphisper'mous_, when the pericarp closely invests the seed and assumes its shape; _amphisporal_, _amphisporal'ic_ (+ _Spore_), relating to an _Amphispori_, Carleton's name for _Mesospori_; _amphisporan'giate_, an emendation of _Ambisorangiate_ (Arber and Parkin); _Amphisporangia'tae_, plants possessing micro- and megaspori, _i.e._ stamens and pistils; _amphistomat'ic_, _amphistomat'os_ (+ _Stoma_), with stomata on both upper and lower leaf-surfaces; _Amphisyncot'ylly_ (+ _Cotyledon_), having cotyledons coalescent in the form of a funnel or trumpet (De Vries); shortened to _Amphicot'ylly_; _Amphithecium_ (ἄθηκη, a case), peripheral layer of cells surrounding the endotheicum in the early stage of the development of the moss-capsule; adj. _amphithec'ial_, _amphitrop'ical_, or more correctly _amphitrop'ous_ - _pus_ (τρόπος, turn), said of the ovule when it is curved so that both ends are brought near to each other; _amphitroph'ic_, relating to _Amphi'trophy_; _Amphitrophy_, Wiesner's term for growth when greatest in the shoots and buds on the sides of the mother shoot; _amphiva'sal_ ( _vasa_, vessels), used of a leptocentric bundle (Haberlandt). _Am'phora_ (Lat., a wine jar), the lower part of a pyxis, as in Henbane; _amplect'ant_, _amplect'ans_, _amplect'tivus_ _amplex'ans_ (Lat.), embracing; _amplex'us_, in VERNATION, when two
sides of one leaf overlap the two sides of the one above it; *amplexiscaul*, *amplexicaulis* (caulis, stem), stem-clasping, when the petiole-leaf, or stipule, is dilated at the base, and embraces the stem.

*am'pliate, ampliatus* (Lat.), enlarged; *ampliatifor*us ‡ (flos, flower), used for Composites having the ray-florets enlarged, as in the Cornflower.

Amplifica'tion (amplificatio, an enlarging), term used for all changes leading to increased formal or structural complexity of the plant (Bower).

*Amplula* (Lat., a bottle), the flasks found on aquatics such as *Utricularia; amplula ceous, -ceus, ampluliform, ampluliformis*, swollen out in flask-shape, as the corolla in some Heathies.

*Amygdala* (amygdalum, a kernel), an almond; *amygdaliform* (forma, shape), almond-shaped; *Amygdalin* a glucoside found in the fruit of many Rosaceae; *amygdaline*, pertaining to or resembling an almond.

*amyla ceous* (αμυλον, fine flour + aceous), starchy; *Amylase*, an enzyme, the same as *Diastase; amyliferous* (φερων, I bear), starch-bearing; *Amylvin*, a product of the action of diastase on starch; *Amylites*, skeletons of starch-granules composed of amylopectin (Belzung); *Amylobacteria* (βακτηριον, a little rod), microbes producing butyric fermentation, ascribed to the action of *Bacillus Amylobacter*, Van Tiegh. ; *Amylocelulose* (+ CELLULOSE), a supposed constituent of starch-granules; *amyloclastic* (κλαστος, broken in pieces), the breaking down of starch by an enzyme; *Amylodextrin* (+ DEXTRIN), an intermediate in converting starch into dextrin; cf. *Achroodextrin*; *Amyloerythrin* (ερυθρος, red), a carbohydrate resembling starch occurring in rice and millet; *Amylogenesis* (γενεσις, beginning), the formation of starch; *amylogenie* (γενος, offspring), producing starch; ~ Bodies, *Leucoplastids*; *Amylodyrolast* (αμιλο, water; λασις, a loosing), an enzyme which transforms starch by hydrolysis; *Amylodyrolysis*, the act in question; *amyloid* (ελθος, resemblance), analogous to starch; *Amyloleürites* (λευκός, white), plastids producing starch-granules; *Amylollysis* (λασις, a loosing), transformation of starch into other bodies, as sugar; *amylolytic* Enzyme, an unorganised ferment, which breaks up the starch cell-contents into dextrin and sugar; *Amylome*, a term applied to xylemparenchyma, when it contains starch; *Amylon*, *Amylum*, in composition = STARCH; *Amylopectin* (+ PECTIN), a mucilaginous constituent of starch (Magueonne and Roux); *Amylum Bod'yi*, a rounded body in a chlorophyll band or plate, which is a centre of starch formation; ~ *Centres*, Strasburger’s term for *Pyrenoids*; ~ *Grains*, or ~ Granules, the laminated bodies which are formed of starch as reserve material in plant cells; ~ *Star*, a tuber-like organ in *Chara stelligera*, Bauer, which is closely packed with starch, it consists of an isolated subterranean node; *Amylophyll* (αμυλον, a leaf), the production of starch-leaves; *Amyloplast* (πλαστς, moulded) = *Leucoplastid*, a colourless granule of protoplasrn, which generates a starch - granule; *amyloplastie*, starch-forming; *Amyloses* (Amyl, a chemical term + ose), a group of substances of which cellulose and starch are the commonest; *Amylosynthesis* (συνθεσις, composition), the formation of starch (Hick).

*Anabiont* (βιος, life), perennials, flowering and fruiting many times (A. Braun).

*Anabiosis* (αναβιω, I revive), the condition of latent life, which may occur through-loss of moisture (Areger).

*Anabix*, pl. *Anabices*, those vegetative parts of Cryptogams which perish below, but vegetate above,
Anabêtes

as Lycopodium, Lichens, and Hepatics.

anabol'ic (ἀνάβολος, bent), lacerations of the epidermal layer as in some Agarics.
anacanth'ous (ανάκανθα, a thorn), without thorns or spines.
anacard'iaceous, resembling Anacardium, Linn., as to arrangement of fruit, etc.
anachor'esis (ἀναχώρησις, a going back), retrograde metamorphosis of an organ or whorl.
anaclin'otropic (ἀνάκλινη, a bed; τροπή, a turning), positive clinotropism, that is, having the direction of growth oblique or horizontal.
anacrog'y nous (an, not; ἄκρος, apex; γυνή, woman), said of Hepatics in which archegonia do not arise at the extremity of the shoot, which continues to grow; cf. acrogynous.
anad'romous (ἀνάδρομος, a course), in venation, that in which the first set of nerves in each segment of the frond is given off on the upper side of the midrib towards the apex, as in Aspidium, Asplenium, etc.
anæret'icus (an, without; αἰρέτικος, power of choosing), applied by C. Schimper to an abnormal arrangement of the leaves in single rows on the axis, as happens in torsion, etc.; Anaero'be, Anæro'bium, pl. Anaer'o'bia (ἀνάρ, air; ἄλος, life), an organism able to live in the absence of free oxygen, as many bacteria; facultative ~, organisms which can live as Anaerobes; obligate ~, those which can exist or thrive only in the absence of free oxygen; anaerob'ian, -bi'ous, -bic, anaero'bi'tic, adj.; Anaerobi'ont (a, with-

Anaphyte

out; ἀφρ, air; βλος, life), a plant independent of free oxygen for respiration; Anaerobio'sis, the state of living without oxygen; anaerob'ic Ene'rgy'sis, the disruptive process without air, by which energy is released (Barnes); Anæ'rophyte (φυτών, plant), a plant which does not need a direct supply of air.

Anal'ogy (ἀναλογία, proportion), (1) resemblance in certain points, as in form not function, or function not form, as the tendrils of the Pea, Smilax, or Vine; (2) "that resemblance of structures which depends upon similarity of function" (Darwin); anal'ogous, resembling, but not homologous; An'alogue's, structures corresponding to previous definition.

Anal'y'sis (ἀναλύνεις, releasing), (1) the examination of a plant to determine its affinities and position; (2) the details of the flower, etc., on a botanic drawing.
anametad'romous (ἀνά, up, + ἀναμετα'dromous), in the venation of Ferns, when the weaker pinnules are anadromous, and the stronger are cata
dromous; Anamorp'hose (Goebel), Anamor'phism (Crozier), = Anamor'phosis. Anamor'phosis (μορφωτις, a shaping), (1) a gradual change of form in a group of plants in geologic time; (2) a similar change in a group now existing; (3) a striking change in form, the result of changed conditions of growth (Crozier).
anan'drous (an, not; ἀνάρ, a man), having no stamens, but with floral envelopes and pistils; ananth'erous, Anan'thérum (ἀνάθερος, flowering), applied to filaments destitute of anthers.
ananth'ous, -thys (ἀνάθος, a flower), wanting the flower; An'aphase, Anaph'asis (φάσις, appearance), the formation of daughter-nuclei in karyokinesis, following the Meta
phasis; An'aphyte (φυτών, plant), the potential independence of every
Anaphyte

branch or shoot; Anaphyto'sis, the building up of plant structure by Anaphytes.

An'aplast (πλαστός, moulded), A. Meyer's term for Leucoplastid; Anas'arca (σάρξ, σαρκός, flesh), dropsy in plants.

anascis'tic (ἀνα, up; σχιστός, cleft), used of chromosomes which split longitudinally; cf. DIASCISTIC (Farmer); Anasor'ium (σαρός, a heap), the building up of nutritive material in the protoplasm, but not an integral part of it (Hartog);
anastat'ic (στάσις, a standing), reviving, as certain plants after desiccation.

Anastates, pl. (ἀνάστατος, removed), the products of anabolic or ascending conversion of food-material into protoplasm (Parker).

Anasto'mosis (ἀναστομώμω, I form a mouth), (1) union of one vein with another, the connection forming a reticulation; (2) Vuillemiin's term for conjugation in Mucor, two equal gametes conjugate and are cut off from the parent hypha by a septum.

Anataximorph'osis (ἀναταξίμωμω, order; μορφή, change), Gubler's term for teratologic changes which are in conformity with the normal order;

Anatom'y (τομή, cutting) in botany, the study of structure; anat'ropical, more correctly anat'ropous, anat'ropus (τροφή, a turn), the ovule reversed, with micropyle close to the side of the hilum, and the chalaza at the opposite end; anat'ypec (τόπος, a type), applied to an anomaly which conforms to the general law of the organism; anat'ypose, an anomaly of the kind specified (Gubler).

An'bury, Am'berry, a disease caused by Plasmodiophora Brassicae, Woron., in Crucifers, the root becoming clubbed.

An'c'ad (ἄγκος, mountain glen, + ἄδ) a cañon plant.

an'ceps (Lát., two-headed), ancip'ital, ancip'itous, two-edged, flattened or compressed, as the stem of Sisymbri'um anceps, Cav.

anchor'aeform (ancho're, an anchor; -forma, shape), with two limbs, as in the petals of Ankyropetalum, Fenzl;

An'hor-hairs, hairs having recurved barbs, distinctive of the Loasaceae;

Anchoring Disk, a growth from rhizoids in Lejeunia; ~ Or'gan, the ends of tendrils with flattened disks for clinging; ~ Root, holdfasts such as those of Hedera, for support, not nourishment (Goebel).

Anch'u'sin, the colouring matter of Anchusa tinctoria, Linn., now referred to the genus Alkanna.

ancis'trus (ἀγκίστρον, a small hook), barbed.

Anci'um, pl. Anci'na (ἄγκος, a hollow, as a glen), a cañon forest formation;

anconph'ilus (ἀκονφήλω, I love), haunting cañons; Anconphy'ta (φυτών, a plant), plants of cañons; ancon'ce'lis, i. e. ancon'cola, living in cañons (Clements).

ander, -dra, -dro, -drum (ἀνθρόπος, a man), in Greek compounds = the male sex; An'drochore (χόρος, I spread abroad), a plant dispersed by human agency; Androclin'ium (κλων, a seat), the bed of the anther in Orchids, an excavation on the top of the column, usually written Clinandrium.

Androconid'ium (+ Conidium), term propounded by Cohn for a spermatozoon of assumed male function;

Androde'cious (δίς twice; οἶκος, house), the cell which afterwards develops into the antherozoid (Allen); andro'dioec'ious (δίς twice; οἶκος, house), used of a species with two forms, one male only, the other hermaphroditic; Androdioec'ism, the condition itself; androdynam'ic = ANDRODY-namous; andrody'namous (δύναμις, power), ofDicotyledons in which the stamens are highly developed; Andro'cium (οἶκος, house), the male system of a flower, the stamens collectively; andro'cial, relating to an androecium; Androgametan'gium (γαμήτης, a spouse; ἄγγειον,
Androgametangium

a vessel, = Antheridium, the organ in which the male sexual cells are formed; Androgam'etes, zoospers, male sexual cells; Androgam'etophore (φοδός, carrying), male sexual form of a plant, as in Equisetum; Androg'amy (γάμος, marriage), employed by Dangeard for the impregnation of a male gamete by a female; it may be, (a) cyto-plas'mic ~, the cytoplasm of the female gamete acting, or (b) nu'clear ~, when the nucleus of the female affects the impregnation; Androgen'esis (γένεσις, beginning), the growth of an individual from a male cell; cf. Parthenogenesis; androg'enous (γένος, offspring), male-bearing; ~ Castra'tion, the action of Ustilago antherarum, DC., when inciting production of male organs; An'drogone (γόνος, offspring), any cell within an antheridium other than the androcyte or androcytemother-cell (Allen); Androgonid'ium (+ Gonidium) = Andros'pore; androg'yunal, androg'y nous - nus (γυνή, woman), (1) hermaphrodite, having male and female flowers on the same inflorescence, as in many species of Carex; (2) occasionally used for monoe'esious; androgyna'ris (Lat.), of double flowers in which both stamens and pistils have become petaloid; androgyn'icus (Lat.), belonging to, or of an hermaphrodite flower; androgyn'iflor'us (flo's, flor'is, a flower), a hybrid term for when the head of a composite bears hermaphrodite flowers; Androg'ynism, a change from dioecious to monocious.

Andromedotox'in, a glucoside occurring in Andromeda and other Erica-ceae.

Andre monoe'cious (ἀνήρ, ἀνδρός, a man; μύον, alone; οἶκος, house), having perfect and male flowers, but no female flowers; Andromonoec'ism, the state described; Andromorph'o'sis (μορφωσίς, a change), the alterations caused by the excitation of the pollen tubes (Schrüter); andropet'alous, andropetal'akius (πέταλον, a flower leaf), flowers double, the stamens petaloid, the pistils unchanged; An'drophore, Andro'phorum (φώτος, carrying), (1) a support of a column of stamens, as in Malvaceae; (2) a stalk supporting an androecium; An'drophyll (φύλλον, a leaf), a male sporophyll, a stamen; An'drophyte (φυτόν, a plant), a male plant in the sexual generation.

Androsac'icile (+ ile), a "Society" of Androsace (Clements).

Androsoran'gium (ανήρ, ἀνδρός, a man, σπορά, a seed; ἄγειεον, a vessel); a microsporangium, a sporangium containing An'drosper'mes, (1) swarmpspores of Oedogoniae, which give rise to Dwarf-males destined to produce spermatozoids, (2) (A. W. Bennett) = Micros'pore; an'drou's, staminate, male.

Aneneletro'tonus (ἀνέλ, ὁπ, ἕλεκτρον, amber; τόνος, stress), the diminished excitation produced on the vital movements of plants by a constant current of electricity from the anode.

An'semad (ἀμέσως, wind, + ἂν), a "blow-out" plant; Anemi'um (⁺i-um), a "blow-out" formation; Ane'moch'ore (χωρέω, I spread abroad), a plant distributed by wind (Clements); Anemocho'ry, anemo'chorous (χωρίς, asunder), applied by Sernander to plants which retain their seeds through the winter, and then disseminate them by the instrumentality of the wind; Anemod'i'um, suggested by Clements for plants of "blow-outs," hollows in dunes excavated by wind; anemodop'h'ius (φιλέω, I love), plants dwelling in "blow-outs"; Anemodophy'ta (φυτόν, a plant), "blow-out" plants; Anemo'ntomoph'il'y, (+ Entomoph'il'y), employed of a polymorphic species which in some individuals is adapted for wind-fertilization, and in others for insect-fertilization (Knuth).

Anem'ônin, an acrid substance from several species of Anemone, Tourn.

anemoph'il'ius (ἀνεμωσ, wind; φιλέω, I love), applied to flowers which are
wind-fertilized, the pollen being conveyed by the air; Anemophilae, wind-fertilized plants; Anemophilous, the condition described; Anemosis, wind-shake, a disease of timber-trees.

Anemogamae (γάμος, marriage), wind-fertilized plants; also as Anemophilae (φιλέω, I love); Anemophile, delighting in wind, growing in breezy places; Anemophobe, shunning wind; Anemophyte, Hanger's term for a wind-fertilized plant.

Anfractuose, anfractuosus, anfractus, anfractus (Lat., a curving), sinuous, as the anthers of gourds; also spirally twisted.

Angiathous, employed by A. Gray as pertaining to Angiathus, a genus of Ulouloid Compositae.

Angienchyma (ένεργεια, a vessel; ένέργεια, an infusion), vascular tissue of any kind; Angiocarpic, angiocarpous, -pus (καρπός, fruit), (1) having the fruit invested by some covering which masks it, as in the Cupuliferae; (2) with spores enclosed in some kind of receptacle; a closed apothecium in Lichens; Angiocycads, proposed by F. W. Oliver for fossil cycads, having an hermaphrodite flower; Angiogamae, Ardissone's group for Angiosperms and Gymnosperms; Angiolium, the spore-case of certain Fungi (Lindley); Angiomonospermous (μονός, one; σπέρμα, seed), having only one seed in the carpel; Angiospermce, Angiosperms, plants having their seeds enclosed in an ovary; Angiosperm'al, angiospermous, belonging to the plants classed as Angiosperms; -type of Stomata, characterized by the development of the inner and outer borders of their cuticle, the outer border usually considerably thickened; Angios'porous, used of Cryptogams producing spores in a closed receptacle; Angiosporae, plants so characterized.

Angle, An'gulus (Lat., a corner), in botany not limited to the inclination of two lines, but often refers to the meeting of two planes to form an edge, as in angular stems; ~ of Deviation, that which a branch or similar organ makes with its axis; of Divergence, the degree of difference in the position of two adjacent leaves or organs on the same or different planes, as in a phyllotaxis, it is 144°; ide'al ~, Schimper's term for a theoretic angle for a "central station of rest" in phyllotaxis, as 130° 30' 27" '936; angular, angu'lar'is angular'is angular'ous, used when an organ shows a determinate number of angles, as the quadrangular stems of Labiatae; ~ Divergence, in phyllotaxis, is given under Angle of divergence; angul'ate, angular'ous, more or less angular; anguline'red, angulinerv'ius (ner'vus, a nerve), when veins form an angle with the midrib, as in mostDicotyledons; angulodent'ate (dens, dentis, a tooth), having angular teeth (Crozier).

Anguilluliformis (Lat., shaped like a small eel), applied by Koerber to Lichen-spores which are worm-like in shape.

Angustif'liate, -lious, -lius (angustus, narrow; folium, a leaf), narrow leaved; angustisept'al, angustisept'atus (septum, a division), having a narrow-partitioned fruit, as the silicle of Thlaspi; Angustisep'tae, plants so characterized.

Anhal'nine, a poisonous alkaloid from Anhalonium Lewiniti, Hennings; it resembles Strychinine.

Anillophyll, a product from Chlorophyll after treatment with Aniline, whence the name.

An'imé, a transparent resin from Hymenaea Courbaril, Linn.

Anisat'us, partaking of the scent of Anise, Pimpinella Anisum, Linn.

Anisob'rious, anisob'rius (ανισος, unequal; βρω, I swell), a name given to Endogens, from one side being supposed to possess greater developing force than the other, hence only one cotyledon is formed;
anisocotyle'donous (+COTYLEDON), unequal development of the cotyledons; Anisocot'yly, the condition in question (K. Fritsch); anisod'y'namous, -nus (δύναμις, power) = anisobrious; anisogamet'an'gous
Copula'tion (+GAMETANGIUM), when gametes are sexually diverse, as Oogonia and Antheridia, e. g. in Ascomycetes (Hartmann); Aniso'gam'etes (γαμήτης, a spouse), sexual cells, showing a difference between male and female; Aniso'gamy (γάμος, marriage), the union of two gametes differing chiefly in size; the smaller (micro-) gamete is male, the larger (mega-) gamete is female (Hartog); aniso'gonous (γόνος, offspring), applied to hybrids which do not equally combine the characters of their parents; cf. isogonous; aniso'gynous (γυνή, woman), with fewer carpels than sepals; Anisoholo'gamy (+HOLOGAMY), union of gametes somewhat differing in size, with slight sexual difference (Hartmann); anisomer'eous, anisomer'icus (μέρος, a part), where the petals of a flower are not all regular, unsymmetrical; Anisomerog'amy (+MEROGAMY) or Oogamy, the union of macro- and microgametes, eggs and spermatozoa, as Volvox, many Algae and Fungi (Hartmann); Anisomor'phy (μορφή, shape), change in form of an organ caused by its position in relation to the horizon of the mother-axis; anisopetal'ous, -lus, (πέταλον, a flower leaf), having unequal-sized petals; anisophyll'ous (φύλλον, a leaf), when the two leaves of a pair are diverse in shape or size; An'isophyllly, (1) used by Krasser for the different forms of leaf structure due to difference of position, as in aquatic plants, the submerged or floating-leaves; (2) the occurrence of leaves varying in form or size on shoots which are obliquely inclined to the light; it may be (a) habitual ~, so fixed as to be capable of being artificially propagated; (b) common ~, throughout the whole shoot; or (c) lateral ~, where only the side-branches display the inequality (Wiesner); Anisophy'tes (φητός, a plant), formerly used for Musciinae; an'isoch'istic (σχίστος, cleft), used of gametes which are unequal, some being degraded or aborted (Hartog); aniso'sep'alous, -lus (+SEPALUM, calyx-leaf), the sepals unequal; anisoste'menous (Crozier), anisoste'mon'ous, -nus (στήμων, a thread) = having stamens of different size; anisostemo'pet'alus = anisostemonous; anisotrop'ic, anisotrop'ous (τρόπος, a turn), endowed with different kinds of irritability; Anisotrop'ism, Anisotropy, the quality itself, as shown in leaves and roots which respectively seek and shun light.

An'ila'ge (Ger.), has been variously rendered as Rudiment, Inception, Primordium, Fundament.

ann'ex'ed, annex'us (Lat., fastened to), = adnate.

annot'inous, -nus (Lat., a year old), applied to branches of last year's growth.

an'nual, annu'al'is, an'nus (Lat., lasting a year), within one year; (1) used of plants which perish within that period; (2) of the rings in wood which denote the year's growth; Annual Ring, the marks seen on cross-section of wood which show the respective increment during each year; ~Shoot, = ramus annotinus.

ann'ular, annular'is, annular'ius (annulus, a ring), used of any organs disposed in a circle; ~Duct, ~Vessel, one in which the secondary thickening has taken place in the form of rings; ann'u'late, annula'tus, annuliform'is (forma, shape), ring-shaped; Annula'tion, a ring or belt (Crozier); annul'a'ti-form, ring-like, as the apex of the thecae of Schizaea.

An'nulus (Lat., a ring); (1) in Ferns, the elastic organ which partially invests the theca, and at maturity bursts it; (2) in Fungi, a portion of the ruptured marginal veil,
An'¬dæ, an¬dæ (’an, up; δήσ, a way), in the upward direction following the genetic spiral.

An'¬derm (’an, without; δέρμα skin), destitute of covering membrane or cuticle.

An'¬mal’ous :¬lus (’a, not; διάλος, equal), unlike its allies in certain points, contrary to rule; anomaloe’¬cious ♦ (οὐκος, a house), = polygamous; An°mal’aly, variation from normal character.

Anom’drom’y (’anμους, without law; δρόμος, a course), venation which cannot be assigned to any special order (Prantl).

An°ph'yta, An°phytes (’an¬, upward; φυτόν, plant), = Bryophyta.

An’sae (’ansa, a handle), the partial leaf stalks of a compound leaf; an’¬sulate, coiled at the apex and then bent over in a loop, as the shoots in some Cucurbitaceae (Crozier).

Ant°ep’iphytes (+ Epiphyte), certain plants cultivated by ants (Ule); ~ -guards, (1) ants attracted by nectaries on involucral bracts; (2) some Compositae which guard the flowers from predatory beetles (Kerner); ~ -plants, plants utilized by ants for habitation; see Myrme-cophilous plants.

Antagon’isti¬cic (’ανταγωνιστικός, adversary) Symbio’sis, where the symbionts are not mutually helpful or neutral, but hurtful, at least on the part of one.

Ante-caul’ome (’ante, before; + Cau¬

An°thel’ia or An°thel’iae’¬tum, an arctic alpine association with An°thel’ia as a constituent; Snow-flush vegetation.
Anthemy, Anthèmeia (ανθέμιον, flower-pattern?), a flower-cluster of any kind.

Anther, Anthe'ra (ανθηρός, flowering), (1) that portion of a stamen which contains the pollen, usually bilocular, and sessile, or attached to a filament; (2) an old term in Fungi, for the Antheridium; (3) also used by Linnaeus for the seta and capsule of Mosses, as in Bryum; ~ Cap, ~ Case, in Orchids, the outer deciduous case or bag, which is virtually the anther minus the pollinia; ~ Dust = Pollen; ~ like, ~ shaped, recalling the form of a stag's horns, as certain trichomes; ~ Lobes, the cells which contain the pollen; ~ Wings, the horny, lateral expansions of the anther-lobes in Asclepiadaceae: Antheran'gium (αγγειον, a vessel), the sporocarp of Dicondyles containing both macro- and microspores (Wittrock); Antherid, Antherid'ium (ελθός, resemblance); (1) the male sexual organ in Cryptogams, the analogue of the anther in Phanerogams; (2) in Hymenomycetes, an old term for Cystidium; Antheridan'gia (αγγειον, a vessel), microspores of Marsilea and allied plants; antherid'ial, antherid'ic, pertaining to antheridia; ~ Cell, the product of a prothallial cell, which divides into the Generative Cell, and the Stalk-cell; Antherid'io-phore (φόδος, bearing), a unisexual gametophore, bearing antheridia only, a specialized branch in Sphagnun and Hepaticae; antheris'ferous, -rous (φόδος, I bear), anther-bearing; an-'therless, destitute of anthers, female or neuter flowers; Anthero'cyst (ανθός, a flower, κύστις, a bladder), (1) Cardel's term for Antheridium, (2) restricted by Vuillemin to a unicellular structure developing antherozoids; antherog'enous, -rous (γένος, offspring), applied to double flowers arising from the transformation of anthers (De Candolle); an'theroid (ελθός, like), anther-like; Antheroma'nia (mania, madness), an inordinate development of anthers; An'therophore (φόδος, bearing), a cylindrical or flattened axis in Ephedra bearing the anthers.

Antherophyl'ly (ανθηρός, flowering; φύλλον, a leaf), the virescence and phyllomorphy of anthers; Antherosporan'gium (σπορά, a seed; ελθός, a vessel), a synonym for Microsporangium; Antherozo'a Antherozo'ids (ζών, an animal; ελθός, resemblance), male motile cells provided with cilia, produced in antheridia.

Anthe'sia (ανθήσις, flowering), the expansion of the flower, the time when fertilization takes place.

Anthesmol'ysis (ανθήσις, flower-like), the metamorphosis of inflorescence (Lindley); Anthesmotax'is (τάξις, order), the arrangement of the different parts of the flower (F. N. Williams); Anthes'mus, an inflorescence; Anthobiol'ogy (+ Biology), Hansgirg's term for the life-history of the flower; Anthocarp, Anthocarp'ium, a fruit formed by the union of the floral organs or part of them, with the fruit itself, as in Nyctaginaceae; anthocarp'ous, -rus (καρπός, fruit), applied to fruits with accessories, sometimes termed pseudocarps, as the Strawberry and Pineapple.

anthocérotoid (ελθός, resemblance), resembling the hepatic genus Antho-ceros.

Anthochlor'în (ανθός, a flower; χλωρός, pale green), the yellow colouring of flowers; xanthin; Anthoclin'ium (κλίνη, a bed), the receptacle of a Composite; Anthoc'y'anas (κύανος, dark blue), the blue, sometimes red, colouring of flowers.

Antho'dium (ανθώδης, flower-like), the capitulum of the Compositae, by some restricted to the involucrem.

Anthoe'cium (ανθός, a flower; οἶκος, a house), the spikelet of such grasses as Panicum; Anthoe'colog'ist (οἶκος, house; λόγος, discourse), a student of plant-life in its environment
**Anthog'amae (γάμος, marriage),** Trevisan’s term to include Bryophytes and Characeae; *anthoid* (ειδος, resemblance), flower-like, as the male inflorescence of *Polytrichum*; *Anthoole'u'cin (λευκός, clear), the so-called colouring matter of white flowers; *Anth'olite* (Λίθος, a stone), a fossil plant which has the appearance of a flower; *Anthol'y'sis* (λύσις, a loosing), the retrograde metamorphosis of a flower; *Anthophae'in* (Φαίνειν, to show), (1) the brown colouring matter of flowers; (2) the colouring of the black spots on the corolla of *Vicia Faba* (Moebius); *anthoph'ilous* (φιλος, I love), applied to plants with flower-visiting insects which aid cross-fertilization; *Anthoph'ilus*, a florist, a cultivator of garden flowers; *Anthoph'ore*, an agent employed for Phanerogams; *Anthoph'yta* (φυτα, plants), R. Brown’s term for Phanerogams; *Anthoph'yte* (φυτον, a plant), a flowering plant, a Phanerogam; *Anthop'tosis* (πτωσις, a falling), the fall of flowers.

**Ant'hos, Anth'us (άνθος, a flower),** used in Greek compounds; *Anthos'perm* (σπέρμα, a seed), "a little coloured concretion scattered in the tissues of certain Fucoids" (Lindley); *Anthosper'mae* (σπέρμα, a seed), a division of plants intermediate between Angiospermae and Gymnospermae (Williams); *Anthostrob'ilus* (στροβιλος, a fir-cone), the theoretic type of an Angiospermous flower (Arber and Parkin); *anthostrob'iloid* (ειδος, resemblance), the adjective of the preceding; *Anthotax'is, Anthotax'y* (τάξις, order), the arrangement of the flower; *anthotrop'le* (τροπη, a turning), employed by Hansgirg for any curvature of the peduncle during flowering; *Anthof'ropism*, any movement of the flower and its parts (Clements); *Anthox'an'thin* (ξανθός, yellow), (1) the colouring-matter of yellow flowers; (2) used by Frank as a synonym of *Carotin*; *Anthozy'mase* (+ *Zymase*), an enzyme found by Béchamp in the petals of flowers.

**anthrac'inus (Lat.),** coal-black.

**Anthrac'ose (άνθραχος, coal; νόσος, disease),** the "Bird’s-Eye Rot" of the Vine, caused by *Phoma ampeliniun*, Berk. et Curt.

**An'thrax, disease in animals due to Bacillus Anthracis, Cohn.**

**Anthro'chore, an abbreviation of the following:** *Anthro'pochore (άνθρωπος, man; χωρίς, asunder); anthropoch'orous, following man, used by Rikli to denote plants which are introduced involuntarily by the agency of man; *Anthro'phile* (φιλεω, I love), a plant which follows cultivation; *Anthro'phyte* (φυτον, a plant), a plant introduced by cultivation; cf. *Hemerythite*.

**Anthu'tus (άνθος, flower; ουδα, tail),** a cluster of flowers at the end of a long stalk; *An'thus, of old authors = COROLLA.*

**ant-**, in composition = against.

**An'tiarine, the active poisonous principle of the upas tree, Antiaris toxicaria, Lesch.**

**Antib'o'nts (άντι, against; βίος, life), antipathetic organisms; Antibio'sis, antipathy, a term proposed by Vuillemín.**

**anti'cal, anti'cus (Lat., foremost), the fore-part: (1) that most remote or turned away from the axis; (2) Spruce uses antical to denote the upper (dorsal) face of a stem in Hepaticae; (3) occasionally employed for introrse, as applied to anthers.**

**Anti-con'tral (άντι, against), employed by Praeger for plants whose distribution tends towards the coasts, avoiding the centre of the island; Antichem'ism (+ *Chem*), Cope's term to denote the protoplasm-producing energy, as antagonizing chemical force.**

**Anticip'atory Inher'itance, suggested**
by Boulger for what has since been called Precocity.

**anticlinal** (ἀντι, against; κλίνω, I incline), perpendicular to the surface; ~ Cells, "parent"-cells which persist in their primitive state without producing antipodal cells or vesicles; Vesque further subdivides them into (a) inert, (b) active or albuminogenous; ~ Planes, ~ Walls, those which cut the surface or the periclinal walls at right angles; Anticlines, anticlinal walls or planes; anticlinalanthous (ἀντιθός, flower), the inferior scaly parts of some Composite flowers; anticytorgamic (+ CYTORGAMIC), used of mixtures for destroying fungi; Antidimorphism (+ DIMORPHISM), varied shape of an organ in the same plant, as distinct to two distinct individuals (Lindman); antidromal, antidromous (δρόμος, a course), the direction of a lateral spiral being different to that of the main stem; ~ Torsion, a twist against the direction of twining; Antidromy, diverse twining; used also when different individuals of the same species display right- and left-hand torsion; Antiferment (+FERMENT), bodies which inhibit the action of enzymes; Antitetrophyll (+HETERTROPHYYYY) = Antidimorphism; Antikinase (+KINASE) = Antiferment: Antilysin (Λύσις, a loosing), any substance which inhibits catalytic action; antimycotic (μύκης, μύκητος, fungus), fungicidal; antipathetic (παθητικός, suffering), applied to plants which do not easily unite by grafting (Crozier); Antipathy, the quality shown by antipathetic plants; antipeduncular (pedunculus, a stalk), placed opposite a peduncle; antipetalous (πέταλον, a flower leaf), opposite or superposed to a petal, not alternate; the same as oppositipetalous; Antiphyte (φυτόν, plant), in alternation of generations, that generation which produces reproductive cells asexually, the antithetic generation (Celakovsky); adj. antiphytic; antipodal (ποδός, πόδις, foot)

~ Cells, three cells at the base of the embryonic sac, formed by division of the primary nucleus, when surrounded by protoplasm and finally cell walls; antisepalous (+SEPALUM), opposite to or upon a sepal, that is, not alternate with it; a shorter word for oppositipetalous; antiseptic (στειρικος, putrefying), preventing putrefaction.

**Antisperm** (ἀντί, against; σέρμα, a seed), Delpino’s term for the coalescence of the fertile divisions of the phyllome into a single fertile body opposed and superposed to the sterile division, in Phanerogams; in Pteridophytes he terms this phenomenon Antisporangism (σπόρα, seed; ἀγγείον, vessel).

antithetic (ἀντίθετος, opposition), in alternation of generations opposed to homologous, implying that the two generations are different in origin.

**Antitoxin** (ἀντι, against + TOXIN), a substance secreted by the plant to protect itself against harmful bacteria; adj. antitoxic; antitropical, antitropical, -pus (τροπή, a turn), a synonym of Orthotropical as applied to ovules; antitropic (τροπή, a turning), (1) suggested by A. Gray for twining against the sun, that is, sinistroscope; (2) relating to Antitropy; Lopriore’s term for roots which branch in opposite directions from the main axis; antitropical ( + ULTONIAN), used by Praeger for plants whose distribution is least in the province of Ulster; antizymotic, antizymotic (ξύμη, yeast), preventing fermentation.

an'tro'se, antro'sus (antero-, before; versus, turned backwards), directed upwards, opposed to retrorse.

Ant'rum † (Lat., a cave) = POMUM.

an'ucleate (α, without, + NUCLEUS) non-nucleate.

-a'num, Clements's suffix to denote "layer."

ap-, apo-, prefix of negation (Rothert);
Apaerotaxis (ἀπαρετόταξις, air; τάξις, order), used by Rothert for negative stimulus by oxygen, in the case of anaerobic organisms.
apag yunus † (ἀπαγός, once; γυνή, woman), monocarpic.

Apan'dry (ἀπαντρικός, without; ἄνθροπος, man); (1) M'Nab's term for fusion of the antheridium with the oogonium; also applied to the pollen tube; (2) the loss of function in the male organs; adj. apan'drous.
aparaph'ysate (ἀπαραφυσάτου, without flower, the tube of paraphyses male), Boulger's.
apet'alae (ἀπεταλόν, without; πέταλον, a flower leaf), plants wanting petals or corolla; apet'alous, lus. apet'alo'se, without petals, or with a single perianth, as in Clematis, where the coloured sepals simulate petals; apet'alousness, being without petals; Apet'alously, the condition of wanting petals; cf. Apet'alously.

A'pex † pl. A'pices (Lat., summit), (1) an old name for Anther; (2) the ostiule of certain Fungi (Lindley); (3) the growing point of a stem or root; (4) the tip of an organ; Floral ~ = Mamelon.

Aphan'eri, pl. (ἀφανής, not; φανερός, manifest), organisms which are not visible without the aids of re-agents (Maggi).

Aphan'isìs (ἀφανίσις, disappearance), suppression of parts.

Aphanocy'clae (ἀφανύς, unseen; κύκλος, a circle), Sachs's name for certain plants where the whorls are not very manifest, as Nymphaeaceae.

Aphaptotropism († Haptotropism), not influenced by touching stems or other surfaces (G. Henslow).

Apheliotropism (ἀπό, from; ἡλιός, the sun; τροπή, a turning), turning away from the light, negative heliotropism, as in roots; adj. apheliotropic.

Aphleb'ia (α, without; φλέψ, φλεβός, vein), used generically by C. Presl, but descriptively by Solms-Laubach for anomalous pinnae on the rhachis of certain fossil ferns, and the existing Hemetelia capensis, R. Br.

~ Traces, pinna traces in Diplolabid derived from aphlebiae; aphot'ic, aphotis'tic (φωτισθεν, one who gives light), growing practically without light, as abyssal organisms may do; cf. Aphot'iciones; Aphotis'tes †, a plant growing in the absence of light, as a Truffle.
aphotomet'ric (α, not; φωτός, φωτός, light; μέτρον, measure), applied by Strasburger to phototactic zoospores, which constantly turn the same extremity to the light; opposed to photometric; Aphototax'is (+ Phototaxis), the condition of organisms which are unaffected by the stimulus of light; adj. aphototactic; Aphototrop'ism (+ Phototropism), turning away from light.
aph'rostase † (ἀφροphthalmus, froth; στάσις, standing), cellular tissue.
aph'thac (αφθας, ulcerations in the mouth), the disease known as Thrush, ascribed to Saccharomyces albicans, Reess; Aphthaphy'tes (φυτόν, plant), the Fungi mentioned above as causing the disease.
aphydrotaxis (ἀπω, from; δύω, water; τάξις, order), repulsion from water.
aphyll'ae (α, without; φύλλον, leaf), (1) Lindley's term for Thallophy'tes; (2) plants having only rudimentary leaves or none (Schipper); aphyll'ous, lus. aphyll'ose, wanting leaves; aphyll'opodous (πούς-ποδός, a foot), the stem of Hieracium when leafy, and without a basal set of leaves; Aph'yllly, suppression of leaves.

A'pical, apic'clis (apex, apicus, summit), at the point of any structure; ~Axi'a, in Diatoms, the line through the centre of the pervalvar axis in
the direction of the raphe, at equal distances from homologous points of the girdle band surfaces, and through the apices; ~ Cone = Punctum Vegetationis; ~ Growth, extension in the length of the axis; ~ Plane, in Diatoms, the plane at right angles to the valvar plane, which passes through the pervalvar and apical axes; cf. Pervalvar ~; Transapical ~; ~ Porae, special hydathodes and monocotyledons (Haberlandt); apiciircinna'tus (circinate, turned round), ending in a circinate manner; apical'ary, apicilla'ris, inserted on, or pertaining to the summit, as in the dehiscence of the capsule of Ceras'tium; apic'iaxed (fixes, fastened), descriptive of a suspended anther (Groom).

Apic'ula, Apic'ulum (Lat., a little point), a sharp and short, but not stiff point, in which a leaf may end; apic'ulate, apicula'tus, furnished with an apicula.

Apig'en'in, a glucoside found in many Umbelliferae, especially Apium.

A'pilary (a, without; παλός, hat), suppression of the upper lip in such flowers as Calceolaria; Aplanogametan'gium (ἀγγείον, a vessel), the organ which gives rise to aplanogametes; Aplanogam'etes (ἀπλανής, not wandering; γαμήτης, a spouse), a non-ciliated gamete, which may or may not be set free; Aplan'o'spores (σπόρα, a seed), non-motile cells which are detached for propagation, formed asexually by true cell-formation and rejuvenescence; aplanomodi'phorus (a, without; παλάμα, moulded; ἔλδος, resemblance; φούς, bearing), used of Myxogastres which do not produce plasmodia; aplanot'ic (πλανοτικός, moulded), not convertible into organic tissues; aplanogle'pieous (απλεγείοσ, a scale), applied to those Mosses having a single row of teeth or scales in the peristome; Aploperei-

st'omi (ἀπλός, simple; περι, around; στόμα, mouth), Mosses having a single row of teeth in the peristome, or none; adj. aplanopereistomat'atos.
apobate'ic (αποβαλω, I depart), repulsive; cf. STROPHIC.

Ap'o'blast (από, up; θάνατος, a germ), a barren shoot, as from pollard willows; adj apoblas'tic; Ap'ocarp, Apocar'pium (καρπός, fruit), a fruit which is apocarp'ous, ~pus, that is, when the carpels of a Gynaeicum are separate; Apocarp'y is the condition; Apochemota'sis (+ Che moto'taxis), negative attraction due to chemical influence; repulsion; adj. apochemotac'tic.
apocyna'ceous, apocyn'eous, relating to or resembling the genus Apocy'num or its allies.
apocyt'ial (κύτως, a hollow), of the nature of an Apocy'tium or Ap'ocyte, an habitually plurinucleate mass of protoplasm, cell-division remaining in abeyance; multinucleate and unicellular; Apo'cryt', Vuillemin's term for non-cellular tissue in Fungi and Algae, the cells being reduced to several nuclei within the cell-wall.
apod'ial (a, without; πούς, πόδι, foot), destitute of a Podium or footstalk; apodog'ynum (γυνή, woman), applied to a disk which is not adherent to the ovary.
apoem'bryony (απο, from; ἵμμυρος, an embryo), the embry-o-stage suppressed; Apogalvanotax'is (+ Galvanotaxis), negative Galvanotropism; apogam'ic, apogamous.
apogamy (γάμος, marriage), (1) abnormal budding and production of a bion by a prothallus without sexual intervention; (2) independently framed by Romanes to express "indiscriminate isolation"; meliot'ic ~, apogamy after meiosis, when the sporophyte originates from the oospore or from gametophytic tissue; dip'id'oid ~ = Eupogamy; hap'id'oid ~ = meiotic Apogamy;
Apotheoium

Apoph'ysis

induced—negative

aposep'alous

apogeotrop'ic,

Ap'o-sperms

alcrOriTiKhs,

—Apo-
apoplasmo'dial

Apogesta'tion

Apog'eny

Ap'o-

Apo-
apoph'y-
apogen'-

Apost'-

is

also

apoplasmo'dial

Apogamy

apomio'tic,
apol'ar

ob'ligate ~ = Parthenapo-gamy:
somat'ic ~ = Euapo-gamy;
gen'-erative ~ = meiotic Apo-gamy;
adj. apog'amous; Apog'eny (γένος,
offspring), loss of power for sexual
reproduction, the function of both
male and female organs being de-
stroyed.
apgeoesthet'ic (άπω, from; αισθητικός,
perceptible), when the young hypo-
cotyl bends upwards (Czapak);
Apo-
geotaxis (γη, the earth; τάξις, order),
negative Geotaxis; Aposeotropism
(γη, the earth; πτωτικός, a turn), grow-
ing away from the earth, as normal
stems; apogeotropic, negatively
geotropic; Apospory (gestatio, a
bearing), defined by A. S. Wilson
as "the gestation of the germ of
one plant in the tissue of a wholly
different plant away from the gener-
ating system"; Apog'yny (γυνή,
woman), loss of reproductive power
in the female organ.
apol'ar (a, privative; πόλις, a pivot),

applied by Bertrand and Corneille,
to indeterminate fibrovascular masses
without tracheae, in Ferns.
apomio'tic, relating to Apomix'is (άπο,
from; μία, intercourse) = Apo-
Gamy; apopetal'ous (πέταλον, a flower
leaf), having free petals; polypetal-
ous; apophyll'ous (φύλλον, leaf),
applied to parts of a single perianth
whorl when free; Apophototaxis'is (+
Phototaxis), the action of light
causing no definite arrangement of
organisms or chlorophyll granules;
adj. apophototact'ic; Apoph'y-
sis (φύση, I grow), (1) the swelling below
the capsule of Splechnum and other
Mosses; (2) also in the cone scale
of Pinus Pinaster, Soland.; apophy-
sate, possessing such an enlargement;
Apophytes, pl. (φύτης, a plant),
(1) Boulger's term for Lichens;
(2) Kikli's term for autochthonous
plants which follow cultivation;
adj. apophyt'i'al, -ic; Apoplas'tidy
(πλαστός, formed), modifications of
the same species; apoplasmo'dial
(+ Plasmodium), and apoplast'o-
amous (+ Plastogamy), said of
the Acrasieae, as differing from the
Myxogastres by the non-fusion of
their cyttoplasmic elements (Hartog);
apora'chial (+ Rhachis), directed
away from the rhachis (Davie);
Aporog'amy (+ Porogamy), when
the pollen-tube does not pass through
the microple; adj. aporog'amous;
apo'schist (σχιστός, split), used of
a gamete in which cell division does
not occur, but the cell directly
assumes the behaviour of a gamete
(Hartog); aposep'alous (sepalum,
calyx-leaf), having free sepals;
Aposmotax'is (+ Osmostaxis), the
repulsive influence of certain solu-
tions on organisms; Apo'sperms
(σπόρον, a seed), plants defined by
MacMillan as integrated separately
from the placenta; cf. Synsperms;
Apos'opy (σπόρα, seed), suppression
of spore-formation, the prothallus
developing direct from the asexual
generation; direct ~, is normal but
prolonged; induced ~, where the
prothalli produce buds forthwith
(Lang); adj. aposp'o'rous; Apo'tas'sis
(στάσις, standing), the monstrous
division of parts normally united;
Apostax'is (στάξις, I drip) the abnormal
loss of nutritive or secreted fluids by
bleeding, gumming, etc.; Apost-
'trophe (στροφή, turning), the position
assumed by the chloroplastids during
intense light, along the sides of the
cell-walls, instead of the outer sur-
face; negative ~, is caused by weak
light, as at night, and positive ~, by
strong light; apostroph'i'c, relating
to Apostrophe; ~ Int'erval, the space
on the Phytron capable of
apostrophizing chlorophyll granules
(S. Moore); also termed Apostro-
phion; Apostrophiza'tion, the act
of chlorophyll granules in taking
up the position of Apostrophe;
Apostaximorpho'sis (τάξις, order;
μόρφωσις, a shaping), Gubler's term
for any teratologic change which
seems antagonistic to the normal
laws governing the organism; Ap'o-
thece = Apothe'ciun (θηκή, a case),
(1) an organ of fructification pecu-
Apothecium

Aqueous

Liar to lichens, and usually cup-shaped "Shields"; (2) bowl-shaped fructifications in Pezizaceae; Apoothermotaxis (+ Thermotaxis), insensitivity to the influence of temperature; Apothigmotaxis (+ Thigmotaxis), irritability induced by contact with a solid body (Rothert); apotrop'ic, used of the ascending axis (White); Apotropism = Apogeotropism; apotropous (trop'h, a turning), used of an anatropous ovule with the raphe ventral; apot)'pic (tô'ros, a type), an anomalous departure from the general law of development; Apotype, a supplementary type, aiding the completion of descriptions; cf. Hypotype; Apoty'pose, an abnormality in development (Gubler).

Appen'dage, Appen'dix (Lat., an addition), (1) a part added to another, as leaves are appendages to the stem; (2) a name given to processes of any kind, especially those of the perithecia of fungi; (3) in the plural the term Appen'dices was formerly applied to suckers, such as the offsets of the pineapple.

Appen'dent, appen'dens (appendo, I hang by), when the hilum is directed towards the upper part of the seed, which is sessile, or nearly so, on the placenta, as in stone-fruits.

appendic'ulate, appen'dicula'tus (appendicula, a small appendage), (1) furnished with appendages; (2) the pyleus of an agaric, when portions of the secondary veil remain attached to the margin of the pyleus; appendic'ular Ridges, on guard-cells of certain Rhizophoreae, dividing the front cavity into two compartments; appen'dicled, having small appendages.

Appendic'ulum †, diminutive of Appen'dix.

appense" (appen'sus, weighed), being hung up as a hat is upon a peg, an approach to pendulous (Lindley in Loudon, Encyc. Pl. 1095).

ap'planate, applan'a'tus (ad, to; plan-

Aqueous

atus, made flat), flattened out or horizontally expanded.

Apple, a fleshy, inferior, plurilocular, two to five-seeded fruit, technically styled a Pome.

applica'tus (Lat., applicati'vis, close to, or attached), applied face to face, without folding.
apo'site, appos'itus (Lat., applied to), when similar parts are placed close to or side by side; apposifo'liar (folium, leaf), an error for oppositifolious; Apo'position, side by side or close to; ~ Theory, of the growth of the cell-wall, as due to repeated disposition of layers of substance on the internal surface of the original cell-wall.

appress'ed, appress'u's, (ad, to; pressus, kept under), lying flat for the whole length of the organ; Appress'ors, organs of attachment of germinating filaments of parasite to host; Appre'ssoria, pl., Frank's term for the exterior organs of attachment of parasitic Fungi, as distinct from the Haustoria or absorbing organs.

approx'imate, approxima'tus (ad, to; proximo, I approach), drawn close together, but not united.

Aprica'tium (apriceus, lying open), the summer habitation of plants in botanic gardens, for exposure to sun and air; apric'cus (Lat.), living in open sunny places.
ap'terous, -rus (a, without; πτερός, a wing), wingless, used of petioles, seeds, and the like; appre'nsus (προνύv, seed), applied to fruit which is seedless, as cultivated varieties of the pineapple, orange, or grape.

Aquarium (Lat., relating to water), a tank for aquatics in botanic gardens.
aquat'ic, aquat'icus (aqua, water), living in water; aquat'ilis, has been defined as living under water; the first category would include Lemna and Typha, the second, Ceratophyllum, Chara, etc.
aqueous aq'ueus, aquo'sus (Lat., watery), (1) indicates some colourless structure, hyaline; (2) having much water in the tissues; aq'ueous Tissue, consists of one or more layers.
of thin-walled parenchymatous cells, destitute of chloroplastids, with much watery sap, without interspaces, and acting as water-reservoirs; aquaticous (I bear) Tissues, is a synonym.

Aquifol'my Period (aqulonarisl, northern) = XEROThERM.

Aquipra'ta (aqua water; pratum, a meadow), pl. plant-communities and herbs, grasses, and bryophytes, where influenced by ground-water.

Arab'in, a substance derived from Gum Arabic, deflecting the polarized beam to the left; Arab'inose, a glucose obtained from it, also from cherry-gum; Arabinox'ylan, a hemicellulose, found in the bran of wheat and rye.

ara'ceous, relating to the order Araceae.

arach'noideal, arach'noideus (arach'noidea, spider, or spider's web; eldos, resemblance), like a cobweb, from an entanglement of fine whitish hairs.

aralia'ceous, resembling the genus Aralia, or the order of which it is the type.

ara'ceous †, arane'ceous †, ara'neose (aranea, a spider), have the same meaning as arachnoid.

Araroba, a powdery excretion in cavi ties of the Brazilian tree, Audira Araroba, Aquiar.

Ar'bor (Lat., tree), a woody perennial plant, having a bole from which the branches spring; arbor'eous, arbor'ens, tree-like; arbores'cent, arbores'cens (+ escens), attaining the size or character of a tree; Ar'boret, a small tree or shrub.

Arbore'tum, a place assigned for the culture of trees, usually in systematic order; also the title of a book devoted to trees; arboric'o-line, arboric'olous (+ suffix -cola, inhabitant), dwelling on trees, as the habitat of Fungi or epiphytes; arbor'oid (eldos, resemblance), a hybrid word for dendroid, tree-like.

Arbus'cula (Lat.), a small shrub with the aspect of a tree, as some heaths; Arbus'cle is an old term for the same; Arbus'culus (Lat.), a small tree; arbus'cular, arbuscula'ris, shrubby, and branched like a tree.

Arbus'tive, arbus'tivus (Lat., planted with trees), coppiced.

Arbus'tum (Lat.), (1) a shrub, a branched woody perennial plant, but wanting a distinct bole; (2) applied to an account of the woody plants of a country; a Sylva.

Ar'butin, a glucoside occurring in many plants, especially Ericaceae; it derives its name from Arbutus.

Ares'thide, Ares'thida (arkev'tis, lodos, juniper berry) = Galbulus.

Arche'ophytes (photon, a plant), Rikli's term for weeds introduced into cultivated ground in prehistoric time.

archaic (ark'aks, antiquated), used with reference to a type of a former age, as Casuarina.

Archebio'sis (ark'os, beginning; bios, life), origin of life; Archeg'one = Archegonium; archego'nial (gono'ial, race), applied by Tschirch to stomata, whose outer walls of the guard cells are thickened, inner walls only a thin lamella, the guard cells separated in their central part but not at the poles, as in Gymnosperms; archego'nest, possessing archegonia; Archegonia'tae, plants producing archegonia, applied to Bryophytes and Pteridophytes; Archego'niophores (phor'os, I bear), the supports of archegonia in certain ferns, outgrowths of the prothalli, also specialized branches on Spagnum with the same function; Archeg'o'nium, the female sexual organ in Cryptogams, containing the oosphere, which after fertilization develops within the venter; Archene'ma (nema, a thread), term proposed by C. MacMillan for gametophytic structures in Thallophytes; Arch'esperm (sperma, a seed), (1) the fertilized contents of an archegonium (Bennett and Murray); (2) also employed by MacMillan, for plants with obligatory and archesper'mic seeds, with monomorphous embryos; Arch'espore, Archespor'iurn (spor'as, a seed), the cell or cells from which
Archesporium

the spores are ultimately derived as in the pollen-sac, or its homologue; archespor’ial, belonging to the same; ~Cells, the original cells in spore-formation; ~Pad, Bower’s term for a mass of cells developing beneath the sporogenous tissue in certain Pteridophytes; Arch’etype (τύπος, a type), an original simple type; restricted to a series of forms from the simplest to complicated, with common type of structure and phylogenetic connections.

Archianth'enum (ἀρχιάνθον, prefix for chief or primitive; ἀνθέμιον, a flower), C. Schimper’s term for a well-developed flower at the apex of a botryoid inflorescence, where it is normally absent (Penzig).

Arch’i-carp (ἀρχικαρπός, beginning; καρπός, fruit), in asconycetous Fungi, the beginning of a fructification, the cell or group of cells fertilized by a sexual act; Archiohlamyd'eae (χλαμύς, -ός, a mantle), Engler’s term to include the Polypetalae and Incompletae of Phanerogams; Age of ~, the Middle Tertiary Period is so termed by MacMillan; Archiclei-stog'amy (+ Cleistogamy), the condition of permanently closed flowers, whose organs are considerably smaller than those of normal flowers (Loew); archigoni'ic (γόνος, offspring), arising by spontaneous generation (Haackel); Archigynos- sper'mae (+ Gymnosperm), Jeffrey’s term for the ferns and the lower Gynnosperms; Archimycyte's (μύκης, a mushroom), unicellular Fungi, parasitic on Diatoms (Marpmann).

arch’ing, curved like a bow.

Arch’isperm (ἀρχισπέρμον, beginning; σπέρμα, seed), (1) another name for Gymnosperms, from their presumed antiquity; (2) Bouger’s term for structures formed before fertilization, or at an early stage in the macrospore; Arch’sphere (σφαῖρα, a sphere), the contents of an archegonium previous to fertilization.

Archistrep'tes (ἀρχιστρέψ, chief; στρεπτός twisted), the principal spirals formed in phyllotaxis.

Archiclestog'amy (ἀρχικλειστόγαμος, chief; + Cleistogamy), when the flowers remain closed at the time when the sexual organs ripen (Knuth); cf. Archicleistogamy; Arch’oplasm (πλάσμα, moulded), Bower’s term for Kinoplasm; adj. archoplas’mic; ~Sphere = Achromatic Spindle.

arctic, a term applied by H. C. Watson to a British region, comprising three zones, styled super-, mid-, and infer-arctic zones, relating to plants growing above the limits of cultivation.

Arctogae’al (αρκτικός, the earth), in plant-distribution refers to Huxley’s term Arctogae’a, which includes Europe, Asia, Africa, and North America as far as Mexico.

ar’cuate, arcu’a’tus (Lat.), bent like a bow, curved; arcu’to-areola’tus, divided into spaces by curves; ~contort’us, forming a depressed spiral, as in some legumes.

Arde’ll’a (αρδέλλα, I sprinkle), small apostheca of certain lichens, as Archonia, seemingly dusty; Ardi’um or Ard’ion (αρδίων, I irrigate), a formation of plants due to irrigation (Clements).

ardos’iacus (Mod. Lat., from Fr. ardoise, slate), slate-grey; ardos’ia’cus, slate-coloured (Clements).

-are, suffix denoting a community (Clements).

A’rea (Lat., a space), (1) a bed in botanic gardens; (2) in Diatoms, the surface of a valve when circular and destitute of a staurus; (3) the receptacle of certain Fungi (Lind-ley); (4) A. Braun’s term for the space round the sporangium in Isoetes; ~ of Infec’tion, the part open to attack, as the stomata, epidermis or wound.

arena’ceous, arena’ricous, aren’arius, aren’osus (arena, sand), growing in sandy places.

Arenari’etum, a formation in which Arenaria is dominant or exclusive (Clements); Arena’rion, a family of Arenaria (Clements).
arenicolous (arena, sand; co/o, I inhabit), growing in sand or sandy places; Arenophīlæ (φιλέω, I love), sand-loving plants.

Are‘öia (Lat., diminutive of AREA), (1) a space marked out on a surface; (2) a small cell or cavity; (3) a tessellation in the thallus of some Lichens; (4) a lumen in the sporangium of Achlyla due to the influx of water (Harper); are’olar, are’olate, areola’-tus, marked with areolae, divided into distinct spaces; Areola’tion, in Mosses, the arrangement of the cells.

arg’entate, argent’eus (Lat., silvery), silvery as to tint and lustre; argent’tus (Lat.), silvered.

argilla’ceous, -ceus (Lat.), clayey, growing in clay, or clay-coloured; argil’licole (+ colo, I inhabit), dwelling on clay; argillo’sus (Lat.), living in clayey places.

Ar’ginin (deriv. ?), a proteid peculiar to the Coniferæ, occurring in their seeds and etiolated seedlings.

arg’os, in Greek compounds = white; in Latin, candidus.

Argotax’is (ἀργός, passive; τάξις, order), passive movements due to surface-tension (Pfeiffer).

argu’tus, argutus (Lat.); sharp, as argu’tes-serratus, sharply-serrate.

arg’yros, in Greek compounds = silvery; Lat., argentus.

arhi’zal, arhi’zus = ARRH’IZAL, etc.

Ar’icine, an alkaloid from cinchona bark, obtained from Arica, in Chili.

ariet’nous, (ariet’i-nus, pertaining to a ram), like a ram’s head (Heinig).

A’ril, Arill’us (Fr., arille), (1) an expansion of the funicle, arising from the placenta, and enveloping the seed; mace is the aril of the nutmeg; (2) used by J. E. Smith for the utricle of Carex; arillate, arillus’tus, possessed of an aril; arillos’form is † (forma, shape), bag-shaped; A’ril’lode, Arillo’dium, a false aril, a coat of the placenta, and not arising from the placenta; aril’loid (eîdos, resemblance), like an aril.

arî’nus (αρρυν, male), Necker’s suffix to words enumerating stamens, instead of the Linnean -androus.

Arist’at, Arist’ate, arista’-tus, awned; aris’tulate, aris’tula’tus, bearing a small awn.

aristolochia’ceous, resembling the genus Aristolochia, Tourn.

aristosty’lous (ἀριστόστυλος, left; στῦλος, a pillar), applied to a flower with an exserted style bent towards the left.

Arm-pal’isade (+ PALISADE), cells having protrusions which amalgamate with each other in the palisade-tissue; ~ -por’tion, of two-armed hairs; ~ -tis’sue, elements having the shape of the letter H (Haberlandt).

Ar’ma (Lat.), Arm’mature, any kind of defence, as prickles or thorns; armed, bearing thorns or similar defences.

armen’ia’ceous, armen’iacus, (1) apricot-coloured, a dull orange, named from Prunus Armeniaca, Linn.; (2) a native of Armenia.

Armill’a (Lat., bracelet), the frill of the stipe of Agarics left attached on the expansion of the pileus; at first it forms a covering of the hymenium; armillate, consisting of rings or circles; armillary, like a bracelet (Heinig).

Arnat’to, also written Arnatto and Annotto, the red colouring matter from the pulp of the fruit of Bixa Orellana, Linn.

aroid’eous, relating to the family Aroidææ.

Aro’ma (Lat., spice), the perfume of a plant; arom’atic, -cus, possessing a spicy smell or taste.

arrect’, arrect’us (Lat., set upright), stiffly erect.

Arrest’ (arrestare, Late Lat., to stop), employed by Goebel to include Abortion and Suppression; sporal ~, see Sporal Arrest.

arhi’zal, arhi’zous, arhiz’i us (a, without; ðì(a), a root), rootless, wanting true roots; Arhizoblas’tus † (βλαστος, a germ), an embryo which has no radicle.
Ar'trow-head'ed, ~ shaped, barbed like an arrow, sagittate.

arth'gonoid, ar'tho'nocid, of the form or consistency of the apothecia in the genus Arthonia, Ash. (The generic name is falsely derived from an imaginary ἁρθω; it should be Ar-tho-donia from ἁρθω). The 'nocid, resembling in form the Desmid genus Arthodesmus (Archer).

arthrog'enous (αρθρας, a joint; γενος, offspring), when portions separate from the cell, and gradually develop into distinct individuals (Massee); e. g. ~ Spores, in Bacteria when portions separate from the cell and develop into spores; Arth'rospore (αρθρας, a seed), one of spores like a chain of beads, formed by fission; arthrospor'ic, arthrop'orous, applied to Schizomycetes, in those species which have no endogenous spore-formation; Arthrosterig'mata (στεριγματα, -ατος, a prop), jointed sterrigmata in some Lichens, made up of rows of cells from which spores are abstricted.

Art'icle, Artic'ulius (Lat.), a joint; artic'ulated, articula'tus, (1) jointed, separating freely by a clean scar, as in leaf-fall; (2) used by Bentham and Hooker for the jointed pod of Desmodium; Articula'tion, (1) a joint, popularly applied to the nodes of grasses; (2) the basal portion of the sensitive bristle in Dionaea; Artic'uuli, the segments of coralline Algae, usually incrusted with lime.

Art'ifact (ars, art; factus, made), a substance not naturally existing, but resulting from laboratory treatment; artifi'cial, artificialis (Lat., according to rules of art), applied to any scheme of classification which is based on one set of characters, as opposed to a natural scheme, which takes all characters into account.

artiphyll'ous, -līus (αρτιος, complete; φυλλον, leaf), used of nodes which bear manifest buds.

Art'olin (αρτος, a loaf), the proteid of wheat-gluten.

arun'coid (αλθος, like), resembling Spiraea Aruncus.
arunda'nceous, arundina'ceous, reed-like, having a culm like tall grasses;
arundine'ous, reedy, abounding in reeds.
arven'sis, (arva, arable land), applied to plants of cultivated land, especially of ploughed fields.

Asafoet'ida (usahaan, Persian for mastic; foetidus, stinking), a gum-resin of a persistent alliaceous odour and taste, yielded by Ferula Narthez, Boiss., and other allied Umbelliferae.

As'arin, the bitter principle of Asarabacca, Asarum europaeum, Linn.; As'arine, a crystallized substance resembling camphor.

Asc'eil'us, (1) diminutive of Ascus; (2) the spores of certain Fungi (Lindley).

ascend'ent, -ents, ascend'ing, (1) directed upwards, as the stem; the ascending axis is oblique at first, then erect; (2) opposed to descending.

-ascens, a suffix denoting a tendency towards something, as ciner-ascens, becoming ash-coloured, cinereus.

ascidia'tus (Lat.), furnished with Ascidia; Ascid'ium (ασκίδιον, a little pitcher), pl. Ascid'ia, (1) the pitcher of Nephthys, etc., the metamorphosed lamina of the leaf, becomes tubular, usually with a lid, which is a development of the apical portion of the leaf; (2) the asci of certain Fungi; ascid'i-form (forma, shape), pitcher-shaped.

ascic'erous (ascus, Mod. Lat., a wineskin; fero, I bear), bearing ascii; ascic'gerous (gero, I produce) = Asci'ferous.

asciiform'sis (ascia, a hatchet; formis, shape), used by Masters for hatchet-shaped; dolabriform.

asclepiad'eous, like the genus Asclepias or its allies, as to structure; Asclepiad'ology (άσκληπιος, discourse), the science, or a treating of the order of Asclepiadaceae (Schlechter).

As'cocarp (ασκωρ, a wine-skin; καρπος, fruit), the sporocarp of Ascomycetes producing ascii and ascospores; its
three kinds are termed Apothecium, Perithecium and Cleistocarp; As'cocy'st (νύστις, a cavity), a large hyaline empty cell with a thick wall, by some authors termed a paraphysis, occurring in Myriocymba and allied genera (Sauvageau); asco-gen'ic, ascog'enous (γένος, offspring), producing ascii, asciferous; asco-gon'ial, relates to an As'cogone, or Ascco'gini (γονή, race), (1) a synonym of Archicarp; (2) a portion of an Archicarp, the contents taking part in forming asco-genous hyphae = reproductive cells containing female nuclei (V. Blackburn); Ascoli'chenes, Lichens producing asci; Asc'o'ma, Wallroth's term for Receptacle and Hymenium of Fungi; Ascomyce'te (μύκης, fungus), Sachs's name for a large group of Fungi, forming ascocarp, asciocarp and stylospores.

Asco'póra, an error (!) for the next.
Asco'phor (άσκος, a bag; φορέω, I carry), the ascus-bearing hyphae within an ascocarp; ascoph'or'ous ascus-bearing; Ascoh'y'ses (φυο, I make grow), the hyphae which constitute the ascosogenous cushion in Chaetomium; As'cospora (σπόρα, a seed), a spore produced by an ascus, sometimes termed sporidium or sporule; As'seus, pl. As'si (pr. as'sī), a large cell, usually the swollen end of a hyphal branch, in the ascocarp of which normally eight spores are developed; ~ Appara'tus, a portion of the sporocarp, comprising the ascii and the ascosogenous cells; ~ suffulto'rius, Corda's term for Bas-idium.

As'yphous (α, without; σύφος, a beaker), without Scyph'i; aspértate (septum, an enclosure), without partitions or cross-divisions; aspért'ic (σπερτικός, putrefying), not liable to become rotten; sex'nal (sexualis, pertaining to sex), destitute of male or female organs; neuter; ~ Genera'tion, in alternation, that generation which produces spores asexually, but is itself the product of a sexual act; thus, in Ferns, the full-grown form is the asexual form or sporophyte, the prothallus the sexual form or gametophyte.

Ash, the mineral residue of plants after complete combustion.
Ash-Oak'wood association, woodland having a quantity of ash-trees with oak usually co-dominant; Ash'wood association, the ash dominant, characteristic of limestone hills in Yorkshire and Derbyshire.
Asim'iña = Ass'imimin.
Asiphon'ogam (α, privative + Siphon'ogam), a plant fertilized by antherozoids; a cryptogam; asomat'ic (σωμα, body), having only embryonal parts (Pfeffer); Asomat'ophyte (φυόν, a plant), plants without permanent tissues.
Aspar'agi (ασπάραγος, asparagus), formerly used for Tur'iones or suckers, young shoots emerging from the rootstock under ground, and at first bearing scales only, as in Asparagus; Aspar'agu, a commonly occurring amide, which was first obtained from Asparagus officinalis, Linn., hence its name; asparag'inous, applied to plants whose young shoots are eaten as asparagus.
As'pect (aspectus, sight, view), "the seasonal impress of a formation, e.g. the spring aspect" (Clements).
as'per (Lat., rough), asperate, as'perous, rough with hairs or points.
aspergil'liform, aspergillyform'is (as'pergilhum, Mod. Lat., holy-water brush; forma, shape), tufted, brush-shaped as the stigmas of grasses.
Aspergil'lin, pigment of the spores of Aspergillus niger, Van Tiegh., now known as Sterigmatocystis nigra, Sacch.
asper'i'late, asper'foli'us (asper, rough; folium, leaf), rough-leaved, as Borrage officinalis, Linn.; As'per'i'ty (asperitas), roughness.
asper'mous (α, without; σπέρμα, seed), seedless.
as'perous (asper, rough), scabrous, harsh to the touch; asper'ul'ous, slightly rough with little points (Braithwaite).
Asphyxia

aster'ic (Heinig) = asteroid.

Asterid'ia, pl. (aster'h, a star, ἵδων = diminutive), spinous or stellate bodies occurring in the cells of Conjugatae, possibly some parasitic form (Archer); Asterosphae'ria, pl. (σφαίρα, a sphere), a synonym of the same.

As'terile (Aster, Tourn., + IL). Clements's term for a "Society" of Aster; aster'oid (εἶδος, resemblance), (1) star-shaped; (2) like the genus, Aster, Tourn.

Astich'ic, ast'ichus † (a, without: στήχος, row, line), not arranged in rows.

Astig'matae (a, without, + stigma), Van Tieghem's name for the Archegoniatae; cf. Stigmatae; Astigmat'icae, Knuth's term for wind-fertilized plants which do not possess stigmas, such as Gymno-
sperms; *astipulate* (a, without, + *Stipula*) = exstipulate; *astomatous* (+*Stoma*), wanting stomata; *astomous*, *astomus* (στόμα, mouth), not having an orifice.

*astragaloid* (αστράγαλος, a knuckle-bone; ἐλός, resemblance), (1) dice-shaped (Heinig); (2) having affinity with the genus *Astragalus*.

*astral* (+*ASTER*), relating to the *ASTER* in cytology.

*Astrocen'ters* (αστρήρ, a star; κέντρον, point, centre), C. MacMillan's term for the bodies variously known as Attraction-spheres, Directive-spheres, Tinoleucites, etc.; *Astroscle'reids* (σκληρός, hard), thick-walled star-shaped cells occurring in the leaves of *Camellia*, and frequently in bark amongst the surrounding parenchymatous cells (Tschirch); *Ast'rospheres* (σφαίρα, a sphere), Strasburger's term for *Astrocen'ters*.

*Astrophe*, or *Astrophy* (a, not; στροφή, a turning), negative *Epistrophe* (S. Moore); *Asymblas'ty* (a, not; σύννυ, with; βλαστός, shoot), the various periods of germination of the seeds of the same plant (Haberlandt); *asymmetric*, *asymmetrical* (σύμμετρος, symmetric), (1) irregular in outline or shape; (2) used of a flower which cannot be divided in any vertical plane into two similar halves; (3) dissimilarity of the number of the members in calyx, corolla or genitilia; *Asymmetry* (+*Symmetry*), term extended by Goebel to express the dissimilarity of lateral halves and leaflets, irrespective of the entire leaf; *asyn'gamic* (γαμός, marriage), used of plants prevented from intercrossing by their flowering at different times; *Asyn'gamy* (γαμός, marriage), the natural prevention of cross-pollination by the respective plants or species flowering at different times (Kerner); *asynthetic* (σύνθετος, compounded) *Gonid'ia*, free Lichen gonidia, occurring on the outside of the thallus (Koerber).

*atactodes'mic* (ατ'ακτός, out of order; δεσμὶ, bundle), applied to the vascular system of Monocotyledons (Brebner); *Atact'ostele* (+*STELA*), Brebner's term for the monostele of Monocotyledons, having scattered vascular bundles imbedded in conjunctive ground-tissue; also in Dicodylons when the meristeles are not in a single ring; adj. *atactostel'ic*; *Atactostely*, the condition described.

*At'avism* (ataurus, an ancestor), ancestral resemblance, reversion to an older type; *At'avist*, applied to a plant showing that tendency; *ata'vistic*, reverting to an older type of structure.

*taxinom'ic* (a, not; τάξις, order; νόμος law), used for teratologic, abnormal structures not represented among plants in a normal condition, as Fasciation, Chloranthy, etc.

*ataxonom'ic* (a, not, +*TAXONOMIC*), any part of botany which is not concerned with systematic work.

*ateg'minous* (a, without; τεγμα, covering), used of naked ovules (Goebel); *Ateg'minity*, is the state.

*a'ter* (Lat.), pure, lustreless black; in composition, *atro*.

*athal'amous* (a, without; θάλαμος, bride-chamber), said of Lichens without apothecia on their thallus.

*athall'ine* (a, without; θαλλός, young shoot), without thallus.

*Ath'era* (ἀθέρα, -έρα, beard of corn), in Greek compounds = awn or stiff bristle.

*Atlant'ic* Type of Distribution, H. C. Watson's term for British plants which occur most frequently towards the west of Great Britain.

*At'om* (a, not; τέμνω, I cut), defined by Nageli as the ultimate particle of a chemical element; in botanic parlance it means the smallest divisible portion of any substance.

*at'omate* (+*ATOM*), "sprinkled with atoms" (Stevenson).

*Atomogyn'ia* (ατομόλις, cannot be cut; γυνή, woman), the elder Richard's
Atomogynia

name for the Angiosperma of Linnaeus.

Atracten'chyma † (ατρακτός, a spindle; εγχύμα, that poured in), prosenchyma, a tissue of fusiform cells.
atramenta'rius (atramentum, inky fluid), inky; black.
atrate', atra'tous, atrate'us, (garbed in black); defined by Heinig as “turning black”; blackened, as in some species of Carex, the apex of the glumes being darkened; atric'olor (color, colour), inky-black.
Atriplic'eum, an association of species of Atriplex, with Suaeda and similar p ants (Warming).
atr'opal, preferably atr'opous (a, not; τροφή, a turn), a synonym of orthotropous; applied to the ovule.
atrophi'c (a, without; τροφή, nourishment) = aplastic; At'rophy (τροφή; nourishment), wasting away, abortion or degeneration of organs; Atro'phytes (φυτών, a plant), those Fungi which cause atrophy of important organs of the host-plant.
At'ropine, a poisonous alkaloid obtained from Atropa Belladonna, Linn.
atro-purpu'reus (Lat.), black-purple, the colour of Sweet Scabions, Scabiosa atropurpurea, Linn.; ~ violaceus (Lat.), very dark violet; ~ -virens, ~ -viridis (Lat.), dark or blackish green; a'trous, dead black (Heinig).
Attach'ment-disc, the holdfast or basal hapteron of an Alga.
atte'nuate, attenua'tus (Lat., thinned), narrowed, tapered.
Attire', Grew's term for stamens and pistils.
Attra'ction-spheres, the same as attrac'tive-spheres, Centrospheres, or Tinoleucites; ~ Glands of Nepenthæ, situated within the ascidia, to tempt insects farther down the tube (Macfarlane).
-a'tus, a suffix indicating the presence of an organ, thus: foli-atus, having leaves.
atyp'ic (a, not; τύπos, a type), (1) not typical, departing from the type; (2) allotypic Mitosis.
auc'tus (Lat., increased); (1) enlarged after flowering, accrescent; (2) augmented by an addition.
anu'párious (anu'pari, to catch birds), “attracting birds” (Heinig), employed in bird-snaring.
Augment-Cells, a modification of an auxospore in Diatoms, after division becoming transformed into daughter-cells, and the starting-points of new generations; Augmenta'tion, increase beyond the normal number of parts.
aulaco'scar'pous (αυλαξ, a furrow; κάρπος, fruit), with furrowed fruit, sulcate (Heinig).
Aul'as'um † (Lat., a curtain), used occasionally for Corolla by Linnaeus.
Au'lax-galls, galls which resemble stone-fruits produced by gall-wasps of the genus Aulax, especially on Labiatae (Kerner).
Aulog'anmae (αυλάς, a tube; γάμος, marriage), employed by Ardisson for Muscineae.
Au'lophyte (αυλή, abode; φυτή, a plant), one plant living in the cavity of another for shelter only, not parasitic; the German is “Raumparasit.”
aurantía'ceous aurantia'ticus, aurant'ius (Lat.), (1) orange-coloured; (2) like the Orange, Citrus Aurantium, or the order to which it belongs.
Auran'tium (Lat., an orange), a succulent superior fruit with a rough rind, such as the Orange.
aura'tus (Lat., gilt), metallic yellow, shot with gold; Au'rea (aurēus, golden), a plant deficient in chlorophyll; au'reus (Lat., golden), glowing yellow, not metallic.
Aur'iele, Auric'ula (Lat., ear-lap), (1) a small lobe or ear, an appendage to the leaf, as in Sage, or the Orange; (2) the lobule, or minor lobe of the leaf of Hepaticæ, often balloon-shaped; (3) formerly and erroneously used for Amphigastria; (4) a small lobe or special patch of cells at the basal angle of the leaf in Mosses; auric'ular, auricula'reis, auricled; ~ Cells, the cells in the leaf.
auricular

described above (4), also termed alar cells.

auri'culate, auricula'tus, eared, auricled.

aur'iform (auris, the ear; formis, shape), ear-shaped.

Auri'go (aurugo, jaundice), a leaf disease shown by the yellow colour usually due to intumescence-formation (Sorauer).

auror'eus (Lat.), the colour of dawn, rosy or golden.

austere' (austerus, harsh), astringent to the taste, as a sloe.

austra'lis (Lat., southern), occasionally applied to plants which are natives of warmer countries, even if not from the southern hemisphere.

Autoae8tlie'sia (ae, a self, + aesthesis), sensibility to some internal stimulus;

Autallog'amia (alloxos, other; γάμος, marriage), normal pollination (Clements);

Autem'bolismus (εμμορφω, a fruit, σκέρμα, a seed), MacMillan's term for Parthensperms with the endosperm the result of fecundation from effective pollen arising in the same flower;

Auten'dosperm (endosperm); the embryo being the result of fecundation, the effective pollen arising from the same flower as the seed (MacMillan);

Auto'allog'amy (+ allogamy), the condition of a species when some individuals are adapted for self-fertilization and others for cross-fertilization, as in Viola tricolor, Linn. (Engler and Prantl);

Aut'oblast (βαλαστός, a bud), a free and independent "Bioblast" (Schlater);

Autob'olites (βολίς, a missile, + ite), the products of division of the living protoplasm (Beyerinck);

Autocarp'y, the fruiting of a self-fertilized flower, the product of autogamy; adj. autocarp'ous; autocarp'otropic (+ carpotropic), automatic separation of fruit;

Auto'gener'ation (= generation), self-fermentation (Johannsen); adj. autogenic; autogenic.'ic; Au'tochore (χωρεω, I spread abroad), motile plants or those with motile spores (Clements);

autochor'ic (χωρεις, separate), applied to plants distributed by means of their own movements (Kirchner);

Autocho'ry, the state itself.

Autoch'thon (αυτόχθων, indigenous), an aboriginal form; a native plant, not an introduction; adj. autochthon'al, autochthon'ous; ~ The'ory, the theory that each species originated where now found (L. H. Bailey).

Autodeple'tion (αυτός, self; depleo, I empty out), self-digestion by the endosperm of grasses and palms.

Autodifferentia'tio (differencia, a difference), inherent power to vary.

Autodigest'ion (digestio, digestion), the endosperm digesting the reserve material;

autoc'ious (αυτός, self; depleo, I empty out), self-digestion by the endosperm of grasses and palms.

Autodiff'erentia'tio (differentia, a difference), inherent power to vary.

Autog'amy, (1) when a flower is fertilized by its own pollen; (2) self-fertilization by a single cell = Automixis; Autogen'esia (γενεσις, beginning), a synonym of Spontaneous Generation; autogen'esic, self-derived; ~ Fertilization = self-pollination; autog'enic (γενεις, race, descent), self-derived; autogen'ous (γενος, race), self-derived, used of diseases, etc., which have their origin within the organism; autog'enus, term proposed in place of monotypic, to show that the genus contains but a single species (Crozier).

autoi'cous, used for Bryophytes, when the male and female inflorescences are on the same plant; the follow-
Auxesis

ing modifications occur; cla’do- (~χάδος, a branch), the male inflorescence on a proper branch; go’nio- (~γόνος, offspring), the male inflorescence bud-like and axillary on a female branch; rhiz- (~ρίζα, a root), the male branch very short, cohering to the female by a rhizoid; Au toly’sis (λύσις, a loosing), chemical changes in dead cells in which microbial decomposition is excluded; adj. autoly’tic.

automa’tic (αιτάματος, self-moving), spontaneous movement of certain parts, as the leaflets of Desmodium gyrans, DC.

Automix’is (αυτρός, self; μίξις, a mixing); self-fertilization (Hartmann);

Automorpho’sis (+ Morphosis) = Mutation; autonas’tic (ναστός, pressed close), relating to Autonas’tism, curvature of an organ not attributable to any outside force.

autonom’ic, auton’omous (αιτονομός, independent), used of plants which are perfect and complete in themselves, and not simply phases of other forms.

autonictrop’ic (αιτός, self; νύξ, νυκτός, night; τροπῆ, a turn), spontaneously assuming the position usual during the night; autopelag’ic (πελάγος, the sea), applied to plankton which lives continuously on the surface (Forel); Autophagy (φάγω, I eat), employed by Dangeard to express complete fusion of gametes; recip’rocal ~, or sexual ~, sexuality in primitive forms of Algae,—further differentiated into, ProtogamY, HologamY, and MerogamY;

Autophyllog’enY (φύλλον, a leaf; γένος, offspring), the production of a leaf upon the blade of another; Aut’ophyte (φυτόν, plant), a plant not dependent on humus, as opposed to Saprophyte; adj. autophyt’ic; Aut’oplasm (πλαστός, moulded), (1) a synonym of chlorophyll granule; (2) occasionally employed for Plastid; autopota’mic (ποταμός, a river), applied to Algae which have become adapted to living in streams; a modified form of tychopotamic plankton (Zimmer); Autop’sia (öψις, sight), actual inspection of the plant or phenomenon in question; Aut’osperm (σπέρμα, a seed), a plant whose embryo arises through autogamy (MacMillan); autosymbion’tic (+ Sym-biont’r), used of cephalodia having similar commensals (Bitter); autotem’ nous (τέμνω, I cut), capable of spontaneous division, as cells in growing tissue; autotroph’ic (τροφή, food), (1) applied to plants which can collect their own nutriment, non-parasitic; (2) digesting reserves of food-material (Keeble and Gamble);

Autot’ropism, the same as Rectif’etality, the tendency of an organ to grow in a straight line; autox’es’enous (ἐξος, a host or guest) = autoeocious; Autox’enY, the autoeocious condition; Autox’idators ( vöς, sharp), cell-substances, which at a low temperature and with absorption of molecular oxygen, can be oxidized by decomposing water; Autoxida’tion, the phenomenon in question; autoxidi’zable, the property of readily undergoing this transformation.

autum’nal autumnna’lis (Lat.), belonging to autumn; flowering at that season; ~ Wood, wood formed at the close of the growing season and notable for its smaller cells; ~ Xanth’ophyll ( + Xanthophyll), the autumnal colouring-matter of leaves (Tswett).

Auxan’a’gram, another spelling of Auxan’agramme.

Auxan’a’grammes, pl. (αὐξάνω, I increase; ἀνά, up; μέτρον, measure), apparatus for measuring increase of growth in plants.

Aux’e’sis (αὐξησις, growth), (1) dilatation or increase in the valves of Diatoms, etc.; (2) new formation of organs (Czapek); (3) predominance
of leaves, hairs, etc., on a particular side (Pfeffer).

**Auxiliaries**, used by S. Moore for **Syneridae**.

**Auxiliary** (*auxiliaris, helpful*) Cell, a cell borne by a specialized branch in certain Algae, which unites with the conjugating tube emitted by the fertilized trichophore, and then gives rise to filaments bearing the spores (Osterhout); ~ **Nucleus**, the nucleus of the auxiliary cell in *Drudesnaya purpurifera*, J. Ag., which does not fuse with the nucleus of the sporogenous cell when the cytoplasm does (Oltmanns); ~ **Veicles** = **Syneridae**.

**Auxoblast** (*auxilaris, helpful*) Shoot, employed by Kirchner for any shoot which can serve for vegetative reproduction; **Auxosis**, used when the general growth of an organ has suffered a change (Massart); **Auxospore** (*σπόρα, seed*), in Diatoms, the spore formed by the union of two frustules, or the excessive growth of a single frustule, whence arises a new bion, larger than the parents; **auxotonic** (*τό νος, strain*), applied to the movements incident to increase of growing organs, as heliotropism, nutation, etc.

**Avelaneus** (Clements), **avellanicus** (*avellana, a filbert*), drab, the colour of the fresh shell of the Hazel-nut, *Corylus Avellana*, Linn.

**Avenaceus**, -cens (*avena, oats*), relating to oats; **Avenine**, a substance derived from oats.

**Avenius** (*α, without*; *vena, vein*), veinless, or seemingly so.

**Averruncation** (*averrunco, I remove*), (1) pruning; (2) uprooting.

**Averse**, *aver'sus* (Lat.), turned back or away from.

**Avoform** (*arum, a grandfather, + FORM*), the still existing stem-form of **Ramiiform** and **Praeform** (Kuntze).

**Awl-shaped**, narrow and tapering to a point; subulate.

**Awn**, a bristle-like appendage, especially occurring on the glumes of grasses; ~ of *Chaetoceras*, a diatomaceous genus, having prolongations of the frustules, recalling the awns of grasses; awned, having awns; bearded.

**Axe-shaped**, dolabriiform, as the leaves of some species of *Mesembryanthemum*.

**Axial** (*axis, an axle*), relating to the morphological axis, as distinct from its appendages; ~ **Row**, the two or more first-formed cells in the embryosac (Wiegand); ~ **Shoot**, a cylindrical appendage in the axil between stem and leaf in *Zygopteris*; it is a prolongation of the ~ **Strand**, itself the stele of the main stem (Scott); ~ **Wood**, the normal central cylinder of xylem; **axiferous** (*fero, I bear*), bearing an axis, but without leaves or other appendages.

**Axil**, **Axilla** (Lat., arm-pit), the angle formed between the axis and any organ which arises from it, especially of a leaf.

**Axile** (*axis, an axle*), belonging to the axis without reference to its morphological nature, as axile placentation.

**Axillant** (*axilla, arm-pit*), subtending an angle; **axillary**, **axilla'sis**, growing in an axil; **axilla'tus**, having axils.

**Axis** (Lat., an axle), an imaginary line, round which the organs are developed; ~ of **Inflorescence**, that part of the stem or branch upon which the flowers are borne; **accessory** ~, an axis of secondary rank; **apical** ~ of Diatoms, is that line which passes through the centre of the pervalvar axis in the direction of the raphe and at equal distances from homologous points of the girdle-band surfaces; **Appendages** of the ~, such organs as leaves, flowers, etc.; **ascending** ~, = the stem; **descending** ~, = the root; **pervalvar** ~, the main longitudinal axis of Diatoms; **transapical** ~, the axis which passes at right angles to the apical axis of Diatoms, and through the centre of the pervalvar axis; **trans-**
Axial, the axis which lies in the transversal plane of Diatoms, cutting the pervalvar axis.

*Axog'amy* (αξογ', axis; γάμος, marriage), plants bearing sexual organs on the leafy stem; adj. *axog'am'ic*.

*Axophy'ta* (αξοφυτ', a plant = CORMOPHYTA; plants having an axis, that is, stem and root; *axosperm'ous* (σπέρμα, seed), with axial placentation of ovules.

azo'nal (a, not; ζών, girdle), C. MacMillan's term for Plant-associations which show no well-marked radial symmetry; *Azote'* (αζώτος, ungirt), Lavoisier's name for nitrogen, still used in French works; *azo'tised*, compounded with nitrogen; *Azo'tobac'teria* (+ BACTERIA), applied to bacteria capable of changing elementary into combined nitrogen (Lipman); *Azotifica'tion*, the process itself.

azo'ure, azu'reus (late Lat., sky-blue), blue as the sky.

*Az yg'osperm* (a, not; ζωύς, a yoke; σπέρμα, seed), a synonym of *Azy'gospor'ge* (σπόρα, seed), the growth of a gamete direct without conjugation, a parthenogenetic spore; pl. *Az yg'ospor'es*, — *æ* (+ SPORE), the spores of Phycomycetes (Saccardo) — az'ygous, unpaired, as a leaflet which is not matched on the opposite side of the rhachis.

Bac'ca (Lat.), a berry, a succulent fruit with seeds immersed in the pulp, as the Gooseberry; ~ cor'tic'a, berry with a rind; the term has been applied to the ovary; ~ sic'a,‡ succulent while unripe, dry when mature; ~ spu'ria,‡ any fleshy fruit which is not a true berry, as raspberry and strawberry; bac'cate, bac'cat'us, berried; “se'mina bacata,” seeds having a pulpy skin, as in *Cycas*; Baccailar'is, Baccailar'ius,‡ (deriv. ?), Desvaux's name for *Carcerula*; *Bacc aus's* = *Etakerio*; *Bacce'tum*, Dumortier's term for *Syncarp*; bacci'ferous, bar'cifer, (fero, 1 bear), berry-bearing, the fruit a berry, usually applied when the normal fruit of the genus is otherwise; *bac'Ciform*, bacCiform'is (forma, shape), like a berry in shape.

Bacill'us, pl. *Bacilli* (*bacillum*, a staff), (1) ‡ young bulb; (2) the frustules of certain Diatomaceae, as *Bacillaria*; (3) rod-shaped BACTERIA; bacill'ar, bacil'lar'is, bacil'li'form (forma, shape), rod- or club-shaped.

Back, that side which is turned from the part or substratum to which an organ is attached; the dorsal surface; *Back-cavity*, the inner cavity of a stoma; in Germ. “Hinterhof.”

Bacte'rium, pl. *Bacte'ria* (βακτήριον, a small staff), Cohn's name for low forms of organic life, multiplying by fission, Schizomycetes; see also, Am'mono-, Azoto-, Ferri-, Proto-, Sulpho- BACTERTA, with their reduction forms having De'- prefixed (Lipman); bacteria'ceous, relating to bacteria; bac'ricidal (-cida = killer), germicidal, destructive of bacteria; Bacte'rio-pur'purin, the purple colouring-matter of some bacteria; Bacte'rioblast (βλαστός, a bud), applied by Winkler to gelatinous bodies, homogeneous at first, then in succession finely-, and coarsely-granular, at last becoming detached bacteria; bac'teroid (εἴδος, resemblance), resembling bacteria; ~ Tissue, applied to the root-tubercles of various plants; Bac'teroids or Bacter'oids, organisms found in nitrifying tubercles on the roots of plants, especially Leguminosae, attributed to the action of bacteria; Bacteriol'ogist (λαγός, discourse), a person versed in the knowledge of ‘bacteria; Bacteriol'ogy (λαγός, discourse), the science of the life-history of bacteria; Bacterio'sis, disease due to the attack of bacteria; Bacteriotox'in (+ Toxin), any substance poisonous or harmful to bacteria.

bacu'liferous (baculum, a staff; fero, 1
I bear), bearing canes or reeds; bacul'iform, baculiformis (forma, shape), stick-shaped, rod-like, as the ascospores of certain Lichens.

bad'iou$, bad'ius (Lat.), dark reddish-brown; chestnut-brown.

baeomy'cetoid (Baeomyces, elios, resemblance), like the genus of Lichens named.

Balanoph'orin, a waxy substance which occurs in quantity in the stems of certain species of Langsdorffia, a genus of Balanophoraeae, whence the name.

Balaus'ta (βαλαύστα, pomegranate flower), the fruit of Punica Granata'tum, Linn., with firm rind, berried within, crowned with the lobes of an adnate calyx.

bald, destitute of pubescence or downy appendages.

Bale † (Fr., Bâle, chaff), cited by S. F. Gray for the outer glume of grasses.

Ball'ing, in nuclear development, the fusion of nuclei into one nucleus.

ballis'tic, or balis'tic (ballista, a catapult) Fruits, used by Kerner to describe those fruits which discharge their seeds elastically; catapult-fruits.

Balm (βάλασμον, balsam), pr. Bahm, a thick, usually resinous exudation of reputed medical efficacy; Bal'sam, pr. Bawls'm; a similar exudation, generally of resin mixed with volatile oil; balsam'ic, having the qualities of balsam; balsam'ifer, (Lat.) balsamifer'ous, (iero, I bear), producing balsam.

Balus'tra, "sometimes applied to fruits like the pomegranate" (Crozier); cf. Balausta.

Bamb'oo, the name applied to the culm of arborescent grasses, notably species of Bambusa; Bambuse'tum, a tropical bamboo forest association.

Band, (1) space between two ridges in the fruit of Umbelliferae; (2) a stripe generally; (3) certain marks in the fruit of Zostera minor, termed by Reichenbach Processus; ~ shaped, used of long narrow leaves, linear;

band'ed, marked with stripes of colour.

Ban'ner, the standard of a papilionaceous flower.

Barb, hooked hairs, frequently doubly-hooked.

Barba (Lat.), a beard; bar'bate, barbat'tus, bearded, having long weak hairs in tufts; Barbell'ae †, the short stiff straight hairs of Composite pappus; adj. barbell'ate; Barbell'ulæ, † similar structures in the pappus of Aster; adj. barbell'ulate, barbellula'tus; Barb'ule, Barb'ula, (1) the inner row of teeth in the peristome of such Mosses as Tortula; (2) a small barb (Crozier).

Barill'a (Spanish), the crude soda obtained from Salsola and allied genera.

Bark, (1) the outer integuments of the wood and exterior to it; all tissues outside the cambium; (2) frequently restricted to the periderm and tissues external to it; ~ bared, stripped of the bark; ~ bound, having the bark too tense, thus impeding growth; ~ galled, having the bark injured; ~ parench'yma, the same as cortex-parenchyma.

Barm, the floating yeast used in bread-making, the "Oberhefe" of the Germans; barm'y, containing yeast.

barred, crossed by lines approximately parallel.

bar'ren, unproductive, infertile; applied to the male inflorescence of certain Mosses; ~ Flow'er, the male or stamineate flower; ~ Ground, in North America, is mainly Tundra (Warming).

Bar'riers, Clements's term for the limiting forces which hinder dispersion; these may be biological ~, due to the habit of the plant or its rivals, or physical ~, such as mountains, deserts, seas, etc.

Bars, the persistent portions in a scalariform perforation; see also Sanio's Bars.

Barymorpho'sis (Bapws, heavy; μορφω-σις, shape), Sachs's term for the
changes produced in organisms in consequence of gravitation.

**bassal** (basis, foundation), at the base of an organ or part; *-Cell, the first cell of an angiospernum embryo which becomes attached to the wall of the embryo-sac; *-Growth, increase near the base, as distinguished from apical growth; *-nerved, basiner'vis, with nerves from the base of the leaf; *-Placent'a, the placenta at the base of the ovary; *-Wall, the division of the oospore in Archeogniatae into an anterior and a posterior half; *Basal*, the extremity of attachment, by which nutrition takes place; *Base-chromatin* (+ CHROMATIN), chromatin in the usual sense; that portion of the nuclear network stained by basic tar-colours.

**Bas'id = Basid'ium**, pl. Basid'ia (basi-dium, a little pedestal), (1) the spore-bearing cells of Hymenomycetous and Gasteromycetous Fungi, having little points from which spores are thrown off; (2) employed by Thaxter for the swollen attachment of the conidium to the conidiophore in *Basidiobolus*, Eidam; (3) by older authors employed for the central *Fertile Cells* of Uredineae.

**Basid'ial**, relating to a *Basidium*; *-Lay'er, the structure in Agarics which produces or bears the basidia.

**basidiogenet'ic** (γήνος, race, descent), produced upon a basidium; *-Basidio gonid'ium* (γονή, race, offspring), proposed emendation of "basidio-sporo"; *Basidioli'chenes* Lichen-forming Basidiomycetes; *Basidio myc'etes* (μύκης, μύκτως, fungus), Fungi producing spores on basidia; *Basidiphore* (φορέω, I carry), a sporophore bearing a basidium; *Basidio rhiz'ae (μύξα, a root), Vuillemin's name for *Basidiomycetes*; *Basidiospore* (σπόρα, a seed), a spore produced by a basidium; *basidio sp'orous*, producing such spores.

**basifix'ed, basifi'xus** (basis, foundation; -fixus, fast), attached by the base; **basif'ugal** (fugo, I put to flight), developing from the base upwards; *basig'am'ic, basig'am'ous* (γάμος, marriage), when the normal position of egg-apparatus and antipodals is reversed; the oosphere and synergidae being at the lower end of the mother-cell of the endosperm (embryo-sac); Van Tieghem contemplates the possible occurrence of double *Basig'amy; Basigyn'i um* (γυνή, a woman), a thecaphore, the stalk of an ovary above the stamens and petals; *bas'i'lar, basila'ris*, basal.

**basila'tus** † arising from a broad base as certain hairs.

**Bas' sin**, the connection between the pouch of certain secretory cells and the cell-wall in Magnoliaceae and a few other families (Solereder); *-shaped* dished or hollowed out.

**basiner'ved**, (basis, foundation; -nervus, a nerve), veined from the base.

**basip'etal** (*petto, I seek), growth in the direction of the base.

**Bas'iplast, adj. basipla'stic** (πλαστός, moulded), Prantl's term for those leaves whose permanent tissue appears first at the apex, the lower portion continuing longer as meristem.

**Ba'sis** (Lat.), the base; *basiscop'ic* (σκοπέω, I look), looking towards the base, the reverse of acrosopic; *basisolu'tus*, † (solutus, unbound), used of such leaves as those of *Sedum* which are prolonged downwards beyond their true origin; *basithe'cal* (θηκη, a box), applied to virescent anthers, the upper portion leafy, the pollen-bearing portion extending toward the base (Celakovsky); *basit'onous* (τόνος, a cord), the prolongation of the tissue of the pollen-sac to the lower end of the anther in Ophrydinae; *bas'o'phil* (φιλέω, I love), readily taking stain from basic substances.

**Bass**, the inner fibrous bark of the lime, used by cultivators for temporary ties; the liber.

**Bass'orin**, a product of Bassora Gum, Tragacanth, etc., which does not
dissolve like Gum Arabic, but swells up when placed in water, and forms a pasty mass; bassorinę'uous (γένος, offspring), producing Bassorin; ~ Lay'er, the tissue concerned in the production of this substance.

Bast, (1) the same as Bass; (2) phloem; (3) fibrous tissues serving for mechanical support; ~ Cells, the components of the bark; ~ Collench'ya'ma, tissue with the walls of the sides thickened on all sides (C. Mueller); ~ Fib'res, = liber-fibres; ~ Group, the phloem elements and individual vascular bundles; ~ Sheath, layer of thin-walled cells surrounding the fibro-vascular cylinder next within the cortex; the periphloëm; ~ Tis'sue, phloem; ~ Ves'sel, sieve-tube; ~ Wedg'es, groups of phloem, wider in section outwards; ~ Hard ~, liber-fibres; Soft ~, the sieve-tubes, with the thin-walled part of the phloëm.

Bastarden'bryosperm (σπέρμα, a seed), C. MacMillan’s term for any plant with parthenogenetic embryo, the effective pollen derived from another plant or variety; Bastarden'dosperm, a similar plant with parthenogenetic endosperm, the effective pollen arising from another individual or variety; Bastard'ocarpy (καρπός, fruit), the production of fruits by hybrids.

Bast'slands, another name for Phloëm-islandis; ~ Nerves, libriform cells in the leaf of Najas graminea, Delile; ~ Parench'ya'ma, phloem parenchyma; ~ Rays = Medullary Rays.

Bath'mism (βαθμός, a step or degree), Cope’s term to denote the force or energy of growth.

Bath'yb'ic (βαθύς, deep or high; βίος, life), applied to the deepest plankton (Forel); Bathylinnet'ic (λίμνη, a lake), used of plants sometimes rooted, sometimes floating, with a tendency towards deep water (Kirchner); Bathymet'ricleal (μετρον, measure), used of the distribution of plants on the sea-bottom; and the depths at which they grow; bathypelag'ic (ζα πελαγικός); plankton companies which daily descend from the surface (Forel); bathyph'ilus (φαλέω, I love), dwelling in low-lands; Bathyphy'ta, the plants of a lowland association (Clements); Bathyphy'tium (φυτόν, a plant), a lowland plant formation.

Batol'ogist (βάτος, a bramble; λόγος, discourse), a student of brambles, the species and forms of Rubus; Batol'o'gy, the study of brambles; batolog'ical, adj. of Batology.

Batrachié'tum, an association of water-crowfoot; of any form of the Batrachium section of Ranunculus.

bay, dun-colour; an equivalent of Radious.

Bays, applied to recessed or undulating cell-walls (Solereder).

Beak, a pointed projection; beaked, used of fruits which end in a long point.

Beard, synonymous with Awn; beard'ed, (1) awned, as bearded wheat; (2) having tufts of hairs, as on the lip of Pentstemon barbatus, Roth; beard'letted, having small awns.

Bear'ers, used by Blair for flower-buds.

Bebeer'in, a tonic alkaloid from the Greenheart, Neotantra Rodiaei, Hook., native name, Bebecru.

Bedeguar', a fibrous gall produced on a rose-bush by the puncture of a species of Cynips.

Bee-bread, the pollen of flowers, collected by bees as food for the young larvae; ~ flow'ers, those flowers which afford honey to an insect having a proboscis of 7 mm. (~275 in.) in length.

Beechwood Association, natural beech-woods found on the chalk, Fugel'tum sylvi'ticae calcareae.

Beglei'ter (Ger., companion) Cells, small groups of thin-walled cells associated with Deuter Cells, and probably serving as conductors of water (Limpricht); cf. Companion Cells (Salmon).
bell-shaped, tubular and inflated, as the corolla of Campanulaceae.
bell'ying, swelling on one side, as in the corolla of many Labiatae.
Bell Tran'sect, a strip of a few inches or feet in width, with its constituent plants recorded (Clements).
Bell's Corpus'cles, Schimper's expression for the Food-BODIES of certain species of Acacia used by ants as food; Bell'ian Bod'ies are the same.
bennettit'ean, resembling the fossil genus Bennettites.
Benth'on, or Benth'os (βẹνθος, depth, bottom), the vegetation at the bottom of the sea, lakes, or streams; the fixed growth as distinct from the plankton or floating growth; Forel distinguishes necton'ic ~, organisms which float freely; seas'sile ~, those which remain attached, and vag'il ~, wandering organisms; Ben'thophyte (φυτόν, a plant), a plant whose habitat is at the bottom.
Benzoin', a fragrant resinous exudation from Styrax Benzoin, Dryand.; called also Gum Benjamin.
benz'oloid, used for a group of scents derived from aromatic bodies, as eugenol or oil of cloves, and in the flowers of Heliotrope, Lilac, etc. (Kern'er).
Ber'berine, a yellow bitter principle from the root of Berberis vulgaris, Linn.
Berge'ria, formerly considered a genus of fossils, now applied to a lepidodendroid stem when the epidermis has been stripped off (Scott).
ber'ried, baccate, possessing berries.
Ber'ry, a pulpy fruit, with immersed seeds; of Bacca; ~ cone', a cone whose scales have become fleshy and fused, as in Juniperus.
Bes'im'en, pl. Bes'im'ina (βάσημος, having the power of living), Necker's name for a spore.
Be'tain, an amide-like substance from Beta, the beet.
Bet'ulase, the same enzyme as Gaul-thera'se, but obtained from the bark of Betula lenta, Linn.; Betule'-tum, a plant association of birch trees (Clements); pl. Betule'ta cladin'osa, an association of birch with the lichen Cladina; ~ hylocomio'ssa, birch and Hylocomium moss association.
Between Races, intermediates between a species and a variety of it.
bi-, bis-, in compound words meaning "twice."
Biachae'niun (bi + Achaenium), Beck's term for a Schizocarp, of two carpels, as in Galium; biacu-minate, biacumin'atus (+acuminate), having two diverging points, as the hairs of Malpighiaceae, attached by the centre.
Biaiometamorpho'sis (Biauos, forced, + Metamorphosis), Lotsy's term for a disadvantageous change, in response to stimulus: Biaio-morpho'ose, Biaiomorpho'sis, the form so pro-dused.
Bianc'oni's Plate, a plexus of sclerenchymatous fibres near the vascular bundles towards the concave or sensitive face of tendrils; so termed by Borzi after the discoverer.
biang'u'late (bi, twice; angulus, a corner), having two corners or angles; biartic'u'late, biarticul'atus (articu-lus, a joint), two-jointed.
Biastrep'sis (Bido, I force; στρέψις the act of turning), (1) C. Schimper's term for Torsion; (2) the transition from decussate to spiral phyllotaxis (De Vries).
biator'ine, resembling the Lichen genus Biatora.
biauric'u'late (bi, twice; auricula, the ear lobe), with two auricles or ear-like appendages; biauri'tus (Lat.) is substantially the same; biax'ial (+ Aaxis), used of a spore germinating at both ends (S. Moore); Bia'cao (+ Bacca), a double berry as in some species of Lonicera; bibract'eate, bibractea'tus (bractea, a thin plate), having two bracts; bibracte'o'late, with two bracteoles; bicalo'rate (calcar, a spur), having two spurs; bicall'o'ose bicall'o'sus (callus, hardened skin), with two
Bifolliculus

bicapsular

Bifolliculus

callosities; bicapsular (capsula, a box), (1) with two capsules; (2) having a capsule which is bilocular; bicarinate, bicornatus (carina, a keel), with two keels; Bicarpels, proposed by Bessey for the Bicarpellae of Bentham and Hooker, a series of gamopetalous Phanerogams (cf. Gen. Pl. ii. pp. vi.–vii.); the latter term also used by Bouger to embrace the majority of Gamopetalae with Umbelliferae; bicarpellary (+ carpellum), of two carpels or pistils; bicarpellate, having a two-celled fruit; bicellular, of two cells; bicephalous (κεφαλή, head); biceros (Lat.), two-headed; bichronic (χρόνος, time), applied to an equation, in which the mutations multiplied by the intervals of time, equal the biologic time (De Vries); biciliate, biciliatus (cilium, an eyelash), with two cilia, as many zoospores; bicipital, with two heads or two supports; bicollateral (con, + latus, lateris, side), applied to a vascular bundle with two groups of phloem lying upon opposite sides of the xylem; Bicollaterality, is the state just described.

bicolar (Lat.), two-coloured, parti-coloured.

biconeentric (bi, con + centrum, a point), Poulsen’s term for the fibro-vascular bundles in Ericaceae; round the axial hadrome bundle is a layer of leptom, which is again enclosed by a hadrome layer; bicongulate, bicongulatus (congulatus, joined), twice-conjugate, that is, when each of two secondary petioles bears a pair of leaflets; bicongulato-pinnaatus, similar to the last, but each petiole pinnate.

Bicorne (bicornis, two-horned), the heaths, from their hornsed authors; bicornis (Lat.) bicornute, bicornatus, two-horned, as the silique of Matthiola bicornis, DC.; bicotyle-donary, having two seed-lobes, more correctly called bicotyleledonous.

bicornate (bi, twice; crema, a notch), (1) having two crenatures or rounded teeth (Crozier); (2) doubly crenate; bicornus (Lat.), two-legged, as the pollen-masses of Asclepiads; biscupid (cuspis, spear-point); bicuspitate, having two sharp points; bidentate, bidentatus (dens, dentis, a tooth), (1) having two teeth; (2) doubly dentate, as when the marginal teeth are also toothed; bidentata (Lat.) = Biconjugate.

biddulphoid (effos, like), resembling the genus of Diatoms, Biddulphia.

Bidenton (Bidens + ox) Clements’s term for a “family” of Bidens.

biduous, biduous (biōnum, two days long), lasting for two days.

Biennial (biennium, a period of two years), a plant which requires two years to complete its life-cycle, growing one year, and flowering and fruiting the second; signs ② or ③; biennial, biennius = monocarpic.

Bieramus (bi, twice, cremus, a hermit), a two-celled fruit, the cells so far apart as to seem separate, as in Cerinthe; bifacial (facies, an appearance), (1) when the leaf has spongy tissue on the lower face, and compact tissue on the upper sides; opposed to centric; (2) having the opposite sides alike; (3) dorsi-ventral; bifarium (Lat., in two parts), arranged in two rows; ~ imbricateus, imbricated in two rows; bifarious, bifarius, distichous.

Bifera (bi, twice; fero, I bear), a plant which ripens fruit twice a year. (Crozier); biferosus, biferus, double bearing, producing two crops in one season; bifid, bifidus (fendo, fidi, to cleave), twice-cleft, divided halfway into two; bifidate = bifid (Crozier); bífistular (fistula, a pipe), with two tubular openings (Crozier); biforate (Crozier), biflorous, -rus (flos, floris, a flower), having two flowers; bifoliata, bifoliatus (folium, a leaf), two-leaved; bifoliolate, bifoliolatus, having two leaflets; ~ Leaf, binate; bifollicular, possessing a Bifolliculus (folliculus, a small sack); a double follicle, as in Asclepiads.
bifo’rate, bifo’rus (biforis, having two doors), with two perforations; Bifo’rine, an oblong cell, opening at each end, containing raphides; bifo’rous = biforate.

biform’is (Lat.), two formed; in two shapes.

bi’frons (Lat.), (1) having two faces or aspects; (2) growing on both surfaces of a leaf; amphigenous.

bifure’ate, bifurca’tus (bifurcus, two-pronged or forked), twice forked; Bifurca’tion, division into two branches.

bigem’inate, bigemina’tus (geminus, a twin) = biCONJUGATE; bigem’inus, in two pairs, as in the placenta of many plants.

Bi’gener (Lat., a hybrid), mule plants obtained by crossing species of different genera, usually spoken of as a bigeneric Cross.

bigland’ular (bi, two; glandula, a gland), with two glands; biglu’mis (gluma, a husk), consisting of two glumes, the components of the perianth of grasses.

bignonia’ceous, resembling or allied to the genus Bignonia.

bihila’tus † (bi, + Hilum), having two scars, as in certain pollen; bi’jugate, bijug’atus, bi’jugous (jugum, a yoke), (1) applied to a pinnate leaf, with two pairs of leaflets; (2) [bi’jugate], type of phyllotaxis in which the parastichy ratios are divisible by 2; bila’biate, bilabi’a’tus (labium, lip), divided into two lips, as are many gamopetalous corollas, etc.; bilam’ellar, bilam’ellate, bilamell’a’tus (lamella, a thin plate), consisting of two plates, as some placenta; bilat’eral, bilater’a’lis (latus, side), arranged on opposite sides, as the leaves of the yew; Bilat’eralism (latus, lateris, a side), having similar or bilateral symmetry; taken by L. H. Bailey as the type of animal evolution; Bilateral’ity, means the same.

Bil’berry Moor Associations, Vaccinieta Myrtilli, especially abundant in the Pennines.

bilo’bate, biloba’tus, bilo’bed (Aosòs, the ear-flap), divided into two lobes, as most anthers, or the leaves of Bau cinia; bilocell’ate (locellus, a small compartment), made up of two locelli; biloc’ular, bilocu’laris (loculus, a compartment), two-celled · Bilomen’tum (+ LOMEN’TUM), a double lomentum as in some species of Raphanus (Beck); bimo’late (macula, a spot), with two spots.

bimes’tris (Lat.), of two months’ duration.

bi’mus (Lat.), lasting for two years.

bi’nary, bina’rius, (bini, by two), consisting of two members; bi’nate, bina’tus (Lat.), (1) where a leaf is composed of two leaflets at the end of a common petiole; (2) a simple leaf nearly divided into two; bina’tim (Lat.), in pairs; bina’to-pinna’ tus † = biminnate.

biner’vate (bi, two; nervus, a nerve), with two nerves, especially if prominent; bino’vulate † (Lat.), having two vascular strands.

bi’ni (Lat.), two together, twin; as bini’florus, bearing flowers on pairs.

bino’dal, bino’dis (bi, two; nodus, a knot), consisting of two nodes.

bino’mial (bi, two; nomen, a name), in botanic nomenclature, the use of a generic and specific name to connote a given organism; used also for Newtonian Curve.

bi’nous, bini’us (Lat.), in pairs; cf. bini.

binu’clear, binu’create (bi, two; nucleus, a kernel), having two nuclei; binu’cleolate, binucleo’late (Lat.), with two nucleoli.

Bi’oblast (Blòs, life; βλαστος, a shoot), term proposed by Schlieter for the unit of life, comprising autoblasts, or free-existing bioblasts, and cyto- blasts or colonies of such bioblasts as have lost their independent existence; cf. Biophor.

bio’ciliate (bi, two; ocellus, a little eye), marked with two eye-spots.

Biochem’ist (Blòs, life), an expert in the chemistry of living organisms; Biochem’istry, the branch of
chemistry concerned with biology; Bi'ocho're (ψισ, asunder), a plant-climate boundary; biochron'ic (χρόνος, time), the period during which mutations have been possible (De Vries); Bioceno'sis (κόινος, in common), the conjoint life of certain plants with animals; biody'nam'ic (δύναμις, force), vital power or force; subst. Biodynam'ics; Biogen'esis (γένεσις, beginning), the doctrine of life from life, the production of organisms from others already in existence; in opposition to Spontaneous Generation; biog'en'eous (γένος, race), growing on living organisms; Biog'en'ny, the evolution of living forms, including Ontogeny and Phylogeny; biogeograph'ic (+ geographic) concerned with the distribution of living forms over the world; biolog'ical (Races, or) Spe'cies, those species which differ only by their physiological behaviour, being morphologically identical; Biology (λόγος, discourse), the science which investigates vital phenomena, both of plant and animal; as limited by Delpino = Ergology); bioly'tic (λύω, I break down), destructive of life; Biom'etry, (μέτρον, a measure), the application of statistical methods to biological data; adj. biomet'rical; Biomol'ecule (+ Molecule, a living molecule; adj. bimolec'ular; Biomon'ad, a symbiotic system of biomores; when very complex it constitutes a cell; Bi'omore an aggregation of biomolecules, living particles (these three terms are due to Giglio-Tos); Bi'on, an individual, morphologically and physiologically independent; Bi'onom'ics (νόμος, a law), Geddes's term to express Phytobiology, the ecology of plants; in German, Pflanzenbiologie; Bi'on'omy (νόμος, usage, law), the principles of plant economy, or ecology (Pfeffer); Bioph'agism (φάγω, I eat), the absorption and digestion of the matter of living organisms (Boulger); bioph'agous (φάγως, a glutton), feeding on living organisms, truly parasitic; bioph'il'ous (φίλεω, I love), used of Fungi which are parasitic on leaves or stems of living plants; Bi'ophor (φορέω, I carry), G. C. Bourne's name for the cell, as the vital unit; Bi'ophores (φορέω, I bear), hypothetical units which are grouped into determinants (Weismann); Biophys'ics (φυσικός, inborn) = Biodynamics; Bi'ophy'te (φυτόν, a plant), a biophagous plant; Bi'o-plasm (πλάσμα, moulded), Beale's name for Protoplas'm; bioplasmatic', relating to Bioplas'm; Bioplas'son (πλάσμα, I mould), Elsberg's emendation of Bioplas'm; Bi'o's, a substance so termed by Wildiers, as indispensable to the development of fermentation.

Bio'sis (βιοσις, the act of living), the state of vital activity; life (Escombe); Bio'ta, pl. (living things); biology (Grinnell); biot'ic, vital; ~ Fac'tors, the relation of plants to each other from an ecologic standpoint; ~ Sucess'sion, a sequence of living forms.

Bi'otype (βίοτοπος, type), an elementary stable form (Johannsen); biova'rial (+ Ovary), derived from the ovaries of the same plant (Pearson).

bipal'eo'late, bipalaeleda'rus (bi, + Palm-o'la), consisting of two palaeae, or small scales in grasses; bipal'mate. bipalma'tus (palmâ, the palm of the hand), twice palmate, palmately compound; bipa'rous (pario, I bring forth), bearing two; ~ Cy'me, Bravais's expression for a normal dichotomous in florescence; bi'part'ible, bi'parti'bilis, bi'parti'tle (part'ilia, divisible), capable of ready division into two similar parts; bi'parti'te, bi'parti'tus (Lat.), divided nearly to the base into two portions; Biparti'tion, the act of dividing into two; bipecti'nate (pecten, a comb), toothed like a comb on two sides; bipelt'ate (pelta, a shield), having two shield-shaped parts (Crozier); biperennial (perennis, perpetual),
used of a part that lives two years, but reproduces itself indefinitely (Crozier); *bipetalous* (*πέταλον*, a flower leaf), Blair’s term for two-petalled flowers, as *Circaea*; *bipentaphyllous* (*πέταλα*, five; *φύλλον*, leaf), having from two to five leaflets.

*bipinnate* *bipinnatus* (*pinnatus*, feathered), when both primary and secondary divisions of a leaf are pinnate; *bipinnatifid*, *bipinnatifidus*, when the divisions of a pinnatifid leaf are themselves pinnatifid; *bipinnatiparted* = bipinnatifid; *bipinnatisect*, *bipinnatisectus* (*sectus*, cut) = bipinnate; *biplicate*, *biplicatus* (*plio*, I fold), doubly folded in a transverse manner, as some cotyledons; *bipolar* (*polus*, the end of an axis), having two poles, the usual number in nuclear division; ~ *Expansion*, growth at both extremities, root and shoot; *Bipolarity*, (1) the condition of possessing two poles; (2) in distribution when the same species is found towards the north and south poles, but is wanting in intermediate regions; *bipolymorphic* † (*πολύ*, many; *μορφή*, a small portion), consisting of two or many parts; *biporous*, *biporosus* (*porus*, channel), opening by two pores as the anthers in *Erica*; *biprophyllous* (+ *prophylla*), Buchenau’s term for possessing two prophylla (Vorblätter); *bipunctate* (*punctum*, a point), having two spots; *biryadiate*, *biryadiatus* (*radius*, the spoke of a wheel), of two rays, as in certain umbels.

*Birchwood Association*, characteristic of the Highland valleys above the limit of the oak.

*birimose*, *biriminosus* (*bi*, two; *rima*, a chink), opening by two slits as most anthers; *bisaccate* (*saccus*, a bag), having two pouches.

*biscociformis* (*bis*, twice; *coctus*, cooked; *forma*, shape), biscuit-shaped, applied by Köerber to some Lichen-spores.

*biscuit-shaped*, when used in translations from the German, means oblong, and slightly constricted in the middle.

*bisepitate*, *biseptatus* (*bi*, two; *septum*, a wall), having two partitions; *biseriate*, *biseriatus*, *biseriate*, *biseriatus* (*series*, a succession), arranged in two rows as on a flat surface; *biserate*, *biserratus* (*serra*, a saw), twice serrate, as when the serrations are themselves serrate; *bisetose*, *bisetous* (*seta*, a bristle), with two bristles; *bisetous*, *bisetous* (*sexus*, sex), having both stamens and pistils, possessing perfect, that is, hermaphrodite flowers; ~ *Heredity*, transmission of qualities of both parents; *bispathelatal*, *bispathellatalus* † (+ *Spathella*), consisting of two glumes (Lindley); *bispine* (*spino*; spiny), having two spines; *bispinous* (*στειφά*, a twist), term used by Spruce for elaters having two spirals; cf. *dispirous*; *bisporangiate* (+ *Sporangium*), (1) used when a plant possesses two sporangia in place of one; (2) *Amphisporangiate*;

*Bispore* (*σπόρα*, seed), (1) “a two-spored tetraspore” (Crozier); (2) an ascus with two cells, in place of the normal eight; *bistellic* (*στελία*, a pillar), having two stelae; *bistipulate* (+ *S t i p u l a*), with two stipules; *bistipular*, bistipulate; *bis-tri*ose (*stratum*, a layer), cells disposed in two strata or layers; *bistriate* (*striatus*, striped), marked with two parallel lines or striae; *bisulcate* *bisulcate* (*sulcus*, a groove), two-grooved; *bisymmetric* (*συμμετρικός*, commensurate), bilateral symmetric, each side alike; *Bitegminatae* (*tegmen*, a cover), Van Tieghem used this for Phanerogams whose seeds have double integuments; *BITEGMINOUS*, used of ovules possessing double integuments; the condition is *Bitegminy* (Balfour); *biterinate*, *biterinatus* (*terminus*, by threes), compound ternate, as in a leaf.
bit'ten, abruptly ended, of roots or leaves, prae-morse.
Bitt’er Orange Spot, on leaves and fruit, due to Colletotrichum gloesporoides.
Bitt’er Pit, an abnormal spotting of the fruit of the apple, ascribed to peculiar external conditions (Pole Evans).
bityp’ic (bi, two; τύπος, a type), applied to those genera which consist of two widely separated species; bi’valent (valens, strong), having hypothetically two chromosomes in each of the apparent chromosomes, in nuclear reduction divisions; bi’valve, bival’vis (valvae, leaves of a door), having two valves, as some capsules; Bi’valve, “a capsule of two valves” (Crozier); bival’ved, (1) used of Diatoms, as possessing two valves; (2) the indusia of certain ferns, as Dicksonia; bival’yular = bi’valve; bivas’cular (vasculum, a vessel), with two vessels; bivert’ed (verto, I turn), O. Muller’s term for an inverted diagonal symmetry in diatoms; bivit’tate (vittae, fillets), having two partitions which appear as bands or fillets.
Bix’in, the colouring-matter of Bixa Orellana.
Bizzari’a (Ital., extravagant whim), a hybrid between the orange and the citron which has the character of both in juxtaposition, but without blending (Heinig).
Black Blight, Capnodium citricolum on Citrus leaves; ~ Earth, rich in mineral salts, found in Asiatic steppes and in North America (Warming); ~ Knot, a devastating disease on plum and cherry trees, caused by Plowrightia morbosa; ~ Leg, a bacterial disease of potatoes due to Bacillus phytophtherus; ~ Root Rot, due to Thielavia basicola, Zopf; ~ Rot, diseases from Guignardia Bidwellii and Pseudomonas campestris; ~ Rust, Puccinia graminis, a universally distributed rust attacking cereals; ~ Scab, of potatoes, caused by Synchitrium.

Blastographia

Blad’der, (1) Grew’s term for a cell; (2) a hollow membranous appendage on the roots of Utricularia, which entraps water insects; (3) similar growths in the frond of some Algae, serving as floats; (4) an inflated membranous pericarp, as in Physalis; ~ Plums, an abortion of the fruit of plums, the stone being wanting, and a thin bladder representing the rest of the fruit; blad’derly, thin and inflated.
Blade, the limb or expanded portion of a leaf.
blanched, (1) the whitened appearance of leaf or stem from the want of iron; (2) artificially produced by exclusion of light, the green chlorophyll pigment not being developed in either case.
Blaste’ma (βλάστημα, a sprout), (1) originally the axis of an embryo, the radicle and plumule, excluding the cotyledons; (2) the Lichen-thallus; blaste’mal, (1) rudimentary; (2) asexual (White); blastema’tic’us, thalloid; Blast’e’sis, the reproduction of the thallus of Lichens by gonidia (Minks).
Blastid’ia (βλάστηδες, shoot), Schleiden’s term for secondary cells generated in the interior of another cell; daughter-cells; Blast’idules, M’Nab’s expression for all reproductive bodies which are not spores, but produced asexually, as gemmae, propagula, etc.; blastocarp’ous (καρπός, fruit), applied to those fruits which germinate within the pericarp; Blast’ochore (χωρίς, separate), plants distributed by offshoots (Clements); Blastococ’ia (κόλα, glue), the balsam which is produced on buds by glandular hairs (Hanstein); Blastog’en’esis (γένεσις, beginning), M’Nab used this for all methods of asexual reproduction which are not due to Sporogenesis; blastog’enic (γενός, offspring), employed by Weismann for those characters which have originated from changes in the germ (L. H. Bailey); Blastograph’ia (γράφω, I
Blastographia

write), the study of buds (Dr. Petit Thouars); Blastoma'nia (μανία, madness), the production of an abnormal number of leaf-shoots (A. Braun); Blastomy'cetes (μύκης,fungus), a synonym of Saccharomyces, the yeast Fungus, etc.; adj. blastomy'cetoid (εἶδος, resemblance); Blast'o'phore, Blastoph'orus (φορέω, I carry), the vitellus, the sac of the amnios in a thickened scale, forming a case in which the embryo lies; Blast'us †, the plumule.

Blaze-currents, ~ reaction, electric response in definite direction in plants (Waller).

Blea, pr. blee; the liber or inner bark.

Bleb, Hill's term for a pith-cell.

blech'noid, resembling the Fern genus Blechnum.

Blee'ding, applied to an extravasation of sap, such as occurs in vines if injured in spring during leaf expansion; ~ Pres'sure, exudation pressure, the internal force needed to cause an abnormal flow.

Blend'ing, a hybrid formed by the crossing of races (Heinig); Ger., Blending.

Blend'ing; a hybrid between races, not species.

Bleph'arae, pl. (βλέφαρον, an eyelash), the teeth belonging to the peristome of a Moss; Bleph'aroplast (πλάστος, moulded), the specialized protoplasm which gives rise to the motile cilia of the antherozoids as in Zamia and Cycas; Blepharoplast'oids (εἶδος, resemblance), the two bodies appearing between the 2- and 4-celled stage at each pole of the two spindles, in nuclear division, disappearing into the cytoplasm before the rise of the blepharoplasts themselves (Shaw).

Blet, a soft spot on fruit; Blet'ting, the change in consistence without putrefaction, of certain fruits, as the medlar.

Blight, popularly applied to an epidemic, either of minute Fungi, or of aphides.

Bombyc'inus, (Lat.), silky, feeling as

Blind, a cultivator's expression for abortion, as when a flower-bud is said to go blind, that is, does not develop.

Blister Blight, of the tea plant due to Exobasidium vexans; ~ Rust, due to Peridermium Strobii.

Bloom, (1) synonymous with Blossom; (2) the white waxy or pruinose covering on many fruits and leaves.

Blos'som, the flower, especially of fruit trees; ~ Bud, = Flower-bud.

blotch'ed, colour irregularly disposed in patches.

Blow-off Lay'er, an epidermal layer of presumably mucilage-cells, forming the outermost investment of the testa of palaeozoic seeds (Oliver and Salisbury).

blunt, ending in a rounded form, neither tapering to a point, nor abruptly cut off.

boat-shaped, having the figure of a boat, with or without a keel.

Bod' y-cell, the cell which divides to form the male cells in certain Conifers (Nichols).

Bog-moss Association, Sphagnum dominant in moorland vegetation; ~ Xerophytes (+ Xerophyte), plants presenting the appearance of xerophytes though growing in water (Clements).

bola'ris (Mod. Lat.), dark red, brick-coloured; from the earth, Armenian Bole.

Bole, the main trunk of a tree, with a distinct stem.

bole tic, obtained from the genus Boletus, as boletic acid; Bole'tol, Bertrand's name for the blue colouring-matter in certain Fungi, as Boletus.

Boll, pr. boal, the fruit capsule or pericarp, especially of the cotton plant; Bo'lling, pr. boaling, = Pollard; bolled, pr. boald, come into fruit, as flax when the capsule is formed.

Bol'ochore (βολή), a throw; χωρέω, I spread abroad), a plant distributed by propulsion (Clements).
smooth as silk; bom'byssine (Heinig) = bombycinus.

bo'ny, of a close and hard texture, as the stones of plums, etc.

boragina'ceous, belonging to or resembling the genus Borago or its allies; bor'agoid, or bor'ragoid, from the genus Borago, applied to a form of inflorescence which finds its fullest development in Anchusa, an extreme case of extra-axillary inflorescence (K. Schumann).

bord'ered, having a margin distinct in colour or texture from the rest; ~ Pit, a pit in which the margin projects over the thin closing membrane, as in coniferous wood; ~ Pore, is the same thing.

Bo'rer, (1) the penetrating root of a parasite (De Bary); (2) an insect tunnelling into the wood of trees during its larval stage.

bor'ragoid = boragoid.

Boss, a protuberance;bossed, with a rounded surface having a projection in its centre.

bost'rychoid (bōt'rus, a ringlet; el'dos, resemblance), having the form of a Botryx; ~ Cyme, a sympodial branch-system in which the right- or left-hand branch is always the most vigorous; a helicoid cyme; ~ Dichot'omy, a dichotomy or repeated forking of an inflorescence, within the previous definition; Bost'ryx, a uniparous, helicoid cyme.

bot'an'ic (bōt'ān, a herb), pertaining to the knowledge of plants; ~ Gar'den, a garden especially devoted to the culture of plants for scientific ends; Bot'anist, a student of plant life, in any of its departments; bot'anize, (1) to seek for plants in their places of growth; (2) to study actual plants; Botanology (a'gos, discourse) = Botany; Bot'any, (1) the study of the vegetable kingdom in all its divisions; its classification, morphology, physiology, and economy; (2) also used for a textbook or local flora. Bothrench'yma (βόθρος, a pit; ἔγγυμα, that poured in), tissue composed of dotted or pitted ducts or cells.

Bot'rus (Crozier) = Botrys.

bot'ry-cy'mose (βότρυς, a bunch of grapes; κύμα, a wave), racemes or any botryose clusters cymosely aggregated; bot'ryoid, botryo'idal (el'dos, resemblance), like a cluster of grapes; bot'ryose, botryo' sus racemeose; Bot'rys, a raceme.

Bottom-yeast, or Low-yeast, the yeast which forms at the bottom of the vats; in German, "Unterhefe."

bot'uliform, botuliform'is (botulus, a sausage; forma, shape), sausage-shaped, allantoid.

Boui'llon (Fr.), meat-broth, used for cultures.

Bound'ary Cell, Ger., Grenzzeile = Heterocyst.

bour'geon (Fr., in English pr. bur'jun), to bud or sprout.

Brach'eid, Tschirch’s suggested abbreviation of his own term Brachysclereid.

brachia'lis (brachium, the fore-arm), a cubit long, roughly about 18 inches; bra'chiate, brachia'tus, when branches spread and widely diverge.

brachy (βραχύς) = short, used in Greek compounds.

brachybiostigmatic (βραχύς, short; βίος, life; στίγμα, a spot), a term proposed by Delpino to express stigmas which are short-lived, withering before their proper authors ripen; protogynous; Brach'ylblast (βλαστός, a bud), Hartig’s term for a spur, or short branch; also spelled Brachy'oblast; brachychi'mous (χειμών, winter), exposed to short winters (Drude); brachyclad'ous, -dus (κλάδος, a branch), applied by Russow to those species of Sphagnum which bear short branches; brachy-dod'romous (δρόμος, a course), with looped veins (Kerner), cf. brochi-dodromus; Brach'yforms (+ forma, shape), Arthur’s term for Brachypucciniá, the ascidia being wanting, but spermagonia, uredospores and telentospores occur on the same
host; Brachymeio’sis (+ Meiosis), abnormal nuclear division in which half the heterotype number of chromosomes are present, sometimes without their visible union (Fraser and Brooks); adj. brachymetiotic; brachyphyll’ous (φύλλον, a leaf), short-leaved; brachyph’odous (πόδος, πόδος, a foot), having a short stalk or foot; Brachyscle’reids (σκλήρος, hard), stone-cells, the sclereids in barks and fruits (Tschirch); brachy-styl’ous (+ Style), a synonym of microstyi’ous; brachyxeroxochi’mous, (ηρός, dry), adapted to short summers and dry winters (Drude); brachyther’ous (θέρος, summer), exposed to short summers; Brachyme’ma (ρημα, section), a disc-shaped cell, which by its rupture sets free a gemma in Bryophytes (Correns); brachyxeroxochi’mous, injured to short, dry winters (Drude).

Brack’et-cells, secretory cells in Lon’chocarpus with papillose epithelium; ~ epithe’lium, leaf epithelium showing finger-like differentiation of the component cells; ~ hairs, bent or hooked at the apex; ~ shaped, a term used by Boodle and Fritsch, for a body curved like a parenthesis.

Bract, Bract’ea (Lat., a thin plate of metal), the modified leaves intermediate between the calyx and the normal leaves; ~ cell, used for certain cells on the branchlets of Chara; ~ scale, in Coniferae, a scale of the cone above which lies the seed-bearing scale; bract’eal, of the nature of a bract; bract’eate, bracte’a’tus, provided with bracts; bracteif’erous (φερό, I bear), bearing bracts; bracte’a’tus, +, formed of bracts; Bracteo’dy (εἶδος, resemblance), the change of foliar organs into bracts (Worsdell); Bract’eole, Bracte’a’ola, (1) a bractlet, or small bract; (2) a prophyl; (3) a post-tal bract of Hepaticae (Spruce); Bract’eole-succulents, such plants as lose their leaves by drying up, but the bracteoles round the flowers become enlarged and succulent, e. g. Salsola; bract’eolate, bracteola’ tus, having bract’ets; Bracteoma’nia (mania, madness), excessive development of bracts; bract’eose, bract’eo’sus, having conspicuous or numerous bracts; bract’less, wanting bracts; Bract’let, a bract of the last grade, as one inserted on a pedicel or ultimate flower-stalk, instead of subtending it.

brad’yschist (Bre’dos, slow; σχιστός, split), when in a brood mother-cell successive nuclear divisions are completed before cell-division (Hartog).

Bran, the husks or outer coats of ground corn, separated from the flour by bolting; bran-like, scurfy in appearance.

Branch, a division of the stem, or axis of growth; Branch’ery, Grew’s term for the ramifications in the pulp of fruits; Branch’ing, Interc’alary, in Hepaticae where branching arises below the apical cell; Ter’minal ~, the branching arising from a division of the apical cell (Leitgeb); branch’less, bare of branches; Branch’let, a twig or small branch, the ultimate division of a branch.

Brand, disease caused by minute Fungi on leaves, as Ustilago, etc.; Brand’spore = Uredospore.

Brasil’in, the colouring matter of Brazil wood, Caesa’lpinia brasiliensis, Linn.

brassica’ceous (Brassica + aceous), resembling the genus Brassica, or belonging to it.

Braun’s Series, the same as Fibonacci Series.

break, (1) to put out new leaves; (2) to show a variation, as in florist’s flowers; Break-back, reversion to an earlier type; Break’ing, a popular expression for a sudden profusion of algal life in certain lakes or meres.

Brea’tling-pores = Stoma’ta.

Breed = Race; Cross-breed = Hybrid.

bre’vi-ramo’sus (brevis, short; ramosus, branched), short-branched.

brick-colour, usually implies a dull-red; latericious, testaceaous; ~ like,
resembling courses of brickwork, as tissue of rectangular cells.

**Bridge**, a narrow band of tissue connecting larger masses of the same (Kearney); **bridging**, applied to certain species which act as intermediate hosts of Fungi, thus breaking down immunity, *e.g.* ~ **Species**, as in *Bromus*.

**Briddle**, (1) strings of protoplasm which often connect the nucleus with the layer of protoplasm next the cell-wall; (2) strands of cells connecting other tissues.

**Bristle**, a stiff hair, or any slender body which may be likened to a hog's bristle; ~ **like**, resembling bristles; ~ **pointed**, ending in a stiff short hair; **bristly**, beset with bristles.

**British**, used by H. C. Watson to express the distribution of those plants which are found throughout the island of Great Britain.

**Brochidodromus** (βρόχος, a noose; εἶδος, like; δρόμος, a course), Ettingshausen's term for loop-veined.

**Brömare** (+ -ARE), Clements's term for a "community" of *Bromus*.

**Bro'melín**, a proteolytic enzyme occurring abundantly in the juice of the pineapple, which is a member of the Bromeliaceae, whence the name.

**Bronte'sis** (βροντή, thunder), injury to plants by electric shock.

**Brood-bodies**, gemmae on leaves of Mosses, becoming detached and growing into protonemal filaments; ~ **Buds**, (1) a synonym of Soredium in Lichens; (2) the same as Bulbil in Archegoniatae; ~ **Cell**, asexually produced propagative cell of a goniidium; ~ **Gemmá**, a pluricellular propagative body produced asexually and passing gradually into a brood-cell on one side, and a bulbil on the other.

**Bro'tüm**, or **Bro'tion** (Βρῶτος, mortal), a succession of plants due to human agency; **Bro'tóchóres**, -ae (χωρίς separate), dispersion by man (Clements).

**Brown Rot**, of cacao pods, attributed to *Diplodia cacaoicola*, P. Henne.; ~ of potatoes, due to *Systanum Stemnitis*, Corda.

**Brownian Move'ment**, motion shown by minute particles when suspended in a liquid.

**Bruc'ine**, a poisonous alkaloid from *Strychnos Nux-vomica*, Linn., formerly supposed to be from *Brucia ferruginea*, L'Hérit.

**Brugiue'rum** (+ ETUM, an association of Brugueria, a mangrove formation.

**bruma'lis** (Lat.), pertaining to the winter solstice; flourishing in mid-winter.

**Brunissure'** (Fr.), injury caused to vines by *Phasmodiojaphora Vítis*, Viala.

**brun'neolus** (Mod. Lat.), brownish.

**brun'neus** or **brun'eus** (Mod. Lat.), brown in colour.

**Brush**, applied to the young fruit of the hop, when the stigmas are protruding; ~ **Form**, of stigmas of some papilionaceous flowers, as of *Phaseolus, Vicia, Lathyrus*, etc.; ~ **shaped**, aspergilliform.

**Bry'ogams**, *Bryogam'iu* (βρόν, a moss; γάμος, marriage), term proposed by Carmel for the Bryophytes; *Bryol'ogy* (λόγος, discourse), the science of Mosses, or Bryophytes generally; *Bry'o'ma*, the vegetative substance of Mosses.

**Bry'oine**, a poisonous principle extracted from the roots of *Bryonia Alba*, Linn.

**Bry'ophytes** (βρόν, a moss; φυτέω, a plant), moss-like plants, the true Mosses and the Hepaticae or Liverworts; *bryophyt'ic*, pertaining to *Bryophytes*.

**Bucc'ae** † (Lat., cheeks), the lateral sepals or wings of the flower ofaconite.

**buckler-shaped**, resembling a round buckler with a raised rim.

**Buck'mast**, the fruit of the beech tree.

**Bud**, the nascent state of a flower or branch; ~ **Cones**, of the carob, *Ceratonia Siliqua*, Linn., arrested or abortive inflorescences; ~ **corm**, 56
the root-system of most herbaceous plants (J. Smith); ~ -gall, Kerner's term for a gall which involves several or all the members of a shoot, and may be leafless or leafy; ~ Glue = Blastocolla; ~ Rot, a disease of palms caused by Pythium palmaricosum; ~ Ru'diment, in Chara, a cell cut off from a procambium branch as the primordium of the young plant; ~ Scales, the coverings of a bud; ~ Sport = Bud-variation; ~ Variation, changes of colour or form in plants arising from a flower or leaf bud.—Adven-
titious ~, a bud arising out of the normal course or locality; Brood ~ = Brood-buds; Flow'er ~, the in-
florescence before expansion, or a unit thereof; Leaf ~, an undeveloped leaf; Bud'dage, propagation 
by buds (L. H. Bailey); Bud'ding, (1) propagation of a garden form by inserting a bud or "eye" on another stock; (2) used also for expansion of the buds; Bud'dlet, "a little bud attached to a larger one" (Crozier).

Bulb, Bul'bus (Lat.), a modified bud, usually underground; (1) na'ked ~, bulbus squamosus, having scaly modifications of the leaves, as in the lily; (2) tunica'ted ~, whose outer scales are thin and membranous, as the onion or hyacinth; (3) the so-called sol'ld ~, is a Corm; (4) the swollen base of the stipe of the sporophore in Hymenomycetes; ~ Scale, one of the components of a bulb; Plu'mule ~, bulb produced directly from the seed; Run'ner ~, bulb arising from a stolon (Blodgett).

bulb'ceous, -ceus, (1) bulbous; (2), having bulbs.

Bul'bizeps, (bulbus, a bulb; caput, a head), a stem bulbous at base; bulb'ifersous, -rus (fero, I bear), bulb-bearing, as when bulbins are amongst the florets of an inflo-

cense, or axes of the leaves; Bul'bil, Bulbil'us; Bulb'let, Bulb'ulus, (1) a small bulb, usually axil-

ary, as in Lilium bulbiferum; (2), Bulbil is also applied, (a) in some fungi to small pluricellular bodies incapable of germination; (b) deciduous leaf-buds capable of developing into a new bion or brood-bud, in Archeognita; Bulb'o'dium \( \equiv \) Corm.

bulb'ose, bulbo'sus, bulb'ous, having bulbs or the structure of a bulb; bulb'ous Hairs, bulbo'st pi'ti, hairs with an inflated base; Bulbotu'ber, Gawler's name for Corm; Bul'bule = Bulbil (Crozier).

Bul'garine, Zoffi's term for an orange pigment produced by Bulgaria poly-

nompha, Wett.

Bulk'head, transverse divisions and 

air-chambers in stem of Scirpus (Florman).

bul'late, bul'a'tus (bull), blistered or puckered, as the leaf of the primrose; Bullescen'tia (+ escens), the state of being blistered, as the Savoy Cabbage; bul'liform (forma, shape), used of some large thin-walled cells, occurring on the epidermis of certain grasses (Duval-Jouve).

Bul' lions, a local name for Coal-balls.

bunched, gibbous.

Bun'dle, a strand of specialized tissue, 

variously modified; ~ -ends, the peripheral ends of bundles when spread out in the leaves or peri-

phery of the stem; ~ Flange, com-

munications between the unbranched leaf-bundles of Gymnosperms and the surrounding tissues; ~ Sheath, the enveloping cylinder of closely united parenchyma; ~ -trunks, those bundles which pass through the stem, root, leaf-stalk, and thick nerves of the leaf; they may be complete or incomplete; ~ Bicol-

lat'eral ~, when a second bast-

'srand exists on the inner, medullary, side of the wood of the conjoint-

bundle; Cauline ~, confined to the stem; Closed ~, destitute of cambium, the procambium having 

become permanent tissue; Col-

lat'eral ~, when the wood and bast 

lie side by side; Com'mon ~, that 

is, to stem and leaf, becoming a leaf-
trace; Concent'trie ~, when either the wood, or the bast-system surrounds the other; Conjoint' ~, consisting of both wood and bast; Cort'ical ~, peculiar to the cortical region; Medul'lary ~, the vascular bundles occurring in the pith, when there is a well-defined exterior ring; O'pen ~, when the bundle possesses a portion of cambium; Ra'dial ~, having the strands of wood and bast alternately as in roots; Phlo'ém ~, the bast portion; Vasc'ular ~, the entire strand, consisting of liber or bast portion (phloëm) and tracheal or wood portion (xylem) in various degrees; Xylem ~, the wood portion.

Bunt, a common disease of the wheat plant, from Tilletia Tritici, Winter.

Bur or Burr, (1) a prickly-headed fruit; applied to the chestnut, Arct'ium, and the like; (2) the female inflorescence of the hop, when the stigmas forming the Brush are visible; bur'ry, resembling a bur.

Bur'gundy Pitch, a resin from species of Abies.

Burr, a woody outgrowth from the bark of certain trees; cf. Gnaur.

Bur'sa (Lat., a purse); ‡ the antheridi-um of Chara; Bur'sicule, Bur-sic'u1a (Lat., a small purse), the pouch-like expansion of the stigма into which the caudicle of some Orchids is inserted; bursic'ulate, bur'sicula'tus, purse-like.

Bush, a low shrub, branching from the ground.

Bush'land, shrubs and small trees constituting a formation (Warming); arctic ~, with Betula nana; subal'pine ~, Rhododendrons, Vaccinium, etc.; Bush-swamp, made up of woody plants as alder and willow with marsh plants; Bush-wood, of taller, lignified plants, but falling short of Forest.

But'terfly Flowers, Lepidopterid flowers, usually red, whose honey-store can only be reached by a long proboscis (Knuth); ~ like, ~ shaped, = PAPILIONACEOUS.

But'tons, (1) an old term for Buds, (2) J. E. Smith's name for TRICAE.

But'tress, the knee-like growths of trunk or roots in certain trees.

Buty'ric Fer'ment, caused by Bacillus Amylobacter, Van Tiegh.; see Fer'mentation.

bux'ious, bux'eus (Buxus, the Box-tree), (1) the colour of box-wood, (2) pertaining to that tree; Bux'ine, an alkaloid from Buxus sempervirens, Linn.

Bynedes'tin (Bûrn, malt, + Edestin), a globulin found in malt with By'nin, a proteid which replaces Hordein when barley is malted.

byssa'ceous, -ceus (byssus, fine flax), composed of fine threads.

bys'sine, byss'soid (el'dos, resemblance), the same as BYSSACEOUS.

Bys'sus, the stipe of certain Fungi.

Caa Ting'a, Brazilian forests, which are deciduous during the hot and dry season (Warming).

caca'inus, chocolate brown; from the name of Theobroma Cacao, Linn.

Cach'rys ‡ (Lat.), the cone of a pine-tree.

Ca'conym (kædős, bad; ὁνομα, a name), a name rejected for linguistic reasons (O. F. Cook).

cact'ai (Cactus, a genus of succulents), cact'a'ceous (+ aecous), cactus-like, or pertaining to the order Cactaceae; cac'tifom (forma, shape), applied to succulent stems like those of cacti, and of Euphorbia.

Cacu'men ‡ (Lat.), the apex of an organ.

cad'ens (Lat., falling), when the funiculus passes over the top of the seed, as in Plumbaginaceae; cadu'ceus, cadu'ceus, dropping off early, as the sepals of a poppy on expansion.

Cae'cum (Lat., blind), a prolongation of the embryo in Casuaria and certain Amertiferae.

Caeno'bio = COENOBIO.

Caenody'namism (kærɒ'dzis, recent; δύναμις, power), Giard's term for the replacement of complex functions by simpler; adj. caenody-
Caenogenesis  

Caem'dia; Caenogen'sis (κακύς, new; γένεσις, beginning), the acquisition of characters of a recent date from readjustment to the environment (spelled also in various ways); cf. Palingenes'sis; adj. caeno-genet'ic; Caenomor'phism (μορφή, shape), simple modifications from complex, in living organisms (Giard).

Caemoma (καλο, I burn), term derived from the genus Caemoma, Link, a form of ureadineous fungi having the spores in chains, and destitute of peridium; ~ Cush'ions, or ~ Disks, enlargements of the tips of twigs, due to the attack of forms of Caemoma, Link, believed to be a stage of Melampsora; Caemom'sospore—ae (+ SPores), spore of Ureadineae in the Caemoma stage.

carulesc'ent (caruleus, sky-blue + escens), verging towards blue; caeru'leus, sky-blue.

cascalpin'a'ceous, or caesalpin'eous, pertaining to the tribe of Leguminosae named after the genus Caesalpinia.

cae'sian, resembling the Dew-berry, Rubus caesius (Rogers).

cae'sious, cae'sius (Lat., grey of the eyes), light grey in tint; caessi/el'us is a diminutive.

caspitell'o'se (caespes, or cespes, a sod), somewhat tufted; caespitose, caespi'to'sus, growing in tufts like grass; caespit'u'lose, somewhat crowded in tuft-like patches.

Caespit'ul'us (late Lat., a little sod), employed of Hymenomyetes for a Fungus tuft.

Caeto'niurn, Lindley's spelling of Corto'nium.

Caffe'ine, an alkaloid from coffee berries, Coffea arabica, Linn.

Cakile'tum (+ ETUM) an association of Cakile maritima, Linn.

Calamagrostide'tum (+ ETUM), an association of Calamagrostis.

Calama'riae (calamus, a reed), (1) a term of vague application, which has been used for plants resembling grasses, chiefly sedges, but even in-  
cluding Isoëtes, Juncus, Typha, etc.; (2) restricted to fossil plants, Equisetinae; calam'arian, sedge-like; calamitean; calamit'erous (fero, I bear), having a hollow, reed-like stem; (2) producing reeds; Cal'amite, a fossil type, resembling recent Equiseta on a gigantic scale; calami'teon, resembling the last; calam'itoid (el'ós, resemblance) = cala-mitean; Cal'amus, a fistular stem without an articulation.

cala'thial, relating to the heads of Compositae.

Ca'lathide, Cal'athida, Calath'ium Calath'i'dium (καλάθος, a wicker basket), the head of a Composite; preferably restricted to the involucre of the same; calathidi'form'us (flos, floris, a flower), having a Calathidium or Capitulum; Calathid'ip'torum (φορέα, I bear), the stalk of a Capitulum; cal'athiform, calathiform'is, cup-shaped, almost hemispherical; Cal'athis, see Cala-thide; Calathocladi'um (καλάθος, a branch), in Hieracium and its allies, the upper part of the stem bearing flower-heads as distinct from the unbranched part or Cladophore (F. N. Williams).

Calc'ar (Lat.), a spur; calc'arate, calcar'atus, furnished with a spur; calcari'form'is (forma, shape), spur-shaped.

Calc'a'rieon (calcarius, pertaining to lime, + ON), a plant formation of calcareous soils (Moss); calcar'eous, -eus, (1) chalk-white, as to colour; (2) growing in chalky or limestone places; (3) having the substance of chalk, as the chalk-glands of certain saxifrages.

cal'ceiform, calceiform'is; calceo'late, calceo'lat'us (calceolus, a slipper; forma, shape), shaped like a shoe.

cal'ceus (Lat. from calz, chalk), chalk-white; cal'cicole, calcio'loous (colo, I inhabit), dwelling on chalky soil; Calific'o'tion (+ facio, I make), deposition within cells of carbonate of lime, in hairs, or cell-contents; calc'ified, the process completed;
calciform

Calyciflorae

calo'iform (forma, shape), "powdery, like chalk or lime," (Crozier); Calyciflorae (floræ, I love), plants addicted to calcareous soils; calycif'ionus, chalk-loving; calci'ugal (floræ, I like), shunning chalk, as heather; Calyciflorae (floræ, I love), plants shunning chalk or limestone; calciv'orous (voræ, I devour), applied to Lichens which eat into their limestone matrix; Cal'osia; saxicol'ae (saxum, a rock, + cola), plants of rocky limestone, as some Lichens. Calyci'alis, Cal'pa, Cal'yx.

Calc'ulary (calculus, a pebble), Grew's term for the sclerogenous tissue of a pear. Calda'rium (Lat., warm bath-room) in botanic gardens signifies an intermediate or warm greenhouse. Calen'dula (Lat., an account-book), Calen'darium, an arrangement of plants according to their period of flowering. Calend'ulin, calic'ulate, calicina'rius = calycinianus, etc. calc'iculate = calc'ulate.

Calici'alis, Cal'pa, Cal'yx.

Calicifloræ (flos, floris, a flower), plants having their petals and stamens abnormally thickened part, as the base of a cutting; (2) a special deposit on sieve-plates; (3) a synonym of verruca; (4) the hymenium of certain Fungi; (5) an extension of the flowering-glume below its point of insertion, and grown to the axis or rhachilla of the spikelet; Callusheteroplasy (heteroplasy), the cell-structures or tissues which arise as the result of a wound; Callusmetaplasy (meta-plasy), increase of normal tissue due to an injury; Callusmetaplasy (+ metaplasy) when through injury to an organ, the contents of cells change, but not the cell-wall; Cush'ions, hemispherical pads covering the pits on the side of sieve-tubes; Rods, thread-like portions crossing the walls of sieve-tubes. Caliopo'dium † (kaλds, fair; πῶς, πῶδας, foot), Rumph's term for Spathe.

caloritropic (calor, heat; πρωτός, a turn); Klercker's term for thermotropic; Caloritrop'ism, curvature produced by conducted heat (Klercker), Thermotropism.

Cal'pa (καλής, an urn), Necker's term for the capsule of Fontinalis. cal'vous, cal'vus (Lat., bald), naked, as an achenë without pappus. Calyb'io (καλύμβων, a cottage), Mirbel's name for a hard, one-celled, inferior, dry fruit, such as the acorn, or hazel-nut; Calyb'ium † is a synonym.

calyc'alis, of or belonging to the calyx (καλύς, a cup); Cal'yCalis, proposed by Bessey for Calycifloræ; calycanth'emous (ἀρθός, a flower), (1) having the sepals converted wholly or partially into petals; (2) the corolla and stamens inserted in the calyx; Calycanthes'emy, a monstrosity of the calyx imitating an exterior corolla; calyc'a'tus (Lat.), furnished with a calyx; Calyce'a, a stipitate and boat-shaped apothecium; Calyciflor'ae (flos, floris, a flower), plants having their petals and stamens
adnate to the calyx; adj., calyci-floral, calyciflorous; calyciform (forma, shape), cup-shaped, applied to an indusium; Caly'cin, a bitter, yellow, crystallizable substance from Calicium chryscephalum, Ach., and other Lichens; calycinia'lis (Lat.), cal'yicine, calyci'nius, (1) belonging to the calyx; (2) of the nature of a calyx; (3) denoting a calyx of unusual size; calycinia'nus †, calycinia'ris † polyphyllly of the calyx; calycina'rius, formed from the calyx; Cal'ycele, Calyc'ulus, the epicalyx, or involucre simulating an additional calyx, a whorl of bracts outside the true calyx; caly'cled, provided with a ring of bracts like an additional calyx; cal'y-coid, calycoid'eous (εἶδος, resemblance), resembling a calyx; Calycosti'mon (στήμων, a filament), a stamen seated on the calyx; calyc'ulate, calycu'lateus, bearing bracts which imitate an external calyx; Calyphy'omy (φοιμαί, I spring from), adhesion of the sepals to the petals.

Calyp'tra (καλυπτρα, a veil) or Calyp'ter, (1) the hood or cap of a Moss in fruit when it crowns the capsule, formed from the archegonial wall; (2) applied to any cap-like covering of a flower or fruit, as the extusquise-shaped calyx of Eschscholtz'ia, or the lid which falls off on expansion of some Myrtaceae, as Eucalyptus; (3) Gomont's term for a thick membrane shutting off the apical cell of a trichome in Oscillarieae; (4) a term proposed by Van Tieghem and Douliot for that portion of the rootcap in lateral roots which belongs strictly to the root-system; (5) Tournefort's word for Caruncle; ~ thalamog'ena (+ Thalamus, γένος, race, descent), a structure of the capsule and stalk in some Hepaticae acting as covering for the young sporogonium; calyp'trate, calyptra'tus, bearing a calyptra; calyp'tri-form, calyptri'formis (forma, shape), shaped like an extinguisher; calyp'trimon'phous (μορφή, shape), a synonym of the last; Calyp'trogen (γένος, offspring), (1) the layer of cells from which the root-cap takes its origin, (2) the layer of tissue covering the young embryo, as in Ferns; calyp'trogen'ic, producing a cap or calyptra.

Calyx (κάλυξ, a cup), the outermost of the floral envelopes; ~ adhe'rens, when not separable from the ovary; ~ calycul'atus, when surrounded by a ring of bracts; ~ commu'nis, the involucre of Composites; ~ infe'tior, ~ li'ber, when free from the ovary; ~ supe'rior, when adherent to the ovary; ~ Tube, (1) a tubular form of the calyx, due to the union of the sepals; (2) † the receptacle of certain Fungi; (3) the "perianth" of Hepaticae, that is, the Cole'sula (Hooker and Taylor).

Cam'ara (καμάρα, a vault), occasionally used for the cells of a fruit; Camer'ula, a diminutive of the foregoing; cam'a'rius, resembling a simple carpel, as the berry-like fruit of Actaea.

camb'ial (cambio, I change), relating to Cambium; camb'iform (forma, shape), resembling cambium; Camb'ium (Mediaeval Lat., = exchange), a layer of nascent tissue between the wood and bast, adding elements to both; formerly considered as a mere viscous mass; ~ Fi'bres, the immediate derivatives of the cambium; partly formed woody fibres (Sanio); ~ Lay'er, the formative tissue during active growth; ~ Ring, the complete system of the cambium, separating the wood from the bast in the shoot; ~ fascic'u'lar ~, that which belongs to the vascular bundles; interfasci'cular ~, that which is formed between the vascular bundles, and the primary medullary rays; cambio'genetic (~ Cambium, γένος, offspring), giving rise to cambium (De Bary).
camell'ious (Lat.), camel-coloured, tawny.

Cann'tum (κανθωρ, I cultivate), a succession due to cultivation (Clements).

cap'pan'teous (campana, a bell); cam'paniform, campaniformis; cam'panulate, campanula'tus, bell-shaped, applied to a corolla; Crozier adds campanil'iform.

campes'ter (Lat.), campes'tris, growing in fields; the second form is that usually found in botanic works; adj. campes'tral.

Camph'or, a solid essential oil from Cinnamomum Camphora, T. Nees et Eberm., and other trees; camphor'aceous (+ aceous), camphoric, pertaining to, or of the nature of, camphor.

Camp'ó, Brazilian savannahs, low open woods with ground vegetation.

camptod'romus (κάμπτως, I bend; ὀπόσιος, course), venation in which the secondary veins curve towards the margins, but do not form loops; campto'tral (τρως), a turn), an orthotropal ovule, but curved like a horse-shoe; Camptot'ropical, (τρως, a turn), the tendency to resume the natural position if forced out of it.

campulit'ropical (καμπυλός, curved; τρως, a turn); campulit'ropous, see Campylitropical, etc.; Campylid'ium, described by Mueller-Arg. as an accessory fruit in certain lichens now known to be a Fungus, Cyphella aeruginascens, Karst.; campylod'romous, -mus (ὀπόσιος, a course), venation with its primary veins curved in a more or less bowed form towards the leaf apex; campylosper'mous, -mus (σπέρμα, seed), having the albumen curved at the margin so as to form a longitudinal furrow; campylot'ropal, campylot'ropic, campylot'ropous (τρως, a turn), applied to an ovule, one side of which has grown faster than the other so as to bring its true apex (micropyyle) near the hilum; Cam-pylot'rism, the state of being bent back.

Can'ada Bal'sam, an oleo-resin obtained from Abies balsamea, Mill., much used in the preparation of microscopical specimens.

Canal', cana'lis (Lat., pipe or channel), an internal channel; ~ Cells, an axial row of cells in the neck of the archegonium, ultimately forming a canal by disappearance of the septa, which becomes the way of access for antherozoids; ~ Ra'phe, modification of the raphe in Diatoms, with longitudinal fissure, as in Surirella; canalic'ułate, canalicula'tus, channelled, with a longitudinal groove; Canalic'ulus (Lat., a small channel), a diminutive of CANAL; see Gum-Canal, Sorus-Canal.

can'cellate, cancella'tus (Lat., latticed), as in Clathrus, and Oowirandra.

Can'dela'bra Hairs, stellate hairs in two or more tiers.

can'dicant, cand'icans (Lat.), white, clear, and shining.

cand'idus (Lat.), white, and shining; brilliant.

Cane, the stem of reeds, large grasses, and small palms; Cane-sugar, a succrose, the crystallized product of Sugar-cane, Sorghum, Beetroot, etc.; ~ Und'er'shrubs, plants having lignifled but commonly monocarpic shoots, as various species of Rubus; ~ Sugar-cane, Saccharum officinarum, Linn.: its chief Fungus-diseases are Cane Freckle, ~ Rust, causes uncertain; ~ Soot, by Macros-porium graminum, Cooke; ~ Spume, by Strumella Sacchari, Peck.

canella'ceous, (1) pertaining to the order of which Canella, P. Br., is the type; (2) resembling cinnamon, Ital., Canella, in taste or shape.

canes'cent, canes'cens (Lat.), growing grey or hoary; Canes'cence, hoariness.

Cank'er (cancer, an ulcer), a disease in deciduous-leaved trees, ascribed to Nectria ditissima, Tul., shown by malformed rind, with swollen cushion-like margin, and depressed centre.
canna’ceous, relating to the genus *Canna* or its allies.

**Canopy** (Mediaeval Lat., *canopium*, tent), (1) a characteristic membrane within the testa surrounding the free part of the nucellus in *Lagenostoma* (Williamson); (2) the high, leafy covering in woodlands, the uppermost layer in forests; ~ Trees, those having well-branched crowns and abundant leafage (Warming).

**Canarthoph'ilae** (κάναρθοφίλος, a beetle; φιλέω, I love), plants which are fertilized by beetles, having showy colours, and abundance of pollen; adj. *canarthoph’ilious*.

câ’nus (Lat.), hoary, grey.

**Caoutch’ouc** (S. American), pr. koot’shook, a substance occurring in the milky latex of many plants; it is allied to the Hydrocarbons; ~ *Bod’ies*, small particles in the latex.

**Cap**, (1) Grew’s term for the husk of a nut; (2) the pileus of Hymenomycetous fungi; (3) the calyptra of Mosses; (4) the short, upper division of the dividing cell in *Oedogonium*; ~ *Cells*, the upper sister-cells of the embryo-sac in the ovule which are compressed as the embryo-sac develops and for a time figure as a cap on its apex; ~ *Fungi*, pileate Fungi, as the mushroom; *Cellulose ~*, formation by protoplasm of cells of certain trichomes.

capilla’ceous, -ceus, capillary, *capillarius* (capillus, a hair), slender, comparable with a hair; *capillatus*, hairy; *capillatae* Radi’ces, roots with evident root-hairs; *Capil’lament*, *Capillamentum* (Lat.), the filament of an anther; *capillamento’sus* (Lat.), comose; *Capillitium*, sterile, thread-like tubes or fibres growing amongst the spores in a sporogenous body, frequently forming a net, especially in *Myxogastres*; adj. *capillit’ial*; *Capill’us*, the width of a hair, taken as 1/17th of a line or about 0.17 mm.

**Cap’italist**, a term applied to plants which have a large reserve of material, and are insect-fertilized.

cap’itate, *capitatus* (Lat., having a head), (1) pin-headed, as the stigma of a primrose; (2) growing in heads, as the flowers of Composites; *capitell’ate*, *capitellatus*, diminutive of *capitate*; *Capitell’um*, the capsule of Mosses; *capitiform’is*, † (forma, shape), shaped like a head, somewhat globose; *cap’itular = capitellate* (Crozier); *capit’niform*, shaped somewhat like a head; *Capit’ulum* (Lat., a little head), (1) a close head of sessile flowers; (2) a term vaguely applied to the pileus, etc. of *Fungi*; (3) a rounded cell borne upon each of the manubria in the antheridium of *Chara*; head-cell.

cap’ro’des, *capnoi’des* (καπνώδης, smoky), smoke-coloured.

cappari’nus (Mod. Lat., from *Capparis*, the caper-bush), brownish-green.

cap’reolate, *capreolatus* (*capreolus*, a tendril), having tendrils.

**Caprif’ication**, *Caprif’icatio* (Lat.), (1) the fertilization of the fig by insects, branches of the wild fig being placed among the cultivated kind; the subsequent fertilization is attributed to the punctures of an hymenopterous insect; (2) fecundation by artificial means; *Caprifi’cus* (Lat.), the wild or “male” fig, the uncultivated form.

**Capsell’a* (κάψα, a box), Link’s term for *Achene*.

**Cap’sicin**, an acrid alkaloid principle found in some species of *Capsicum*.

**Capsoma’nia (κάψα, a box; μανία, madness), a multiplication of pistils.**

**Cap’sule, *Cap’sula***, (1) a dry, dehiscent seed-vessel; (2) the theca of Mosses; (3) † the perithecium or receptacle of *Fungi*; *cap’ sular*, *capsularis*, possessing a fruit of the kind just mentioned; *cap’sulate*, enclosed in a capsule; *capsulife’rous, -rus, (fero, I bear), bearing capsules.

**Cap’ut**, (Lat., the head), the peridium of some *Fungi*; ~ *Flor’um † = Capit’ulum*; ~ *Radi’cis*, the crown of the root; the obsolete stem or bud of herbaceous plants.
Carbohydrates

Carbohydrates, (Carbon + Hydrate), non-volatile solids, as arabic acid, cellulose, dextrin, starch, sugar; the non-saccharine members may be turned into sugars by boiling in dilute acids, usually into glucose (dextrose).

Car'bon Dio'xide = CO₂; carbona'ceous (+ aceous), (1) consisting chiefly of substances in which carbon predominates; (2) resembling charcoal, in colour or substance; carb'onised, turned into nearly pure carbon by slow combustion, as charcoal.

Carbozy'mase (ζύμη, leaven), an enzyme occurring in yeast.

Car'cerule, Carcer'u'lus (carcer, prison), (1) Desvaux’s name for a dry, indeliscent, many celled, superior fruit, such as that of the lime-tree; (2) it has also been employed for the sporangia of some Fungi; carcer'ul'ar, carcerula'ris, having a carcerule fruit.

Carcino'des (καρκινος, cancerous disease) and Carcino'ma (καρκίνωμα, cancerous ulcer) have been used to denote Can'ker and kindred diseases.

Carcith'ium † or Carcyth'ium † (καρκίνοθαι, to become entangled, as roots), Neckier’s word for Myc'elium; Carcy'tes, † = Myc'elium.

card'inal (cardinalis, principal), applied by Malinvand to those species which cannot be reduced; Card'inal-grade, points of temperature, (a) lowest, (b) optimal, and (c) highest, at which vital functions can be performed (Kirchner).

Carene’ (Fr., Carène) = Car'ina, keel; has been used for the keel or midrib in the leaves of grasses.

Carice'tum, a plant-association of Car'ec (Warming).

Caricog'raphy (Car'ec, Carici, γράφη, writing), a treatise on Cyperaceæ, sedges, from the genus Car'ec, the largest in the order; Caricol'ogist (λόγος, discourse), a writer on sedges.

Car'ies (Lat., rottenness), putridity, decay.

Carí'na, (Lat., keel); (1) the two anterior petals of a papilionaceous flower, or similar organ; (2) the keel of the glume of grasses; (3) the principal nerve of a sepal; cari'nal, relating to the keel in aestivation when the carina includes the other parts of the flower; ~ Canal’, in Equisetum, a water canal on the inner side of the xylem, opposite a ridge on the surface of the stem; carina'tis, that side of the fruit of Umbrelliferae which represents the carina, or principal nerve of the adherent calyx; cari'inate, carinda'tus, keeled; carina'to-plic'at'tus, plaited so that each fold resembles a keel, as the peristome of some Mosses.

Cariop'side, Cariop'sis (καντων, a nut; ὀίκος, resemblance), a one-celled, one-seeded, superior fruit, with pericarp united to the seed; the fruit of cereals; cariopsid'eous, having a cariopsis as fruit, also spelled Caryopsis.

car'iose, cario'sis, car'ious, decayed; cario'so-can'cellate, used of Lichens becoming latticed by decay.

Car'mine (Mediaeval Lat., carmenius), the purest red pigment obtainable, without admixture of blue or yellow.

carna'tion, (carnatio, fleshiness), flesh-coloured. [Wheat ear Carnation is a monstrous state of that flower with multiplied bracts.]

carn'eous, carneus (Lat., of flesh), flesh-coloured; Carniv'orism, the condition of insectivorous plants (Bailon);

Carniv'orophyte (φωσίπ, a plant), a carnivorous or flesh-digesting plant; carniv'orous (voro, I devour), flesh-eating; applied to those plants which digest insects; Carno'sitas (Lat.), fleshiness; carno'ose, carnous, car-no'sus (Lat.), fleshy, pulpy; Ca'ro (Lat., flesh), (1) the fleshy parts of fruits; (2) the tissue of some Fungi.

Car'o'tin, (1) the red colouring-matter of chromoplasts; name from Dau'cus Carota, Linn.; pl. Car'o'tins; (2) a group of red and yellow colouring-matters (Czapek); also styled Caro'tinoids (είδος, resemblance) (Tswett).
Caroubin, a carbohydrate first observed in the Carob; Caroub' inase, a hydrolytic enzyme formed during germination in seeds of Ceratonia Siliqua, Linn.; French, Caroube.

Carpag'elium ✦ Carpag'elus ✦ (καρπός, fruit; ἄνθος, not manifest) = CREMOCARP.

Carp, a suggested abbreviation of Carp'el, Carp'elium (καρπός, fruit), a simple pistil, or element of a compound pistil, answering to a single leaf; a female sporophyll; carpel' lary, carpelle'tris, carp'icns, relating to a carpel; ~ Disk, Williamson's term for the ovuliferous expansion in Williamsoniana; carpel'late, possessing carpels; carpel'loidy (εἴδος, resemblance), the change of a floral leaf into a carpel (Worsdell); carpel'lot'ax'y (τάξις, order), the arrangement of carpels in the fruit.

Car'phosphore (κόρφος, a scale), a plant whose seeds are disseminated by means of a scaly or chaffy pappus (Clements).

Carpid', Carp'idiurn (καρπός, fruit) = diminutive of CARPEL; Carp'iurn, (1) the oogonium modified by fertilization, which remains as an envelope around the embryo; (2) ✦ = CARPEL; Carp'oas'sci (ἀνθός, a wine-skin), the more complex Alcyonaceous Fungi; all, except the Exoscaceae (Kerner); Carpocep'h'alum (κέφαλη, a head), the sporogonal receptacle of the Marchantieae (Campbell); Carpocep'o'nium (κλωνία, a young shoot), "a free case or receptacle of spores found in certain Algae" (Lindley); Carpo'derm'is (δέρμα, skin), Bischoff's emendation of PERICARP; Carpo'des, Carpo'dium, pl. Carpo'dia, abortive carpels, as in Tylp'tha; Carp'ogam (γάμος, marriage), the female organ in a procarp, producing a cystocarp; Carp'ogamy, the process itself; carpog'enic, carpog'enuous (γένος, race), producing fruit; in Florideae, applied to special cells of the carpogoni; Carp'ogone, Carpog'o'nium (γονή, offspring), (1) part of a procarp of carpogenous cells resulting in a sporocarp after fertilization; (2) in Ascomycetes = ARCHICARP; carpo'gon'ial, relating to a carpogonium; Carpogoniid'ium (+ GONIDIUM), suggested by Svedelius as an emendation of CARPOSPORE; Carp'o'graphy (γράφω, I write), description of fruits; Carp'olite, Carp'olith (λίθος, stone), a fossilized fruit, or cast, found in the coal measures, probably of gymnospermous origin; Carp'ol'ogist, Carp'o'logus (λόγος, discourse), a specialist in fruits; Carp'ology, classification of fruits; Carp'o'ma ✦ "a collection of spermangia" (Lindley), i.e. a compound sporocarp; Carpoma'nia (μανία, frenzy), a disease of grittiness in fruit; Carp'oma'ny, pistillody, or substitution of pistils for stamens; Carpomorp'h'a ✦ (μορφή, shape), apothecia of Lichens, resembling true fruits.

Car'pon (καρπός, fruit), in Greek compounds = fruit; Carp'ophore, Carp'ophor'ium (φορέω, I carry); (1) the stalk of a sporocarp; (2) that part of the receptacle which is prolonged between the carpels as a central axis, as in Ceramium; (3) used by Fayod as inclusive of stipe, pileus and lamellae of Fungi; Carp'ophyll, Carpophyl'lium (φύλλον, leaf), synonym of CARPEL; Carp'ophytes (φυτής, a plant), Panerogams; adj. carpoph'ylic; ~ Fun'gi, Clement's term for Fungi which produce Conidia; Carpopod'iurn (ποδίurn, an elevation), fruit-stalk; Carpopto'sis (πτώσις, falling), abnormal falling of the fruit; Carp'osoma (σώμα, body), the fruit-body of Fungi; Carp'osperm (σπέρμα, seed), the impregnated oosphere of Algae; Carp'osphere (σφαίρα, a sphere), the oosphere of Algae before impregnation (Bennett and Murray); Carp'osporan'gia (σπόρα, a seed; ἄγγειον, a vessel), differentiated sporangia in the cystocarp of Rhodophyceae; Carposp'o'reae, one of Cohn's, also Sach's, main divisions of Thallo-
Catabolism

phytes, of plants which produce spore-fruit as the result of fertilization; Carp'ospore (σκόρπα, a seed); (1) a spore; (2) a spherical uninuclear spore formed in a sporcarp, arising from the swollen tips of branched filaments resulting from the fertilization of the carpogonium; (3) used by Clements for a plant possessing chaffy pappus; adj. carpospor'ic; Carp'o-stome, Carposom'ium (στόμα, the mouth), the opening in the cystocarp of some Algae; Carp'o-strotes, -ae (στρώτες, spread), plants whose distribution is effected by fruits (Clements); Carpo'trop'ism (τροπή, a turning), the movements of fruits before or after pollination; adj. carpotrop'ic; Carpozy'gote (+ Zygote) = Zygospore.

Carr, an association of scattered trees and shrubs progressing from fen to scrub (Tansley); Fen ~, ultimate stage of fen formation; Swamp ~, occurs on edge of water as a Swamp-wood.

Carragheen Moss, chiefly of Chondrus crispus, Ag.

Carth'amine, red colouring-matter from flowers of Carthamus tinctorius, Linn.

cartilag'inous, cartilag'in'cus (Lat., gristly), hard and tough, as the skin of an apple-pip.

Carunc'le, Carunc'ula (Lat., a little piece of flesh), a wart or protuberance near the hilum of a seed; carunc'ulare, caruncula'tus, possessing a caruncle; caruncula'tris = carunculate.

Caryog'am'y (κάρυ γ'αμ', a nut; γάμος, marriage), the fusion of male and female nuclei; adj. caryogam'ic; Caryokine'isia or Caryocene'sis (Crozier) = Karyokinesis; nuclear division; caryolog'ic (λόγος, discourse), relating to the nucleus; caryolyt'ic (λυτικός, able to loose), relating to nuclear dissolution; Cary'o-mi'tome (+ Mirrom), the chromatin portion of the nucleus.

caryophyll'a'ceous, -ceus, relating to the Caryophyllaceae; caryophyll'e'ous, -lous, used of a corolla having petals with a long claw as in Dianthus Caryophyllus, Linn., whence the name; caryophyll'a'tus, = the same.

Car'yoplasm (κάρυον, a nut = nucleus; πλάκα, mouled), Vuillemin's term for the plasma of the nucleus; carypsid'eus (Mod. Lat.), like a Cariopsis; Caryop'sis (ψίς, resemblance) = Cariopsis; Caryorhex' y (ῥήξ, a breaking), the loss or dissolution of a nucleus; Car'yosomes (σώμα, the body), the constituents of the nucleus (Vuillemin).

cascarill'us (Lat.), the colour of the inner bark of Cascarailla (Heyne).

Cas'e'in, see Plant-casein.

Caspa'trian Dots, markings on the cell-walls of the endodermis of Dianthera; they are named after R. Caspary.

Casque = Galea.

cassid'e'ous, -cus (cassis, a helmet), helmet-shaped, as the upper sepal in Aconitum.

cas'sus (Lat., empty), empty, as an anther destitute of pollen.

casta'neus (Lat.), chestnut-coloured.

cast'ing, prematurely shedding leaves, or fruit.

ca'strate, castra'tus (Lat., gelded), said of a defective part, as a filament without an anther; Castra'tion, in botany, (1) removal of anthers for artificial crossing; (2) the action of Ustilago, etc., on Lychnis and allied genera; divided into amphig'en'ous ~, transformation in either stamens or pistils; androg'en'ous ~, production of anthers; thelyg'ynous ~, production of pistils in male-host.

Casts, fossils showing the impressions of the structures whence their forms are derived; medul' lary ~, impressions of the internal cavities of Calamites, etc.

Cas'u'al (casualis, fortuitous), H. C. Watson's term for an occasional weed of cultivation, which is not naturalized.

cata'b'olic, (κότά, down; βόλος, a throw), adj. of Cata'b'olism, destructive metabolism of the protoplasm, or the formation of simpler substances from more complex, accom-
panied by a conversion of potential energy into kinetic energy; also spelt Catabolism; Catabolites, the products of Catabolism; cf. Heterobolites, Schizobolites; catad'ous, -ous (κάθως, a branch), deflexed; applied to certain species of Sphagnum; Catacle'sium † (κατάκλισις, a shutting up) = Dicclesium; Catac-or'lla (corolla, a little garland), a second corolla formed exterior to the true one; resembling a hose-in-hose flower; catad'r'ous (δράμος, course), Luerssen’s term when the first set of nerves in each segment of a Fern frond is given off on the basal side of the mid-rib, as in Osmunda; Catagen’esis (γενέσις, a beginning), retrogressive evolution, by loss of attributes or simplification of structure; catagenetric, relating to Catagenesis.

Cat'alone (deriv. from the next), an enzyme in fresh tobacco leaves (Loew). Catal'ysis (κατά, down; λύσις, a loosing), chemical changes effected by a substance which does not itself undergo change; ferment action; catalytic, modification of chemical force which causes catalysis; catametad'r'ous (+ metadromous) in Ferns, when they are sometimes catadromous and sometimes metadromous, which may occur in the same species; catapet'alous, -us, (πέταλον, a flower-leaf), where petals are united only by cohesion with united stamen, as in Mattea; Cataphyll, Cataphylla, pl. (φύλλον, leaf), the early leaf-forms of a plant or shoot, as cotyledons, bud-scales, rhizome-scales, etc.; in German, Niederblatter; cataphyllary, of the nature of the foregoing; ~ Leaves = Cataphylls.

Catapult Fruit; those fruits dispersing seeds or fruit-segments by the elasticity of their peduncles.

Cat'echin, a crystallizable constituent of catechu; Cat'echu, pr. Cat’eshoo, cutch, the heart-wood of Acacia Catechu, Willd., powerfully astringent from its rich tannin-contents.

cate'nate (catena, a chain), the coherency of Diatom frustules in a connected chain; cate'nulate, catenula'tus, formed of parts united or linked as in a chain.

Cath'edrus (κάθεδρα, a chair), a part growing between the angles of a stem.

Cath’ion (καθα, down + ion), an ion charged with electricity which migrates toward the cathode or negative pole (J. F. Smith); in physics the word is usually spelled “Cation”; cathodal, cathodic (δόδος, a way) = kathodic.

Cat’kin, (1) a deciduous spike, consisting of unisexual apetalous flowers; an amentum; (2) improperly used by J. E. Smith for the spikelet of Carex; (3) the male flowers of Cycads and Conifers are erroneously styled catkins; Cat'u'la (Lat., puppy), † a synonym of Catkin.

Cau’da (Lat.), a tail, any tail-like appendage; cau’date, caudatus, tailed.

Cau’dex (Lat.), the axis of a plant, consisting of stem and root; ~ de-scan’dens, the root; ~ Radi’eis, the root-tip; ~ re’pens † = Rhizome; caud’ici-contin’uus †, continuous with the stem, used of those leaves which have no articulation with the stem; caudiciform (forma, shape), like a caudex in form; Caudicle, Caudicula, the cartilaginous strap which connects certain pollen-masses to the stigma, as in Orchids.

caulescent, -ens (caulis, a stalk), becoming stalked, where the stalk is clearly apparent; Cau’dicle, Cau’dicule, Cauliculus, a diminutive stalk; (1) a small stem produced on the neck of a root without the previous production of a leaf; (2) the initial space between the radicle and the cotyledons of an embryo, now termed the hypocotyl; (3) the stipe of certain Fungi; caulicolous (colo, I dwell), applied to Fungi which live on stems; Caudid'ium, term proposed by Bower to express the leaf in the oophore generation; its
analogue in the sporophore generation is Caulome; cauliferous (zero, I bear), bearing a stalk; cauliform (forma, shape), having the shape of a stalk; Caulif'ory, the production of flowers from the old wood (C. Schimper); Cauliflower (+ Flower), hypertrophy of the flower-stalk, accompanied by defective flowers; caulig'enous (γένος, race), arising from a stem; caulig'rous (gero, I bear), borne on a stem; caul'inar, caulina'ris, caul'inary, caulina'rius; caul'ine, caul'tinus, belonging to the stem or arising from it; ~ Bund'les, vascular bundles growing acropetally with the stem, having no direct communication with the bundles which pass into the leaves.

Caul'is (Lat.), a stem; the ascending axis, restricted to the above-ground portion in its normal state; ~ delicuous'ens, † a stem which branches irregularly; ~ excursion'ens, a stem shooting straight upwards, having side branches, as in Abies; Caulocar'pic, caulocar'pous, caulocarp'eous, -por'ous (καύλος, stem; καρπός, fruit), bearing fruit repeatedly, as trees and shrubs; Caul'ode (elbos, resemblance), a portion of a Thallophtye which simulates a stem; caul'oid (elbos, resemblance), emulating a stem, as in Pithophora (Wittrock); Caulo'ma, † (1) the stem of a palm; (2) the stem-like portion of such Algae as Fuci; Caul'o'me, the stem as an abstract entity; the leaf-developing axis; Bower suggests its restriction to the sporophore generation only; Caul'o'mer (μέρος, a part), a secondary axis in a symposium; Ca'ulotax'is (τάξις, arrangement), the order of branches upon a stem.

caust'icus (Lat., burning), biting in taste, as Cayenne Pepper.

caverna'rius (caverna, a cave), growing in caves; Cavern'uli, the pores of such Fungi as Polyporus.

Cav'itus † (cavus, hollow) and Cav'us are given by Lindley as respectively the peritheciun and peridium of some Fungi; also Cav'us sup'erus, defined by him as the hymenium of certain Fungi.

Cecidi'o'gy (κατεδαύω, a gall; άγος, discourse), the science of galls and their origin; Cecidi'um, the galls produced by Fungi or insects, the consequence of infection being an abnormal growth.

Cell, Cell'u'a (Lat., a small apartment),
(1) an independent unit of protoplasm, strictly with a single nucleus, contained in a chamber of cellulose, etc., which originally was recognized and called cell, now Cell-wall; (2) the cavity of an anther, otherwise anther-lobes; (3) the cavity of an ovary or pericarp, containing the ovules or seeds; ~ Bun'dles, a band or bundle of similar cells, as the bast fibre in dicotyledons; ~ Cap, an appearance in Odogyonium, due to intercalary surface-growth; ~ Ker'nel = Nuclear; ~ Cont'ents, of two kinds, living or protoplasmic, and non-living, such as starch, fats, proteids, crystals, cell-sap, and the substances dissolved in it; ~ Div'sion, in free cell-division, several daughter-cells are formed in the cavity of the mother-cell; in ordinary cell-division, as a rule only two daughter-cells are formed, usually followed by a subsequent further division of each; ~ Family, a group of cells of common origin, a colony or coenobium; ~ Fib'res, the achromatic filaments which form the nuclear spindle in nuclear-division; ~ Form'a'tion, the construction of a new cell by reorganization of the protoplasmic energid, with or without division of the cytoplasm; ~ Fu'sions, cells united by absorption or perforation of transverse walls as Sieve-vessels; ~ Groups, associations of similar cells, as the sclerenchyma in the pulp of the pear, or in cork; ~ Mas'ses, when cells are united in all directions of space, not having necessarily any definite form; ~ Multipli'ca'}
tion takes place by the formation of two or more protoplasmic bodies out of one; ~ Nu'cleus, an organized structure within the cell, the active agent in division, usually spherical in form, and of higher refractive power than the rest of the cell-contents; ~ Plate, formed by the thickening of threads of kineplasm, marking out the future septa; ~ Rows, have the cells in contact by their ends, thus making a filament; ~ Sap, a watery solution of various substances, salts, sugars, alkaloids, and the like; ~ Surf'aces, where the cells form a single layer, as in some Algae; ~ Tis'sue, distinguished from vascular tissue by being made up of cells only; ~ Wall, a closed membrane, formed of cellulose, and a small proportion of mineral substances, originated by the layer of protoplasm which lines it, frequently thickened by secondary deposits; ~ Hinge ~ = Hinge-CELL; Prim'ord'ial ~, a cell previous to the creation of a cell-wall; Stalk ~ = Stalk-CELL.

Cel'la (Lat., storeroom), (1) Scopoli's name for the fruit of Couroupita, Aubl.; (2) † a form of peritheciurn in Fungi (Lindley); Cell'ase, an enzyme which reduces Cellose; cellif'erous (fero, I bear), bearing or producing cells; Cellobi'ose formerly Cel'lose, a sugar stated to have nearly the same composition as Cellulose; Cel' lul'in, Pringsheim's term for a modification of cellulose; ~ Gra'ins, bodies found in vegetative hyphae; Cellulo'sae, Corda's name for Spori'desm; Cel' lulose, (1) a carbohydrate, the chief organic base of the cell-wall; (2) Diatom valves composed of cellulose are termed cellulose, a synonym of CELLULAR; (3) an enzyme occurring in Poly'porus and Merulius which attacks woody tissues; Cel'luloses, a generic term for the carbohydrate group above mentioned; divided by chemists into sub-groups, as Adi pocel'luloses. (adéps, aditus, fat), consisting of cuticular tissues of leaves and fruits and of cork; Hemicel'luloses, all carbohydrates in the cell-wall which are not coloured blue by chlor-zinc-iodide, such as reserve-cellulose, etc.; Lignocel'luloses, lignin combined with cellulose, as in Jute fibre; Metacel'luloses, in Fungi and Lichens; the fungine of Braconnet; Paracel'luloses, the cellular tissue and epidermal cells of leaves; Pecto cel'luloses, composed of pectic acids and cellulose, such as the purified bast of Russian flax.—Other modifications are named but not characterized by Messrs. Cross and Bevan in their work "Cellulose," 1895, as Cuto-, Hydr'a-, Hydr'o-, Muc'o-, Nitro-, Pseudo-celluloses. Fungus-cellu lose = Chick; Reserve ~, cellulose which is stored up as a food-supply; cel'llulosi'c, composed of CELLULOSE; Cellulo'side, a mixture of cellulose and pectose, composing the primitive cell-wall (Green); cellulo'so-plic'ate, folded so as to form small cells (Phillips).

Cement'-disk, the reticulum in Orchids.

Cement'ation, union of the membranes of hyphae by a slip of cementing substance, concrescence; in German, Verklebung.

Cenan'th' y (κενός, empty; ἄρθος, a
Cephalophorum

flower); suppression of the stamens and pistils, leaving the perianth empty; adj. cen'an'thous.
ceno'biar, cenob'id'neus cenobia'naris, Ceno'biun; = COENOBIIAR, etc.
cenogeneti'c (kaufs, recent; γενέτηρ, a parent), secondary (Croziers); cf. CAENOGENETIC.
Cen'ser-action, used for such capsules as partially open by valves, the seeds being gradually shaken out by the wind, as in Papaver and Cerastium (Kerner); Cen'ser-holes, apertures in the capsule, as in Campanula.
cen'tholious (centum, a hundred; folium, a leaf), literally having a hundred leaves; actually, more than can be readily counted; Cent'i- metre, Centimetre, 0:3937 of an English inch, roughly, two-fifths.
cen'tonate (cento, patchwork), used by F. N. Williams for the blotched leaves of Hieracium.
cen'tral (centrum, the middle), (1) relating to the centre of a body; (2) applied by Praeger to those plants which are distributed centrally, and die out towards the extremities of a country or island; ~ Cell, of the archegonium, that in the venter from which the ooosphere, and ventral canal-cell arise; ~ Cord, a series of cells in the leaves and other parts of Mosses, which simulates a vessel; ~ Cyl'inder, in stems and roots the portion within the endodermis; Cent'rac'h (dρχ), beginning, solid xylem, protoxylem elements being in the centre (Lang);
Centraxo'nia (dρω, an axle) = SYNGRAMME; ~ Cent're, in Diatoms, the middle point of the per valvar axis; cent'ric, in the middle; centrif'ugal (fugo, I flee), tending outwards or developing from the centre outwards; Cent'riole, Boveri's term for CENTROSOME; centrip'etal (peto, I seek), developing towards the centre from without; Centro'gen'esis (γενεσις, beginning), the rotate or peripheral type of form assumed by plants (L. H. Bailey);
adj. centrogen'i'c; cf. DIPLEUROGENESIS.
Cent'ron (κέντρων, a sharp point), in compounds = Spur.
Centronu'cleus (centrum, the middle + NUCLEUS), a nucleus whose centrosomes are active during division and intranuclear (Olive); Cent'rosome (σωμα, body), minute bodies believed to have directive influence in nuclear division; the central particle of the centrosphere; Cent'rospheres (σωμα, a sphere), two small colourless bodies near the nucleus, imbedded in the cytoplasm, having a centrosome in each.
Cent'rospheres, -ae (κέντρων, a spur + Spore), plants having spurred fruits (Clements).
Centrostig'ma (centrum, the middle; στύμα, a point) = SYNSTIGMA; cen troxyl'ic (ξύλον, wood), referring to Centrox'yly, centrifugal primary woody structure (Van Tieghem); Cent'rum (Lat.), the centre of a solid body.
Cent'ury (centuria, a hundred), in sets of dried plants, each hundred is styled a century.
cepa'ceous, -ceus (cepae, an onion), having the taste or smell of garlic; alliaceous.
Cephalanth'ium ✤ (κεφαλή), a head; ἄνθος, a flower), the capitulum or head of Composites; anhodium; Cepha'lium, a woody enlargement at the apex of the stem in some Cacteae, from which the flowers appear; Cephalization, the simplification of floral elements; cephal'oidine, forming a head (Leighton);
Cephalo'dium, (1) a knob-like shield, as in the genus Scyphophorus; (2) the capitulum of Composites; (3) peculiarly shaped, branched or convex outgrowth of a Lichen-thallus, in which algal cells are situated; (4) a synonym of Tubercu-lum; cephal'oid, cephaloid'eous, -deus (eidos, resemblance), capitate; Cephal'o'niun Gall, a sac-like gall, joined to the leaf by a narrow neck (Kerner); Cephalop'horum (φαρ'ω,
I carry, (1) the receptacle, or (2), the stipe of some Fungi.

cerae'ceous, -eus (cereus, Lat.), waxy, (1) in appearance, or (2) colour, that of unbleached wax.

Ceramid'ium (κεραμίu, a jar), synonym of Cystocarp.

Cer'asa, a gummy exudation from plum and cheery trees, swelling in water but not dissolving; the name is from Prunus Cerasus, Linn.

Ceratench'yma (κέρατον, a horn; χύμα, poured in), the tissue of effete sieve-tubes which becomes horny in texture; Cera'tium, a long, slender, one-celled, two-valved, superior fruit, as in Hypecoum, "capsula siliquiformis" Ceratoma'nia (μανία, frenzy), monstrous production of horn-like or hooded structures in the flower.

Cer'atrin, the better principle of "Iceland Moss," Cetraria islandica, Linn.

Cercid'ium (κερκίδιον, a small comb), the mycelium of some Fungi.

ce'real, cere'al(is) (Ceres, goddess of agriculture), applied to any Gramineae whose seeds serve as food;

Cere'alia, corn-plants generally; Ce'reum, Cé'rium, Ce'rio = Cariopsis.

cer'ebroform (cerebrum, the brain; forma, shape), having an irregular brain-like appearance, as the kernel of a walnut.

cer'iferous (cera, wax; ferre, I bear), wax-producing; cere'nius (Lat.), the colour of yellow wax.

Ce'rin, Ce'rine (cera, wax), a substance stated to be a constituent of cork.

cernuous, cern'nis (Lat.), nodding, applied to such flowers as Narcissus, or Coltsfoot when in fruit.

cerus'satus (Lat.), white as though painted with white lead.

cerv'ine, cer'visius, cerv'ic'olor (cereus, a stag), dark tawny colour.

Cerv'ix (Lat., the neck) = Rhizome.

cesi'ous (cesaceous, the grey of the eye), blue-grey, usually spelled caesious.

cespiti'ous (caespiticicus, made of turf), pr. cespitish'us; cesp'itous, pertaining to turf, or growing in tufts; cespit'ulose, somewhat tufted; cf. Caespes.

Cet'rarin, a principle from several species of the genus Cetraria.

Chae'ta (χαετή, a bristle), the slender sporophore of Mosses, the seta;

Chaetoplank'ton (+ PLANKTON), plankton composed of Diatoms with awn-like processes, as Chaetoceras (Cleve).

Chaff, (1) small membranous scales, degenerate bracts, in many Compositae; (2) the outer envelopes of cereal grains; chaff'y, paleaceous.

Chain-gem'ma (gemma, a bud), in Fungi, having the form of a septate conervoid filament, the segments of which are capable of growth; termed also Sprout-gemma.

Chala'za (χάλαζα, a small tubercle), that part of the ovule or seed where the nucellus joins the integuments; it is the base of the nucellus and is always opposite the upper end of the cotyledons; cha'la'ai, pertaining to the Chalaza; cha'la'zian, or cha'la'zinous, like a Chalaza, or pertaining thereto; Chalaz'ozgams (χάλαζος, marriage), plants which are fertilized through the chalaza, and not the foramen, as Casuarina, and many Cupulifereae; cf. Porogams; Chalazog'amy, fertilization by the chalaza; adj. chalazog'am'ic.

Chal'icad (χάλικαδ, gravel + AD), a gravel slide plant; Chalico'dium, "a gravel slide formation"; Chalicod'oph'ilus (φιλέω, I love), "dwelling in gravel slides"; Chalicodi phy'ta (φυτά, a plant), "gravel slide plants" (Clements); Chalico dophy'ta (φυτα, a plant), gravel plants; Chaliciphy'tia, gravel plant formations (Clements).

Chalk-glands, multicellular glands which deposit calcareous matter, as in some Saxifrages, the secretion escaping through a special channel, the water-pore; ~ White, pure white, cretaceous.

Chalyb'eus (chalybeius, of steel), steel-grey, or lead-coloured.

Chamae'phytes (χαμαι, on the ground;
chemonastic

φύτον, a plant), plants whose resting-buds are but slightly above the ground (Raunkiær); adj. chamae-
lyphyt'ic.

Cham'ber-flu'íd, the Kammerflüssigkeit of Crato, comprising cell-sap and enchylema between lamellae of
protoplasm.

Cham'bered-fi'bres, fibres which have become septic and seemingly multi-
cellular, as in the secondary wood of Dicotyledons; ~ O'very, when the margins of the carpels project into
the interior to form incomplete longitudinal dissepiments, the ovary remaining unilocular.

Cha'nar Stepp'e, regions in Argentine predominating in Gourliaceae and other Leguminosae and Compo-
sites (Grisebach).

chan'elled, hollowed out like a gutter,
as in many leaf-stalks.

Chap'let, a series of objects arranged
like beads on a string, as the spores of Cystopus (Crozier).

Chap'paral(Span.), dry shrubby regions,
the plants usually leafless in summer.

Characé' tum, an association of plants
of the genus Chara; Char' acine, a
species of camphor from terrestrial
Algae, as Palmella, Oscillaria, etc.;
it smells like Chara, hence the
name; charací' nus Chara-like,
composed of a single, or a few
parallel tubes.

Char'acter (Lat., a mark), the techni-
cal difference whereby allied forms
are distinguished, as ordinal, generic,
specific, and so on.

Chart Quad' rats, metre-squares of
vegetation, each plant being accur-
ately plotted on the chart (Clements).

charta'ceous, -ceus (charta, paper +
aceous), papery.

chasmanth'é ric, chasmanth'é roux (χάσ-
μα, a chasm; ἄνθηδοτ, flowering),
in cleistogamous flowers, when the
anthers open, and liberate their
pollen; Chasmanth'é ry, partial cleis-
togamy, when the stamens are es-
serted from the otherwise closed
flowers(Knuth); Chasmocho'mophyte
(χάσμα, an aggregation; φύτον, a
plant), a plant of a rock-crevice;

Chas'mocleistóg'am y (+ Cleisto-
gamy), the condition of possessing
both cleistogamic and chasmogamic
flowers (Delpino); adj. chasmocleis-
tog'amous; Chas'mo-dichóg'am y (+
Dichogamy), when cleistogamic
flowers are accompanied by others
which are chasmogamic (Delpino);
chasmos' gam' ic, chasmog'amous (χάμος,
marrige), pollination effected
during expansion of the floral envelope;

Chas'mog' amy, the opening of the
perianth at the time of flowering, as
opposed to cleistogamic; Chasmo-
pet'al'y (petalum, a flower-leaf), per-
sistent opening of the floral en-
velopes: cf. Cleistopetal'y;

Chas'mophyte (φύτον, a plant), a
plant which grows in rock-crevices
(A. F. W. Schimper).

Check, an experiment or observation
for confirmation; frequently the
word “Control” is used for this.

cheilod'romous (χείλος, lip; δρόμος, a
course) = Craspedodromous; Chei-
loma'nia (μαλακή), frenzy), Morren’s
term for the doubling of the lip in
Orchids, as in Orchis Morio, Linn.

cheiroste'monous (χειρος, hand; στήμον,
thread), (1) with five stamens united
at the base (Heinig); (2) relating
to the genus Cheirostemon.

che'l' ate (χαλήθη), a hoof or claw, “with
two cleft claws”; cf. Bifurcate
(Heinig).

Chemaux'iam (chem + αθην, growth),
icentment to growth by certain re-
agents or other compounds; Che-
miotax'is = Chemotaxis; Che'mo-
aesthe'sia (ασθηνης, perception by
sense); term employed by Czapek
to express the capacity of a plant-organ
to respond to chemical stimuli;

Chemokine'sis (κινησις, motion), the
action of zoopores induced by
chemical attraction; Chemol'yisis
(λυσις, a loosing), chemical solu-
tion or analysis; Chemomorph'o' sis
(μορφωςις, a shaping), an alteration
in shape caused by some compound,
as galls by insect puncture; chemo-
na'stic (ναστας, pressed close), cur-
vature due to chemical stimuli; 
Chemosyn'thesis (σύνθεσις, composition), the composition of carbohydrates by chemical forces (Mac-dougal); Chemotax'is (ταξίς, order), the attraction of bacteria, anthero-zoids, etc., by certain substances; sometimes spelled Chemiotax'is; adj. chemotact'ic; neg'ative Chemotax'is', repulsion instead of attraction, = Apochemotaxis; Chemotrop'ism (τρόπος, a turning), the condition of Chemotaxis (Miyoshi); Chemozo'ophobe (φόβος, I fear), a plant which defends itself against insect- or animal-attack by tannin, raphides, etc.; adj. chemozooph'obous.

Chera'dad (χέραδος, silt, + AD), a wet sandbar plant; Cherad'um, a sandbar formation; Cheradophil'us (φιλέω, I love), dwelling on sandbars; Cheradophy'tae (φυτών, a plant), sandbar plants (Clements).

Chersi'mus (Lat., dyed with Chermes), crimson.

Chersad (χέρσας, dry land + AD), a plant of a dry waste; Chersi'um, a dry waste formation; Chersoph'i'lus (φιλέω, I love), dwelling in dry wastes; Chersophy'tes (φυτών, a plant), dry waste plants (Clements).

Chila'rium (χίλαριον, a lip), the boundary of a small pit in the testa of Phaseolus, of two movable valves, which by hygrometric movements cause the rupture of the testa; chil'lary Lay'er, the investment of the seed which contains the chilarium.

Chi'lding, proliferous.

Chime'ra (Lat., a monster), the product from a bud with mechanical coalescence of two parent-forms (Winkler); pericli'nal ~, = Gra'ft-hy'brid, as Cytisus Adami (Keeble and Arm-strong).

Chimio'sis (χειμά, that poured; μελώσις, reduction), the alteration in time of action of digestive fluid in a carnivorous plant (Massart).

Chimi'o'tropism = Chemotropism.

Chim'ney, applied to protrusion of epidermal cells round the guard-cells of a stoma, producing a long respiratory cavity.

Chimonocho'rous (χειμών, winter; χλωρός, pale green), applied to plants whose thin herbaceous leaves persist through the winter (F. Ludwig); Chimonocho'phious (φιλέω, I love), the chief development taking place in the winter season (F. Ludwig); Chimopel'agic (πέλαγος, the sea), Forel's term for plankton found on the surface only in winter.

Ch'i'na (Ital.), (1) a synonym for Quine'ne; (2) the bark of Cinchona, supplying valuable febrifuges and tonics.

Ch'i'na-grass, the fibre from Boehmi'eria nivea, Gauchich.; it was formerly confounded with Ramie; cf. Kew Bulletin, 1898, p. 209.

Chinin' = Quinine.

Chio'nad (χίων, snow + AD), a snow-plant; Chioni'um a snow-plant formation (Clements); Chionoph'i'lus (φιλέω, I love), F. Ludwig's term for the winter-leaves of Helleborus foetidus, Linn.; Chionoph'obous (φόβος, fear, dismay), the same author's word for the summer-leaves of the same plant; Chio'nochobe, a plant shunning snow; Chionophy'ta (φυτών, a plant), snow-plants; Chio'no'phyti'um, a snow-plant association (Clements).

Ch'i'tyronym (χειτόνιμον, a name), a manuscript name; Chi'rotypes (τῶτος, a type), the specimen on which a manuscript name is based.

Chiropteroph'i'lae (Chiropteran = bat, φιλέω, I love), plants which are fertilized by bats; adj. Chiropteroph'ibous.

Ch'i'tin (χίτών, coat of mail), a substance allied to horn, which forms the protective covering of many insects such as beetles, identified as being of the same composition as Fungus-cellulose.

Chive, (1) an old word for An'ther; (2) sometimes confined to the Fila'ment; (3) an offset of a bulbous plant.

Chlamy'd'ia, (1) bud-scales; (2) floral envelopes.
Chlamydogonidium

Chlamydogonid'ium (χλαμύδος, χλαμύδος), a cloak; γον', race, offspring), unicellular gemmae of certain Fungi, which are relatively large and thick-walled, and adapted for a period of quiescence before vegetating; Chlor'amylite

Chlamy'dad, applied to the type of Alga represented by Chlamy'dononas (F. Blackman); chlamydomon'adine, the phase of algal growth resembling that genus; Chlamydomone'tum, an association of Chlamydomonas and Diatoms, Chlamy'dospore, a spore having a very thick membrane.

Chl'eadad (χλε'δος, rubbish + AD), a ruderal plant; Chledi'um, a waste formation; chledo'colus, i.e. chledo'cola, inhabiting wastes; chlodoph'ilus (φιλέω, I love), dwelling in waste places; Chledophy'ta (φυτάν, a plant), plants of waste places (Clements).

Chlor'am'ylite (χλαρά, grass green; ἐφυρόν, fine flour), Belzung's term for chlorophyll granules derived from the transformation of starch; chloranth'ous (εφθος, a flower), with green, usually inconspicuous flowers; Chlor'anthy (ἐφθος, a flower), the change of all or most parts of the flower into leaf-like organs; frondescence; chloras'cens, green, inclining to yellow; Chlorench'yma (ἐχρυμα, an infusion), assimilating tissues; Chlor'in, used by Kraus to denote the green constituent of chlorophyll; Chlo'ria, a plant deficient in chlorophyll, xanthine and carotin; chlori'rus, yellowish-green; Chlor'is, used as the title of a work on the plants of a district; analogous to Flora; Chlor'ites, Arbanont's term for chlorophyllous plastids, further specialized as Endochlorites and Gymnochlorites; chloroch'rous (χρώα, complexion), having a green skin; Chlorocyp'eraeae, those Cyperaceae which have little sclerenchyma in the cortex, but much assimilatory tissue and numerous stomata (Plowman); Chlor'ocyst (κοστίς, a cell) a chlorophyll cell; Chlorofo'mine (φυκός, fucus, seaweed), a chlorophyll of a clear yellowish-green colour (Sorby); Chloroglo'bin (globus, a ball), the green colour-matter of chlorophyll, which has been separated from it in the form of minute globules (Tswett); Chlorogoni'dium (γονίδιον, offspring), the green gonidia of Lichens, as distinguished from the chrysochonidia; chlorogoni'mus (γόνυμος, productive), applied to the gonidial layer in Lichens; Chl'oroleuc'ite (λευκός, pale), Van Tieghem's term for chlorophyll granule, by Belzung restricted to those which are formed from protoplasm, albuminous; syn. Chloro'plastid (A. Schimper), Autoplast (A. Meyer); chloro'phae'us (φαιός, dun-coloured), yellow-green as the colour-matter of Algae; Chlor'o'phore (φόρεω, I carry), Schmitz's term for chlorophyll granule; a chloroleucite; Chlor'ophyll (φύλλον, leaf), the green colour-matter of plants; ~ Bod'y, ~ Cor'puscle, ~ Grain, ~ Gran'ule, a protid or plastid in the cells of plants, usually of a green colour; cf. Chloro'leucite, etc.; ~ Ve'sicles, chlorophyll granules; chlorophy'ceous, resembling or relating to the Chlorophyceae, or green Algae; chlorop'hylla'ceous (+ aecous), applied to cells which contain chlorophyll, in contra-distinction to those which do not, and are consequently colourless; Chlorophyll'an, a synonym of Hypochlorin; chlorophyllig'eron (gero, I bear), bearing chlorophyll, or containing it, etc.; Chlorophyll'line, the green principle of chlorophyll; Chlorophyll'in, Tswett's name for those constituents of chlorophyll which are fluorescent; cf. Metachlorophyllins, Xanthophyll'ins; chlorophyll'lose, containing chlorophyll; ~ Cells, those small cells in leaves of Sphagnum and other Mosses which contain chlorophyll; Chlor'oplast, Chloro-
plast'id (πλαστὸς, moulded), the plastids or granules of protoplasm which are of a green colour; Chromoplast'in, Schwarz's term for a proteid constituting the ground substance of the chlorophyll granule; Chloror'u'fin (νυσις, reddish), a reduced chlorophyll, the red pigment of Chlorophyceae, so named by Rostafinski; Chloro'sis, a disease, shown by loss of colour; chlorosperm'ous (σπέρμα, a seed), belonging to those Algae having green spores; chloro'tic, chloro'ticus, greenish in colour: Chlorovaporiza'tion (vaporatio, a reeking), a function analogous to transpiration, but proceeding only from the chloroleucites under certain lights (Van Tieghem).

Chomaph'yte (χωμα, accumulation; áπ, form; φυτον, a plant), ruderal plants (Simmons); Cho'mophyte, a plant growing on ledges or in fissures (Ottli).

Chon'driokonts, pl. (χονδρος, grain; κοντος, a pole) = Mitochondria, or Chromidia; Chon'driom, the entire number of chondriosomes in a cell; Chon'driomes, pl. a collective term for Chondriosomes; Chon'driomites (αλτος, a web), also Chon'driosomes (αωμα, a body), the same as Chon'driokonts; chon'droid (ελως, resemblance) applied to a Lichen medulla with the hyphae forming a solid axis; Chon'drome, granular masses in the fluid cell-contents (Schneider); cf. Linome.

Chord'a (Lat., a cord) pistilla'ris, the line of tissue between the stigma and the cavity of the ovary; chord'a'ceous ‡ (+ acceous), having the figure of a rope.

chordorrh'i'zal (χορδης, catgut; μις, a root), where the rootstock produces numerous flowering-stems one before the other from its sides (Syme), as in Carex chordorrhiza, Linna. f.

chore (χορεω, I spread abroad), a combining term to denote agent of migration (Clements).

Chor'ion (χοριον, a caul), (1) Malpighi's term for the pulpy matter which fills the young ovule, and is absorbed during development; (2) ‡ a carpel; Choriona'rius, ‡ = ἕταεροι.

Chorip'etalae (χωρηλ, separate; πέταλον, a flower-leaf), (1) proposed by Bessey for Polypetalae; (2) by W. R. M'Nab for Polypetalae and Incompleteae; chorip'etalous, -us (πέταλον, a flower leaf), having petals separate, polypetalous; chori'philoid (φελλας, cork bark), applied to the separated suberized cells and lenticels (Klebahn); choriphyl'ious (φιλλον, a leaf), having separate leaves, used of the floral members; chorisep'alous, -us (+ Sepal), with separate sepals, polypetalous; Chor'iisis, the separation of a leaf or phylloid member into more than one, dédoublément, doubling; collat'eral ‡, when the plane of separation is antero-posterior; par'al'lel ‡, the plane of separation lateral; chorisolepid'eus ‡ (λεπτος, λεπτος, a scale), when the scales of the involucrum of Composites are distinct from each other; chori'ristate, un-lined (Lindley); cf. Chorisisis; chori-stophyl'lous, -us (φιλλον, a leaf), separate leaved; Choriza'tion = Chorisisis.

Chortonom'ia ‡ (χοροτος, green herbage; νομος, law). "The art of making an herbarium."

Chre'sard (χρησις, use), the available water of the soil, the physiological water-content (Clements).

chromat'ic (χρωμα, colour), relating to colour; ‡ Sphere, the coalescence of the chromosomes after anaphasis; the nuclear membrane is formed round it (R. M. Davis); ‡ Thread, the filiform body in nuclear division, which breaks up into Chromosomes; Chromatid'ium, ‡ the colouring-matter of plants; Chroma'tin (Flemming), that portion of the nucleus which readily takes artificial staining, termed Nuclein by Strasburger; chromat'inic, relating to Chromatin; Chromatol'o'gy (λόγος, discourse), used by Sorby to
express the science of vegetable colouring-matters; Chromatolysis
(λωσις, a loosing), (1) Cavara's term for the condensation of nuclear chromatin in a homogeneous mass, which afterwards subdivides; (2) the solution of chromatin (Nēinect); Chromomere (μέρος, a part) = Chromosome; Chromatophile (φιλέω, I love), readily receptive of stain; easily colourable; Chromatophore (φορέω, I carry), a collective term for the various plastids, chloro-, chromo-, leuco-plastids; Chromatoplasm (πλάσμα, moulded), the protoplasm of the colouring and allied substances (Strasburger); Chromidium, (1) the gonidium of a Lichen, (2) pl. Chromidia, Hertwig's term for discrete chromatin granules derived from the nucleus (Wager); generative ~, those which replace the nucleus or can be reformed into nuclei; vegetative ~, those extruded for metabolism, or accumulated in nuclear-like structures; adj. chromid'ial; Chromidioecentrum (centrum, a centre), chromidia when grouped into a well-defined mass in the cell (Wager); Chromidiogamy (γάμος, marriage), fusion of chromidia (Wager); Chromidiosome (σωμα, a body), Minchin's term for Chromidium; Chromidiosphere (σφαιρα, a sphere), the same as Chromidio-centrum; Chromism, an abnormal colouring, as of leaves; Chromomblast, an error of some writers for Chromoplast; Chrom'mogen (γένος, offspring), applied to sundry colourless substances in plants, which by artificial oxidation or fermentation produce a colouring-matter; Indican is an example; chromogen'ic, chromogen'eous (γένος, offspring), colour-producing, as some bacteria; Chromo'molecute (λευκός, white), Van Tieghem's name for protoplasmic colour granules; Chromomères (μέρος, a part), granules susceptible of staining darkly in chromosomes; adj. chromomer'ic; chromop'arous (μαρκος, I produce), colour-producing, applied to bacteria

(C. Jones); chromoph'ilous (φιλεω, I love), employed for those nuclei which readily take up staining; chromoph'orous (φορεω, I carry), used of protoplasm which is itself coloured (C. Jones); Chromophyll (φυλλον, a leaf), any substance which colours plant-cells; Chromoplast (A. Meyer), Chromoplast'id (A. Schimper (πλάσμα, moulded), are synonyms for granules containing other colouring than chlorophyll; Chromosomes (σωμα, a body), fibrillar bodies of definite number formed during nuclear division, dividing by fission into new groups, and contributing to form the daughter nuclei; adj. chromosoma'li; Daughter ~, secondary or derived chromosomes; Chromospire (+ Spirem), the folds of the spirem in nuclear division (Dangeard); Chromula, colouring-matter of the plant, other than chlorophyll; applied especially to petals; Chromule, Sorby's term for any colouring-matter in plants.

Chro'mispor~ (χρόνος, time; σπόρα, a seed), a resting-spore; Chronisporangium(αγγείον, a vessel), the sac which produces chronisporae (Vuillemin); Chronizoospore (ζωδι, living; σπόρα, a seed), a microzoogonidium produced by Hydrodictyon, which rests for some weeks before germinating; also called Chron'tispor~ (Pringsheim); Chronotropism (τροπή, a turning), changes due to age, as the position of leaves.

croco'coid, resembling Chrocoecus; croco'coceous, allied to the same genus.

Chrocole'poid, (1) like the genus Chrocolepis; (2) consisting of yellow scales.

Chrysaloi'dea (χρυσαλαίς, a pupa; εἴδος resemblance), rolled up and folded up at the same time; wrapped up as an insect pupa or chrysalis.

Chryan'thine (χρυσός, gold; άνθος, a flower), yellow flowered; chry'sell'us, somewhat golden-hued; chry'seus, yellow as gold; chry'sites (χρυσίτης, like gold), gold-coloured; Chrysochlor'o'phyll (+...
Chlorophyll), according to Gaidukov, a constituent of Chromochrome; Chrysochrome (χρωμα, colour), Kleb's term for a characteristic pigment found in Chromulina Rosanoffi; chrysochrous (χρως, skin), having a yellow skin; Chrysonidium (γόνιον, offspring), a yellow gonidium of Lichens; chrysonimus (γόνιμος, productive), the layer of yellow gonidia in some Lichens; Chrysophan (φαινω, I show) occurs in Physcia parietina, De Not., etc., as gold-coloured crystals; also known as chrysophanic Acid; Chrysophyll (φάλλον, a leaf), a yellow colouring-matter from leaves; chrysophyllous, having Chrysophyll; Chrysorhamin, a yellow substance from unripe buckthorn berries, Rhamnus catharticus, Linn.; Chrysotanin (+ Tannin), a group of colouring-matters in plants, when oxidized giving rise to brown tints in autumn foliage; Chrysoxanthophyll (+ Xanthophyll), said to be a constituent of Chrysochrome (Gaidukov).

Chylocaulous, pl. (χυλαδις, juice; καυλαδις, a stem), plants with succulent stems, as Cacti (A. F. W. Schimper); adj. chylocaulous; Chylocaul'ly, the condition; Chylophyl'lae, pl. (φύλλαν, a leaf), plants with succulent leaves (A. F. W. Schimper); adj. chylophyl'ous; Chylophyl'ly, the condition.

Chymiferous (chymus, juice; fero, I bear), chymifer' a Vasa, ♦ Hedwig's term for an imaginary "sap-thread" rolled round a tube to form a trach' eid or spiral vessel.

Chytridio'sis, a disease due to Cladochytrium viticolum, Prunet.

Cic'atrice, Cicatriclea, Cicatrizes (Lat., a scar), the mark left by the separation of one part from another, as by the leaf from the stem; cicatrissatus, cicatriscose, cicatrices' us scarred or scarry; cicatriscial, relating to a Cicatrix.

Cicin' nus (κικωνος, a ringlet) = Cin'cinnus.

Ciench' yma (possibly, κιω, I go; εγχυμα, an infusion), a system of intercellular spaces (Köhler, tide Crozier).

Cil'la, pl. of Cil'ium (Lat., an eyelash), (1) Vibratile whip-like processes of protoplasm by which zoospores and similar bodies move; (2) the hair-like processes in the endostome in Mosses; (3) the marginal hairs of Luzula; cilia'ris (Lat.), like an eyelash, or short hair; cili'ate, cilia'tus, fringed with hairs; cilia'to-denta'tus, the teeth finely serrate, as if fringed; cili'iiform (forma, shape), resembling cilia; cili'iograde (gradus, a step), moving by means of cilia (Crozier); Cili'iola, secondary or diminutive cillum.

cimici' nus (cimez, a bug), smelling of bugs, as Coriander.

Cincho'a (genus), compounds, see China, Quinine, etc.; cinchona'-ceous (+ aceous), relating to Cinchona plants; Cinchonine, one of the alkaloids found in the bark of Cinchona; cinchonic, relating to the same genus.

Cin'cinnal, cincinnalis (Lat., curled), applied to curled inflorescences, as ~ Cyme, a cyme in which the successive flowers are on alternate sides of the pseudaxis; ~ Dichot'omy, a cyme in which alternate branches develop; Cinc' inus (Lat., a curl), applied to a uniparous scorpionoid cyme; the erroneous form Cin' cinnus is found in some writers.

Cinc'tus (Lat., girded), used of albumen when surrounded by an annular embryo.

Cinench' yma (κινεω, I move; εγχυμα, an infusion), laticiferous tissue; cinenchym' atous, possessing latex vessels.

Ciner'a ceous, -eus (Lat.), somewhat ashy in tint.

Cineras' cens (cinis, cineris, ashes), turning ashy grey; cinera'eous, -eus (Lat., ashy), the grey of wood ashes; cineric' ius, cineric' ious, -ius = ciner' esous.
between stem and root, the collum; (2) the connecting zone, girdle, or hoop of Diatom frustules.

Cinnabar (κινδυνόμαρ, a red pigment), (1) Dragon's blood, a resinous gum from Daemonorops Draco, blume, and other plants; (2) also the colour obtained from it, vermilion; cinnabarine, scarlet-coloured; cinnabarine, scarlet.

c'inamic, or cinnamo'mic, pertaining to cinnamon; cinnamo'meus (Lat.), cinnamon colour, a light yellowish brown.

Cijn, an old form of Scion.

Cionosper'meae (κίον, a column; σπερμα, a seed), plants whose ovules develop on a central, more or less columnar placenta, as Olacineae and Santalaceae.

cir'ca, in Latin compounds = round about.

cir'cinal, circina'llis (circino, I make round), involute from the tip into a coil; cir'cinnate, circinnatus, coiled into a ring or partially so; sometimes spelled cir'cinate.

Cir'cle, Migra'tion (migratio, change of habitation), movement of migration of plants from a parent individual or group (Clements).

Circula'tion (circularatio, a revolution), the streaming motion of protoplasm in cells; cf. Rotation.

circumax'ilis, circumax'ilis (circum, round; axis, an axle), surrounding a central axis which separates when the fruit splits open; circumcinc'tus (Lat.), girded round; Circumcis'sion (circumcissus, cut around), (1) Blair's term for ringing fruit trees; (2) cut round, as the apothecia of some Lichens; circumfer'en'tial (Lat., circumferentia), relating to the circumference; circu'mfor'al (flos, floris, a flower), applied to nectaries on the outer side of a flower, as in Euphorbia; Circumlat'eralism (latus, lateris, a side), the tendency in plant phylogeny to develop a circular arrangement of parts (L. H. Bailey); circummedul'larv (medulla, the spinal marrow), a proposed enenda-
tion of "perimedullary"; circumnu'tate (nudo, I nod), the movements of the growing points of plants round the axis; Circumnum'tation, the phenomenon of the apical portions of stem, tendril, root, turning to various quarters of the compass; circumpo'lar, round the pole, as of arctic or antarctic plants confined to high northern and southern latitudes; Circumposi'tio (positus, placed), a layer, or branch laid into the earth to root, whilst still connected with the parent stock; circumaciss'ile, circumaciss'iles, circumaciss'us (seindus, scissus, to split), delisising as if cut circularly around, as in the capsule of Anagallis; Cir-
muscript'ion (scribo, scriptum, to write), (1) the outline of any organ; (2) the definition of a form or group of forms, as of species, genera, orders; circums'piens (sepio, I enclose), surrounding, as a protection; circumspi'entia fol'iis, is used by de Candolle for leaves which surround the stem, as if to protect the young growth.

Circumvall'ation (circumvallatus, walled round), a method of layering, by ringing the stem and surrounding it with soil kept moist, while the stem continues erect.

cirrhate, cirra'tus, cirrh'a'tus, cirrh'a'lis (cirrus, a tendril), tendrilled, or assuming the functions of a tendril; cirrhif'erous (gero, I bear), producing tendrils; cirrh'iform, cirrhiform'is (forma, shape), apparently a tendril; cirrhig'erous (gero, I bear), cirrhiferous (Crozier); Cir-
rho'sit'as, the state of possessing tendrils; cirrh'o'se, cirrh'o'sus, cirrh'o'sus, (1) tendrilled, (2), with a wavy hair-point (Braithwaite); Cirrh'us, since Linnæus, used for a tendril, a filiform organ of attachment, modified from a leaf, stipule, or aborted branch.—The foregoing are frequently spelled cirrh'erous, cirr'hiform, cirr'ose, Cirr'us, etc. (from cirrus, a curl).

Cista'tula, Cis'tula (Lat., a little chest)
used for the apothecia of Lichens, which, globular at first, burst at maturity.

**Cistern**-**epiphyle** (+ **Epiphyle**), employed by A. F. W. Schimper for that class of epiphyle in which the roots are mere supports or altogether suppressed, and the entire nourishment takes place by the leaves.

**Clathrinarian**

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Cist'olith = **Cystolith**.

Cist'ome Cisto'ma (Mod. Lat. contracted from Cistostoma) (κιστα, a box; στόμα, a mouth), a membranous sac which was supposed to pass beneath the stomatic guard-cells; but the cells at the bottom of the stomatic cavity are destitute of cuticle.

Cistoph'orum (φοδεω, I carry), "the stipe of certain Fungals" (Lindley).

Cistula = **Cistella**.

Cis'tus Ma'qui, (Maqui, Corsican for thicket), a mass of mostly evergreen vegetation in the Mediterranean region largely composed of *Cistus* spp.

citrel'us (from *Citrus*, Linn.), somewhat yellow; cit'reus, lemon-yellow; citri nel'tus, yellowish; cit'ric Ac'id is abundant in lemon juice; cit'rine, citri'nus, lemon-yellow.

cladanto'ous (κλάδος, a branch; αὐτός, self; ὀλκός, a house), having the male inflorescence of a Moss on a proper branch; Clad'en'chyama ♩ (ἐγχυμα, an infusion), branched parenchyma.

cladino'sus, Nilsson's term for those heaths which have a substratum of Cladina lichen.

cladocarp'ous (κλάδος, a branch; καρπός, fruit), having a fruit terminating a lateral shoot in Mosses;

Clad'ode, a branch of a single internode simulating a leaf; Clado'dium, a flat expansion of the stem; Clado'dystrophy'sis (δυσ, bad; τροφή, nourishment), the perishing of branches;

Cladoma'nia (μανία, madness), an extraordinary exuberance of branches (Penzig); Clad'ophore (φοδεω, I bear), the portion of the stem in *Hircacium* giving rise to the branches of the

inflorrescence; Clad'ophyll, Clado'phyll'a (φύλλον, a leaf), (1) a branch assuming the form and function of a leaf, a cladode; (2) Cladophyll'ium, a cone-scale (Archangeli); Cladopt'o'sis (πτώσις, a fall), abnormal casting off of branches; Cladoscile'rieids (σκληρός, hard; εἶδος, resemblance), stellate bodies containing calcium oxalate in leaves and floral envelopes of *Euryale ferox*, Salisbury; cladosiph'o'nic (σιφων, a tube), having a tubular stele interrupted at the insertion of branches (Jeffrey).

cladospor'oid, L. Planchon has employed this to express likeness to Cladosporium, Link.

cladoste'mon'us (κλάδος, a branch; στήμα, a stamen), Hayne's term for semi-connate filaments in willows (Wimmer); Cladostro'ma ♩ (στέμα, something spread), a receptacle or growing-point covered with carpels, each of which has a free placenta.

Clamp-cells, (1) small semicircular hollow protuberances, laterally attached to the walls of two adjoining hyphal-cells, and stretching over the septum between them; (2) "the nipple-like cells by which an epiphytic root adheres to its support" (Heinig); ~ Conneo'tions, are the same.

Clap'per, the water-sac, or lobule of Hepaticae.

Clasileu'cite (κλάδος a fracture + Leu'cite), that part of the protoplasm differentiated in nuclear division to form the spindle and centrosomes or spheres when present (Dangeard).

Clasp'ers, Grew's term for tendrils.

Class, *Clas'sis* (Lat., a fleet), (1) a primary group of Orders, Dicotyledons for example; (2) ~ of Var'iates, a group all of which show a particular value falling between certain limits (Lock); **Classification**, arrangement under respective groups; taxonomy, from Class to Variety, or Form.

clathra'rian, the characteristic markings of the fossil Clathrina, now referred to Sigillaria.
cleft

clathrate, clathrated (Lat., latticed), latticed, or pierced with apertures; ~Cell = Sieve-tube; Clathrus (Lat., a lattice), a membrane pierced with holes and forming a sort of grating; Clathrophores (φόρεω, I bear). D. Don's term for the glands in the pitchers of Nepenthes.

Clausilus (clausus, shut), Richard's term for his macropodal embryo, when its radicle is united by its edges, and entirely encloses the rest (Lindley).

Clavate, clavatus (clava, a club), club-shaped, thickened towards the apex; clavellate, clavellatus, diminutive of the foregoing; Clavicule, Clavicula (Lat., vine-tendril), tendril, cirrhus; claviculate, claviculatus, furnished with tendrils or hooks; claviform, claviformis (forma, shape), club-shaped; clavillosus (Lat.), clubbed, or markedly club-shaped; Clavule, Clavula, the club-shaped sporophore in certain Fungi, as Clavaria; Clavus, the disease of Ergot in grasses, the young grain being malformed and club-shaped, from the attack of Claviceps purpurea, Tul.

Claw, the narrowed base of the petals in such plants as Dianthus; ~Hook, the petiole of a well-developed leaf which is transformed into a hook after the fall of the lamina (Goebel).

Cleft (pr. Cleet) of Diatoms, a small outgrowth of silica from the secondary hoops of certain Diatoms (Palmer and Keeley).

Cleavage (disyll.), (1) sporangial division by which sporangiospores and conidia are formed; either (a) progressive, or (b) complete (Harper); (2) in xylem by cell-division in wood-parenchyma, pith and medullary rays, resulting in formation of separate struids, sometimes followed by growth of meristem (Solereder).

Cleft, cut half-way down; ~ -grafting, insertion of a scion in a cleft made in a stock; Clefts, used by Sir W. J. Hooker for Lirellae.

Cleistanthe'ry (κλειστός, shut; ἄνθημα, flower), the anthers of a partially cleistogamous flower remaining inside and not exerted (Knuth); Cleistocarpus (καρπός, fruit), an ascosporangium, which is completely closed, the spores escaping by rupture, a cleistothecium; adj. cleistocarpic, cleistocarpous, applied to those Mosses whose capsules do not open by a lid; cleistogamous, cleistogamous (γάμος, marriage), with close fertilization, it taking place within the unopened flowers; Cleistogyamy, the condition described; Cleistogogene (γένος, offspring), a plant which bears cleistogamous flowers (Crozier); Cleistogy'eny, the bearing cleistogamous flowers; adj. cleistog'enuous; ~Psen'do ~; Hansgirg's term for an intermediate condition, the flowers being normal, but not opening, and pollination taking place within the closed perianth; Cleistopetal'ly (τέταρτον, a leaf), permanently closing of the floral envelopes, thus ensuring Cleistogamy; Cleistothecium (θηκή, a case), an ascocarp which remains closed till decay or rupture sets free the ascospores, a cleistocarp.

Clepsy'droid (κλεψίδρα, a water-clock; εἶδος, resemblance) Trace, a band of centrifugal xylem separating into halves, each having parenchyma and dying-out remains of centripetal xylem (Lang).

Cleist'ines (deriv. !), large parenchymatous cells in which raphides are frequently deposited.

Climacorhi'zae (κλιμακός, a ladder; πίθα, a root), Van Tieghem's term for Gymnosperms and all Dictyotyledons except the Nymphaeaceae, their root-hairs having an epidermal origin; climacorhizal, relating to the Climacorrhizae.

climatic (κλίμα, a climate), relating to climate; ~Fac'tors, the elements resulting in a stable plant formation due to climate.

cli'max (climax, from κλίμα, a ladder) Leaves, the most developed and complete leaves of a given plant; ~ Vegetation growth of mature age.
climbing, ascending by using other objects as supports.

Clinandrium (κλινάνθρο, a bed; ἄνθρ, ἀνθρός, a man), the anther-bed in Orchids, that part of the column in which the anther is concealed; Clinanthium (ἀνθρός, a flower), the receptacle in Compositae; Clinidium, the stalk supporting a stylospore.

Climb, inclination of the axis due to each unit bending, the axis making an angle to its original direction.

Clinium (κλίνω, I bend), (1) the receptacle of a Composite flower; (2) the sporophore of some Fungi; Clinode, a term proposed by Léveillé for the conidiophores of certain Fungi, as the Uredineae, etc.; cf. Sterigma; clinomorphous (μορφῆ, shape), when asymmetric organs are without definite relation to the horizon (Wiesner); Clinosporangium (σπόρα, a seed; γένος, a vessel), a synonym of Pycnidium; Clinosporie = Stylospore; Clíonestat = Klínostat; Clinotropéc (τρόπη, turning), used of an obliquely placed organ, which shows no vertical plane of symmetry (Wiesner); Clinotropism, the condition in question.

Clip, the seizing mechanism in the flowers of Asclepiads; Ger., Klemmkorper.

Clítochóre, -ae (κλιτός, a slope; χώρας, asunder), plants which are distributed by falling or sliding (Clément).

Clockwise, in the same direction as the hands of a clock; dextrorse.

Clonalrium (κλών, a little branch), the ripe, spiral-coated nucule of Chama; Clone, Webber's term for a bud individual.

Close Fertilization, fecundation by its own pollen.

closed, used of those fibro-vascular bundles in which all the pro-cambium cells become permanent tissue; ~ Bundles, as described, so that increase is prevented; ~ Fertilization = Close Fertilization; ~ Formations, when the component plants are so crowded that invasion by other species is very difficult (Clément); ~ Flowers are cleistogamic Flowers; ~ Nucleus, that of the higher plants.

Closing Membrane, the original unthickened cell-wall at the centre of a pit.

Cloister, Clóstrum (κλώστορ, a spindly), elongated cells, pointed at each end, frequent in wood.

clouded, when colours are unequally blended.

Clove, a gardener's name for a young bulb developed by the side of the mother-bulb, as in garlic.

Club, a pluricellular hair, one of the elements of the pulp of the orange or lemon fruit (Crozier); club-shaped, gradually thickened upward from a slender base, clavate; Club-root, malformation in Crucifers caused by Plasmodiophora brassicae, Woron.; Clubbing is a synonym.

Clusium, -on (κλούω, I dash against), an association of plants growing in flooded places (Clément); also spelled Clysi'um.

Cluster, (1) old name for raceme, as used by John Hill; (2) = Vascular Bundle; ~ Cusps = Aecidium; ~ Cystals = groups of single crystals; clustered, compactly gathered together, as the flower of Cuscula; ~ Gall, a gall with stunted axis and densely crowded leaf-like appendages (Kerner).

clypeate, clypeatus (clypeus, a round shield), buckler or shield-shaped; clypeastriformis (forma, shape), clypeolaris, clypeiform, clypeusformis, all denote shield shaped; clypeolar, clypeolate, somewhat shield shaped; Cypeus, a covering of the perithecia formed of mycelium, as in Cylpeospharia (Traverso).

Clysi'um, cf. Clusium.

Cniece'tum, an association of road-side weeds and Cnicus, whence the name.

Coacervate, coacervatus (Lat., heaped up), clustered.
coadnate, coadnatus (coadunatus, gathered into one); (1) an equivalent of ADNATE; (2) cohering; (3) connate.

coadnatus, cited by Lindley as equal to COADNATUS.

coaeta'neous (coetaneo; to be of the same age), existing or appearing at the same time.

Coag'ulase (coagulum, I cause to curdle), an enzyme which can precipitate starch in solution (Butler).

Coal-balls, calcareous masses in coal-seams containing fragments of fossil plants.

Coales'cence (coalesco, to grow together), the act of growing together; ~ of Cells, the absorption or disappearance of partitioning cell-walls, as in the formation of vessels; coal-es'cent, coalesc'ens, union by growth.

Coa'litio (coailitus, fellowship), the growth together of parts, as the coalescence of petals causes that, condition; adj. coailitus.

coarc'tate, coarctatus (Lat., pressed together), crowded together; Coarc'ture, Coarctu'ra, Grew's term for the neck or collarum, the junction of root and stem at the level of the ground.

Coat, the successive layers of a bulb; coat'ed, occurring in layers, usually of varying consistence, as the bark of a tree, the rind of fruits, etc.; ~ Bulb, a tunicated bulb.

cocax'ial (co for con, with, and axis, an axle), parallel with the axis, or having a common axis.

Cob, the spike of maize.

cobalti'num (Mod. Lat.), the colour of cobalt, a light blue, azure.

cob'webbed, cob'webby, entangled with fine filaments, arachnoid.

Coca'ine, an alkaloid from the leaves of Erythroxylum Coca, Lam.

Coc'ci, pl. of Coccus.

Coccid'ium (cocco, a kernel or berry) = CYSTOCARP; cocci'erous (ero, I bear), bearing berries.

co cosiform'is (cocillum, kermes; forum, shape), used by Koerber to denote Lichen spores shaped like the kermes, or insect which affords the scarlet dye from Quercus coccifera, Linn.; coccinell'tus, light scarlet in colour; coccin'eus, scarlet, with a tendency towards carmine.

coccochromat'ic (kôkos, a berry; χρώμα, colour), colour distributed in granular patches, as in some toms, cf. PLACOCROMATIC: w. coe'des, spherical granulations resembling pills; Coc'cogone, Cocco-go'nium (γονή, offspring), a propagative cell of the nature of a sporangium in Cyanophyceae; cocci'oid (eidos, resemblance), applied to amorphous colonies of propagative cells in Nostoc (Sauvageau); ~ State, the unicellular state of Algae (F. F. Blackman); Coc'colith (λίθος, stone), constituent plates of Coccospheres.

Coccoloba Associacion, an association in which the shrub Coccoloba uvifera is predominant.

Coc'cosphere (kôkos, a berry; σφαιρα, a sphere), spherical masses of protoplasmic origin, bearing coccoliths on their external surface, Coccosphaera leptopora, G. Murr. & Blackm.; Coc'cule, Coc'culum, a portion of a divided Coccus; Coc'cus, Coc'cum, (1) part of a schizocarp or lobed fruit; (2) also applied to the rounded bacteria.

Coc'hle'a (cochlea, a snail or spoon), a closely coiled legume; coch'lear, coch'lear'is; (1) spoon-shaped; (2) used of a form of imbricate aestivation with one piece exterior; coch'leariform, coch'leariform'is, spoon-shaped; coch'leate, coch'leatus, shell-shape, in the manner of a snail-shell; Cochlidiosperm'ata (σπέρμα, seed), seeds convex on one side, concave on the other, from unequal growth or anomalous structure.

cocks'eombed, fasciated (Crozier).

Cod = a seed pod; cod'like, follicular; Cod'ware, an old word for pulse.

Co'deine (kôdeia, a poppy-head), an alkaloid in the opium poppy.
Cohesion

Codidiophyllus (κώδων, a fleece; φύλλον, a leaf), when a leaf is covered with a woolly pubescence.

Co-dom'inant (+ DOMINANT), dominant in common with another species, neither preponderating.

Coelen'terate (κοιλάς, hollow; ἐντερον, a bowel), used by Bouger for the carnivorous habit of Nepenthes and Cephalotus; Coel'oblast (βλαστός, a bud), employed by Sachs for non-cellular Algae and Fungi; cf. APOTYPIUM; Coelone'mata, pl. of Coelone'ma, Myxogastres having a hollow capillitium; cf. STEREONE-MATA.

Coelo'ma, pl. Coelo'mata (κοιλάωμα, a hollow), Kuetzing’s term for the body of Vaucheria, etc.; an unseptate coenocyte.

Coelosper'mae (κολας, hollow; σπέρμα, a seed), plants whose seeds have albumen curved at the ends; coelosper'mous, coelosperm'us, hollowneeded; used for the seed-like carpels of Umbelliferae, with ventral face incurred at the top and bottom, as in coriander; Coenanth’ium (άνθος, a flower) = CINANTHUM.

COENO'BIUM.

Coenomone'cia (+ MONOECIA), polygamous plants, the same individual having male, and female flowers, as well as the normal hermaphrodite flowers; the condition is Coenomone'cism (Kirchner); coeno-p'o'dus = COINOPODUS; coeno'pterid (πτέρυς, a fern), resembling or allied to the Coenopteridae, Seward’s name for Palaeozoic ferns previously termed Botryopteridae; COENO'SPHERE, Dangeard’s term for COENO-CENTRUM.

Coerules'cens, coerul'eus = CAERULES-CENS, CAERULEUS.

coesi'us = CAESIUS.

Coesta'neous, coeta'neus, of the same age, existing at the same time; also spelled COETANEOUS.

Coeto'nium (κοτόνν, a bed-chamber), the outer glumes of a multifloral spikelet in grasses (Trinins).

Coffee'tus (Mod. Lat.), the colour of roasted coffee-berries, Coffea ar'a-bica, Linn.

cogen'er'ic, preferably CONGENERIC.

Cohe'rent, cohe'rens, cohe'ring (cohaerēc, I cleave to); (1) the act of COHE'-SION, the incorporation of one part with another, as the petals to form a tubular corolla; (2) adherent.

before fertilization and disappearing later; presumably nutritive, and possibly concerned in producing oily reserves in the oosphere.

Coenoclad'ia (κοινός, in common; κάδος, a branch), natural grafting, where branches have grown to gather; Coen'o'cyte (κούτος, a vessel), an aggregation of protoplastic units (energids) enclosed in a common wall, as in Vaucheria; coeno'cytic, of the nature of a coenocyte, non-cellular or multinucleate; Coen'o gamete (+ GAMETE), a multinucleate mass of protoplasm, whose individual nuclei are sexual elements (Stevens); Coenogen'esis (γένεσις, beginning), development by adjustment to the environment; cf. PALINGENESIS: —it is also spelled Caen-, Cain-, Cen-, Kenogenesis; Coenomoneoe'cia (+ MONOECIA), polygamous plants, the same individual having male, and female flowers, as well as the normal hermaphrodite flowers; the condition is Coenomoneoecism (Kirchner); coenop'o'dus = COINOPODUS; coeno'pterid (πτέρυς, a fern), resembling or allied to the Coenopteridae, Seward’s name for Palaeozoic ferns previously termed Botryopteridae; COENO'SPHERE, Dangeard’s term for COENO-CENTRUM.
Co'hort, Co'hors (Lat., a band of soldiers), a group of orders, forming an Alliance.

colla-p'odus (kouévou's, with common foot), terminating downwards in a cone, as most embryos; Lindley also spells it coenop'odus.

Colch'icine, an alkaloid yielded by Colchicum autumnale, Linn.

Co'le'sion, the red colouring-matter of Coleus Verschaffeltii, Linn.

Colench'yma = Collenchyma.

Co'leop'teroid (Coleopteron, el'dos, resemblance), resembling a beetle or tick, as the seeds of many Euphorbiaceae (S. Moore).

Coleop'tilum (kole'ds, a sheath; πτιλον, a feather) = Coleophyllum; Coleorhi'za (πτιλα, a root), the sheath of a monocotyledonous embryo, when pierced by the true radicle; adj. Coleorhiza'tus; Col'esule, Coles'ula; a membranous bag-like organ enclosing the sporangium of Hepaticae, the perichaetial sheath, usually termed the Vaginule.

collaps'ing, used by Babington for the form compared to a painter's pencil, assumed by the submerged leaves of some aquatic plants when taken out of the water; Collaps'ion, Collaps'io (Lat., falling together), the act of closing or falling together.

Col'lar, Col'hum (Lat., neck); (1) the "neck" of a plant, the imaginary boundary between the above- and underground portion of the axis; (2) the annulus in Agarics; (3) an encircling outgrowth at the base of the ovule in Ginkgo (Potter).

Colla're (Lat., a collar) = Ligule.

collat'er'al (col'latero, to admit on both sides), standing side by side; ~ Bun'dles, those having a single strand of bast and wood, side by side, and usually in the same radius; Bicolateral Bundles are a variation on this type, having two of one element to one of the other; ~ Cho'risis, see Chorisism.

collect'ing (collect'io, a gathering together) Cells, are roundish cells at the base of palisade tissue, destitute of chlorophyll and densely filled with protoplasm; in German "Sammenzellen"; ~ Hairs, hairs on the styles of some Compositae serving to collect the pollen on its discharge from the anthers; collective Fruits, the aggregation of the fruits of several flowers into one mass, such as the mulberry; ~ Spe'cies, a super-species, an assemblage of subspecies; Collect'ors, Collect'or'es, the hairs of certain styles, as in Campanula, which collect or brush out the pollen from the anthers; cf. Collecting Hairs.

Collench'yma (κόλαλα, glue; ἔχυμα, an infusion); (1) parenchymatous cells with cellulose walls usually elongated, forming strands of great strength under the epidermis, thickening in angles, etc.; (2) the cellular matter in which the pollen is formed, usually absorbed, but remaining and assuming a definite form in some plants, as in Orchids, or delicate threads, as in Oenothera (Lindley); ~ Bast ~, thickening chiefly involving the whole wall; Cartilage ~, walls thickened all round with sharply differentiated inner lamella; Met'a- ~, caused by slow death of the cell, and metamorphosis of the cell-wall; Plate ~, a form which resembles the true hard bast; Rift ~, portion of wall bordering on an intercellular space alone thickened; collenchymat'ic, collenchymat'ous, relating to Collenchyma.

Col'let = Collar.

Coll'eter (κολλανητός, glued), mucilaginous hairs on the buds of many phanerogams which secrete gum.
little hill), covered with little round elevations or hillocks.

**collif'eros** (collum, a collar), bearing a collar, as the stipe of an Agaric; **Côlliform'e** (forma, shape), an ostiole, the orifice being lengthened into a neck.

**colliga'tus** (Lat., fastened together), collected (S. F. Gray).

**coli'nus** (Lat., appertaining to a hill), growing on low hills.

**colliques'cent** (collique'scre, to become liquid), becoming fluid, dissolving in moisture.

**Col'loids** (κόλλα, glue; εἴδος, resemblance), substances of a gelatinous character; opposed to crystalloid; adj. colloid'al.

**Col' lum** (Lat., neck); (1) the collar or neck of a plant, see **Collar**; (2) the lengthened orifice of the ostiole of Lichens.

**col'o'nial** (colonia, a band of settlers), in cell-division, every cell dependent on the other cells of the organism at large (Hartog); **Col'onist**, H. C. Watson's term for weeds of the cultivated land and about houses, seldom found elsewhere; **Col'ony**; see CoENOBium. **Ener'gid ~, Pro'toplast ~**, a temporary union of Meriplasts, the individuality of the Protoplasts not being disturbed (Pirotta).

**colori'fic** (color, colour; facio, I make), applied to those Lichens which yield a dye.

**Col'our**, col'oured, possessing any tint but green, technically white is regarded as a colour, green is not; **col'ourless**, (1) pale, and hyaline; (2) in Lichens, not brown.

**Colpen'ch'yma** (κόλπος, bosom; γύνα, an infusion), cellular tissue with sinuous cell-walls.

**col'ubrine** (colubrinus, like a serpent), snake-like in appearance (Heinig).

**Col'um** ‡ (Lat., a strainer) = **Placenta**.

**coli'num** (Lat.), dove-coloured; sometimes used for the tint of a blue pigeon.

**Col'umel** (columella, a small pillar), Jaccard's term for lignified tissue formed in place of the fertilized archegonium, bearing at its extremity the privileged embryo, the only one which develops, as in Ephedra, C. A. Mey.; **Column'la**; (1) a persistent central axis round which the carpels of some fruits are arranged as in Geranium; (2) the axis of the capsule in Mosses; (3) the receptacle bearing the sporangia of Trichomanes, and other Ferns; (4) the central portion of the anther in Solanaceae (Halsted); (5) a sterile axial body within the sporangium of Fungi; **columnel'liform** (forma, shape), shaped like a small pillar or column.

**Col'unm**, Col'un'na (Lat., a pillar); (1) the combination of stamens and styles into a solid central body, as in Orchids; (2) the lower, twisted portion of the awn of grasses, not always present (Trimen); **colun'nar**, columnar'ris, having the form of a column, as the stamens of Malva; ~ **Crys'tals** = **Styloids**.

**com**, in Latin composition, a modification of con, with.

**Co'ma** (Lat., the hair); (1) the hairs at the end of some seeds; (2) the tuft at the summit of the inflorescence, as in the pineapple; (3) the entire head of a tree; **co'mal Tuft**, a tuft of leaves at the tip of a branch; ~ **co'mate, coma'tus**, tufted.

**combina'te-veno'sus** ‡ (Lat.), jointed veins, when in a leaf the lateral veins unite before reaching the margin.

**combi'ned Hy'brids**, hybrids having the strain of more than two species, as one arising from a simple hybrid + another hybrid or species.

**comb-shaped**, pectinate.

**Com'bus**, used by S. F. Gray for Cormus, for which it is probably a misprint.

**Com'ites** (pl. of conus, a companion), Hegelmaier's term for certain cells occurring in the embryo-sac of Lupinus.

**commen'sal** (**com** = con, with; mensa, a table), used of two organisms living in mutual beneficent relations, as in
the dual-lichen theory, where the Fungus stimulates the host-Alga to greater energy of function; Com-
men'salism, the state in question.
Comm'sisure, Commissu'ra (Lat., a joint or seam), the face by which two carpels adhere, as in Umbelliferae; adj. commissu'ral; ~ Col'umn, the central vascular strand in ferns; ~ Strand, the same structure; ~ Sieve-
tubes, structures which unite the different kinds of Sieve-tubes with each other (A. Fischer).
com'mon (Lat., commu'nis), general or principal, as opposed to partial; ~ Bud, containing both leaves and flowers, or more than one flower; ~ Bun'dles, those which are common both to stem and leaf, being continuous from one to the other; ~ Ca'lyx † = Involucre; ~ Involu'cre, that belonging to the main infor-
escence, as of the general umbel; ~ Name, one in popular use for a plant, exclusive of the scientific name; ~ Ped'uncle, the main stalk, when it supports several subordinate ones, or pedicels; ~ Per'ianth, occasionally used for the involucre, as in Compositae; ~ Pet'iole, the first and principal leaf-stalk in compound leaves, the secondary petioles being termed "partial"; ~ Recept'acle, that which supports more than one organ; ~ Um'bel = COMPOUND Um'bel.
commu'nis (Lat.), growing in society; not common, which is rendered by vul'garis; Comm'u'nity, Clements's term for growths intermediate be-
tween Society and Family; he uses -are to denote it.
co'mose, con'mos'us (Lat., with much hair), tufted, comate.
Com'spores (κόμη, the hair, + Spore), seeds maned or comate (Clements).
com'pact; compact'us (Lat.), closely joined or pressed together.
Com'pa'go, pl. Com'pa'gines (Lat., a connection) used by Wallroth in speaking of the Lichen-thallus when more or less brittle or readily parting into layers; compagina'tus (Lat.), packed closely one over another.
Com'pan'ion-Cells, (1) in Phanerogams, cells which are associated with sieve-tubes and are of common origin, filled with granular proteid contents, and possessing strongly marked nuclei; (2) Salmon's term for Begleiter-Zellen, cf. Begleiter-
cells; ~ Hy'phae (φυ, a web), the tip of the trichogyne of Polystigma passing through a stomata into the air is accompanied by slender mycelial hyphae, which form a tuft, the so-called companion hyphae (De Bary).
Com'pass-plants, those which place their leaves so that their surfaces face east and west, the edges north and south, such as Silphium laciniat-um, Linn.
Compensa'tion (compensatio, weighing together) of Growth, used when the development of a primordium of an organ is suppressed, or its growth limited by another organ (Goebel).
Compe'tition (competitor, a rival), the relation between plants occupying the same area, and dependent upon the same physical factors (Clements); Compe'titive Society, applied to two or more species whose roots occupy the same level in the soil (Adamson).
comp'iatal (compita'lis, pertaining to cross roads) in venation when the veinlets angularly intersect; also when the soi are on the point of junction.
com'planate, complana'tus (Lat., levelled), flattened, compressed.
complemen'tary (complementum, that which completes), when plants re-
ciprocally help, as Mosses protect soils and profit by shade and trees above them; ~ Cells, the com-
ponents of lenticel tissue arising from the phellogen; ~ chromatic Adap'tation, the power of Algae to make effective use of the light which reaches them, complementary to their own coloration (Engel-
mann); ~ Soci'ety, two or more species which root at different levels
complementary

in the soil to each other (Adamson); sea’sonal ~ ~, when different plants use the same ground at different seasons.

complete', comple’tus (Lat., filled), having all the parts belonging to it or the type.

Complex (Lat.), interwoven fibres, or group of complicated parts (Crozier); complex’us (Lat., embraced), in vernation when a leaf is folded over another at the sides and apex; ~ cellu’lo’sus (Lat.) = cellular tissue; ~ membrana’ceus (Lat.), elementary membrane, ground-tissue; ~ tubu’la’ris (Lat.), woody tissue, xylem; ~ utri’ca’ris (Lat.), angular cellular tissue; ~ vascu’la’ris (Lat.), spiral vessels, sometimes used for small vessels showing secondary deposits; complex’i’us = complex’us.

complicate, complic’a’tus (complico, I fold together), folded upon itself.

Composition, composi’tio (Lat., putting together), the combination of parts to form the whole, as of subordinate parts to form an organ, or elements to form a substance.

compound, similar parts aggregated into a common whole; ~ Cor’ymb, one having more than one flower to each branch; ~ Dicha’sium, that in which the primary axis divides into secondary dichasium; ~ Flow’er, an accumulation of florets as in the Compositae, Anthodium; ~ Fri’t, where many distinct carpels are associated, as in the mulberry; ~ Fun’gus-body, growth-form in which the thallus is constituted by the coherence of separate hyphal ramifications; ~ Hairs, branched or ramified hairs; ~ Inflores’cence, where an inflorescence is itself composed of secondary ones; ~ Leaf, one divided into separate blades; ~ O’vary, an ovary having more than one carpel; ~ Pis’til, two or more carpels coalescent into one body; ~ Raceme’ = Panicle; ~ Spike, occurring frequently on grasses, when the inflorescence is made up of spikes; ~ Spore = Sporidesm;

~ Spor’aphore, formed by cohesion of the ramifications of separate hyphal branches, Ger., Fruchtkörper; ~ Stem, one that is branched; ~ Um’bel, an association of simple umbels, each ray being itself an umbel.

compress’ed, compress’us (Lat., pressed together), flattened, complanate; compress’is’simus (Lat.), excessively flattened.

con (Lat., with), modified by euphony frequently into com and con—meaning “with” in Latin compounds.

conca’tenate, concate’na’tus (Lat., linked together), joined as links in a chain, as when strings of spores, or frustules of Diatoms are linked together.

Concaulesc’ence (con, with ; caulis, stem), the coalescence of axes.

con’cave, con’ca’vus (Lat., hollowed out), hollow, as the inside of a saucer.

con’cen’trate (con, with ; centrum, centre), to bring to a common centre; con’cen’tric, having a common centre; ~ Bun’dles, where one element -is wholly surrounded by the others, as the xylem by the phloëm; ~ Cells, in Cyanophyceae, destitute of nucleus, and yielding on slight pressure, the cell-walls curved inwards (Kohl); ~ Vasc’ular-bun’dle is the same as ~ Bundle; Concen’tra’tion, applied to the growth of Primordia with the bulk remaining constant (Church).

Concep’tacle, Concepta’culum (Lat., a receptacle), (1) originally used by Linnaeus to express Follicle; (2) afterwards for the fruit of Asclepiads and Apocynaeae; (3) a hollow case covering the sexual organs in some Algae; (4) the peridium of Fungi; (5) the capsule of Mosses; (6) by Medicius, following Jung, used for pericarp; (7) a general expression for a superficial cavity opening outwards, within which reproductive cells are produced.

conch’iform, conch’i’form’is (concha, a shell; forma, shape), shaped like the shell of a bivalve.

concin’nus (Lat.), neat, elegant.
concolor'ous, con'color (Lat., of one colour), uniform in tint.

concom'itant (concom'itans, attending), used of vascular bundles which run side by side without being separated by other bundles.

Concres'cence (concresco, to grow together); (1) growing into union; coalescent; (2) a synonyn of CEMENTATION; adj. concres'cent; concrete', concre'tus, growing together.

Condensa'tion (condensatio, making dense) = Concentration; condens'ing Len'sees, epidermal papillae acting so as to focus the available light on the chloroplasts in the palisade-cells (Haberlandt).

Conduct'ing Bun'dles, strands of elongated cells in leaves and even the stems of Mosses, simulating a vascular bundle; also used for VASCULAR BUNDLES; ~ Cells, long narrow cells, associated with sieve-tubes, but having imperforate walls; ~ Sheath, elongated parenchymatous cells in the inner cortex of the stem, continued into the leaves as an investment of the vascular bundle; ~ Surface, in the pitchers of Nepenthes, upon which insects have no foothold, but fall downwards; ~ Tis'sue, a loose tissue of the style through which the pollen-tubes can readily make their way; Conduct'ive Tis'sue is the same.

condulp'icans (Lat., doubling), doubling up, as conduplicant'ia Folia, the leaflets of a compound leaf which apply themselves to each other's surfaces; condulp'icate, conduplica'ti'rus, folded together lengthwise; Condup'lication, in aestivation when the sides of an organ are applied to each other by their faces.

Con'dyle, Con'dyl'i'um (κόνδυλος, a knuckle), (1) the antheridium of Chara, (2) the swelling which terminates the rhizoplast of Polytoma (Dangeard).

Cone, Co'nus (Lat.), the fruit of the pine or fir-tree with scales forming a STORBILE; ~ Gen'us, a fossil genus only known by its cones; ~ of Growth, the apical growing portion of the stem.

Co'nein = Conia.

Cone'let (disyll.), the diminutive of Cone, applied to a cone of the first year (Mohr).

Conen'ch'yma (κάνως, a cone; έγχυμα, an infusion), conical cells which constitute hairs (Lindley).

conforru'minate, conferrumina'tus (Lat., cemented), adherent by adjacent faces, as the cotyledons of Horse Chestnut.

confer'ted, confert'us (Lat., brought together), closely packed or crowded.

conferva'ceous, confer'void, composed of threads, resembling the genus Conferva.

conflu'ent, con'fluens (Lat., flowing into), blended into one, passing by degrees one into the other; ~ Fruit, a compound fruit, such as the mulberry or pineapple.

conformed' (disyll.), conform'is (Lat., shaped), (1) similar in form; (2) closely fitting, as a seed-coat to the nucellus.

Con'gen (Lat., of the same race), another plant of the same genus; congeneric, belonging to the same genus; Congener'ity, the condition of belonging to the same genus.

congen'ital (congenitus, born together), grown to anything; strictly, of the same origin.

congest'ed, congest'us (Lat., brought together), crowded.

congl'o'bate, congloba'tus (Lat., made like a ball), collected into a ball.

conglom'erate, conglomer'a'tus (Lat., rolled together), clustered.

Conglu'tin (conglutinatus, cemented together), a constituent of plant-casein, usually with legumin; con-glut'i'na'te, conglutina'tus, as though glued together.

con'gregate (congrego, to assemble), collected into close proximity.

Coni'a (κώνειος, hemlock), the active principle of Conium maculatum, Linn., a poisonous alkaloid.

con'ical, con'icus (Lat., cone-shaped),
having the figure of a cone, as the carrot.

**connid'ian** (κόνις, dust), referring to conidia; **conid'oid** (εἶδος, resemblance), like conidia in form or function (W. G. Smith); **conidiifer'ous** (φόρεω, I carry), bearing Conidi'a; **Conid'io phore, Conidio ph'ora** = Conidioph'ore; the organ which produces Conidia in the Hyphomycetes and Phycomycetes (Saccardo); **Conid'iospore** (σπορά, a seed) = Conid'i um; **Conid'i um** (pl. Conidia) = Coni'dia; Con'i'da, simplification proposed by Bennett and Murray for Conidia.

**Coni'ferin** (conus, a cone; fero, I bear), a glucoside derived from coniferous wood; **conifer'ous**, producing or bearing cones, as many Gymnosperms; **co'niform** (forma, shape) = **conical**; **Coni frutice'ta**, pl. (+ Fruticeti'um), forests composed of or dominated by coniferous shrubs.

**Coni'in**, Cone'in, the same as Conia.

**Coniligno'sa** (conus, a cone; lignosus, woody), dominated by trees and shrubs with typical needle-like foliage.

**Coniocyst'*, Coniocyst'a** (κόνις, dust; κύστις, a bag), a closed sporangium resembling a tuberele, containing a mass of spores; **Coniothe'ca** (κύστις, case), the loculus of an anther.

**Conisil'vae**, pl. conus, a cone (+ Silva), coniferous forests.

**Con'joint Bun'dle**, a vascular bundle when it is composed of wood and bast elements.

**conjugate**, conjug'a'tus (Lat., united), coupled; as a pinnate leaf, of two leaflets; ~ **Spi' rals**, whorled leaves so arranged as to give two or more genetic spirals running parallel with each other; **Conjuga'ting Tubes**, long processes emitted by the fertilized trichophore in certain Algae, which unite with the auxiliary cells (Osterhout); **Conjuga'tion**, (1) the fusion of sexual elements, the union of two gametes to form a zygote, used especially when the two gametes are similar, as in some Algae and Fungi; (2) the temporary and incomplete fusion of two individuals (Hartmann); ~ **Canal'**, an open tube formed between the conjugation cells (gametes) of certain Algae (F. Blackman and Tansley); ~ **Tubes** = Conjugating Tubes, various kinds of, as cross ~, when some cells in a given algal filament are active, and others passive; ~ **lat' eral**, when it takes place cell by cell; scala'riform ~, when the entire filament is concerned; ~ **Cell** = Gamete; conjug'a-to-palm'ate, when a leaf divides into two arms, each of which is palmate.

**conjunctive** (conjunctivus, joined), serving to unite; ~ **Symbio'sis**, applied by Frank to those cases in which the symbionts are so intimately blended as to form apparently a single body; ~ **Threads** = Spindle Fibres; ~ **Tis'sue**, the fundamental tissue or ground tissue interior to the stele; **Conjunctor'i um**, the operculum of a Moss.

**conn'a'cian**, used by Praeger for plants chiefly growing in Connaught.

**connas'cent** (con, with; nascor, to be born), produced at the same time (Crozier).

**con'nate**, conn'atus (Lat., born at the same time), united, congenitally or subsequently; **con'nate-perfo'liate**, united at the base in pairs around the supporting axis.

**Connect'ing** (connectus, fastened together) **Cell** = Heterocyst; ~ **Tis'sue**, a special colourless tissue adjoining the veins of some leaves (Solender); ~ **Zone**, the "hoop" or girdle connecting the valves of a Diatom frustule; **Connect'ive, Connect'i'um**, the portion of a stamen distinct from the filament which connects the two lobes of an anther; **connectiva'lis**, having to do with the connective.

**conni'vent**, conni'vens (Lat., winking), coming into contact or converging.

**Connu'bium** (Lat., wedlock), the stage of protoplasmic coalescence in the conjugation of filamentous Algae.
Conocarp'ium (κώνος, a cone; καρπός, fruit), an aggregate fruit consisting of many fruits on a conical receptacle, as the strawberry; conoid (εἶδος, resemblance), cone-like; conoid'ial, conoid'al'is, resembling a conical figure, but not truly one, as the calyx of Silene conoides, Linn.


Conophor'ium (κωνοφόρος, cone-bearing), a coniferous forest; conophor'iph'ous (φίλεω, I love), dwelling in coniferous forests; Conophoro'phy'ta (φυτόν, a plant), coniferous forest plants (Clements).

Conopod'ium (κώνος, a cone; πούς, πόδος, a foot), a conical floral receptacle.

Conostro'ma † (στρώμα, spread out) Endlicher's term for a growing point, constituting a free central placenta.

Conser'vative Or'gans (conservatio, a keeping), those which are employed in nutrition, as root, stem, leaves.

Consim'ilar (consimilis, entirely alike), applied to the valves of a Diatom, when both sides are alike; Consim'ilit'ude, resemblance of the two valves, unequal but similar, of the Epitheca and Hypotheca.

Conosoc'iation (consociatio, union), a group formed by Consoc'ies (Lat.), used by Clements in the sense of Association; Consocis'tum (+ etum), an association.

Consol'idated (consolido, I make firm); (1) when unlike parts are coherent; (2) Crozier adds, having a small surface in proportion to bulk, as many Cacti.

Con'sortism (consors, sharing property), Reinke's term for SYMBIOSIS.

Con'sor'tium (Lat., fellowship), (1) the relations of Lichen life (Reinke); (2) the intimate association or felting of certain algal vegetation (F. E. Fritsch).

Con'stant (constans, steadfast), in the same condition, or always present.

Constitu'ation (Lat., constellatio, a star-cluster), employed by Pfeffer for the aggregate of conditions regulating the vital mechanism, c. g. of the protoplast.

Con'stipate (constipatio, crowding together), crowded or massed together.

Constrict'ed (constrictus, compressed), drawn together, contracted.

Constric'tion (constrictio, binding together), the narrowest portion of Diatoms and Desmids seen from the side.

Construc'tive Metab'olism = Assimi'lation.

Consu'tus (Lat., stitched together), when parts are united by a membrane of threads.

Con'tabesc'ence (constabescere, to waste away), the abortive condition of stamens and pollen.

Con'tact (contactus, touching) Cy'cles, individual members of a phyllo tactic system overlapping to form continuous investments of the axis (Church); ~ Lines = Parastichies; ~ Parastich'ies is a synonym; ~ Pres'sures, those between growing primordia in a Concentration system.

Con'tagious (contagio, touch), used of diseases when communicable by touch; cf. INFECTION.

Contem'ato'sus ‡ (deriv. ?) covered by an armature between bristly and acuteolate (Lindley).

Conter'minous (conterminus, neighbouring), of equal boundaries.

Con'text (contextus, woven together), employed by Murrill for the flesh of Fungi; context'us = Tissue.

Contig'uous, contiguus (Lat., adjoining), when neighbouring parts are in contact, as most cotyledons.

Contin'gent (contingens, touching) SYMBIOSIS, see SYMBIOSIS; in Ger., Raumparasitismus.

Contin'uous (continuus, running on), the reverse of interrupted; also used for ASSEPTATE; Continui'ty, uninter rupted connection.
contorted, *contort'ed, contort'ed* (Lat.), twisted or bent; in astation the same as *convolute*; *Contort'ion*, a twisting; *Contortoplank'ton* (+ *Plankton*), a neritic floating mass of Diatoms, especially of *Chaetoceras debile* and *C. contortum*, whence the name; *contortu'plicate* (*plicatus*, woven), (1) twisted and plaited or folded; (2) twisted back upon itself.

contra, in Latin compounds = against; ~ clock'wise, against the motion of the hands of a clock; sinistrorse.

contract'ed, *contract'ed* (Lat.), narrowed or shortened; spreading but slightly; *contract'ile*, capable of actively shrinking in volume and expanding again, used of protoplasm; ~ *Vac'uoiles*, small cavities in protoplasm, which increase and decrease in size rhythmically; *Con-tractility*, the capacity of altering spontaneously in volume.

con'trary, *contra'rius* (Lat.), in an opposite direction, as a silicé compressed contrary to the dissepiment.

Control', frequently used in the sense of the English word Check, as ~ Experiments, to check the original observation.

*Co'nus* (Lat.) = *Cone, Strobile*.

Convar'iants, pl. (*con = with; varius, I alter*), individuals of equal age or the same generation, who are liable to vary; cf. *Devariantis; converg'ent* (*vergens*, bending), applied to veins which run from the base to the apex of the leaf in a curved manner; *converg'iner'vis, vius, convergen'ti-nervo'sus* (Lat.), simple veins diverging from the midrib and converging towards the margin.

con'vex, *convexus* (Lat., arched), having a more or less rounded surface; *convexus'culus, somewhat convex.

con'volute, *convolutus* (Lat., rolled round), *convolutu'viss*, *convolutu'tus*: (1) when one part is wholly rolled up in another, as the petals of the Wallflower; (2) in a spathe when the margins mutually envelope each other.

convolvula'ceous, denoting affinity with the genus *Convulvulus*.

co-ovar'ial, derived from cells of the same ovary (K. Pearson).

cop'ious (copiosus, plentiful), abundant; abbreviated *cop.¹, cop.²* to show decreasing frequency (Warming).

cop'pery, brownish red, with a metallic lustre; cupreous.

Cop'pice, a small wood which is regularly cut at stated intervals, the new growth arising from the stools; *Copse* is practically the same; *cop'piring*, in forestry, cropping the plantation by cutting the underwood every few years.

*coproph'ious* (*kópos, ordure; φιλέω, I love*), applied to Fungi whose habitat is the dung of animals;

*Cop'rophyte* (*φυτον, plant*) = *Saproph'yte*.

Cop'uleae (pl. of *copula*, a thong or band), intermediate bands of cell-wall in Diatoms, as in *Teiysinoë*, etc.

Copula'tion (*copulatio, coupling*), (1) used for Conjugation, the union of sexual cells; (2) the entire blending of two individual nuclei (Hartmann); *cop'ulative* †, used of dissepiments not readily separating from the axis or walls of the pericarp.

Coque (Fr., shell), used by S. F. Gray for *Coccus*

Cor Se'minis † (Lat.) = Embryo.

cor'acinus (Lat., raven-black), glossy black.

cor'acoid (κόραξ, a raven; εἶδος, resemblance), "shaped like a crow's beak" (Crozier).

Cor'al Spot, a fungus disease caused by the wound parasite *Nectria cinna-barilla*, Fr.

coralliform'is (corallum, coral; *forma*, shape), coral-like in form; *cor'al-line*, *coralli'num* (Lat., coral red), resembling coral in appearance; *cor'alloid, coralloid'es* (εἶδος, resemblance), coral-like, as the roots of *Nectria Nidus-aris*, Rich., and also certain Lichens.

Cor'cle (Crozier); *Cor'cule, Cor'culum*
Corcula

(Lat., a little heart) = (1) embryo; (2) plumule, or plumule and radicle.

Cord, a synonym of Strand; umbilical = Funiculus.

cordaitean, resembling the genus of fossils, Cordaites.

cordate, cordatus (Lat.), heart-shaped, applied to leaves having the petiole at the broader and notched end; cordiform, cordiformis (Lat.); shaped like a heart.

cord'shape = Funiciform.

Core, (1) the seeds and integuments of a pome, such as an apple; Grew spells it "Coar"; (2) an axial strand of parenchyma in the haustorium of certain parasites (De Barry); coreless [disyll.], without core (Bailey).

core'mial ( réalité, a broom), like the genus Coremium, Link; core'mioid (silés, resemblance), applied to a fasciated form, as of Funicillium, etc.; Core'mium = Synnema.

Core'ses (cédus, a bug), "dark red, broad, discoid bodies, found beneath the epicarp of grapes" (Lindley).

coria'ceous, coriaceus (corium, leather), leathery.

Cork, protective tissue replacing the epidermis in older superficial parts of plants; the outer cells contain air, and are elastic and spongy in texture, but impervious to liquids; ~ Camb'ium = Phellogen; ~ Cor'tex, the corky layers of the bark; ~ Mer'istem = Phellogen; ~ Pore'cork, suberised portion of lenticels, with intercellular spaces between the cork-cells (Klebahn); ~ Warts, local formations of cork on leaves (Solereder); cork'y, of the texture or quality of cork; ~ Envel'ope, ~ Lay'er, the bast layer beneath the epidermis which gives rise to cork; ~ Scab, a potato disease due to the Myxomycete Spongiospora Solani.

Corm, Corm'us (cómbus, a trunk), a bulb-like fleshy stem or base of stem, a "solid" bulb; cormo'des (silós, resemblance), possessing an axis (A. Braun); Cormog'amæ (γάμος, marriage), Ardissoné's division for Characeae and Musciæae; cormo'gen'ous (γένος, offspring), having a stem or corn; cormophyll'a'ceous (φύλλον, a leaf, + aceous), used by E. Newman for those Ferns whose fronds are attached to the candel; Cormó'phyte (φυτά), plant, Endlicher's term for plants possessing axis and foliage, that is, Phanerogams and vascular Cryptogams; adj. cormo'phytic; ~ Association, dominated by cormophytes (F. E. Frisch).

Corn, cereals generally; in the United States it is confined to maize.

corna'ceous, (1) allied to the cornel tree, Cornus; (2) "of a horn-like consistence" (Vasey).

corne'ous, cor'neous (Lat.), horny, with a horny texture.

Cor'net (cornu, a horn), a hollow horn-like growth; ~ -shape, cuneiform, hooded; cornic'u'late, corniculat'us (Lat.), furnished with a little horn or horns; cornicul'fer'ous, -rús (fró, I bear), bearing horns or protuberances; cor'niform (forma, shape), shaped like a horn.

Cor'nine, a bitter principle in the bark of Corvus sanguinea, Linn.

Cor'nu (Lat., a horn), (1) a horn-like process; (2) occasionally used for Calear or Spur; cor'nute, cornut'us, horned or spurred; ~ Leaves, a sudden projection of the midrib forming a spine-like outgrowth, often in a different plane; Cor'nu'tin, a poisonous body derived from ergot, the "spur" of rye and other grasses.

Cor'ol (Crozier) = Coholla.

Coroll'a (Lat., a little crown); (1) the interior perianth, composed of petals, free or united; (2) the annulus of Fungi; (3) employed by Sir J. E. Smith for the utricle of Carex.

Corolla'ceous (+ aceous) corolla-like, petaloid; cor'ollate, corollat'us, corollo'ris, possessing a corolla; Cor'ollet, a floret of a Composite; corollif'er'ous, -rus (fró, I bear), corolla-bearing; corollifi'or'al (flōs, floris, a flower), corollifor'ous, -rus, having the calyx, petals and ovary
Corolliferous

inserted separately on the disk, the
stamens on the corolla; corolline,
corollinum, (1) seated on a corolla,
(2) corolla-like, petaloid, (3) belong-
ing to a corolla; corollule, Corol-
lu'le; (1) a diminutive corolla; (2)
floret of a head, as in Compositae.

Corona (Lat., a crown); (1) a coronet, 
any body which intervenes between 
the corolla and stamens; (2) the 
"eye" of apples or pears, the re-
main of the calyx limb; (3) the 
ray of the capitula in Compositae;
(4) a whorl of ligules or petals, 
united or free; (5) a synonym of 
Cucullus; (6) used by J. Hill for the 
pericyle, or "circle of propa-
gation"; (7) the ring of primary 
wood in the medullary sheath; (8) the 
medullary Crown, or ~ Sheath; ~ stipula'ris, the circle 
of stipules in Chara (Migula);
~ Seminis = Pappus; ~ stamin'ea 
= Orbiculus, a coronet formed from 
the transformation of stamens; cor-
onal, appertaining to a corona, as
~ Ves'sels, those of the corona;

coronans (Lat.), crowning, seated 
on the apex; cor'onate, corona'tus 
(Lat.), crowned, having a corona;
~ Papil'lae, growths with an ap-
pearance of crown-like cells at their 
 apex (Solereder); Cor'onet = Cor-
ona; coro'niform, coro'niform'is 
(forma, shape), shaped like a crown 
or coronet; Coro'nule, Coro'nula;
(1) a diminutive of corona, a floret;
(2) = Pappus; (3) the small calyx-
like body which crowns the nucule 
of Chara; (4) in Diatoms, a set of 
spines which terminate the frustules.

Coronopse'lioid (elath, resemblance), 
recalling the foliage of Plantago 
coronopse'liaria, Br. & Poit. now merged 
in P. marrchacea, Poit.

Cor'pora (pl. of corpus, a body) car-
no'sa (Lat., fleshy), the sporangia of 
certain Fungi; Cor'pus, the mass or 
substance of anything; ~ lige'neum, 
~ ligno'sum, the mass of the woody 
tissue of a plant; ~ medulla're, 
the mass of the cellular tissue in 
the pith.

Corpus'cle (corpusculum, a small body), 
a small mass or body; Corpus'ula, 
sing. Corpus'ulum; (1) sporangia of 
some Fungi; (2) archegonium, or 
the central cell of the same in Coni-
ferae; (3) the connections between 
the arms of the pollen-masses in 
Asclepiads; (4) = Egg, Oospheres; 
~ vermi'form'is, spiral vessels in a 
contracted, stranded condition.

correla'ted (con = with, relatus, 
returned); ~ Variabil'ity, having 
reciprocal variation; Correla'tion, 
the reciprocal influence of one organ 
upon another.

cor'ugate, corruga'tus; corrugati'vus 
(Lat.), wrinkled.

Cor'sican Moss, dried Algae.

Cor'tex (Lat.), (1) the bark or rind;
the ground tissue between the stele 
and epidermis; (2) the peridium of 
Fungi; cor'tical, cortica'tis, relating 
to the cortex; ~ Intra'sion (in-
trusus, thrust in), applied to growth 
of external tissues into stelar or vas-
cular structures (Lang); ~ Lay'er,
~ Integ'ument, the investing layers 
of the bast system; see also Endo-
, Exo-, Medio-cortex; ~ Pore=Le-
ticel; ~ Rays = medullary rays 
in the phloem; ~ Sheath, Naegeli's 
term for the whole of the primary 
bast bundles; ~ Stra'tum, the super-
ficial layer of the Lichen-thallus;

corti'cate, cortica'tus (Lat.), covered 
with bark, or with an accessory 
bark-like covering; cortica'ting, con-
stituting cortex, as ~ Cells, those 
which make up the cortex; Cortica' 
tion, the formation of cortex; corti-
ciferous (fero, I bear), producing 
bark; cortic'i form (forma, shape), 
like bark; corti'cole, corti'colous 
(col, I inhabit), living on bark, as 
some Lichens and Fungi; corti'cose, 
corti'cous, barky, full of bark.

Corti'na (Late Lat., a curtain), the fil-
amentous annuli of some Agarics;
corti'native, cortina'tius (Lat.), having 
a web-like texture.

corvi'nis (Late Lat., pertaining to the 
raven), raven-black.

Corydal'lin, an alkaloid present in the
root of *Corydalis tuberosa*, DC.; corydaline, corydalin'eus, resembling the genus *Corydalis*.

Corymb, Corymb'bus (Lat., a cluster of flowers), a flat-topped or merely convex and open flower-cluster of the indeterminate or centripetal order; the term formerly included most cymes; cor'ymbate, cor'ymb'lated, having corymbs or growing in corymb; cor'ymbif'erous, -rus (fere, I bear), bearing corymbs; cor'ymbi'form (forma, shape); cor'ymbose, cor'ynabo'sus, cor'ymb'ous, arranged in corymbs; cor'ymb'ulose, -lous, in small corymbs.

Corynd'ia (κορυνία, a club), “Processes sunk into the margin of the germinating leaf of Ferns, and containing spiral threads” (Lindley) [= Antheridia ?].

Coryphi'um, pl. Coryphi'a (κορυφή, summit), alpine plant formations; cor'yphoph'ilus (φιλέω, I love), growing in alpine places; Coryrophy'ta (φυτών, a plant), alpine plants (Clements).

Coryphy'ly (κορυφή, the crown of the head; φύλλον, a leaf), a monstrosity in which the axis ends in a leaf; sometimes coloured.

Cosmaesthe'sia (κόσμος, the world, + Ἀσθεσία), sensibility to external stimuli; Cosmopo'lite (στάσις, a city), a plant of well-nigh universal distribution; cosmol'pitan, distributed throughout the world.

Cost'a (Lat.), a rib, when single, a midrib or middle-nerve; cost'al-nerved, nerves springing from the midrib; cost'aleform (forma, shape), applied by J. Smith for primary veins in ferns when parallel to each other and very evident; cost'ate, cost'atus (Lat.), ribbed, having one or more primary longitudinal veins; cost'a-to-ven'o'sus, when the parallel side veins of a feather-veined leaf are much stouter than those which intervene; costel'late, having small ribs; Cost'ulae, used by J. Smith for the primary veins of Fern-segments.

Cotton, the hairs of the seeds of species of *Gossypium*; Cot'ton-grass Association, an association in which *Eriophorum* is dominant; cot'tony, pubescence of long soft hair.

cotylar (κότυλας, a hollow vessel), cotyledonary.

Cotyle'don (κότυλεδών, a hollow), applied first by Linnaeus to the seed-lobes, the first leaves of the embryo, one in monocotyledons, two or more in dicotyledons, rarely a whorl borne by the radicle or cándicle; ~ trace, the common bundle in the stem proper to the cotyledon; its leaf-trace; cotyledona'ris, union or close approximation of the seed-lobes; Cotyle'donid (εἶδος, resemblance), a germinating thread of a Moss, a protonema; cotyle'donous, cotyledo'neus, possessing seed-lobes.

cotyliform, cotyliform'is (κότυλοψ, a hollow; forma, shape), dish-shaped or wheel-shaped, with an erect or ascending border; Cot'yloid Cell, a single huge cell in *Arvicinia offici'alis*, acting as a haustorical organ; its branches ramify throughout the mucellus and finally invade the placenta (Haberlandt); possibly a sister-cell of the embryo-sac (Treub); cotyloi'deus (Mod. Lat.), = cotyl'i'form; Cotyliv'ar'iants, pl. (varianus, varying), variation in the number of cotyledons (De Vries).

Cou'marin, the fragrant principle of the Tonquin bean, *Dipteryx odorata*, Sw.

count'er (contra, against) clock-wise, sinistrorse, turning the reverse way of clock-hands.

Cou'ple-cell, Hartog's term for Zygote.

Cou'plet, the result of Cou'pling; union due to affinity in the same individual between allelomorphs which belong to distinct pairs; also termed Game'tic Coupling.

Cour'baril, a resin from *Hymenacu Courbaril*, Linn.

Cov'er = Ope'r culum.

Cov'er-cell. of Hepaticae, the apical cells of the neck of a young archegonia'num (Campbell); cov'er-like =
 opercularis; covering = vexillar is; ~ plate, in Ferns, see stemata of Mettenius.
cowled = cucullate (Crozier).
Crab, a disease of the larch, due to the mycelium of Pestiza Willkommii, Hartig.
Grad’ina (κράδος, the wild fig-tree), a proteolytic enzyme existing in the juice of the common fig-tree, Ficus Carica, Linn.
cra’dling = involventia (folio).
Cram’pon (Fr.), hooks or adventitious roots, which act as supports as in ivy.
craspedod’romous, -nus (κράσπεδους, a border; δρόμος, a course), when the lateral veins of a leaf run from midrib to margin without dividing.
Crassinucleatae (crassus, thick, + nucellus), Van Tieghem’s term for plants whose nucelli remain of considerable bulk up to the time of the formation of the embryo; cf. Tenuinucleatae.
crass’us (Lat.), thick.
Crate’ra (κράτρη, a cup), a cup-shaped receptacle; Crate’ria, pl., ascidia which are derived from the surface of a leaf (C. Schimper); crate’riform, crateriform’is (forma, shape), goblet or cup-shaped, hemispheric or shallow in contour.
cratic’ular (craticula, a small gridiron), a resting condition of Diatomaceae, in which a pair of new valves are formed within the original valves.
Cra’zy-weeds, the same as Locoweeds, chiefly species of Astragalus and Lupinus which produce “Loco” disease in animals which have eaten them.
cream-colour, white with a slight inclination to yellow.
Cread’spores, -ae (κρέας, flesh, + spore), “nut-fruit ed” plants (Clements).
creep’in, running along or under the ground and rooting at intervals; restricted by Syme to those cases where there is only one, or rarely two, flowering stems from each branch of the rhizome; ~ stem, often means rhizome.
cre’meus (Mod. Lat., creamy) = cream-colour.
Crem’nad (κρημνόδος, a cliff), a cliff plant; Cremni’on, a suggested emendation of Cremni’um, a cliff plant association; cremnoph’ilus, (φιλέω, I love), cliff-dwelling; Cremnophy’ta (φυτόν, a plant), cliff plants (Clements).
Crem’ocarp, Cremocarp’ium (κρεμμῶν, I liang; καρπός, fruit), a dry and seed-like fruit, composed of two one-seeded carpels invested by an epigynous calyx, separating when ripe into mericarps.
cremaric’olor (cremeus, color, colour) = cream-colour.
Cre’na (Mod. Lat., a notch), a rounded tooth or notch; cre’nate, crena’tus, scalloped, toothed with areatures; Cre’nature, Crenatu’ra, a rounded notch on the margin of a leaf; Cre’ni, Cren’elling = Crena; cre’nelled crenula’tis, margined with areatures; crenellate, crenel’latus, crenu’late, crenula’ tus, create, but the toothings themselves small; Cren’ule, a diminutive Crena.
Cre’nad (κρηνή, a spring or source), a spring-loving plant; Cre’nium, a spring formation; crem’oph’ilus (φιλέω, I love), spring-loving; Cre’no phy’ta (φυτόν, a plant), plants of springs (Clements).
creoph’agous (κρέας, flesh; φαγω, I eat), a synonym of carnivorous, as applied to plants.
cres’cent-shaped, approaching the figure of a crescent, as the leaves of certain species of Passiflora.
Cres’cograph (creso, I grow; γραφή, writing), employed by Bose for an instrument to measure growth.
Crest, (1) an elevation or ridge upon the summit of an organ; (2) an outgrowth of the funiculus in seeds, a sort of axil; crest’ed, possessing any elevated line or ridge on the surface such as may be compared with the crest of a helmet.
creta’ceous, -ceus (creta, chalk), (1)
chalky, as the chalk-glands found in Saxifrages; (2) chalk-white, dead-white.

Crev'ice-plant = Chasmophyte; crev'-iced = limose.

cri'brate (cribrum, a sieve), usually written Cribrose; cri'briform, cri'brifor'mis (forma, shape), sieve-like, pierced with many holes; ~ Cells = Sieve-cells; ~ Tiss'ue, containing sieve-cells and tubes; cri'brile, (Kearney), cri'brose, cribro'sus, pierced like a sieve; ~ Cells = Sieve-tubes.

crinif'erous (crinis, hair; fero, I bear), used by J. Smith for hisrsute; cri'nite, crin'i'tus, bearded with long and weak hairs.

crin'o'id (kripov, a lily; el'dos, resemblance), lily-like (Crozier).

Crin'ula (crinis, hair) = Elater;
Cri'num, a stiff hair on any part.

crisp, crisp'es (Lat.), curled; crispa'-bilis, capable of curling up; cris'pate, crisp'es, crispata'ceus, curled; Crispature, Crispatica'ra, (1) when the edge is excessively and irregularly divided and twisted; (2) or the leaf much puckered and crumpled, but not so much as bullate; crisp'es'ens, able to curl up; crispifi'or'al (flus, flor'is, a flower), having curled flowers; crispifi'oi'rous (folium, a leaf), with curled leaves.

Criss'ta (Lat.), a crest or terminal tuft;
criss'taeform (formus, shape), used by J. Smith for crested appendices in Ferns, as in Actinostachys, Wall.; criss'tate, crista'tus, crested; in Ferns, having a tasselled margin to the fronds.

Criss'tarc (Fr., cristarque, from cristal and arque), Van Tiegheem's term for a layer of cortical tissue, whose arc-shaped cells contain macled crystals and are strengthened by sclerogen; occurring in Ochnaceae.

Critic'hem'ya (kπρόσ, chosen; ερχυμα, an infusion), the tissue of bundle-sheaths, open or closed envelopes which accompany fibro-vascular bundles; crit'ical, used of plants which need great discrimination in classifying.

Crithme'tum (→ etum), an association of Samphire, Crithmum maritimum.
croca'tus, croce'ous, cro'ceus (Lat.), saffron-yellow; a deep yellow tint from the stigmas of Crocus sativus, Linn.; Croč'cin, the colouring-matter of the foregoing.

Cro'mules (G. T. Moore) = Chro'mules.

Crop-hairs, trichomes occurring in Cordia, unicellular and usually knobbed at the extremity (Mez), resembling a bird's crop in shape.

crock'ed, curved.

Cross, term implying a hybrid of any description; ~ armed, brachiate (Crozier); ~ Breeds, the progeny of interbred varieties; ~ -conjugation, see Conjugation, cross; ~ Fertiliza'tion, fecundation by pollen from another flower of another individual; ~ Pollina'tion, dusting the stigma of one flower with pollen from another; ~ Septa'tion, division by transverse septa; ~ Type, in nuclear division, the formation of tetrads.

Crossed-pits, cells in sclerenchyma, with the slits on opposite walls at right angles to each other.

crowd'ed, closely pressed together or thickly set.

Crown, see Corona; also (1) in Characeae, the apex of the nucule; (2) in Diatomaceae, a series of teeth connecting the frustules into filaments, as in Stephano'discus; ~ of the Root, the point where root and stem meet; ~ gall, disease of the root-crown of fruit-trees, ascribed to a Myxogaster, Deudrophagus (Tomney); ~ rust, of cereals due to Puccinia coronata; crow ned, coro'natus, furnished with a coronet; crow'n ing, coro'nans, borne on the summit of an organ.

Cro'zier, "anything with a coiled end, as the young leaves of most Ferns" (Crozier).

cro'cu'se, cruci'a'tus (Lat.), cross-shaped, used especially of the flowers of Cruciferae; ~ Tetragon-
id′ia, those gonidia formed by two divisions at right angles to each other; Cru′cifer (Lat. cross-bearing), a plant with four petals and tetradynamous stamens; crucif'erous, cross-bearing, used of the corolla of Crucifers, which have four petals; cru′ciform, cruciform′is (Lat.), cross-shaped.

cruenta′tus (Lat. stained with blood), dyed or blotched with red.

cruent′us (Lat. gory), dark purplish red, the colour of gore.

crum′pled = corrugate; ~ Aestiva′tion, when folded in bud irregularly, as in the poppy.

Cru′ra (pl. of crus, a leg), divisions of the teeth of the peristome in Mosses.

cru′ral, crura′lis (Lat. pertaining to the legs), “somewhat leg-shaped; used mainly in composition” (Crozier).

Crust, Crust′a (Lat. rind or shell), the hard and brittle part of certain Lichens; crusta′ceous, -eus, of brittle texture, some Lichens are thus termed; crust′ose = crustaceous; crustul′i′nus, toast-colour, darker and warmer in tint than a cracknel biscuit.

Cry′mad (κρυμωδ, cold), a polar plant, Cron′ium, a “polar barrens” formation; crymoph′ilus (φιλέω, I love), dwelling in polar regions; Cry′mo′phyte (φυτόν, a plant), a polar plant (Clements); adj. crymophy′tic.

Cry′ophyte (κρύος, frost, φυτόν, a plant), a glacial association of microphytes periodically exposed to ice cold water (Warming); cryoscopic′ic (σκοπεω, I see), observation of low temperatures as a method; Cryos′copy, the study described; Cryot′ropicism (τροπή, a turning), movements influenced by cold or frost.

Cryp(t) (cry′ta, a vault), used by G. Henslow for the front cavity of a stoma; Cryp′ta, applied to sunken glands, receptacles for secretions of plants in dotted leaves.

cryptan′thous (κρυπτόθ, hidden, κρυς, a flower), an emendation of cleistanthous; the stamens remaining enclosed in the flower (Davis);

cryptan′thery is the condition; cryptobiotic′ic (βιος, life), Kuntze’s suggested expression for those lowly organisms which appeared in geologic times, but have left no trace of their existence; Crypt′oblast (βλαστός, a bud) = Krypto′blast; Cryptocotylene′s (cotyledon), a group to contain syncotyledonous and monocotyledonous plants (Agardh); cryptocryst′alline (+ Crystal), of the minute crystals in plant-cells (Kraemer); Cryptogam′ia (γάμας, marriage), plants destitute of stamens, pistils, and true seeds, but often reproduced as the result of a sexual act; cryptogam′ian, cryptogam′ic, cryptogam′icus, cryptog′amous, belong to the sub-kingdom just defined; cryptogam′ic Wood, the centripetal portion of the xylem in certain fossil Cycadoxylae; Cryptog′amist, a botanist devoted to the study of flowerless plants; Cryptog′amy (1) the state of concealed fructification; (2) the condition of cryptogamous plants; Cryptohy′brid (+ Hybrid), a term for a hybrid which displays unexpected characters; Cryptone′ma′a (νῆμα, a thread) small cellular threads produced in cryptostomata; Crypt′omere (μέρος, a part), applied to plants possessing latent characters; Cryptom′erism is the condition; cryptomer′eous, having latent characters which show in the crossed offspring; cryptoner′vus (νευρός, a nerve), the nervation hidden, as by hairs or texture of the leaf; Crypt′ophyte (φυτόν, a plant), Cryptop′hyt′um, a cryptogamous plant; Cryptophy′tium, an association in which Hemicryptophy′tes and Gly‐

phyes together are dominant (Vahl); Crypt′opore, adj. cryptop′orous, -rous (+ Pore), applied to stomata which are below the plane of the epidermis; cf. phanerop′or′ous′s; Cryptostom′ate (στόμα, a mouth), barren conceptacles in some Algae, containing hairs, or paraphyses.

Crypts, stomatal pits.
Crystal cupola-shaped

Crystal (κρύσταλλος, ice), a mineral solid, usually of regular faces or angles, found in the tissues of plants, of very various composition; ~cells, cells containing crystals; ~Dust, exceedingly small crystals in plant-cells (Haberlandt); ~conglomerate, clustered crystals; ~hairs, crystal projecting inwards as in some euphorbiaceae; Idioblasts, ~Crystalloids, in the epidermis, large or small special cells; ~Receptacles, a term to include all kinds of crystal-containing cells; ~sacs, enlarged special cells; ~sand = ~Dust; ~sclerenchyma, tissue of cells with thickened walls containing single crystals (Solereder); Crystalloid, Fischer’s emendation of Crystalloid; Crystalloches, -ae (χωπλα, separate), plants distributed by the action of glaciers (Clements); Crystalloid (εἶδος, resemblance), (1) term applied to protein crystals as being less truly angular than normal crystals, as well as swelling in water; (2) in contradistinction to colloid.

Ctenophytes (κτεινό, I kill; φτένω, a plant), Fungi whose influence on their hosts is chemical only (Wakker).

cetmoid (κτεις, κτένος, a comb, εἶδος, resemblance), comb-like, pectinate.

Cubebine, the active principle of Piper Cubeba, Linn.

Cubiform (cubus, a die; forma, shape), dice-shaped, cubic; cubic, cubicus, cubical, of a cubic form.

Cubit (cubitum, the elbow), a measure, from the elbow to the finger-tips, usually reckoned as equivalent to 18 inches, or 45 cm.; cubitalis (Lat.), about half-a-yard in length.

Cubus (Lat.), a solid figure of six square sides.

Cuculla’ris, cu’cullate, cucullatus (cucullus, a hood), hooded, or hood-shaped; cuculliform (forma, shape), hood-like in shape; Cucull’us, a hood.

Cucumis, a cucumber, shaped like a cucumber (Crozier).

Cucurbita’ceous (cucurbita, a gourd, +aceous), like a gourd; of gourd-like growth; cucurbiti’nus has the same meaning.

Cud’bear, the Scotch name for Orchil.

Cul-de-sac (Fr.), “a tubular or bag-shaped cavity, closed at one end” (Crozier).

Culm, culmus (a stalk, especially of grain), the peculiar hollow stem or “straw” of grasses; culmeus (Lat.), straw-like; culmic’olous (colo, I inhabit), growing on the stalk of grasses; culm’ifer, culmid’ereous (fero, I bear), producing culms.

Cultiform (cultus, tilled, forma, shape), a cultivated form of a species or variety (Kuntze); Cultohy’bridiform, a cultivated hybrid of mixed parentage (Kuntze).

Cult’rate, cult’rating (Lat. knife-like), the shape of a knife-blade; cult’ri-form, cultiform’is (cultor, a knife; forma, shape), in shape like a knife, or coulter.

Cultures, in botany, applied to experimental growth conducted in the laboratory.

Cumaphytic (κύμα, κύματος, a wave, φύτον, a plant), plant-modification due to wave-action (MacMillan); Cumaphy’tism is the condition.

Cu’marin, see Coumarin.

Cu’neal (Crozier), (cuneus, a wedge), cunearius ℃ (Lindley), cu’neate, cuneatus, cu’neiform, cuineform’is, wedge-shaped, triangular.

Cunici’late, cu’niculatus (cuniculus, a rabbit), pierced with a long deep passage open at one end, as the peduncle of Tropaeolum.

Cu’nix ℃ (deriv. I) “The separable place which intervenes between the wood and bark of exogens” (Lindley); the cambium region. Mr. Gepp suggests as a possible derivation, χων, a dog, ἱδρος, birdlime, as being viscous but worthless as birdlime.

Cup, (1) an involucre, as of the acorn; (2) the receptacle, or “shiel’d” in some Lichens; (3) used for Disco-carp; ~shaped, formed like a goblet, see Crateriform.

Cu’pola-shaped, nearly hemispherical, like an acorn-cup.
cu'preus (cuprum, copper), copper-coloured, with its metallic lustre.

cupress'soid (cupressus, cypress, eidos, resemblance), with foliage like the cypress; appre'ssed ~, apically directed and sometimes decurrent; le'poid ~ broad and short.

Cu'pule, Cu'pula (Lat. a little cup), (1) the cup of such fruits as the acorn, an involucre composed of bracts adherent by their base, and free or notched, upwards; (2) a free sheathing structure from the peduncle investing one or more seeds (Oliver and Salisbury); cu'pular-shaped (Lindley) see CUPOLA-SHAPED; cu'pular, cupula'ris, cu'pulate, cupu'latus, furnished with, or subtended by a cupule; Cupulifer (Lat.), cupu'liferous (fero, I bear), producing cupules; cu'puliform, cupuliformis (forma, shape) cupula-shaped.

Cur'arine, an alkaloid from "Curare," obtained from several species of Strychnos.

Cur'cumine, the colouring matter of the roots of Turmeric, Curcuma longa, Linn.

Curl, a disease, shown by deformed and curled leaves, ascribed in some cases to Exoenseus deformans, Fuckel; see LEAF CURL; curled, when a leafy organ is folded or crumpled, as Endive.

Cur'tain = CORTINA.

Curv'ature (curvatura, a bending), continued flexure or bending from a right line; ~ of Concussion, that produced as the result of a sudden blow; Darw'in'ian ~, effects produced on growing organs, as root-tips in consequence of irritation; Sachs's ~, the difference in growth of the two sides of the root (Wettstein); curva'tus (Lat.), bent as a bow, or arc of a circle; Curve, the same as curvature; ~ ribbed, ~ veined = CURVINERVED; curved, bent, not rectilinear.

curvembr'yon'ic (curvus, bent, ἠμβρονω, a foetus), used of any curved embryo; all, except the atropous (orthotropous) form; curvicau'date (cauda, a tail), having a curved tail; curvicost'ate (costa, a rib), with curved ribs or veins; curviden'tate (dens, a tooth), with curved teeth, cur'viform (forma, shape) = CURVED; cur'viferous, curvifer'ous (Lat.), having curved nerves, especially applied to monocotyle-dons; curvi'petal (peta, I seek), Vochting's term for the causes which tend to curve an organ; Curvi'petal'ity is the condition; see AUTOTROPISM; curvi'serial (series, a row), (1) in curved or oblique ranks; (2) an orthostich'ial applied to a cylindrical surface (Church).

Cush'ion, (1) the enlargement at or beneath the insertion of many leaves, the pulvinus; (2) the portion of a Fern-prothallus on which archegonia are borne, often perceptibly thicker than the margins; ~ plants, having the shoot-system much branched, and densely packed to form hemispherical cushions, as Raoulia, Silene acutis and many Mosses; cush'iioned, tufted, as in some Mosses; ~ Fun'gi, Fungi growing in tufts.

Cusp, Cus'p is (Lat. a point), a sharp, rigid point; cuspi'date, cuspi'datus, tipped with a cusp.

cut, the same as incised, or in a general way as cleft.

Cut'i'cule, Cuti'cule (Lat. the outer skin), the outermost skin or pellicle, containing the epidermis; Cuti'cule den'sa, ~ hymeniform is, ~ primordi'al'is, ~ pro'pria, ~ regular'is, ~ subnul'la, modifications proposed by Fayod, in Ann. Sc. Nat., Bot. Sér. VII. ix. (1889) 243-244; cuti'cular, pertaining to the Cuticle; ~ Beads, pearl-like glands, as of Chenopodium album; ~ Crown, at the apex of papillae in certain Anon-aceae; ~ Crests, on epidermis and lower side of leaf in certain Mir-moseae; ~ Epithe'lium, formed of cells of the epidermis and primary cortex, with thickened outer walls; ~ Lay'ers, more or less cuticularized and apposed to the cuticle on its inner
Cuticle, multiplication by cuttings (L. H. Bailey).

Cutting, (1) the severed portion of a plant, used for propagation; (2) the outline of a leaf or frond when incised.

Cul'tage, a type of preparative operation to render vegetative portions suitable for propagation by means of cuttings.

Cuttlefish, a marine mollusk of the order Cephalopoda, characterized by a hard, calcareous shell with a complex internal structure.

Cuticle, a protective outer layer found on the surface of certain plants, animals, and fungi.

Cutin, a waxy substance found on the surface of plants, which acts as a protective barrier against water loss and pathogen invasion.

Cyanophyll, a term used for blue-green algae, which are photosynthetic organisms characterized by their blue pigment.

Cyanogenic, pertaining to plants or chemicals that contain cyanogenic glycosides, which release hydrogen cyanide upon hydrolysis.

Cyanophor'ic, pertaining to a substance or property that resembles or is related to cyanophyll, such as blue-green algae.

Cyanophy'sea, a subphylum of blue-green algae, noted for their complex life cycles and pigmentation.

Cyanophy'tes (φότος, a plant), a term used for a plant-like organism that can photosynthesize.

Cyanophy'tid (+ Plastid) granules, small granules of blue coloring matter found in certain plants.

Cyanophy'tus, a term used for blue-green algae, a group of photosynthetic bacteria and eukaryotic microalgae.

Cyanea, a type of alga that produces a blue pigment and is commonly known as blue-green algae.

Cyanaeus, a term used for a plant-like organism that can photosynthesize.

Cyaneac'eous, a term used for a type of alga that produces a blue pigment and is commonly known as blue-green algae.

Cycadophy'tes (φότος, a plant), a term used for a plant-like organism that can photosynthesize.

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Cycadophy'tus, a term used for blue-green algae, a group of photosynthetic bacteria and eukaryotic microalgae.

Cycadophy'tus, a term used for a plant-like organism that can photosynthesize.
cyclic, *cy'clicus*, applied to foliar structures or arranged in whorls, coiled into a cycle or relating to a cycle; *cyc'clical*, rolled up circularly, as many embryos; *Cyclocho'oريس* (+ Chorisis), Fermond’s term for the division of an axial organ into a sheaf of secondary axes; *cyclodes'-mic* (δέσμα, a bond), applied to the vascular system of typical Dicotyledons (Brebner); *Cy'clogen's* (γεννάω, to bring forth), exogenous plants, from their exhibiting concentric circles in the section of their stems; *cycloge'nyeous*, having concentric circles in the stem, exogenous; *cy-conlyt'ic* (λύω, a loosing) *in'terval*, the space on the Phor'tium with all grades of illumination up to direct sunlight, capable of producing cyclosis or rotation of protoplasm in a plant-cell (S. Moore); *Cyc'lo'me*, a ring-shaped cushion of anthers (Μ'Nab); *Cyclo'meter* (μέτρον, a measure), a series of concentric circles traced on a board, for comparison with structured surfaces; *Cyclo'sis*, the rotation of protoplasm within the cell, in one or more currents; *cy-cloper'mous* (στερμα, a seed), with the embryo coiled round the central albumen; *Cyclu'tra* (οὐρα, a tail), the last member of a whorl.

cy'g'neous *cy'g'neus* (Lat. pertaining to a swan), the sets of Mosses when curved so as to suggest a swan’s neck.

cylindra'ceous, *-ceus* (κύλινδρος, a cylinder, ἄκευας) somewhat cylindric; *Cylindranth'erae* (κύβος, a flower), syngenesious, from the stems forming a tube; *Cylindrench'yma* (γχυμα, an infusion), tissue made up of cylindric cells; *cylind'ric, cylind'rical*, elongated, with a circular cross-section; *Cylindrobasio'te'mon* (βασις, a pedestal; στήμα, a stamen), monadelphous; *cylindrogen'ic* (γεννάω, race, offspring), longitudinal expansion of amoeboïd organisms (Jensen).

cymaphyt'ic, emended spelling of *CUMAPHYTIC*.

cymaphy'tic, emended spelling of *CUMAPHYTIC*.

cyma'tium (κυμάτιον, a little wave) = APOTHECIUM.

cymb'neform, more correctly cymb'i-form, *cymiliform'-is* (cymba, a boat; forma, shape), boat-shaped, used for Diatoms, or the keel of Leguminosae.

Cymbel'lae (cymbula, a little boat), reproductive locomotive bodies of an elliptic form, found in some Algae.

Cyme, *Cy'ma* (κῦμα, a wave, Lat. the sprout of a cabbage), a flower-cluster of determinate or centrifugal type, especially a broad and flattened one; hel'ioid ~ (a) a Bostryx, and (b) a Drepanium, the lateral branches of the successive ramifications always occurring on the same side; *scor'pionoid* ~ (a) Cincinnois, and (b) Rhipidium, the lateral branches always occurring alternately on opposite sides; *Cy'melet*, pr. sim.-let, a little cyme; *cymif'erous* (φέρω, I bear), producing cymes; *cy'mo-bo't'ryose* [or bot'ryoid], when cymes are arranged in a botryoid manner; *cy'moid* (εἶδος, resemblance), having the form of a cyme; *cy'mose*, *cy'mos'us*, *cy'mous*, bearing cymes or relating to cymes; ~ Um'bel, one with centrifugal inflorescence; *Cy'cule*, a diminutive cyme or portion of one.

Cyn'apine, an alkaloid occurring in *Aethusa Cynapium*, Linn.

Cynarrh'odion, *-dium, -dium* (κωνή, a dog; δόνα, a rose), a fruit like that of the dog-rose, fleshy, hollow, and enclosing achenes.

Cy'on, Grew’s spelling of Cion’= SClion.

cy'pera'ceous *Cyperus, + aceous*, relating to sedges, from the typical genus *Cyperus*; *Cyperog'rapher* (γράφω, I write), a writer on *Cyperaceae*.

Cyphel'la (κυφός, bent), “collections of gonidia in the form of cups” (Lindley); *Cyphel'lae*, orbicular fringed spots like dimples, under the thallus of Lichens; *cyphel'late*, marked with Cyphellae.

cypr'i-pe'deous, allied to or resembling *Cypripedium*.
Cytodieresis

Cyp'sela (κύτος, a box), an achene invested by an adnate calyx, as the fruit of Compositae.

Cyroiodoch'as (κύριος, regular, as to time, δοξή, entertainment), employed by Clements to denote regular successions of plants.

Cyr'rhua = CIRRHUS, a tendril.

Cyst, Cyst'is (κύστις, a cavity), (1) a sac or cavity, usually applied to a structure whose nature is doubtful; (2) all cells of non-sexual origin in green Algae which reproduce the plant by germination after a resting period as resting spores, hypospores, chronospores, aplanospores, akinetes (F. Gay); Cyst'ä, Necker’s term for a berry with dry, membranous envelope, as in Passi-flora; Cysticar'pium = Cystocarp; adj. cysticar'pic; Cyst'id, a proposed emendation for Cystid'ium; (1) large, one-celled, sometimes inflated bodies, projecting beyond the basidia and paraphyses of the hymenium of Agarics, of unknown function; (2) = Utricle; Cyst'o-blast (βλαστός, a shoot), cited by Crozier for Cytoblast; Cyst'ocarp Cystocarp'ium (καρπός, fruit), a sporophore in Algae, especially Florideae, a cyst containing sexually produced spores; Cyst'olith (λίθος, stone), mineral concretions, usually of calcium carbonate on a cellulose stalk, occurring chiefly in special cells of the Urticaceae, as in Ficus elastica, Roxb.; adj. cystolith'ic;

Cyst'ophore (φορέω, I carry), the same as Asco'phore; Cyst'osphere (σφαιρα, a ball), masses of secretion enclosed in a kind of sac or pouch; Cyst'sorse Cystoso'rus (σωρός, a heap), a group of resting-spores within a cell as in Woronina; Cyst'sorse (σωρός, a seed) = Carpo'spore (Strasburger); Cystot'yle (τύλη, a lump), mucilaginous concretions resembling Cystoliths, but uncalcified and usually occurring in pairs (Radikofe); Cyst'ula = Cyst'uла, Cistella.

Cy'tase (κύτος, a hollow vessel), an enzyme found in germinating seeds which hydrolyses cellulose; Cytas'ter (ἄστηρ, a star), a series of achromatic rays from each pole of the nucleus into the cytoplasm in karyokinesis (Crozier); Cytench'yma (ἐγχύμα, an infusion), vacuolar structure in cells, fluid which separates from protoplasm as vacuoles (Crozier); Cyt'ioderm (δέρμα, skin), the cell-wall in Diatomaceae (Crozier); Cytioder'ma, or Cy'toderm (δέρμα, a skin), (1) the cell-wall; (2) the outer layer of protoplasm next the cell-wall, the primordial utricle; Cytioplas'ma (πλάσμα, moulded), the cell-contents.

Cy'tisine, an alkaloid occurring in the genus Cytisus.

Cy'to-anat'omy (κύτος, a hollow vessel + ANATOMY), the organisation of the cell (Graf); Cytoas'ter (+ Aster), a star in nuclear division; cf. Dy'aster; Cyt'o-blast (βλαστός, a shoot), (1) Schleiden’s name for the cell-nucleus; (2) a colony of bioblasts which have lost their independent existence; cf. Bioblast; Cytoblast'ema, the formative material in which cells are produced, and by which they are held in union; protoplasm; Cy'tochem'istry, the chemistry of the cell (Graf); Cyto-cho'rism (χορις, I separate), division of living cells (Fitting); Cyto-chyle'ma (χυλός, juice), the contents of the cell, composed of Plasmo-chym, and Cy'tochym (χύμα, that which is poured), the more watery sap present in the vacuoles of the plant-cell (Strasburger); cytoclas'tic (κλαστικός, broken in pieces), destructive of the cell; Cytocoag'ulase (coagulo, I cause to coagulate), an enzyme in the cambium region of Prunus in autumn, which deposits an insoluble product from gum (Griiss); Cy'todes, (1) cells; (2) nuclear elements in which the caryosomes are not grouped into nuclei (Vuillemin); Cy'toderm = Cytiod'erma. Cytodier'esis (βίασεις, division), cell-division with nuclear
division, and formation of a nuclear-spindle and asters (Crozier); Cy'to-dynam'ics (+ Dynamic), phenomena of motion, cell-division, maturation, fertilization, death and part pathology (Graf); Cy'tog'amy (γάμος, marriage), the complete fusion of two cells into a seminucleate zygote or oosperm; Cy'togen'esis (γένεσις, beginning), the origin and development of cells; sometimes written Cytogenesis; cy'togenetic, pertaining to cell-formation; cyto'-genous, producing cells, or cellular tissue; Cy'tog'eny = Cy'togenesis; Cytoby'a'loplasm (+ Hyaloplasm), the protoplasm of the cell, apart from any granules or foreign matter; Cy'toby'rolist (θῦρα, water; λασις, a loosing), an enzyme which attacks and breaks up the cell-wall by hydrolysis; Cy'tobydro'lysis, the action of an enzyme on the cell-wall, which becomes broken down in consequence; Cytokine'sis (κίνησις, motion), cell-division by mitosis; Cy'tolist (λαβίς, a loosing), an enzyme which dissolves the cell-wall; Cy'to-lite = Cystolith; Cy'tolymph (λυμφα, spring water), the more fluid contents of a cell; Cy'tolyl'tic, of a ferment dissolving cells apart; Cy'tol'ogy (λόγος, discourse), the science of the cell, its life history, nuclear divisions and development; adj. cyto-log'ic, cytol'o-gieal; Cy'to-mechan'ics, physical properties and behaviour to mechanical stimuli (Graf); Cy'tomatic'rosomes (μικρός, small; σώμα, a body), the granules or microsomes imbedded in the cell-protoplasm; Cy'tomix'is (μίξις, a mingling), the extrusion of chromatin from the nucleus of one pollen-mother-cell into the cytoplasm of an adjacent mother-cell (Gates); Cy'to-morphol'ogy (+ Morphology), external form and size of the cell (Graf); Cy'to-physiol'o-gy (+ Physiology); Graf divides this into sub-heads of Cyto-Chemistry, ~ Dynamics, ~ Mechanics, and ~ Statics; Cy'toplas'm (πλάσμα, moulded), the general protoplasm of the cell (Strasburger); Cy'toplas'mic (πλάσμα, that formed), relating to Cyto-plasm; ~ Androg'a'my, the male gamete is fertilized by the cytoplasm of the female gamete (Dangeard); ~ Gynog'a'my the female gamete is impregnated by the cytoplasm of the male gamete (Dangeard); Cy'toplast (πλάσμα, moulded), the cytoplasm as a unit, in contrast to the nucleus; Cy'toplastic, relating to the Cyto-plast; Cy'toplast'ic, a protoid which apparently forms the bulk of the cytoplasm; Cy'tosarc (σάρξ, σαρκός, flesh), the body of a cell exclusive of the nucleus (Schneider); Cy'tosomes (σώμα, a body), Vuiillemin's name for the granules of cell-protoplasm; cytomicrosomes; Cy'to-stat'ics (στατικός, causing to stand), conditions of equilibrium in the cell (Graf); Cy'totax'is (τάξις, order), the mutual relation of cells or organisms; neg'ative ~, the tendency to separate from each other; pos'itive ~, the tendency to approach each other; Cy'totox'ins (τοξικός, for the bow, i.e. poison), enzyme-like productions of which little is known; also styled enzymes; Cy'to-tr'o'pism (τρόπος), a turning = Cy'totaxis.

dacryoi'deus (δακρυς, a tear; εἶδος, resemblance), used for pear-shaped fruit, oblong and rounded at one end, pointed at the other.
dactyl'i'nis (δάκτυλος, a finger), divided like fingers; dac'tyline, dac'tyloid, (1) finger-like; (2) pertaining to the § Dactylolides of the genus Saxifr'aga; Dactylorhi'za (δάκτυλος, root), the forking of roots; dac'tylo'se, dactylo'sus, fingered, or finger-shaped.
daeda'leus, daede'leus (Lat. = skilful craft), (1) the apex of a leaf irregularly jagged, though not arcuate; (2) wavy and irregularly pitted as the hymenium of some Agari'c; Daedalench'yama (δάεανθμα, an infusion), tissue made up of entangled cells, as in some Fungi.
Dahline, a substance resembling starch from the tubers of the genus *Dahlia*.

*Dammar*, a transparent resin from *Agathis loranphofia*, Salisb., formerly named *Dammara orientalis*, Lamb.

*Damping*, a cultivator’s term for premature decay in plants, especially young seedlings, attributed to excess of moisture; *Damping off*, the collapse of seedlings, ascribed to the attacks of the Fungus *Botrytis vulgaris*, or of *Pythium De-Baryanum*.

*Daphnin*, the bitter principle of *Daphne Mezereum*, Linn.

*Darwin*, see *Knight-Darwin Law*.

*Darwinian Curvature*, the bending induced by the irritation of any foreign substance close to the apex of the root.

*Dasycladous*, *-dus* (*δασως*, thick; *καδος*, a branch) = *Compactus* (Russow); *Dasophysyllum*, *-lus* (*φυλλον*, a leaf), (1) thick-leaved; (2) leaves thickly set; (3) with woolly leaves

date-shaped, resembling a date in form.

*Date*cin, a substance having the appearance of grape-sugar, first obtained from *Datisca cannabina*, Linn.; it has been used as a yellow dye.

*Daturine*, an alkaloid of *Datura Stramonium*, Linn.

*Daughter-cells*, young cells derived from the division of an older one, the mother-cell; *Chromosome*, a secondary chromosome, derived from division of the original; *Skein*, stages in nuclear division when the chromatins is more or less in a reticulate condition; further distinguished by some observers into “loose” or “close”; *Spore*, a spore produced immediately from another or upon a promycelium; *Star*, one of the groups of chromatic filaments at the poles of a dividing nucleus; the two together with the connecting spindle constitute the “Dyaster” stage.

*Day-position*, the pose assumed by leaves during the day, in contrast to that taken for the night.

*Deaf*, has been applied to imperfect fruits of *Rumex*; *-seeds*, imperfect seeds of grasses (Percival).

*Dealtate*, *dealta tus* (Lat. white-washed), whitened; covered with an opaque white powder.

*Deammonifica*’tion (*de*, from; *ammonia*, an alkali; *facio, I make*); a reduction of ammonia by the soil bacteria *Deammonobacter*ia (Lipman).

*Deassimilation* (assimilatio), conversion of food into digested products; the process of plant-katabolism (Quin).

*Death-point*, the critical point when a spore is rendered permanently incapable of germinating (J. F. Clarke).

*Deazotifica*’tion (*azote; facio, I make*), the reduction of nitrogenous substances by *Deazotobacter*ia (Lipman).

*Decagynia* (*δεκα*, ten; *γυνη*, woman), a Linnean artificial order of plants with ten pistils; *decagynia*, *decagynous*, having ten styles or carpels; *decamerous*, *decamerus* (*μεπος, a share*), in tens; *decander* (Mod. Lat.) = *decandrous*; *Decandria* (δανδρ, *δανδρια*), a Linnean artificial class of plants with ten stamens; *decandria*, *decandrous*, having ten stamens.

*Decapetalous*, *-lus* (*δεκα*, ten; *πεταλον*, a flower-leaf), with ten petals; *decaphylous* (*φυλλον*, a leaf), with ten leaves or segments; *decarius* (*ἄρπην*, male), Neckert’s term for ten stamens and one pistil; *decaspermous*, *-lus* (+ *Sepalum*), with ten sepals; *decaspermal* (*σκηρμα*, a seed), having ten seeds.

*Decendentate* (*decem*, ten; *dens, dentis*, a tooth), having ten teeth, as the capsule of *Cerasium*; *decemfid* (Crozier), *decemfidus* (*fid*, the root of *fido, I split*), ten cleft; *decemlocularis* (*locillus*, a compartment), with ten cells, as an ovary.

*Deceptive* (*deceptus*, deceived) *Fly*
plants, applied to Parnassia and other flowers which seem to offer much honey, but the apparent glands are dry (Knuth).

Deciduillgano'ssa, pl. (deciduous, ready to fall; lignosus, woody), associations of trees and shrubs which lose their leaves during unfavourable periods, and usually have protected buds (Rübel); deciduous, deciduous, a leaf falling in season, as petals fall after flowering, or leaves in autumn, evergreens excepted; Deciduousness, the quality of falling once a year.

dec'linate, declinatus (Lat. turned aside), bent or curved downward or forward; declined, directed obliquely.

Decoloura'tion, Decolouratio, absence of colour; dec'orate, decolouratus (Lat.), discoloured, discharged of colour, colourless.

decom'pound, decompositus (Lat.), several times divided or compounded.

decort'icating (decorticatio, barking), deprived of bark; Decortication, stripping off bark.

decreases'ingly pinnate, where the leaflets diminish in size from the base upwards.

decum'bent, -ens (Lat. reclining), reclining, but with the summit ascending.

decur'rent, decur'rens (Lat.), running down, as when leaves are prolonged beyond their insertion and thus run down the stem; decursive, decursivus (decursus, a descent) = decurrent; decursively pinnate, the leaf seemingly pinnate, but the leaflets decurrent along the petiole.

decus'sate, decussatus (Lat. divided cross-wise), in pairs alternately at right angles; Decussation, a crossing by pairs of leaves.

Dédoublement (Fr.), doubling = Chorisis.

deduced (Lat: leading forth), applied by Macfarlane to the conducting surface in the pitchers of Nepenthes.

Déduplication (Fr. déduplication), a synonym of Dédoublement.

Defarina'tion (de, from, farina, flour), De Vries's term for suppressed or greatly lessened formation of starch.

def'erent (deferro, I bring down), conveying anything downward.

defered' shoots, those produced by buds which have remained long dormant.

Deferrifica'tion (de, from, ferrum, iron, facio, I make), the reduction of iron by FerribacteriA (Lipman).

def'inite, definitus (precise, clear), (1) precise; (2) of a certain number, as of stamens not exceeding twenty; (3) applied to inflorescence it means cymose; - Inflorescence, where the axis ends in a flower; definitively Nucleus, a result of the fusion of one nucleus each from the micro-pylar and chalazal ends of the embryo sac.

defixed, definatus (Lat. fastened) = immersed.

deflect'ed, deflectus (Lat. bent aside), bent or turned abruptly downwards; deflexed', bent outwards, the opposite of inflexed; Deflexion, turned downwards.

deflo'rate, defloratus (Lat.), past the flowering state.

deflower, to deprive of flowers.

defluous (Lat. defluens), flowing down.

defoliate, defoliatus (Mod. Lat.), having cast its leaves; Defoliation, the act of shedding leaves.

Deform (deformis, misshapen), used by O. Kuntze for Deformity; Deformation, a malformation or alteration from the normal state; deformed', disfigured, distorted; Deformity, Deformatus (Lat.), an unshapely organism; a monster.

degenerate (degenerate, to become unlike the race), degraded in function or form; Degeneration, an alteration for the worse, or less highly developed, as when scales appear instead of leaves.

degerm'ed (de, from, germin, an embryo), used of a seed deprived of its embryo (Pond).

Degradation (degradatio, L. Lat. the act of reducing), (1) less highly differ-
Degradation
denudate

entiated, simpler structures taking the place of more elaborate; (2) lower in function, retrograde metamorphosis, or a katabolic change, complex substances resolving into simpler; ~ Prod'uct, the result of kat'abolism.

degress'ive, tending towards degeneration.

dehisce' (dehisco, I yawn), to open spontaneously when ripe, as seed capsules, etc.; Dehis'cence, Dehis'cent'ia, the mode of opening of a fruit capsule or anther by valves, slits or pores; dehis'cent, dehis'sens, dehis'cing, splitting into definite parts.

Dehydra'tion (de, privative; ὕδας, water), depriving of water as a component, as by the use of alcohol, or calcic hydroxide.

delignify'ing (lignum, wood; facio, I make), applied to an enzyme which breaks down the structure of wood, as in Meruli'sus.

Del'i'a, applied to those colour-forms of Antirrhinum with ivory tube and magenta or crimson lips (De Vries).

Delimita'tion (Late Lat. delimitare), used for Abjunction; cutting off by a precise limit; delim'ited, circumscribed.

deliques'cent, -cns (Lat. melting away), dissolving or melting away, as (1) when the stem loses itself by repeated branching; or (2) when certain Agarics become fluid at maturity.

Deli'quium ‡ (Lat., a defect) = Emarginate (Lindley).

Del'phine, an alkaloid present in Delphinium Staphisagria, Linn.

del'ta-leaved (δέλτα, the Greek letter Δ), having triangular leaves; del'toid, del'toides, -deus (ελδός, resemblance), shaped like the Greek Δ; an equilateral triangle.

demat'toid (ελδός, resemblance), like the genus Dematium, having a felted layer of hypheae bearing perithecia.

demered'd, demer'ssus (Lat. plunged under), under water, especially of a part constantly submerged.

demis'ssus (Iat.), hanging down, lowered.

Den'a'rii ‡ (Lat.) = ten together (Lindley).

Den'дрad (δενάριον, a tree + AD), an orchard plant (Clements); den'dri'form (forma, shape) = Dendroid; dendrit'ic, -icus, -ical, having a branched appearance, as the lirellae of Lichens, etc.; Dendrio-tham'no'des, with thallus branched as a bush, as the Reindeer Lichen, Cladonia rangiferina, Hoffm.; Den'dri'tes, cellulose in crystals; Den'dri'um, an "orchard formation" (Clements); dendrophi'lus (φιλω, I love), "orchard loving"; Dendro'thy'ta (φυτων, a plant), "orchard plants" (Clements); den'droid, den-droi'des, den-droi'deus (ελδος, resemblance), tree-like in form, or branching; Den'drolite (Αλδος, stone), a fossil tree; Dendro'tigist (Λόγος, discourse), one skilled in the knowledge of trees; Dendro'togy, the study of trees.

deni (Lat.), by tens, ten together.

den'i'grate, deni-gra'tus (Lat.), blackened.

Denitrifica'tion (de, from, nitron, nitre, facio, I make), the reduction of nitrates by the action of Denitro-bac'teria (Lipman).

Den'izien, H. C. Watson’s term for plants suspected of foreign origin, though maintaining their place, as Viola odorata, Linn.

Dens (Lat.), a tooth; den'tate, den-ta'tus (Lat.), toothed, especially with salient teeth directed forward; denta'to-crena'tus = Crena-todontatus; ~ -lacinia'tus, with toothings irregularly extended into long point; ~ -serra'tus, the toothings tapered and pointing forward; Dent'icle, a small tooth (Crozier); denti'culate, denti'culatus, minutely toothed; Denticula'tions, small processes or teeth; dent'iform (forma, shape), J. Smith’s equivalent for toothed; den'toid (ελδός, form), tooth-shaped.

denu'date, denuda'tus (Lat.), stripped,
made bare, or naked; Denud'a'tion, the act of stripping bare; denu'ded
Quad'r at, a permanent quadrate, or metre-square of land, from which all
the original vegetation has been removed, for the study of invasion
(Clements).

deoperc'ulate, deopercula' tus (do =
from, operculum, a lid); (1) when
the operculum of a Moss does not
separate spontaneously from the
sporophore; (2) having lost the
operculum.
deror'sum (Lat. from de, down, versus
turned towards), downward.
depaup'er at e, depaupera'tus (Lat.),
impoveryished as if starved, reduced in
function.
depend', depen'dent, depen'dens (Lat.),
downing down.
Deperula'tion (de, prefix of separation,
+ Perula), the act of throwing off
the bud-scales in leafing; calyp'tral
~, thrown off as a cap; tu' bular
~, when remaining as a collar at
the base of the shoot (Kirchner).

Depigmenta'tion (pigmentum, colouring
matter), latency of colour in
flowers, etc. (De Vries).
depla' nate, deplana'tus (Lat.), flat-
tened or expanded.

Deple'tion (deplatus, emptied out),
enzyme digestion of reserve material
in the endosper'm (Pond).

Depo'sits (depositus, laid aside),
secondary growths on the cell-
wall, more or less covering it, in
various forms.
depres'sed, depres'sus (Lat.), sunk
down, as if flattened from above;
Depres'sio (Lat.), a pressing or sinking
down, a little hollow; ~ dor-
sa'lis, a depression in the spores of
some Agarics extending along the
back of the spore; ~ hill'a'ris, a
similar depression, but of less ex-
tent, above the hilum (Fayod);
depress'o-trunca'tus = re'tuse.

Deproteofica'tion (de, from, + Proteid,
fació, I make), decay and putre-
faction due to the action of Deproteo-
bacte'ria (Lipman).
deregula'ris (de, opposed; regularis
in order), between regular and irre-
gular (Lindley).

Deriv'a'tive Hy'brids, those sprung
from a union of a hybrid, and one of
its parent forms or another
hybrid.
deriv'ed (derivo, I turn aside) (disyll.),
used by Clements to denote not
native.

Der'ma (dérma, dérmatos, skin), surface
of an organ, bark, or rind; Derma-
calypt'rogen (kalóptra, a veil;
γέναω, I bring forth), Schwendener's
term for a common histogen which
produces root-cap and root-epider-
mis in Phanerogams; der'mal, relat-
ing to the outer covering; ~ Tis'sue,
the substance of the epidermis and
periderm; dermat'i' us, applied to
those plants such as Lichens, which
live on bark or epidermis; der-
mat'io'id (elipsoid, form), skin-like in
function or appearance; Dermo-
calypt'trogen = Derma'calyptrogen;

Derm'a'tocyst, Dermatocystis (σώτης,
a bag or pouch), inflated hairs on
the surface of the sporophore of
young Agarics; Dermat'o'gen (γέναω,
I bring forth), the meristem form-
ing the layer of nascent epidermis;
primordial epidermis; Dermat'~
ophyte (φυτών, a plant), any Fungus
parasitic on the skin of man or
other animals (Crozier); Derma-
'otosomes (σώμα, a body), Wiesner's
term for granular bodies in rows,
united and surrounded by proto-
plasm, which form the cell-wall;

Dermobla's'tus (δάστρος, a shoot),
the cotyledon formed by a mem-
brane that bursts irregularly
(S. F. Gray); Dermocalypt'trogen
= Derma'calyptrogen;

Derm'oplant (πλαστός, moulded), Pirotta's
term for a Monoplant, invested
with a membrane; Dermosym'plast,
the same writer's word for a Sym-
plast; as a latex-vessel.

Descend'ing, descen'dens (Lat.), tending
gradually downwards; (1) as the
branches of some trees; (2) as the
roots; ~ Ax'is, the root system;
~ Metamorph'osis, substitution of
Dextrin

organisms of a lower grade, as stamens for pistils, petals for stamens, etc.; ~ Sap. formerly applied to the Cambium; Descen'sus ♯ = Root.

Des'ert, Deser'tum (Lat.), a tract where rain is continuously wanting, and vegetation is most scanty, as the Epycto-Arabian desert; it may be either climatic or edaphic. Deser'tion of Host = Lipoxeny.

des'inens (Lat. ceasing), Desin'entia, ending in, the manner in which a lobe terminates.

desmid'ian, allied to the Desmidea;

Des'midocarp (καρπός, fruit), the special cystocarp of Balbianiů, the fertilized trichogynial cell divides transversely, each daughter-cell in turn branching with terminal oospores.

Desmobry'a (δεσμόσ, a bond; βρόν, a moss), a division of Ferns, where the fronds are adherent to the caulix; cf. Eremobry'a; Desmo-chon'dria, pl. (χώνδρος, grain) = Microsomes; Des'mogen (γένναω, I bring forth), distinguished as primary ~, the procambium, or embryonic tissue from which the vascular tissue is afterwards formed; or sec'ondary ~, formed from the cambium, afterwards transferred into permanent vascular strands;

Desmoplank' ton ( + Plankton), plankton united into bands or ribbons (Forel).

destarch'ed, deprived of starch, as by translocation.

destruct'ive Meta-bol'olism, those changes which take place during the waste of tissues; ~ Par'asite, one which seriously injures or destroys the host.

Desulphofico'tion (de, from, sulfur, brimstone, facio, I make), the reduction of sulphates and sulphites by Desulphobacter'ia (Lipman).

detect'us (Lat. laid bare) = naked.

detent'ive (detento, I hold back), used of those parts of a Pitcher plant which detain insects (Macfarlane).

Deter'minants, pl. (determin'na, I limit), separate material particles in the germ-cells; ~ of Hered'ity, those carried by zygotes (Weismann);

deter'minate, deter'mina'tus (Lat. bounded), definite; ~ Growth, when the season's growth ends with a bud; ~ Inflores'cence, when it ends with a bud, as in cymes; De'termina'tion, -atio, the ascertaining the names and systematic position of plants, identification.

deus'tate, deus'tous (deustus, burned up), as if scorched (Heinig).

Deu'ter (Ger., an interpreter) Cells, a row of large parenchymatous cells, empty or containing starch, which occur in the middle nerve of Mosses (Limpricht); cf. Pointer-cells.

Deuterog'amy (δευτερόν, the second; γάμος, marriage), peculiar nuclear fusions in certain Cryptogams, superposed upon and subsequent to the sexual act (P. Groom).

deutogen'otypic ( + genotypic) = Isogenotypic.

Deuterogonid'ium (+ Gonidium), a gonidium in the second generation of a transitorial series (A. Braun; Deuteroplas'ma (πλάσμα, moulded) = Paraplasm; sometimes contracted into Deut'oplas'm; Deutero-strophi'ies (στροφή), a twist or turn), spirals of a third degree in the development of leaves; Deutoxy'lem (+ Xylem), a synonym of Meta-xylem.

Devel'opment, the gradual extension of the parts by which any organ or plant passes from its beginning to its maturity.

Devia'tion, probable, Galton's term for probable variation.

Dew-leaves, leaves which slope upwards, so that dew is collected; ~ - rust, "blotchy discoloration of leaves caused by dew" (Heinig).

dex'trad (dextra, the right hand); an unusual modification of dex'tral, towards or on the right side, as a climbing plant, cf. Dext'rose;

Dex'trin, a substance produced during the transformation of starch into sugar, said to be of two forms: —Ach- roodextrin and Amylodextrin;
Dextrinase, an enzyme stated to be present in diastase (Wysman); dextrorotatory, turning towards the right; dextrorse, dextrorsus (from versus, turned towards), towards the right hand; dextrorsum volubilis (Lat.), twining towards the right; Dextrorse, glucose, or fruit sugar, it turns the plane of polarization to the right; cf. Levulose; Dextrostyly (+ Style), the style curves to the right in enantio-stylos flowers.

dia-, dis-, in Greek compounds = two, or double.

dia-, Greek, for through.

Diablaste'sis (+ Blastesis), special growth from the hyphal layer of a Lichen (Minks).

Diachne'ium (di, two, + Achenium), or Diake'neium = Cremocarp.

Diach'yma (dia, through: χυμά, a libation), Link's term for Mesophyll.

diac'mic (di, two, ἀκρή, a point), employed to denote plankton having two maximum periods; cf. Monac'mic.

Di'ad, a variation in spelling of Dyad, Ἰνφρα.

Diadel'phia (di, two, ἄδελφος, a brother), a Linnean class having the stamens in two bundles or brotherhoods; diadelph'ian, diadelph'ous, -us, -icus, with two groups of stamens.

diadromous (dia, through: δρόμος, course), applied to a fan-shaped venation, as in Ginkgo biloba, Linn.

diaecious = dioecious.

diage'ic (γῆ, earth), plants producing stolons which are below ground; diageotropic (τρόπος, a turn), a modified form of geotropism, the organs placing themselves in a horizontal position, as though opposing forces were neutralised; Diageot'rropism, the state just described; Diagnos'is (γνώσις, wisdom), a brief distinguishing character.

diagonal (dia, across; γωνία, angle), a mean between two forces, a compromise of position; ~ Plane, in a flower, any vertical plane which is not antero-posterior (front to back) or lateral (side to side); ~ Position, one intermediate between median and lateral; ~ Symmetry, applied to the valves of Diatoms when their torsion amounts to 180°; D'agram (γραμμή, an outline, see FLORAL DIAGRAM; Diapheliot'tropism (διαλογίς, the sun; τρόπος, a turn), growth more or less horizontal, under the influence of light, as when leaves place themselves at right angles to incident light; adj. diapheliotrop'ic; Diakine'sis (κινήσις, energy), the last stage in the heterotype prophase in which the definitive chromosomes have been formed and the nuclear membrane is still intact; adj. diakinet'ic.

dialycarp'ic (διαλυκάρπως, I disband; καρπός, fruit), having a fruit composed of distinct carpels; Dialydes'my (διαλυσμύ, a band), the breaking up of a stele, into separate bundles, each with its own endodermis; Dialypet'alae (πέταλον, a flower-leaf), Endlicher's equivalent for the Polypet'alae of Jussieu; dialypet'alous, poly-petalous; diallyphyll'ous (φύλλον, a leaf), bearing separate leaves; dialysep'alous (+ Sepalum), bearing separate sepals; Dial'y sis, the separation of parts normally in one, especially parts of the same whorl; dialyste'tic (+ Stele), having distinct stelae; Dialyste'ty, a variation of Polystely, in which the separate stelae remain for the most part separate during their longitudinal course.

diamesog'amous (διά, through; μέγας, middle; γάμος, marriage), fertilization by the means of some external agent, as wind or insects; Diamesog'ammy, the condition just defined.

dian'drous (-drius, -drius, -drid, two, ἀνήρ, ἀνδρός, man; + Eous), the condition of Orchids having two perfect stamens (S. Moore); Dian'dria, a Linnean class with plants of two stamens; dian'drian, dian'drous (diaender), possessing two stamens; dianth'ic (ἀνθως, a flower), pollination by
a flower of the same plant (K. Pearson).

diaph' anous, -anous (διά, through; φαινω, I show), permitting the light to shine through; also written dia-
phanus; Diaph' ery (φέρω, I bear), the calycine synthesis of two flowers (Morren); Diaphototax' is (φως, light; ταξις, order), the arrangement of Oscillatoria threads at right angles to incident light of optimal intensity (Pieper); Diaphototrop' ism (+ Phototrop' ism), the act of self-placing at right angles to incident light; adj. diaphototrop' ic; Di'aphragm (φάραγμ, I enclose), a dividing mem-
brane or partition, as (1) the constric-
tion in the neck of the nucule in Chara, from the inward projections of the segments; (2) the transverse septa in the stem of Equisetum or of grasses; (3) the layer separating the prothallium from the cavity of the macrosphere in Vascular Cryptogams; dia-
phyll' ous (φύλλον, a leaf) = dia-
lyphyll' ous; Diaph' ysis (φω, to make grow), proliferation of the inflorescence.

di' arch (δια, two; ἀρχή, beginning), having two protoxylem groups, used of the steles of roots; diari' nus (διαρν, male), Neeker’s term for diandrous.

diaschis'tic (διά, through; σχιστικός, cleft), applied to chromosomes when they divide transversely; cf. Ana-
schis'tic (Farmer); Dias' pasis (σπάω, I tear), when the daughter-
nuclei in amitosis are torn asunder (Wasielewski).

Di'astase (διαστασις, standing apart), an amylolytic enzyme which con-
verts starch into malt-sugar; ~ of Transloca' tion attacks starch grains gradually over their whole sur-
face; it is almost universally dis-
tributed in plants; ~ of Secre'tion.

acts by corrosion, attacking parts of the starch-grain first; it is formed by the glandular epithelium of the scutelum of grasses; adj. diastat' ic. Di' aster (διαστήρ, a star), see Dyaster.

Diast' ole (διαστολή, separation), the slow dilation of a contractile vesicle; cf. Sys'tole.

Diather'mancy (διά, through; θερμάνω, I warm), the relative conductivity of a medium with regard to the transmission of heat (T. W. Engel-
mann); diatherm' op'tic (+ Thermotrop' ic) unaffected by or placing itself transversely to the source of heat; Diatherm' trop' ic, the condition described.

Diatome' sis (τυχόν, a cut), in Amitosis when the daughter-nuclei become neatly divided (Wasielewski).

diato' ma'ceous, resembling or consisting of diatoms whose type is Dia-
toma; Diatom' ine, the colouring matter of Diatoms, phycoxanthine; Diat' omist, one devoted to the study of Diatoms; Diat' omiphile (φιλέω, I love), an enthusiastic student of Diatoms.

diatrop' ic (διά, through; τρόπος, twin-
ing), used of organs which place themselves transversely to the operating force; Diatrop' ism is the condition; it may be Geotrop' ic or Heliotrop' ic.

dibot' ryal = Diibotryoid.

dibot' ryoid (δίς, double; + Botryoid), a compound inflorescence, the branches of the first and succeeding orders being botryoid, such as the com-
 pound umbel, panicle, or spike; Dicar' otin (δίς, twice; + Carotin), a lipochrome pigment; dicarp' ellary (καρπός, fruit), composed of two carpsels or pistil-leaves; Dicar' yocyte (κάρυον, a nut; κύτος, a hollow vessel), a binucleate cell (Moreau); Dicar' yon, the complex of two inde-
pendent nuclei, united in the same cell (Bonnet); Dicar' yophase (φάσις, a phase), the stage ending in the production of teleutospores (Moreau).

dicha' sial (διχάςω, I disunite), re-
 lating to a Dichan' ium; ~ Cymes, cymes whose secondary members are dichasia, such as occur in Euphorbiaceae; Dich' a'sium, a false dichotomy in which two lateral shoots of nearly equal strength
arise from the primary axis below the flower which terminates the apex, the process being repeated by each set of branches; a two-parted or two-ranged cyme; dichas'tic, spontaneously dividing.

Dichlamyd'eous (δίχα, in two; χλαμός, χλαμύδος, a cloak), having a double perianth, calyx and corolla; dichoblas'tic (διβλάστος, a shoot), (1) suggested by Celakovsky to replace "dichotomous" when the repeated dichotomy develops into a symposium; (2) branching intermediate between his acro- and pleuro-blastic conditions, it apparently occurs in the embryo of Pteridophytes; Dichocarp'ism (καρπός, fruit), Cooke's term for Fungi producing two distinct forms of fructification; dicyomorphic as to fruit; dichodynam'ous, dichodynamic (δύναμις, power), applied to hybrids in which the characters of both parents are equally represented; dichog'amous (γάμος, marriage), hermaphrodite with one sex earlier mature than the other, the stamens and pistils not synchronizing; Dichog'amy, insuring cross-fertilization, by the sexes not being developed simultaneously; Dichog'eny (γένος, offspring), the condition when of two formative impulses, one is set in motion, and the other inhibited (De Vries); dichopod'ial (πῶδοςων, a small foot), when an axis repeatedly forks, giving rise to an inflorescence termed a Dichopod'ium (Pax); dichot'omal, (τόμος, a cut), pertaining to a bifurcation, as a ~ Flower', one seated in the fork of a dichasium; Dichoto'mia, forking, as of branches in an inflorescence; dichotomy; ~ brachi'a'lis, in Uladophora, the normal forking, the cell-wall remaining unchanged; ~ conn'a'ta, the basal cells of the fork grown together; ~ ma'trica'lis, when the terminal cell forks and the branch and stem are equal in thickness; ~ spu'ria, branch and stem of equal size, but the mother cell is bent (Brand); dichot'omize, to fork or divide in pairs; dichot'omous (ομος, forked, parted by pairs; ~ Cyme, of English authors = Dichasium; Dichot'omy, the state of being repeatedly forked; ~ hel'ioid ~, in each successive forking, the branch which continues to develop is on the same side as the previous one, the other branch aborts; false ~, = Dichasium; scorp'ioid ~, the branches develop on each side alternately; dichot'yph'ic (τύπος, type), the appearance of two or more types on the same plant (Focke); Dichot'yph'py (τύπος, a type), the occurrence of two different forms of the same stock; Dicle'sium (κλάσις, closing), an achene within a separate and free covering of perianth, as Mirabilis; Di'clinism, (κλίνη, a bed), the separation of pollen and stigma in space, as dichogamy is in time; di'cimus, unisexual, having the stamens in one flower, and the pistils in another; Di'cley, male and female organs separate and in different flowers; di'coccus, -us (δίς, two; κόκκος, a kernel), having fruit of two cocci; diicc'eus (κοίλος, a hollow), with two cavities.

Dicot'ylae, an abbreviation of Dicotyle'doneae; dicot'y'lisos = Dicotyle'donous.

Dicotyledo'neae, Dicotyle'dones, Dico'tyle'dons (κοτυληذως, cup-shaped hollow, used for seed-lobe), plants of the class denoted by their possession of two cotyledons; dicotyle'donous, -us, having a pair of seed-lomes; Dicot'y'ls, an abbreviation for Dicotyle'dons.

dicran'a'ceous, resembling the Moss Dicranum.

Dict'y'din, a substance found by Jahn in the Myxomycete Dicty'dium umbi'licatum, as granules which resist both acids and alcalis.

Dictyodes'mic (δικτύων, a net; δίςως, a bond), the vascular network in Ferns so termed by Brebner; dict'yod'romous (δρόμος, a course), with reticulate venation; Dict'yogens (γέννω, I bring forth), plants having
netted veins, proposed by Lindley as intermediate between his Endogens and Exogens; dicytogonal, applied to monocotyledons with netted veins; ~ Lay' er, a layer of meristem general in monocotyledons, which gives rise to the central "body" and cortex of the young roots (Mangin); dicytomeristic ( + Meristele), the stem-stelates in certain Ferns thus designated by Brehm; Dicytospora (+ Spora), Fungi having muriform spores (Traverso); Dicytosporangium (+ Sporangium), the sporangium of Saprolegnia, with encased spores germinating within the sporangium (Walpole and Huxley); Diet'yosteles (+ Stele) a stele with large overlapping leaf-gaps; ~ dissected ~, a perforated dicytostele in which the strands of the stelar network are reduced to thin threads (Tansley); perforated ~, a dicytostele in which gaps other than leaf gaps occur; siphonic ~, when the network of meristeles is simple and tubular (Brehm); adj. dicytosteolic; Dicyoxylon (ξυλον, wood), applied to the cortex of a fossil stem possessing a netted system of hypodermal fibrous strands, as in Llyniodendron (Scott).

Dict'yochus State of Saprolegniaceae (Hartog) = Dicytosporangium.

dicyclic (δς, two; κόκκος, a circle), (1) when a series of organs is in two whorls as a perianth; (2) applied to biennials; Dicyc'tly, the condition of having two concentric vascular cylinders; Di'cyme, a cyme in which the first (or higher) axes again form cymes (Eichler); ~ a two-fifths spiral expressed in terms of two circles, two outside, and three inside (Church); dicy'mose (κυμα, a wave), doubly cymose; didip'loid (δι, twice, + diploid), used of a nucleus consisting of the fusion of two diploid nuclei (Némec); cf. Syndiploid; dicro'mic (διφωνος, a course), doubly twisted, as the awns in Danthonia, Stipa, etc.; Did'romy, double torsion; Didymospora (+ Spora), Fungi bearing spores in pairs (Traverso).

did'ymous, -us (δίδυμος, twin), (1) found in pairs, as the fruits of Umbelliferae; (2) divided into two lobes; ~ An'thers, when the two lobes are almost destitute of connective.

Didyna'mia (δις, twice; δύναμις, power), a Linnean class marked by didynamous flowers; didyn'ian, did'y'namous, flower, four-stamened with stamens in pairs, two long, two short, as in most Labiatae. Didy'namy, the condition above defined.

Die-back, of Salix, a disease due to Diplodina salicina; ~ of Citrus, some uncertain condition of health; ~ of Prunus, from Naemospora crocea.

Dientomoph'ily (+ Entomophily), when in a species, some individuals are adapted for insect-fertilization by a different group of visitors from the remaining individuals (Engler and Prantl).

Dieres'ilia, Dieresil'ia (διερίς, I divide), Mirbel's name for Car'cerule; adj. dieresil'ian.

Diet'e'siae (δις, two; διήσος, annual), perennials with short shoots, long shoots being absent or fugacious (Krause).

Differenti'a'tion, of a Cell-wall, the arising of apparent layers; ~ of Tis'sues, their development into permanent tissue and consequent diverse growth.

diff'luent (diffluens, dissolving), having the power to dissolve, or readily doing so.

diformed, diform'is (dis, apart; forma, shape), of unusual formation or shape; Difform'itas (Lat.), an abnormality.

diffract', diffrac'tus (Lat., broken), broken into areolae separated by chinks.

dif fus'e, diffus'us (Lat., spread abroad), wide y or loosely spreading; ~ Col'our, a colour which has "run" into the surrounding tissues; Diffu'sion, (1) term used by Wiesner for the intermingling of different gases under equal pressure, with or
without intervening partitions; (2) mixture of fluids, or dispersion of a fluid through a solid or tissue; static ~, in botany, the absorption of gaseous bodies through stomata and diffusion through tissues; Diffus'ivity, the ratio of such diffusion.

dig'amous, -us (ðls, twice; γάμος, marriage), having the two sexes in the same cluster; as in Compositae.

dig'enous (ðls, two; γένος, offspring), containing both sexes, or produced sexually; digenet'ic, sexual; digenodif'erent (+ genodifferent), when in a hybrid, the genotypes of the two genodifferent gametes involved, differ on two points (Johannsen); Di'gency, the condition.

Digestive-cells, of the mycorrhiza of Neottia: cf. Host-cells; ~ Glands, structures in the lower portion of the interior of the pitcher of Nepenthes (Macfarlane); ~ Pock'et (or ~ Sac), an investment of the secondary rootlets, which penetrate the tissues of the primary root till they reach the exterior.

Dig'italine, an alkaloid contained in Digitalis purpurea, Linn.

digita'lis (digitus, a finger), a finger length; digitate, digita'tus, fingered; a compound leaf in which all the leaflets are borne on the apex of the petiole, as in the Horse-Chestnut; ~ pin'inate, when the leaflets of a digitate leaf are pinnate; digita'tely, in a digitate manner; digita'liform is (forma, shape), shaped like a finger, as the corolla of the Foxglove; digiti'ne'revus (nervis, a nerve), when the secondary nerves of a leaf diverge from the summit of the main petiole, straight ribbed; Dig'i'tus, a measure of about 3 ins. in length, or 8 cm.

dig'onenous (ðls, two; γωνία, an angle), two-angled, as the stems of some cacti (Crozier); Digyn'ia (γυνή, a woman), a Linnean class, with a gynaeicum of two pistils; digy'ian, dig'ynous, with two separated styles or carpels; dihap'loid (+ haploid), the coupling of two haploid nuclei (Bonnet): Dihap'lophase (φαίνεις, an appearance) the condition described.

Di-hybridisa'tion, or Dihy'bridism (δι, two; + Hybrid) having two pairs of allelomorphs, showing the proportions of 9:3:3:1.

Dikar'yon, cf. Diearyon.

dilácerate, dilácerat'us (Lat.), torn asunder, lacerated.

Dilamina'tion, dilatation, (Lat., lamina, a thin plate), the separation of a layer from a petal, like or unlike it in form; chorisis.

dila'ted, dilata'tus (Lat., widened), expanding into a blade, as though flattened, like the filaments of Urnithogalum; Dilata'tion, cell-division in the parenchyma of the wood, the pith, and the medullary rays, causing cleavage of the xylem-mass.

dilep'idus ‡ (ðls, two; λεπίς, λεπίδος, scale), consisting of two scales.

dilu'tus (Lat. thinned), of a pale tint.

dimer'ic, dim'erous, -rus (ðls, two; μεπός, a share), with two members in each part or circle; Dimer'istele (+ Meristlele), two meristeles or vascular bundles (Brebner); adj. dimeriste'lic.

dimid'iate, dimidia'tus (Lat., halved), (1) halved, as when half an organ is so much smaller than the other, as to seem wanting; (2) used of the calyptre of Mosses when split on one side by the growth of the theca; (3) in Lichens applied to the perithecial wall when it covers only the upper half of the perithecium; dimidia'to'cordatus, when the larger half of a dimidiate leaf is cordate.

Diminu'tion (diminutio, a decrease), simplification of inflorescence in successive branches (Guillardi).

Dimonoec'ism (+ Monoeicism), the condition of two out of three kinds of monoecious flowers, having perfect flowers, and (a) male, (b) female, or (c) neuter flowers also (Kunth).

dimorph'ic, dimorph'ous (ðls, twice; μορφή, shape), occurring under two forms; Dimorph'ism, the state of presenting two forms, as long or
short-styled flowers in the same species.

dimo'tus (Lat., separated), somewhat remote from.

dineur'oid (εἶδος, resemblance), like the fossil genus Dineuron.

Di'o'dange (+Diode, ἄγγειον, a vessel), a group of diodes surrounded by one or more layers of sterile cells (Van Tieghem); Diodan'giun (δίδος, a passage; ἄγγείον, a vessel), Van Tieghem's term for a sporangium in Vascular Cryptogams and Bryophytes; Di'ode, Van Tieghem's term for a reproductive body peculiar to vascular plants which develops into a rudimentary body or prothallium, the transition between the rudimentary and adult stages; cf. Isodiody, Heterodiody; Di'o-dogone (γονή, offspring), Van Tieghem's term for a sporangium which produces diodes in Phanerogams, the embryo sac and pollen sac, Di'odo'phytes (φυτόν, a plant), vascular plants (Van Tieghem).

Dioec'cia (δίς, two; ὀλκός, a house), a Linnean class of plants with unisexual flowers; dioec'i'an, dioec'i'ous, unisexual, the male and female elements in different individuals; dioec'i'o-dimorph'ous, heterogenous; dioec'i'o-polyg'amous, when some individuals bear unisexual flowers, and others hermaphrodite ones; Dioec'ism, the condition of being dioecious; dioi'cous, a spelling used by bryologists for dioecious, the male and female organs on separate plants.

diop'h'anus = Diaphanous.

Di'o'mose, Diosmo'ēsis (δια, through; ὠμός, a pushing), the transfusion of liquid through membrane.

Dipet'alous, -us (δίς, two; πέταλον, a flower-leaf), having two petals; dipho'tic (φώς, φωτός, light), two surfaces unequally lighted; Dipho'rophyll (φύλλον, a leaf), a leaf differentiated into palisade and spongy tissue from unequal illumination (Clements); diphyll ous, -us (φύλλον, a leaf), having two leaves; diplan'et'ic

(πλάνος, roaming), relating to Di-planet'ism; Diplan'et'ism, double-swarming; in certain genera allied to Saprolegnia the zoos'ores escape from their sporangium destitute of cilia, come to rest in a cluster each forming a cell-wall, and after some hours the protoplasmic contents of each spore escapes, acquires cilia and active movement; Dipleco'lō'beae (πλέκω, I fold; λόβος, a lobe), a sub-order of Cruciferae, the incurred cotyledons being twice folded transversely; Dipleurogen'ēsis (πλευρά, the side; γένεσις, beginning), term used by L. H. Bailey for Bilaterality, as the type of animals; cf. Centro-gen'ēsis.

diplo (διπλός, twofold), in composition = duplo; Diplobaccillus (+ Bacillus), bacilli which are composed of two cells or adhere in pairs; Diplobact'ēria = Diplobacillus; diplocaules'cens (caulescens, stem-producing), having axes of the second order; diplochlamyde'ous (χλαμύς, a cloak) = Di'chlamy'deous, having a double perianth; Diplo-coc'cus (+ Coccus), a coupled spheral or result of the conjugation of two cells; Dip'locyte (κύτος, a hollow vessel), a somatic cell having the full number of chromosomes (Benson); adj. diplo'cytic.

Dip'loë (διπλὰ, doubling), Link's term for Mesophyll.

diploid (διπλός, twofold), applied to the state of the 2x Generation, the chromosomes being doubly as many as in the haploid generation; dip'loid Generation, the Sporophyte (Strasburger); Diplogam'ete (διπλάς, twofold; + Gamete) in Ascomycetes the double gametes produced in the same cell (Dangeard); Diplogen'ēsis (γένεσις, a beginning), doubling of parts normally single; Dip'lonasty (ναστίς, pressed close), when organs grow faster on the upper and the under surfaces than on the sides; Diploperisto'mi (+ Peristo'ma), with double peristome, applied to Mosses; Dip'lophase (φαίνω,
I appear), Vullemin’s term for the discoidal generation; **Diplophyll** (φύλαν, a leaf), a leaf having palisade tissue on both surfaces (Clements); **diplosporangiate**, an error for ambisporangiate; **Diplospore** (+ Spore), Dangeard’s term for *Teleutospore*; **diplostemonous** (στῆμαν, a stamen), with stamens in two whorls, those of the outer whorl alternating with the petals, the inner whorl alternating with the last; **Diplostemony**, stamens as just described; **diplostic**, Van Tieghem’s term for rootlets when the mother-root has only two xylem bundles; **Diplotragia**, *gis, -giatan* (τέγος, a covering), a capsule or other dry fruit, invested with an adnate calyx; an inferior capsule; **diplostene** (ταίνια, a ribbon), the synaptic stage of the nucleus in which the thread is double; **diplostichous** (στῆμα, a row), in two series or rows; **diploxylic** (ξίλον, wood), (1) used of vascular bundles in which the centrifugal part of the wood is secondary; (2) two or more vascular bundles in the leaf, *e.g.* *Pinus longifolia*, Roxb.; **diploxylic**, resembling the genus *Diploxylon* (Williamson): **diploxylic** = diploxylic.

Dip’terid (Diptera = flies), or **Fly** Flowers, chiefly visited by dipterous flies, as *Ruta* and *Punarnava*.

**Dipteroeccdidae** (δίς, two; πτερόν, a wing; κηρός, a gall), galls produced by dipterous flies; **dipterous**, -ous, two-winged, having two wing-like processes; **dipyro’s** (πυρός, fruit-stone), containing two stones.

**Direct’-Metamorph’osis**, the same as **Progressive Metamorphosis**; ~ **Superposition**, the situation of accessory buds in an axis above the leading bud or that first formed (Crozier); **direct-venous**, a feather-veined leaf, where secondary ribs (primary veins) pass direct from mid-rib to margin, **directinervus**; **direct’ing Leucite**, ~ **Tinoléucite**; **Direct’ion Cells**, ~ **Corpus’cles**, synonyms of **Polar Cells**, **direct’ive Spheres**, = **Attractive Spheres**; **Directivity** (direct’us, made straight), the controlling effect of the vital functions (Sir A. H. Church).

**Diremption**, **Direm’ptio** (Lat., a separation), the occasional separation, or displacement of leaves.

**dirin’ean**, **dirin’old**, resembling the genus *Dirina*.

**disappearing**, branching in extreme.

**disartic’ulate** (dis, apart; articulus, a joint), to separate at a joint, as the leaves in autumn.

**Disassimila’tion**, the breaking down, the katabolism of plants.

**Disc**, or **Disk** (disc’us, a quotient), (1) development of the tornus within the calyx or within the corolla and stamens; (2) the central part of a capitulum in Compositae as opposed to the Ray; (3) the face of any organ, in contradistinction to the margin; (4) certain markings in cell walls, of circular outline; bordered pits; (5) the valves of diatoms when circular; (6) the base of a pollinium; (7) the expanded base of the style in Umbelliferae; (8) in a bulb, the solid base of the stem, around which the scales are arranged; **adhesive**, modified tendrils, as in *Vitis heterophylla*, Thumb., *Erecailla*, etc.; **carpell’ary**, expansion of strobilus of fossil cycads bearing ovules (Wieland); **stam’inate**, the surface bearing the staminate organs in fossil cycads (Wieland).

**disc’al**, word used by J. Smith to express “on the surface of the frond, superficial”; **Dis’cals**, Bessey’s proposed abbreviation of Disciflorae, a series of polyptalous Phanerogams.

**Discentra’tion** (dis, apart; centrum, centre), used by C. F. Schimper for (a) fasciation of the axis, and (6) multiple of a leaf-organ (Penzig).

**Dischisma** (δίς, two; σχίσμα, separation), the fruit of *Phalyssemon*, which divides into longitudinal carpels, each of which again divides transversely.

**disc’ifier** (Lat.), discif’erous (fero, I
bear), disc-bearing, as the wood of conifers; *dis*ciform, *dis*ciform*is (form, shape), flat and circular, orbicular; *dis*ciferous (yew, I bear), disc-bearing; ~ *Fru*s tules, in Diatoms those having valves more or less circular in outline.

**D**is**co**carp (*biskos, a quoit; karptóds, fruit), an ascocarp in which the hymenium lies exposed while the asci are maturing; an apothecium; **D**iscocarp'ium, a collection of fruits within a hollow receptacle, as in many Rosaceae; *disc*óid, *dis*co*deus* (eídos, like), with a round thickened lamina, and rounded margins; ~ Flow'ers, those belonging to the disk, usually tubular florets; ~ Glands, stalked glands of Urticaceae with round head of a single layer of cells; ~ Mark'ing, see Disc, (5) disco*ïdal, discoïda*lis, orbicular; **D**iscoli'chenes (+ Lichenes), Wainio’s term for *Discomycetes*, Fungi with open hymenium, as Peiza.

dis*color* (Lat. of different colours), used when the two surfaces of a leaf are unlike in colour.

dis*contin’uous Varia’tion, forms arising at a single step with complete and definite characters of other species.

**D**iscoplank’ton (*biskos, a quoit, + planktöns), floating diatoms of discoid forms, chiefly of *Coscinodiscus*; **D**iscopod’ium (*pous, pódos, a foot), a disc-shaped floral receptacle; disc*ous, the same as discoid (Crozier).

disc*rete*, disc*er’tus* (Lat., parted), separate, not coalescent.

**D**isc’ulus (dim. of Discus), the adventitious lobule of Hepaticae (Spruce).

Disc’us (Lat. from *dis*kos), (1) see Disc; (2) a flat stroma through which the ostioles of fungi protrude, as in Valsa.

disp*al’ous, -us* (dís, two, + Sepalum), of two sepals.

disharmon*ic*, used of a flora showing gaps in series and with many monotypic genera.

Dis*jun’ction* (dis*junctio, separation), see Dialysis, Fission, Solution, varying degrees of separation in organs; Disjunc’tor, Woronin’s term for a spindle-shaped cellulose connection between the gonidia of certain Fungi; the developed septum, as in *Sclerotinia Vaccini, Woron.*

disjun*ct*ive (dis*junctivus, disjoined) Symbio’sis, applied by Frank to those cases in which the symbionts do not form an associated organism, but are temporarily associated, as in the case of insects and plants.

**D**isk, see Disc. Disk is the more usual spelling in the case of Compositæ, as ~ Flor’ets, ~ Flow’ers, those occurring on the central portion of the capitulum of compositae, not of the ray (or margin); ~ shaped = diskoid.

Disloca’tion (dis, apart; locus, a place) = DISPLACEMENT; Disloca’tor Cell, in Gymnosperms, a wall-cell derived from the antheridial mother-cell which sets loose the spermatocyte from its attachment (Goebel); disoper*c’ulate* (oper’culum), a lid, deprived of the cover or lid.

disper*rous* (dís, double; σπέ*ρμα, a seed), two seeded.

Disper’sal, Dispers’ion (dispersus, scattered), the various ways by which seeds are scattered, by wind, birds, adhesion to animals, etc.; in Ger. Verbreitungsmittel.

Dispi’rem (dís, two, + Spirem) a stage in nuclear division, having two chromatic groups, the achromatic filaments being constricted in the middle, which follows the *Dyaster* (Rosen).

dispi’rous (dís, double; σπε*ρμα, a coil), Spruce’s term for the elaters of Hepaticae which have double spirals.

Displa’cement, the abnormal situation of an organ: diremption.

Dispos’itio* (Lat., arrangement), the manner in which parts are arranged, as “disp. §” indicates that phyllotactic system.

dissect*ed, dissect’us* (Lat., cut up), deeply divided, or cut into many segments.

Dissemina’tion (disseminatio, sowing), the contrivances by which ripe seeds are shed by the parent plant;
Dissemination, Dissemp'iment (Lat., a partition), a partition in an ovary or pericarp, caused by the adhesion of the sides of carpellary leaves; spu'rious ~, a partition not having that origin.

dissil'ient, dissil'iens (Lat., flying apart), bursting asunder.

dissim'lar (dissimilis, unlike), when similar organs assume different forms in the same individual, as the anthers of Cassia.

Dissocia'tion (dissociatio, separation), observed in the fibrovascular system of the Lentibularieae, the wood and bast being mutually independent.

Dis'sophyte (Horodis, two-fold; φυτόν, a plant), a plant with xerophytic leaves and stems, and mesophytic roots (Clements).

dist'ad = dis'tal (disto, I stand apart), remote from the place of attachment; the converse of proximal; dist'ant, distans, when similar parts are not closely aggregated, in opposition to approximate.

Disteleol'ogy, defined by Haeckel as purposelessness; for botanic usage, see DySTELEOLOGY.

Disten'sion (distensus, stretched out), swollen or bulging.

dist'hichous, -us (dístich'os, of two rows), disposed in two vertical ranks, as the florets in many grasses.

dist'inct, distinct'us (Lat., separate), separate from, not united.

distrac'tile distrac'tilis (distractus, pulled two ways), borne widely apart, as the anther-lobes in Salvia.

Dis'trict, applied as the equivalent of the Ger. Bezirk; a small region or tract of country.

distromat'ic (δις, two, + STROMA), applied to those species of Porphyra with the thallus in two layers; cf. MONOSTROMATIC; Dis'trophy (τρόφη, nourishment), employed for Re for disparity in size of homologous organs; dithe'cal (θηκη, a case), dithe'cous, dithe'cus, of two cells, as most anthers; Ditopag'amy (τόπος, place; γάμος, marriage), Ludwig's term for HETEROSTYLY, ditrichot'omous (τριχ'ῆ, threefold; τρίμη, a cutting), doubly or trebly divided; dit'ripleid (→ TRIPLOID), the fusion of two triploid nuclei into one (Némec).

diur'nal, diur'inus (Lat., daily), occurring in the day-time, sometimes used for ephemeral; ~ Sleep, = PARAHELIOTROPISM.

divar'icate, divarica'tus (Lat., spread asunder), extremely divergent.

Diverg'ence (divergium, turning in different directions), used when parts gradually separate as they lengthen, as the follicles in Ascle-piás; Angle of ~, the angle between succeeding organs in the same spiral or whorl; diver'gent, -ens, diver'ging, separating by degrees; divergin'er vius (nervus, a nerve), with radiating main nerves.

diversifor'ous, -rūs (diversus, contrary; flos, florīs, a flower), with flowers of more than one kind; diver'ssus, (1) variable (de Candolle); (2) different or separate.

Divertic'ulum (Lat., a byway), in Algae, a protoplasmic protrusion, communicating with the fused procarp cells and the placenta, as in Gracilaria confervoides, Grev.

divi'ded, divi'sus (parted asunder), used where lobing or segmentation extends to the base; divis'u'ral (line), the line down the teeth of the peristome of a Moss by which the teeth split.

Dix'eny (δίς, two; εἶνας, a host), where an autoecious parasite may infest two species, but does not need a change of host to ensure its development (De Bary); dixyl'ic (ἐύλον, wood), having the xylem in two masses (Brechner).

-doch'e (δόχῃ, succession), used by Clements for "succession"

Dodecagyn'ia (δώδεκα, twelve; γυνή, woman), a Linnean order of plants
Dodecagynia

with twelve pistils; dodecag'ynous, -nus, possessing twelve pistils or distinct carpels; dodecame'reous, -r-us (μερός, a share), in twelve parts, as in a cycle; dodeca'nder, dodecandrous; Dodecan'dria (ἄνθος, ἄνθες, a man), a Linnean class of plants with twelve stamens; dodec'an'drian, dodecan'-drous, -dr-us, of twelve stamens, normally (occasionally extended to nineteen); dodecapet'alous (πέταλον, a flower-leaf), with twelve petals, or less than twenty; dodecar'i'nu's (ἀπρων, male), Necker's equivalent for dodecandrous.

D'o'drans (Lat., a span), a full span, from thumb tip to extremity of the little finger, about nine inches, or 23 cm.; d'odrant'a'lis, a span long.

dolabra'tus (Lat.), axed, or axe-shaped; dolabri'form, dolabrifor'm-is (forma, shaped); hatchet-shaped.

doleifo'rm-is (dolica, casks; forma, shape), barrel shaped.

dolia'rius dolia'tus (Lat.), circinate.

Dolichon'e'ma (δολίχος, long; νημα, a thread), the stage in nuclear division which immediately precedes synopsis in the formation of the reproductive cells; Dolicho'sis, retardation of growth in length (Czapek); dolicho sty'ous (+ Style), in dimorphic or trimorphic species applied to the long-styled form.

Dolicho'trema (μυημα, free), a filiform cell which ruptures and sets free the gemma of a Moss (Correns).

Dom'a'tia (δωμάτιον, a little house), modified projections for shelter-parasites (Tuben).

domestica' ted, thriving under cultivation (Crozier).

dom'in'ant (dominans, prevailing, ruling), (1) in hybrids, the prevalent character, in opposition to reces'sive; (2) chief constituent of a plant-association; (3) ruling, as the preponderant races and plants at a given period.

Dom'in'ion, state, condition; recently used as the equivalent of Goebel's "Staat," as Cell- ~, Energid- ~.

Dom'itoform (domitus, tamed; forma, form), a cultivated form, the original being unknown or dissimilar (Kunze).

dor'mant (dormībens, sleeping), applied to parts which are not in active life, as ~ Buds, ~ Eyes, potential buds which normally do not shoot, until excited to growth by special circumstances; ~ State, the condition of a plant during the winter, or when inactive from any reason.

dor'sal, dorsal'is (dorsum, the back), relating to the back, or attached thereto; the surface turned away from the axis, which in the case of a leaf is the lower surface (Note.—This is reversed by some authors); ~ Su'ture, the suture of a follicle or legume which is exterior to the axis; the midrib of a carpel; dorsicu'm' bent (cumhens, lying down) = supine (Crozier); dorsif'erous (fero, I bear), borne on the back, as the sori on most Ferns; dor'sifixed.

dorsif'xus (flexus, fast), fixed on the back or by the back; Dorsina'sty (ναςτις, pressed) = επιναστί; dorsiv'en't'ral (renter, the belly), used of an organ which has dorsal and ventral surfaces, as a leaf; Dorsiventral'ity, the condition of possessing upper and lower faces of an organ; Dor'sum (Lat.), (1) the back, or parts of the flower which face the outside; (2) in Diatoms, in forms which are more or less lunately curved, the convex side of the girdle.

Dots (1) receptacles of oil in the leaves; (2) pits in the cell-wall; dotted, punctured with dots; ~ Ducts, vessels with pit-like mark-ings on the walls; ~ Tis'sue = Bothrienchyma.

dothidia'ceous, like the genus Dothidia.

doub'le, du'plex (1) twice; (2) used of flowers when the petals are mon-strously increased at the expense of other organs, especially the stamens; ~ bear'ing, producing a crop twice in the same season; ~ Fert'iliza'tion, in Angiosperms, when one male cell from the pollen-tube fuses
with the egg nucleus, the other with the upper polar nucleus, and this last with the lower polar nucleus; also termed Tripple Fusion; ~ Fructifica'tion, dimorphism in fruit, applied to certain Algae; ~ Need'dle, in Sciadopitys, a dwarf branch without bud-scales, the two leaves being fused together at the edges into one needle; ~ Recip'rocal Cross, the off-spring of two reciprocal crosses, as \((b \times m) \times (m \times b)\) resulting in the usual suppressing of the characters of the middle parent, \(m:\) ~ Rosette’, = Dyaster; Doub'ling, the same as Chorisis; doub'ly, something repeated, as ~ toothed, the teeth themselves being toothed.

Down (1) soft pubescence; (2) the pappus of such plants as thistles; down'y, pubescent, with fine soft hairs.

Dra'canth (dragonanthum, Mid. Lat.), a synonym of Gum Tragacanth.

Draco'nine, a red resinous substance from "Dragon's Blood," produced by Daemonorops Draco, Blume, and Draeonosa Draco, Linn.

Draining-point, of a leaf; cf. Drip-point.

drawn, applied to attenu'ed shoots, diminished and etiolated, often increased in length.

drep'a'niform (δρέπανον), a sickle; forma, shape), falcate (Crozier); Drepa'nium, a sickle-shaped cyme; drepanoclad'ous (κλάδος, a branch), having sickle-shaped branches (Russow).

Dri'mad (δριμώς, pungent, + AD), a plant of an alkali formation; Drimi'tum, an alkali plain or salt basin formation; drimyph'ilus (φιλέω, I love), salt-loving, halophi'lus; Drimyphy'ta (φυτών, a plant), salt-plants (Clements).

Dri'odad (δριός, a thicket, + AD), a plant of a dry thicket; Droidi'tum, a dry thicket formation (Clements).

Drip-point Drip-tip, the acuminate apex of a leaf, from whose point water soon drips; Germ. Träufelspitze.

Dromot'ropism (δρόμος, a course; τροπή, a turning), the irritability of climbing plants which results in their spiral growth (MacMillan); adj. dromotrop'ic.

dropp'ing, inclining downwards, cer-nuous, but not quite pendent.

Drop-dis'ease, a disease of lettuce ascribed to Botrytis vulgaris and Sclerotinia Libertiana.

Drop'per, the young bulb of a tulip, not of flowering size.

Drop'ping-point = Drip-point.

Drought (pr. drowt), want of rain hindering plant-growth; phys'i'cal ~, when the soil contains very little free water; physiolog'ical ~, when the soil contains a considerable amount of water, which, by reason of the character of the soil or weak osmotic force of the roots, cannot be used by the plant (Warming).

dru'pa 'ceous (drupa, an olive, + aceous), resembling a Drupe, possessing its character, or producing similar fruit; Drupe, Dru'pa, a stone-fruit such as a plum; the pericarp fleshy or leathery, containing a stone with a kernel; false ~, a nut-like fruit where the lower persistent part of the perianth becomes fleshy, as in Neea; spurious ~, any fleshy body enclosing a stone; Dru'pel, Drup'pelet, Drupe'ola, a diminutive drupe, the fruit of the Blackberry is an aggregation of these; Drupe'tum, a cluster of drupes; Drup'pose, a constituent of the stone-cells of the flesh of pears (Cross and Bevan).

dru'sy, a mineralogical term used by G. E. Smith to express the appearance of the stigma of Orobanche carvophyllea; pruinose.

Dry'ads, pl. (δρῦδας, a wood-nymph), applied to shade-plants.

Dry'rot, destruction of timber in houses by Merulius lacrymans, Fr.

du'bious, du'binus (Lat.), doubtful, used for plants whose structure or affinities are uncertain.

Du'ces, pl. (dux, ducis, a leader), Lorentz's name for character cells in Mosses; = Deuter Cells.
Duct, Duct'us (Lat., led, conducted), an elongated cell or tubular vessel, especially occurring in the fibrovascular portions of plants; an'nular ~, the secondary thickenings occurring more or less in the form of rings; closed ~, long cells, not continuous, but with the intervening septa remaining; dott'ed ~, = Both'renchyma; intercell'ular ~, passages between the cells; retic'ulated ~, where the markings seem to form a network; scalar'iform ~ with ladder-like markings as in Ferns.

dul'cis (Lat.), sweet, extended to any kind of taste which is not acid; Dul'cita, a crystalline substance from Melampsyrum, also found in Madagascar Manna.

du'metose, dumeto'sus (dumetum, a thicket), bushy, relating to bushes; Dume'tum (Lat.), a bush.

Dune, undulating banks of blown sand, with characteristic vegetation; cf. Thini'um.

duo'ds'ni (Lat.), by twelves, growing by twelves.

du'plex (Lat.), double; du'plicate, dupli'cate, dupli'cates, double or folded, twin; ~ Par'asitism, self-parasitism, as in the case of mistletoe upon mistletoe; Dupli'cation, doubling, Chorisis; dupli'cates-to-crena'tus, doubly-crenate; ~ denta'tus, doubly-toothed; ~ pinna'tus, bipinnate; ~ serra'tus, doubly-serrate; ~ terna'tus, biter-nate: duplo = twice as many; in Greek compounds it is dipl'o.

Dura'men (Lat., a hardened vine branch), the heartwood of an exogenous stem, which has become hardened by deposits.

Durifrute'cia (durus, hard; frute'ci um, a thicket), sclerophyllous scrub formations; Durilign'o'sa (lignosus, woody), trees and shrubs which have sc'lerophy'ous leaves or green axes which serve as leaves; Duripra'ta (pra'tum, a meadow), where the dominant species are strengthened by mechanical tissue, largely consisting of grasses and sedges; Durisil'vae (silva, a wood), sclerophyllous forest formations, as of Quercus flex in the Mediterranean region and Eucalyptus in Australia.

Dust, Blair's word for Pollen; dust'y, covered with granulations resembling dust; or powdered, farinose.

dwarf, of small size or height compared with its allies; ~ Male, a short-lived filament of a few cells in Oedogoniaceae, the upper cells being antheridia.

Dy'ad (δύας, δυάς, two), (1) a subdivision of a Tet'rad by mitosis, again dividing into single elements (Calkins); (2) a bivalent chromosome.

Dy'as'ter (δῦα, double; ἀστὴρ, a star), the stage of nuc ear division when the rays of linin split longitudinally and two stars are formed which move apart, ending with the formation of daughter-skeins; dyblas'tus (βλαστός, a bud), two-celled, applied to Lichen spores: Dyce'sium, or Dyclo'sium, see Dic'lesium.

dynam'ic (δύναμις, power), applied to tissue which is capable of strongly swelling on one side; ~ Cell, any thick-walled prosenchymatous element, having its molecules or micellae in transverse rings, which undergoes marked longitudinal contraction in water (Eichholz); Dynam'ia, used by Linnaeus to express the degree of development of stamens, as Didynamia and Tetradynamia, applied to flowers where respectively two and four stamens have longer filaments than the remaining two; dy'namo-sta'tic (στάσις, a standing) El'ements, hygroscopic motor-cells (Eichholz); Dyne, the unit of force expressed by the weight of one gramme moving one centimetre in one second of time (Errera) [= CGS].

dypl'o'static, = Diplo'static, Dy'plote'gia = Diplo'tegia.

dysanth'ic (ἀνθός, a flower), fertilization by the pol'en from a different plant (K. Pearson).
dysgeogen'eous (δυσ-, i.e. bad; γενεα, the earth; γενεα, I bring forth), employed by Thurmarrn for those plants growing on soils which do not readily yield detritus; hard rocks generally, such as granite; dyspho'tic dysphot'iotic (φωτς, φωτς, light), applied by A. F. W. Schimper to the deeper situated Benthos; ~ Plants, are these which are adapted to a minimum of light; dyspho'tropic (τροπη, a turning), used of leaves adapted to a certain amount of light, but not too intense, as Lactuca Scariola; Dysteleology (τελος, completion; λόγος, discourse), frustrated in function; as where an insect obtains honey by puncturing a nectary instead of by the floral opening; adj., dysteleologists, a term which evades the teleologic end, as a bee which obtains honey by means which do not conduce to fertilization; dystropic (τροπη, a turning), injurious insect-visiting, so far as the flowers are concerned; Dys'trophy, the condition described.

Dysso'phytes, -ae (δύσος, two-fold; φυτον, a plant). Clements's term for plants which are sometimes hydrophytes and sometimes aerophytes; the author gives the derivation as from "δυσος, double."

e, ex, in Latin compounds, privative, as ecostate, without ribs.

Ear, the spike of corn; Ear-cock'les of wheat, a disease due to eel-worms, Tylenchus tritici; ear- formed (Loudon), eared, auriculate.
ebe'neous, black as ebony, the heart-wood of Diospyros Ebenum, Koen.

ebeta'tus = hebetatus.
ebori'nus (eboreus, made of ivory), ivory-like, or ivory-white.
ebrac'tete, ebrac'eat'tus (e, priv.; bracte, a bract), without bracts; ebrac'teolate, ebracteol'tus, desti- tute of bracteoles.
eburn'eous, -eus (Lat., of ivory), ivory white, more or less tinged with yellow.

E'cad (οικος, a house; + AD), a habitat form due to origin by adaptation (Clements).

ecalc'arate, ecalcara'tus (e, priv.; calcare, a spur), spurless; eca'un'al (cauda, a tail), without a tail or similar appendage.

Ec'bali'um, or Ecballi'o (εκβαλλω, I throw out), succession of plants after timber felling (Clements).

Eclaste'sis (εκ, out of; βλάστη, growth), the appearance of buds within a flower, proliferation of the inflorescence.

eccen'tric = excentrcic.

Ec'dysis (εκδουσις, a shifting out), exuviation or the physiological mechanism by which Dinoflagellata rid themselves of their carapace (Kofoid).

Ec'sis, or Oece'sis (οικησις, the act of dwelling), the germination and establishment of invaders.

Ech'ard (εχω, I withhold), the non- available water of the soil (Clements).

Echi'nops-fluorescine, Echinops'ein, and Echinops'ine, alkaloids found in Echinops Nitro (Greshoff).

echlor'ophyllose (e, priv.; + Chloro phyll), without chlorophyll; scari- ous; ech'inate, echinat'us (Lat., prickly), beset with prickles; echin'ulate, echinulat'tus, having diminutive prickles.

Ech'ma, pl. Ech'mata (εχω, a support), the hardened hook-shaped funicle in most Acanthaceae which supports the seed; cf. Retinacu- lum (3).

Ec'dium (Crozier) = Afcidium.

ecl'i'ate (+ CILIUM), without cilia.

Ecogen'esis (οικος, a house; + GENESIS), the origin of ecologic factors; eco log'ic Opt'imum, when the sur- roundings offer the most favourable conditions for the life of a given plant; Ecolo'gism = Ecology; Eco'logist, or Oec'o'logist, a student of the life of the plant in relation to its surroundings; Ecol'o'gy (λόγος, a discourse), or Oceol'o'gy, the study of plant-life in relation to environ- ment; adj. ecological, oecological;
Ecology

physiograph’ic Ecol’ogy, the distribution of plants according to climate and soil; econom’ic Botany (νομικός, resting on laws), applied botany, that branch which takes note of technical application of plants and plant-products; Coeffici’ent, the weight produced by a consumption of 100 parts of the nutrient material (Pfeffer).

Eocop’ar’asite, or Oecopar asite (οἶκος, a house; + Parasite), a specialized form of a parasitic fungus when growing on one or more host-species to which it is confined under normal circumstances; cf. Xenoparasite; Ecoparasitism, or Oecoparasitism, is the condition in question (Salmon).

eocort’icate, ectocital’us (ε, priv.; cortex, bark), destitute of bark, or bark-like covering; ecos’tate, ecostat’us (costa, a rib), without ribs, nerveless; eorusta’ceous (crusta, rind, + aceous), destitute of thallus, applied to Lichens.

Ec’tone (οἶκος, a house; τόνος, stress), the stress line or boundaries between plant associations (Clements); also spelled Oe’cotone.

Ectaux’esis (ἐκτός, outside; αἰξιός, growth), the growth of an organ outwards through the substance of the parent shoot (Weisse); ectocy’clic (κύκλος, a circle), used of sieve-tubes which are between the epidermis and the ring of sclerogen (Fischer); Ectogen’esis (γενεσις, a beginning), variation induced by external conditions; ectogen’ic (γενός, offspring), capable of living outside of a given body, as certain bacilli; Ectopar’asite (+ Parasite), a parasite which remains on the exterior of its host, only sending its haustoria within; opposed to Endo’parasite; Ectopep’tase (πεπττός, cooked), an enzyme which peptonizes the more complex of the proteins, and occurring in the excretions of plants, such as the pitcher-liquid of Nepenthes (Vines); ectophloeo’des (φλοῦς, bark), living on the surface or bark of other plants as some Lichens; ectophloio’ic, the condition of stems when the internal phloem is wanting; cf. Amphiphloic (Jeffrey); Ect’oplasm (πλάσμα, moulded), a delicate, firm, superficial layer of the cytoplasm or general protoplasm of the cell, hyaloplasm.

Ec’topy (ἐκτόπιος, displaced), the abnormal position of an organ.

Ect’ospore (ἐκτός, outside; σπόρα, seed), a synonym of Basidiospore; Ectospor’ium, the outer layer of a spore in bacteria (Mühlschegel); ectos’porous, possessing exogenously formed spores; ectothé’cal (ἐκθέν, a case), in Ascomycetes used for naked-spored; ectotroph’ic (τροφή, nourishment), when a fungus clothes a root only externally; ectotrop’ic (τρόπος, direction), (1) outward curvature; (2) the course of the pollen-tube in acrogamic fertilization, by the micropyle to the embryo-sac (Pirotta and Longo).

ec’yphe’llate (ε, priv. + Cyphèlla), used of Lichens destitute of cyphellae.

edaph’ic (ἐδαφός, the ground), A. F. W. Schimper’s term for the influence of the soil on the plants growing upon it; Edaphophytes (φυτα, a plant), plants which root in the earth, with assimilation organs in the air above it; normal plants, or Euphytes (Schröter).

edent’ate, edenta’tus (dens, dentis, a tooth), without teeth; edent’ulius (Lat.), toothless.

Ed’estin (ἐδαθτός, catable), a globulin constituent of wheat flour, forming about six to seven per cent.

Edge, the margin or outline, as of a leaf; edged, when a patch of colour is rimmed round by another tint.

Edob’oles, -ae, pl. (οἴδας, a swelling, βολή, a throw), distribution by turgescence of fruits or sporangia (Clements).

Eel-trap Hairs, hairs found in structures which detain insect visitors, as in Sarracenia and Aristolochia Clematitidis (Haberlandt).
effete, effe'tus, effoe'tus (Lat., exhaus-
ted), past bearing, functionless from
age.

Effi'gurare, effi'gura'tus (figura, a figure),
(1) when an organ is completed by
the full development of its subordi-
nate parts; (2) of definite outline,
opposed to effune; Effi'gurations,
outgrowths of the receptacle or
torus, as in Passiflora, Capparis, etc.

Efflores'cence. Efflorescen'tia (efflores-
ces, I blossom forth), the season of
flowering, anthesis.

Effoli'ation (Lindley) = Exfoliation.

Effu'se, effu'sus (Lat., poured out),
patulous, expanded; Effu'sio, an ex-
ansion; Effu'sion, used by Wiesner
for an intermingling of gases under
different pressures, the current acting
through openings in membranes.

Effagellil'erous (ε, priv. + Flagel-
lum, fero, I bear), destitute of fla-
gella; efo'liolate, folio'lastus (folio-
lum, a small leaf), without leaf-like
scales or squame; effo'lialose has
the same meaning; efo've'olate
(fovea, a pit), "smooth, without
pits or depressions" (Heining); — the
form "eforeolate" is a press error;
elful'crate, eful'cratus (fulcrum, a
bed-post), used of buds from which
the customary leaf or bract has fallen.

Egg (1), Ovum, ovule; (2) restricted
in meaning as below; — Appara'tus,
the three cells with nuclei at the
micropylar end of the embryo sac,
two form the synergid, and the
other forms the oosphere; — Cell,
the oosphere or gynogamete; — sac,
the mesochite and endochite of
Fucaceae, the membranes which
enclose the egg (Farmer and Williams);
~ -shaped = ovate; ~ Spore =
oospore.

e glandul'ose, cylindro'losus (ε, priv.,
glandula, a gland), destitute of

glands; egran'ulose (granula, a
small grain), without granules.

Egret, Martyn's term for pappus;
Fr. Aigrette.

ehila'tus ‡ (ε, priv. + Hillum), im-
perforate, applied to pollen grains
having no perforations.

eis'odal, eiso'dial (εισοδός, an entry),
anterior, as the outer pore of
stomates (Tschirch).

Ejacula'tion (ejaculor, I shoot forth) = Ejec-
tion.

Ejec'tion (ejecío, a casting forth),
forcibly throwing out endogen-
ously formed spores from a spor-
angium.

Elabora'tion (elaboratio, persevering
labour), used of the changes which
take place after the absorption of
food material to fit it for the use of
the plant.

eiæo'des (έλαια, olive), olive colour,
brownish green; Elaioleu'cites
(λευκός, white), Van Tieghem's term
for Elaioplasts; Elaioplank'ton
(+ Plankton), plankton floating
by means of fatty matters (Forel);
Elai'oplasts (πλαστός, moulded),
(1) plastids which are believed to
form oil, as leucoplasts form starch;
(2) oil-drops, usually applied to the
chromatophores of Diatoms, some-
times free; they are particularized
as Libroplasts, Placoplasts, and
Spa'ksioplasts (Mereschkowsky);
Elai'osomes, pl. (σάμα, a body),
characteristic oily appendages and
seeds of myrmecochorous plants,
such as arils, crests, etc., offering
food-bodies to ants (Sernander);
Elai'o'spheres (σφαίρα, a sphere),
bodies in spongy and palisade paren-
chyma, similar to elaioplasts, pro-
bably oil-bodies (Lidforss). The
foregoing are also spelled elaeo-
elaphi'nes (ελαφινής, a fawn); eia-
phi'nes (ελαφός, a deer), tawny or
fulvous.

Elas'tic Lim'it, the extreme load which
a vegetable fibre or body can sup-
port, without being permanently
stretched (Haberlandt).

Elater (ελατήρ, a driver), (1) an
elastic spirally twisted filament,
occurring amongst the spores in
the thee of Hepaticae; (2) a free capil-
litium thread in Myxogastres; (3)
in Equisetum, four clubbed hygro-
scopic bands attached to the spores,
which serve for dispersal.
Elaterine, the active principle of the fruit of Elaterium, Jacq.

Elaterium (€λατήριος, driving away); (1) = Coccum; (2) the dried juice of the wild cucumber, Elaterium.

Elaterophore (€φορέω, I carry), thready organs which bear the elaters in certain Hepaticæ.

elatuš (Lat., exalted), tall, lofty.

Electropism, eleutherophyllus, electrotropic, elenther-.

Krummholz.

Electrolysia, Elfín-tree, elevated, eleutheranthous.

Elementary, Elaterium, Elaterophore, Elaterine, Election.

Elate'riam

Elat'erophore

Elat'erine, Ele'tro-vegetometer, electric reaction, (eléktros), adj. electrotropic (€λητροτροπ'ικ, (1). elepsion, (€λάκω, I drag; τροπή, a turning), compulsory attraction of plants.

Elec'tion (electio, a choice), the selection of the fittest, as opposed to the elimination of the unfit.

ele'trinus (€λακτρον, amber), yellowish amber coloured; Electrol'ysis (λύσις, a loosing), analysis by electric force, adj. electrolytic; electro'tropic (τρόπος, direction), actuated by electric force; Electropism, or Electrotropism (τρόπος, direction), (1) the electric impulse which governs certain plant-functions; (2) the inflection of roots or shoots towards the cathode (Macdougal); Electro'sis, reaction from an electrical current (Massart); Electrotaxis (τάξις, order), arrangement induced by electric currents, galvanotaxis; Electrot'onus (τόνος, stress), a latent period of electric stress (Hoermann); Electro-vegetometer, an arrangement of insulated wires and points above the plants to be electrified by atmospheric electricity (Berthelon).

Element'ary Or'gans, the constituents of cellular and vascular tissue.

eleuthera'n'therus (€λευθέρος, free, + anther), having the anthers distinct, not united; eleutherop'tal'ous (πέταλον, a flower-leaf), polypetalous, having free petals, choripetalous; eleutherophyllous (φύλλον, a leaf), separate leaved; eleutherosép'tal'ous (+ Sképalum), with distinct sepals; eleutherot'opal'ous (+ Tépal), having free tepals (Pax).

eleva'ted, applied to a Lichen when raised above the surface of its matrix.

El'f-in-tree; ~-wood, applied by A. F. W. Schimper, to alpine forest, distorted from mountain climate; Ger., Krummholz.

Elimina'tion (elimino, I move out), the destruction of forms from various natural causes (Plate).

Ellitic'ulus = Elytric'ulus.

Ell, a measure variously understood, the English ell being 45 inches, the Flemish ell 54 inches.

Elleb'orin, an acrid resin from Eranthis hyemalis, Salisb., formerly considered a species of Helleborus.

Ellip'soid (€λλειψις, a failing short; εις, like), an elliptic solid; adj. ellipsoidal, ellipsoidalis; sometimes employed for elliptic, elliptical, ellipticus, shaped like an ellipse, oblong with regularly rounded ends.

elit'oral (ε, from littoralis or littoralis, pertaining to the shore), employed to denote the coastal region below the sublittoral, and extending as far as the light penetrates (Warming).

eloc'ular, elucula'ris (ε, priv. loculis, a cell), unilocular.

elód'oid (είδος, resemblance), like Elodea; applied to a linear leaf (Warming).

Elonga'tion, Elonga'tio (elongo, I lengthen), remarkable for length in comparison with its breadth; elonga'ted (elongatius, drawn out in length).

Elu'vium (eluvio, a washing away), used by Bouger for sand-blown dunes.

Elym'é'tum, an association of Elymus arenarius.

Elyric'ulus (€λυρός, a covering), Neckers's term for a floret in Compositeae; ely'triform (forma, shape), resembling the wing-case of a beetle (Crozier).

emar'cid, emar'cidus (emarcesco, I wither), flaccid, withered.

emarg'inate, emar'ginatus (emargino, to deprive of its edge), having a notch cut out, usually at the extremity; Emarginat'u'ra (l.at.), the notch at the apex of an emarginate leaf.

Emascula'tion, in plants, the removal
Emergence

of the stamens, before they dehisce, from h-ruaphrodite flowers previous to artificial hybridization.

embedded veins, those surrounded on all sides by assimilatory tissue.

Embolus (εμβόλος, a pump piston), a plug, a process which projects downwards from the upper part of the cavity of Armeria, and closes the foramen of the ovule.

embossed (dissyl.), umbonate, having a slight central nodule.

eembracing, clasping by the base, amplexicantal.

Embryo, Embryon (εμβρύων, a foetus), the rudimentary plant formed in a seed or within the archegonium of Cryptogams; ~ Buds, "spheroidal solia b-dies, of unknown origin, resembling woody nodules formed by the bark of trees, and capable of extending into branches" (Lindley); ~ Cell = Oosphere; ~ -cord, in Hydnora, a single row of flattened cells connecting the embryo with the outer surface of the albumen (Solms-Laubsch); ~ secondary ~, = Embryo-sac Tubes; ~ Nodule, the same as Embryo Buds; ~ Sac, the cell in the ovule in which the embryo is formed, also by some termed the macrospore; ~ Tubes, tubular upgrowths and compartment walls within which the female nuclei of Welwitschia are conducted to the nucellar cone (Pearson); fixed ~, a leaf-bud; Embryoblastanion (βλαστάντος, a bud), Miquel's term for the suspensor in Cycads; embryogenic (γενώς, I bring forth), belonging to the development of the embryo; ~ Bodies, in Mucorini, naked masses of protoplasm apparently derived from the nuclei, at each end of the zygospore, ultimately fusing together, becoming ~ Spheres, then surround themselves with a double cell-wall, and finally become Embryonic Spheres (Léger); Embryogen'eny, formation of the embryo; direct ~, when a spore gives rise to an embryo resembling the adult form; heteroblastic ~, when the embryo differs widely from the adult form it is not borne direct, but as a lateral outgrowth; holoblastic ~, in which the whole of the ovum takes part: homoblastic ~, = direct ~; indirect ~ = heteroblastic ~; meroblastic ~, when only a portion of the ovum takes part in the development; Embryology (αύγοσ), discourse, study of the embryo; embryonal, embryona'lis, relating to the embryo; ~ Tubes, tubular structures which develop in Abietineae, forming the suspensor; ~ Vesicule, the oosphere; embryonary Sac = Embryo Sac; embryonate, having an embryo (Crozier); embryonic, rudimentary, in an early stage; ~ Appendage, the apical portion of the suspensor in grasses (Vines); Embryophore (φορέω, I carry), in Equisetum the homologue of the suspensor of Phanerogams and Selaginella, the lower of the two cells first cut off by a septum in the oosphere, then again separated, and this time forming the lower two of the quadrants, one becoming the "foot," the other the first root; Embryophyta (φυτά, a plant), plants possessing embryos, divided into ~ Siphonogam'ia, having pollen-tubes, practically all flowering plants, and ~ Zoodiagam'ia, with ciliated spermatozoids, practically all Cryptogams; embryophyt'ic, relating to Embryophyta; ~ Branches, in Chara, peculiar branches resembling an embryo, which become separate and grow into new plants; ~ Spheres, see under Embryogenic Spheres; Embryotega, -tegum, -tegium, -tegum (τεγών), a covering), a callosity in the seed coat of some seeds near the hilum, and detached by the protrusion of the radicle on germination; Embryotroph'a (τροφή, nourishment), (1) Perisperm; (2) Amnion (J. S. Henslow).

Emergence (emergo, I come forth), an outgrowth from the surface, differing from hairs in arising from more than
the superficial cells, and from spines, in arising from a few layers only; prickles, warts, etc.; emergent, emergens, used of capsules which rise slightly above the perichaetium; emersed, emersus, raised above and out of the water; Emerispira'ta (pratum, 'a meadow'), marsh plants which root in water-covered or saturated soil, but have their leafy shoots erect above the surface.

Em'etin. a supposed alkaloid from Ipse^can^ania and similar emetic roots.

Emissaria, pl. (emissarium, an outlet), Moll's term for Hydatodes or water-glands; Emissiv'ity, ther'mal, the interchange of heat between a leaf and its surroundings.

Emo'din, a glucoside obtained from buckthorn and a species of rhubarb, Rhum Emodi, Wall.

empa'led, Grew's term for hemmed in, as the flower by the calyx; Empa'lement, = Calyx; Empe'lers, the calyx segments.

empenna'tus (Mod. Lat.), pinnate.

emph'y'tism (emphi's, inhering). W. D. Cope's term for inherited or simple type of growth force; Emphyto-gen'es (γένεσις, beginning), the origin of inherited growth force (W. D. Cope).

emphyto'genous (emphi'tos, innate; γενήν, born), employed by Carrière to denote graft-hybrids.

Empir'ic Dia'gram, a scheme showing the relative number and position of parts of a flower as seen by inspection.

emprost'rod'tuous (εμπροσ'θεν, in front; δρόμος, a course), used of a flower when the genetic spiral on its shortest way from the bract to the outermost perianth-segment passes outside the flower, farthest from the axis.

em'pty, void; ~ Glumes, one or more glumes subtending a spikelet in grasses enclosing one or more flowers.

Emul'sin (emulsus, mixed), an enzyme acting upon glucosides, found plentifully in almonds.

En'alid (ενάλιος, marine), Warming's term for such plants as Zostera, Halophila, and other marine submersed Phanerograms.

enantioblast'ic, -tous (εναντα, opposite; βλαστος, a shoot), having the embryo at the end of the seed diametrically opposite the hilum; enantiosty'rous (εναντίος, opposite, + Style), flowers whose styles are protruded right or left of the axis, with the stamens opposite; Enantiosty'ly is the condition; cf. Dextro-, Sinistro'ly.

Ena'tion (enatus, sprung up), an outgrowth from another organ, as the corona from the perianth of Narcissus.

Enaul'ad (εναυλός, a water course; + αυς) "a sanddraw plant"; Enaul'ium, a "sanddraw formation" (Clements); enauloph'ilus (φιλέω, I love), dwelling in such places; Enauloph'yta (φυτών, a plant), plants inhabiting "sanddraws" (Clements).

Encarp'ium (έν, in; καρπός, fruit), Trattiniek's term for sporophore.

Enca'sing, of protoplasm, the formation of cellulose-threads by the protoplasm in the cells of certain trichomes (Haberlandt); Ger. Ein kapselung.

Enchyle'ma (έγχυλος, I pour in; λήμν, rheum), the more fluid portion of the cytoplasm (Haustein).

Encyoneme'tum (έν, in; κλω, I contain; νήμα, νήματα, a thread), an algal association in Lake Constance of Spirogyra, etc.; encyst'ed (κυστίς, a bladder), enclosed in a bag, or invested with a coating when in a non-motile state, as some unicellular plants; Encyst'ment, the condition of being encysted.

end'arch (ένδον, within; ἀρχή, beginning) applied to a bundle in which the primary xylem, in most Phanerograms, is wholly centrifugal, centroyxic; Endaux'esis (αθέναι, growth), on the inner side of an
organ relatively to the main shoot (Wiesner).

endecag'ynous, endecagnyn'ian (έν-δεκάς, eleven; γυνή, a woman), having eleven pistils; endecan'-drous (άνηφ. ἀνυφός, a man), having eleven stamens; endecaphyll'ious (φύλλον, a leaf), having eleven leaves or leaflets.

ende'mic, ende'micus (έν, in; δῆμος, a country district), confined to a given region, as an island or country; Ende'mism, the condition of endemic plants.

Endhý'menate (δυμή, a membrane) = Intine; cf. Exhy'menate.

En'distem (ένδος, within; ἵστημι, I stand), young, pith.

endivia'ceous, light blue, like the flowers of endive, Cichorium Intybus.

Endobasid'ium (ένδος, within; basidi-um, a little pedestal), an enclosed basidium, as in Gasteromycetes; endobiot'ic (Biotή, life), living within as a parasite, as Chrysophlyctis endobiotica, Rose, in potato tubers; En'dobleem (βλεύμα, a coverlet), tissue beneath the dermatogen, of small celled parenchyma; En'docarp (κάρπος, fruit), the inner layer of a pericarp; endocarp'oid (είδος, resemblance), resembling the Lichen genus Endocarpon; Endocaryog'-amy = Endogamy; endocata'drom'ous ( + cata'dromous), when Ferns in their nervation have their stronger pinnules cataemalous, the weaker ones anadromous; En'dochite (χιτόν, a tunic), the innermost membrane of the egg in Fucaceae (Farmer); Endochlor'ites ( + Chlorite), chlorophyllous plastsida contained in aehrocysts (Arbaumont); En'dochro'a (κράσι, skin), a supposed interior layer of the cuticle (Lindley); En'dochrome, Endochro'ma (κράσιμα, colour), the peculiar colouring matter in cells, especially in Algae; -plate, used of the two bands of colour in the frustule of navicular Diatoms, lying on the connecting band (Pfitzer); En'dochylic (χυλίδες, juice), a plant which has its water-tissue within its assimilating tissue (A. F. W. Schimper); endococ'ceoid, like the Lichen Endo'coccos; Endocon'id'ia ( + Conidia), a synonymy of Endogonid'ia; Endo'cor'tex (cortex, bark), the innermost layer of the cortical region; endo-criv'rose (+ cribro'se), within the sieve-tubes (Buscalioni); En'docyst (κύστις, a bladder), Cleve's term for a probably sexual organ in the frustules of certain Diatoms; Endoderm'is (δέρμα, skin), the layer of ground-tissue which abuts on the stele, being differentiated as a sheath round it; adj. endoderm'al; Endoderm'ogens ( + Endoder'm, γένος, descent), Van Tieghem's term for Vascular Cryptogams; endoderm'oid (είδος; resemblance), like the Endodermis (Rendle); endogam'ic (γάμος, marriage), crossing between two flowers of the same individual (K. Pearson); Endog'amy, (1) the condition above described; (2) an expression for fusion or coalescence of two or more female gametes of the same brood (Hartog): adj. endog'am'ous; Endo'den (γένος, race, off-spring), a monocotyledonous plant, supposed to grow by internal accessions; endog'ensous, (1) pertaining to an Endogen; (2) produced within another body, arising from deep-seated tissues; ~ Cell-formation, free cell-formation; ~ Spores, those formed within a cell; Endogoni'd'ium ( + Gonid-i-um), a gonidium formed within a receptacle or gonidangium; Endog'o'num, the contentis of the nucale of Chara; Endohaust'o'rium ( + Haustor'ium), a body resembling a young haustorium within a cell of a plant infected by Uredineous Fungi (Eriksson); Endokary'o'g'amy (καρυω'ν, a nut or kernel) = Endogamy; endolith'ic (λιθός, a stone), used of lichens growing below the surface of limestone rock; Endo'mer'istem ( + Meristem), Russow's term employed by Vaizey for that meristem in a Moss which
produces the central strand; endo-
nast’ic (ναστᾶς, close-pressed), ap-
plied by Van Tieghem to an anatrop-
ous or campylotropous ovule, when
the curvature is horizontal towards
the edge of the carpel; Endo-
nucle’olus (+ Nucleolus), a space
inside the nucleolus (Huie); Endo-
nucle’eus (nucleus, a small nut), “the
nucleolo-nucleus” (Macfarlane); En-
dopar’asite (+ PARASITE), a plant
which lives and develops within the
tissues of the host; adj. endo-
parasit’ic; Endoperid’ium (περίδιον,
a little pouch), the inner layer of
the peridium in Fungi; Endo-
phloe’um (φλοίος, bark), the inner
bark; Endophrag’ma † (φράγμα, a
fence), a partition in the frond of
some seaweeds; endophyll’ous, en-
dophyl’lus, (φύλλον, a leaf), (1)
formed from within a sheathing
leaf; (2) living within the sub-
stance of a leaf; endophy’tal, endo-
phy’tic, -cus (φυτόν, a plant), one
plant growing inside another plant;
whether parasitic or not; En’dop-
hyte, (1) the woody body or timber
of an exogen, including the pith
(Lindley); (2) a plant which grows
in the interior of another living
plant; Endophy’tism, the condition
last described; Endo’plasm (πλάσμα,
moulded), the internal granular
portion of the protoplasm as dis-
tinguished from the outer portion,
the ectoplasm, which is free from
granaules; Endo’plast (πνευτός,
moulded), the protoplasmic contents
of a cell (Huxley); Endoplast’id, a
plastid containing one starch
granule, simple or compound (Ar-
baumont); Endoplaeu’ra (πλευρά, a
rib), the inner seed-coat, tegmen;
Endoprothal’iae, Van Tieghem’s
name for Phanerogams; endop’tile,
endopt’ilus (πτιλον, a feather), used
of an embryo whose plumule is rolled
up in the cotyledon; Endorhi’zae
= Monocotyledons; endorhi’zal,
endorhi’zous, -us (βία, a root),
monocotyledonous, for germina-
tion the radicle instead of lengthen-
ing gives rise to secondary rootlets;
Endosap’rophytism (+ Saprophy-
tism), Elenkin’s term for the Lichen-
life, when dead gonidia in a het-eromero-
ous Lichen are utilized by the hyphae;
Endosclero’tium (+ Sclerotium),
a persistent tuber-like mycelium of
endogenous origin (Fayod); Endos-
mon’teter (μετάνοια, a measure, an
instrument to show endosmosis.
En’dosmose, Endosmo’sis (φυσᾶς,
impulsion), flow of liquid through a
membrane into a more viscous fluid;
Endosperm, Endosper’num (σπόρα,
seed), (1) the albumen of a seed in
Angiosperms, by recent observers
limited to the endosperm deposited
within the embryo sac; (2) in
Gymnosperms the prothallium with-
in the embryo sac; (3) in Selagi-
nella, tissue formed in the cavity of
the macrospore below the prothall-
ium; endosperm’ic, -icus, having
albumen, or associated with it; En-
dospha’rine, resembling or allied to
Endosphaera, a genus of Protococ-
caceae.
En’dospero, Endospor’ium (ενδον,
within; σπόρα, seed), (1) the innermost
cot of a spore; (2) the Intine of a
pollen grain; (3) the interior mem-
brane of the pollen in Angiosperms;
endosp’orous, -us, having spores
formed within; Endo’stere † (στερέος,
stiff), the timber of an exogen,
without the pith (Lindley); Endos-
tome, Endos’toma (στόμα, the mouth),
the foramen of the inner coat of
an ovule; Endotest’a (+ Testa),
the hard lignified inner integu-
ment of the seed of Cordaiacarpus
(Brongniart); Endothe’ca (θηκη, a
case), Tulasne’s term for endothec-
cium; Endothe’cium, (1) Purkinje’s
name for the inner layer of a pollen
grain; (2) the inner lining of the
loculus of an anther; (3) the inner
tissue of the theca in Muscineae;
Endothe’lium (θήλαια, a nipple),
Schwere’s name for Endodem’mis;
endotherm’ic (θερμός, hot), internal
changes of heat within a plant; endo-
trrophic (τροφή, nourishment),
applied to mycorhiza when the fungus attacks the cells of the root itself; **Endotrophy**, Wiesner's expression for the condition of thickened growth of a shoot in the direction of the parent-shoot; cf. **Entomophyta**; endotrophic (τροφή, a turning), (1) inward curvature; (2) fertilized by pollen from another flower of the same plant (K. Pearson); (3) the path of the pollen-tube in basigamic fertilization; **Endotrigon**in, or Endotrigon'tase (+ Trypsin), a proteolytic enzyme in yeast (Vines); endozoic (κύκλος, an animal), living inside an animal; entozoic (Crozier); **Enzoochory** (χορέω, I make way), dispersion of plants through the interior of animals.

**Enesi'ma** (ἐνεσίμα, a wrapper), the inner skin of the seed.

**Energet'ics** (ἐνεργείας, active), the science which treats of the transformation of energy.

**Energet'ics** (ἐνεργός, busy), the disruptive process by which energy is released (Barnes); — aero'bio ~, anaer'o'bio ~, ferment'ative ~; see under **Respiration**.

**En'ergid** (ἐνεργεία, action; ἐν, Greek suffix = paternity), Sachs's term for the nucleus and protoplasm as a vital unit; **Energy**, the capacity for doing work, as ~ of actual motion or kinet'ic ~; or ~ of position or poten'tial ~.

**ener'vis, ener'vium** (Lat.), destitute of veins or nerves.

**Eng'lish Type** of Distribution, H. C. Watson's term for those plants whose range in Great Britain is centred in England proper.

**Enha'lid** Formation, spermophytes and larger Algae growing on loose soil in salt water; **Enhalus** occurs, whence the name.

**Enneas'gyn'ia** (ἐννέα, nine; γυνή, a woman), a Linnaean order of plants with nine pistils; enneas'gyn'ian, enneas'gynous, having nine pistils; **Enneas'gyn'ia** (ἀνήρ, ἄρσας, a man), a Linnaean class characterized by having nine stamens; enneas'an'drous, enneas'an'drus, with nine stamens; enneas'pet'alous (πέταλον, a flower-leaf), having nine petals; enneas'pet'alous (SEPALUM), with nine sepals (Crozier); enneas'pet'alous (σπέρμα, seed), nine-seeded (Crozier).

**Enno'bling**, an old term for inarching.

**Eno'dal, eno'dis** (Lat.), without knots or nodes.

en'sate (Crozier), en'sat'us (ensis, a sword), sword-shaped; en'siform, en'sifor'mis (forma, shape), sword-shaped, as the leaves of **Iris**.

**enterop'phleus** (ἐντερόπνοος, intestine; φυλός, bark), by Wallroth applied to Lichens which need some amount of preparation in the bark, wood, etc., by weathering, before they can thrive.

entire'(1), without toothing or division, with even margin; (2) in Lichens applied to an apothecium in which the peritheium or hypothecium wholly subtends the hymenium, or to the margin of an apothecium when continuous (Leighton).

**entoc'yctic** (ἐντοκτός, within; κύκλος, a circle), applied to sieve-tubes on the inner side of the ring of sere'nchyma in Cucurbitaceae; **entod'is'callis** (ἐντοδίσκος, a quoit), inserted within a disc, as in the case of some stamens.

**Entomog'am'y** (ἐντομόμας = Insect; γάμος, marriage), fertilization of flowers by insects (Kirchner); entomog'enous (γνωμάς, I bring forth), used of Fungi which are parasitic on insects; **Entomoph'thæae**, plants whose flowers are fertilized by insects, especially Lepidoptera; **entomop'hilous** (φιλέω, I love), applied to flowers which are fertilized by insects; **Entomoph'thy**, is the condition; **entomoph'tyal** (φυτόν, a plant), entomogenous.

**Entopar'asite** (ἐντόπος, within; τράπαντες, a parasite), a parasite living entirely within its host (Crozier); **entoph'y'tal** (φυτόν, a plant) = endo'phyt'al; **Entot'phyte**, **Entoph'y'ta**, a plant which grows within other
Entophyte

plants, as some Fungi; adj. entoph'tic; Ent'o'spore (+ Spora), a
primarily interior spore, possessing its own membrane apart from that
of the sporophore (Vuillemin); en-
tozo'ic (έντος, an animal), growing
within animals, endozoic.

En'trance, the outer aperture of a
stoma; in Ger. "Eingang."

en'ucleate (+ NUCLEUS), destitute of
a nucleus.

En'velope, a surrounding part; ~ Ap-
par'a'tus, the sporocarp in Ascomy-
cetes exclusive of the asc, and
ascigorous cells; ~ Cell, Archer's
equivalent of Cohn's "Hüllzelle";
the common hyaline envelope of a
colony of Stephe'nostephanos pluvialis,
Cohn; the Fl'o'ral En'velopes are
the perianth or its analogues; en-
vell'oping = involucrate.

Environ'ment (Fr., environnement),
the aggregate of surrounding con-
ditions.

enzyma'tic (έν, in; ζύγη, yeast), per-
taining to a ferment; En'zyme, an
unorganised or soluble ferment, as
Diastase; amylolyt'ic ~, as Diastase,
converting starch into sugar; fat ~,
converting olein into oleic acid and
glycerine; glu'coside ~, as Synap-
tase or Emulsin; hydroyt'ic ~,
splitting up by hydrolysis; in'vert
~, turning cane-sugar into grape-
sugar; ox'idising ~, assisting in
the oxidation of various substances;
proteolyt'ic ~, decomposing pro-
teids; Enzymo'id (εἶδος, resem-
blance), a body resembling an enzyme in
its action; Cy'totoxins; Enzy-
mol'ogy (+ Enzyme. λόγος, dis-
course), the study of the soluble fer-
ments; Enzymol'y'sis (λύσις, a
loosing), the action of breaking up
a substance by the solvent power of
an enzyme; Enzymo'sis, changes
induced by the action of an enzyme;
enzymo'tic, acting as an enzyme.

Eoclad'ous (ήως, dawn = early; κλάδος,
a branch), applied by Prantl to
those leaves which in development
become branched while in the meri-
stromatic state.

Eosin'o'phil (eosin, a rose-red dye from
coal-tar products; φιλέω, I love),
denotes any substance which be-
comes coloured by the application of
eosin.

Epan'ody (ἐπανόδος, return to normal),
a return to a regular state from an
irregular, as a peloria flower.

epan' thou's (ἐπι, upon; άνθος, a flower),
growing upon flowers, as certain
Fungi; Ep'en (Crozier) = Epench'yma
(ἐγχυμα, an infusion), Nageli's term
for fibro-vascular tissue; Ephar-
mon'ism, physiologi'c (αρμονία, con-
cord), Vesque's term, used for the
methods by which the plant is
adapted to sun and drought; Ephar-
mony, growth form in contradistinc-
tion to its systematic form; adj.
epharon'mic (or epharmon'ical); ~
Conver'gence, resemblance of plants
which are distant in affinity; Ephar-
om'sis (αρμοσ, I join. together),
the adaptation of plants under new
conditions (Vesque); adj. epharmo'tic.

ephebogenet'ic (ἐφήβος adult; γένος,
trace, descent), matured, applied to
development of sperm-cells.

Ephe'm'er (ἐφημέρος, short-lived),
(1) Rikli's term for introduced plants
which are unable to persist, but
soon disappear; (2) flowers which
close after a short term of expa-
sion; ephem'er'al, ephem'erous, ~us
(ήμερα, day), (1) lasting for a day or
less, as the corolla of Cistus; (2)
used by Moebius as ~ polycarpic
plants, which flower several gener-
tations in the same year, as Stellari-
a media, Cyri, Ephé'merophytes (μέρος,
a plant), casuals.

Ephydr'gam'icae, pl. (ἐπι, upon; ὕδαρ
water; γάμος, marriage), Knuth's
term for plants whose flowers are
fertilized on the surface of water,
as Vallisneria; Ephydrogam'amy,
the condition described.

Ep'iachene (+ Achene), an achene
developed from an inferior ovary
(Villari); Epiascid'ium (+ Asci-
dium), a funnel formed from a leaf,
the inner surface corresponding to
the upper surface; cf. Hypoas-
Epibasal

Fdium; epiba'sal (βάσις, the base), in front of the basal wall, as in the anterior half of a proembryo; ~ cell, the upper cell of an ospore in Bryophytes and Pteridophytes; ~ o'c'tants, the subsequent divisions of the ~ cell; Epiblast, Epiblastus (βαστός, a shoot), the first and undeveloping leaf of the plumule of grasses, a rudimentary second cotyledon; Epiblast'anus is a synonym; Epiblaste'ma, a superficial outgrowth from leaves; Epiblaste'teme, a tuft of glandular emergences which act as colleters, their cells secreting a viscid substance (Kerner); Epiblaste'sis, growth of Lichens from gonidia which develop on the parent Lichen.

Epible'ma (ἴπιβλητα, a cloak), (1) the extremity of the root with its root-hairs (Schleiden), now restricted to the primary inteygumentary tissue of the root, apart from the root-cap; (2) an epidermis of thickened and flattened cells (Lindley).

epical'y'c'ius (ἴπτως, a flower) = epistam'ineous; Epica'lyx, an involucre resembling an accessory calyx as in Malva; Epicarp (καρπός, fruit), Epicar'pium, the external layer of a pericarp; epicarpan'thous, -us (ἴδρος, a flower), epicarp'ous, epicarp'ius, -icus, superior, applied to a flower or its parts; Ep'ichil, Ep'icheile, Epichil'ium (χείλος, a lip), the terminal part of the label-lum of an orchid when it is distinct from the basal portion; Epichro'a t (χρώς, skin), a supposed external layer of cuticle; Ep'icline (κλίνη, a bed), a nectary when on the receptacle of a flower; epicil'nal, epicil'thous, seated upon the torus or receptacle; Epicop'ula (+ Copula) an intermediate band of cell-wall, in the upper or larger valve of Diatoms (O. Müller); epicer'mic (κορμός, a tree-trunk), (1) applied to preventitious buds which develop on the trunks of trees; (2) used of 'branches which develop on the body of a forest tree from which surrounding trees have been removed' (Crozier); epicor'o'lline, epicorolla'tus (+ Corolla), inserted upon the corolla; Epicot'yl (κοτύλη, hollow vessel), the young stem above the cotyledons; adj. epi-cot'yl'lar; epicotyle'donary, placed above the seed-leaves; Epicot'ius (cutis, the skin), Fayod's term for the superficial layer of the cuticle in Agarics; Epiderm, Epider'mis (δέρμα, skin); the true cellular skin or covering of a plant below the cuticle; epider'mal, relating to the outer covering; ~ Lay'er, the outer cortex (Williamson and Scott); ~ Tis'sue, the tissue which makes up the epidermis; epiderm'o'id (εἶδος, like), belonging to or resembling the epiderm; epidermo'idal Lay'er, the exoderm of roots; Epidi- phyll'um (δίς, double; φυλλόν, a leaf), Kronfeld's term for a double leaf, when the growth of the lamina has been interrupted at a particular spot; epo-endoderm'al, applied to cells with thickening ridges immediately outside the endodermis in the roots of many Cruciferae; epigae'ans, epigae'ous, epige'us, γῆ, the earth), (1) growing upon the ground; (2) on land as opposed to water; (3) the above-ground flowers of such genera as have hypogaean flowers also, as Krasch'eni'kova; also occurs as epige'al, epige'ans, epige'ous, especially when used of cotyledons which spread above the surface; epige'ic, Vahl's term for plants whose stolons are above ground; epigam'ic (γάμος, marriage), sex determined during the later stages of development (Correns); Epigen'esis (γένεσις, a beginning), the theory that the embryo develops by the differentiation of new organs; opposed to the old theory of 'Evolution' or Pre-formation; adj. epigeneti'c; epig'enous, epig'enus, γήνας, race, growing on the surface, as Fungi on leaves; Epigeot'ropism (+ Geotropism), growing on the surface of the soil (White); Epigone, Ep'i-
go'ni um (γονή, offspring), (1) the cellular layer covering the young sporophore in Hepaticae; (2) similar tissue in Mosses after formation of the capsule, frequently ruptured, the upper portion carried up as the calyptra, the lower remaining as the vaginule; (3) the nucleus in Chara; epigyn'icus, with the calyx or corolla superior; epigynophor'ius (γυνή, a woman; φορέω, I carry), placed upon a gynophore or stipe of an ovary (Lindley); epig'y nous, -us, on the pistil, apparently above the ovary; Epig'y ny, the state of having epigynous flowers; epilith'ic (λίθος, rock), growing on rocks as many Lichens; Epimat'i um (ματίων, an outer garment), the ocelliferous scale of Coniferae.

epim'enus (ἐπιμένον, upon; μένω, I remain), Necker's term for the perianth being superior; epina'stic (ναυτίς, pressed close), (1) in leaves when pressed close to the ground, or away from the axis; (2) in organs when the ventral surface grows the fastest, as in revolute vernation; (3) when ovules are curved in a downward direction (Van Tieghem); Epina's ty, De Vries's term for curvature produced by greater growth of the ventral surface; Epine'mus (νήμα, a thread), the upper part of the filament in Compositae bearing the anther; epiniyc'tous (νύξ, νυκτός, night), ephemeral, applied to flowers which begin to open in the evening; Epiontolo'gy (+ Ontology), the developmental history of plant-distribution; adj. epiontologi'c.

epipedo'chor'ias (ἐπιπεδόχος, level; + Chorisis), the division of an axial organ in one plane; it frequently does not differ from Fasciation (Penzig).

epipel'lat e (ἐπιλατέ, upon; + pel'tate), a phyllome having the base of the limb on the superior face (C. de Candolle); Epiperid'i um (+ Peri'dium) = Exoperidium; epiperisper'micu s (περι, about; σπέρμα, seed), without perisperm or albumen (S. F. Gray); epipet'alous, -us, epipet'al ens (πεταλον, a flower-leaf), (1) borne upon the petals; (2) placed before the petals; epipetre'ous (πέ'tρα, a rock), growing on rocks, saxicol e; epiphloe'dic = Epilhloedal; Epiphlo'o em (φλούς, bark), the outermost or corky bark; epilhloedal, existing on the outer bark; Epi'phlosa = Epiderm (Lindley); Epiph'ragm, Epiphrag'ma (φράγμα, a fence), (1) a membrane which closes the opening of the theca in Mosses; (2) a delicate membrane closing the cup-like sporophore in Nidularia; Epiphyll (φυλλόε, a leaf), the upper portion of a leaf, from which the petiole and blade are developed; epiphyllosperm'ous (σπέρμα, seed), bearing seed or the like on leaf-like organs, as the dorsiferous Ferns; epiphyll'ous, -us, growing on leaves; Epiphyll'ae, epiphyllous Algae and Lichens.

Epiph' ysis (ἐπιφυς, to grow up), protruberances round the hilum or foramen of some seeds; strophioles.

Epiphyty (ἐπιφύτης, upon; φυτόν, a plant), a plant which grows on other plants, but not parasitically; an air-plant; epiphyta'ceous = Epiphytic; epiphy'tal, epiphytic, relating to epiphytes; Epiph'ytism, the condition of epiphytes; Epiphy'toid (εἴδος, like), Johow's term for a phanerogamous parasite presumably derived from an autophagous epiphyte; ~ Par'asites, as Loranthaceae and Santalaceae; epiphyto'tic, used of wide-sprea ding disease in plants, as an epidemic (Crozier); Epilank' ton (+ Plankton), (1) the upper portion of pelagic plankton; (2) floating organisms attached to pelagic organisms (Forel); Epiplasm (πεπλάσμα, moulded), protoplasm rich in glycogen, which remains in the ascus after the formation of ascospores; glycogen-mass; Epipleu'ra (πλευρά, a rib), the outer half of the diatom girdle, belonging to the epithea; Epipodium (πούς, πόδος, a foot), (1) the apical portion of a developing
Phyllododium or longitudinal axis of a leaf; (2) a form of disk consisting of glands upon the stipe of an ovary; (3) the stalk of the disk itself (Lindley); *epipodioarch* (παλκς, many; ἀρχ', beginning), the division of the median protoxylem in a triarch stele (Prantl); *epipro-teoid* (+ proteoid), applied to plants whose leaves have sclerogamous cells on the upper surface (Vesque); *epiper'terus*, *epiper'terus* (περόν, a wing), winged, especially at the summit.

**Epirrhoeology** (ἐπιρρέω, I overflow; ἀγος, discourse), the effects of external agents on living plants.

*epihi'zous*, -zus (ἐπιλ, upon; βία, a root), growing on roots, as certain parasites; *episep'alous* (+ *sepalum*) (1) on the sepals; (2) standing before the sepals; *Episperm* (σπερμα, seed), the coat or outer covering of the seed, spermoderm, perisperm; *episper'micus*, exalbuminous; *Episporang'ium* (σπορά, seed; ἄγγειον, a vessel), the indusium of Ferns; *Epispor', Epispor'ium*, an external coat or perinium formed from the periplasm round the oospore in some Fungi and the spores of certain of the higher Cryptogams; *episp'orico*, connected with the outer coat of a spore; *epist'amina'lis* (+ *Stamen*), on the stamens, as hairs; *epistat'ico* (στατικός, causing to stand), applied to a unit-character becoming invisible but not inactive (Shull); *Epist'asis* is the condition; *epistem'eous* (στιμων, a mouth), "spigot-shaped" (Heinig).

**Epistrophe** (ἐπιστροφη, turning about), the arrangement of chlorophyll granules on the upper and lower faces of the cells in diffused light; cf. Apostrophe; adj. epistroph'ic; ~ Int'erval, or Epistroph'ion, S. Moore’s term for that range of intensity of sunlight needed to produce Epistrophe; Epistrophiza'tion, the condition described. **Epistrophy**, Morren’s term for the reversion of a monstrous form to the normal condition: epanody.

*epitactic* (ἐπιταξιος, commanded), placed behind another; cf. Panto-tactic; Paratactic.

**Epit'eesporae**, _ae_, (ἐπιλ, upon; + Spora), spores in a sorus surrounded by prominent paraphyses, as in the genus Epitea, Fries, whence the term; *epitet'arch* (+ Tet'arch), when in a triarch stele, the third (median) protoxylem group is divided (Prantl); *epithall'ine* (θαλλος, a young shoot), growing on the thallus; Epithall’us, the cortical layer of Lichens, by Zukal employed for all modifications of the cortical hypae at the margin or apex of the thallus, which serve as protection to the gonidia; *Epithe'ca* (θηκη, a case), the outer and larger half-frustule of Diatoms; adj. *epithe'cal*; **Epithe'-cium**, the surface of the fructifying disc in Lichens; *Epithe'lium* (θηλη, a nipple), (1) any distinct layer of one or more cells in thickness which bounds an internal cavity; (2) = **Epidermis**.

**Epithem**, or Epithe’ma, pl. Epithe’- mata (ἐπιθημα, a cover), masses of tissue in the mesophyll of leaves, serving as internal hydathodes, the cells being usually devoid of chlorophyll, as in *Crassula*.

*epitri'arch* (ἐπιλ, upon; + triarch), when in a triarch stele, the third (medial) protoxylem group is uppermost, i.e. ventral (Prantl); *epitroph'ic* (τροφη, nourishment), having relation to Epitrophy (Wiesner); Epitroph'-y, the condition when the growth of the cortex on wood is greater on the upper side of the organ; or having buds or shoots on the upper side (Wiesner); *epitrop'ic* (τροπος, direction), below the axis; epicytoly'-ary; Epitropism = Geotropism; *epitropous* (τροπη, a turn), denotes an anatropous ovule with its raphe averse when ascending, adverse when suspended; Epival'va, Epival'Ve (valva, a valve), the valve belonging to the epiteca of a
Diatom; epixyio'neus (ἔλον, wood); epiz'ylos (Crozier), growing on wood, as *Hypoxylon*; epizo'arius (ὤν, an animal); growing on dead animals; epizo'ic, epizo'us, (1) growing on living animals, parasitic or not; (2) the dispersal of fruits by their adhesion to passing animals (Sernander); Epizooco'ry (ὤν, an animal; χωρο, I wander), dispersal of plants by animals carrying them on their fur (Sernander).

epica'tus (e, priv.; plicatus, folded), not plaited or folded.

Epik'ophytes (ἐποικεω, I settle as colonist; φυτόν, a plant), fairly naturalized plants, but almost entirely confined to roadsides or paths, as Lepidium ruderalere (Rikli).

eprophylla'tus(e, priv.; +Phryphylla), without prophylla, bracteoles;—in Ger. Vorbblatter; epru'inoose (pruinosus, frosty), without surface furina.

e'qual (aequalis), (1) alike as to length or number; (2) in Mosses when the capsule is symmetrical; ~ si'ded, equal, when applied to the two sides of an organ; e'qually-pin'nate = abruptly pinnate, having no terminal leaflet; e'quans (Lat.), equalling.

Equator'ial Plane, the line which passes through the mother-star of the nucleus, the plane of cell-division; ~ Plate. the nuclear disc of Strasburger, the grouping of chromosomes at the middle of the spindle in nuclear division.

equilateral, equilateralis (aequilateralis), equal-sided.

equinoc'tial, equinoctic'alis (acquinoctic'alis), pertaining to the equinox, used of plants whose flowers expand and close at particular hours of the day.

equisets'ceous—Equiset'ic; Equiset'es'tum, Warming's term for a plant-association of *Equisetum*; equis etie, pertaining to the genus *Equisetum*; equis etiform, resembling the same genus as to form.

e'quitarian, e'quitans (Lat. riding), folded over, as if astride; equi-tati'vens (Lat.) † = equitant.

equiv'alv'ular (aegue, equally; valva, leaf of a door), having the valves of a fruit equal in size.

Equiv'ocal (aquivocuus, ambiguous) Generation, spontaneous generation.

eradic'uose (e, priv.; radicula, a small root), without rootlets or rhizoids; eramo'sus (ramus, a branch), un-branched.

erec't, erect'us (Lat.), upright, perpendicular to the ground or its attachment; erec'to-pat'en (patens, lying open), between spreading and erect.

Eremacau'sis (ἡμέα, gently; καῦς, burning), slow combustion or oxidation, such as long preserved seeds show, as if charred.

Ere'mad (ἐρμα, a desert; + AD), a desert plant; Eremi'on, Eremi'um (+ion) = a desert formation; eremo'cola, desert dwelling; eremo'philus (φιλεω, I love), desert loving; Eremophy'ta (φυτων, a plant), desert plants (Clements).

Ere'moblast (ἐρμος, solitary; βλαστω, a shoot), cells which, united at first, afterwards separate themselves;

Eremobry'a (βρω, I grow), a division of Ferns having articulated fronds, and not adherent to the stem or rhizome; Ere'mus † a carpel apart from its sister carpels.

Erep'sin, a fibrin-digesting enzyme;

Erep'tases, peptolyzing enzymes (Vines).

Ergasiap'ophytes (ἐργασια, labour; + Phryphytetis), colonists of cultivated fields (Simmons); Ergasiali'pophytes (λιπαρεω, I persist), relics of cultivation (Nägeli and Thellung); Ergasiophy'gophytes (φυτων, flight), fugitives from cultivation; Ergasiophy'tes, foreign cultivated plants, which have reached their habitats by the conscious action of man (Woodhead); Ergasi'phytes, foreign cultivated plants (Simmons).

Ergastoplas'ma (αἴθραμα, moulded), applied to protoplasmic filaments observed in the embryo-sac of certain Liliaceae whose origin and
formation are still uncertain (Bonnet); adj. ergastoplasmatic.

Ergesis (ἐργον, I work), the ability of an organ to exhibit reaction (Massart).

Ergogenesis (ἐργον, work; γενος, beginning), the exhibition of growth-energy (J. A. Ryder); Ergology (λόγος, discourse), proposed by Lindman for Delpino’s “Idology.”

ergoplastictic Naëleus, Schwarz’s term for the vegetative nucleus.

Ergot (Fr.), also pr. Ergot; Claviceps purpurea, Tul., causing “Surp” in grasses; Ergost erin. Ergotio Acid.

Ergotin, ergotised, the infected with Ergot; Ergotism, the effect produced by eating bread which is ergotized.

Erianthous, -us (ėrio, wool; āνθος, a flower), woolly-flowered.

Ericaceous, heath-like, or allied to the genus Erica.

Eri'ceteal (ericetum, Mod. Lat., a heath), H. C. Watson’s term for plants which grow upon moors, such as heather, Erica; ericetinous, ericetinus (Mod. Lat.), (1) growing on heaths; (2) heath-like, in form or habit: Ericetum, (1) an account or monograph of heaths; (2) a heath plant-association; pl. Ericetea, employed by Nilsson, as ~ cladino'sa, ~ hylacomio'sa, ~ polytrichio'sa, ~ pu'ra, ~ sphagno'sa, according to the substratum of Lichen or Moss (Heinig); Ericifrutice ta, pl. (fruticetum, a thicket), heath communities; Ericilligno'sa, pl. (lignosus, woody) community of heath characterized by rolled-up leaves; Eri'ci-ma'qui (Ma'què), preponderance of arboreal heaths with Ulex and Sarothamnus, as in the “Landes” of France; erico'iid (εἰδος, like), used of leaves which are like those of heaths.

Erigens (erigo, I raise), used of a branch, horizontal at first, rising at the point.

Erioonos (er, eris, a hedgehog), “prickly, rough with sharp points” (Heinig).

Eriophoretum (+ etum), a plant formation of cotton grass, Eriophorum.

eriophorous (ėrio, wool; φορέω, I carry), wool-baring, densely cottony; eriophyllous, -us (φυλλον, a leaf), woolly leaved.

Eris'ma (ėrisima, a buttress), Necker’s term for the rhachis in grasses.

Ermin'ees (Mod Lat.), the colour of the fur of ermine, white, broken with yellow.

ero'ded, ero'se, ero'sus (Lat. gnawed), as though bitten or gnawed.

erost'rate, erost'ratus, erost'ris (Lat.), bezkless.

Er'ror, probable, see Deviation.

Ersatzfas'eru. Sanio = Substitute Fibres, intermediate in form between woody fibres and parenchyma.

erubesc'ens (Lat. blushling), blush red.

er.caesform'is (erew, a caterpillar; forma, shape), used for such Lichen spores as those of Gr. . . is, which are long, septate. Blunted at the extremities, and in shape suggest a short caterpillar.

erump'ent, erump'ens (Lat. breaking through), prominent as though bursting through the epidermis.

Er'simin, a glucoside found in Ery{smum.

Er'ythrias (ėruthros, red), a red colour in flowers usually white, the reverse of albinism; erythrobacteri'a (+ bacteri'a), bacteria of a deep red colour; in Ger., “Purpurbacterien”; erythroph'ious (philéω, I love), used of nuclei which take up red stains in preference to blue; Er'ythrophyl'le (φυλλον, a leaf), Berzelius’s term for the red colouring of leaves; Er'ythrophore (φορέω, I carry), Schmitz’s term for a chlorophyll-granule when red, as in certain Algae; Er'ythrost'omum (στόμα, the mouth), Desvaux’s word for Etaerio; Er'ythrozum (ζύμη, yeast), an enzyme from the root of the madder which acts on glucosides.

Escape’, a cultivated plant found growing as though wild, dispersed by some agency.
-escens, a Latin suffix = ish, thus rubrescent = redd-ish.

eucarplc (eucarplus, fit for eating), suitable for human food.

Es'culin = ÆSCULIN.

esep' tate (e, priv.; septum, a partition), destitute of septa.

esore'diate, destitute of SORelia.

esoter'ias (τσωτερος, inner), arising from inside the organism.

Espal'ier, a fruit tree trained lattice-fashion, in one plane, but not attached to a wall; ~ shape, stems pressed against the ground (Warming).

espatha' ceus (e, priv., + Spatha, -aceus), wanting a spathe; Lindley gives the form espatha'tus.

essen'tial (essentia, the being of anything), the necessary constituent of an existing object; ~ Char'acter, the distinguishing note by which a form differs from its allies, diagnostic character; ~ Or'gans, those which are absolutely necessary, stamens and pistils.

Esthe'sis = AëTHESIS.

es'ti'val = AEStival; e'stitative = AESlывать; Estive'a tion = AEStiva'tion.

estroph' iolate (estrophiolatus, destitute of caruncle, or STROPHIOLE.

Ete' rion, Etkairiunm (treapela, companionship), an aggregate fruit composed of achenes or drupes, as in Ranancul'sus, the Strawberry, and Blackberry; adj. etairona'ris, etairio' nens.

Etê'sion (ετησιος, annual), herbaceous perennials; the root persisting, with the above-ground portion only annual; adj ete'sial.

ethnobotan'ic (εθνος, a tribe; βοδανη, a herb), relating to those plants which illustrate or are typical of the customs of a given race or people.

e'tiolative, tending to disease.

e'tiolate etiola'tus (Fr. etiolé, drawn out), lengthened or deprived of colour by absence of light; Etiola'tion, the condition of being blanched; E'tioline, the yellow-colouring matter of blanched plants, chlorophyll which has not acquired its green colour (Pringsheim).

etiological, connected with AEtiOLOgy; E'tiology = AEtiology.

etrabecula'tus (e, priv.; trabecula, a little beam), not cross-barred; when the peristome teeth of Mosses want cross-connections.

-e'tum, suffix denoting ConsoCies (Clements).

eu- (ευ, well), in Greek compounds = true; often used in sectional names, with a restricted meaning; ena'cranth'ic (ενακρανθ, apex; ακρανθ, flower), truly terminal; ~ Flow'er, a terminal flower which springs immediately from the apex of a shoot which has produced leaves or other lateral structures; cf. Pseudacranthic; eu'anath'ic, used by Delpino to denote a monothalamic flower, the reverse being Pseudanathic; Euanthro'trob'icus (+ ANTHROSTROBILUS), the theoretic idea of the flowering Angiosperms (Arber and Parkin); Euapog'am( + Apogamy), restricted to such cases as have no obvious need for fertilization as in Athyriun (Farmer and Digby).

Eucalyptol'ogist, an expert in the polymorphic genus Eucalyptus (Maiden).

Eucar' otin (ευ, well; + CAROTIN), Zopf employs this to denote the yellow carotin as distinct from the red; eucarp'ic (ευκαρπας, fruit), applied to certain Algae where part only of the body of the plant goes to form the sporangium, in contrast to Holcarpic; eucar'pour, (1) = EUCARPIC; (2) of Fungi when producing several successive fructifications from the same thallus; eucy' clic (κυκλος, a circle), when flowers are composed of alternate isomorous whorls.

Eudio'meter (ευδια, fair weather; μετρεω, measure) an instrument for measuring the quantity of oxygen in a given bulk of fluid; adj. eudio'met'ric.

eu'phem'erous (ευ, well; + EPHEM-ERous), applied to flowers which open
and close within 24 hours; Eu'forms (forma, a shape) of uredineous Fungi, whose spores develop on the living host, but only germinate after the host's death, usually after a resting period; Eugam'ophage (γάμος, marriage; φυτόν, a plant), term proposed by C. MacMillan for such Cryptogams as Oedog-nium, Marchantia, Sphy-nnum, "which support dependent sporophytes."

Eu genoi, the chief constituent of oil of cloves, obtained from Pimenta acris, Kostel, and other myrtaceous plants, formerly referred to Eugenia.

eugeg'enos (εὖ, well; γῆ, the earth; γενέω, I bring forth), Thurmann’s word to indicate rocks readily yielding detritus and the plants which grow on it; Euisog’amy (εὐίσωμος, marriage), the union of a gamete with any other similar gamete (Hartog); Eugonid’ia, pl. (+ Goni dia) "bright-green gonidia" (A. L. Smith); enrolm’etic (+ limnetic), plankton exclusively of pools; Eu meio’sis (+ Meiosis) the opposite term to Pseudomeiosis; a true meiotic phase; eumerist’ic, having reduced Eu-teleis, as some species of Primula and Gunnera (Brebner); Eunu’cleole (+ nucleole), used by Rosen for an erythrophilous nucleus; Eunnuc’eoli (+ nucleoli), a class of nucleoli which persist in nuclear division after the Pseudonucleoli have disappeared (Rosen).

Eu’nuchs, pl. (eunuchare, to castrate), Lee’s term for flowers destitute of stamens, as double flowers.

Euparthen’osperm (εὖ, well; + Par thenosperm), C. MacMillan’s term for plants in which both embry and endosperm are parthenogenetic.

Eupato’rine, an alkaloid occurring in Eupatorium cannabinum, Linn.; eupelag’ic (+ pelagic), applied to plankton confined to the ocean; Euphe’mera (+ Ephemerida), flowers which open and close finally within twenty-four hours.

Euphor’bium, an acrid inspissated juice or resin from various species of Euphorbia.

eupho’tic (εὖθ, well; φως, φωτός, light), applied to hydrophytes which receive an abundance of light (Warming); euphotomet’ric (μέτρον, a measure), used of leaves which place themselves so as to obtain the maximum of diffused light, as the foliage of forests (Wiesner); euphototropic’ic (τρόπος, a turning), Drude’s term for Euphotometric; Euphy’lia, pl. true leaves; adj. euphy’lioid, euphy’lioid’eus; Eu’phylls (φυλλον, a leaf), true leaves, foliage leaves; euph’ytoid (φυτόν, a plant; εἴδος, like) Par’asites, are erect land plants, parasitic in habit (Johow); Euplank’ton (+ Plankton), free-floating organisms (Forel); eupo’ntic, species which show only a slight westward range from Pontus, the N. E. of Asia Minor (Preuss); eupot’am’ic (ποταμός, a river), applied to the plankton of running or standing inland waters; (Zimmer); Eupuc’cin’ia, cf. EU FORMS; eurad’ulian, employed by botanists to denote similarity to Rubus Radula.

eurotoph’ilus (εὖρος, mouldiness; φιλέω, I love), dwelling in leaf-mould; Eurotoph’yta (φυτόν, a plant), leaf-mould plants; Euroto phy’ta, leaf-mould plant formations (Clements).

eurycho’ric (εὖρος, broad; χαρώ, I spread), used of plants having a wide distribution in varying climates and several plant formations (Drude); Eurycho’ry, is the condition.

euryco’ladous (εὖ, well; κλάδος, a branch), employed by Russow for laxis: euryhal’ine (άλς. άλς, salt), plankton adapted to varying conditions of salinity (Forel); euryph’otic (φως, φωτός, light), adapted to light of varying intensity (Forel); Eu’rytherm θερμή, heat, applied to bacteria capable of enduring great heat; adj. eurytherm’ic; eusigil’lar’ian, used of ribbed Sigillaria stems from the Carboniferous Forma tion; eu’ schist (σχιστός, split),
when a gamete is formed by successive complete divisions from the parent cell, the gametogonium (Hartog).

**Eu'state** (ἐυστάθης, steadfast), Hartig's term for the outermost layer of a cell.

**Eu'stele** (ἐὐστήλε, well; + STELE), Brebner's term for the monostele of typical dicotyledons, a ring of meristeles, including pericyclic and ground tissue; the stele of a typical Dicotyledon, with ring of collateral bundles; adj. eustel'ic; the condition is Eustely; eusporang'iate (σπορά, seed; ἀγγείον, a vessel), in Pteridophytes, possessing a sporangium, a Eusporan'gium, derived from a group of superficial cells; Eusporophy'ta (φυτόν, a plant), Cryptogams defined by C. MacMillan as 'self-supporting, and do not nurse the gametophytes, r. g. the higher Mosses, the lower Fern-worts and Club-mosses.'

**Euthal'lophytes,** Euthallophy'ta, Schroeter's term for Thallophytes exclusive of Myxogastres; by Wettstein employed in a more restricted sense for Chlorophyceae and Fungi only.

**Euthybas'lid** (εύθυς, direct), Van Tieghem's word for those basidia which spring directly from the sporophore; cf. PROBASID; Euthymorph'osis (μόρφωσις, a shaping), the rapid succession of members of different form on the same stem, buds, etc., polymorphism (Caruel).

**Eu'thy'schist** (εὐθύς, immediately; σχιστής split), in brood-division, when each nuclear division is accompanied by cell division (Hartog).

**Eutroph'ic** (εὖθε, well; τρόφη, nourishment), applied to plants adapted to live at the expense of nutritive solutions present in the soil; eutro'pic (τρόπος, direction), (1) A. Gray's word for twining with the sun, that is, left to right, de'trorse; (2) those flowers which display Eutrop'y; Eu'tropy, applied by M'Leod to those flowers to which only a restricted class of specialized insects can gain access; adj. eu'tropous.

**Evol'vis, eval'vular** (e, priv., valra, leaf of a door), destitute of valves, not opening by them.

**Evan'es'cent** (eranesccens, vanishing), soon disappearing, lasting only a short time; evaniscent ti ven'o'sus, when the lateral veins of a leaf do not reach the margin.

**Evapora'tion** (evaporatio, vaporizing), to pass off in vapour; Evaporim'eter (μέτρον, a measure), an instrument to measure the amount of moisture given off by plants.

**Evec'tion** (ejectus, carried), when in Cladophora the initial cells of the branches arise from the sides of the upper end of the mother-cell; Evec'tio disloca'tus is an extreme form of this displacement in C. Nordst. di'i, Hauck (Brand).

**E'ven** without inequalities of surface;

**E'venness,** absence of elevations or depressions; e'ven-pin'nate = aBRUPTLY-PINNATE (Crozier); e'ver-green, bearing green foliage all the year; everlast'ing, used of some flowers which preserve their shape and colour in drying, as species of Gnaphalium, Helichrysum, etc.

**Ever-nia'eform** (firma, shape), like the thallus of Evernia, a genus of Lichens; Ever'nine, a principle found in the same genus; ever'noid (eidos, resemblance), like the genus Evernia (Leighton).

**Ever'sion** (eversio, an overthrowing), protusious of organs from a cavity, turned backward or outward; evert'ed, turned inside out.

**Ev'ident** (evidens, manifest), clearly visible.

**Evit'tate, evit'tatus** (e, priv.; vitta, a fillet), not having Vit'tae, oil-reservoirs in the fruit of Umbelliferae.

**E'volute** (evolve, I roll forth), unfolded, turned back; Evolu'tion, (1) the act of development; (2) the theory according to which complex forms are considered to have been evolved from simpler ones; saltat'ory ~, sudden appearance of sports; muta'tion.
Exhomotropy

Exhomotropy (ex, priv.; + Albumen), destitute of albumen, used only of seeds when the embryo occupies the whole cavity within the testa; exalate, exalatus (alatus, winged), wingless.

Exaltatus (Lat., raised high), lofty, tall.

Exarch (ex, priv.; annulus, a ring), used of Ferns which do not possess an elastic ring round their sporangia.

Exarch'ema (ex, out of; ἄνθος, a flower), (1) a blotch on leaves, etc., as though eruptive; (2) the "Dieback" of Citrus; Exanth'ium ‡ bractlets of the last degree, incapable of forming axillary buds, and immediately external to the flower.

Exaphysa'tus (ex, priv.; + Apo'physis), destitute of an apophysis, or swelling below the capsule of a Moss.

Exarch (ex, out of; ἀρχή, origin), used of vascular bundles in which the whole primary wood is centripetal; cf. Perixylic.

Exar'elate, exarela'tus (ex, priv.; + AEO'LATUS), not spaced out or marked into small areas; exar'illate (+ Artilla), without an aril; exaristate, exarista'tus (+ Arista), destitute of awns.

Exaspera'tus (ex, out of; apparent, roughened), rough with hard projecting points.

Excavate (excavatus, hollowed out), as though dug out.

Excen'tric, excentricus (ex, out of; centrum, the centre), one-sided, out of the centre, abaxial.

Excip'le, Excipule (Crozier), Excip'ulum, Excip'ulus (excipula, a basin), wart-like excrescences on the thallus of certain Lichens, which have a narrow opening; the portion of thallus which forms the rim round the base of the discus.

Excitabil'ity, Excitabil'itas (excitatus, roused), the faculty of responding to external stimuli.

Excita'tion (ex, out of; corium, skin), the falling off of the outer layer of the terminal cells of glandular or capitate hairs, as in Geranium (Heinig); Excoc'tia'tion (corticatus, covered with bark), the stripping of bark.

Excres'cent (excro'scens, growing out), growing in an unnatural way, as a wart or other outgrowth; Excres'cence, a gnaw or wart on the stem of a tree; enation.

Excres'cence (ex, out of; cretus, sifted), (1) the action by which any substance is rejected from the organism; (2) the thing itself excreted, as gum, resin, honey, etc.; excurr'ent, excur'rens (Lat., running out), (1) running through to the apex and beyond as a macro; (2) where the stem remains central, the other parts being regularly disposed round it; ~ Vena'tion, in Ferns, when the veinlet is directed outwards.

Exendosperm'ous (ex, out; ἐνθεόν, within; σπέρμα, seed), used of seeds which have reserve material stored in the embryo; Exendotrop'ic (+ Endo'tropic), when fertilized from another flower of the same or a different plant (K. Pearson); Exendot'ropy, the condition itself.

Exesus ‡ (Lat., eaten away), applied to a surface irregularly sculptured as though by corrosion.

Exfoli'ate (ex, from; folium, a leaf), to come away in scales or flakes, as the bark of the Plane; Exfolia'tion, peeling off.

Exhal'ant (exhalo, I exhale), breathing out, as exhalantia Va'sa ‡ imaginary vessels in the epidermis, actually the sides of confluent cells; Exhal'a'tion, the function discharged by stomata in passing off vapour; Exhomotrop'ic, (+ Homotrophic), when fertilized from the anthers of the same, or a different plant (K. Pearson); Exhomot'ropy, is the
Exhomotropy

condition described; Exhy'menine
(ōnhy, a membrane) = Extine.

Exig'nous, exig'ius (Lat., scanty), small and narrow, mean.

ex'ilis (Lat.), thin, meagre; lank and straight.

Exim'ius (Lat., distinguished), excellent for size, for beauty.

Exindu'siate, exindus'ius (ex, priv.; + indusiate), without an indusium, the membrane which covers the torus in Ferns.

Ex'ine = Extine.

Ex'intine (ex, out; + intine), the middle coat of a pollen grain, that which is next the intine.

Exis'tem (ēxi, out; trēdos, a web), the "Aussenschicht" of Sanio, consisting of Mesistem, "thickening ring" and Peristem, young cortex; it is the tissue of protomeristem which is not young pith.

Ex'it, the inner aperture of the slit of a stoma; in Germ. "Ausgang."

exo, prefix = outward: Ex'ocarp, Exocar'pium (ēxi, outside; karπs, fruit), the outer layer of a pericarp; Exocaryog'amy (karπvν, a nut; γάμος, marriage) = Exogamy; exocata'romous (+ Catacompression), when Ferns in their nervation have their stronger pinnules anadromous, and their weaker catacompression (Prantl); Ex'o-chite (χιτων, a tunic), the outer-st membrane of the egg in Fucaceae (Farmer); Exochrome'phyte (χωμα, a mound; φυτον, a plant), surface-rooting and mat-forming plants. Exocortex (cortex, bark), (1) the outermost portion of the cortex; (2) in Rhizomorphae specially pervaded by hyphae: (3) a special layer in the roots of saprophytic Orchids; Exo'dermis (δέρμα, skin), the outermost cortical layer of the adult root, answering to the hypoderma of the stem; Exog'am'ic (γάμος, marriage), when flowers are crossed from different plants (K. Pearson); Exog'am'y (γάμος, marriage), (1) the tendency of closely allied gametes to avoid pairing; (2) the union of two gametes of distinct broods (Hartog); exog'-enous, exog'enus (γεννάω, I bring forth), (1) growing as the wood of Dicotyledons; (2) arising from superficial tissue; Exog'ens, Exog'enus, plants which in-crease in growth by the addition of wood on the outside beneath the constantly widening bark; exog'ynous, exog'ynus (γυνή, woman), where the style is exerted beyond the flower; Exohadrom'atic (+ Hadrome), exterior to the hadrome; cf. Perihadromatic; Exoisog'am'y (+ Isogamy), when a gamete will pair only with a similar gamete of another brood (Hartog); Exomer'istem (+ Meristem), Russow's term for the meristem which produces all the tissues of a Moss outside the central-strand, namely, cortex and epidermis (Vaizey): exo'nas'tic (ναστις, pressed close), in anatropous or campylotropous ovules when the curvature is horizontal towards the median nerve of the side of the upper face of the carpel (Van Tieghem); cf. Endostatic; Exo'neuro'sis, (νευρον, a nerve), the separation of veins in appendicular organs, and their reappearance as teeth, spines, or bristles, as in the Barberry (Clos); Exoper'id'ium (+ Peridium), the outer layer of the peridium of su-h Fungi as Lycopera'd, which peels or flakes off on maturity; exophyll'lous, -us (φύλλον, a leaf), not having a foliaceous sheath, with naked cotyledons; Exopleu'ra (πλευρα, the side) = Testa (Heinig); Exoprophala'lea, Van Tieghem's term for vascular Cryptogams; exop'tile, exop'tilis (πτερον, a wing) = Exophyllous, said of an embryo whose plumule is naked upon or between cotyledons and not rolled up in one (Lindley);

Exorhi'zal, exorhizin'is, the radicle not sheathed, so the primary root in germination has no covering to pierce; Exosclero'tes (σκληρός, hard), sclerot:s which are external to the surface of Agarics; Exos'mose,
Exosmosis (ἐξομήν, a thrusting), the passage through a membrane outwards from a thin to a dense fluid; Exosporium, Exosporium (σπορά, seed), (1) the outer covering of the spore; (2) a thick coat developed from the periplasm round the oosporose in Peronosporaceae; (3) the three outer layers of the spores of Isoetes (Fitting); Exosporinum, the outer integument of a pollen-grain, or microspore of flowering plants (Fitting); exosporous, having scattered spores, as Fungi; Exostome, Exostoma (ἀτόμα, a mouth), the foramen of the outer coat of the ovule; Exostosis (στοίχαν, bone), (1) the nodules on roots of Leguminosae; (2) the hard turgescence of sound wood, showing as prominent knots; Exostylus (+ Stylus), Mirbel's word for fruit as in Labiateae, four seemingly naked nutlets; exoteric (ἐξωτερικός, external), arising from outside the organism, the opposite of esoteric; Exostesta (+ Testa), the hard outer layer of a seed-coat (F. W. Oliver); Exothecium (θηκή, a case), (1) the outer case of the anther (Henslow, Lindley); (2) Purkinje's term for the exine or outer layer of pollen-grains; exothermic (θερμὸς, hot), heat derived from outside, and not as the result of vital action.

Exotic (ἐξωτικός, foreign), not native, introduced from abroad; Exotics are those plants which are not indigenous; Exotism, a shortened form of exoticism, the condition of non-nativity, introduced from abroad.

Exotrophic (ἐξωτροφία, nourishment), employed by Wiesner where an organ or lateral shoot, as opposed to the mother-shoot, is most strongly developed; Exotrophy, development of lateral shoots instead of the main axis; exotropie (τροπή, a turning), fertilized from anthers of the same plant (K. Pearson); Exotropism, the tendency of lateral roots to grow away from a main root (Willis); Exotropy, roots arising from the small extremities of a flattened secondary root (Lopriore).

expanded, expanse (Lat. spread out), diffuse; Expansion, the condition of a flower in full perfection; ~ of protoplasm, the normal condition when it is impermeable to cell-sap, the opposite of contraction, when it is flaccid and permeable.

explanate, explanatus (Lat., flattened out), spread out flat.

Explodiforae (explodo, I. drive off; flos, floris, a flower). Delpino's term for wind-fertilized flowers which expel their pollen by explo-ive action.

expulsive (expulsus, driven out) Fruits, fruits which forcibly expel their seeds.

exquisitus (Lat., choice), used of parts larger or more highly coloured than usual, as Bracteae exquisitae; cf. Coma.

exraphidian (ex = without; + Raphis), destitute of raphides (Gulliver).

exsiccatus (Lat., carved out), showing small depressions as though dug out, as the seeds of Anchusa.

exsert', exserted, exsertus (Lat., protruded), protruded beyond, as stamens beyond the tube of the corolla.

Exsiccatum (exsiccatus, dry), dried plants, usually in sets for sale or for subscribers, frequently with printed tickets (Note.—Flora exsiccatas is the full expression).

exstipulate, exstipulatus (ex, priv. + Stipula), wanting stipules.

exsuccous, exsucus (Lat.), juiceless.

Extensibility (extensum, spread out), having the property of stretching.

extensus (Lat.), spread out.

extenuatus (Lat., thinned), a synonym of Virgatus (Henslow).

exterior (Lat., outer), outer, in the flower sometimes = Anterior.

external, externus (Lat.), outward; ~ Sheath, a modification of the bundle-sheath, stated to occur in Ferns (Russow).
Ex'tine (extimus, outside; + ine), the outer coat of a pollen-grain.

extra (Lat.), without, beyond, as extr-axill'ary, ~ axilla'ris, beyond, or out of the axil; ~ cell'u-lar, outside a cell; ~ fasc'ic'lar, outside the vascular bundles; ~ flor'al, beyond the flower, as some nectaries; ~ foli'a'ceous, away from the leaves, or inserted in a different position from them; ~ extramat'rical, outside of a nidus or matrix; Extremea'bilité (meabilis, penetrable), the capacity of protoplasm to permit substances to pass outwards from its vacuoles (Janse);

estra (Lat. beyond) - median, beyond the middle; ~ nup'tial, applied to nectaries or honey-glands which are not part of the floral organs; ~ ov'u'lar (+ ovule), exterior to the ovule; ~ prothall'i'al (+ Proth'al'ss) originating outside the prothallium (Bower); ~ sac'eal, used of embryos arising outside the cells of the embryo-sac.

extr-asem'i'nal (extra, without), outside the seed, as ~ Devel'opment, following the sowing of the seed, as the escape of the embryo, etc.

estra (Lat. beyond) - ste'lar, the ground-tissue outside the central cylinder; extr-trop'i'cal (+ Trop'ic), beyond the tropics, to the north or south of them; extrava'g'i'nal (vagina, a sheath), beyond or outside the sheath, applied to branches springing from buds, which break through the sheath of the subtending leaf, chiefly in grasses; Extrava'sa'tion (vas, a vessel), unnatural flow of a liquid from a tissue or organ, as the “bleeding” of vines; extra-xyl'ar, or extr-xylem'ic (+ Xylem), outside the xylem (Toulet).

estra'rous, ex'cros (exter, on the outside; versus, towards), directed outward, as the dehiscence of an anther.

ex'tus, a modern term = extra; similar in form to intus, but not classic Latin.

Exu'da'tion (exudo, or exudo, I sweat), the transpiration of liquids from hydathodes, etc., as seen on the leaf-tips of Monocotyledons; ~ Press'ure, Pfeffer's term for Root-pressure.

exungui'c'ulate (ex, priv.; unguula, a claw), without a claw (Crozier).

Exu'sion, Berkeley's term for Exu-di'ation.

ex'u'live (exutus, drawn off), applied to seeds wanting the usual integument.

Exu'vias (Lat., stripped off clothing), cast-off parts, as shed scales; Exu-via'tion, the operation of shedding effete material.

Eye, (1) a gardener's name for an undeveloped bud; (2) the persistent calyx of a pome, cf. Crown; (3) a conspicuous spot in a flower or seed, as a blotch of colour; (4) ~ Hili'um: ~ Spot (1) a coloured spot in a motile gamete or spore, which is sensitive to light; (2) markings on the silicous valve of Coscinodiscus, consisting of an aperture with a thickened margin in each alveole; dor'mant ~, a bud which is not called into growth.

faba'ceous, -eus (faba, a bean; + aceous), like a bean, or having its qualities; fabiform'is (forma), applied to Lichen spores which are bean-shaped.

Face, that surface of an organ which is opposed to the back, usually the upper or inner side; fa'cial, applied to a hilum which is on the side and not on the margin of a seed (H-inig).

F'a'cies (Lat., shape), (1) the general aspect of a plant; (2) suggested for the dominant species of an association, but this usage has been condemned.

fact'i'ous, fact'i'us (lat.), artificial.

Fac'tors, pl. (factor, a maker or doer) the elements which in their entirety make up a character or quality.

fac'ultative (facultas, capability), occasional, incidental, as opposed to
facultative; ~ An’aérobes, organisms which can exist without the presence of free oxygen or air; ~ Par’asites, normally saprophytes, but able to develop as parasites; ~ Sap’rophytes, the converse of the last, parasites which can run their course as saprophytes; ~ Sym’biont, an organism which can either exist and reach maturity independently or in symbiosis with another.

Fading, withering, without immediately falling away.

Fas’cilia, see ÆcUla.

Fage’tum (fagus, a beech-tree), an association of beeches; Fage’ta, pl., asperulo’sa, beech forests with ground-vegetation and Asperula; ~ myrtillo’sa, the same with Vaccinium Myrtillus in place of Asperula; Fagi’on (+ ion), a formation of beeches.

Fairy-ring, a circular patch of Aragics which have grown centrifugally, and whose influence on the soil is shown by greener grass after they have disappeared.

Fal’cate, falca’tus (Lat.), sickle-shaped; falca’rius, falcator’ius, are Latin synonyms; fal’ciform, falci’formis ( talx, a sickle; forma, shape), sickle-like.

Fall of the Leaf, defoliation, casting off the leaves, as done in temperate climates by deciduous trees in autumn.

False, fal’sus (Lat., untrue), spurious, having a specious resemblance; ~ Ax’is, a pseudaxis, see Sympodium; ~ Bark, a layer on the outside of endogens of cellular tissue, into which fibrous tissue passes obliquely; ~ Dichot’omy, a dichasium, in which the lateral axes are two; ~ Dissep’iment, a partition which does not arise from the edges of carpels, but some form of cellular tissue; ~ Foot, the base of the seta in some Bryophytes, which becomes dilated; ~ Fruit, a p-endocarp, as a Strawberry; ~ Hy’bridism, Millardet’s term when the hybrid shows the charac-ter of one parent only; cf. Monolepsis; ~ Indu’sium, the recurved margin of some Fern-pinnules, which serves to protect the sori; ~ Par’ench’yma = Pseudoparenchyma; ~ Plank’ton, Plankton, at first fixed, afterwards broken loose, and floating (Warming); ~ Raceme = Helico’id Cyme; ~ Ray, bands or aggregations of uniseriate rays in the wood of certain Cupuliferæ (1. W. Bailey); ~ stom’a’ta ( + Stoma), pores in the epidermis of Equi’tum; ~ Tis’sue, lyphal or mycelial felted tissue; falsinerv’is (nervus, a nerve), when nerves are formed of cellular tissue, without fibrovascular bundles, as in Mosses.

Fam’ily, Fam’ilia; (1) a group of genera, formerly styled Order; (2) “a group of individuals belonging to one species” (Clements): i.e. the lowest association.

Fan, an equivalent of Rhipid’ium; ~ nerved, having the nerves disposed in the fashion of a fan, radiating from the base; ~ shaped, flabelliform; ~ veined, = ~ Nerved.

Farc’tate, faret’sus (Lat., stuffed), filled up, not hollow or tubular.

Fa’riam, = in rows, as bi-fariam, in two rows, etc.

Far’i’na (Lat., meal); (1) Blair’s term for pollen; (2) starch or starchy matter; farina’ceous (+ ace’ous), of the nature of starch, or containing starch; far’inose, far’ino’sus, (1) covered with a mealliness; (2) Multh’s term for the cellulose of starch.

Far’ious, a bi-, tri-, quadri-far’ious, in two, three, or four rows.

Fas’cia (Lat., a band), pl. Fas’ciae, a cross-band, as of colour.

Fas’c’i’l’s fasci’ate, fasci’ tus (fascis, a bundle), used of the condition of a stem when several have coalesced; Fas’c’i’ton, a band or bundle caused by a monstrous growth of stems into one.

Fas’ciarius (Lat., band-like), banded, or band-shaped, narrow and long, with parallel margins, as in seawrack.
Fascicle. *Fasciculus* (Lat., a little bundle), a close cluster or bundle of flowers, leaves, stems, or roots; *fascicularis, fasciculartis, fas'cicled, fasciculatus*, connected or drawn into a fascicle; *fascicular Camb'ium*, is that portion which belongs to the vascular bundles; ~ *Tis'sue*, or ~ *Syst'Em*, the fibro-vascular system; ~ *Xy'lem*, the hadrome, the wood-elements of a bundle; *fasciolaris, fasciola'tus*, fasciated.

**Faslgribchen** (Ger.) = Crypto-stomata.

**fastigate, fastigiat'us** (*fastigium*, a slope, a gable), (1) parallel, clustered and erect, as the branches of *Populus fastigiata*, Linn.; (2) frequently used as if it meant the same as *fa-ci-ate*; *Fastigiation*, when branches become more or less parallel with the main stem.

**Fat Body**es, pl., fatty oils occurring in plants, often as reserve-material, particularly in seeds; *Fat En'zyme*, an unorganized ferment which breaks up oils and fats.

**Father-plant**, in hybrids, the pollen-parent or male element.

**Fatigue-substant'ces**, Recnitzer’s name for bodies thrown off the plant, which act in a restraining or poison ous way on its own life; Ger., Ermündungstofe.

**fatiscent** (*fatisco, I gape*), cracked, or gaping open.

**Fau'ces** (Lat., the throat), pl., the throat of a gametatalous corolla; *Faux*, singular, is an assumed word.

**Favel'la** (? a diminutive of *favus*, honey-comb), the conceptacle of *Ceramium*, a dense terminal agglomeration of spores within a thin colourless membrane; *Favellid'ium* (*eihov*, diminutive) = *Cystocarp*; *fav'olate, favola'tus* (perhaps from *favus*, honey-comb), honey-combed, alveolate; *Favilla, Favilli'dium*, Lindley’s erroneous spelling of *Favella*, and *Favellidium*; *fa'vose, favo'sus* (Lat.), honey-combed, as the receptacles of many Compositae; *favo'so - areola'tus*, mapped-out into spaces, suggestive of the cavities of honey-comb; ~ *dehis'cens*, seeming honey-combed after dehiscence, as the anther of *Viscum*; *favo'sulns*, somewhat honey-combed; *Fa'vsa*, a skin disease caused by *Achorion Schoenleinitii*, Remak.

**favular'ian**, a ribbed surface separated by zigzag furrows in certain genera of fossil Lycopods, derived from the obsolete genus *Favularia*.

**feath'er-veined**, with secondary veins proceeding from the midrib, pinnerved.

**feath'ery**, plumose, with long hairs which are hairy themselves.

**Fe'cula** (*faecula*, wine-lees), starch or similar substances; *fe'culent*, thick with sediment (Crozier).

**Fecunda'tion** (*secundo*, to make fruit- ful) = *Fertilization*.

**Federa'tion**, the whole of the plant-associations of the world.

**Feed'er**, (1) a host-plant; (2) in Wel'watchia and other Gnetaeaceae, an outgrowth of the hypocotyl, serving as a temporary organ of absorption; (3) used by S. H. Vines for the “foot” of *Selaginella*.

**fell'eus** (Lat., full of gall), bitter as gall.

**Fell'fields**, districts of dwarf, scattered plants, chiefly *Cryptogams*; *ar'tic ~*, occur round the north pole.

**felt'ed** matted with intertwined hairs; ~ *Tis'sue*, hyphal tissue not “regularly united, but more or less grown together”; syn. *Tela conTEXTa*.

**fe'male** the fruiting element in plants, the pistil and its analogues, arche-gonia, oöspheres, etc., shown by ♀.

**femin'eus** (Lat., womanly), female, as *Flora ~*, a flower which contains pistils but no stamens.

**Fe'n', a moist, level tract, peaty and rich in humus.

**Fence, Withering’s word for Invo-lucere.

**Fenes'tra** (Lat., a window), an opening through a membrane; *Fenes'trae* (lat., windows) *apica'les*. and ~ *bas'a'les*, openings in the outer coat of certain Silicoflagellatae (Lemmer-
mann); fenestrate, fenestral, fenestralis, fenestralis, pierced with holes, as the septum in some Cruciferae.

fer, Latin suffix from fero, I bear; occurs in such words as florifer, bearing flowers; sometimes found as -ferus, which is very rarely correct.

feral (fera, a wild animal), wild, or indigenous; not cultivated.

Fermentation (fermentum, leaven), a substance which produces or excites chemical changes, but not itself appreciably contributing to the new products. Ferments may be divided into (a) organised —, such as yeast and other Schizomyces, and (b) unorganized ~, or enzymes; the latter are related to and apparently derived from the proteins; their composition is not absolutely known, and their names are usually derived from the sources whence they are derived; diastase, invertase, papain etc. —; Fermentation, the catalytic operation of ferments, particularized as acetio ~, produced by Bacterium Aceti, Lanzi, alcoholic ~, by yeast, and similar organisms, butyric ~, by a Vibrio, lactic ~, by which sugars are turned into acids; another classification is (1) diastatic ~, converting starch into sugar; (2) ferments which decompose glucosides with production of sugar, such as emulsin; (3) ferments which convert cane-sugar into glucose, as invertase; (4) and those which convert proteins into peptones, or peptic ~, such as papain; fermentative Energesis, the disruptive process by fermentation by which energy is relea-ed (Barnes).

Ferrification (ferrum, iron), the action of Ferrobacteria; Ferrobacteria (+ Bacterium), bacteria which oxidize ferrous to ferric salts; ferruginaeans (Lat.), becoming rusty; ferruginous, -eus, ferruginous, ferruginoeus (ferrugo, rust), rust-coloured; Ferrugo (Lat.), a disease in plants known also as "Rust," due to the Uredo stage of various species of Puccinia.

fertile, fertilis (Lat.), capable of producing fruit; ~ Cells, binucleate cells forming a basal layer in the accidium of uredineous Fungi, and giving rise to the accidiospores; ~ Flowers, female flowers, those which possess pistils; ~ Stamen, those bearing pollen which fecundates the ovules; ~ self ~, flowers perfectly fruitful in the absence of insects; Fertility, the state of being fertile; Fertilization, Fertilisatio, (1) fusion of two gametes to form a new individual cell (zygote); (2) the effect of pollen, deposited on stigmatic surface, resulting in conversion of flower into fruit, and of ovule into seed; Close ~, breeding in-and-in, or successive progeny of closely related parents; Cross ~, progeny by other forms not of close affinity; cf. Pollination; double ~, one generative nucleus from the pollen-tube fuses with the nucleus of the egg-cell (oosphere), the other with the definite nucleus, itself formed by fusion of the polar nuclei; generative ~, the sexual union of germ plasm of different parentage and diverse potentialities; Post- ~, the stage after fertilization to the ripening of the seed; Pre- ~, the stage of the ovules previous to fertilization; reduced ~, partial fusion of a female cell with a vegetative cell, or the fusion of two female cells; vegetative ~, the stimulus to growth resulting from the fusion of two nuclei or other masses of protoplasm; ~ Tube, the channel by which gonoplasms passes from the antheridium to the oogonium in Peronosporae.

ferulaeaeous, ferulaceaeus (Lat.), (1) resembling the genus Ferula; (2) pertaining to reeds or canes, or being formed like them, hollow.

Fervidium (fervidus, boiling hot), applied in botanic gardens to the Stove.

Festuca're, a community of Festuca; (Clements); Festucetum, an association of the same grass-genus; festucine. straw-coloured, as the
dry culm of Festuca; fesc'ucous, formed of straw.
fe'tidus = foetidus.
Fibonacci's series, Braun's series of numbers formed thus, 1 2 3 5 8 13 21 34 55 ... by successive additions of the last two; they occur in phyllotaxis, and were formulated by Leonardo of Pisa, surnamed Fibonacci.
Fi'bre, Fi'bra (at.), (1) a fine thread or filament, chambered or woody; (2) the fusiform cells of the inner bark; (3) the ultimate rootlets; element'ary, the thread in a spiral vessel, secondary deposit in a spiral; fi'briform (forma, shape), fibre-shaped; Fi'bril, Fibrilla, diminutive of FIBRE; ~ of Nu'cleus = CHROMOSOME; fi'brillate, fibrillatus, fi'brillo'sus, furnished with fibres, as roots, or having a finely lined appearance; ~ Lay'er, two outer layers of closely woven hyphae in Geaster; ~ Mycel'lium = FIBROUS MYCELIUM; Fi'brin (ve'getable), occurs in gluten, has no fibrous structure as animal fibrin, but forms a hen dry a tough, horny mass: fi'bro-cell'u'lar. "composed of spiral cells"; fi'bro-va'sal (Hillhouse) = ~ vasou'lar, tissue of mixed vessels and fibres; ~ Bun'dle, or Vascular Bundle, an association of vessels characteristic of the higher plants, usually consisting of phloem and xylem elements, often surrounded by a special layer of cells known as the bundle-lath; ~ Cord, proposed by Strasburger for the similar structure in monocotyledons; ~ Cy'l'nder, the central cylinder; ~ Sys'tem, the whole of the fibrous portion of a plant, exclusive of the pure y cellular structures; Fi'brole'in, Fayod's term for a very delicate membrane of the spirals of protoplasm (hyla'oplasm); fi'brous, fi'brose, fi'brosus, having much woody fibre, as the rod of a Coco-nut; Fi'brous-myce'lium, when the hyphoe form long branching strands; Fi'brose, Frémy's term for the substance of woody fibre, a variety of cellulose; Fi'bro'sin, a reserve substance resembling FIBROSE, found by Zopf in the conidia of certain Fungi, in the form of rounded flattened discs, embedded in the protoplasm; ~ Bod'ies, the discs described; Fi'brotype (fibra, a filament; typus, a type); Macdougals expression for the condition of a root of Cephalanthera with a reduction and fusion of the stelar compounds, and radially elongated cortex: fi'bry, used by Loudon for FIBROUS.
Fi'bula (Lat., a buckle), a cylindrical podetium, terminated by apothecia.
fi'dle-shaped, panduriform.
-fi'dus, Latin suffix for cleft, as tri-fi'dus, three-cleft.
Field-strat'um (stratum, a layer), formed by grass and herbs and dwarf shrubs (Warmng).
Fig-insect, the fertilizing agent in capricration, Blasto'phaga.
Fi'la (pl. of filum, a thread), adduct-or'ia, the abortive "pistillidia" of Mosses; ~ succulent'a, para-physes.
Fil'a ment, Filamen'tum (filum, a thread), (1) the stilk of an anther, the thread-like stem; (2) any thread-like body; Filament'a osti'o'ria, delicate colourless threads lining the perithecium round the epithecium of Verrucaria; fila'ment'ous filamen'tose, fi'mento'sus, formed of filaments or fibres; ~ Fung'us, growth-formed of a branched hypha without union with other hyphae; ~ Myce'lium = FIBROUS MYCELIUM; ~ Spor'ophore, a simple sporophore; ~ Thal'lus = Fruticulo'SThallus; Fi'lar-plas ma (παλαμα, moulded), Strasburger's term for KINOPLASM; fi'larious (Crozier) = filamentous; fila'tus (Lat.) = virgatus.
Files, a series of Navicula-like frustules as in Micromcea.
Fil'ial (filia, a daughter) -cell. Hendrey's term for daughter-cell; ~ Genera'tion, the first cross-bred
generation, denoted by \( F_1 \); the second by \( F_2 \), etc.

fil'ical (fil'ica, a fern), Fern-like, or allied to Ferns; filicin'ean, filicin'-eans, relating to the Filicineae, that is, Ferns in the widest sense (Scott); filico'id (elbos, like), Fern-like; Filico'logy (λυγος, discourse), = Pteri
dology.

fil'i'form, filiform'is (filum, a thread; forma, shape), thread-shaped; ~ Appara'tus, the upper ends of the synergidae, which pierce through and are prolonged beyond the summit of the embryo-sac; filipen'dul'ous, -dus (pendulus, hanging down), having tuberous swellings in the middle or end of filiform roots; Filobacte'ria (+ Bacterium), thread-like bacteria; fili'lose, ending in a thread like process (Crozier).

Fim'bria (Lat., fringe), (1) a fringe; (2) an elastic-toothed membrane beneath the operculum of mosses; fim'briate, fimbr'idus'tus, with the margin bordered by long slender processes; fim'bricate = Fimbriate (Crozier); Fimbril'la, a diminutive fringe; fimbril'lateg, fimbrillat'us, having fimbrillae; fimbrillif'erosus, -rus, with many little fringes, as the receptacle of the Compositae.

fimeta'rius (fimeta, a dung-hill), growing on or amongst dung.

fimic'olous (fimus, dung; colo, I inhabit), growing on manure-heaps.

Finger-and-toe, a disease in Crucifers caused by Plasmidiophora Brassicae, Woron. ——Clubbing or Anbury.

fing'ered, digitate.

Fl'i'form (fius, a boundary; + Form), a form whose nearest relations have completely died out (Kuntze).

First'ling-Cell, from the Germ. Erst-linzelgele, the first of a new generation from an auxospore in Diatoms.

Fise'tin, the yellow colouring-matter of \( P. \) Ctinus, Linn.

fis'sile, fis'silis (Lat.), tending to split, or easily split; Fis'sion, splitting; ~ Fungi = Schizomicy

cetes; Fissip'arism (pario, I bring forth), the act of multiplication among the lower forms by breaking up into living portions; Fissipar'-ity = Fissiparism; fissip'arous, dividing into two or more divisions by splitting; fis'sus (Lat., split), split or divided half-way.

Fis'tula (Lat.), a pipe; ~ spira'lis = Trachea; fis'tular, fis'tulous, fis'tulosus, hollow throughout its length as the leaf and stem of an onion.

Fixa'tion of \( CO_2 \), respiration of oxygen and retention of carbon dioxide.

flabel'late, flabril'latus (flabellum, a fan), fan-shaped, dilated in a wedge-shaped, sometimes plaited; flabel'li-form, flabelliform'is (forma, shape), shaped as a fan; flabellin'er'ed (nervus, a nerve), radiate-veined.

flac'coid, flac'cidus (Lat.), withered and limp, flabby.

Flacherie' (fr.), a disease in silk worm caused by Micrococcus Bombycis, Colun.

Flag-appara'tus, Goebel's term for anthers becoming petaloid, as a signal for insect-visitors.

Flagella'ta (flagellum, a whip), Algae distinguished by possessing whip-like flagella, by which they are able to progress through the water; flag'ellate, flagellat'us, provided with whip-like runners; flagel'la'ris, having creeping sarmenta; flag'ellary, caused by flagella, as the motion of zoospores (Crozier); Flagel' lum, pl. Flagel'la, (1) a runner or sarmentum, branchlets in Mosses; (2) the whip-like process of the protoplasm of a swarmspore; (3) similar organs in the cells of some Schizomycetes; flagellif'iform, flagelliform'is (forma, shape), (1) resembling a runner, or (2) lash-like, as the cilia of zoospores; Fla
gello'sis, a disease of Euphorbia attributed to Leptomonas Davidi, a flagellate parasite.

flag' on-shaped (Loudon), used for flask-shaped.

Flake, a nectariferous gland (S. F. Gray); flak'ky, lamelliform.
flame-coloured, *flam'meus* (Lat.), fiery red.

**Flange**, (1) a ring-like projection of the integumental lining of the micropyle of certain fossil seeds; (2) Bower’s term for the apparent margin of the pinnae in *Blechnum*.

**Flank-curvature**, unequal growth of climbers, Ger. “Flanken-Krümung”; **Flanks**, the lateral surfaces of a bilateral body.

**Flask**, the utricle of Carex; **flask-shaped**, having the form of a Florence flask, somewhat globular, with a drawn-out neck.

**Flats**, proposed equivalent for the German “Etagenbildung.”

**Flattening**, (1) the fasciation of a stem; (2) the production of a cladodium.

**Flave’do** (Lat.), yellowness, a disease in which the green parts have become yellow.

**flaves’cent, flaves’centa** (Lat.), yellowish, becoming yellow; **flav’icans, flav’idus** (Lat.), somewhat yellow; **Flav’one** (*flavus*, yellow), a natural yellow colouring matter occurring in plants; **flavo’vi’rens** (Lat.), yellowish green; **fla’vous, fla’vus**, nearly pure yellow, a bright clear hue.

**Flee’tiness**, villosity.

**Flesh**, the soft parts, as the flesh of apples or pears; **flesh’y, succulent**.

**flexed** (*flexus*, bent), used of Diatoms which appear as though bent; **flexible, flex’ilis, flex’i bilis**, capable of being bent, but elastic enough to be able to resume its original figure; **flex’i nose, flex’i sus, flex’i ous**, bent alternately in opposite directions, zigzag; **Flex’ure**, the “bend” of Diatoms.

**floating**, borne on the surface of water; ~ **Tis’sue**, air-containing tissue in the seeds of plants dispersed by water currents (Haberlandt).

**Floc’ci**, pl. of **Floc’cus** (Lat., a lock of wool), locks of soft hair or wool; **floc’cos, flo’co sus**, bearing flocci, ~ **Myce’lium, = Fibrous Mycelium**; **floc’culent, flo’culent’us**, diminutive of **flo’ccose; flo’cculose**, like wool (Leighton).

**Flo’ra** (Lat., goddess of flowers), (1) the aggregate plants of a country or district, (2) a work which contains an enumeration of them; **Flo’rae Horolo’gium**, a floral clock, certain plants arranged in the order of the hours of opening or closing; **flo’ral, flo’ralis**, belong to flowers; ~ **A’pex = Mamelon; ~ Di’agram**, a drawing to show the relative position and number of the constituent parts; ~ **En’velopes**, the perianth leaves, calyx and corolla; ~ **Glume**, the lower glume of the flower in grasses; flowering glume (Beal); ~ **Leaf = Bract**; a suggested equivalent for the Ger. “Hochblatt.”

**Flores’cence**, *Floresc’entia*, anthesis, the period of flowering; **Flo’ret**, a small flower, one of a cluster, as in Compositae.

**floribun’dus** (*flos, floris*, a flower; *abundus*, = production of present activity), abounding in flowers; **Floriculture** (*cultura, cultivation*), cultivation of flowers, flower gardening; **Flor’ie, Grew’s word for peri- anth; flo’rifer (Lat.), flor’i ferous, flower-bearing; flo’ri’erae Gem’mae, flower buds; **Florifica’tion**, the act or time of flowering; **flo’ri form** (*forma, shape*), shaped like a flower; **Flo’riglume**, the flowering glume in grasses; **Flo’rlige’ne (lego, I gather), a treatise on flowers; flo’ ri’arous, -us (pario, I bring forth), (1) producing flowers, (2) a monstrosity producing other flowers instead of fruit; **Flo’rist**, (1) a cultivator of flowers, especially those variable forms known as florist’s flowers, (2) a writer of a Flora, (3) in foreign usage “Florist” means a local botanist; **Flora’eco’logy**, used for the ecology of flowers (Lovell); **Flo’rula**, (1) a small flora, (2) the botanic account of a small district; **flo’ru lent**, flowery; **flo’rus**, in composition means flowered, as uni-florus, one-flowered.
**Foliage**

**Flows** (Lat.), an assemblage of the organs essential for fertilization, as stamens and pistils, with some protecting envelope; ~ A'quae, floating Algae, as Rivularia fluitans, Cohn; ~ compositus = CAPITULUM; ~ ple'nuus, a double flower, where the stamens or pistils, or both, are converted into petals; flos'cular, flos'culus, flosculo'sus (1) relating to florets or flowers, or presenting many florets; (2) with tubular florets.

Flos'cule, Flos'culum (Blair), Flos'culus, a little flower, a floret; semi-flos'cule, a composite floret; Floss, the down in certain Compositae, as Thistle-down: Flossifica'tion, flowering, expansion of flowers.

Flou'risch, Blair's word for a disk-floret of Compositae; half ~ the same for ligulate florets.

Flow'er, defined under Flos; ~ Bud, an unexpanded flower, distinct from a leaf-bud; ~ Head, a cluster of flowers, as the Capitulum or Head in Compositae; Flow'erage, the state of being in flower; Flow'eret, a small flower, a floret; Flow'eriness, abounding with flowers; Flow'ering, the maturity of the floral organs, and expansion of their envelopes; ~ Glume, the lower of the two organs which subtend the flower of Grasses (the upper being the pala); ~ Plants = PHANEROGAMS; Flow'erless, destitute of flowers; ~ Plants = CRYPTOGRAMS; Flow'erlessness, absence of flowers; Flow'ery, abounding in flowers.

Flowers of Tan = Aethalium septicum, Fr; ~ of Wine, growth of Saccharomyces Mycoderma, Reess.

flu'itant, fluitans (Lat.), floating.

Fluke-cell, resembling the fluke of an anchor; in shaggy hairs of Crano-carpus.

flumin'a'lis, flumin'eus (flumen, a river), applied to plants which grow in running water.

Fluores'cence (from Fluor-spar), the property of diminishing the refrangibility of light; ~ of Chlor'o-phyll, the shifting of the spectrum by the colouring matter contained in chlorophyll; fluorescigen'ic ( + Fluorescence; γένος, offspring), causing fluorescence, as certain bacteria.

Flush, a shallow runnel floored with vegetation result (Crampton)—Snow- ~ tracks of channels leading from snow-patches; cf. Anthelia.

fu'vial, fluvial'is, fluvial'ic (Crozier), fluvial'ile, fluvial'i(lis (Lat.), applied to plants growing in streams.

Fly-flow'ers, those specially adapted to be fertilized by flies; Fly-traps, contrivances by which insects are caught, as pitchers, tentacles of Drosera, etc.; Fly-wood, oakwood destroyed by Stereum (Tubef).

Fly-ing-hairs, hairs which aid seeds in dispersal; ~ Mem'brane, the expanded structures in winged seeds; ~ Tis'sue, the structure composing the last (Haberlandt).

foem in'eus = FEMINEUS, female.

foen'i'us (foenum, hay), "hay grey" (Hayne).

foe'tidus (Lat., stinking), fetid, smelling strongly and disagreeably; Foe'tor (Lat., a stench), the odour given off by flowers which thereby attract carrion flies.

fo'iled, in vernation when the two halves of a leaf are applied to one another; ~ Tis'sue, endoderm with suberified or liquified membrane, confined to a band on the lateral and transverse faces of the cells, without thickening (Van Tieghem). Folds of Sanio's Rims.

folia'ceous, -eus (folium, a leaf; + ACEOUS), having the texture or shape of a leaf, as the branches of Xylophylla; ~ Thal'i'us, a frondose thallus, flat and leaf-like, usually crisped and lobed, which spreads over the surface on which it grows, and can be detached without much injury; Foli'a'ceae, frondose vascular Cryptogams; Fo'liage, the leafy covering, especially of trees; ~ Leaves, ordinary leaves, as distinguished from those which have undergone metamorphoses as bracts.
petals, etc.; Foliace = Foliole; foliar, folia’ris, (1) leafy or leaf-like, (2) inserted on, or forming an appendix to a leaf; epiphyllous; cir’rus foli’a-ri’s = tendril; ~ Gap, a mesh in the vascular bundle cylinder from the margin of which vascular bundles pass into the frond in Ferns; ~ Spur, a dwarf shoot in a pine-tree, which bears a pair of leaves (Hartig); ~ Trace, = Leaf-trace; the remains of the vascular bundle or bundles which supplied the leaf.

foliace, folia’tus (Lat.), leaved, clothed with leaves, as bi-foliace, two-leaved, etc.

Foliage, Folia’tio (Lat.), vernation; used by Grew for the act of leafing.

Foliature (foliatura, foliage), Blair’s term for petals.

foliaceous, foliiferous, -rus (folium, a leaf; fero, I bear), leaf-bearing; folio’lus (colo, I inhabit), growing on leaves, as some Fungi and Lichens; foli’ferae Gem’mae (Lat.), leaf-buds; foliiform, foliiform’is (forma, shape) = foliaceous; foliip’orous, -rus (pario, I bring forth), bearing leaves; foliolar, relating to a leaflet; foliolate, foliola’tus, clothed with leaflets; bi-, tri-foliolate, two-, three-leafletted; folio’lean, folocola’nus, growing from the end of a leaf.

Foliol, Foliol (dim. of folium), (1) a leaflet, the secondary division of a compound leaf; (2) employed by Spruce for the postical leaves of Hepaticae, those on the ventral or rooting surface; foliolose, closely covered with leaflets; Foliolum, a small leaf or leaflet; foli’sus, folio’sus, (1) closely clothed with leaves; (2) applied to a Lichen with a leaf-like expansion of the thallus: folious, having leaves intermixed with flowers; Folium, (Lat.), a leaf, pl. Folia.

Follicetum (folliculum, a small bag), a whorl of follicles; Follicle, Follic’ulus, (1) a fruit of one carpel, opening by a ventral suture to which the seeds are attached, formerly applied to any capsular fruit; (2) by Linnaeus used for the bladder of Utricularia; (3) a little bladder on the leaves of some Mosses, as Pottia ovifolia, Ehrh.: follicular, follicula’ris, folliculiform’is (forma, shape), shaped like a follicle.

fontan’us, fontina’lis (Lat.), relating to a spring), growing in or near a spring of water.

Food-bodies, small pear-shaped bodies formed on or near the leaves of certain plants, as Acacia spadicea, Cham. & Schlecht., and Leea aegialiata, Linn., which are utilised by ants as food; Ger. "Ameisen-brotchen."

Foot, (1) as a measure, 12 inches, or 30·5 cm., sign ’; (2) = Podium; (3) a development from the hypobasal part of the embryo, as an organ of attachment and temporary nutrition; (4) in Myxogastres, the first development from the plasmodium which leads to the formation of spores, a cell-wall of cellulose, forming an axis (Van Tieghem); (5) the base of a hair, often enlarged; ~ Cell, the spore of Guttulina rosea, Ciek., arising from a naked cell of protoplasm from the aggregated plasmodium; ~ Em’bryo, an arrested terminal growth of the embryo of Cutleria, thus differing from the proto-nematoid embryo of the same species; ~ Hot, a disease on species of Citrus caused by Fusarium Limonis, Briosi; ~ Stalk, a stem specialised as peduncle, petiole, etc.

Foramen (Lat., a hole), an aperture, especially that in the outer integuments of the ovule; cf. Micropvle; foraminose, foramin’ous, perforated by holes; Foramin’ula, "the ostiolum of certain Fungi" (Lindley); foramin’ulose, marked with little holes.

Force, any cause which changes the state of a body as to rest or motion; vital force is kinetic energy.
Forcing

Forcing, the operation by which cultivators produce fruit and vegetables out of season, early or late.

forceps, forcep'at'us (forceps, nippers), forked like pincers.

Fore-leaf, a translation of the Ger. "Vorblatt"; a bracteole or prophyllum.

Fore-run'ner Point, a form of leaf-apex which performs all duties of assimilation before the basal portion is mature; Ger. "Vorläufer-spitze."

For'est, in a botanical sense, land covered with trees exclusively, or with an undergrowth of shrubs or herbs; many varieties are recognized by ecologists, e.g., swamp ~, etc., forest'ian (upper), a stage in peat when Pinus was dominant; ~ or (lower) Betula, Corylus and Alnus, the prevalent trees, in the peat-stage.

Fore'wold, the thicket zone bordering a forest (Clements).

forfica'tus, (fofex, scissors), scissors-like, resembling shears.

forked, separating into two divisions, more or less apart.

Form (forma, shape), a slight variety or variation, as long and short-styled Forms; nearly thirty special terms are enumerated by O. Kuntze in his "Methodik der Speciesbeschreibung," pp. 15-17; ~ Gen'us, a genus made up of an assemblage of ~ Spec'ies, an apparent species which is really a single stage of the life-cycle of a pleomorphic species; ~ Spore, a body simulating a spore but without germinating power, or remaining attached to its sporophore; For'mae oxyda'tae. (Lat.) crustaceous Lichens which have become rust-coloured from an infiltration of some salt of iron.

For'mation, (formatio, a shaping), in botany, applied to an assemblage of similar habits and environment, as a forest is a ~ of trees, turf a ~ of grasses; in Ger. "Pflanzenverein"; closed ~, when the plants are so crowded that invasion is difficult; mixed ~, when a mixture of two or more distinct formations; o'pen ~, when the plants and groups are scattered (Clements); sec'ondary ~, those which have arisen through human interference (Warming); Dr. Moss's subdivisions are given under Association. Note:—Association is also used, but both terms are somewhat loosely employed.

form'ative, giving form, plastic; ~ Irritabili'ty, the capacity of tissues to respond to stimuli and to produce outgrowths (Virchow); ~ Mat'er'ials, applied to such as starch, su'ar, fats, and albuminoids; ~ Re'gion, the growing point proper; ~ Stim'u'lus, the capacity of microorganisms to produce outgrowths of determinate form (Virchow).

formicar'ian (formica, an ant), applied by Beccari to those plants possessing saccharine fluids, thus attracting ants.

for'nicate, for'-icat'us (Lat., arched over), provided with scale-like appendages in the corolla-tube, as in Myosotis; For'nices, p. of For'nix (Lat.), a little scale.

Fos'sil (ossus, dug), the remains of a plant changed to a stony consistency, from various stra'a; ~ Bot'any, the department which takes note of fossil plants, palaeobotany.

Fos'sula (Lat., a little ditch), a small groove in some Diatom-valves.

Fost'er-pla nt = Host.

Founda'tion, a literal rendering of the Ger. "Anlage."

four-fold, quadruple; ~ Pol'i'en-Grains, as in Oenothera, which form coherent tetrads.

Fov'e'a (Lat., a small pit), a depression or pit, as (1) in the upper surface of the lea-base in Isoetes, which contains the sporangium; (2) the seat of the pollinium in Orchids; fov'e'a fovea'tus, pitted; Fov'e'ola, (1) a small pit: (2) "the peritheciium of certain Fungals" (Lindley); (3) in
Isoëtes, a small depression above the fovea, from which the ligule springs; foveolate, foveolatus, marked with small pitting.

Foive (foveo, I nourish), the contents of the pollen-grain.

foxglove-shaped, like the corolla of Digitalis; digitaliform.

fracidus (Lat., mellow), of a pasty texture, between fleshy and pulpy.

Fractional (fractic, a breaking) cultures, cf. Separation Cultures; Fractionation, in biology denoting variation due to the quantitative disintegration of factors (Bateson).

Fragmentation (fragmentum, a piece), Van Beneden's term for direct division of the nucleus.

Frangula, a yellow crystalline body from the parenchyma of Rhamnus Frangula, Linn.

Fraternity (fraternitas, a brotherhood), see Adelphia.

Fraxinum, an association of ash-trees; Fraxinum, a principle existing in the bark of the ash, Fraxinus excelsior, Linn.

free, not adhering, the reverse of adnate; Free-cell, a cell formed by Cell-formation, the production of new cells from several nuclei within the mother-cell, as in pollen; endogenous cell-formation.

Frenching, a disease caused by Fusarium vasinfectum, Atkins., in the leaf of the cotton-plant (Tubelif).

Fréquent, used of a species often occurring.

Frígida'rium (Lat., the cool room), in botanic gardens applied to the Orangery, or Temperate House with simple exclusion of frost.

Frígogus (frigidus, cold; fugio, I flee), plants which shun low temperatures; Frígorídesertá, pl. (frigidus, cold; + desert), cold deserts with vegetation of herbaceous perennials, frequently of tufted growth; they are nearest to the poles of any desert.

Frill = Armilla.

Fringe, used by Sir W. J. Hooker for the peristome of Mosses; fringed, margined with hair-like appendages; fimbriate.

Frond, Fronds (Lat., a leaf), (1) the foliage of Ferns and other Cryptogams; (2) the leaves of Palms, according to Linnaeus; ~ -genus, a genus described solely from fronds, as of Ferns; frondesce', to unfold leaves; Frondescence, Frond-escence, (1) vernation; (2) phyllody; (3) by Morren restricted to the formation of leaf-like organs in the place of petals; see also ViRESCENCE; frondiferous (fero, I bear), producing fronds; frondiform (forma, shape), like the fronds of Ferns; frondiparous (pario, I bring forth), (1) bearing fronds; (2) the monstros production of leaves instead of fruit; Frond'let, a small frond; frondose, frondous, frondosus (Lat., full of leaves), (1) leafy; (2) frond-like or bearing fronds: ~ Thal'tus, foliaceous thallus: Frond'dula, Frond'dules, used by J. Smith for the main stems of Selaginella.

Front, of a Diatom, is that view which has the cingulum-facing and the valves fore-shortened in side view.

Front-cavity, the outer cavity of a stoma; in Ger. "Vorhof."

Frost-cracks, longitudinal cracks in the bark due to sudden reduction of temperature; Frost-rib, callus caused by growth after a rise of temperature of a Frost-crack, and consequent closing of the wound; frost'ed, with a surface having the appearance of hoar frost.

Fructes'cence, Fructescence (fructus, fruit), the time of maturity of fruit.

fructiferous (fructifer, fruit-bearing), producing or bearing fruit; Calyx fructifer, the fruiting calyx.

Fructification, Fructification (Lat.), (1) fruiting; (2) in Cryptogams, the result of the sexual act; (3) any sporogenous structure or an aggregate of them; double ~ dimorphic fructification in Algae.
fructiparous (fructus, fruit; pario, I bring forth); Fruc'tose, fruit-sugar, or levulose; it exists with other sugars in fruits, honey, and treacle; Fruc'tus (Lat.), fruit, the product resulting from fertilization.

frugifer'ous (fruges, pl. of frux, fruits of the earth; fero, I bear), producing fruits or crops.

Fruct'ical, Compositae of Solms forms Dots, (1) the term portion external pericarp of ovary seeds, of product resulting from fertilization; (2) in Rubus, allied or belonging to the super-species R. fruticosus; frut'icose is a synonym; ~ Thal'ius a Lichen having a shrub-like thallus; fruti'cule, somewhat shrubby; Fruti'culus (Lat.), a small shrub.

fruticules'cent (fruticulus, a small shrub; + escens), applied to a Lichen when somewhat shrubby (Crombie).

Frui'let, suggested for low tufted evergreen plants as Saxifages (J. Smith).

Frut'esce = Fructose, Fruit-sugar.

fu'caceous (fu'cus, from φίοκος, seaweed; + a'ceous), relating to the genus Fucus, as ~ Ve'sicles, the bladders of F. vesiculosus; fu'coid (el'dos, like), fuco'idal, resembling seaweed; Fu'cosan, Hanstein's name for a granular substance found in the assimilating tissue of Fucoideae, the Phaeophyceae-starch of Schmitz; Fu'cose is probably a partial inversion of it; Fu'o'xanthine (gav'dor, yellow) Sorby's name for the colouring-matter of the olive-green seaweeds.

fugac'ious (fugax, fleeting), soon perishing.

fulc'iens (fulcio, I support), supporting, used of an organ above another.

Ful'cera (pl. of fulcrum, a prop), the appendages of the leaves, as prickles, tendrils, stipules, etc.; fulc'ra'ceus, of or belonging to the fulcra; fulc-rate, fulc'ratus, having fulcra.

fuligin'eous (Lat., sooty), fulig'inous, fulig'inose, fuligino'sus, sooty or soot-coloured.

full, used of a double-flower, the stamens and pistils being transformed into petals.

fulmin'eous (fulmen, lightning), fulvous, almost brown; used of a species of Cortinarius by Fries.

fui'vus, ful'ves'cens, fu'vidus (Lat.), ful'vuid (Crozier), the diminutive of the next; ful'veus, ful'vus (Lat.), yellow, tawny.

fuma'goid resembling Fumagot.

fumaria'ceous, pertaining to Fumaria.
or its allies; fur‘rioid, like the genus Fumaria.

Fu‘marole (It., fumarole, from fumo, I give off smoke), a spot in a volcanic region which gives off sulphurous vapour; the surrounding flora is xerophilous (A. F. W. Schimper).

fu‘meus (Lat., full of smoke), smoky, or smoke-coloured; fu‘midus (Lat.), slightly smoke-coloured; fumiga‘tus (Lat.), as though smoked, fumed; fu‘mos, fumo‘sus, fu‘mous, smoke-grey.

fun‘alis (Lat., of a rope) = FUNI Li FORM.

Func‘tion (functio, performance), the peculiar action caused by certain stimuli; func‘tional Metab‘olism, the kinetic effects of certain chemical changes in the plant.

Fun’dament (fundamentum, ground-work), a suggested equivalent of the Ger. "Anlage" (Potter); funda- men‘tal, basic; ~ Cells. parenchyma; ~ Or‘gans, the nutritive organs essential to plant existence; ~ Spi‘ral = genetic spiral; ~ Sys‘tem = cellular system; ~ Tis‘gue, tissue not belonging to the normal or fasicular system; ground tissue; funda- menta‘lius, an es-sen-tial part, as the axis and appendages of a plant; Funda- mentum = HYPOCOTYL.

Fun‘dus (Lat., foundation) = COLLUM.

funga‘ceous (fungus, a mushroom), F. von Mueller’s word for fungoid or fungus-like; fun‘gal, relating to Fungi; fun‘gio, belonging to mushrooms; ~ Ac‘id, a mixture of citric, malic, and phosphoric acids (Cooke); fungic‘de (-cida, a killer), destructive of Fungi; Fungici‘de, an agent or mixture for killing Fungi; anti- mycotic; fun‘giform, fungiform‘is (forma, shape), fungiform. fung‘illi‘form‘is, mushroom - shaped; Fungil‘ius, a small parasitic Fungus; Fung‘in, the "flesh" of mushrooms, Fungus cellulose; fung‘inus, belonging to a Fungus; fung‘oid (eido‘s, like), pertaining to a Fungus; ~ Para‘sites, parasites which are

Fungi; Fun‘go-li‘chens, Lindsay’s term for plants considered to be transitional forms between Fungi and Lichens; fung‘ose, fungo‘sus, fung‘ous, (1) spongy in texture; (2) relating to a Fungus; (3) produced by a Fungus; Funga, F. von Mueller’s word for the plural of Fun‘gus (Lat., a mushroom), pl. Fungi, thallophytes destitute of chlorophyll, parasitic or saprophytic, comprehending forms from the simplest unicellular structure to some of complex character; many are symbiotic ~ Cel‘lulose, the substance of the cell-wall in Fungi; ~ Gam‘boge, a yellow, resinous colouring matter found in Fungi; ~ Traps, or "catch-crops," quickly growing crops to secure attack from Plasmodiophora Brassicae, and removal with the Fungus, leaving the land free for that season for a later crop of Crucifers; fung‘used, attacked by a Fungus (Goozier).

Fu‘nicle. Fun‘catus (funis, a rope), (1) the cord or thread which sometimes connects the ovule or seed to the placenta; (2) in Nidaria, a cord of hyphae attaching the peridium to the inner surface of the wall of the peridium; (3) used by W. Griffith for the suspen-or of Gnetum; fu‘niform (forma, shape), rope-like; funil‘iform, applied to organs tough, cylindrical, and flexible, as the roots of arborescent Monocotyledons.

Fun‘nel, in Marsiliaceae, a space below the thick outer coats of the macrospore into which the apical papilla projects (Goebel); ~ Cells. short and broad cells, shaped as a funnel; fun‘nel-form, fun‘nel-shaped, hypocrateriform.

fur‘cate, fur‘catus (Lat.), forked, with terminal lobes which are like prongs; fur‘cellate, furcel‘latus, diminutively forked.

fur‘fura‘ceous, -ens (furfur, bran), scurfy, having soft scales.

fur‘rowed, sulcate, striate on a large scale.
fur'ry, pubescent (Lowe).

fur'vus (Lat., swarthy), black and lustreless.

Fusa'riose, or Fusario'sis, disease induced by an attack of the Fungus Fusarium (Mortensen).

fuses'tus (Lat.), fusel'lus, fusces'cent, -ens, fuscid'ulins, somewhat dusky; fuses'couis, fus'cus (Lat., dark), dusky, too brown for a grey; the word is akin to furvus.

fu'siform, fusiform'is (fusus, a spindle; forma, shape), thick, but tapering towards each end; fus'i' nus †, a synonym of the last.

Fus'ion ( fusio, a melting), the complete union of vessels, as in the laticiferous vessels; Cell, a double cell in uredineous Fungi, formed by conjugation of a pair of fertile hyphal cells, their nuclei not fusing (Grove); ~ Nu'cleus, in Uredineae immediately after division of the nuclei, each of the Fusion-nuclei gathers round it protoplasm to form a resting spore (Hartog); ~ Sor'us, sori run together; Tri'ple ~, Macdougal's term for Double Fertilization.

fu'soid (fusus, a spindle; eidos, like), somewhat fusiform.

Galac'tin (γαλακτιν, milk), (1) a principle in the juice of Galactadendron; (2) a substance in leguminous seeds like Gum Arabic; galac'ti' tes, white as milk; Galac'tose, a sugar produced from Galactin.

Gal'banum (Lat.), a gum of uncertain origin; gal'banus (Lat.), a colour re-embling the same, greenish-yellow.

Gal'bulus (Lat.), the fruit of the cypress, a modified cone, the apex of each carpellary scale being enlarged and somewhat fleshy.

Gal'ea (Lat., a helmet), a petal shaped like a helmet, placed next to the axis, as in Aconitum; gal' eate, galea'tus, hollow and vaulted, as in many labiate corollas; galeiform'is (forma, shape) = galeate.

galic'ululate (galericalum, a cap), covered, as with a hat.

Gall, Gal'la (Lat., an oak-apple), a monstrous growth caused by an insect puncture; ~ Flow'ers, atrophied female flowers of the fig, within whose ovaries the eggs of an insect undergo evolution; Gal'lic Acid, an astringent occurring abundantly in oak-galls; Gal'lotannin, a glucoside occurring in oak-bark.

galoch'rous (γαλόχρους, skin; χρῶς, skin), milk white.

Gal'tonic Curve, see Newtonian Curve.

Galvanotax'is (after Galvani, the discoverer of galvanic electricity; ταχινός, order), arrangement induced by galvanic currents; ne-ga'tive ~, shown by infusoria, Flagellata and Bacteria, collecting round the cathode; po-sitive ~, the same, collecting round the anode; galvano'tropic (τροπή, a turn), curvature shown when subjected to a galvanic current, usually towards the positive electrode (anode); Galvanotrop'ism, the condition just described; nega'tive ~, when the curvature is towards the negative electrode (kathode).

Gam'boge, a yellow resinous gum from several species of Guttiferae; Fun'gus ~, a somewhat similar product found in some Fungi.

Gamet'a'ngium, Gamet'ang'ium (γαμητάνγ'ιον, a spouse; ἀγγείον, a vessel), differentiated cavities in the filaments of certain Algae which produce Gametes; adj. gamet'an'gial; ~ Copula'tion, fusion of polynuclear gametangia with reciprocal karyogamy, cell-division ceasing on formation of gametes (Hartmann); Gam'ete, a unisexual protoplasmic body, incapable of giving rise to another individual until after conjugation with another gamete, and the joint production of a Zygo'te; Gam'etocyst (κύστις, a bag), the envelope enclosing one or more gametes (Vuillemin); Gameto-gen'esis (γεν'εσις, I bring forth), the production of gametes; gameto-gen'ic, gametog'enous, (γένος, race,
offspring), giving rise to gametes, sexual cells; Gametog'eny, the production of gametes; Gametogoni'um (γάμος, offspring), the mother-cell of a brood of gametes; Gam'étoïd (εἶδος, resemblance), an apocytial structure which unites like a gamete, producing a zygotoid as the result; Gam'éto-nu'cleus, the nucleus of a gamete; Gam'étophore (φορέω, I bear), the portion of an algal filament which produces gametes according to function, further discriminated as Androgamétophore and Gynogamétophore; Gam'étophyl (φύλλον, a leaf), a more or less specialized leaf which bears the sexual organs; Gam'étophyte (φυτόν, a plant), the generation which bears the sexual organs, producing gametes, in turn giving rise to the Sporophyte; Gam'étoplas'm (πλάσμα, moulded), the protoplasm of gametes; Gametozo'o'spore (+ Zoospore), Pascher's name for the biciliate zoospores of Ulothrix; gamétrop'ic (τρόπον, a turning), movements of organs before or after fertilization (Hansgirg).

Gamób'ium (γάμος, marriage; βίος, life), H. Gibson's term for the sexual generation of organisms which show alternation of generations (Parker); a gametophyte; Gamocen'tres, pl. (κέντρον, a sharp point, = centrum), centres of grouped chromatin granules during synopsis, afterwards becoming the reduced number of bivalent chromosomes (Strasburger); gamodes'mic (γάμος, marriage, union; δεσμός, a bond), used of a stele which has its component vascular elements, fused together; Gamodes'my, the stelar condition in question; Gamoe'cia (οἶκος, a house), used by Lindberg for the inflorescence of Bryophytes; gamogás'trou's (γαστήρ, the belly), applied to a pistil formed by the more or less complete union of ovaries, the styles and stigmas remaining free; Gamoge'nēsis (γένεσις, beginning), sexual reproduction; gamogen'ic (γένος, offspring), developed as the result of a sexual process; gam'oïd, sexual, opposed to vegetative reproduction; Gamomer'idus (μερίδος, a part), a flower whose parts are united by their edges (Lindley); Gamomer'is-tèle (+ Meristele), the lateral fusion of individual bundle sheaths (Jeffrey); gamomeriste'lic adj. = gamodes'mic; Gam'omites, pl. (μίτος, a thread or web), the conjugated filaments in karyokinesis (Strasburger); Gamopet'alae (πεταλόν, a flower-leaf), plants having the petals united; adj. gamopet'alous, -lus; gamo-phy'lous, -lus (φύλλον, a leaf), with leaves united by their edges; Gam'o-phyte (φυτόν, a plant), proposed by C. MacMillan for "sexual plants;" gamosep'alous, -lus (+ Sepalum), the sepals united into a whole; Gam'osomes, pl. (σῶμα, a body), Strasburger's term for the aggregation of chromatin granules formed from portions of the thread during synopsis; Gam'osperms (σπέρμα, a seed), plants having seeds without parthenogenetic embryos (C. Mac-Millan); Gam'icae, Radlkofer's term for Algae; Gamospor'ae (σπόρα, seed), Cohn's term for those Algae which produce zoogonia or zoospores, as the Conjugatae, Volvocineae, and Fucoidae cf. Carposporae; Gam'ostele, (στήλη, a post), a polystele, in which the vascular bundles are not distinct throughout their entire length, but fused together at some portion; adj. gamoste'lic; Gamoste'ly, the state described; gamotrop'ic, (τρόπον, a turning), the position of flowers when expanded (Hansgirg), cf. carp'o-tropic; Gamot'ropism, (τρόπος, a turning), C. Mac-Millan's term for the movement of mutual attraction in similar conjugating gametes. 

Gang'lia, pl. of Gang'lion (γαγγlion, a little tumour), (1) used for various enlargements of mycelium, some being rudimentary fructifications (Crozier); (2) the origin of the vascular bundles in Dicotyledons;
ganglion'eous, used by Lindley for hairs which bear branchlets on their articulations.

Gan'grene, Gangre'na (γάγρεων, an eating ulcer), a disease ending in putrid decay.

Gap, see Leaf-Gap.

Garide' (disyll.), Chodat's term for bushland composed of deciduous shrubs occurring in the Jura and the Rhone Valley.

Garigue' (disyll.), the French term for vegetation belonging to forest soil, but wanting trees; widespread in the Mediterranean region.

Gas, pl. Gas'es, in plants, a continuous system from the stomata and lenticels by the intercellular spaces;

Gas-vac'uoless, special floating organs in certain Cyanophyceae, as Ana-baiana (Kerner); Gasoplank'ton (+ Plankton), organisms which float by means of air vacuoles (Forel).

Gasteroli'chenes (γαστελοιχηνες, the belly + (lichen), defined as Gasteromyctetes in symbiosis with Algae; Gastero-myct'es (μυκης, fungus), a division of Fungi which includes Lycoper'dion, Puff-balls; Gasterothalam'eae (θδαλαμος, a bed-chamber), referring to those Lichens whose sporangia are always closed or which burst through the cortical layer of the thallus; gas'tric Bacte'ria, those which are found in the digestive tract of animals; Gastronas'ty (ναστος, pressed) = hy'ponas'ty.

Gattine' (Fr.), a disease in silkworms caused by parasitic Fungi.

Gaul'therase, an enzyme producing oil of Wintergreen and glucose from Gaul'therin, a principle occurring in Gaultheria.

Geitonemb'ryosperm (γειτων, a neighbour; μυρ, foetus; σωμα, a seed), a plant with parthenogenetic embryo, fertilized by pollen from a different flower on the same stock;

Geitonen'dosperm (υδων, within), a plant with parthenogenetic endosperm, fertilized by pollen from a neighbouring flower on the same stock; Geitono'carpy (καρπος, fruit),

the production of fruit as the outcome of Geitonog'amy; Geitonog'amy (γαγμας, marriage), fertilization between neighbouring flowers on the same plant; Geiton'oosperm, a plant whose embryos arise by geitonogamy, and are not parthenogenetic, three terms due to C. MacMillan.

Ge'latin (gelatus, congealed), in plants confined to albumen-like bodies, which are tough, viscid, and scarcely soluble in water; Ge'latin'ina hyme'n'eα, a gelatinous substance surrounding the ascii and paraphyses in some Lichens (Leighton); Ge'latiniza'tion, used when a membrane breaks down into a jelly-like mass; gelatin'ose, gelatin'osus (gelatio, freezing), having the consistence or appearance of jelly; gelatin'ous, jelly-like; ~ Felt; ~ Tis'sue, tissue which is slimy from the cell membrane being soft and mucilaginous; Gel'atoid (ελος, like), suggested for protein-like substances resembling gelatin (Escombe); Gel'ifica'tion, becoming gelatinous; Gelin'ea, cells in Algae which secrete vegetable jelly; Gel'o'se, vegetable jelly from Agar-Agar.


Gem'in'ate, geminat'us (Lat. doubled), in pairs, binate.

Gem'in'i (Lat.), (1) twins, paired; (2) the union of two chromosomes; Synap'tic ~, the pairing of somatic chromosomes in prophase of the first or heterotypic meiotic division; geminiflor'us (flos, floris, a flower), bearing two flowers, or two flowers together.

Gem'ma (Lat.), (1) a young bud, either of flower or leaf, as used by Ray; (2) an asexual product of some Cryptogams, as in the Hepaticae, analogous to leaf-buds; ~ Brood = Brood-ge'mma; ~ Cup = Cyathus; gemma'ceous (+ aceous), relating to leaf-buds; Gem'maecorm (+ Corm), J. Smith's term for a bud-corm, applied to herbaceous plants with a root-crown which increases by side-buds; Ge'mma'tion, Gem-
Gemmation

ma'tio, (1) budding, vernation; (2) disposition or phyllostaxis of buds; (3) budding, as in the multiplication of yeast (Huxley); nu'clear ~, in Synchytrium when the karyosome of the parent nucleus gives off a small karyosome which passes through the nuclear membrane and becomes an independent nucleus, repeated until a definite group of nuclei is formed (Griggs); Gemmid'ium = TETRASPORE; gemmi-f'erous (fero, I bear), bearing buds; gem'miform (forma, shape), bud-shaped; gemmip'arous (pario, I bear), producing buds; Gem'mule, Gem'mula, (1) buds of Mosses, and reproductive bodies of Algae; (2) = Plum'ule; (3) = Ov'ule (Endlicher); (4) certain primary formative granules in the protoplasm (Naegele).

Gene (monosyll.), (γένος, race, offspring), Johannsen's term for unit-factors; allelomorphs.

Geneagen'esis (γενεά, stock, race; γένεσις, beginning) = PARTHENOGENESIS.

Genepist'asis (γενος, offspring; ἐπί στασις, a halt), graduated evolution, by the persistence of certain individuals at a definite lower grade, the remainder advancing farther in modification (Eimer).

Gen'era, pl. of Gen'us.

gen'er al, general'is (Lat., pertaining to all), opposed to partial, as ~ INVIOL'ECE.

Gen'erating (generatio, a begetting), producing; ~ Spi'ral = Genetic Spiral; ~ Tis'sue = Meristem; gen'erative Apog'amy (+ Ap'o-gamy), the asexual origin of a sporophyte from the vegetative tissues of the gametophyte, when the nucleus of the mother-cell of the sporophyte has only haploid chromosomes (Winkler); ~ Cell, (1) a gamete or sexual reproductive cell; (2) the cell in a pollen grain which develops into male gametes; ~ Nu'cleus, the nucleus in a pollen-grain which is actively concerned in fertilization, see Nu'cleus; ~ Parthenogen'esis (+ PARTHENOGENESIS), the asexual origin of a sporophyte from a germ-cell, when the nucleus of the latter has haploid chromosomes only (Winkler); Genera'tions, alternation of, see ALTERNATION.

gen'er ic, gener'icus (genus, birth, race), the differences which make the genus as opposed to those which make the order, or species.

Genesi'ology (γενσιολογία, origin; λόγος, discourse), the doctrine of the transmission of qualities from the parent, both in vegetative and sexual reproduction (Archer); genet'ic, genealogical, that which comes by inheritance; ~ Spi'ral, a spiral line which passes through the point of insertion of all equivalent lateral members of an axis, in order of age.

Genetic'ian, an expert in Genet'ics (γενετικός, an ancestor), the modern science of breeding on Mendelian lines; heredity and its developments (Bateson).

gen'ic'ulate, geniculatus (Lat., with bent knees), abruptly bent so as to resemble the knee-joint; Genic'ulum, (1) a node of a stem (Lindley); (2) the junction of the articuli of Coralline Algae, which is destitute of crustation.

Geni'talia, Gen'i'tals (genitalis, pertaining to birth), in plants, the stamens and pistils, or their analogues.

Genny'lan'tium (γεννάω, I beget; δόνα = ΜΑΤΕΡΙΑ; ἄγγελον, a vessel), l'dilkofer's term for AN'lHER; Genny'ley'in (ἡ = food) = AN'THERID'UM; Gennylozo'id (ζώον, an animal; εἴδος, resemblance) = SPIR'MATOZOO.N.

Genodiff'erent (γενέω, race, offspring; διffero, I differ from), a hybrid word used by Johannsen for the gametes forming a monohybrid; Genohol'o-type (δαλός, whole; τύπος, a type), the one species on which a genus is founded (Schuchert and Buckman); Genolect'o-type (λεκτός, chosen), the
one species subsequently selected out of a series as typically of a genus, there being no Genoholotype (Schuchert and Buckman); Genoplast (πλαστός, moulded), H. L. Clark's emendation of Johannsen’s Genotype, the fundamental hereditary combination of the genes of an organism; adj. genoplast'ic; Genosyn'type (σύν, with; τύπος, a type), one of a series of species upon which a genus is founded, no one species being the actual type (Schuchert and Buckman); Gen'type, (1) the type of a genus, the species upon which the genus was established; (2) Johannsen has employed it for a combination of the genes of an organism; = Biotype, Genoplast; ~ Con'ception = Heredity; adj. genotyp'ic, genotyp'ical; Genotype, a student of Biotypes.

Gens (Lat., a nation), a tribe in botany.

genta'seous, resembling or akin to the genus Gentiana; Gen'tianose, a sugar from Gentiana lutea, occurring with saccharose; Gen'tianine, the bitter principle of Gentiana.

Genuflec'ction (genus, the knee; jecto, I bend), a bend in a conjugating filament of an Alga; gen'uflexed (flectus, bent), bent, as the valves of certain Diatoms.

Genus (Lat., a race), the smallest natural group containing distinct species; large genera are frequently for the sake of convenience divided into sections, but the generic name is applied to all species; ~ Hy'brid, or gener'ic Hy'brid, a hybrid between two genera, a bigener or bigeneric cross.

Geoaes'thesia (γῆ, the earth; αἰσθησίς, perception by sense), the capacity of a plant to respond to the stimulus of gravity: Geob'ion (βίος, life), plant associations of the land, as distinct from water (Forel); Geobl'aas'tus (βλαστός, a bud), an embryo whose cotyledons remain under ground in germination, as the pea.

geocal'ycal, resembling the Hepatic genus Geocalyx, Nees; marsupial.

Geocar'py (γῆ, the earth; καρπός, fruit), the subterraneous ripening of fruits, which have developed from a flower above ground; geocen'tric (κέντρον, a sharp point), used by Wiesner in opposition to geotropic, ageotropic;

Geocrypt'ophyte (+ CRYPTO'PHYTE) = Geophysy; Geodiat'rropism (διά, through; τρόπος, a turning) the function by which an organ places itself at right angles to the force of gravity;

Geogen'esia (γένεσις, beginning) or Geog'en'y, derived from the ground, as gravitational movement; adj. geogen'ic; geograph'ic (γραφή, writing), descriptive of the earth or a portion thereof; ~ Bot'an'y, that department which takes account of the ~ Distrib'u'tion of plants over the earth's surface; Geoheteraux'eism (ήτερος, other; αὐθεντικός, growth), variation in the relative growth of opposite sides of an organ due to gravity, (Pfeffer); geologi'c (λόγος, discourse) Bot'any = Palaeobotany or Fossil Botany; geomor'phic (μορφή, shape), taking its shape from the earth (= gravity); Geona'sty (ναος, pressed), curved towards the ground (Pfeffer); geonycit'mast'ic = geonycit'trop'ic (νυξ, νυτὸς, night; τρόπος, a turning), sleep-movements requiring also the stimulus of gravity; Geoparallel'tropism (παράλλαξις, parallel; τρόπος, a turning) when an organ places itself parallel to the surface of the earth; adj. geopara'lellotrop'ic; Geopercep'tion = Geoaes'thesia; Geophysy'aeae (φυσικός, I love), soil-loving species; geoph'ilous, -ous, (1) earth-loving, used of such plants as fruit underground; (2) land-loving, terrestrial; ~ Fun'gi, those which grow saprophytically on decaying vegetable matter on the ground; Geoph'ilous is the condition; Geophysy'ta (φυσικός, a plant), Geophytes, plants which produce underground buds, with perennial development there; Mat- ~ perennial spot-bound plants; Rhiz'o'ome ~
or Trav'elling ~ plants, having horizontal hypogeous scaly shoots, giving rise to leaves and flowers (Warm-ing); adj. geophytic; Geophyti'a, land plant formations (Clements); Geoplagnetropism (+ Plagiotropism), having the direction of growth oblique to the ground; Geostrophicism (+ Strophism) the tendency to twist in response to gravity; geotactic, relating to Geotaxis; it may be positively or negatively; Geotaxis (ράξις, order), movement or arrangement in plants caused by gravity (Czapek); Geotaxy = preceding; Geothermometer (θερμός, warm; μετρη, a measure), a thermometer for earth temperatures; Geotome (τομή, an edge), an instrument for obtaining samples of soil; Geotony (γεωτονία, stress), the tendency to bring back to a normal condition any organ which has been forced from it (Czapek); Geotropism (τορτος, twisted), torsion caused by the influence of gravitation (Schwendener and Krabbe); Geotrophy (τροφή, food), unilateral inequality in growth due to position with regard to gravity (Wiesner); geotropic (τροπή, a turning), relating to the influence of gravity on growing organs; Geotropism, the force of gravity as shown by curvature in nascent organs of plants; lateral ~, curving horizontally, as in twining stems (Macdougal); negative ~ growing away from the earth, as stems do normally: positive ~, growing towards the earth’s centre, as roots; transverse ~, = Diageotropicism; Geoxyl (ξύλον, wood), applied by Lindman to any woody plant with numerous stems arising from a subterranean rhizome.

gerania’ceous, resembling or allied to Geranium.

Germ (germen, a bud), (1) a bud or growing point; (2) the ovary or young fruit; (3) a reproductive cell, especially in bacteria; ~ Cell, (1) a female reproductive cell; (2) a spore of the simplest character, a sporidium (Brefeld); ~ -disc, ~ -fil’ament, ~ plants, stages in the life of Hepaticae. (Goebel); ~ Nu’cleus, the nucleus resulting from the union of the pronuclei of two gametes in conjugation; ~ -plasm, the assumed original generative substance contained in the body of the parent from which new individuals arise; cf. Soma -plasm (Weismann); ~ Pore, a pit on the surface of a spore-envelope through which a germ-tube makes its appariance; ~ Tube, a tubular process from a spore developing into a hypha, and then into a mycelium or promycellum.

Germanic, H. C. Watson’s term for a type of distribution in Great Britain of those plants whose headquarters are in the eastern portions of the kingdom.

Germ’en (Lat., a bud), (1) Linnaeus’s term for the ovary; (2) formerly used for the capsule of Mosses; (3) by Pliny and later writers it signified a bud generally; Ger’micide (-cida, a killer), an agent which causes the death of bacteria or spores; cf. Sporocide; Germiculture (+ Culture), the practice of bacteriology; germ’inable (+ able), capable of germinating; viable; germinal, relating to a bud; ~ Apparatus, = Egg-apparatus; ~ Cor’iaceous = Oösphere; ~ Dot, of Diatoms, the centrosome; ~ Lid, a separable area of a pollen-grain, breaking away to permit a pollen-tube to issue; ~ Process; a part belonging to or proceeding from an ovary (Lindley); ~ Slit, a small break in the seed-coat of Scitamineae; ~ Ve’sicle = Oösphere; Germina’tion, Germina’tio, the first act of growth in a seed; sprouting; germ’inative Nu’cleus = Nu’cleus, Generative.

gerontogaeous, -aeus (γέωτος, γέωντος), an old man; γη, the earth), used of plants which are confined to the Old World.

gib’ber (Lat., hump-backed), gib’bose, gib’bous, gibberoso’sus, more convex
in one place than another, a pouch-like enlargement of the base of an organ, as of a calyx; Gribbosity, Gribbos'ius, a swelling at the base of an organ; gibbosus (Lat.) = GIBBEROSIS.

gigantic, giganticus (Lat., pertaining to giants), of unusual height; Gigantism, unusual size; opposed to NANISM.

Gil'iare, (-are) a community of Gilia, (Clements).

Gills, the plates or lamellae of an Agaric which bear the spores.

gill'vus (Lat.), pale yellow, a term of confused application, sometimes reddish or even greyish.

Ginger-beer "plant," an association of organisms which ferment a sweetened liquid into Ginger-Beer.

gin'glymoid (γ',γ'λυμος, a hinge; eidos, resemblance), like a hinge (Heinig).

ginkgoa'ceous, resembling the Maiden-hair tree, Gingko biloba; ginkgoa'lean, Wieland's term for the same.

Gir der sclerench'yma, strengthening tissue in section recalling a T or H girder; ~ shaped, an organ so shaped.

Gird'le, (1) the hoop or cingulum of Diatoms, that portion of the frustule which unites the valves; (2) also applied to a ring-like branch of the leaf-trace of Cycas; ~ - band, the hoop, girdle or cingulum of a Diatom-frustule; ~ Canals', narrow intercellular air spaces round the palisade cells parallel to the leaf surface (Warming); ~ Struc'ture vascular bundles surrounded by radially elongated photosynthetic cells (Haberlandt); ~ -view, the front or back view of a Diatom, in distinction to a lateral view; Gird'ling, in cultivation, ringing.

githagin'eus (Lindley); githaginosus (Hayne), defined as greenish red, meaning red or purple streaks on a green ground, as the calyx of Githago.

gla'ber (Lat., without hair), glabrate, glabrat'us, destitute of pubescence; by Bentham extended to mean also destitute of any roughness; glabres'cent, glabres'cent, becoming glabrous, or slightly so; Gla'brism, the smoothness of normally hairy parts; glabrius'culus (Lat.), somewhat glabrous; glabrous, smooth, without pubescence.

gla'cial (glacies, ice), employed by C. MacMillan for "distinctively northern plants."

gla'diate, gladius'us (gladius, a sword), (1) flat, straight, or slightly curved, with acute ap x and approximately parallel edges, ensiform. (2) aci'capital.

Gland (glans, glandis, an acorn); (1) an acorn, or acorn-like fruit; (2) a definite secreting structure on the surface, embedded, or ending a hair; any protuberance of the like nature which may not secrete, as the warty swellings at the base of the leaf in the cherry and peach; (3) in Orchids, see GLANDULA; ~ of the Torus, see LEPAL (Crozier); alu'ring or attract'ive ~, in Nepenthes secreting nectar to attract insects; chalk ~, those which exude salt solutions and give a whitish deposit on drying, as in some species of Sierifrage; der'mal ~, external secreting cells or groups of such; di ges'tive ~, in the pitcher of Nepenthes giving forth a peptic ferment; epider'mal ~, those on the external surface; exter'nal ~, glands not immersed in the tissues; intra-mu'ral ~, tubular curved or sinuate secreting elements in Psoralea (Haberlandt); mar'ginal ~, glands found inside the upper part of the pitchers of carnivorous plants; salt ~, which excrete solutions of hygroscopic salts, are dry in day time and deliquesce at night; glan'diferous (fero, I bear), bearing or producing glands; gland'iform (forma, shape), shaped like a gland; Gland'ula, Gland'ule, a viscid gland in Orchids and Asclepiads, which holds the pollen-masses in their place; the rotenaculum; glandula'o'ceous, -ceus (+ aceous), the colour of a ripe acorn; raw sienna yellow; glan'du-
lar, possessing glands; ~ Disk, = Glandula; ~ Hair, an epidermal appendage, the end of which is usually enlarged, and contains a special secretion; ~ Wood'y Tis'sue, coniferous pitted tissue; Glandula'-tion, -tio, the arrangement of the glands on a plant; glandulifer'ous, -rus, gland-bearing; glan'dulose, glandul'osus, gland'ulous, glandular; glan'dulose-serra'tus, having serrations tipped or bordered with glands; Glans (Lat.), a fruit one-seeded by abortion, or a few-seeded dry inferior indehiscent pericarp seated within a cupular involucre, as the fruit of the oak, nut, etc.

gla'real (glarea, gravel), term employed by H. C. Watson for those plants which grow on dry exposed ground, chiefly gravel or sand; gla'reose, glare'o'sus, frequenting gravel.

Glass'wort Association, formed of various species of Salicornia (Tansley).

Glass'y Fir, an appearance found on sawing fir wood, due to wood-cells being filled with water and then frozen.

glauces'cent, glauc'es'cent (γλαυκός), becoming sea-green; glauci'nu's (Lat.), bluish sea-green; Glaucogoni'um (+ Goni'um), the bluish green gonidium of Lichens (Bornet); glau'cous, -cus (1), sea-green; (2) covered with a bloom as a plum or cabbage-leaf.

Gle'ba (Lat., a clod), the chambered sporogenous tissue within a sporophore of Phalloideae; Glebe = Gle'ba; Gle'bula, (1) a synonym of Gle'ba; (2) the sporangia of certain Fungi, as Nidularia (3) a rounded elevation on the thallus of Lichens; gle'bulose, possessing a gleba, or resembling it.

gleiche'nioid, resembling or allied to the fern genus Gleichenia.

gleoca'psoid (εἰδος, resemblance), like the genus Gleocapsa.

Gli'adin (γλαίν, glue), vegetable glue or gelatin forming part of gluten; Gli'an, the alcohol-soluble part of gluten.

Gli'ding-growth = Sliding Growth.

glit'tering, lustre from a polished surface which is not uniform.

glo'bate (globus, a sphere), globular; Globes, Grew's term for pollen-grains; Glo'bi spermat'ici, spores of some Fungi (Lindley); Glo'o'oids (εἰδος, like), rounded masses of mineral matter in proteid grains; glo'bose, globo'sus, nearly spherical; glo'bular, globo'laris, sphericidal in shape; Glob'ule, the spherical antheridium in Characeae; Glob'ulet used by Grew for (1) a glandular hair, (2) a pollen-grain; Glo'bulin, (1) "round transparent granules in cellular tissue, constituting fecula" (Henslow); (2) the chief ingredient in aleurone or protein granules, occurring amorphous or as crystalloids; (3) in Lichens = Chlorophyll (Olivier); glob'u'lose, globulo'sus, a diminutive of GLOBOS; Glo'bula'lis (Lat., a little globe), (1) used by Necker for the fruit of Hepaticae; (2) the deciduous shield in some Lichens; soredia.

Glo'chid, Glochidi'um (γλώξις, an angular end or barb), (1) a barbed hair or bristle; (2) a similar structure on the massulae of certain Cryptogams which act as organs of attachment to a macrospore; glochid'eeous, -eus, glochid'iate, gloch'idiata'us, pubescent with barbed bristles; Glo'chis, a barb.

Gloeoci'chenes (γλωίδης, sticky), Forssell's name for homoeomeric Lichens, as Collemaceae, Ascolichenes with gonidia belonging to the Chlorococccaceae Gloe'ophyta (ψωμέν, a plant), Gobi's name for Thallophy'te; Gloe'o'spores, -ae (γλοία, glue; + spora), plants having viscid seeds (Clements); Gloiocar'pus (καρπός, fruit), a tetraspore (Lindley).

Glome (glomus, a ball), a rounded head of flowers; glom'erate, glom'erat'us, agglomerate, collected into heads; Glom'erule, Glomerul'us, (1)
a cluster of caputula in a common involucre, as Echinops; (2) a Sore-
dium; glomeruliferous (fero, I bear), bearing clusters of coral-like
excrecences; glomerulous, having glomerules; Glomus † = Glom-
erule.

Glossol'ogy (γλωσσα, a tongue; λόγος, discourse), the explanation of tech-
nical terms; Gloss'sopode, Glosso-
pod'ium (ποίος, πόδος, a foot), the sheathing base of the leaves in
Isoetes; adj. glossopodi'al.

Gluc'case (γλυκος, sweet), an enzyme
which hydrolyses maltose; Glu'cose, (1) a group of carbohydrates, crystal-
lizable and soluble in water, occurring
in fruits, as grape-sugar, etc., see Dextrose, Levulose; (2) also
a commercial term for syrups made
from starch or grain; Glu'coside (ελδος, like), for complex substances
which give rise on decomposition to
Glucose, such as Amygdalin, Coniferin, Salicin; ~ En'zyme, a ferment
such as Synaptase or Emulsin.

Glue, viscid secretion on surface
of some plants; Bud ~ = Blastocolla.

Gluma'ceous (gluma, husk of corn; +
aceous), resembling the glumes of
grasses, as the perianth-segments of
Juncus; Glume, Glu'ma, the
chaffy two-ranked members of the
inflorescence of grasses and similar
plants; bar' ren ~, em' pty ~, glumes
which subtend a spikelet, and do
not include a flower; fer'tile ~, flo'ral ~, flow'er-ing ~, the glume in grasses
which includes a flower, the palea;
fruit'ing ~, the fertile glume at the
time of maturity; ster'ile ~, a
glume which subtends other glumes
or has no flower; glu'mal, character-
ized by having a glume; Glum-
el'la, Glu'melle, (1) the palea of
grasses; (2) the lodicule of the same
(Richard); glumenella' nus † of or be-
longing to a glumella; Glumela'ule,
Glumellula'la, (1) = palea; (2) = lodic-
ule; glumose', glume'o'sus = gluma-
ceous; glu'mous, having glumes, as
a flower which has a subtending
glume.

Glut'am in (gluten, glue), an amide
allied to asparagin found with it in
the juice of beets, etc.; Glu'ten, a
tough protein substance occurring in
grain after the removal of the starch;
~ Cells, of the endoderm contain
oil, but no starch; Glu'tenin, a
constituent of wheat gluten; Gluten-
casein or Zymom; Glut'in'ium, "the
flesh of certain Fungals" (Lindley);
glu'tinous, glutino'sus, covered with
a sticky exudation.

Gly'case (γλυκος, sweet), an enzyme,
the same as Gluca'se.

Glycerie'tum, an association of Gly-
ceria.

Glycyrrh'zin, or Gly'c1on, a saccharine
matter from the roots of Glicyr-
hriza glabra, Linn., liquorice.

Glyco'dru'pose (γλυκος, sweet; +
Dru'pose), a lignocellulose, forming
the hard concretions in the flesh of
pears; Gly'cogen (γενναω, I bring
forth), a carbohydrate present in
quantity in epiplasm, capable of
being converted into glucose; ~
Mass, protoplasm permeated with
glycogen, epiplasm; Glycolig'nose
(lignum, wood), a presumed gluco-
side, from pinewood.

glyco'sic, resembling the action of the
enzyme Gluca'se.

Glyphol'ecine (γλυφω, I hollow out;
λεκος, dish), with wavy longitudinal
canals or grooves (Heinig).

Gnaurs, burrs or knotty excrescences
on tree-trunks or roots, probably
from clusters of adventitious buds.

Gna'wed, = erosus.

Gnesio'amy (γνησιος, legitimate;
γαμος, marriage), fertilization be-
 tween different individuals of the
same species.

Gneta'lean, allied to Gnetum.

Gnomon'ical, gnomo'nicus (γνώμον, the
pin of a dial), applied to an
appendage when abruptly bent at an
angle to its attachment.

gob'let-shaped = cup-shaped.

Gonang'ium (γονος, offspring; αγγειον,
a vessel), a spherical colony of
Palmella, etc., overgrown with thick-
walled brown Lichen-hyphae; Gones,
pl., suggested by Lotsy to cover asexual spores and gametes; *gonoeclini* (κάλυτ, a bed), applied to a hybrid which approximates to one parent, and not intermediate.

**gongrosiroid**, resembling the genus *Gongrosira*, Kuetz.; applied to the resting-stage of *Vaucheria*.

**gongyloides** (γογγύλος, round), knoblike; *Gongylus* (1) for round corpuscles on certain Algae, which become detached, and germinate as separate individuals; (2) globular bodies in the thallus of Lichens; (3) = spore, *Sporeidium*, Speirema.

**Goniangium** (γόνιος, offspring), term proposed by A. Braun to include cystocarps and the scyphi of Hepaticae; *goniautocious*, *goniauto* (αυτός, self; ὁινός, a house), the male inflorescence of a Moss, bud-like and axillary on a female branch; *Goni'd*, proposed abbreviation of *Goniodium*; *Gonidan* (εἴδος, like; ἀγγείον, a vessel), in a gametophyte, the organ which produces a sexual spore or gonidia; *Gonide'ma* (δεῖν, to bind), Minks's term for the entire gonidial layer in Lichens; *gonid'-ial*, pertaining to gonidia, as ~ *Lay'er*, (1) an aggregation of simple gonidiophores to form a cushion-like layer or crust; (2) the algal layer in the Lichen-thallus; *gonid'ic*, possessing gonidia (Lindsay); *Gonidium*, a small algal cell occurring in the hymenium of some Pyrenocarpeae; *gonid'oid* (εἴδος, resemblance), gonidium-like; *Goni'd'-iophore* (φορέω, I carry), a sporophore which bears a gonidium; *Gonid'iophyll* (φόλικον, a leaf), C. MacMillan's term for the sporophyll of *Alaria*; *Gonid'ium*, (1) in Lichens, an algal cell of the thallus; (2) the same as Brood-Cell, a propagative cell, asexually produced and separating from the parent.

**Gonima**, pl. of *Gonim* (γόνιμος, productive), the gonidia in Lichens; *gonim'ic*, relating to gonidia, as ~ *Lay'er*, the algal layer in the Lichen-thallus; *Gon'imoblast* (βλαστός, a shoot), filaments which are often clustered, arising from the fertilized carpogonium of certain Algae; *Gon'imolobes*. pl. (λοβός, a lobe), the terminal tufts of gonimoblasts; *Gon'imon*, Wallroth's term for the gonidial layer; *gon'imous*, relating to gonidia.

**Goniocyst** (γόνιος, offspring; κύστις, a bag), a sporangium (A. Braun);

*Gonocystia* = *Gonocystis*; *Gonicytium* (κύτος, a hollow) = *Gonidangium*; *Gon'osphere* (σφαίρα, a sphere), a zoogonidium of Chytridiaceae (Nowakowski); *Gon'ocysts* (κύστις, a bag), used by Minks for metamorphosed gonidia extruded on the superficial crust, having a peculiar appearance; *Gon'o-hyphema* (ὁφα, woven), applied by Minks to the hyphal layer of Lichens; *Gon'omeres* (μέρος, a part), the theoretic separate existence of parental and maternal nuclear parts (Haecker);

*Gon'ophore*, *Gonoph'orium* (φόρεω, I carry), an elongation of the axis, a receptacle bearing stamens and carpels, as in *Capparis*; *Gon'oplasm* (πλάσμα, moulded), in Peronosporae, that portion of the protoplasm of the antheridium which passes through the fertilization tube and coalesces with the oosphere;

*Gonotaxis* (τάξις, order), the movement of antherozoids towards the female organ (C. MacMillan); adj. *gonotactic*;

*Gonothallium* (θάλλος, a twig), the gonidial layer of Lichens (Minks); *Gon'otokonts*, pl. (κοτός, a pole), Lotsy's term for the mother-cells which inaugurate reduction phenomena; *Gonotrophium* (τροφή, food) = *Soreidiium*; *Gonotropism* (τροπή, a turning), C. MacMillan's term for the motion of antherozoids and pollen-tubes towards the female organ; the same author also suggests the restriction of this term to pollen-tube growth; adj. *gonotropic*;

*Gon'osphere*, *gonosphaeria* (σφαίρα, a sphere), = *Oosphere*; *Gonosphaeridium*, = *Goniodium* (?)

*Gorge*, the throat of a flower.
Gos'ling, an old term for catkin, as resembling a soft-feathered young goose.

gos'sypine, gossyp'inus, cottony, floc-culent, like the hairs on the seeds of Gossypium.

Gourd, a fleshy, one-celled, many-seeded fruit, with parietal placentas, as a melon.

gra'cis (Lat.), slender; Crozier has the needless word "gracile."

Graft, a union of different individuals by apposition, the rooted plant being termed the stock, the portion inserted the scion;  ~ Hy'brid, effect produced by one or the other of the united individuals on its grafted fellow; Graft'age, L. H. Bailey’s term for multiplication by grafting or the state of being thus increased.

Grain, a general term for cereals, those grasses cultivated for food; the caryopsis or the fruit of the same;  grained, having grain-like tubercles or processes, as in the flowers of Rumex (Crozier).

gramina'ceous, gram'in'eal (gramen, grass), synonymus of gram'in'eous, -eus.  gram'in'ous, (1) relating to grass or grain-bearing plants; (2) grass-coloured;  gram'inic'olous (colo, I inhabit), growing on grasses, as some Fungi;  gramini'fo'lious, (folium, a leaf), having grass-like leaves; Graminol'ogy (aγός, discourse) = Agrostol'oogy (Crozier).

gram'micus (Lat.), (γραμμικός, lined), lettered, marked as though inscribed;  gramma'pod'īus (πούς, πόδος, a foot or stem), having a striped stalk.

Gra'na, pl. of Gra'num (Lat.), a seed, (1) any small bodies; (2) the coloured drops in chloroplasts (Strasburger);  ~ tetra'sticha, "the spores of certain Fungals" (Lindley).

granati'inus (Lat.), pale scarlet, the colour of the flower of Punica Granatum, Linn., the pomegranate.

grandif'o'liate (grandis, large; folium, leaf), applied to plants in which the stem is subordinate, the internodes are short, and the leaves the dominant organs, e. g. Palms, Water-lilies (Worsdell).

Grand'mother Ax'is, the primary axis of a series of three (Pott-r);  ~ Cell, the primary cell of a third generation.

Granif'er'us (granif'er, grain-bearing), a synonym of Monocotyledon (J. S. Henslow).

gran'iform (granum, a grain; forma, shape), having the shape of grains of corn.

granit'icus (Mod. Lat.), applied to plants growing on granite rocks, as certain Lichens.

Gran'ula, Gran'ule, Gran'ulum, pl. Gran'ula (granum, a grain), (1) any small particles, as pollen, chloroplasts, etc.; (2) the Naviculae of Schizonema (fide Lindley); (3) sporangia in Fungi (Lindley); (4) by Frommann used for the nucleolus-like structure in the nucleus of the terminal cells of the glandular hairs of Pelargonium zonale, Ait.; (5) a minute particle, the assemblage of such being held to constitute protoplasm (Oltmanns); Gran'ula gon'im, the gonidia in Lichens; gran'ul'ar, granula'tris, (1) composed of grains; (2) divided into little knots or tubercles, as the roots of Saxifraga granulata, Linn.; gran'ul'ate, granula'tus, means the same thing;  granuli'fer'ous (fero, I bear), granule bearing;  granu'lose, granul'o'sus, composed of grains; Gran'ul'ose, used as a substantive by Naegeli for true starch.

Grape-sugar, a sugar found abundantly in the grape, dextrose.

Grascila'tio (Mod. Lat.), used by Desvaux for Etiolation.

Grass-green, clear lively green; in Latin, prasinus, gramineus.

Grass-heath, Tussock-formation; peculiar to the southern hemisphere;  ~ Moor, intermediate between Scirpus moors and silicious grass-land, mainly of grass, rushes, and sedges; Grass-land, dominance of grasses, as above the forest belt in alpine regions.
Graveolence (graveolentia, a rank smell), a smell so strong as to be unpleasant; graveolent, graveolens, strongly scented, of intense and heavy odour.

Graviperception (gravis, heavy; perception, receiving), suggested instead of Geotethesia (F. Darwin).

Gravitation (gravitus, weight), the act of tending towards a centre, as of the earth; in botany sometimes confused with Geotropism and Apheliotropism.

greasy, oily to the touch.
greaved (monosyll.) = ochrate.

Green-rot, a disease in wood, the tissues becoming verdigris green, ascribed to Peziza aeruminosa, Pers.

Greffe (Fr.) graft; ~ des Charlatans, a fraudulent apparent graft, the scion being passed through a hole bored in the stock.

gregarious (gregarius, belonging to a flock), growing in company, associated but not matted; solitary ~, a single clump of one species (Warming).

Gregiform (grega, gregis, a flock; FORM, a variable or polymorphic Finiform (Kuntze).

grey, gris’eus (Lat.), cold neutral tint, varied in tone; ~ Blight, a fungus, Pestalozzia Guepinii, which attacks the tea-plant.

grisel’tus (Lat.), gris’colus, diminutive of foregoing, somewhat greyish.

Grit-cell, a sclerotic cell, as in the flesh of pears.

gromonic’al, an error of Lindley’s for gnomonical.

gross’e- (Late Lat.), coarsely.

Grossifica’tion (grossus, thick; facio, I make), the swelling of the ovary after impregnation; grossus (Lat.), (1) coarse, larger than usual, used adverbially as gross’se-crena’tus, ~ serrat’us, coarsely crenate or serrate; (2) Grcs’sus, an unripe fig (Heinig).

grossula’ceous, gross’sular, relating to the gooseberry, Ribes Grossularia, Linn.; Gross’suline, a principle found in certain acid fruits.

Ground Form (Ger. Grund-Form), elementary form, as distinguished from Growth Form; Ground Mass, used of the woody tissues; ~ Strat’um, from the surface of the soil to about 5 centimetres (two inches); ~ tissue, applied to the pith, cortex, and medullary rays; ~ Vegeta’tion, the plants which cover the soil under trees, etc.; ~ Wa’ter, that collected above the impermeable stratum of soil, and moving in obedience to gravity.

Grow’ing-point, the extremity of the stem, or cone of growth, the seat of the activity of the apical cell, and its divisions.

Growth, increase by new cell-formation or extension of old cells; ~ -en’zyme, a ferment which conduces to growth, by breaking down tissue in advance; ~ Form, a vegetative structure marked by some characteristic feature which does not indicate genetic affinity; a tree, shrub, sprout-fungus, are growth-forms; ~ Ring, the annual rings of growth in exogens; ~ Wa’ter, the percentage of soil moisture in excess of that present when wilting occurs (Fuller).

Grub’bing, in forestry, the uprooting of trees.

grun’alis (grus, a crane), shaped like the bill of a crane, as the fruit of Geranium.

gru’mose, grumo’sus, gru’mous (grumus, a hillock), divided into little clusters of grains.

Grand-Form (Ger.), the original form, sometimes hypothetic, from which other forms have been derived by morphologic variation.

Guaiaci’nus, Hayne’s term for greenish-brown; from “Gum guaiacum.”

Guar’nine, a bitter principle from Guarana breed, or Brazilian cocoa, isomeric with caffeine.

Guard-cells, Guard’ian-cells, in stomata, two cells which open or close the stomata by their greater or less turgescence.

Gulids, Schimper’s term for Saprophytes, Epiphytes, Lianes, etc.,
each member group having a close connection with the others.

Gum (gummi, gum), a viscid secretion frequently extruded from stems, and hardening in the air; ~ Arabian, derived from species of Acacia in tropical countries, dissolving easily in water; ~ Canals', thin-walled sacs in the pith of Lycinodendron, now regarded as secretory sacs; ~ Cells, Ger. Kleberzellen, see Oil-cells; ~ Lac, excretion by an insect, Carteria Laccu, from various trees; ~ Passage, an intercellular passage containing gum; ~ Resin, exudation partaking of the nature of gum and resin; gummi'ferous (ferm, I bear), producing gum; Gum'ing, a disease, known also as Gummosis, producing gum in excess.

Gutta-per'cha (gutta, a drop), a kind of chaoutouc, said to be derived from Dichopis Guttu, Benth. and Hook. f.; gut'tate (gutta'tus, spotted), as to colour; Gut'tation the exudation of drops of fluid; Gut'tifer (ferm, I bear), a plant which produces gum or resin (Crozier); adj. gut'tif'erous; gut'tulate, resembling drops of oil or resin; Gut'tule, used for drops of oil or vacuoles contained in the capitate paraphyses of Fungi; Lat. Gut'tulae.

gyalec'tiform (forma, shape), urceolate, like the apothecia of the genus Gyalecta, now merged in Lecidea; gyalec'tine, and gyalec'toid (eiīdos, like), are synonyms.

gymnan'thous, -us (γυμνός, naked; ἄθυτος, a flower), naked flowered; Gymnax'ony (γάνθος, an axle), Morren's term for the placenta protruding through the ovary; gymnoblas'tus (θλαστός, a bud), having the ovary superior; gymnocar'pic; gymnoca'rpos; gymnoca'r'pous, gymnoca'r'pus, -us (καρπός, fruit), (1) naked-fruited; where the perianth does not adhere to the outer integument; (2) where the fruit is without pubescence (J. S. Henslow); (3) when the hymenium is exposed during the maturation of the spores; Gymnochlor'ites (γυμνό-CHLORITE), chlorophyllous plastids contained in cyanocysts, usually soon becoming detached from the protoplasmic layer of their formation (Arbautmont); Gymnocid'ium ♀(γυμνόκιον, tubercle), Necker's term for the swelling sometimes formed at the base of the capsule in Moses, the apophysis; Gymnocy'cads naked-flowered Cycads (P. W. Oliver).

Gymnodin'ium Stage, applied to mobile flagellate bodies of certain Peridiniaeae, resembling the genus named.

Gymno'gaeae (γυμνός, naked; γαμος, marriage), (1) Ardi'sone's term for Heterosporous and Isosporous Cryptogams; Gym'no'gams, Gymnog'aea, (2) Cardel's terms for all plants possessing naked motile male cells; Gymnog'any (γαμος, marriage), when cytoplasm'ic ~, the female gamete is impregnated by the cytoplasm of the male gamete; when nu'clear ~, the female gamete is impregnated by the nucleus of the male gamete (Dangeard); Gym'nogen (γεννάω, I bring forth), = Gymnosper'm; gymnog'ynous ♀(γυνή, a woman), having a naked ovary; Gymnoplas't (πλαστός, moud ded), a monoplast devoid of covering membrane (Pirotta); Gymnoplas'tid, plastids similar to Gymn-chlorites found in the pith of certain shrubs (Arbautmont); gymnop'odal (ποδός, a foot), applied to peculiar branches of Chama, partially or wholly destitute of cortex on the lowest whorl; Gymnosper'mae (σπέρμα, seed), Gymnosper'mia, (1) the Linnean order Didynamia, plants having four nutlets, taken for naked fruits, as Labiat-s; (2) the modern order of naked-ovuled plants, as Conifers; Gymnosper'matous relating to conifers and their allies, recent and fossil; Gymnosper'mism, the real or supposed condition of plants with naked seeds; Gymnosper'mous, the ovules developed without the
usual tegumentary pericarp, as in Coniferae; opposed to angiosper-
mous; Gymnosper'my, the state of bearing really or apparently naked
fruit; Gym'nospare, a naked spore, one not produced in a sporangium;
gymnos'tomous (στόμα, a mouth), applied to the peristome of Mosses
when destitute of teeth; Gymnosym'plast (+ Symplast), a plas-
modium, a mass of naked protoplasm (Pirota); Gymnotetrasper'mus †
(τέτρας, four; σπέρμα, seed), having a four-lobed ovary, as in Labiates,
onececonsidered to be naked-seeded ;
gymnotre'moid (τρίμα, a hole; ήδος, like), a bare open spot or space
(Leighton).
Gynoe'cium (γυνή, a woman; οἶκος, a house), the pistil or pistils of a
flower; the female portion as a whole.
Gyan'der (γυνή, a woman; ἄνήρ, ἄνδρας, a man) = Gynan'drous;
Gynan'dria, a Linnean class, with gynandrous flowers; adj. gynan'-
drian; Gyan'drophore (φορέω, I carry), a column bearing stamens
and pistils; Gyan'dospore (≠ Andro'spore), a term applied by
Radlkofer to the majority of Fern spores; gynandros'porous (σπόρα, seed),
used of dioecious forms of Oedogoniae in which the female plant
produces androspores; gy-
nan'drous, when the stamens are adnate to the pistil, as in Orchids,
etc.; gynan'therous, ≠ (≠ Antlier),
used of stamens converted into pistils; Gyn'e'cium = Gynoe'cium;
Gynix'us, Gyniz'us (ίδιος, birdlime), the stigma in Orchids; Gynob'base,
Gynob'asis (βάσις, a pedestal), an
enlargement of the torus on which the gynaecium rests; gynobas'ic,
applied to a style which adheres by its base to a prolongation upwards
of the torus between carpels; Gyno-
cid'ium, an error for Gymn'cid'ium;
Gynodimorph'ism (+ Dimorphism),
the occurrence of small female flowers
on a gynodioecious plant; gynodioe-
cious, dioecious, with some flowers
hermaphrodite, others pistillate only,
on separate plants; Gynodioe'cism
(≠ Dioecism), the occurrence of
female and hermaphrodite flowers
on a plant separated from its fellows;
gynod'namus (δύναμις, power),
applied to an organism where the
female element is preponderant;
Gynoe'cism, the presence of female
flowers without any male flowers
whatever; Gynoe'cium = Gynae-
ceum; Gynogamet'an gi'mum (γαµέτης, a spouse; γυναῖον, a vessel), an organ
in which female sexual cells are formed;
an archegonium; Gynogam'etes, egg-cells (McNab); Gynogam'-eophore (φορέω, I carry), the female gametophore; gynomonoe'
cious, monoecious, with female and
hermaphrodite flowers on the same
plant; Gynomonoe'cism is the con-
tion; Gyn'ophore, Gymnophor'ium
(φορέω, I carry), the stipe of a pistil;
adj. gynophor'tus † gynophoria'nus †;
Gynophyly (φύλλον, a leaf),
virescence or phyllomorph of the
ovary; Gyn'ophyte (φυτόν, a plant),
the female plant in the sexual
generation; Gyn'ospore (σπόρα, a seed), formerly suggested for macro-
spore, that is, a Megaspore;
Gynospor'an gi'mium (ἄγγειον, a vessel),
a sporangium producing the same;
Gynosteg'ium (στέγος, a roof),
the staminal crown in Asclepias;
Gynoste'mium (στήμων, a stamen),
the column of an Orchid, the andro-
cium and gynaecium combined;
Gynoteg'ium (τήγος, a roof), the
sheath or covering of a gynaecium
of any kind.
gyp'ceus (Lat., plastered with lime),
chalk-white, cretaceous.
gypso'phila (γύψος, chalk; φιλέω, I
love), dwelling on limestone; Gyp-
sophy'ta (φυτόν, a plant), chalk
or limestone plants; Gypso-
phy'ta, limestone plant formations
(Clements); Gyp'sum-crystal's occur
in the epidermis of certain species
of Capparis, also ~ spheres.
gy'rate, gyra'tus (Lat.), curved into a
circle, or circular; circinate.
Gy'rolith (γυρός, round; άθος, stone), the presumed fossil fruits of Chara; Gyro'ma, (1) the annulus of Ferus; (2) the button-like shield of Gyroph'ora; gy'rose, gyro'-us, curved backward and forward in turn; Gy'rus (Lat., a circle) = Gyroma.

Hab'it, Hab'itus (Lat., appearance), the general appearance of a plant, whether erect, prostrate, climbing, etc.; hab'itally, used in the United States for resembling; having the habit of another plant.

Hab'itat, Habita'tion (Lat., dwelling), (1) the kind of locality in which a plant grows, as woods, moors, etc.; (2) the geographic distribution or limits, now termed Locality, or more precisely Station; ~ Form, the impress given to a plant by the habitat (Clements); ~ Group, applied to those plants which have common habitats, though not related, as Halophytes, Hydro-phytes, and the like; ~ Ra'ces, used by Magnus for those hetero-oeous Uredines, which are adapted to respective species of host (Tubef).

Had'reocen'tric (+ Hadrome; centrum, the middle), Bun'dle, having the hadrome in the centre surrounded by the leptome (Haberlandt); Had'roma'l, also termed Had'romase, an enzyme found in Merulius loric'ynatus, Schum., and other Fungi, which attacks the hadrome and destroys its lignified cell-walls (Czapek).

Had'rome's'tome (ἄδρος, thick, ripe, strong; μεστός, filled), the xylem or woody portion of a vascular bundle; consisting of the Hydrome and part of the Amylome; together with the Leptome it forms the Mestome.

Ha'ematein (αἷμα, αἷματος, blood), the colouring matter of Logwood; haemat'i'us, haem'atites, haemat'i'ic, haemat'i'icus, haematocho'ros (χρῶς, a tinge), blood-red; Haematocho'rome (χρώμα, colour), Cohn’s term for the pigment of Haematoxycoccos plurialis, etc.; Haematox'ylon (ξύλον, wood), the colouring matter of Logwood, Haematox'ylon campechianum, Linn.; Haemorrh'a'gia (παγία, from παγία, to break forth), a disease in plants when the sap is constantly exuding through an external wound.

Hair, an outgrowth of the epidermis, a single elongated cell, or row of cells; ~ Cyst'o'li ths, pl., structures resembling cystoliths occurring in trichomes; ~ point'ed, ending in a fine, weak point; ~ shaped, filiform, very slender, as the ultimate divisions of the inflorescence of many grasses; Hair-breadth = Capillus; Hair'ness, hirsute, more rigidly hairy than pubescent; hair'y, pubes-cence when the hairs are separately distinguishable.

hal'berd-, or hal'bert-shaped, hastate; ~ headed, means the same.

Half, (1) a moiety; one part of that which is divided into two equal portions; (2) sometimes it means one-sided, dimidiate; ~ anat'ropous, amphitropous; ~ Breed, the product of a cross-fertilization; ~ cor'date, heart-shaped on one side; ~ cylin'dric, applied to a stem flattened on one side; ~ equ'itant, partially equitant; ~ hu'mus Plants, semi-saprophytes; ~ in-fe'rior, used of an ovary when the stamens are perigynous; ~ mono'pet'alous, the petals united, but so slightly as to separate easily; ~ moon-shaped, semilunate, crescent-like; ~ net'ted, when of several layers, only the outer is netted, as the corm of Gladiolus communis, Linn.; ~ race, a form intermediate between a species and a variety of it, producing but few seedlings of the racial character, the majority revert-ing to the specific type; ~ Sib'ling (+ Sibling), a pair of plants from the ovaries of the same parent, or pollen of the same parent (K. Pearson); ~ stem-clasp'ing, partly am-plexicanl; ~ supe'rior, the same as half-inferior; ~ terete', flat on one
side, terete on the other:—Half-Galtonian-curve, see Newtonian Curve.

Halm, see Hauml.

Halobi'on ( آلاف,HALÖS, salt, the sea; βLOS, life), associations of marine plants (Forel); halolimnet'ic (+ limnet'ic), belonging to the sea or salt lakes (Forel).

hal'onenate, halona'tus ( آلاف, the disc of the sun, halo), when a coloured circle surrounds a spot.

Halodrym'iun ( آلاف,HALÖS, salt, the sea; δWμδας, a coppice), a mangrove formation (Diels); hal'o-ne'reid (Nηρείς, a sea-nymph), pertaining to salt-water.

halo'niaal, used of the fertile branches or tubercles of the fossil Lepido-plaioi, formerly considered as belonging to Haplonia, Lindley et Hutt., non Fries.

haloph'ilous ( آلاف,HALÖS, salt, the sea; φιλεω, I love), salt-loving; Hal'o-phobe (φoβεω, I fear), a plant which shuns salt; adj. haloph'obous; Haloph'yta (φοτον, a plant), salt-plants; Halophyte (φοτον, a plant), a plant which grows within the influence of salt water; adj. halophy'tic; Halophyti'a, plant associations of salt marshes; Haloph'y'tism, the condition in question; Haloplank'ton (+ Plank'ton), the floating vegetation of salt-water. nerit'ic ~, confined to the coast; ocean'ic ~, or pelag'ic ~, that of the open sea.

Halospore, an error for Haplospre.

halved, dimidiate; Halves, cf. Segment Halves.

Hama'da, stony desert tracts in Algeria.

ha'mate, ha'mat'us (Lat. hooked), hooked at the tip; ha'mose, ha'mous, hamosus, hooked; ham'ulate, hamu'late; ham'ulose, hamulo'sus, beset with small hooks; Ha'mulus, a hooked bristle in the flowers of Uncinia; Ha'mus, a hook.

Ham'ock vegetation, a Florida term for Climax Vegetation.

Ha'ndle, the manubrium of the antheridium of Characeae.

hapaxan'thic, hapaxan'thous ( آلاف, once; ουθος, a flower), used of herbs having a single flowering period.

Haplan'the ( آلاف, single; ουθη, a blossom), Huxley's term for the hypothetic anemophilous type of the flowers of Gentianaceae; cf. Journ. Linn. Soc., Bot. xxiv. (1887), 112, '22; Haplobact'eria (+ Bacteria), simple bacteria, colonies and cells in aggregation, the product of division as in Sarcina; Haplobi'ont (Bios, life; ουτα, things existing), a plant which fruits once only: monocarpic; haplocaules'cent, uniaxial; haplocaul'ous ( καυλός, a stem), having a simple unbranched stem; haplochlamyd'eous (χλαμύς, a mantle), monochlamydeous, having a single perianth; Haplocy'te (κύτος, a hollow vessel), a cell containing nuclei with the reduced number of chromosomes (Bensou); adj. haplocy'tic; Haplogen'esis (γενεσις, beginning), the origin of new forms by evolution and development of new characters; haplogen'en'sus (γεννάω, I bring forth), = heteroneme'us; Haplogonid'ium (+ Gonidium), a lichen gonidium occurring singly and resembling Protococcus; Haplogonim'ia (+ Gonimia), gonimia occurring singly; Hap'loid (λόδος, resemblance), the organism with the single number of chromosomes, the hap'loid, or x Generation; the gametophyte (Strasburger); haplolep'id'eous, the preferable form of aplolepideous; Haplo'merist'ele (+ Meristele), a simple stile consisting of an axial series of tracheae surrounded by a ring of phloem; adj. haplomerist'e'tic (Breb'ter); Haplotomito'sis (+ Mitosis), nuclear division in which the spirem does not give rise to the chromosomes but to chromospres (Dangeard); haploperist'omous (+ Perisome), used of Mosses with a peristome of a single row of teeth; haplopet'al'ous, -lus (πεταλος, a flower leaf), with one row of petals; Hap'lophase (φαίνω, I appear), Vuillemin's term for Haploid; Hap'lospore (σπώρα
seed), (1) a simple spore in Lichens; (2) an asexual spore (Benson); haplo-
ste'monous (στήμων, a stamen), with a single series of stamens in one
whorl; Hap'lostele (στήλη, a pillar), a simple stele consisting of xylem
surrounded by phloem (Brebnner); Hap'lotype (τύπος, a type), used of
a single species in its original place of publication; adj. haplotyp'ic;
haploxy'lic (ὑλόν, wood), having a single vascular bundle in the leaf,
e.g. Pinus excelsa, Wall.

Hap'teron, pl. Hap'tera (ἀπτω, I fasten
upon), Warming's term for organs
of attachment which do not contain
vascular tissue, as in Podostomaceae;
Hap'tere, C. MacMillan's term for
Hap'teron, a holdfast; hapter'ic,
of the nature of a holdfast; Hapto-
morph'ism, stimulus by contact;
Haptot'axis, Haptot'ropism (τροπός,
direction), the curvature induced in
climbing plants by the stimulus of
a rough surface (Czapék).

hard'y, enduring without protection;
not injured by the climate.

harmon'ic (ἀρμονία, consonance), ap-
plied by Boulger to the development
of large groups characteristic of
continents.

Harmo'sis (ἀρμοσίς, an adapting), re-
response to stimulus, both of adjust-
ment and adaptation (Clements).

harpid'ioid, (1) resembling or allied to
the Harpidium section of Hy-pnun;
(2) similarly the Lichen genus
Harpidium.

has'tate, has'ta'tus (hasta, a spear'),
halbert-shaped, sagittate, with the
basal lobes turned outward; has'ti-
form (forma, shape), spear-shaped,
hastate; has'tile, has'tili (Lat.,
lke the shaft of a spear), used for
hastate.

hatch'et-shaped, dolabrirform.

Haulm, Halm, Haum, (1) the culm
of grasses; (2) the stem of herbaceous
plants.

Haustor'ium (haustor, a drawer), (1) a
sucker of parasitic plants; (2) used
by Komarow for an appendage of per-
thecia; (3) a structure arising from

the secondary nucleus of Lathraea,
the embryo sac containing two
haustoria, one equatorial, the other
micropyllar (Chodat); Haustor'ia
(pl.) appendicula'ta, when they arise
from a protrusion of the hyphae,
appressors; ~ exappendicula'ta,
when they arise direct'y from the
hyphae without much contortion at
the point of origin; ~ lobula'ta,
lobed appressors.

Haust'rum (Lat. machine for drawing
water), the bulbous nursing foot of
developing plants; an organ of
attachment and temporary nutri-
tion; adj. haust'ral.

Haut'schicht (Ger.), the layer of cell
protoplasm known as Ectoplasm.

Head, (1) an inflorescence; the capi-
tulum of Composites; (2) formerly
used for the theca of Mosses; ~ Cell,
the capitulum of Chara; head'ed,
capitate.

Heart, used by Grew for the centre,
as heart of oak, the duramen; ~
shaped, cordate; ~ Rot, a disease
of pine-apples of unknown origin;
~ Wood, the innermost and oldest
wood next to the pith, the duramen;
~ ~ Rot, Polyporus hispidus, the
cause of this disease on fruit trees;
it attacks the wood near the pith
and spreads towards the sap-wood.

Heath, an expanse of peaty or sandy
soil, with a predominance of Cal-
luna; ~ Associa'tion, a stable prin-
cipal growth of heather, without
trees; Heathland, a delayed or
abortive stage of Moorland.

Heath'er-moor, Calluna is dominant,
often with Vaccinium Myrtillus.

Heaut'otype (ἰαυτό, of his own;
τύπος, a type) applied to a specimen
of a previously described and named
species selected by the author, not
being otherwise recognizable; meant
to supersede Auto'type.

hebecar'pus (ἡβην, puberty; καρπος,
fruit), having the fruit covered with
downy pubescence.

hebet'a'te, hebet'a'tus (Lat., blunted),
having a dull or blunt or soft point.

Hecist'o'therm = Hekisto'therm.
hederaceous, hederaceous (Hedera, ivy; + ACOUS, (1) pertaining to ivy; (2) resembling ivy in habit; hedera-eral, composed of ivy; hederiferous (fero, I bear), producing ivy; Hedera's, a sugar contained in ivy, Hedera Helix.

Hedi'tum, or Hedi'on (δώς, a base), a succession of plants on reseduary soils (Clements).

He'gemon (γαμων, a leader), fibrovascular tissue.

Hekis'totherm (ἠκιστος, the smallest; ἑρμη, heat), a plant which needs but little heat, and can withstand long periods of darkness (Warming); adj. hekistothermic.

Hel'ad (δώς, a marsh; + άδ, a marsh-plant; Heleoplankton', or Helei'o plankton (+ plankton), the floating vegetation of marshes, which overpowers the animal plankton; it differs from the plankton by less motion of the water (Zimmer).

Helicot'ropism (ἐκλω, I drag; τροπτ, a turning), compulsory attraction of plants; a correction of Elcotropism.

heliaca'lis (ηλικος, belonging to the sun), helical; spiral.

He'liad (δώς, the sun), a heliophyte or sun-loving plant, adapted to full exposure to the sun; heliophobic (φοβω, I dread), shunning the light, negatively heliotropic; heliophobous (φοβω, I fear), adapted to a very small amount of light; Helio-phyll (φυλατων, a leaf), a leaf of a heliophile; Helio-phyltes, -phyta (φυτων, a plant), plants adapted to full sunlight; Helio-phytila, formations of such plants (Clements); Helio'sis, injury done by sun-burn; Helio-trop'hisim (+ Straphism), a tendency to twist, in response to light (Pfeller); Heliotax'is (ταξις, arrangement), the turning of an organism such as a spore, in relation to light; Heliotor'tism (τωτος, twisted), torsion caused by incidence of light (Schwendener and Krabbe); heliotropic (τροπος, direction), turning towards the light; Angle, the angle of incidence at which light has the most stimulating effect; Heliotrop'ism, the act of turning towards the sun or source of light; negative ~, shunning light; positive ~, growing in the direction of sunlight.

Heliotrop'ism

helicoid'eus (ελος, like), coiled into a helix, or like a snail-shell; ~ Cells, terminal cells, which are usually branched, of Pathophora (Wittrock); ~ Cyme, a symposium indeterminate whose lateral branches are all developed on one side, a bostryx, or drepanium; in some text-books this is erroneously called "scorpioid"; ~ Cystoliths, twisted cystoliths; ~ Dichot'omy, when in two unequal branches, the more vigorous one is uniformly on the same side; ~ Inflores'cence, when the flowers are in a single row; ~ unip'arous Cyme, a bostryx; helico'id'al, spirally twisted, in the manner of a snail-shell: Helicomer'phy (αρφη, shape), term covering the young and adult forms of leaf in heteroplastic plants (Diels).

he'lio- (ηλιος, the sun), Drude's prefix to his groups depending upon the sun in summer for the vegetation period; helioph'il'ous, -us (φιλω, I love), adapted to full exposure to the sun; helioph'o'bic (φοβω, I dread), shunning the light, negatively heliotropic; helioph'o'bus (φοβω, I fear), adapted to a very small amount of light; He'liophyll (φυλατων, a leaf), a leaf of a heliophile; Helio-phytes, -phyta (φυτων, a plant), plants adapted to full sunlight; Helio-phytila, formations of such plants (Clements); Helio'sis, injury done by sun-burn; Helio'sis, injury done by sun-burn; Helio-trop'hisim (+ Straphism), a tendency to twist, in response to light (Pfeller); Heliotax'is (ταξις, arrangement), the turning of an organism such as a spore, in relation to light; Heliotor'tism (τωτος, twisted), torsion caused by incidence of light (Schwendener and Krabbe); heliotropic (τροπος, direction), turning towards the light; Angle, the angle of incidence at which light has the most stimulating effect; Heliotrop'ism, the act of turning towards the sun or source of light; negative ~, shunning light; positive ~, growing in the direction of sunlight.
Heliotropism  

**hemichimonophilous**

the light; trans'verse ~, = Dia-
Helo'tropism: Helioturgot'ropism
(turgor, a swelling; τροπή, a turn-
ing), becoming turgid in response to
light (Pfeffer); helioxeroph'ilous
(+ xeroph'ilous), the condition of
plants adapted to strong sunlight
and dryness (Vesque); Helioxero-
ph'yll (φυλλον, a leaf), the state of
leaves capable of withstanding
drought and strong sunshine (Ves-
que); heliozo'oïd (ζώον, an animal;
el'dos, like), amoeboïd, but having
distinct ray like pseudopodia.

Heli'um (élos, a marsh), a marsh
formation.

Hel'kotropism (élaω, I drag; τροπή, a
turning), attraction on plants as of
gravitation; cf. Helio'tropism.

Hel'met, = Galea; ~ shaped =
galeate.

helminth'oid (éλμος, éλμνθος, a worm;
el'dos, resemblance), worm-shaped,
vermiform (Heinig).

helminthospor'oid (éldos, resemblance,
resembling the genus Helmintho-
sporium, Pers.

helo'bius (élos, a marsh; βίος, life,
living in marshes, paludal..

Helo'dad (éλωδης, marshy; + αδ, a
marsh plant; Hel'o'drad, a plant of
a marsh thicket; Helodi'um, a
swampy open woodland formation;
Helodri'um (δρόσος, a thicket), a
thicket formation: Helo'hy'drad
(δάνη, forest, a marsh forest plant).

Helopyli'um (élos, marsh; δάνη, forest,
a swamp forest formation; helo-
hyloph'ilus (φιλέω, I love), dwelling
in wet forests; Helophyloly'îta
(φυτών, a plant), wet forest plants
(Clements); Helolochmi'um (λόχυνη, a
thicket), a meadow thicket forma-
tion; helolochmoph'ilus (φιλέω, I
love), dwelling in meadow thickets;
Helolochmophily'îta (φυτών, a plant),
meadow thicket plants (Clements);
heloph'ilus (φιλέω, I love), marsh-
loving; Helophylie'um, a marsh forest
formation (Clements); Helophy'ites
(φυτών, a plant), marsh plants
(Clements); Helophy'tes (+ Plankton),
the floating vegetation

of a marsh; Helorgadi'um (ελος,
marsh; ὑγάς, meadow), swamp for-
mation (Gaong); helorgadoph'ilus
(φιλέω, I love), dwelling in swampy
woodlands; Helorgadoph'yta (φυτών,
a plant), plants of that formation
(Clements).

Hel'o'tism (ελίως, a serif), Warming's
term for the symbiotic relations
of Algae and Fungi in Lichens.

hel'volus (Lat.), pale ochreous yellow;
hel'vus (Lat.), light bay, dun-colour.

He'marine = Haematin.

Hemeran'thy (ημέρα, day; ἀνθώ, I
flower), day-flowering; adj. heme-
ran'thous.

He'merophytes (ημέρας, cultivated;
φυτών, a plant), plants introduced
by the agency of man; anthropo-
phytes (Simmons).

he'mi-, (ημι), in composition means half;
Hemi-albumose' (+ Albumoses), a
mixture chiefly of proto- and hetero-
albumose; hemiamphicar'pous (+
amphicarpous), having two kinds
of fruit, one of which is both aërial
and subterranean, e. g. Catananche
lutea; hemianat'ropous (άνσα, up;
τροπή, a turn), half-anatropous, the
ovule being partially bent back, halft
the raphe free; hemitropous, am-
phitropous; hemiangiocar'pic, he-
miangiocar'pous (+ angiocarpic),
when the ascocarp (apothecium) is
closed at first, but opens on
approaching ripeness and discloses
the hymenium of crowded asci;

Hemiangiasperm'aeae (+ angiosper-
mae), hypothetical direct ancestors
of the Angiosperms (Arber and
Parkin); Hemiant'rophyte (+ Auto-
phyte), chlorophyll-bearing parasites
(Boulger); Hem'i'carp, Hemiacarp'ium
kap'tós, a fruit), a half-carpel, a
mericarp; Hemicell'ulose (+ Cellu-
lose), all carbohydrates present in
the cell-wall which are not coloured
blue by chlor-zine-iodide, such as
pectinaceae substances, reserve
cellulose, etc. (Gilson); formerly
referred Pseudo-cellulose; hemich-
monoph'ilous (χειμών, winter; φιλέω,
I love), applied by F. Ludwig to
those plants whose above-ground development begins even during the prevalence of frost, as Ranunculus Ficaria, Linn.; hemiplanay'deous (χάλυξ, a cloak), half-coated, as ovules when borne on an inverted symphyllodium in Coniferae (Cela-kovsky); Hemicleistog'amy (+ CLEISTOGAMY), Knuth's term for the condition of plants whose flowers open slightly; adj. hemicleisto-gam'ic; hemiconcen'tric, partly in whorls, as the perianth leaves in whorls, and the sporophylls in spirals; hemicylin'dric (κύλινδρος, a cylinder), (1) half-terete; (2) a leafy expansion, plane on one side, convex on the other; Hemidys-troph'ia (δυσ-, bad; τρόφις, nourishment), partial nourishment, semi-starvation; hemiendobiot'ic (+ ENDOBITIC), living usually within the host, sometimes outside it; hemiendophy'tic (+ ENDOPHYTIC), used of a fungus parasite sometimes external and sometimes internal (Salmon); Hemiendozo'a (ζώον, an animal), applied to Tortubia, as though imperfect plants; Hemi'phyte (έπι, upon; φυτόν, a plant), employed by Went for a plant which at first roots in the soil, afterwards developing aerial roots; Hem'i'form (+ FORM), used of heterocoeous Fungi, having uredospores and teleutospores, the latter only germinating after a resting period; hemigamo't-ropous (γάμος, marriage; τροφή, a turning), used of flowers which open and shut imperfectly; hemigona'ris ‡ (γάνος, offspring), employed when a part of both stamens and pistils are changed into petals; hemigymno-car'pous (+ GYMNOCARPous), used of Fungi which mature their spores in closed receptacles which open for their dispersal; Hemig'y'rus ‡ (γύρος, round) = FOLICILE; hemi-hei'icoid (+ HELICOID) F. N. Williams's term for Braun's HEMICYCLIC; hemi'den'tic, nearly the same; e.g. the red flowers and spots of the leaf-axils in certain races of peas are hemiidentic characters; Hemimeta't-ropy (μετά, with; τροφή, a turning), in crossing when the interchange between male and female elements from different flowers or plants is only half completed (K. Pearson); adj. hemimetatrop'ic; hemiortho-morph'ic (ὁρθός, upright; μορφή, shape), symmetric organs which possess an equality in a vertical plane (Wiesner); Hemiorhot'tropy (τροφή, a turning), any naturally placed organ displaying vertical symmetry (Wiesner); Hemipara'site (+ PARASITE), (1) plants whose seeds germinate without a host plant, but whose after life is dependent upon a host, as Bartsia and Tozzia; (2) a facultative saprophyte, a parasite which can exist as a saprophyte; Hemiparthen'osperm (+ PARTHEN-OSPERM), C. MacMillan's term for a plant having either embryo or endosperm parthenogenetic, but not both; hemipe'lic (πελάς, clay), rocks which yield a moderate amount of clay detritus, and the plants which affect such localities (Thurmann); hemipel'oric (πελάφιος, monstrous), partly peloric flowers in Linaria, the flowers being nearly regular (Vernon); Hemipentact'yl, a seedling with partial division of its cotyledons so as to appear as if it had five; Hem'iphyll (φύλλον, a leaf), the hypothetic segment of a carpel; ov'ular ~, placental ~, those which become modified into special parts of the ovary respectively, cf. Triphyllome; Hemiplan'kton (+ PLANKTON), the mingled vegetation of shallow and deep water forms in land-locked pools, etc. (A. F. W. Schimper); hemipsamm'mic (ψάμμος, sand), strata
which give a moderately porous detritus, with the plants which prefer such places (Thurmam); Hemi-
puccinia, a group of Puccinia, = hemiform; Hemisaprophyte (+ Saprophyte), a plant which appropri-
ates humus although capable of self-support, a facultative parasite (Warming); hemischist (σχιστός,
split), in broad-cell formation when the nucleus only divides, the cytoplasms remaining whole (Hartog);
Hemisyncot'ly ( + Syncotyly), when seedlings have their cotyledons partially fused with one another or
some other organ (De Vries); hemisyngyn'icus (σύν, with; γυνή, γυναι-
kός, a woman), half-adoherent (Lind-
ley); Hemite'ria † (τέρας, a monster),
“a monstrosity of elementary organs, or of appendages of the axis” (Lind-
ley); Hemitetracotyle’don (τετράς,
four; + Cotyledon), De Vries’s expression when both cotyledons are divided, or one normal and the other divided; hemitrichous † (θρίξ, τριχή, hair), half covered with hairs;
Hemitricotyle’don (τρίς, three; + Cotyledon), used by De Vries, when one cotyledon is apparently divided into three; Hemitricotyly, partial division of one cotyledon; complete fission is Tricotyly (De Vries);
hemit'ropal, hemit'ropous (τρόπος, direction), (1) amphitropous, the axis of the ovule being more curved than the anatropous condition; (2) employed by MacLeod for flowers which are restricted to certain insects for honey-getting; (3) with flowers of moderate adaptiveness to insect visitors, the mean between allotropous and eutropous; (4) also applied to insects which visit the same, as flies, short-tongued bees, and most butterflies (Loew); ~
Herkog’any = HercoGAMy

Hemp, the fibro-vascular tissue of Cannabis sativa, Linn.

Hen-and-chickens, prolific flowers, the centre flower or head being sur-
rounded by subsidiary flowers.

Henslov'ian Mem’brane, the cuticle; so named from Prof. J. S. Henslow’s researches on the same.

hepat'ic, hepatic'ious, -cous (Lat., dis-
eased in the liver), liver-coloured, dark, purplish-red; Hepaticol'ogist, an expert in Hepaticae; Hepati-
col'ogy (ἀγγέλος, discourse), the study of the Hepaticae or Liver-

Hepo’dochrome (ἐπώ, I follow; ἐπώχη, suc-
cession), a secondary succession (Clements).

Heptagyn’ia (ἐπτά, seven; ἔννοι, a woman), a Linnean class of plants having seven pistils; heptagyn’ian, possessing seven pistils; heptam’erous (μέρος, a part), having the parts in sevens; heptan’der (ἄνθη, ἄνδρος, a man), having seven stamens; Heptan’drion, a Linnean order of plants with seven stamens; heptan’driam, heptan’drious, relating to the same, or possessing seven stamens; heptapet’alous (πέταλον, a flower leaf), having seven petals; heptaphy’lous (φύλλον, a leaf), with seven leaves; hep’tarch, applied to a fibrovascular cylinder or stèle with seven rays or bundles; heptari’nus (ἡπτάριον, male), Necker’s term for heptan’drius.

Herb, Herb’a (Lat., grass, herbage, plant), a plant with no persistent stem above ground; herba’ceous, -cous (+) Aceous,(1) with the texture, colour and properties of a herb; (2) with annual stems from a perennial root, as an ~ Peren’nial; Herb’age, herbs collectively, grass, pasture;

Herb’al, (1) an old volume containing descriptions of plants, such as John Gerard’s “Herball”; (2) sometimes = Herbarium; Herb’alist, (1) a writer of herbals, one of the old botanists; (2) a person skilled in the knowledge of herbs; Herb’arist, an old word for botanist; Herba’rium, a collection of dried plants, formerly styled a “hortus siccus”;

Herb’elet, Herb’lit, a small herb; herbes’cent, growing into herbs;

Herb’orist, a collector of plants for medical use; Herboriza’tion, a
Herbarization

botanic excursion for the collection of plants; herb'orize, to botanize.

Herco'gambar (éphros, a fence; ãmamos, marriage), applied to hermaphrodite flowers, when some structural pecu-
liarity prevents self-fertilization; requiring insect-visitation; adj. her-
cogam'ic, herkomam'ic, hercog'-
amous, -mus; ab'solute ~, the possibility of self-pollination is always excluded; conceal'ed ~, self-
pollination as frequent as insect-
pollination; contin'gent ~, acci-
dental and occasional self-pollination is possible; half ~, flowers at first hercogamous, but at a later period self-pollination becomes practicable from growth or change in parts of the flower.

Here'd'ity (here'ditas, heirship), pos-
session by inheritance, of certain qualities or structures; bisex'ual ~, unisex'ual ~, having the qualities of both, or of one parent only trans-
mitted; adj. hered'itary; ~ Symbi-
osis, the presence of Mycobacteria in the tissues, including seeds.

herma ph'rodite, herma phrodi'tus (Lat. having the characters of both sexes), the stamens and pistils in the same flower.

Her'pes (épης), a cutaneous eruption) tonsu'rans (Lat., shaving), ring-
worm, a disease of the skin as-
cribed to Trichophyton tonsurans, Malm.

Herp'ism (épης, I creep), creeping by means of variously shaped pseudo-
podia, as in Flagellata; Herпоblast (βλαστός, a shoot), Cramer's term for a conformed prothallium lying flat on its substratum.

Hertzot'ropism (τροπη, a turning), movement due to the influence of the Hertzian waves, whence the term (Massart).

Hesperid'ium (from the golden fruit of the garden of the Hesperides), Desvaux's term for a fruit, such as the orange: a superior, polycarpel-
lar, syncarpous berry, pulpy within, and externally covered with a tough rind; AVIANTUM of de Candolle.

Hetaer'io (étaipela, a brotherhood); a collection of distinct indehiscent carpels produced by a single flower, dry or fleshy, as in the Strawberry, Buttercup, Raspberry; usually spelled Etaerio.

Hetera'my (érpos, other; åµη, apex), = Dico Gamy; Heteradal'phy (åδελφος, a brother), used of two adherent carpels which develop unequally, one being more or less atrophied (Reymondaud); heterand'rous (ardp, åndpds, a man), with two sets of stamens; applied to flowers whose stamens vary in size; Heteran'dry, the condition de-
scribed; Heteranth'ery, the condition of having distinct kinds of stamens; Hetera'uxes'sis (αδεης, growth), variation in the relative growth of opposite sides of an organ; heterax'on (åkwn, an axle), applied by O. Mueller to a diatom if the transverse axes are unequal; Heteroalbumose' ( + ALBUMOSE), Kuhne's term for proteid, phytal-
bumose; hetero blas'tic (βλαστος, a shoot), (1) applied to embryogeny which is indirect, the offspring not similar to the parent, but producing the adult form as an outgrowth, as in Chara; (2) used by Goebel to express the fact that the adult form of a plant is very unlike the young or larval form; (3) applied by Pfitzer to those Orchids in which the pseudobulbs consist of a single swollen internode; the condition is Heteroblas'ty; Heterob'olites (βωλη, a missile), a catabolic product with absorption of other bodies (Beyer-
ineck); cf. SChizoBolites; heterocar'pinus (fructus), "an inferior fruit" (Lindley); heterocar'pinus (καρπος, fruit), an inferior or par-
tially inferior fruit, as the acorn; heterocar'pous, -pus, producing more than one kind of fruit; Heterocar'py, having two kinds of fruit; hetero-
ceph'alus (κεφαλη, the head), bearing two kinds of head or capitulum; heterochlamy'd'eous, -deus (χλαμίδης, a mantle), when the calyx and
corolla clearly differ; heterochóryic (χωρέω, I spread abroad), used of a species inhabiting two or more closely related formations; heterochromat’ic, adj. of Heterochro- matism; Heterochromatism (χρῶμα, colour), a change in the colouring or marking of petals; Heterochromosomes ( + Chromosomes), aberrant chromosomes (‘ates); cf. Monosomes; heterochromous, when the florets of the disc in Compositae differ in colour from those of the ray; heterochortonous (χρῶνος, duration of time), in cultures when sow- ings are made at different times (Cleve’s); heterocism’al, an ill-contrived version of heteroeconomic; het’eroclite, heteroclinous, -nus, (κλίνω, a bed), with the male and female members on separate recep- tacles.

het’eroclite, heteroc’litos (έτερόκλιτος, varying in declension), anomalous in formation.

heterocot’ylosed (έτερα, other; + Coty- ledon), having cotyledons unequally developed; heterocyclic (κύκλος, a circle), used when the floral whorls are heteromerous, not uniform or isomerous; Het’erocyst, (κύστις, a bag), large inert cells in the filaments of certain Algae; separating contiguous hormogonia; adj. heterocyst’ous; heterodes’mic (δεσμός, a bond), used when the vascular bundles are partly of phloem only (Brebner); cf. homo- desmic; Heterodichog’amy; Engler and Prantl’s synonym for Dichogamy; Heterodi’ode (+ Diode), a term to include Macrodiode and Microdiode (Van Tieghem); Het- erodi’ody (διάδος, a passage), Van Tieghem’s term for the condition of those Diodes which are differentiated into Macrodiodes and Microdiodes; cf. Isodiody; Het- erodist’yly ( + δί; stylus, a style), dimorphism, the presence of two kinds of plant, having either long or short styles, e.g. Primula; adj. heterodisty’lous; heterod’romous, -nus, (δρόμος, a course), having spirals of changing directions, as in some tendrils, or phyllotaxis; Heterod’romy, when two spirals take different or oppo- site courses; heterodynam’ic (δύναμις, power), applied to pairs of characters, one dominant, the other recessive (Cor- rens); heteroe’cious, forms which pass through their stages of de- velopment on different hosts are so termed; metoeconomic is a syno- nym; Heteroe’cism, the condition a heteroeconomic parasite; heteroe’cism’al, should be Heteroeconomic; Heteroe’cium (οίκος, a house), a Fungus which passes its stages on more than one host plant; a metoeconomic parasite; Het’erocyst (Crozier) = Heterocyst’; Hetero- eu’forms (εὖ, well; + Form), forms of Puccinia, producing uredospores and teleutospores on a host other than that on which they bring forth spermogonia and acedia; Het’eroforms is a contraction for the same; heterog’am’ous, -nus, (γάμος, marriage), (1) bearing two kinds of flowers, as in Compositae, the florets of the ray may be neutral or un- sexual, and those of the disk hermaphroditic; (2) an abnormal arrangement of the sexual organs (Masters); Heterog’am’y, change of the function of male and female flowers, or in their arrangement; heterogene (γένος, offspring), the character of offspring when the parents are hybrids or belong to different types (Lotsy); heteroge’neous (γένος, race), not uniform in kind; Heterogene’ity, dissimilarity of nature; heteroge’neous Induc’tion, used by Noll to denote sensitive movements in which two different causes co-operate; Heterogen’esis (γένεσις, beginning), (1) alternation of generations; (2) the origin of organisms from different genera or orders, or de novo (Ilastian); (3) origin by sports, or bud variation; heterogenet’ic, when applied to fertilization mequs cross-pollina-
tion; ~ Variation = Mutation; Heterog'enism = Heterogenesis; Hetero'-g'eneous, heterog'eneus: Heterog'on'y, the same as Heterostyl'y, cf. Homogony; Hetero'homo-type, the entire stage of Hetero- and Homotype karyokinesis (Grégoire); hetero'i'cous, a form preferred by some bryologists to the usual spelling Hetero'ricous; heteroi'deus (el'dos, like), diversified in form (Lindley); heterokaryo'tic (k'drom, a nut), the character of spores in which both male and female nuclei exist (Bur-geff); Heterokaryo'sis is the condition; Heterokine'sis (k'yn'isis, motion), heterotypic meiosis (Gré- goire); Heteroli'chnum (+ Lichen), Lichens in which the gonidia are stratified in the thallus (Jatta); het- eromal'ius, -i'sus (mu'allos, a fleece or tuft of wool), spreading in all directions; hetero'm'alous (Crozier) = the foregoing; Heterom'erals, Bessey's abbreviation for the Heteromerae of Bentham and Hooker, a series of Gamopetanae; Heteromer'icarpy (mu'ros, a part; kar'pos, fruit), (1) heterocarpy occurring between parts of the same fruit (Delpino); (2) Huth's term for a binary fruit, the halves of which differ from each other, as Turgenia heterocarpa, DC.; heteromer'i'cious, stratified, as in some Lichens; heteromer'i'ous (1) when the number of the members is not uniform; (2) in Lichens, the opposi- te of isomericus; heteromor'phic, heteromor'phous (mu'rphi, form), (1) variation from normal structure, as deformities, etc.; (2) having organs differing in length, dimorphic, with long and short styles; trimorphic, with long, short, and medium length, the male organs (stamens) being of corresponding length; Heteromes-o'g'amy (mu'veos, intermediate; gamo's, marriage), when individuals vary in the method of fertilization, as (a) auto-allogamous, (b) homodicho- gamous, and (c) dientomorphophilous; Heteromorpho'sis or Heteromor'phy = Automorphosis in botanic usage; Heteromorph'i'ism, the heteromorphic condition; heterone'meus (ne'ma, a thread), applied to plants which on germination produce thread-like growths, which afterwards give rise to a leafy axis, such as Bryophytes and lteridophytes; Heteropetal'o'dy (+ Petalody) change from one kind of petal into another; heteroph'agous (ph'gos, I eat), applied to Fungi which attack plants not congenic (Erikson); Heteroph'agy, used by Dan- geard for sexual (protoplasmic) unions which leave a residue; cf. Auto-phagy; heterophy'adic, heterophy'adicus (ph'ados, growth), used of those species which have fertile stems of different form from the barren stems, as in some Equiseta; heterophy'l'ous (phi'los, a leaf), having leaves of different forms; Heterophyl'ly, used by Krasser, for two different forms of leaves, when caused by difference in organization; Hetero- phyte, Heterophy'l'us (phor'os, a plant), (1) Trattinik's name for those plants which bear leaves and flowers on separate stems, as Curcuma Zedo- aria, Rosc.; (2) Bouger's term for parasites destitute of chlorophyll; (3) Warming's term for those plants which are holosaprophytes or parasites, unable to exist independently; (4) employed for species of wide range of habitats (F. H. Brown); (5) the dioecious sporophyte; of heterothallic plants, those with unisexual sporophytes (Blakes- lee); adj. heteroph'y'ic, hetero-ph'y'tous; Heteroplasi'tid's, those organisms whose differing cells perform different functions; Hetero-plas'y (pi'asos, I form), applied to all forms, and cells and tissues arising from abnormal growth after a wound; heteropo'lar (polos, a pivot), for the axis of Diatomaceae when the extremities differ; Hetero- pro'thally (+ Prothallus), Van
Tieghem’s term for the production of unisexual prothallia; hetero-
ri’zal (διζα, a root), having roots or similar organs proceeding from
any indeterminate portion of a spore in germination or rooting from no
fixed point; Heteroschi’zis (οςχιζω, I split), the simultaneous fragmenta-
tion of the mother nucleus, giving rise to many (Griggs); Heterosepal-
o’dý (+ Sepalody), the change of one sepal into another (Worsdell);
Heterosper’my (σπέρμα, seed), bearing two kinds of seeds, as in Suaeda,
some species producing both seeds with endosperm, and other seeds
destitute of it; heterosporan’gic (+ Sporangé), male and female gametes
produced by different sporangia (Blakeslee); Het’erospore
(+ Spore), a spore containing male and female energids in variable pro-
portion, mixed but not fused (Dangerd); heterospor’ic (+ Sporea),
producing spores giving rise to male and female gametophytes; heteros’-
porous (σπόρα, seed), with spores of two kinds, as in S. laginella; Het-
eros’por’y, the condition of producing microspores and macrospores,
etc.; Heterostamin’ody (+ Stam-
inody), the change of a stamen of one type, into that of another
(Worsdell); het’erostyled, hetero-
sty’lous (+ Stylus) = hetro-
gambarous; Heterosty’lia, heterogamous plants; Heterosty’tism, having
flowers differing in the styles, as Compositae when certain florets are
unisexual and others hermaphrodite in the same head; Heterosty’tly
= hetrogamy; heterosymbion’tic (+ Symbion’t), used of lichens
whose algal constituents are diverse in the same example (Bitter); het-
erosta’tic (τακτικός, qualified to ar-
range), with more than one system in the same inflorescence; Hetero-
tax’y (ταξις, arrangement), deviation, as the production of organs in situations
where under normal con-
ditions they would not be found; heterothal’lic (θαλλός, a sprout), em-
ployed by Blakeslee for dioecious, in Mucorinae; Heterothall’ism is
the state; heterotherm’ic (θερμός, hot), applied to porous silicious
soil, which absorbs and loses warmth (Krasan); heterotop’ic (τόπος, a
place), used of plants found on soils apparently very diverse from their
normal stations; Heterotristy’ly, trimorphism, as in Lythrum Salici-
aria, Linn.; heterot’ropical, hetero-
tropous (τρόπος, direction, (1) in
ovules, the same as amphitropous;
(2) employed by Agardh for col-
lateral ovules, back to back; (3)
lying parallel with the hilum; Het’-
erotroph (τροφή, food), (1) employed
by Pfeffer to denote a pure sapro-
phyte; (2) an organ which is de-
veloped more on one side than
another (Wiesner); adj. heterotro-
ph’ic, -us; Heterot’rophy, (1) used
by Minks for those Lichens living
 symbiotically; (2) by Wiesner for the
compound position of a shoot
with regard to the horizon and of
the mother-shoot; (3) also applied
to nutrition by ingestion, like an
animal (Keeble); Het’erotype (τύ-
os, form, type), Flemming’s term for a
peculiar nuclear division connected
with the reduction of the chromo-
somes, marked by the early fission
of the chromatic thread, a special
form of the chromosomes themselves
(Farmer); adj. heterot’yp’ic, which
is also employed to denote vegeta-
tive division; heteroty’pical, de-
scribed from more than one species,
these differing in structure (Schu-
chert); heterox’enous (ξένος, a host) = hetroe’cious; Heterozyg’osity,
having heterozygotes; Heterozy-
gote (+ Zygote), a “zygote formed
by a pair of opposite allelomorphic
gametes” (Bateson).
Hexacoc’cus (ξ, six; κόκκος, a kernel),
a fruit of six cells, as in Triglochin:
hexacot’ylous, having apparently
six cotyledons due to fission of
the normal two (de Vries); hexacy’cle
(κύκλος, a circle), arranged in six
whorls; Hexagoniench’yma (γωνία,
angle; \( \gamma \chi \nu \mu \alpha \), an infusion), cellular tissue which exhibits hexagonal cells in section; **hexagonoid** (\( \varepsilon \delta \dot{o} \), like), J. Smith’s term for hexagonal areolae on Fenus, which are bordered by veins; **hexagonous**, six-angled; **Hexagynia** (\( \gamma \nu \), a woman), a Linnean order of plants possessing six pistils; **hexagynian**, plants belonging to that order, or having its character; **hexa
gynous**, with six pistils; **hexalepidus** (\( \lambda \nu \tau \iota \lambda \iota \), a scale), six-scaled; **hexam'eronous**, \( \mathfrak{r} \mathfrak{u} \mathfrak{s} \) (\( \mu \epsilon \rho \rho \), a part), in sixes; **hexander**, (\( \alpha \nu \rho \), \( \alpha \nu \rho \), a man), having six stamens; **Hexan'dria**, a Linnean class characterized by the possession of six stamens; **hexan'drian**, relating to that class; **hexan'drous**, with six stamens; **Hexand’ry**, the state of possessing six stamens; **hexapetal'aloid** (\( \varepsilon \delta \dot{o} \), like), having a perianth of six pieces, which resemble petals; **hexa
petal'alous** (\( \pi \tau \sigma \lambda \alpha \nu \), a flower leaf), with six petals; **hexaphyle'tic** (\( \psi \alpha \lambda \nu \), a tribe), applied to those derivative hybrids which are the product of six forms or species, as in some willow-hybrids; **hexaphy'lous**, \( \mathfrak{l} \mathfrak{u} \mathfrak{s} \) (\( \phi \nu \lambda \alpha \nu \), a leaf), six-leaved; **Hexa'pod** (\( \nu \nu \iota \), \( \nu \nu \dot{o} \), a foot), a fathom of six feet, used sometimes as a measure of altitude; **hexap'terous**, \( \mathfrak{r} \mathfrak{u} \mathfrak{n} \) (\( \pi \tau \rho \varepsilon \rho \), a wing), six-winged; **hexapry'renus** (\( \pi \rho \rho \rho \nu \), a kernel), having six kernels; **hexarch** (\( \alpha \rho \chi \nu \), beginning), applied to a stele with six strands or origins; **hexari'nis** (\( \kappa \rho \rho \nu \nu \), male), Necker’s synonym for hexandrous; **hexasep'alus**, \( \mathfrak{l} \mathfrak{u} \mathfrak{s} \) (\( \mathfrak{S} \mathfrak{r} \mathfrak{p} \mathfrak{a} \mathfrak{l} \mathfrak{u} \), with six sepals; **hexaste'monous**, \( \mathfrak{n} \mathfrak{u} \mathfrak{s} \) (\( \sigma \tau \mu \mu \omega \nu \), stamen), hexandrous, six-stamened.

**hi'ans** (Lat.), gaping, as a ringent corolla.

**Hibern'acle**, **Hibern'a'culum** (Lat., a winter room), (1) a winter bud; (2) in botanic gardens, the winter quarters for plants, especially plant houses and frames; **hiber'nal**, **hiberna'lis** (Lat.), pertaining to winter; **Hiberna'tion**, passing the winter in a dormant state.

**Hib'er'nia**, H. C. Watson’s term for those plants of the United Kingdom whose headquarters appear to be in Ireland (Hibernia).

**hid'den**, concealed from view; ~ veined, with veins which are not obvious, as in Pinks and House-leeks, by excess of parenchyma.

**hide-bound**, a cultivator’s expression when the bark does not yield to the growth of the stem.

**Hid'roplank'ton** (\( \lambda \rho \omega \), sweat; + **PLANKTON**), organisms which float by virtue of some secretion (Forel).

**hi'emal**, **hiema'lis** (Lat.), relating to winter; **Hienis'il'vae** (\( \sigma \iota \nu \), a wood), woods in which the trees shed their leaves in the dry summer season.

**Hieraciol'ogist** (\( \lambda \gamma \omega \sigma \), discourse), an expert in the genus **Hieracium**.

**High'land**, used by H. C. Watson for a type of distribution in Great Britain, of those plants chiefly found in the Highlands of Scotland.

**High-moor**, arises in water but emerges from it, and is then dependent upon rain-water; it is supra-aquatic;

**High-yeast**, barm, the yeast which forms at the surface; cf. low or bottom yeast.

**hi'lar**, **hila'ris** (hilum, a trifle), relating to the hilum; **Hile** (S. F. Gray) = **Hilum**; ~ bearing, marked with a hilum; **hiliferous**, **hi'lifer** (fero, I bear), having a hilum on the surface; **Hilof'era**, the second or internal integument of a seed; **Hilum**, (1) the scar left on a seed where formerly attached to the funicle or placenta; (2) the central point in a starch granule which the ring-like markings seem to surround; (3) † any point of attachment; (4) ‡ an aperture in pollen grains.

**Hinge**, (1) the isthmus of Diatoms; (2) in stomata, delicate lamellae of cellulose, upon which the mobility of the guard-cells usually depends; they may form an inner or outer hinge; in German, “Hautgelenk”; (3) a special part of the stem near a node, between two rigid portions, capable of movement (Kohl); ~
Cells, cells lying in furrows on the upper face of the leaves of grasses, deeper than epidermal cells and easily folded as the leaf curls; ~ Plants, plants thus susceptible to curvature.

hinoïdeus (Lat., rough, hairy), hairy, with long, tolerably distinct hairs; Hirsute, the hairiness just described; Hirtelliforms, in Rosa, those forms having hairs on the midrib of the leaf (Almquist); named from R. hirtella; hirtellous, -lus, minutely hirsute; Hirtiforms, in Rosa, with lower leaf surface and leaf hairy (Almquist), name from R. hirta; hirtose, used by R. T. Love for hirtus (Lat.), hairy, practically the same as hirsute.

hispid, his'pidus (Lat., bristly), beset with rough hairs or bristles; hispi'dulous, -lus minutely hispid.

Histidialysis (Crozier) = Histology.

Histidialysis (στά, a web; δί, through; λόγος, a loosing), the separation of the cells of a tissue from each other (Crozier); Histogenous (γενός, offspring), the origin of tissue; histogenetic, histogenetic, tissue-forming; ~ Plasma, Weismann's term for tissue-forming protoplasm; Histogenesis (γενέσις, beginning), or Histogeny, formation or origin of tissue; histoid (εἴδος, resemblance), arachnoid (Heinig); Histology (λόγος, discourse), the science of tissues; Histometabases, pl. (μετάβασις, alteration), chemical changes by which tissues have been fossilized; histophílous (φίλος, I love), parasitic; Histophyta (φυτόν, a plant), parasites; Histophytia, parasitic plant formations (Clements).

Histométer (Κός, I sink), an instrument for measuring gravitational water (Clements).

Holar (ὅλος, whole), the total water-content of a soil (Clements).

Holdfasts, the disc-like attachments of Algae.

Holoëdobiottic (ὁλός, whole; βιωτικός, pertaining to life), used of Fungi which produce their spores in other organisms, as Saprophytina; Holendobiotic, p.l. (φυτόν, a plant), Fungi confined to life within other plants, as Ustilaginaceae; Holendozoëa, p.l. (ξενών, an animal), Fungi living within animals, as Chytridaceae.

holeraeous (Crozier) =oleraceous.

Holobas'did (ὁλός, whole; basalidium, a little pedestal), an undivided basidium in Basidiomycetes (Van Tieghem); holoblastic (βλαστός, a bud or shoot), employed when the whole spore is concerned in the embryogeny, cf. meioblastic; Heliocarp (καρπός, fruit), Nicotra's term for an entire fruit resulting from a number of carpels; it may be an apocarp, or a syncarp, or an insensible blending of the two forms; other divisions are actinocarp, and heliocarp, according as it is founded on a whorl or spiral; and antispermic or pleurosppermic according to the position of the placenta; holocarp'ic, holocarp'ous, (1) having the pericarp entire; (2) in simple
Algae, the whole spore (individual) becomes a sporangium, and invested with a cell-wall; (3) used of Fungi producing fruit once only from the same thallus; cf. ECARPUS; holochlamydeous (χλαμύς, a cloak), employed for ovolves such as those of Gymnogono when the integuments are practically complete (Celakovský); holocylic (κυκλικός, circular), (1) applied to a stem with ampexical leaves, regarded as encircling the stem and ending at the node in a leaf (Celakovský); (2) evergreen (Drude); Hologamy (γάμος, marriage), when the nuclei of gametes fuse together (Dangeard); Hologonidium (γόνος, offspring), employed by Wallroth for the algal gonidia pure and simple, or soredia; hologymnocarpous (+ GYMNOCARPUS), permanently gymnocarpous, the fruits being entirely free; Hologynasite (+ Parasite), a plant entirely dependent upon the host-plant for its existence (Warming); holophytic, pertaining to Holophy'ism (φυτός, a plant), the condition of a plant with its growth maintained entirely by its own organs, without any suspicion of saprophytism or parasitism; Holo- plankton (+ plankton), plankton of the open sea; adj. holoplanktonic; Holosaprophyte (σαπρός, rotten; φυτόν, a plant), employed by Johow for a true saprophyte, a plant which is dependent upon humus for its existence; holosericeous, -ceus, (sericus, silken), covered with a fine and silky pubescence; Holotype (τύπος, a type), the one specimen possessed by the describer of a species, and forming the basis for the original diagnosis.

Homoan'diceous (διάφανος, equal; χωρέω, I spread abroad), refers to a species confined to one formation; homalo-cladous, -clus (κλάδος, a branch), Russow’s term for straight-branching; homalotropous (τρόπος, a turning), applied to organs which grow in a horizontal direction (Noll); Homa-

Holocarpous

Homoeogamy

lotropism, is the condition; = DIATROPISM.

Homoblastic (διώς, one and the same; βλαστός, a shoot), (1) denotes embryogeny which is direct; (2) used by Goebel to express the fact that the larval and adult forms are practically the same; (3) Pfitzer employs it for those Orchids whose pseudo-bulbs consist of several internodes, only the terminal one bearing developed leaves; Homoblasty is the condition; homocarpous, -pus (καρπός, fruit), having fruit of one kind only; homocentric (κέντρον = centre. of a circle), concentric (Crozier); homoeoph'alic (κεφαλή, a head), Delpino’s term for homogamy when the anthers fertilize the stigmas of another flower of the same inflorescence; homochlamydeous (χλαμύς, a mantle), the perianth leaves all alike; Homochromaticism (χρώμα, colour), constant as to the colouring of the flower; homochromatic, uniform in colour; homoclinic, homoclinous (κλίνη, a bed), used by Delpino for that kind of homogamy when the anthers fertilize the stigma of the same complete flower; homodesmic (δεσμός, a bond), when the vascular bundles of an atactostele are of the same type (Breuer); Homodichogamy (+ DICHOGAMY), the existence of homogamous and dichogamous individuals in the same species; homodromic, homod'romal, homod'romous, -mus (δρόμος, a course), having the spirals all of the same direction; Homodromy, uniformity in direction of spirals; homodynamic (δύναμις, power), in hybrids in which the parental characters are equally transmitted (Correns); homodynamic, strength, equal in strength or vigour.

Homoean'dryous (διώς, like; ἀνήρ, ἀνδρός, a man), having only one kind of stamen: Homoean'dry, the condition of having uniform stamens; Homoeogamy (γάμος, marriage), the impregnation of an antipodal
cell, instead of the oösphere as in Balanophora (Van Tieghem); Homoeokine'sis (κινησις, motion), Grégoire’s term for homotypic meio-
sis; Homoeoli'chenes (+ LICHEN) Lichens with gonidia distributed throughout the thallus; homo-
eom'erosus (μεσοs, a rest, hyphae and gonidia more or less mixed in a lichen thallus; Hom'oeomorph'icus (μορφις, shape), similar organisms of different origin due to condi-
tions of the environment, as many species of Cactaceae and Euphor-
biaceae; Homoeomorph'y is the state; Hom'oeoplasy (πλάσις, I form), ab-
normal growth composed of normal elements; Homoeo'sis (συστηματικη, impulse), Bateson’s term for metamor-
phosis, a variation by assumption by one member of a meristic series, of the form or character proper to others; in'ward ~ outer organs taking on the structure of a whorl internal to itself; out'ward ~ assumption of form of outer organs by inner parts, as disc-flowers of Compositae becom-
ing petaloid like those of the ray; homo'et'ic, metamorphic, cf. Homo-
esis; Hom'oeotyp'e = Homotyp'e; homoetyp'ic = homotypic.

homog'amous, ~mus (μορφις, one and the same, γαμοσ, marriage), bearing one kind of flower; Homog'amy, simulta-
naneous ripeness of pollen and stigmas in a perfect flower; (1) by Delphi-no divided into homoclinic ~, homoclinc ~, or monocious ~; (2) independently coined by G. J. Romanes to express “discriminate isolation”; homogen'eal, homoge-
genet'ic, homoge'nous. (γενος, race, kind), of the same kind or nature, uniform, opposed to heterogeneous; Homogen'eis, Homogen'y, the re-
verse of Heterogen'esis; the suc-
cessive generations resembling the parent form; Hom'ogene, the condition of offspring whose parents are pure and of the same type (Lotsey); Hom'ogone (γυνας, offspring), a plant bearing only one kind of flowers; adj. homog'onous; Homog'ony, the

state of uniform respective length of anthers and stigmas in perfect flowers; homostylous; the opposite of Heterogony; Homoheterost'yly, the occurrence of similar and dis-similar styles in the same species (Warming).

homoiochlamyd'eous (δομιοσ, like; χλαμυς, a mantle) used by Engler and Prantl when the perianth is uniform; homoiog'amous (γαμοσ, marriage), adj. of the next; Homoiog'amy, the fusion of two sexual nuclei of the same kind; homoiom'erosus (μεσοs, a part), used of a Lichen thallus when the gonidia and hyphae are distributed in about equal proportions; Wallroth em-
ployed the word homoeom'eres from δομιομερησ; Homoi'o'otherms, pl. (δερμοσ, hot), plants whose vital temperatures are approximately the same as their surroundings.

homokaryot'ic (καιρος, one and the same; καρπον, a nut), spores which contain nuclei of differing sexuality (BurgeIl); Homokine'sis (κινησις, motion), homotypic mitosis (Grégoire); Homoli'cheni, a defective term for Homoeoli'chenes, i.e., Lichens with gonidia distributed generally throughout the thallus (Jatta); homol'ogous (ληγος, discourse), of one type, constructed on the same plan though varying in form and function, as leaves and parts which answer morphologically to leaves; ~ Alternation of Generations, differen-
tiation of generations which are fundamentally alike as regards descent, either in form or the char-
acter of their reproductive organs; cf. Antithetic; Hom'ologue, the equivalent of certain organs; Homol'ogy, the identity of parts apparently different homom'al'ious, homom'al'ous (Crozier). ~us (μαλλος, a lock of wool), recurved, arising from all sides but turned to one direction; homomer'ieus (μορφις, a part) = homoiom'erous; homo-

mor'phous, ~phus, homomor'phic μορφις, form), uniform in shape; Homomor'phy, uniformity, as when
Homomorphy

the disk and ray florets of Compositae are alike; either normally or by conversion of the disk florets from tubular into ligulate florets; Homono'emeae (ηυμα, a thread), formerly applied to Algae and Fungi (Henslow); Hom'onynym, Hom'onymon (δειμα, a name), (1) botanically, the same specific name in another genus of the same plant, as Myrtus buxifolia, Sw., is a Homonymyn as well as a Synonym of Eugenia buxifolia, Willd.; (2) a name rejected because an earlier application of the same name to another genus (O. F. Cooke); Homon'ymy, the possession of the same specific name under another genus; homo'go'nous (γονος, race) = anisogamous, breeding true; homo'om'erous = homoiom'erosus; Homopla'sy (πλάσια, I shape), when an abnormal growth consists of the same elements as the part whence it arises (Küster); homopet'alous (πεταλον, a flower leaf), (1) all petals being alike; (2) the receptacle of Compositae when the florets are alike, as the Ligulatae; homophy'ad'ic. homophy'ad'eus (φυν, growth), applied to those species of Equisetum, whose fertile and barren stems are similar in form; homophy't'ic, used of plants having bisexual sporophytes (Blakeslee); Homoplas'my (πλασμα, moulded), similar in form but not of similar origin, as Cacti and succulent Euphorbias; Homopla'st, correspondence in external form, but distinct in nature; adj. homopla'stic; Homopla'st'ids, pl. organisms derived from similar cells, cf. Het ero'plast'ids; Hom'oplasty, moulded alike but of different origin, analogous, not homologous, cf. Homo'plas'my; homopo'lar (πλος, a pivot), relating to the same pole; homo'pro'teid (+ pro'teid), used of plants whose leaves have sclerotic cells uniformly distributed (Vesque); Homosporan'gium (+ sporan'gium), a spore-case which develops into a bisexual prothallus, as of a Fern (Worsdell); homosporan'gic, giving rise to one sort of spore only (Blakeslee); homospo'ric (+ spora), derived from one kind only of spore (Blakeslee); homo'sporous (σπορα, seed), (1) similar-seeded, in opposition to heterosporous; (2) neutral-spored; Homostat'ic (στατις, a standing) Pe'riod, that period during which the present vegetation developed after the Pliocene formation (Tuzxo); hom'ostyled (+ style) = homo'gonous; Homostylia, homogonous plants; Homosty'ly, (+ style), the same relation of length between all styles and anthers of the same species (Axell); homo'ta'tic (τατικος, apt to arrange), when only one system of arrangement prevails in an inflorescence; homothal'amus (θαλαμος, a room, bride-chamber), defined by Lindley as "resembling the thallus, used for Lichens only"; homothall'ic (θαλλος, a sprout), monocious, applied to Mucorineae (Blakeslee); Homothalli'um, Minks's term for the medullary layer of a lichen; homother'mic (θερμος, hot), applied to firm earth or rocky soil, which absorbs heat and loses it slowly, cf. hetero'thermic; homot'ropical (τροπη, a turning), applied to organs having the same direction as the body to which they belong; homot'ropic (τροπων, direction), fertilized by anthers from the same flower (K. Pearson); homot'ropous, -μος (1) curved or turned in one direction; (2) used of an anatropous ovule having the radicle next the hilum; Homot'ropy (1) the homotropous condition; (2) Lopriore's term for secondary rootlets which branch in the same direction from the axis; it may be longitu'dinal ~, or trans'verse ~; Hom'otype (τυπος, form, type), (1) correspondence of parts; (2) in nuclear division this term is applied to those cases resembling ordinary karyokinesis, save in minor respects, immediately following the Hetero'
type, in which the reduced number of chromosomes are retained up to the formation of gametes (Farmer); (3) organs showing no trace of differentiation between one and another in function (K. Pearson); adj. homotypic, homologous; Homotyposis, the principle of the likeness and diversity of homotypes (K. Pearson); Homotypy, the condition of correspondence of parts which are in series; Homozygosity, Homozygosis, the condition of producing homozygotes; Homozygote (+ Zygot), a zygote produced by the union of gametes having similar allelomorphs (Bateson).

Honey, the sweet secretion from glands or nectaries, which acts as an inducer to insect visitors; ~ Cup, used by Withering for nectary; ~ Dew, a sweet secretion voided by aphides from the juices of their host plants; ~ Guides, lines or streaks of honey or colour leading to the nectary; ~ Leaves, nectaries such as those of Aquilegia (Potter); ~ Pot, a supposed pore or gland which secretes honey; ~ Spot = ~ Guides; Honeycomb-cells, in Diatoms, hexagonal hollows, as in Triceratium Fusi, Ehrenb.; honeycomb, alveolate.

Hood, = Cucullus; hooded, Hood-shaped (Crozier) = Cucullate.

Hook, a slender process, curved or bent back at the tip; ~ Clambers, plants which support themselves by hooks or prickles, as the bramble; hooked-back, curved in a direction from the apex to the base as the side lobes in a dandelion leaf.

Hoop, the zone or girdle of Diatoms, the connection between the valves of the frustule.

Hop meal = Lupulin.

Horalius, horary (hora, an hour), lasting an hour or two, as the expanded petals of Cistus.

Hordeaceus (Lat. pertaining to barley), shaped like an ear of barley; Hordein, a special proteid occurring in barley, Hordeum vulgare, Linn.

Horizon'tal, horizontalis (ὅρισμα, the circular boundary of vision), level; Horizon'tal Sys'tem, the cellular, as distinguished from the fibro-vascular system (Crozier).

Hormogon (Crozier) = Hormogone, Hormogonium (ὅρμως, necklace; γόνος, offspring), in filamentous Algae, those portions composed of pseudo-cysts marked off by heterocysts which become detached, and after a short period of spontaneous motion, come to rest and develop into new filaments; Hormogonium (+ Goni-ium), gonimia arranged in necklace fashion; Hormospores (ςπόρα, seed), a term used by Minks for spores which are similar in origin to stylo- or telunto-spores of Fungi, colourless, dividing into cells, microgonidia, etc., with deliquescence of the mother-cell, the microgonidia developing into heterocysts.

Horn (1) any appendage shaped like an animal's horn, as the spur in Linaria; (2) the antheridium of Vaucheria; Horn'let, (1) the male organ of Vaucheria, a papilla or projection from the filament (Cooke); (2) a little horn (Crozier); horn'ny, corneous as to texture.

Horn'bast (Ger.), a tissue of obliterated groups of sieve-tubes, specially thickened and of horny texture (Wigaud).

Horn'tinus, horn'us (Lat.), of this year, the present year's growth!; Ram'ni horn'ni, branches not a twelve-month old.

Horological (horologicus, pertaining to a clock), said of flowers which open and close at stated hours; Horologium Florae, a time-table of the opening and closing of certain flowers; see Linnaeus, Phil. Bot. 274; Kerner, Nat. Hist. Plants, ii. 215–218.

Hortensisis (Lat.), pertaining to gardens, or only found there; Hortulanus (Lat.), (1) a gardener; (2) belonging to a garden; Hortus (Lat.), a garden; ~ sic'cus, an herbarium; formerly it consisted of volumes
with dried specimens glued down; ~ vi'vus, also means HERRARIUM.

Hose-in-hose, a duplication of the corolla, as though a second one was inserted in the throat of the first.

Hospita'ting (hospes, a guest), of plants which shelter ants, as Hpyodonphylum; Hospita'rors, the plants in question (Beccari).

Host, a plant which nourishes a parasite; Host-plant, the same; Host-cells, the cells in mycorhiza of Neotilia, associated with the digestive cells (Magnus).

Hosto'rium (hostio, I requite, ex J. S. Henslow) = HAUSTORIUM.

Hov'er-fly flowers, those adapted for pollination by Syrphidae (Knuth).

Humble-bee flowers, specially adapted for the visits of species of Bombus.

hu'mi (Lat.), in or on the ground.

humic'ular, Beccari's term for sAPROPHYTIC; Humifica'tion, the reduction of dead plant substances to humus by Fungi (Beyerinck).

hu'mifuse, humi'fusus (humus, the ground; fusi us, spread), spread on the surface of the ground; humi'stra'tus, (status, stretched out), laid flat on the soil.

hu'milis (Lat.), lowly.

Hu'mor (Lat., moisture) = SAP.

Hu'mulin, the oleoresin of the hop, Humulus Lupulus, Linn.

Hu'mus (Lat., the ground), decomposing organic matter in the soil; ~ Plants = SAPROPHYTEs; ~ Soils, garden soils enriched with organic manure.

Husk, the outer covering of certain fruits or seeds; husk'less, wanting the usual outer covering, as in certain forms of barley, walnuts, etc.; husk'ky, abounding with or consisting of husks.

Hyacin'thine, hyacin'thus, hyacin'thinus (hydrate,os, hyacinth-coloured), (1) dark purplish blue; (2) hyacinth-like in habit, a scape bearing spicate flowers.

Hyales'cent (glare, of glass), "something hyaline" (Crozier); hyalic'olor (color, colour), wanting in colour; hy'aline, hyali'num, colourless or translucent; ~ Ar'ea, the smooth part of a diatom-valve.

Hyaloid'yeae (dalaos, crystal; die'tov, a net), Fungi having translucent muriform or netted spores (Traverso); Hyaloid'id'ymeae, Didymosporae with clear spores (Traverso); Hy'al'om = HYALOPLASMA; Hyalopla'sma (pi'daire, moulded), the hyaline matrix or clear and non-granular portion of protoplasm; by some restricted to the ECTOPLASM; Hy'alo'somes (os'ma, a body), colourless granules which do not take up stains: Hyalops'o'reae (+ Spora), having colourless spores like Laestadia (Traverso); Hyalo'staur'ae (staur'des, a pole or cross), Fungi with cruciate spores destitute of colour (Traverso).

Hyber'nacl'e, Hyberna'culum = HIBERNACULUM.

Hyberna'lis = hIBERNA'lis.

Hy'brid, Hyb'rida (Lat., a mongrel), a plant obtained by the pollen of one species on the stigma of another; bi'sex'ual ~, when the offspring shows the character of the parents combined in pairs (Clements); de'riv'ative ~, when crossed with each other or a parent; double ~, cf. DIHYBRIDIZATION; double-reci'procal ~, the crossing of reciprocal-hybrids; false ~, FALSE-HYBRIDISM; graft ~, reciprocal influences of scion and stock on each other; heterodynamics ~, showing the characters of male and female parents in varying degree; homodynamics ~, showing equal combination of the characters of both parents; mos'ai'c ~, showing traces of each parent, as special colour patches; reciprocal ~, obtained from the same parents, but transposing the male and female elements; secon'dary ~, crossed with a hybrid; sesquireci'procal ~, when a hybrid is crossed with one of the parental types;

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twin ~, hybrids identical but from reciprocal sources; unisexual ~, when a certain character found in one parent does not occur in the other (Clements); Hybrid'ity, Hyb'riddias, crossed in parentage; Hybridiza'tion, (1) the art of obtaining hybrids by artificial crossing; (2) also used for the same operation occurring naturally; Hy'bri'diform (~ Form), a hybrid between Fini'forms (Kuntze); Hybridoprol'iform (proles, offspring), a fertile hybrid of Hybridofor'ms (Kuntze); Hyb'riddog'amy (γάμος, marriage), hybrids between different species; Hybrid'ology (λόγος, discourse), the science of hybridizing.

Hy'dathode (ὅδωρ, water; ὅδος, a way), Haberlandt's term for water-pore or water-gland, an organ which extrudes water or other liquid; it resembles a stoma with functionless guard-cells; sub'stitute ~; cf. Ωδεμάτα; Hydatophyti'α, pl. (φυτά, a plant), submerged forma'tions (Diels); Hydracel'ulose (+ Cellulose), see Cellulose (Clements); Hy'drad (+ AD), a hydrophyte (Clements); Hydral'gae (+ Algae) = Hydrophy'tes; hy'drarch (~αρχή, beginn-ing), applied to successions from ponds or lakes by growth of plants; Hy'dras, the "wet form" of a species (Clements).

Hy'drastin, an alkaloid found in Hydrastis canadensis, Linn.

Hy'drate (ὅδωρ, water), a compound containing a definite proportion of water in chemical combination; Hyd'rATION, the act of becoming chemically combined with water; hy'dric, pertaining to water; hydro-car'pic (καρπός, fruit), used of aquatic plants which are fertilized above the water, but withdraw the fertilized flowers below the surface for development, as in Vallisneria; Hydrocar'py, the condition described; Hydrocell'ulose, see Cell'u-lose; Hydroch'arid Formation, macrophytes such as Hydrocharis floating on or in the water; Macro-plankton; Pleuston; Hydro-ch'ious (ψευδός), winter, used for plants adapted to a rainy winter (Drude); Hy'drochore (χωρός, asunder), a plant distributed by water (Clements); hydrocho'rio, dispersed by water, rivers or floods; Hydro-cleistog'amy (+ CleistogAMy), when flowers do not open in consequence of submersion (Knuth); Hy'dro-chrome (χρώμα, colour), used by Nadson for the pigments of Russula and Amanita muscaria, Fr.; hydrodynamic'ic (δυναμική, power), used for the action of tides and waves in distribution; Hy'drogams, (γάμος, marriage) = CryptogAMS; Hydrochar'mose (ἀρως, I join together), response to water stimuli (Clements); Hy'droid (εἶδος, like), Potonié's term for a water-conducting strand in aerial stems; a tracheid, cf. Hydrome; hy'droger (gero, I bear), water-bearing, as hydro'gera V'ā'sa, threads in a spiral vessel which were formerly supposed to convey fluid; hy'drolated, combined with the elements of water, by Hydrola'tion; Hydroleu'cide (+ LEUCIDE), Van Tieghem's term for vacuoles in cell-sap, which he further subdivides into tanniferous ~, oxaliferous ~, coloured ~, albuminiferous ~, in accordance with their production of tannin, oxalates, colouring matter, or aleurone; Hy'drolist, cf. Cytohydrolist, Proteohydrolist; hy'drolized, (λύσις, a loosing), chemically decomposed by taking up the elements of water; Hydrolysis, the act of being hydrolysed; Hy'drolyst = Hydrolist; Hy'drolyte, the substance which undergoes fermenta'tion (A)μιστρόν; hydrolyt'ic, causing hydrolysis; Hy'drome, the hydral or water-system of a vascular bundle, cf. Hadrome; water-conducting tissue in stems, particularized into ~cyl'inder, conducting vascular tissue supplying water; ~man'tle, composed of elements identical with the hydroids of the leaf-traces; ~sheath, a separation-
layer between HADROME and LEPOME: ~stele, = -CYLINDER; ~ste'reome or ~strand, a unit of the water vascular tissues (Tansley and Chick); Hydromeg'atherm, (μεγα, great; θερμ, heat), Warming's term for a plant which needs much heat and moisture, as the natives of most tropical regions; Hydromor'phosis, Hydromor'phy (μορφωσις, a shaping), structural peculiarities induced by being submerged (Herbst); Hydronas'ty (ναστός, pressed), curvatures produced by changes in fluid relationships in the tissues; adj. hydronas'tic; Hy'drone, the simple fundamental molecule of which water is composed (Armstrong); Hydrophy'lae (φυλα, I love), (1) water-pollinated plants; (2) = Cryptogams; hydrophy'lous (φυλός, I love), (1) some aquatic Phanerogams, and many Cryptogams which need water in order to be fertilized; (2) dwelling in wet land or water (Clements); ~Fun'gi, refers to those Fungi which are allied to Stenopelagia; Hy'drophyll (φυλλο, a leaf), the leaf of a hydrophyte (Clements).

Hydrophylla'ceous, pertaining to Hydrophyllum or its allies.

Hydrophy'tes, Hydrophy'ta (υδρο, water; φυτον, a plant), water-plants, partially or wholly immersed; Hydrophy'tium, a plant association of bog and swamp plants; hydrophy'tic, relative to Hydrophytes; Hydrophy'tol'ogy (λογος, discourse), a treatise on water-plants.

Hy'dropic (υδροπικος, dropsical), Cells, certain enlarged cells in Cyanophyceae (Brand).

Hy'droplast (υδρο, water; πλαστος, moulded), an apparent vacuole in which aleurome-grains arise: Hydroplast'id,s, pl. Van Tieghem's term for apparent vacuoles in the endosperm of the seed of Ricinus; Hydrople'lon (πλοιον, full, = an aggregate of molecules, but smaller than a micella), water of crystallization; hydrostat'ic (στατικος, standing), "completing the succession under hydrophytic conditions" (Clements); Hydroste'reids (στερεός, solid), prosenchymatous thick-walled elements, with conspicuous pits, but without spiral thickening on the walls (Haberlandt); Hydroste'reome, transverse, the transverse parenchyma of Podocarpus and Cypress (Bernard); Hydrotax'is (ταξις, order), creeping from dry to moist situations, as plama (Verworn); adj. hydrotact'ic; Hydrotribi'um (τριβιον, grinding), "bad lands" formation; hydrotriboph'ilus (φιλεω, I love), dwelling in bad lands; Hydrotribo'phyta (φυτον, a plant), bad land plants (Clements); Hydrotro'phy (τροφη, food), unequal growth caused by unequal supply of moisture on one side of a part (Wiesner); hydrotro'pic (τροπη, a turning), (1) unequal growth due to difference in the supply of moisture; (2) applied to successions which become mesophytic (Clements); Hydrotro'pism, the phenomena induced by the influence of moisture on growing organs; positive ~, turning towards the source of moisture; negative ~, turning away from moisture.

Hy'e'mal, hy'emalis (hiemia, winter) - hemalis, pertaining to winter.

Hygrocha'stic (υγρος, moist; χαιμω, I yawn), applied by Ascherson to those plants in which the bursting of the fruit and dispersion of the spores or seeds is caused by absorption of water, as in Anastatica hierochuntica, Linn.; Hygroch'asy, the act in question; Hygro dif'usion, the taking in of moist air by diffusion, and its subsequent extraction from looser tissue of the leaf (Olmo); Hygrodrimi'um (δρυμος, a copice), a tropical forest formation (Diels); hygromet'ric (μετρητος, a measure), moving under the influence of more or less moisture, hygrometric; Hygromor'phism (μορφη, shape), (1) form determined by moist surroundings; (2) the state of little water absorption and equally little evaporation (Drude); adj. hygromor'phic.
hyperchromatic

hygrophanous (φαλν, I appear), looking watery when moist, and opaque when dry (Cook); Hygrophilaee (φιλέω, I love), moisture-loving plants; hygrophile, hygrophilous, pertaining to Hyrophytes; Hygrophorbiu'm (φορβή, pasture), low moor formation (Diels); hygrophorous, water-bearing, or saturated with it; applied by Spruce to certain Hepaticae: Hygrophytes (φυτόν, a plant), marsh-plants, or plants which need a large supply of moisture for their growth; Hygrophytia, formations of hygrophytes (Diels); Hy'groplasm (πλάσμα, moulded), Nägeli's term for the fluid portion of protoplasm; cf. Stereoplasm; Hygropoi'um (πόια, grass), meadow formation (Diels); hygroscopic (εκφυτέω, I see), susceptible of extending or shrinking on the application or removal of water or vapour; ~ Cells, certain cells in the leaves of grasses which cause them to alter in shape in dry weather, known also as bulliform cells; Hygroscopic'ity, Hygroscopic'itas, the hygroscopic property; Hygrophagni'um (Sphagnum, bog-moss), high moor (Diels).

Hy'lad (Ἑλέ, forest; + AD), a forest plant; Hyli'um, a forest formation; hyloc'o1a, dwelling in forests.

Hylocomnio'sus, mossy, composed of Hypnum and similar Mosses as a formation (Nilsson).

Hylo'dad (+ AD), a plant of the following; Hylo'dium (φυλωθης, wooded), pl. -ia, dry open woodland formations; hylo'doph'ilus (φιλέω, I love), dwelling in dry woods; Hylo'dophy'te (φυτόν, a plant), a dry woodland plant.

Hylo'gamy (Ἑλέη = material; γάμος, marriage), the fusion of a sexual with a vegetative nucleus; Hy'loids (ελόσ, resemblance), crystals in Goutania leaves suggesting logs of wood as to shape; hyloph'ilus, dwelling in forests; Hylophy'ta, pl., forest plants (Clements); Hy'lophylte (φυτόν, a plant), a plant which grows in woods, usually moist; adj. hylophyt'ic.

Hy'lus, Hyl'um = Hilleum.

Hy'men (ὑμήν, a membrane), a skin or membrane; hy'menial (1) pertaining to the Hymenium; (2) relating to the reproductive organs in certain Cryptogams; ~ Al'=ga, the algal cell in a sporocarp in Lichens, also termed ~ Gonid'ium; ~ Lay'er = Hyme'nium, an aggregation of spore mother-cells in a continuous layer on a sporophore, the sporiferous part of the fructification in Fungi; hymenodes (ελός, like), having a membranous texture; Hymenoli'chen (+ Lichen), a term devised by Mattirolo for a Lichen which is symbiotically associated with a hymenomyce'tous Fungus; hymenomyce'tous (μύκης, a mushroom), having the hymenium exposed at maturity, the spores borne on basidia; Hy'menophore, Hymeno'phor'iun (φορέω, I carry), in Fungi that part which bears the hymenium, the sporophore; Hy'menopode, Hymenopo'dium (πόος, πόδος, a foot), Fayod's name for the hypothecium; hymenopt'eric Flowers, those which can be pollinated only by Hymenopt'er's, e.g. Leguminosae; Hym'e'nulium, a disc or shield containing asci, but without an excipulum.

Hyoscy'a'min, an alkaloid contained in henbane, Hya'cyamus niger, Linn.

Hypalle'lo'morph, (=, under; + Al'lelo'morp), the constituents of compound allelo'morphs (Bateson).

Hypan'thiun, Hypan'thodium (ανθος, a flower), an enlargement or development of the torus under the calyx; a syconium.

Hyperanisog'amy (ὑπέρ, above; ἀνίσος, unequal; γάμος, marriage), the female gamete, at first active, and much larger than the male gamete (Hartog); cf. Oog'amy; hyperbor'ean, hyperbor'eous (Βορέας, the north wind), northern; Hyperchimae'a(α = Chi'maea), a graft-hybrid resembling a true hybrid intermediate between its parents (Strasburger).

hyperchromatic (ὑπέρ, above; χρωματικός, suited for colour), readily
susceptible of taking colour, or intensified colouration; **Hypnothallas** (δρόμος, a course), when anadromous and catadromous venation occurs on one side of a Fern-frond (Prantl); **hyperhymic**, Küster's expression for an outlet or overflow for water in tissues; **hypermic**, defined as when the ovary of one plant receives pollen from another of a flower of the same or a second plant, while the ovary of the latter flower receives pollen from another associated with the first ovary" (K. Pearson); **hypermic**, the condition in question; **hypoplasia** (πλάςσω, I shape), an abnormal growth of tissue due to undue cell-division (Küster); adj. **hypermic**; **hyperstomatous**, having the stomata on the upper surface of the leaf; **hypertrophic** (τροφή, food), morbidly enlarged; **hypertrophy**, an abnormal enlargement of an organ, presumably by excess of nourishment; **hypertrophic** (φυτόν, a plant), a term employed by Wakker for those parasitic Fungi which cause hypertrophy in the tissues.

**Hypha** (φυτόν), a web), pl. **Hyphae**, element of the thallus in Fungi, a cylindric thread-like branched body developing by apical growth and usually septate; **Sieve** ~, or **Trumpet** ~, a special form found in Algae, bulging at each septum (F. W. Oliver); **hyphal**, relating to hyphae; ~ **Bodt**ies, short thick hyphae in certain Fungi, which produce fructifying hyphae or conidiophores (Thaxter); ~ **Tissue**, interwoven hyphae, constituting the tissues of the larger Fungi.

**Hyphalmyric** (~plankton) (φυτόλαμπρος, somewhat salt, + plankton), the floating organisms of brackish water (Zimmermann).

**Hyphasma** (φυσαμα, a web), the thallus of Agarics.

**Hyphema** (φυτημα, a web), used by Minks for the hyphal layer in Lichens; **Hyphenchyma** (~γχυμα, an infusion), tissue of felted hyphae; **Hyphidium**, a term proposed by Minks for Spermatium; **hyphodromous**, ~mus (δρόμος, a course), used when the veins are sunk in the substance of a leaf; and thus not readily visible; **hymunces** are Fungi imperfecti; **hyphomyces** (mikis, a mushroom), applied to Fungi bearing their spores on simple or branched hyphae; **Hyphophode**, Hyphophodium (πούς, πόδος, a foot), appendages on the mycelium of Meliola which bear the perithecia (Gaillard); **Hyphostroma** (στρώμα, spread out), the mycelium of Fungi; **Hyphothallium** (θάλλας, a sprout) = **Hypothallus**.

**Hyphysogamiea** (~πυως, ~δωρ, under; ~δωρ, water; γάμος, marriage), plants whose flowers are fertilized under water, a ~ *Naia* (Knuth); **Hyphysogamy**, the condition specified.

**Hyphallium**, a plant-association composed of Mosses, especially of *Hymenium*, and its allies.

**Hyphonicst** (~πυως, sleep; κώστις, a bag or pouch), in Pediastreae, etc., a dormant stage assumed when the conditions for growth are unfavourable; **Hypoplasia** (πλάςσω, moulded), the protoplasm of a dormant individual, as of a seed, cf. Necroplasm; **Hypnoplasia** (πλάςσω, I shape), arrested development due to various inhibiting reactions, which prevent the cells or tissues attaining normal size (Küster); **Hypnosia**, the state of dormant vitality shown by seeds whilst still retaining their power of germination (Escombe); **Hyphosporium** (σπέρμα, a seed), the winter state of the zygospore of Hydroidictyon, **Hyphosporange**, **Hypnosporangium** (~Sporangium), a product of the modification of the root of Botrydia, a sporangium which produces zoospores after a resting period (Rostafinski); **Hyphospore**, a resting spore; **Hypnote**, an organism in a dormant state; **hypnotic**, dormant, not dead, as in seeds; **Hyphothallus** (θάλλας, a young branch), Chodat's term for...
growth by cell-division from hypocyts, as in \textit{M. nostrum}; \textit{Hyphozygote} (+ \textit{Zygote}) a dormant zygote or union of two sexual cells (Hartog).

\textit{Hy’poachene} (\&\textit{\orig}, under; + \textit{ACHENE}), an achene from an inferior ovary (Villari); \textit{Hyposacdgium} (+ \textit{Ascidium}), a funnel-shaped growth, the inner surface corresponding with the lower surface of the metamorphosed leaf (C. de Candolle); \textit{hypobas’al} (\textit{Basis}, a pedestal), behind the basal wall, employed as regards the posterior half of a proembryo; \textit{cf. epibasal}; \textit{hydr’oblast} = \textit{hydr’oblastus} (\textit{Basistr}, a shoot), the fleshy cotyledon of grasses; \textit{Hypocarp’ium} (\textit{Karpos}, fruit), an enlarged growth of the peduncle beneath the fruit, as in \textit{Anacardium}; \textit{hypocarpo’genous}, -\textit{genus} (\textit{Karpos}, fruit; \textit{γανθ}, the earth), = \textit{hydr’oblastus}; \textit{hypocarpo’genous} (\textit{γανθ}, offspring), the flowers and fruit produced underground (Pampaloni); \textit{cf. Myrhi’carpogenous}; \textit{Hy’pochil, Hyphochil’ium}, \textit{Hyphochil’is} (\textit{xeilos}, a lip), the basal portion of the labellum of Orchids; \textit{Hyphochlor’in} (\textit{χιλρα}, light green), Pringsheim’s name for a constituent of chlorophyll corpuscles, supposed to be the first visible product of constructive metabolism; \textit{Hyphochrom’yli} (\textit{xrωμα}, colour) = \textit{Hyphochlo’rin}; \textit{Hyphocor’pula} (+ \textit{Cor’pula}) the lower or intermediate band of cell-wall in the lower and smaller valve of certain Diatoms; \textit{Hyпоcot’yl} (+ \textit{Cotyledon}), the axis of an embryo below the cotyledons, but not passing beyond them; adj. \textit{hydr’ocotylar}; \textit{hydr’ocotyle’donary}, below the cotyledons and above the root; \textit{hydr’ocrate’iform, hydr’ocrateriform’is} (\textit{krap’th}, a bowl; \textit{forma}, shape), salver-shaped, as the corolla of the Primrose, \textit{Primula vulgaris}, Huds.; \textit{hydr’ocraterimor’phous, -phus} (\textit{μορφ}, shape), salver-shaped; the same meaning as in the last, but derived wholly from the Greek; \textit{Hyp’oderm} = \textit{Hyponder’ma}, \textit{Hyponder’mis} (\textit{έπιμα}, skin, hide), the inner layer of the capsules of Mosses; \textit{hypoder’mal}, beneath the epidermis; \textit{~ Cell}, the apical cell of the nucellus giving rise to the embryo-sac; \textit{hypoder’mic Zone}, Bastit’s term for structure described by him in the scales of the rhizome of certain Mosses distinct from the bundle in the midrib; \textit{hydr’oga’eous, -cus, hydr’oga’al, hyponder’gan} (\textit{γανθ}, the earth), growing or remaining below ground, as certain cotyledons, as in the Pea; \textit{hydr’ogenous} (\textit{γανθως}, offspring), produced beneath; \textit{hydr’ogenous, -nus} (\textit{γανθως}, a woman), free from but inserted beneath the pistil or gynaeceum; \textit{Hyponder’gan}, the condition of possessing hypogynous flowers; \textit{hydr’olith’ie} (\textit{λεθος}, a stone), growing beneath stones.

\textit{hydr’omenous, -us} (\textit{υπομενωνα, I stay behind}), free, not adherent, arising from below an organ without adhesion to it.

\textit{hydr’onic’lia} [sic, possibly a misprint for “\textit{hydr’omyelia}” from \&\textit{\orig}, under; + \textit{Mycelium}], “the mycelium of certain Fungals” (Lindley); \textit{hydr’onas’tic} (\textit{ναςτος}, close pressed), (1) used of a dorsiventral organ in which the ventral surface grows more actively than the dorsal, as shown in flower expansion; (2) by Van Tieghem employed for anatropous or campylotropous ovules when the curvature is in an upward direction; \textit{hydr’ona’sty}, the state in question; \textit{Hyponder’ny} (\textit{νωμα}, name), a name to be rejected for want of an identified type; \textit{hydr’opyg’amy} (\textit{ωνως, an egg; γαμος, marriage}), a shortened form of \textit{hydr’anisogamy}; \textit{hydr’opel’tate} (+ \textit{pel’tate}), applied to a phylloch having the base of the limb on the inferior face; \textit{cf. epipel’tate} (C. de Candolle); \textit{hydr’ophole’odal, hydr’’phloe’odeic} (\textit{φλοιος}, bark), applied to Lichens when growing under the epidermis of the bark; \textit{hydr’ophyll, Hyphophyl’ium} (\textit{φύλλον}, a leaf), (1) an abortive leaf or scale under another leaf or leaf-like organ, as in \textit{Ruscus}; (2) also used for the lower portion
of the leaf from which stipules develop, adherent to the axis and ultimately forming the leaf-scar; **hypophyllop’dous** (πόνος, a foot), radical leaves present when flowering, but not numerous; used of certain *Hieracium*; cf. *physlop’dous*; **hypophyll’ous**, -lus (φύλλον, a leaf), situated under a leaf, or growing in that position; Hy’po-physye, ~ Cell = Hypoph’ysis (φυσις, I grow), the cell from which the primary root and root-cap of the embryo in Angiosperms is derived; adj. hypophys’ial; Hy’po- plasey (πλάσις, I mould), defective development due to insufficient nourishment, and consequent cessation of growth (Kü-ter); adj. hypoplas’tic; Hypopli’e’ra (πλευρά, a rib), the inner half-girdle of the frustule of a Diatom (O. Mueller); Hypopod’ium (πούς, πόδος, a foot), the stalk of a carpel; hypopor’ticoid (+ proteoid), use of plants having sclerotic cells on the lower surface of their leaves (Vesque); Hypop’t’aes † (πτερον, a feather or wing), a wing growing from below, as the seed of a Fir-tree; hypopter’a’tus, † having wings produced from below; Hypo- sath’ria (σαθρός, rotten), the state of secondary ripening styled bletting, as in medlars; Hy’posperm (σπέρμα, a seed), the lower part of an ovule or seed, below the level where the integument becomes free from the nucellus (F. W. Oliver); Hypo- sporan’gium (σπόρα, a seed; ἄγγειον, a vessel), the indiumus of Ferns, when proceeding from below the sporangia.

Hy’postase (ὑποστάσις, a support), a disc of lignified tissue at the base of the ovule in certain orders (Van Tieghem).

Hy’postasis (ὑπό, under; στάσις, a standing), (1) the suspensor of an embryo; (2) a unit-factor concealed or inhibited (Bateson); adj. hypostat’ic; cf. Epistasis; Hy’postata = Hypospem; hypostomat’ic, hypostom’atous (+ Stoma), with the stomata on the under surface; Hypostom’ium, cells forming the lower portion of the stoma of the annulus of a rupturing sporangium in the Ferns; Hypostro’ma (στρώμα, spread-out) (1) = My- celium; (2) the stroma at the base of the fructification only (Traverso); hypotet’rarch (+ tetra’arch), in a triarch stele, the division of the median protoxylem; hypothal’line (θάλλος, a young branch), relating to the hypothallus or resembling it; hypothallin’ic, situated beneath the thallus of a Lichen; Hypo- thal’ium, Areschoug’s term for the basal rhizoidal layer in caleareous algae; Hypothal’ium, the marginal outgrowth of hyphae in crustaceous Lichens; Hypotheca (θηκη, a case), the inner half-frustule of a Diatom (O. Mueller); hypotheca’l, belonging to the hypotheca of a Diatom; Hy’potheca = Hypothec’ium, a layer of hyphal-tissue immediately beneath the hymenium in certain Cryptogams; hypocri’arch (+ triarch), when in a triarch stele, the median protoxylem group is lowermost (Prantl); Hypotrophy (τρόφος, food), Wiesner’s term when the growth of cortex or wood is greater on the lower side of the branch; also when buds or stipules form on the lower side; adj. hypotrop’ous; Hypoval’va (valva, a door), the valve of the inner “shell” or hypotheca of a Diatom (O. Mueller); Hypoxan’thin (ξανθός, yellow), a substance akin to xanthin, which has been found in germinating seeds.

Hyp’si’un, or Hyp’sion (ὑψι, high, aloft), a succession of plants by elevation (Clements); Hyp’sophyll (φύλλον, a leaf), a bract of the inflorescence, a reduced or modified leaf towards the upper end of a shoot; cf. Cataphyll; Ger. Hochblatt; hyposophyll’ary, relating to bracts; ~ Leaf, a bract.

*hs’ginus* (ἡσ’γήνος), a red colour, or dark reddish pink.
hysteran'thous, -thus, -this (ὑστερός, following; ἀνόδος, a flower), used of leaves which are produced after the flowers, as in the Almond; hystero-ge'netic = hystero-ge'nic (γένος, race, offspring), used of intercellular spaces which are formed in the older tissues; hystero-lysi'genic (λύσις, a loosing; γένος, offspring), when a cavity is ultimately formed by the dissolution of cells; Hys'terophyme (φυμ, a tumour or excrescence), (of cells), Hysteroste'le (ὑστεροστήλη, a stalk), glandoid;
Hysterophyte (πτέρυγων, a plant), fungoid; Hysterophyte, a plant which lives upon dead matter; a saprophyte; Hysteroplas'ma (πλάσμα, moulded), Nägeli's term for the more fluid part of Protoplas'ma; Hysteroste'le (-stelle), a stele which is supposed to be reduced in structure, as in Hippuris and Potamogeton (Brebner).

Hystre'tia (ὑστερίτης, the matrix), a synonym of Carpel.

i'anthi'nus (ἰανθων, violet colour), bluish purple, violet.
icyed, having a glittering papillose surface, as Mesembryanthemum crys-tallinum, Linn.
Ichneu'mon Flowers, those which are specially visited by Ichneumonidae.
I'cones, pl. (icon, εἰκών, a figure), pictorial representations of plants; botanic figures.
icosa'heldral (εἴκοσι, twenty; ἑδρα, a seat or base), having twenty sides, as the pollen-grains of Tragopogon; icosa'nder, icosa'ndrous, -rous (ἀνθρ, ἀνδρός, a man), with twenty or more stamens; Icosan'dria, a Linnean class of plants with twenty stamens or more, inserted on the calyx.
I'cotype (εἰκών, what is like), types serving for identification, but not previously used in literature.
icter'i'cus (Iat.), icteri'nus (ἰκτερικός, jaundiced), the colour of a person suffering from jaundice, impure yellow.
I'cterus (Lat., a yellow bird), vegetable jaundice; a form of Chlorosis shown by yellowness.
Id (ίδος, suffix implying paternity), an hereditary unit recognized in granules and chromosomes; I'dant, a serial complex of id's, Weismann's term for Chromosome.
'idéal (идеал, existing in idea)
An'gle = Angle, Ideal.
Identifica'tion, used for Determination (Crozier).
Id'eotype, cf. Idio'type.
-i'des, -i'deus (εἴδος, like), a suffix in Greek compounds denoting similar; cf. -o-ides.

idicandros'por'ous (ἰδίος, peculiar; + Andro'spore), when dwarf-males of Oedogoniaceae are produced from zoospores contained in certain cells of neuter individuals (Wittrock);
Id'ioblast (βλαστός, a bud or shoot),
(1) a special cell in a tissue which markedly differs from the rest in form, size, or contents, as the "stellate-cells" in Nymphaeae;
(2) used by Hartwig for Pangen, a unit of hereditary substance, a biophore; ol'eoid ~, long sinuous sclerenchym cells, occurring in Olea; prot'eoid ~, similar cells in Protea;
Idiochro'mosome (+ Chromosome), special chromosomes believed to convey sex-tendency (Wilson);
Idiochro'mid'a (pl. (+ Chromidia), generative chromidia; idio'gynus (γυνη, a woman), not having a pistil;
Idiomer'es, pl. (μέρος, a part), structures evolved during the resting stage in nuclear division, and believed to be the sexual elements of the resultant nucleus; Idio-'morph'osis (μορφώσις, a shaping), a special kind of metamorphosis, as the petals of Camellia, from bundles of stamens, or petaloid sepals of Polygalva (Delpino); Idio'plasm (πλάσμα, moulded), Nägeli's term for the active organic part of the protoplasm, identified with Chroma'tin; Id'ioplast (πλαστός,
Idioplast

moulded), employed by F. S. Lloyd for Idioblast; a cell with special contents; Idiosome (σώμα, a body), a hypothetical ultimate unit of the cell, a biophore; idiobalthamous, idiobalthanneus (θάλασσος, a bedroom), having different coloration from the thallus, a term in lichenology; Idiometer (τέπας, a monster), Gubler's term for a monstrosity which is peculiar to the individual; cf. Taxis, Idiotery; Idiotype (τύπος, a type), a specimen identified by the describer, but not from the original locality; idiotypic, sexual (Radikofar); the condition is Idiotypic; cf. Zeotropic.

Igneous (Lat., fiery), flame-coloured, used for combinations of red and yellow, or brilliant in tone.

Igniorius (Lat., pertaining to fire), of the consistency of German tinder, derived from puff-balls.

-Ile, suffix to denote Society, as Iridile for a society of Iris (Clements).

Illegitimate, fertilization in dimorphic or trimorphic flowers so termed, when occurring between parts of diverse length, as long with short, etc.

Imberbis (Lat.), beardless, devoid of hairs.

Imbibition (imbo, I drink in), the act of imbibing; ~ Theory, Sachs's suggestion that water ascends in plants by a chemical process in the cell-walls, and not by actual passage upwards by vessels; ~ Water, the amount which occurs in organic bodies (Warming).

Imbricate, imbricated, imbricatus (Lat., covered with gutter tiles), (1) overlapping as the tiles on a roof; (2) in aestivation, used of a calyx or corolla where one piece must be wholly internal and one wholly external, or overlapping at the edge only; imbricative is a synonym.

Immarginate, immarginatrus (im = not; margo, marginis, a border), not margined or bordered.

Immediatus (Mid. Lat., not mediate), proceeding directly from a part, as pedicels of a raceme.

Immersed, immersus (Lat., plunged), below the surface; (1) entirely under water; (2) embedded in the substance of the leaf or thallus.

Immobilie, immobilis (Lat.), immovable, as many anthers; opposed to versatile.

Immotilflorae (immotus, motionless; flos, floris, a flower), Delpino's term for wind-fertilized plants whose flowers are steadily fixed.

Immutatus (Lat.), unchanged, as the phyllaries of Hieracium after flowering.

Imparipinnate, ~ pinnatus (impar, unequal; + PINNATE), pinnate with an odd terminal leaflet.

Imperfect, imperfectus (Lat., incomplete), where certain parts usually present are not developed; as a flower may be imperfect, that is, unisexual.

Impertorate (in, into; per, through!); foratus, bored), without an opening, closed (Crozier).

Implexus (Lat., an entwining), entangled, interlaced.

Implicatus (Lat.), entangled, woven in.

Impregnating Tube, an outgrowth from the antheridium of Puihiun, which penetrates the periplasm to the surface of the oosphere.

Impregnation (im = in; praegnatus, pregnancy), fertilization, the union of male and female elements; generative ~, the fusion of the generative nucleus with the egg; vegetative ~, Strasburger's term for the fusion of the polar nuclei, either with each other or with one of the generative nuclei.

Impressus (Lat., pressed into), marked with slight depressions.

Impubes, not mature, as impubes

Aetus, the period before impregnation.

Inadhering (inadherens, not clinging), free from adjacent parts.

Inaquilis (Lat.), unequal in size; inaquimagines, magnus, large), not the same in size; inaequilaterals, inaequilateralis, inaequilateris
(latus, lateris, a side), unequal sided, as the leaf of Begonia; inaequilateral, as the leaf of Begonia; inaequinerious (nervus, a nerve), when the veins are of dissimilar size; inaequivalvate, inaequivalvular (valva, a door-leaf), used of the glumes of plants which show inequality in their constituent valves.

inane', inanis (Lat.), empty, void; as an anther containing no pollen; Inanitio, the condition of green cells induced by want of oxygen and consequent loss of power of assimilation (Pringsheim).

inan’therate (Crozier) = inanthera’tus, (in = not; + Anther), having no anther; said of abortive or sterile filaments.

inappendiculate, inappendicula’tus (in = not; appendicula, a small appendage), without appendages; inapert’us (apertus, opened), not opened, contrary to its habit.

Inarching, grafting by approach, the scion remaining partly attached to its parent, until union has taken place.

inarticulate, inarticu’latus (Lat., indistinct), not jointed, continuous.

incanescent, incanesce’sens (Lat., turning hoary), becoming grey, canescent.

incan’tus (Crozier) = incan’tus (Lat.), quite grey, hoary.

incarnate, incarnatus (Lat., clothed in flesh), flesh-coloured, “carneous.”

Incisio, Incisio (inceptio, a beginning), suggested rendering of the German “Anlage.”

Inch, an English measure, equaling 2.54 cm.; in Latin, unia, unciatis.

incised, incisus (Lat., cut into), cut sharply into the margin; incisedanta’tus, slashed toothed; ~ serr’at’us, deep-sliced serrations; Inci’sion, Incis’io, an indentation on the margin of a foliar organ.

inclining, inclin’d (inclinatus, bent down), falling away from the horizontal direction.

inclined, inclin’us (Lat., shut in), not protruding beyond the surrounding organ; includen’tia Fo’lia, applied to alternate leaves which

in the sleep-position approach buds in their axils, seeming to protect them as in Sida (De Candolle).

Incog’nit (incognitus, not examined). Used by H. C. Watson for those British plants whose nativity or distribution are matters of doubt.

incomplet’e, incompletus (Lat., not finished), wanting some essential part; Incomple’tae, usually synonymous with Monochlamydeae, but variously circumscribed by different authors.

incompressible (in = not; compresso, I press together), “offering resistance to compression” (Drummond).

inconspicuous, -eus (Lat., not remarkable), not readily seen from small size or lack of colour.

incras’ate, incrassatus (Lat., thickened), made stout, as the leaves of house-leek.

increasing = accrescent; increse’nt (increso, I grow), growing (Crozier).

Incrusta’tion (Incrustatio, an encasing), fossils encased in mineral substance, with the actual tissue wanting; casts which give impressions of markings or cavities, but show no organic structure.

Incrust’ing, incrusta’tus (Lat., coated), (1) used of seeds so firm in their pericarp as to seem one with it; (2) encrusted with earthy matter.

Incubation (Incubatio, a brooding), the time from the moment of infection, or sowing of spores, until growth is manifest.

incubous, -bus (incubo, I lie upon), the oblique insertion of distichous leaves, so that the lower overlap the upper on the same side of the stem on the dorsal surface, as in Bazzania; cf. succubous.

incumbent, incumbens (Lat., leaning on), resting or leaning upon, proculent; ~ An’ther, one which lies against the inner face of its filament; ~ Cotyle’dons, when the back of one lies against the radicle, shown as || o.

incurred, incur’vus; incur’vate, incur’vatus (incurvus, bent), bending from without inwards.
indeciduous (in = not; deciduous, cut or lopped off), evergreen or persistent foliage (Crozier); indefinite, indefiniteus (Lat., not precise), (1) uncertain or not positive in character; (2) too many for easy enumeration, as an abundance of stamens, denoted by the sign \(\infty\); (3) in an inflorescence, when racemose, the main axis being capable of constant extension; ~ Growth, continuous growth and not the mere extension of a limited organism or bud; ~ Inflorescence, indeterminate or centrifugal, acropetal of some authors; Indehiscence (dehiscens, gaping), not opening, as of fruits which remain closed at maturity; indehiscent, -cens, not opening by valves or along regular lines.

Independence, the separation of organs usually entire.

Indeterminate, indeterminatus, not terminated absolutely, as an inflorescence in which no flower ends the axis of the flower-cluster.

Indican, a nitrogenous glucoside, by its decomposition forming Indigo.

Indifferent (indifferens, without difference), not specialized or differentiated.

Indigene (indiges, native), a native plant; indigenous, -nus, original to the country, not introduced.

Indigo, a deep blackish blue obtained from various species of Indigofera; Indigogen, white indigo, or colourless indigotine; indigoticus, indigo blue, atro-cyanus; Indigotine, pure blue indigo, forming about four-tenths of the commercial indigo; Indimulsion, an enzyme producing indigo in the leaves of Indigofera.

Indirect, venousus, Link’s term for lateral veins combined within the margins, and emitting other little veins.

Individual, Individuum (individus, inseparable), a unit of the series which constitute species; Individualism, (1) capable of separate existence; (2) symbiosis in which the total aggregate result is wholly different from any of the symbionts; Individuation, a synonym of the last (2).

Indivisus (Lat.), undivided, entire.

Induced’, applied to those movements which are the result of some irritation or stimulus, as pressure, light, heat, etc.; Induction, the production of sensitive movements; heterogeneus ~, due to two or more causes; inorganicus ~, due to one cause.

Indumentum (Lat., a garment), any covering, as hairiness.

Induplicate, induplicateus, induplicate, with the margins bent inwards, and the external face of these edges, applied to each other, without twisting.

Indurascent (Lat., from induro, I harden), hardening by degrees; Indurated, hardened.

Indusioform, induciform (+ Indusium; forma, shape); Indusial, having inducia; ~ Flaps, a false indusium in Woodwardia; Indusiate, induciatus, possessing an indusium; Indusioid (fidos, like), John Smith’s expression for any indusium-like covering in Ferns.

Indusium (Lat., a woman’s undergarment), (1) an epidermal outgrowth covering the sori in Ferns; (2) a ring of collecting hairs below the stigma; (3) the annulus of some Fungi (Dundley).

Induviae (Lat., clothes), (1) persistent portions of the perianth, or leaves which wither, but do not fall off; (2) scale-leaves; Induviate, induvialis, induviaitis, induviatus, clothed with withered remnants.

Inembryonatus (in = not; embryo, an embryo), having no embryo.

Indenchyma (fis, ibus, muscle-fibres; \(\delta\gamma\nu\mu\alpha\), an infusion), fibro-cellular tissue, the cells having the appearance of spiral vessels, as in Sphagnum.

Inerm’, inermous, inermis (Lat., unarmed), without spines or prickles.

Inextensible (in = not; extendens, stretched) “offering resistance to stretching” (Dranmond).

Ineye’, to inoculate, or bud.
Infarcltate (infarctus, stuffed into), turgid or solid.

Infection Ar'ea, the portion of the host attacked by a fungus; ~ Lay' er, a patch of hyphae near the base of the scutellum in Lolium temulentum (Freeman); ~ Thread, continuous chains and bacteria passing from cell to cell; ~ Tube = Germ-tube; ~ Ve'sicle, the haustorium of an invading fungus; ~ Zone, a series of cells in which the infection threads pass from cell to cell; infec'tious, communicable by infection, as diseases in plants, etc.; caused by some organism from outside.

Infer-agar'ian (infer, below) Zone, H. C. Watson's term for the lowest portion of the cultivated lands in Great Britain; ~ arc'tic Zone, a similar term for the lowest division of his arctic region in Britain; In'erals, a division of gamopetalous Dictyyledons proposed for Rubiaceae, Compositae, Companulaceae, etc.

Infer'i or (Lat., lower), (1) below some other organ, as an ~ Ca'lyx is below the ovary, or an ~ O'vary seems to grow below the adnate calyx; (2) has been used for anterior, or turned away from the axis.

Inflo'scated, inflo'stus (Lat., puffed up), bladdery, swollen.

Inflec'ted (inflecto, I bend), bent or flexed.

Inflex'ed, in-fer'us (Lat., bent), turned abruptly or bent inward, incurved.

Infle'sible (in = not; flexibilis, pliant), "offering resistance to bending" (Drummond).

Inflo'ren'scence, Inflo'rescent'ia (infloresco, I begin to bloom), (1), the disposition of the flowers on the floral axis; (2) less correctly used for the Flower Cluster; def'inite ~, when each axis in turn is terminated with a flower, as in a cyme; indef'inite ~, when the floral axis is capable of continuous extension, as in a raceme.

Inflo'liate (in, in; folium, a leaf), to cover with leaves.

Infor'ssus (Lat., buried), sunk in anything, as the veins in some leaves, but leaving a visible channel.

Infra-axil'lar'y, infra-axill'a'ris (infra, below; + Axillaris), below the axil.

Infrac'ted, infract'us (Lat., broken, bent), incurved.

Infra'cute'neous (infra, below; cutis, skin), below the surface, subepidermal; infrano'dal (nodus, a knot), below a node; ~ Canals', gaps in the medullary rays of Calamites, below the node, leaving prints on the casts (Williamson).

Infro'scence (fructus, fruit, by analogy to inflorescence), (1) the inflorescence in a fruiting stage; (2) collective fruits.

Infruc'tuose (infructu'o'sus, unfruitful), barren, not bearing fruit.

Infundib'u'lar, infundib ula'ris (infundibulum, a funnel), funnel-shaped; infundib'u'iform, infundibul'for'mis (forma, shape), shaped like a funnel.

Infus'oate (in'fuscus, dusky), of a brownish tint.

Inhib'ited, (1) used for spores, not killed, but whose germination has been prevented by the use of certain solutions; (2) hindered.

Inhib'ition (inhibitio, a restraining), modification or restraint in function; Inhib'itor, a restraining or preventing factor.

Init'i al (initialis, original); ~ Cells, cells from which primordial layers or nascent tissues arise; ~ Lay'er, the middle cambium layer; Init'ials, the beginnings of tissues, the early stages of cells or tissues; as Der'mat'ogen ~, or Per'iblem ~.

Injec'tion (injectus, cast into), the filling of intercellular spaces with water (Crozier).

In'nate, inna'tus (Lat., natural), (1) borne on the apex of the support; in an anther the antithesis of adnate; (2) imbedded (Leighton).

In'ner, internal, nearer the centre than something else; ~ Lam'ina, the layer of a lignified cell-wall which is next the inside of the cell; ~ Perider'ium, ~ Tu'nic, a more or less coloured.
membrane which surrounds the hy-
menium in *Verrucaria* beneath the
peritheciun.

+in'novans (Lat.), renewing; innovan'tes
Gem'mae, the fixed or persistent buds
of Mosses.

Innova'tion, Innovatio (Lat., an alter-
ation), a newly formed shoot in Mosses, which becomes independent
from the parent stem by dying off
behind; ~ Shoot, a vigorous shoot
which carries on the further growth
of the plant.

Innu'cella'tae *(in = not; + Nu'cellus)*,
Van Tieghem's name for planer-
gamic plants whose ovules want
nuceillus and integuments, such as
the Santalaceae.

Inocula'tion (inoculatio, ingrafting),
(1) grafting, more properly budding,
a single bud only being inserted;
(2) facility for the introduction of
seed to newly established beach
(F. W. Oliver).

inophyl'lous *(is, inos, a nerve; φύλλον,
a leaf)*, with thread-like veins in the
leaf (Heinig).

in'ops (Lat. destitute), poor, deficient
(Heinig).

inorgan'ic *(in, not; + organic)*, devoid
of organs; ~ Ash, the final residuum
after complete combustion;
the mineral portion of a vegetable tissue;
~ Compounds, those which form
part of animal or plant structure
derived from mineral substances;
~ Fer'ments, enzymes, as opposed to
organic ferments, such as bacteria.

inos'culating *(in, into; esculatus,
kissed)*, anastomosing; Inscula'tion,
budding or grafting.

I'nosite, *(is, inos, strength, sinew)*, a
saccharine aromatic principle which
occurs in many seeds and other parts
of plants, especially in climbers;
Inotag'mata, pl. (+ Tagma), the
hypothetical contractile elements of
protoplasm (T. W. Engelmann).

Inovula'tae *(in, not; + ov'ulum)*, phan-
erogamic plants which have no ovules
discernible at the time of fertiliza-
tion, as the Loranthaceae (Van
Tieghem).

in'quinant *(inquino, I stain)*, stained
or staining.

in'ro'lied, rolled inwards (Boulger).

in'sculpt *(insectus, engraved)*,
embedded in rocks, as some lichens.

Insect Pollina'tion, the transfer of
pollen from the anther to the stigma
of the same or a different flower by
insect visitors; entomophil'y.

insectiv'orous *(insectum, an insect;
vero, I devour)*, used of those plants
which capture insects and absorb
nutriment from them.

Insemina'tae *(in = not, semen, seed)*,
Van Tieghem's name for those plants
which do not contain seed separable
or distinct at maturity; in order to
germinate, the fruit must be sown
entire.

Insepara'tion *(in'separatus, not sepa-
rated)*, Masters's term for coalescence;
adj. inseparable.

inser'ted, inser'tus (Lat., put into),
joined to or placed on; inser'tion,
Inser'tio, (1) mode or place where
one body is attached to its support;
(2) Grew's term for a medullary ray.

Insit'ion *(insitio, a grafting)*, the in-
sertion of a scion into a stock,
grafting.

Insola'tion *(insolus, I expose to the sun)*,
extposure to the direct rays of the
sun.

inspis'cated *(in, into; spissatus, thick-
ened)*, thickened, as juice by evapora-
tion.

instip'ulate *(in = not; + stipul'ate)*,
estipulate (Croziers).

in'teger (Lat., whole), entire, not lobed
or divided; integer'imus, an em-
phatic assertion of the entirety of
an organ; Integmina'tae *(in = not;
tegment, a covering)*, Van Tieghem's
name for plants whose nuceillus is
devoid of integument; in'tegra
Rad'ix, an unbranched root; ~
Vagi'na, the sheathing petiole which
forms a continuous tube, as in sedges;
integrifo'lious *(folium, a leaf)*, with
undivided, or simple leaves.

Integ'ument *(integumentum, a cover-
ing)*, (1) the covering of an organ or
body; (2) the envelope of an ovule;
**Interpetiolar**

**Integumen'ta Flora'lia**, the floral envelopes; integumen'tal Glands, peltate glands, the integument being raised like a bladder due to the formation of abundant secretion; ~ Tis'sue, the epidermis and hypoderm.

in'ter-axill'ary (inter, between; + AXILLARIS), between the axes; interbiomor'ic (+ Bionmore), employed to denote the condition of HYALOPLASM.

inter'calary (intercularis, that to be inserted), used of growth, which is not apical but between the apex and the base; ~ Branch'ing, intermediate branching short of the apex; ~ Cell, a small cell arising from the conjugate division, disappearing after the formation of the ascidiospore mother-cell (Grove); ~ Infor'escence, when the main axis continues to grow vegetatively after giving rise to the flowers (Parkin); ~ Veg'etative Zone, a portion lying between mature tissue, which takes on growth as though a growing point; inter'calated, interposed, placed between.

intercarp'ellary (inter, between; + Carpel), between the carpels; intercel'lar (cellular), between the cells or tissues; ~ Pas'sage, a continuous opening between the cells; ~ Space, a cavity bounded by the cells of a tissue; ~ Sub'stance, material extravasated from within to outside the cell; ~ Sys'tem, the intercellular spaces and adjacent tissues (Crozier); interco'stal (costa, a rib), between the ribs or nerves of a leaf; intercotyle'donary (+ Cotyle'don), between the cotyledons; Interco's sings, cross fertilization; Intercu'tis (cutis, the skin), Kroemer's name for the hypoderm of the root; interfasci'cular (fasciculus, a bundle), between the vascular bundles; ~ Cam'biun, that formed between the bundles in the primary medullary rays; ~ conjuncti've Tis'sue = preceding; ~ Phil'o'em, ~ Xy'lem, respectively formed from the ~ Cambium; interfil'ar (filum, a thread), between filaments, as the resting spore in Medocarpus (Crozier); interfoli'ceous (folium, a leaf; + ACEOUS) between the leaves of a pair; the stipules of many Rubiaceae; interfo'liar, situated between two opposite leaves; interfo'liate, interfo'liar (+ FOLIOLE), between the leaves, or between the leaves and some other structure; Int'erfoyles, Grew's name for (1) bracts; (2) scales; (3) stipules.

intergeri'num (Lat., placed between), Lig'num, the diispiment of a fruit.

Interkine'sis (inter, between; kinesis, motion), the heterotypic telophase or the period elaping between the two meiotic divisions; Interlob'ule (+ Lobule), name given by Spruce to a small plane process of a subulate or triangular form, between the lobule and the stem in certain Hepaticae.

interme'diate, interme'dius (Lat., that which is between), half-way or between; ~ Bun'dles, applied to somewhat later bundles, as the six last in the stem of Clematis Vitalba; ~ Tis'sue, the ground tissue in exogens, except that of the epidermis and vascular bundles; ~ Type, employed by H. C. Watson for those plants whose distribution in Great Britain is of a local or doubtful range; ~ Zone, (1) the active zone between the pith and epidermis, containing the vascular bundles in Monocotyledons; (2) used by H. C. Watson as indicating a certain elevation, between the agrarian and arctic zones.

intermicel'lar (inter, between; + MicellA), between the micelles; intermo'lecular (+ MOLECULE), between the molecules.

inter'nal (interne, inwardly), ~ Pery'cle', Flot's expression for the pro-cambium retained on the inner side of the vascular bundle.

In'ternode, Interno'dium (Lat.), the space or portion of stem between two nodes; adj. interno'dal.

interpetio'lar, interpetioli'ras (inter, between; petiolus, a little stalk), (1) between the petioles; (2) enclosed
by the expanded base of a petiole; (3) also applied to connate stipules which have coalesced from two opposite leaves; *interplacentāl (+ *Placentā*), between the placentas; applied to vascular bundles which occur in the capsule; cf. *anteplacentāl*.

*interposed* (interpositus, placed between) *Mem'bers*, those parts which have arisen in a whorl subsequent to its earlier members; *Interposition*, *Interposit'io*, formation of new parts between those already existing in a whorl; *interpositī'vus* (Lat.), interposed.

*interprotoplas'mic* (inter, between; + *Protoplasm*) *Spa'ces*, gaps in the reticulum of *Myxogastres*.

*interrupted* (interruptus, broken or separated), when any symmetrical arrangement is destroyed by local causes; a solution of continuity; ~ *Growth*, an alternation of abundant and scanty development, appearing as constrictions in an organ, as a fruit or tap-root; *interrupt'edly pi'nate*, (1) a pinnate leaf without a terminal leaflet; (2) having small leaflets interposed with those of larger size.

*intersem'inal* (inter, between; *semen*, seed), between or amongst seeds, as scales on the torus of *Anthis*; *interspor'al* (σπόρα, a spore), in a sporangium, situated between the spores (Harper); *interstam'inal (+ *Staminal*), placed between two stamens; *interstam'inate* is a synonym.

*Inter'stice* (*interstitium*, a space between), small air-spaces; larger are termed lucunae, still larger, air-passages: *interstiti'al Bod'ies*, mucilaginous discs occurring in certain pollen-grains (Beer); ~ *Growth*, the theory which requires the interposition of new particles between the older portions, instead of superficial additions.

*intertrop'ic* (inter, between; + *Tropic*), relating to the torrid zone; within the tropics; *intervag'in'al* (*vagina*, a sheath) *Scales*, squamules found between the leaves of aquatic monocotyledons (Gibson); *Interve'ninum* (*vena*, a vein), a portion of parenchyma between the veins of a leaf; *Interweav'ing* (+ weaving), the union of hyphae by growing amongst each other, without cohesion; Ger. Verlechung; *interxy'lary* (+ *Xylem*), amongst the xylem elements; *Interzones* (+ *Zone*) Bessey's term for the portion of a Diatom frustule which in some cases lies between the girdle and the valves.

*Intex'ine, Intex'tine* (*intus*, within; + *Extine*), the inner membrane when two exist in the extine, or outer covering of a pollen-grain; *In'tine*, the innermost coat of a pollen-grain; *intodisca'lis* (discus, a disc), inserted within the disc of a flower.

*Intors'io* (Lat.), curling or crisping; *Intor'sion* = *Torsion*; *intort'us* (Lat., twisted), practically a synonym of contorted; twisted upon itself.

*in'tra-ax'il'lary* (intra, within; + *Axillary*), within the axil, as many leaf-buds; *intraecam'b'ial* (+ *Cam'ial*), within the cambium, internal to it; *intraesarp'ellary* (+ *Carpel*), within the carpels; *in'tracell'ular* (+ *Cellular*), within a cell; *intracutic'ular* (+ *Cuticle*), within the cuticle; applied to parts or organs whose normal position is outside; *intrafascic'ular* (*fasciculus*, a bundle), within a bundle; *intrafil'lar* (*filum*, a thread), within a filament; *intraflo'ral* (+ *Floral*), within the floral organs, as many nectaries; *intrafolia'ceous, -ceus* (*folium*, a leaf; + *Ae'ous*), within or before a leaf, as within the axil; *intralam'ell'ar* (*lamella*, a small plate), within plate-like structures, as the trama of *Agarics*; *intramar'g'in'al* (*margo*, a margin), placed within the margin near the edge; *intrama'trical* (*matrix*, a mould), inside a matrix or nidus; *Intrameabi'lit'Y* (*meabitis*, penetrable), the capacity of protoplasm to permit substances to pass into its vacuoles (Janse); *intramedull'ary* (+ *Medul-
invaginated

in'tricate, in'tricle'us (Lat.), entangled.
introcur'ved, introcur'vus (Lat.), in-curved.
introdu'ced (introduct'us, brought within), used of plants which have been brought from another country.
introflex'ed (intro, inside; flexus, bent), inflexed; intromargin'al (+ mar-ginal), used of a vein running just within the outer margin of a leaf.
in'trorse, in'tror'sus (Mod. Lat.), turned inward, towards the axis.
introve'nius (intro, inside; venus, a vein), hidden veined; from the abundance of parenchyma, the veins not readily seen; cf. AVENIUS; introxy'lic (ξυλον, wood), within the xylem.
in'trud'ed, in'truse, in'trusus (Lat., thrust in), pushed or projecting forward; Intru'sion, cort'ical, abnormal growth of cortex in other tissues.
Intumes'cence (intumescere, to swell up), any abnormal swelling on the exterior of plants.
Intussuscep'tion (intus, within; sus-ceptus, taken up), the theory of growth, which assumes the intercalation of new particles (micellae), between the already existing par-ticles of the cell wall.
In'u'lace (from the genus Inula), an enzyme in Compositae which converts Inulin into Levulose; Inu-len'in, a subordinate constituent of Inulin (Tanret); Inu'lin, a body like starch, first found in Compositae, in the form of sphaero-crystals.
in'un'cans † (Lat., hooking), the surface covered with glochidia or hooked hairs.
inunda'tal (inundatus, overflowed), H. C. Watson's expression for those plants which grow in places liable to be inundated in wet weather, but dry in summer; inunda'tus, flooded, sometimes under water, sometimes dry.
-inus, a Latin suffix, meaning, (1) resemblance; (2) augmentation.
invag'inated (in, into; vagina, a sheath), enclosed in a sheath.
Invasion, (invasus), an intrusion of an alien plant into regions or stations foreign to it.

inverse' (inversus, turned about), inverted; Inversion, (1) a change of order or place; (2) the action of Invertase; Invert-enzyme, Inversion, an unorganized ferment, which transmutates cane-sugar into inverte suger; inverted, having the apex in an opposite direction to the normal; Invert-sugar, a mixture of fructose by the action of invertase on cane-sugar; Involution, (1) the act of rolling inward; (2) the return of an organ or tissue to its original state; ~ Form, a swollen bladder-like form of Schizomycetes, supposed to be a diseased condition of the form associated with it; ~ Period, the resting period; ~ Spore, a resting-spore; ~ Stage, the resting stage.

involvans (Lat.), rolling together, as involutam Fo‘lia used by A. P. de Candolle, for trifoliate leaves whose leaflets rise up, unite at the summit ... so as to form an arch which shelters the flowers, as in Trifolium incanatum, Linn. (Lindley).

involution, involute, involutus, involuti\'vus (Lat., enwrapped), having the edges of the leaves rolled inwards; involvans (Lat.), rolling together, as involutam Fo‘lia used by A. P. de Candolle, for trifoliate leaves whose leaflets rise up, unite at the summit ... so as to form an arch which shelters the flowers, as in Trifolium incanatum, Linn. (Lindley).

irregular, irregula’ris (Late Lat., not according to rule), (1) wanting in regularity of form; (2) asymmetric, as a flower which cannot be halved in any plane, or one which is capable of bisection in one plane only, zygomorphic; ~ Peloria, a monsterly by which irregular form has become regular by symmetric development; Irregular’ity, Irregular’itas, the state of being unequal in form.

irritability (irritabilis, easily excited), phenomena induced by stimuli, such as shock, absence or presence of light, warmth, gravity, etc.

isabeline, isabeli\'nus (Mod. Lat., refers to Isabella, Queen of Spain), a greyish drab colour, a dirty tawny tint.

isadelphous, ~us (\(\sigma\)os, equal to; \(\alpha\)\(\delta\)\(\sigma\)\(\phi\)s, a brother), equal brother-
hood, the number of stamens in the two phalanges being equal.

I'satin, the colouring principle of wood, Isatis tinctoria, Linn.

isidioid, resembling the Lichen genus, Isidiium; isidiiferous (fereo, I bear), bearing a thallus like the genus whence it derives its name.

isidiose (Iros = a genus of corals; + ostiis); isidioso'sus, having powdery, coral-like excrescences; Isid'ium (ei'dos, like), the coral-like elevation of a Lichen thallus with a globule on it.

I'slands, a term applied to isolated strands of phloëm in the xylem.

i'so- (Iros, equal to), Drude's prefix to denote the uniformity as to light, temperature and rain, of certain groups of plants; isocand'rose ore (+ Androspore), Janet's term for the spermatozoids of Marchantia; isobla'teral (bis, twice; latus, lateris, a side), capable of being divided into two similar halves; isobri'a'tus, dicotyledonary; isob'rious (βδιαω, I strengthen), of equal strength, referring to the embryo of Diocotyledons; I'socheim (χειμα, winter), the isotherm of the coldest months; isocho'mous (χωμα, a mound), applied to branches springing from the same stem at the same angle; isocot'ylo'sus (+ Cotyledon), having equally developed cotyledons; isochro'mous (χρωμα, colour), all of one colour or hue, uniform in tint; isocyc'lic (κυκλος, a circle), eucyclic, a flower having isomeric whorls; isodia'met'ric (δια, through; μετρον, a measure), of equal dimensions;

Cells, those having an equal diameter in each direction; Isodi'o'de (διδος, a passage), when all the Diodes produced are alike (Van Tieghem); Isodi'ody the condition of producing Diodes which give rise to unisexual prothallia (Van Tieghem); isody namous (δύναμις, power), equally developed.

Isocetoid, applied to a leaf which is linear, undivided, terete, often tubular, and sessile, which occurs in Isoetes, Pilularia, etc. (Warming).

Isogam'ete (Iros, equal; γαμητης, a spouse), gametes or sexual cells of similar size and appearance, which conjugate and result in a zygote; Isogametan'gium (+ Gametangium) the organ which produces isogametes; isogama'tional, pertaining to an isogametangium; ~ copula'tion, when the gametangia and nuclei are alike (Hartmann); isog'a'mous (γαμος, marriage), used for those plants which produce isogametes; Isog'amy, the fusion of similar sexual cells; isogenotyp'ic (+ Genotype), where two or more generic names have been applied to the same type species; isoge'nos (γενος, race), employed by Johannsen for individuals which belong to the same "genotype," i.e. = biotype; ~ Induc'tion, used by Noll to express sensitive movements arising from a single cause; isog'onous (γονος, offspring), used of hybrids which combine the parental characters in equal degree (De Vries); cf. aniso'gensous; Isogyn'ospore (+ Gyospore), Janet's term for the egg of Marchantia; isog'y nous (γυνη, a woman), having the pistils similar; isogy'rus (γυρος, round), forming a complete spire; Isoholo'gamy (διαος, whole; γαμος, marriage), when the coalescing individuals are entirely alike (Hartmann); isolat'eral (lateralis, pertaining to the side), (1) equal sided; (2) employed by Heinricher for "central"; ~ Leaves, those which possess palisade tissue on both surfaces.

Isola'tion (Fr., isolation, insulation, from insula, an island), the prevention of intercrossing between a separated section of a species or kind and the rest of that species or kind (Romanes).

Isomalt'ose (fros, equal to; + Maltose), a product of amy lodextrin, passing by fermentation into maltose; iso'meric, iso'nerous, -us (μετος, a part), (1) having the same elements in the same proportions, but with different properties; (2) having
members of successive cycles equal in number, as the petals and sepals; Isomerogamy (μέρος, a part; γάμος, marriage), the copulation of isogametes, as in many Algae (Hartmann); Isomorph (μορφή, shape), similar in external form, but not in essential structure; a mineralogical term; Isomorphism, the condition described, as exemplified by the outward agreement of purple Crocus and Colchicum; Isophagous (φάγω, I eat), applied to Fungi which attack one, or several allied species (Eriksson); Isophageous (φάίω, I appear), used of individuals which belong to the same phenotype (Johannsen); Isophorous (φορέω, I carry), transformable into something else (Crozier); Isophotic (φός, φωτός, light), equally illuminated, as leaves which are erect, so that both sides are exposed to the light (Clements); Isophotophil (φῶλαιν, a leaf), a leaf in which both halves of the chlorenchym are alike, due to equal illumination (Clements); Isophylous, (1) leaves alike, in shape or size; (2) bilateral; Isophylly, (1) the condition described; (2) "bilateral expression in the form of two equal sides about an axis of the member in the tangential plane of the system" (Church); Isophytotrophic (φορέω, I carry), transformable into something else; Isomorphous (μορφή, shape), similar, in external form, but not in essential structure; a mineralogical term; Isostereous, -ous, having one kind of spore only: Isospory, the state of producing one sort of spore; Isostemonous, -ous, having as many stamens as petals, or sepals; Isostemony, equality in number of stamens with the segments of the perianth whorls; Isostic, Van Tieghem's term when the mother root has more than two xylem bundles; Isotere (θέρος, summer), an isotherm of the hottest months (Boulger); Isotonic (τόνος, a strand, a brace) Concentration, that degree of different solutions in which they attract water with equal force (De Vries); Isotomous (στόμα, a mouth), the calyx and corolla the same size; Isotrophy (τροφή, food), equal growth all round: adj. isotrophic; Isosystolic (σύστολος, tied), the styles being similar, opposed to heterostylos; Isotrophiclyte (τροφή, food; φυτon, a plant), a parasitic Fungus whose influence is only chemical, with but slight changes in the host (Wakker); Isotropous (τρόπος, direction), equal torsion in development, as in valvate and contorted asestivation (K. Schumann); Isotropy, capable of being attracted in any direction; Isotype (τύπος, a type), forms common to different countries; Isotypic, described from more than one species, all of which are congeneric.

Isthmus (ἰσθύμος, a neck of land), (1) the narrowed connection between half-cells of Desmids; (2) the girdle of such Diatoms as Isthmia.

Itera - proliferous (iteratus, repeated; + proliferous), repeatedly bearing proliferations.

Iteology (ἰτέα, a willow; ἀγος, discourse), the study of the genus Salix, willows; adj. iteologic.

Itthyphylous (ἰθύς, straight; φυλλος, a leaf), straight and stiff-leaved.

-IUM (-είον, locative affix), suffix denoting a formation (Clements).
ix'ous (iç'os, bird-lime), sticky, viscous (Heinig).

Jac'ulator (Lat., a darter), a hook-like process on the placenta of certain fruits, which aids in the expulsion of the seeds, as in Acanthaceae (Bouglé).

Jag'gery, a coarse dark sugar from the coco-nut and other palms, which produces arrack by fermentation.

Jal'apin, a constituent of the officinal Jalap, a purgative root, derived from Ipomoea Purga (Hayne).

Jama'icin, an alkaloid occurring in the cabbage bark-tree, Andira inter-mis, Kunth, a native of the West Indies.

Jamin's Chain, a chain of air and water in the vessels of plants.

Jaspid'eus, or iasp'id'eus (Lat., from is'asper, jasper), a mixture of many colours arranged in small spots.

Je'terus, a mistake of Bischoff, copied by Lindley, for Icterus, vegetable jaundice.

Join'ing, used by Babington for the point of union of two different parts: a node.

Joint, an articulation, as a node in grasses or other plants; joint'ed, articulated, falling apart at the joints.

Jonquil'leus (Mod. Lat.), the bright yellow of the Jonquil, Narcissus odor'us, Linn.

Jord'anism, an excessive multiplication of so-called species, regarded as mere varieties which are tolerably constant under cultivation; the name is derived from Alexis Jordan of Lyons; cf. Microspecies, or elementary species.

Ju'ba (Lat., a mane), a loose panicle, with diliqueuous axis; juba'tus, maned.

Ju'gale (juga'tus, connected or yoked together), used in composition as conjugate, bijugate, etc.

Ju'gum (Lat., a yoke), pl. Ju'ga; (1) a pair of leaflets; (2) the ridges on the fruits of Umbelliferae.

Juice, the liquid contents of any plant-tissue; ~ Ves'sels, J. Hill's term for vascular tissue; ju'ice'less, dry, exsuc'cous.

Jula'ceous, -ceus (julus, Mod. Lat., an ammutation or spike; + ace'ous), bearing catkins, amentaceous; ju'liform (forma, shape), like a catkin; Ju'lus, an old term for catkin, or spike, such as in Acorus Calamus, Linn.

Junca'ceous (juncus, a rush), rush-like;

Junctu'ra (Lat., a joint), an articulation or note.

Jungerman'nia Form, applied to plants having distichous leaves, usually orbicular and shortly stalked (Warming).

Jun'gle, wild forests and thickets in India, referred by Warming to the savannah type.

Juniper'ius, bluish-brown, like the berries of the juniper (Hayne).

Junquill'o-pam'pa, pampas characterized by Sporobolus arundinaceus.

Jute, the fibre of Corchorus capsularis, Linn., and C. olitorius, Linn.

Juvenes'cence (ju'vencens, I grow young again) = Reju'venescence.

ju'venile (ju'venilis, youthful), applied by Goebel to the early forms, as the larval-forms of conifers.

Juxta'position (jux'ta, close to; posi'tus, placed), the relative position in which organs are placed.

K, for many words see also under the letter C.

Kalid'ion, Kalid'iun; pl. Kalid'ia (kalid'ia, from Kalid', gianary) = Cy sto'carp.

Kampt'o'dromous = Camptod'romous.

Kar-herb'age (Ger. Karflur), the plants occurring in hollows high amongst mountains ("Kar" is an Austrian geological term for hollows dug out by glaciers).

Karpotro'pic = Carpotro'pic.

Karyas'ter (károv, a nut; + aster), the spindle-figure of the nucleus; Karyochyle'ma (xval'ds, juice), pro-
posed by Strasburger for Achlematia; Karyodermaatoplast, pl. (δεμα, δεματος, the skin; πλαστος, moulded), kinoplasmic asters of Synchitrium (Kusano); Karyogam'etes (+ Gameete), gametanonuclei; their union is Karyogamy; Karyog'amy (γάμος, marriage), the union of gametanonuclei, to form a zygote-nucleus (Maupas); Kar'yolds (εἴδος, like), minute spherical bodies attached to the chlorophyll plate of Conjugatae and Desmids; Karyokine'sis (κίνησις, motion, I change), Schleicher's term for the series of changes undergone by the nucleus in cell-division; "also spelled Caryocinesis" (Crozier); it is the indirect division of Flemming; adj. karyokinetic; Karyol'ogy (λόγος, discourse), the science of the nucleus and its development and vital history (Trow); Kar'yolymph (+ Lymph), the nuclear liquid; Karyol'yisis (γήρις, a loosing), the dissolution of the nucleus, in whole or in part; adj. karyolytic; Karyomito'sis (μιτός, a thread or web) = Mitosis; Karyomyx'is (μυξίς, intercourse), the fusion of the two nuclei of a teleutospore (Vuillemin and Maire); Karyoph'agy (φαγός, a glutton), the destruction of a nucleus by a special parasite (Dangeard); Kar'yoplasm (πλάσμα, moulded), the more fluid protoplasm of the nucleus, between the nuclear threads; Kar'yoplast, Strasburger's term for the nucleus in its entirety; Karyorne'xis (νόριξ, a breaking), rapid dissolution of a nucleus (Maire); Karyososto'ma (σωμα, a body), a close mass of microsomes in a nucleus; pl. Karyosostoma; Karyosymph'yisis (συμφυρίς, growing together), nuclear fusion (Hartog).

Kat'ablast (κατά, down; βλαστός, a bud), a shoot from an underground stock.

Katab'ol'ic (καταβάλλω, I cast down), descending metabolism, the breaking up of compounds into simpler bodies; Katab'olism, destructive metabolism; Katab'olite, any product of destructive metabolism; cf. Anabolite.

Kataklinot'ropism (κατά, down; κλίνω, I bend), negative kinotropism; Kat'alae, see Cata'large; Kata-'lysa'tor, any substance which causes katalysis (= CATALYSIS); katalyt'ic = CATALYTIC; katab'hor'io (φορέω, I carry), the power of carrying off or away; Kat'astates, pl. (στάτος, a standing), intermediate products of katabolism, during the breaking down of protoplasm (Parker); katon'io (τόνος, a strain), tending to decrease a stimulus; katastruk'tio (τροπή), a turning, negatively tropic; Katelectrot'onus (θλεκτρόν, amber; τόνος, strain), heightened excitation in plants due to an electric current (Hörmann).

Katharo'bia (καθαρός, clean, pure; bios, life), organisms of clean water. kathod'ic (καθόδος, a descent), that half of a leaf which is turned away from the direction in which the genetic spiral turns; the opposite of Anodic.

Keel, or Carina, (1) a ridge like the keel of a boat; (2) the two anterior and united petals of a papilionaceous corolla; ~-puncta, pl., nodulated thickenings on one margin of the valves of Nitschia (O'Meara); keeled, carinate.

Kenap'rophytes (κενός, empty; + Anaphy'tes), plants which colonize cleared land (Simmons); Kenench'yma (κενήχυμα, an infusion), permanent tissue which has lost its living contents, as cork-tissue; in Ger., "Leerzellengewebe."

Keramid'ium = Ceramidium, or Cystocarp.

Kermes'i'nus (Mod. Lat.), carmine, a colour from Kermes. Ker'nel, (1) the nucellus of an ovule, or of a seed, that is, the whole body within the coats; (2) the softer part of the pyrenocarp within the outer wall in certain Fungi.

Ke'tones (a variation of "Acetone"), a class of ethereal oils; camphor is probably one of this class.
Kettle-traps, applied to such flowers as those of Aristolochia, which imprison insects until fertilization is effected.

Key, (1) a clavis or short statement of the contrasted characters of a genus or other group; (2) or Key-fruit, the Samara of sycamore or ash.

Kidney-form, kidney-shaped, oblate corolate; crescent-shaped, with the ends rounded.

Kinas, pl., ferments or enzymes.

Kine'sis (kinesis, motion), (1) movement, used by T. W. Engelmann in contradistinction to Taxis; (2) = Karyokinesis; kinet'ic, relating to kinesis; ~ En'ergy, the energy of actual motion, as opposed to potential energy; Kine'tosomes, pl. (σώμα, a body), small polar plates or bodies of kinoplasm present before mitosis, presumably material for the formation of the spindle-fibres (Allen).

Kinetic (Kína-Kína, a name for Cinctrona), pertaining to cincrona; ~ Ac'id, an organic acid in Cinctona barks.

King'dom, one of the highest groups of organic nature; the Veg'etable ~ includes all plants.

Kinoplasm (κινόω, I set in motion; πάσμα, moulded), that part of cytoplasm involved in spindle formation, as contrasted with Tropoplasm; Kine'spore (+ Spore), a spore resulting from a simple process of division, as motile zoospores, conidia, pycnidiospores (Klebs).

Klado'dium = Cladode.

Kleisanth'ery = Cleisanthery.

Kleistogam'ic, kleistog'amous = Cle- istogamic.

Klinogeotropism ( κλίνω, I bend; γή, the earth; τροπή, a turning), the drooping tendency of the free end of a climbing plant whilst mutating (Pfeiffer); Klinomorph'y (μορφή, a shape), Wiesner's term for the condition of an organ determined by the simultaneous oblique position of the principal and median planes, so that the right and left halves may be distinguished as upper and lower, resulting in a different shape of the two halves; klinorrh'omic (ρόμος, a rhomb), a mineralogic term applied by De Bary to oblique rhombic crystals in plants; Klin'ostat = Clinostat; klinotropic'ic = Clino- tropic; Klinotrop'ism = Clino- tropism.

Knaur = Gnaur.

Knee, (1) an abrupt bend in a stem or tree-trunk; (2) an outgrowth of some tree-roots; -joint'ed, geniculate; ~-pan-shaped, concavo-convex, patelliform; kneed, geniculate.


Knob-like = Gongylodes; knobbed = Torulose; knob'by = Nodose.

Knobs, used by Sir J. E. Smith for Cephalodia.

Knorr'ia, formerly a genus of fossil plants, now used for lepidodendroid stems when their cortex has been stripped off to a considerable but variable depth (Scott).

Knot, (1) a node in the stem of grasses; (2) a swelling in stems at the attachment of the leaf; (3) various diseases caused by Fungi, as Black ~, effected by Peowrigitria morbosus, Sacc. (Tuberul); Knot-phase, in nuclear-division, is also known as skein-stage, or spirem; Knot-stage = Skein in nuclear division; knot'ted, knot'ty, nodose.

Knur, Knurl, a knob or hard substance = Gnaur.

Koele'rian, relating to Rubus Koeleri or its close allies.

Koleo'chym (kole'des, a sheath; ἔχυμα, an infusion) = Kri'renchyma.

Kol'laplankton (κόλας, glue; + Plankton), used of organisms which float by being encased in gelatinous envelopes (Forel); Kollen'chym (έχυμα, an infusion) = Hypno- derm.
Kremastoplankton (κρεμαστόπλαγκτον, hung up; + Plancton), floating organisms supplied with appendages which conduce to that function, as hairs, prickles, etc. (Forel).

Kriten'chyma (κριτέριον, chosen; ἐγχυμα, an infusion), one or more layers of cells which form a sheath for a vascular bundle (Russow).

Krypt'oblast (κρύπτοβλαστ, hidden; βλαστο-τός, a bud), a preventitious bud (Hartig).

Kryptocotyle'dons = Cryptocotyle-dons.

Kun'changraph (Sanscrit, Kunchan, contraction; γραφή, writing; pron. Kōonchangraph), apparatus to measure longitudinal contraction (Bose).

Ku'tine = Cutin.

Kyanoph'ilous (κυανός, blue; φιλέω, I love), used of any tissue which readily absorbs blue staining; Ky'anophyll (φυλλον, a leaf), nearly pure chlorophyll freed from its associated yellow pigment, xanthophyll (Wiesner); it is bluish-green in colour.

La'bel (labellum, a little lip), (1) Grew's term for the pinnule or ultimate segment of a Fern-frond; (2) Labellum.

Label'um, (1) the third petal of Orchids, usually enlarged, and by torsion of the ovary becomes anterior, from its normal posterior position; (2) a similar petal in other flowers.

La'biate, labia'tus (Lat., lipped), lipped, usually bilabiate; characteristic of the family Labiatae; labiatifor'ous, ‑ous, used of certain Compositae with bilabiate corollas to their florets;

labioscop'ic (+ Labium, σκοπέω, I look), employed by Pfitzer for the condition of certain Orchids when the sepals are combined with an extension of the axis, as in Drymoida.

La' bile (labulis, slippery), "plastic, easily modified" (Clements); perishable or transient.

La'biose, labio'sus (Lat., having large lips), applied to a polypetalous corolla seemingly two-lipped; La'bium (Lat., a lip), (1) the lower lip of a Labiate flower; (2) the lip subtending the ligule in Isoetes.

Laboulbenomy'cetes, Engler's term for Laboulbeniaceae and their allies.

Labyrinthiform'is (labyrinthus, a structure with winding passages; forma, shape), marked by sinuous lines, cf., Daedaleus.

Lac (Ital., lacca, a varnish), a resinous exudation from various tropical plants, occurring in commerce in different forms; Lac'case, the enzyme which produces Lacquer, from fluid lac; lac'cate, as though varnished; Lac'cine, a substance found in lac, insoluble in water, alcohol, or ether.

lac'erate, lac'erus, Mod. Lat. (lacer, mangled); lacera'ted lacera'tus; torn, or irregularly eft.

Lach'rima = Lacrima.

Lac'cin'ia (Lat., the flap of a garment), a slash or slender lobe; Lacinia'tion, fission; lac'iniate, lacinia'tus, slashed, cut into narrow lobes; lac'iniform (forma, shaped), fringe-like (Crozier); Lac'inule, (1) a diminutive lacinia or lobe; (2) the incurved point of the petal in many Umbelliferae; lac'inuate, lac'in'u-lose, finely laciniate, possessing lacinulae.

Lac'qu'er, a Japanese varnish; cf. Lac and Laccase.

Lac'rima (Lat., a tear), a drop of gum or resin exuded from a tree; also spelled Lach'ryma and Lach'rima.

lac'rimiform, lacrimum'formŭs (forma, shape), tear-shaped; sometimes but less correctly spelled lach'tymeiform, etc.

Lac'tase (lac, milk), Beijerinck’s name for an enzyme which inverts sugar, but is distinct from Invertase; Lac'teals, Lac'tifer (fero, I bear); Lac'tents, Grew’s names for lacticiferous ducts; lactes'cent, lactes'cens, yielding milky juice; lac'teus (Lat.), milky, white as milk; lactic'olor (color, colour), milk-white; lacti'ferous, Grew’s word for lacticiferous;

Lac'tose, milk-sugar; the sweet principle of milk, and stated to
Lactose

occur in the fruit of Achras Sapota, Linn.

Lactuca'rium, the dried juice of the lettuce, Lactuca sativa, Linn., containing an active principle, Lac'tu
cine.

Lacu'na (Lat., a hole or cavity), (1) an air-space in the midst of tissue; (2) a depression on the thallus of a Lichen; (3) applied to the vallecular canals of Equisetum; lacu'nar, pertaining to or arising from lacunae; ~ Tis'sue, thin-walled cells, forming irregular trabeculae radially traversing the intercellular cavity of the stem of Selaginella; it may be regarded as the equivalent of the Bundle-Sheath of most other vascular Cryptogams; lacu'no-rimo'sus, marked with irregular cracks and excavations; lacu'no-ru'gose, ~-rugo'sus, having irregular wrinkles, as the stone of the peach; lacu'noose, lacuno'sus, (1) when the surface is covered with depressions; (2) perforated with holes.

lacus'tral (lacus, a pond or lake), H. C. Watson's term for plants which are usually floating in water or immersed; lacus'trine, lacus'tris, belonging to, or inhabiting lakes or ponds; the form lacus'ter has been introduced of late years.

laev'igate, laevigat'tus (levigatus, smooth, slippery), smooth, as if polished.

lae'vis (levis, smooth), smooth, in the sense of not being rough.

Lager'nian, pertaining to Leinster, from Lagenia, the Latin name of that province.

lager'niform, lageni'form'is (lagenus, a flask; forma, shape), shaped like a Florence flask.

Lagenos'tome, the free apex of the nucellus in Lagenostoma.

lago'pus (Λαγύς, hare's foot), hare-footed, densely covered with long hair.

Lair-fló'ra, the flora growing upon ground manured by animals, as sheep or goats (Crampton); ~ -herb'age, the plants forming a similar flora.

Lam'el, Lamel'la (Lat., a thin plate or scale), a thin plate; pl., Lamel'iae, the gills of Agarics; Lamel'la, mid'-dle, the membrane or primary septum between any two cells; lam'ell'ar, lamell'aris, composed of thin plates; lam'ell'ate, lamellat'tus, made up of thin plates, as the hymenium of the mushroom; lamel'liform (forma, shape), in the shape of a plate or scale; lam'el'lose, lamello'sus = Lam ell'ate; Lamel'ulae, the gills of Fungi.

Lam'ina (Lat., a thin leaf), the limb, blade, or expanded part of a leaf; ~ proli'g'era, ~ spor'i'g'era, the disk or centre of the apothecium of a Lichen; lamina'ted, consisting of plates or layers; ~ Bul'b, a tunicated bulb, as a hyacinth; lamina'ting, separating into layers.

Laminarie'tum, an association of the marine algal genus Laminaria; lamina'rio'id (elos, resemblance), resembling or akin to the genus Laminaria.

La'na (Lat.), wool, or woolly covering; la'nate, lanatus, clothed with woolly and intergrown hairs.

lan'ceolate, lanceo'late'us (Lat., arched with a little lance), (1) narrow, tapering to each end; Linnaeus used it for a leaf having nearly similar extremities, but in modern use the base is usually somewhat broadened, with the greatest breadth at about one-third from the base; (2) the primitive meaning is preserved in Cardius lanceolatus, Linn.; ~ -has'tate, a hastate leaf with the principal lobe lanceolate; ~ -sag'i't'tate, a sagittate leaf, the middle lobe lanceolate; lance-o'vate (Crozier), lanceolate ovate, indicative of a form intermediate between the two named terms; lance-shap'ed, lanceolate.

Landes (Fr.), tracts of "Erica-maquis" in the south of France, but destitute of raw humus (Warning).

la'noise, lano'sus (Lat.) woolly, cf. lanate.

lanu'ginose, lanu'ginous, lanugino'sus (Lat.), woolly or cottony, clothed
with Lauri'go (Lat.), woolliness; long and interwoven hairs.

**lapi'deus** (Lat., stony), lapillo'sus, stony, as the seeds of "stone fruits"; lap'idose, lapis'dus, growing amongst stones.

**lappa'ceous**, lappa'ceus (Lat.), bur-like, hamate.

**lar'val** (larva, a mask), (1) applied to the resting stage, as the soleritum of ergot; (2) the early form of certain Conifers, whose perfect and adult form is very different; larva'tus (Lat.) personate.

**lasi'an'thus** (lados, shaggy; ἓρμος, a flower), woolly-flowered; lasiocar-pous (karpós, fruit), pubescent-fruited.

**latebro'sus** (Lat., full of lurking places), hidden.

**La'tency** (latens, hidden) of characters, applied to those which are not observable until brought out in the hybrid generation by crossing; la'tent, dormant; ~ Bud, an adventitious bud; ~ Faec'tors allelomorphs by themselves invisible, yet when combined in cross-breeding with certain others, produce the appearance of new characters; ~ Pe'riod, (1) resting-stage; (2) the time required to take up any stimulus, and respond to it (Macdougal).

**La'tern**: pl. of La'tus (L., a side), the sides; la'te'rial, later'al'is, fixed on or near the side of an organ; ~ Bud, adventitious bud; ~ Dehis'cence, bursting or opening at the side; ~ Nu'cleolus, Nu'cleus, cf. Paranuc'leus; ~ Plane, the vertical plane at right angles to the antero-posterior plane, as of a flower; ~ View of a Diatom frustule, when the valves are seen in front view, the girdle being then in side view; **Lateral-geo'tropism** (+ Geotropism), the movement of climbing plants laterally to a support, neither positive nor negative geotropism (Strasburger); Lateral'ity, used by Sachs for Symmetry, both radial and dorsiventral.

**latici'eous** or lateri'tious, lateri'cious, lateri'lius (Lat., made of bricks), brick-red.

**laticifo'lious** (latus, lateris, a side; folium, a leaf), growing on the side of a leaf at the base; lateri'ner'vis, lateri'ner'vius (nervus, a nerve), straight-veined, as in grasses; lateri-stip'ulus + ( + Stipula), having stipules growing on its sides.

**La'tex** (Lat., juice), (1) the milky juice of such plants as spurge or lettuce; (2) the moisture of the stigma; (3) the gelatinous matter surrounding the spores in some Fungi; ~ Cells, laticiferous coenoocytes; ~ Coen'ocytes, branched cells or vessels like cells containing latex; ~ Gran'ules, starch or other granules floating in the latex; ~ Hairs, hairs continuous with latex-tubes, easily breaking and then liberating drops of latex; ~ Sacs, specialized cells, containing latex; ~ Tubes, laticiferous vessels; ~ Ves'sels, anastomosing vessels derived from the original septa becoming absorbed.

**latici'ferous** (latex, laticis, juice; fero, I bear), latex-bearing; ~ Cells, structures which are not cell-fusions; ~ Coen'ocytes, branched cells or vessels like cells containing latex; ~ Ti's'ue, the system of cells or vessels; ~ Ves'sels, the tubes or similar structures which have milky juice, usually branched syncytes, the walls between adjacent cells being absorbed; **Latic'i'fers**, laticiferous cells or vessels.

**laticifo'liate, lati'foliou's, lati'follus** (Lat.), broad-leaved.

**latisep'tal** (latus, broad; septum a hedge), applied to those Crucifers which have broad septa in their silicles as Honesty, Lunaria annua, Linn. ; latisep'tate, latisep'tus, with broad partitions.

**latt'icised, cross-barred; ~ Cell = SIY'VE-TUBE.**

**Laur'ad** (λαύρα, a drain; + άδ), a drain plant; Lauri'um, "sewer formation"; laurop'hilus (φιλέω, I love), "sewer-dwelling"; Laurophy'ta (φύτων, a plant), "sewer plants" (Clements).

**Lauriligno'sa** (laurus, laurel; lignosus,
woody), woods with dominance of evergreen, mostly glabrous bright green leaves; in moist subtropics; Lauri'on, an association of laurels; Laurisil'vae, pl. (silva, a wood), the knysna forest of South Africa; Laurin, an acid principle from the berries of Laurus nobilis (Linn.).

lav'ender, pale bluish grey; the colour of the flowers of Lavandula vera, DC.

lax, lax'us (Lat.), loose, distant.

Lay'er, (1) the stroma or receptacle of Fungi; (2) in propagation, a branch caused to root whilst still connected with the parent; (3) different strata of growth, as trees above a lower stratum of shrubs and again of herbaceous plants; ab'sciss ~, usually corky tissue cutting off the leaf from the branch; lig'nfied ~, at the base of the leaf before leaf-fall; proteo'tive ~, partly suberized; Separ'a'tion ~, the absciss layer in leaf-fall; Lay'er-age, term proposed by L. H. Bailey for propagation by layering, or the state of being so multiplied; Lay'er-ing, the art of making layers; Lay'ing, a gardener's term for the preceding.

lazuli'num (Mod. Lat.), ultramarine blue, a pigment obtained from "Lapis Lazuli."

leach'y, losing material by percolation, as rain washing away nutriment through the soil; Leach'ing, is the action itself.

lead-col'oured, dull grey; cf. PLUMBEUS.

Lea'der, the primary or terminal shoot of a tree.

Leaf, the principal appendage or lateral organ borne by the stem or axis; it is a sim'ple ~ when undivided, com' pound ~ when divided into distinct parts; ~ Arrang'ement, see PHYLO-TAXIS; ~ Blade = LAMINA; ~ Blus'ter, disease of pear-leaves due to Taphrina bullata; ~ Blotch, black patches on sycamore leaves caused by Rhizoma acerinum; ~ Bud, a bud which develops into a leafy branch; opposed to a "Flower Bud"; ~ Cast, pine-leaves diseased by Lophodermium Pinastri; ~ Curl, disease due to attack of Eucosmus on peach leaves; Cy'cle, in phyllotaxis, a spiral which passes through the insertions of intermediate leaves till it attains the next leaf exactly above its starting point; ~ Fall, defoliation; ~ Green = CHLOROPHYLL; ~ Pores = STOMATA; ~ Scar, the mark or cicatrix left by the articulation and fall of a leaf; ~ Scorch, fungus attacks on leaves of various plants, appearing as if scorched; ~ Sheath, the lower part of the petiole which more or less invests the stem; ~ Spot, diseased portions due to fungus attacks on the leaves of many species; ~ Stalk = PETIOLE; ~ Ten'dril, one which is a transformed leaf; ~ Trace, all the common bundles in a stem belonging to one leaf.

Leaf'ing, the unfolding of leaves; Leaf'it, Withering's term for LEAF-LET; leaf'less, wanting leaves; Leaf'let, the blade or separate division of a compound leaf; leaf'like = FOLIACEOUS; leaf'y, full of leaves.

leath'er-yel'low, a vague term for the tint of tan or bull' leather; al'u- taceous.

leath'ery, tough, coriaceous.

Leaves, pl. Pock'et ~ or Man'tle ~, specialized leaves which accumulate humus, as Asplenium Nidus, etc.

lecanor'ine, resembling the apothecium of the genus Lecanora, which has a paler margin arising from the thallus.

lecid'eiform (forma, shape), lecid'eine, like the apothecium of Lecidea, which has a margin of the same colour as the disc; lecid'ioid (el'dos, resemblance), lecidiform.

Le'cithin (λήκθος, an oil-flask), a type of white, waxy, phosphorus-con- taining substances, some of which have been separated from the seeds of maize, peas and wheat.

lecot'ropal (λέκοσ, a dish; τροφή, a turning), shaped like a horse-shoe, as some ovules, cf. LUCOTROPOUS.
Lectotype

Lepiota

Lee'totype (λεκτός, chosen; τύπος, a type), a specimen of the original series, chosen after the original description to be the type.

Le'cus (λέχος, a bed) = Corm.

leek-green, vivid green, prasinous.

left, sinistrorse; see Appendix C.

legitimat e (legitimus, allowed by law)

Fertilization, in dimorphic or tri-morphic plants, fertilization by its own-form pollen, as short-styled flowers by pollen from other short-stamened flowers, etc. (Darwin).

Leg'ume, Leg'umen (Lat., pulse), the seed-vessel of Leguminosae, one-celled and two-valved, but various in form; Leg'u min, an albuminoid from pulse, vegetable casein; legu'minous, leguminus'ris, (1) pertaining to a legume; or (2) to the order Leguminosae.

Leimonap'ophyte (λειμωνόφυτον, a meadow; + ΑΡΩΦΥΤΕ), a plant introduced into grassland.

leiodermarian, resembling Leio'dermaria in external markings (Scott).

Lem'ma (λέμα, a husk), the palea or flowering glume of a grass; ster'ile ~, the third glume.

Lemne'tum, an association of Lemna, duckweed.

lem'on-col'oured, pale, pure yellow, citreus.

len'diger (lens, len'tis, a nit), having the appearance of small insects, as the panicle of Gastridium lendigerum, Gaud.

Lens (Lat., a lentil; gen., len'tis), the contracted tissue of the free portion of the nucellus frequently attached to the base of the lagcnostome (F. W. Oliver); ~ Cells, cells of the integument capable of focussing light and other rays; ~ shaped, lentil-like, doubly convex, lentilular; conden'sing ~ or Len'ses, epidermal papillae causing photosynthetic activity (Haberlandt).

Len'ticel, Len'ticella (lens, len'tis, a lentil), lenticular Corky spots on young bark, corresponding to epidermal stomata; syn. Lent'icelle (Crozier); lenticella'tus (Mod. Lat.), having lenticels; Lentic'ulae, "the spore-cases of certain Fungals" (Lindley); lentico'lar, lenticula'ris, lentiform'is (forma, shape), like a doubly convex lens; lentiform (forma, shape), doubly convex, shaped like a lentil-seed.

lentig'inosc, lentig'inous, lentigino'sus (Lat., full of freckles, minutely dotted as though freckled.

leochro'mus (λεόν, a lion; χρώμα, colour), tawny, the colour of a lion's hide; leoni'nus (Lat., pertaining to a lion), something of the same tint.

Lep'al, Le'p'alum (Mod. Latin, from λεπίς, a scale), a nectary originat-ing in a barren transformed stamen (J. S. Henslow).

Lepan'thium (λεπίς, a scale; ὄνος, a flower), "a petal which contains a nectary" (Crozier); Leip'icen (kevβs, empty), the glume in grasses, by Richard used for the lower pair of glumes; Leip'ides, pl., scales, usually attached by their centre.

lepidoden'roid (εἶδος, resemblance), like the fossil genus Lepidodendron, a carboniferous Lycopod.

lepidoid (λεπίς, a scale; εἶδος, resemblance), as though scaly, applied to leaves, as in Thuya; lepidophyll'ous (φύλλον, a leaf), has the same meaning; Lep'idophyte, Lepido'phytae (φυτών, a plant), L. Ward's term for Lepidodendroid fossil plants.

lepidopt'erid, used of flowers adapted for lepidopterous pollination; Lepido'pteroph'ilae (Lepidopteron, σκότως, I love), applied to plants which are fertilized by lepidopterous insects.

Lepidosper'mae (λεπίς, a scale; στέρμα, seed), applied to seed-bearing Lycopods (Ward).

lepidos'troboid, recalling the fossil genus Lepidostrobus in form or making.

lep'idote, lepid'o'tus (λεπίδωτος, scaly), beset with small scurfy scales.

Lepio'ta (λεπίς, a scale; οὖς, ὄντος, an ear), "the annulus of certain Fungals" (Lindley); but Lepio'ta is a
genus of Agarics, having been proposed by Persoon for a section of Agaricus; Le'pis, a scale.

Lepis'ma (λέπισμα, peeled bark), a membraneous scale in some Ranunculaceae, an apparently aborted stamen in Paeonia papaveracea, Andr.; several of them enclose the ovary.

Le'pa (λέπα, leprosy), a white mealy matter extruded from the surface of some plants; lep'rose, lep'rous, lepro'sus, scurfy.

lep'tarioid, resembling the old Lichen genus Lepraria.

leptocen'trio (+ Leptome; centrum, the middle), when a vascular bundle has the leptome in the middle, with the hadrome round it (Haberlandt).

leptoclad'ous (λεπτόκλαδος, thin; κλάδος, a branch), slender branched.

leptoder'matous, leptoder'mous (λεπτόδερμα, skin), thin-coated, used of moss-capsules when pliable; Lep'toforms (forma, shape), heteroecious Fungi having teleutospores only, which as soon as they arrive at maturity germinate on living plants.

lep'togloïd (εἶδος, resemblance), like the Lichen genus Leptogium.

Leptogonid'ium (λεπτόγονος, thin, delicate; + Gonidium) = Microgonidium; Lept'oid (εἴδος, resemblance), a group of six to eight polygonal cells, resembling sieve-tubes, in the leptome of certain Bryophytes (Tansley and Chick); Lept'ome, an abbreviation of Leptomes'tome (μεστός, filled), Haberlandt's expression for the phloem-like portion of the vascular bundles in vascular plants; Leptome'mantle, fusion of several leptoids into a layer; ~ Strand, modification of the leptome cylinder; lep'tomat'io, pertaining to the leptome; Lept'omin, a substance found in the leptome of some plants, especially in the sieve-tubes and laticiferous vessels, the presumed function being to convey oxygen (Raciborski); Leptome'ma (μήμα, thread), the delicate thread formed during the transition from a reticulum to a spirem in synapsis; Leptoniss'tion, the reduction of the nucleus into a finely filamentous condition, from reticulum into spirem; Leptophlo'iém (+ Phloëm), rudimentary phloëm, for storage or conduction of food material (Vaisey); leptophyl'ious, -ious, (φύλλον, a leaf), slender-leaved; Leptopuccin'ia, a group of the genus Puccinia, which produces only teleutospores; leptosporan'giate (σπορά, seed; σποροφύτης, a small vessel), having leptosporangia; Leptospor'an guim, a sporangium derived from one superficial cell, as in the true Ferns, and not from a group of cells as in Ophioglossaceae; lep'totene (τένον, a tendon), when the dividing nucleus is extended into a mass of fine filaments; leptoti'chus (τειχος, a wall), thin-walled, applied only to tissue; Leptoxy'lem (+ Xylem), the water-conducting tissue of the sporophyte of Mosses: functional wood (Vaizey); lepto-zygotene (+ Zygote'ne), a transition stage between the delicate single threads or leptomena of the nucleus and their paired arrangement in the zygonema.

Lepyrophy'lly (λεπτοφυλλον, a scale; φυλλον, a leaf), Morren's term for arrest of the tests in the leaf-stage.

Les'keol, resembling the moss-genus, Leskea.

le'thal (lethalis, deadly) Coeffi'cient; infe'rior or supe'rior, the lowest or highest temperatures which are fatal to the vital functions of a given organism (C. Jones).

lett'ered, with spots resembling letters; cf. Gram'micus.

leuc'an'thous, -thus (λευκός, white or grey), white-flowered; Leu'cin or "Amidocaproic acid" is a white substance, first found in animals, afterwards found in plants; Leu'cite, Van Tieghem's name for Leuco'plast; he further modifies the term by prefixing am'ylo-, chlo'ro-chro'mo-, ela'io-, ox'ali-, for various modifications; furthermore, act'ive ~, or pas'sive or reserve ~, accord-
Leucite

Life

ing to function; **leucophyll'us** (φυλάλοιν, a leaf), white-leaved; **Leu'cophyll-grain = Leu'coplast**; **Leu'coplast, Leu'coplast'íd (πλαστός, moulded), A. F. W. Schimper's term for the specialized colourless protoplasmic granule; syn. ANAPLAST (A. Meyer), and **Leucite** (Van Tieghem); **Leu'coso'ma'ta, pl. = Leu'cosomes (σώμα), a body), small spherical bodies, apparently composed of albuminoids inclosed in the leuco-

plants of Commelinaeae (Zimmer-

mann).

leviga'tus (Lat.), smooth, slippery; in botanical Latin it is usually spelled "laevigatus."

le'vis (Lat.), smooth, in the sense of not rough; from the time of Linnaeus downward this has been spelled botanically as "laevis."

Le'vulose (laevus, on the left side); Fructose or fruit-sugar; it deflects polarized light to the left.

Lia'na, Lia'ne (Span. liar, to tie; pron. léah-nä, lé-ahn), luxuriant woody climbers in the tropics with stems of anomalous structure; **lia'noïd (elbos, like), having a liana-

like habit; Lia'noïd, Johow's term for phanerogamous parasites which proceed from autotrophous climbers.

Lib'er (Lat., inner bark), the inner bark, which is often fibrous, the phloëm of the vascular system containing the bast-tissue; ~ Fi'bres, bast-fibres.

li'ber (Lat., free), having no cohesion with the adjoining parts; libera'tus (Lat.), freed.

liberolig'neous (liber, inner bark; lipidum, wood), applied to a conjoint bundle composed of bast and wood elements; **Lib'riform (forma, shape), a tissue composed of LIBRIFORM cells (Tschirch); lib'riform Cell, a narrow, thick-walled cell of woody tissue resembling bast, wood-fibre (Crozier); ~ Fi'bres, substitute fibres reduced in form (Germ., Ersatzfasern).

Li'broplasts (liber, free; πλαστός, moulded), elaeoplasts which are free on the median line of Diatoms (Merenschkowsky).

Li'chen (λείχην, lichen), a Cryptogam which forms a thallus that is either shrubby, leafy, crustaceous or powdery, generally regarded as a symbiosis of hyphal filaments with algal gonidia; ~ Al'gae, the gonidia or green bodies in the thallus; ~ Fun'gi, the filaments of hyphae, which are usually interwoven with the gonidia; ~ Starch = Lichenin; ~ Tun'dra, flat or gently undulating land, chiefly producing Lichens, especially in the north of Siberia; lichente'olous (colo, I inhabit), dwelling in or on a Lichen; Li'chenin, the peculiar starch-like body in Cetraria islandica, Linn., and other Lichens; Li'chenium, the special symbiosis between Alga and Fungus occurring in Lichens; Licheno-
g'rapher, Lichenog'raphist (γράφω, I write) = Lichenologist; Lichenog'raphy, the study of Lichens; adj. lichenog'raphic; li'chenoid (elbos, like), irregularly lobed, as Lichens; Lichenol'o gist (λόγος, discourse), a student or writer on Lichens; Lichenol'o gy (λόγος, discourse), the science and study of Lichens; Licheno'erythrine (έρυθρός, red), Sorby's name for the red colouring matter of Lichens; Licheno'xanth'in(e (λευκόθος, yellow), the same observer's term for the yellow colouring in Lichens.

Lid, (1) the operculum of moss-capsules (W. J. Hooker); (2) the distal ex-
tremity of the ascidium of Nepenthes which forms a lid-like appendage to the pitcher; (3) the areas of pollen-grains which are detached to permit the pollen-tubes to pass; ~ Cel'ls, the terminal cells of the neck of the archegonium which temporarily close the canal; the stigmatic cells.

Life, the state in which plants can grow or perform their functions of absorption, assimilation, reproduction, etc.; ~ Cy'cle, the course of development from any given stage to the same again, as from the seed to the seed once more.
Ligamentum

Ligamentum † (Lat., a band or bandage) = Raphie.

Light-absorption, the ratio of the whole of daylight to that of the place in which the plant grows (Wiesner); ~ traps = Lens-cells.

ligneous, lignous, ligneus (Lat.), woody.

lignicolor (liguum, wood; color; colour), tawny, the colour of freshly cut wood; lignicolous (colo, to inhabit), applied to plants which live on timber; ligniferous (fero, I bear), used of branches which form wood only but no flowers; Lignification (facio, I make), the hardening or thickening of the cell-wall by secondary deposits; lignified, converted into wood; ~ layer, in leaf-fall, the layer of cells immediately above the separation layer; ligiform (forma, shape), like wood; lignify, to turn into wood; Lig’nin or Lig’nine, an incrusting or impregnating substance on the cell-wall, producing woody tissue; it is insoluble in water or ether, soluble in alcohol and alkalis, and is the remainder after the cellulose has been removed by chemical means; Lignireose (deriv. ?), Payen’s term for a constituent of Lignin, only slightly soluble in water; Lig’nite, a fossil or semi-fossil wood substance; jet is an example; Lignocel lulose (+ Cellulose), see Cellulose; Lig’none, a substance which differs from Lignin by being insoluble in water, alcohol and ether, but soluble in ammonia, potash, soda (Payen); Lig’nose, a constituent of Lignin, but soluble only in potash and soda solutions (Payen); lig’nose, lignous, lignous, woody, ligneous; Lig’nosuberation (+ Suberation); in leaf-fall when the lignification and the protective layer is completed by a layer of suberine, and the disappearance of the protoplasm from the cells (Lee); Lignosum, a type of vegetation in which there are several layers, conditioned by the dominant trees or shrubs; Lig’num, wood, that within the cortex, including both albumen and duramen.

Ligule, Lig’ula (Lat., a little tongue), (1) a strap-shaped body, such as the limb of the ray florets in Compositae; (2) a lobe of the outer corona in Scopelula (N. E. Brown); (3) the thin, scariosous projection from the top of the leaf-sheath in grasses; (4) a narrow membranous, acuminate structure, internal to the leaf-base in Isoetes and Selaginella; (5) an appendage to certain petals, as those of Silene and Cuscuta (A. Gray); (6) the ovuliferous scale in Araucaria, united with the bract, and resembling the ligule in Isoetes (Potter); (7) the envelope which protects the young leaf in palms, as Chamaerops and Rhipis.

ligular, (1) pertaining to a ligule, in its various meanings; (2) Russow’s term for that leaf-face of Selaginella which is turned towards the ligule; cf. aligular; ligulate, ligulatus, furnished with a Ligule; liguliform, liguliformis (forma, shape), strap-shaped; liguliforate, liguliforous, -rus (flos, floris, a flower), having ligulate florets, as Hieracium.

li’ac, pale warm purple, the colour of the flower of Syringa vulgaris, Linn.; Li’laceine, a bitter principle from the bark of the same plant; li’laceine (Heinig), li’aecus (Mod. Lat.), lilac’ious, -rus, lilac in colour.

li’laceous, -ceus (lilium, a lily; + aceous), lily-like.

limaciformis (limax, limacus, a slug; forma, shape), applied by Koerber to those Lichen spores which are slug-shaped.

Limbus, lin’bus (Lat., a border or hem), (1) the border or expanded part of a gamopetalous corolla, as distinct from the tube or throat; (2) the lamina of a leaf or of a petal; (3) the margin of the leaf in Mosses when distinct in colour and cell-structure; lim’bate, limba’tus, having a margin of the kind stated.

Lime, used to denote calcium carbonate.
in plants; \~ Gran'ules, lime-knots in Myxogastres, concretions occurring in the capillitium; \~ Scale's, the chalk-glands which excrete lime, as with certain Saxifrages.

Li'mes (Lat., a cross-path or boundary) commu'nis; the collum or neck of a plant.

lim'ic'olous (limicola, a dweller in mud), growing in mud, as on the margins of pools.

lim'itary (limitarius, pertaining to a boundary), placed at the limit, as a guard; lim'iting, restricting; \~ Ceil = Heterocyst; \~ Fac'tor, the factor in growth which fails first; it may be humidity, or light, or temperature, etc.

lim'i'tate (limitatus, restricted), limited or bounded by a distinct line of hypothallus in Lichens (Leighton).

Lim'nad (Limna'a Formation, aquatic plants with a loose substratum of soil; limnet'ic, applied to plants which grow in pools or their neighbourhood; Linni'um, lake formation; Limn'obion (Bios, life), organic associations occurring in fresh water; cf. halobion; geobion.

Limn'o'dad (λίμνωδης, marshy; \(+\) AD), a lake plant (Clements); Limnae'a Formation, aquatic plants with a loose substratum of soil; limnet'ic, applied to plants which grow in pools or their neighbourhood; Linni'um, lake formation; Limn'obion (Bios, life), organic associations occurring in fresh water; cf. halobion; geobion.

Limnnone'reid (λίμνη, a lake; Νηρετ's, a sea-nymph), freshwater algal sub-formation; limnoph'ilus (φιλέω, I love), marsh-loving; Limn'odophy'ta (φυτόν, a plant), marsh plants (Clements).

Li'namarin (linum, flax), a glucoside in linseed, Linum; the same as Phaseolunatin; Li'nase, an enzyme in flax (Armstrong).

Line, Li'nea (Lat., a line or thread), as a measure of length, the twelfth part of an inch, in millimetres, 2.1167; the Paris line is 2.325 mun.; \~ Tran'scet, a record of the plants occurring along a straight line (Clements); Li'nema transvers'al'is, the ostiolum of some Fungi; Lines of Growth, the limits of each year's growth in woody stems; \~ of Vege'tation, for any given species, those obtained by joining all the places in a given direction where the species stops; the resultant lines map out the distribution of the said species (Kerner); linea lis (Lat., consisting of lines), measuring about a line; lin'e'er, linea'tis, narrow, several times longer than wide; lin'eate, linea'tus, marked with lines; linea'ta Va'sa †, vessels transversely marked, as annulate ducts or tracheids; line'a'tipes † (pee, a foot), having a lined or striated foot-stalk; lined = lineate, striate; lin'eolate, linea'latus, marked with fine or obscure lines.

lin'iform (lingua, a tongue; forma, shape), tongue-shaped; lin'gulate, lingula'tus, also means tongue-shaped.

Li'nin or Li'nine (λινός, a thread), the hyaloplasmic filaments of the nucleus in repose (Schwarz).

Linn'e'an Sys'tem, the artificial classification devised by Linnaeus, based upon the number and position of the stamens and pistils.

Li'none (linum, flax; oleum, oil), "the glyceride of lineoleic acid found in linseed oil."

Li'nom = Linin.

lin'osp'orous (linea, a line; \(+\) Spore), employed by G. F. Atkinson for "linear spored."

Liorhi'zae (Λιορής, smooth; βίς, root), Van Tiegheam's name for Monocotyledons and Nymphaeaceae, the root-hairs being of exodermic origin; liorhi'zal, pertaining to Liorhi'zae.

Lip, (1) one of the two divisions of a bilabiate corolla or calyx, that is, a gamopetalous or gamosepalous organ cleft into an upper (superior or posterior) and a lower (inferior or anterior) portion; (2) the label-lum of Orchids; \~ Cells, two narrow,
lignified cells on the sporangia of some annulate Ferns, distinct from the annulus, which are the first to separate on dehiscence; cf. Stomium.

Lip’ase (λίπος, grease), a fat-splitting enzyme occurring in oily seeds; Lipasei’din, the fat-splitting enzyme of the cytoplasm in castor-oil seeds, Ricinus; Lip’ochrome (χρώμα, colour), the yellow pigment of flowers, so named by Hansen from its resemblance to an animal pigment;

Lipoey’anin (κυανός, blue), the blue pigment of some plants; Lip’oid (είδος, resemblance), applied to a series of fatty bodies found in plants in association with protoplasm; e.g., Cytoplipoïd, Tropholipoïd, etc.; lipolyt’ic (λύσις, a loosing), dissolving fats.

Lipox’enous (λεύκω, I leave; γένος, a host), deserting its host; Lipox’eny, the desertion of a host-plant by a parasite to complete its development on reserve materials previously obtained from the host, as in the falling away of Ergot, the sclerotium of Cordyceps purpurea, Tul.

Lipped = Laborate.

Liq’uor (Lat. a liquid) Am’nios (cf. Amniōs), a term borrowed from zoology for the fluid “contained in the sac within which the embryo is engendered.” (Lindley).

Lirel’la (dim. of lira, a ridge), in Lichens an oblong apothecium with a furrow along its middle, as in Opegrapha; lirel’late, lirel’line, lirella-like; lirel’iform, lirelliform’is (forma, shape), shaped like a lirella.

lisigenet’ic, = Lysigenetic.

List-quad’rat, an enumeration of the plants found in a square space (Clements).

Lithobib’lion (λίθος, a stone; βιβλίον, a paper or scroll) = Litho’phyll; Lith’ocarp (καρπός, fruit), fossil fruit; Lith’ocyst (κύστις, a bag or pouch), a crystal cell; Lithoph’illus (φιλέω, I love), rock-loving; lithoph’ilous, saxicolous, dwelling on rocks; ≈ Formation, a formation of aquatic plants fixed to stones or rocks, as marine Algae; Lith’ophyl (φυλλον, a leaf), a fossil leaf or leaves; Lithophy’ta, Lith’ophytes (φυτόν, a plant), (1) plants which grow on stones, but derive their nourishment from the atmosphere, as saxicolous Lichens; (2) plants growing amongst rocks; Lithophy’tia, rock plant formations (Clements); lithosper’mous (σπέρμα, seed), having hard, stony seeds; Lithox’yle (ξυλόν, wood), fossil wood.

Lit’mus, a violet colour derived from several species of Lichens, such as Roccella, etc.

Lit’oral, li’toralis (Lat. pertaining to the sea-shore), belonging to or growing on the sea-shore (A. Gray adds “river-shore,” which strictly speaking is “riparian”); used by H. C. Watson for plants of the sea-shore; frequently spelled lit’toral, li’toralis.

Litorides’er’ta (litorea, pertaining to the sea-shore; + Der’ta), strand-stepes, deserts developed under the influences of the sea, consisting chiefly of halophytes and succulents.

Litua’tus † (litus, a crooked staff), forked, with the points turned a little outward.

Litura’tus ‡ (litura, a smearing), when spots are formed by an abrasion of the surface.

Li’vens, liv’id, li’vidus (Lat.), pale lead colour.

Liv’er-col’oured = Hepaticous.

Liv’er-worts, Hepaticae.

Lia’nos (Span.), a special type of savannah, forming vast plains in Venezuela, and characterized by usual absence of trees.

Lobe, Lo’bus (λόβος, the lower part of the ear), any division of an organ or specially rounded division; Mid’âle~, a small conical or tongue-shaped growth arising from between the two side-lobes of a Fern-prothallus; lo’bate, lo’batous, divided into or bearing lobes; Lo’belet, a small lobe; Lob’iolus, a small lobe into which some Lichen-thalli are divided; lobose’, occasionally used
for lobed; lobulate, lobula'tus, having small lobes; Lob'ule, (1) a small lobe, a lobule; (2) Spruce's word for the minor lobe of the leaf of Hepaticae, the anicle of Nees and others; (3) a tongue-like structure opposite the scutellum in grasses, the epiblast (Van Tieghem); Lob'u'lus, a small lobe.

Local'ity (localitas, a place), the approximate geographic position of an individual specimen.

locel'late, locellat'us, dividing into Locelli; Locel'lus (dim. of loculus, a little compartment), a secondary compartment, as a primitive pollen-sac, which, by the destruction of a septum, unites with an adjoining locellus to form an anther-loculus.

Loc'h'mad (λόχημα, a thicket; + A), a thicket plant; Lochmi'um, a thicket formation; lochmoc'ola (colo, I inhabit), and lochmoph'ilus (φιλέω, I love), dwelling in thickets; Loch'mophy'ta (φιλώ, a plant), thicket plants (Clements).

Lochmo'dium (λοχμοδίον, bushy), a dry thicket formation; lochmoph'dilus (φιλέω, I love), dwelling in dry thickets; Lochmodophy'ta (φιλώ, a plant), dry thicket plants (Clements).

Loc'o'co, disease of cattle and sheep from their feeding on Loc'o-co-plants or ~ weeds, chiefly species of Astragalus and Lupinus.

Loc'o'form (locus, a place; + FORM), a form which differs from its nearest allies by peculiarities derived from the climate or soil (Kuntze); Loco-greg'iform (grex, gregis, a flock), a secondary or tertiary Ramif or'm (Kuntze).

Loc'u'lament, Loculamen'tum (Lat. a case or box); (1) Loculus of a carpel; (2) "the perithecium of certain Fungi" (Lindley); loc'u'lar, locula'tris, having cavities or Loculi, denoted further by the addition of uni-, bi-, tri-, etc., for one-, two-, etc., celled; loculatu'sus, divided into cavities; loculici'dal (caedo, I cut), the cavity of a pericarp deshiscent by the back, the dorsal suture; loc'u'lace, locul'i'sus, loc'u'lous, divided internally into cells, partitioned; Loc'u'lus, (1) the cavity of an ovary or anther; (2) the periderm of certain Fungi (Lindley); (3) a chamber in the apex of the testa of a fossil seed (F. W. Oliver).

Locu's'ta (Lat. crayfish or locust), the spikelet in grasses.

Lodg'er-arrangements, used by those flowers which detain their insect visitors.

Lod'i'cule, Lodic'u'la (Lat. a small coverlet), a small scale outside the stamens in the flower of grasses; ghmella.

Loess, drifting dust detained and consolidated by vegetation.

Log'otype (λόγος, word; τύπος, type), a type determined historically from two or more original species; adj. logotyp'ic (O. F. Cook).

Lol'iophyll, Étard's name for chlorophyll from Lolium and other grasses.

Lo'ma, a grass-steppe in Peru, the life of plants is during the winter when mists moisten the soil, in summer it is dried up.

Lomar'loid, resembling the Fern genus Lomaria.

Long'ipes (longus, long; pes, a foot), long-footed or long-stalked.

Lomenta'ceous, -ceous (lomentum, bean-meal), bearing or resembling Lomenta; Lom'en'tum, Loment'um, a legume which is contracted between the seeds, falling apart at the constrictions when mature into one-seeded joints.

Long'ipesp'lan'kton (+ Plankton), a summer boreal association composed of Peridiniaceae, especially of Ceratium longipes, whence the name.

Longis'imus (Lat.), very long.

Longis'tamnine'sae (longus, long; + Stamen), Delpino's term for flowers with long stamens which are wind-fertilized; adj. longis'tamin'ate.

Longitu'dinal Sys'tem, an old term for fibro-vascular system (Crozicr).

longitudinal'iter, longitudinal'is (Lat.), in the direction of the length.
Longitu'do (Lat., length) means, botanically, in the direction of growth.

loose, (1) as applied to inflorescence, lax, as a panicule; (2) hardly coherent, as loose tissue; ~ Smut, a disease of cereals caused by various species of Ustilago.

Loph'ad (λοφία, a crest; + AD), a hill plant; lophio'stomate (στόμα, a mouth), having crested apertures or openings; Loph'i'um, a hill or crest formation; lophoph'ilus (φιλέω, I love), hill-dwelling; Lophoph'y'ta (φυτόν, a plant), hill-plants (Clements); Loph'osporas, -ce (+ Spore), plants having plumose pappus (Clements); lophot'richous (θηλης, τριχος, hair), used of those bacteria possessed of a tuft of cilia (Jones).

lor'ate, lor'a'tus (lorum, a thong), strap-shaped, ligulate.

Lori'ca (Lat.), a leather corset, (1) the entire silicious covering of the frustule in Diatoms; (2) formerly used for the Testa; (3) employed by Hance to denote the scales of the fruit of Calamus.

lor'icate [clothed in mail], "equally narrow throughout" (Braithwaite), is probably a slip for lor'ate.

Lo'rum (Lat. dim. of lorum, a thong), the filamentous and branched thallus of some Lichens.

Lo'tase, an enzyme in Lotus arabicus; Lot'o'fa vin, a yellow colouring matter in the same plant; Lo'tusin, a yellow crystalline glucoside also from it.

low, small as compared to its allies; ~ Moor, a swampy formation developing peat (Warming); ~ Yeast, that which is found at the bottom of a fermenting liquid: Ger. "Unterhefe"; low'ered, used when the lip of a bilabiate corolla is inclined at about a right angle to the tube.

lu'b ricous; lu'b ricus (Lat.), smooth, slippery.

lu'cens, lu'cid, lu'cicus (Lat.), shining, referring to the surface.

lu'mbrica'lis (lumbricus, a maw-worm), worm-shaped, as in some Algae; lu'mbricous, shaped like an earth-worm.

Lu'men (Lat., light, opening), the space which is bounded by the walls of an organ, as the central cavity of a cell; Lu'minous Line, in Malpighiaceae, etc., on the tests of the seeds, is due to a modification of the outer layer.

lu'nar (luna, the moon), (1) pertaining to the moon; (2) LUNATE; ~ Plants, Grew's term for those which twine "with the moon," against the sun, sinistrorse; lu'native, lu'minous, half-moon shaped; lu'nated, having lunar markings (Crozier); lu'niform (forma, shape), crescent-shaped (Crozier); lu'nulate, lu'nul'a'tus, diminutive of lunate.

Lu'pinine, an alkaloid in the flower-buds of Lupinus luteus, Linn.; Lu'pinite, a bitter substance occurring in the leaves of the white lupin, Lupinus albus, Linn.

Lu'pulin, (1) a secretion from the glandular hairs of the hop-strobiles, Humulus Lupulus, Linn., which gives a bitter taste; (2) see LUPULINIC GLANDS; lu'puline, lupuli' nous, lupuli'num, resembling a hop-strobile; Lupulin'ic Glands, the resinous glandular bodies within the scales of the female flower of the hop. "also called Lupalin" (Stor-month); Lu'pulite, a lupulinic gland.

lu'rid, lu'ridus (Lat., sallow, wan), in botany, dingy brown or yellow; lurid'ic Acid occurs in Boletus luridus, Schaeff.

Lu'siform (lusus, a game), a new form, due to cultivation, which reproduces itself by vegetable increase only, and not by seed (Kuntze).

Lu'sus (Lat., a game), a sport or variation from seed or bud; ~ Natu'rae a monstrosity.

lu'teol'us (luteus, yellow; fuscus, swarthy), blackish-yellow; lu'teolin, a yellow colouring matter found in seed, Reseda Luteola, Linn.; lu'teolus (Lat.), yellowish; lutes'cent, lutes'cent, becoming yellow; lu'teous, lu'teus (Lat.), a full yellow.
lucticole (luctum, mud; colo, I inhabit),
used of a plant growing in miry places.

Luxur'ria, Luxur'ries (Lat., rankliness),
exuberant growth; Luxur'iant, Luxur'ians (Lat.),
usually signifies that the organs of nutrition are
more developed than those of fructification.

lycop'er'dio'oid (Lycoperdon, a genus of
Gasteromycetes; el'dos, like), resembling a puff-ball.

lycopodia'ceous (+ ACEOUS), resembling
the genus Lycopodium; lycopod'ini'e'an, lycopod'i'nos, resembling in
structure Lycopodium; Lycop'sida, Lycop'sids, pl. (ψις, appearance),
a group of cryptogams, consisting of
Lycopodiadles and Equisetales (Jeffrey); adj. lycop'sid, sporangio-
phoric; the cryptogams specified.

lycot'rep'al = lycot'repous, -pus (άκος, a
door-knocker; τρωή, a twining),
when an otherwise orthotropous ovule is bent like a horse-shoe.

Lymph, Lyn'pha (Lat., spring water),
Grew's term for sap; Lymph'ae-ducts = Ducts; lymphat'ic, clear, pellucid;
~ Ducts = Ducts.

lysigenet'ic, lysigen'ic, lysig'en'ous
(λύσις, a loosing; γένος, offspring),
when a cavity is formed by a dis-
organization or dissolving of cells.

ly'rate, lyra'tus (άρα, a lute or lyre),
lyre-shaped, pinnatifid with the
terminal lobe large and rounded, the
lower lobes small; lyra'ti-parti'tus,
~ se'o'tus, lyrately pinnate; lyre-
shaped = lyKate.

Ly'sin (λύσις, a loosing), a product of the
hydrolysis of protamines and other
proteids, isolated from sprouting
plants; Ly'sis, the metamorphosis
of a part.

Mace, the arillus of the nutmeg.

Macera'tion (Macerratio, a steeping),
steeping, as in the case of barley for
malting.

macran'drous (μακρός, long; ἀνήρ,
ἀνδρός, a man), having large or long
male plants in Algae; macran'thus
(άνθος, a flower), long flowered.

Macro-, in Greek compounds = long;

frequently but improperly used for megα-, or megal-, large.

macrosēroph'ilous (μακρόεροφί, long; ἀφ',
air; φιλέω, I love), employed by
Winogradsky to express the avidity
for oxygen shown by Clostridium;

Macroan'dro'spore (+ ANDROSPORE),
Janet's term for macrospores of
Selaginella having a male function;

Macroaplanosporang'ium (+APLANO-
spore, SPORANGIUM), the sporangium
producing macroaplanospores (Thax-
ter); Macroaplan'o'spore (+APLANO-
spore), aplanospores of large size
given off by Compsopogon (Thaxter);

Macrobiocar'py (βιος, life; καρπός, fruit), Delpino's expression for the
property of certain fruits to retain
their seeds during a series of years,
as Callistemon; macrobiostigmat'mic
(βιος, life; στίγμα, a puncture), Del-
pino's term for those plants whose
stigmas remain capable of fertilization
until the anthers are mature;

Macroblistas (Αλαστός, a bud), a normal
wood bud (Hartig); macroceph'alous,
-lus (κεφαλή, head), big-headed, di-
cotyledonous embryos with consoli-
dated cotyledons; macroclad'ous
-dus (κλάδος, a branch), having long
branches; Macrhocon'idium (+ CONI-
DIUM), a large conidium produced at
a different period in the life-cycle
to a Microconidium; Mac'rocyst
(κύστις, a bag or pouch), (1) one of the
vesicles which originate the fertile
tissue in Pyronema, etc. (Tulasne);
(2) the resting condition of a very
young plasmodium, a mass of proto-
plasm, with nuclei in a double wall
(Lister); Mac'rocyste, trisyll. (κύτοs, a
holow), the larger form of dimorphic
flagellate Algae; Macrodi'o'dange
(+) Diode; άγγειον, a vessel), Van
Tieghem's term for MACROSPORE;

Macrogam'ete (γαμήτης, a spouse)=MEGA-
GAMETE; Macrogon'idium (γόνος, offsping; el'dos, like), a goudium of
large size in comparison with others
produced by the same species; cf.
Megalogonidium; Macroy'nospere
Macrogynospore

(+ Gynospore), Janet's term for gynospores of Selaginella having presumably a female function; Macro-
microspor'ophyll = CARPEL.
macromit'reous, resembling the genus Macromitrium.

macrophyl'line (mákrós, long; φύλλον, a leaf), macrophy'lous, having elongated leaflets or leaves; Mac'rrophyte (φυτόν, a plant), employed by Schimper to denote marine Algae of extreme length; macrophy'tic, (1) used by Schimper for the large forms of marine Algae; (2) the non-microscopic plants found in the pleuston or hydrocharid formation (Warming); Macrophytoplankton (+ PLANKTON), plants such as Ulri-
cularia; Mac'roplast (πλαστός, moulded), Lankester's term for large disc-like plastids in Bacterium rubes-
cens; macrop'odal, macrosp'odous (ποδός, ποδός, a foot), used of an embryo with enlarged hypocotyl forming the greater part of its mass; (Crozier adds another meaning, applied to a leaf with a long petiole);

Macroprothall'ium (+ Prothal-
lium), a prothallial growth from a microspore of Selaginella, etc., having a female function; Macrop'teres (πτερός, a feather or wing), the wings on the stems of plants with reduced leaves; Macropyc'nid (πυρός, dense) = STYLOSPORE; Macro'scle'reids (σκληρός, hard), Tschirch's term for long stone-cells with blunt ends; macroscop'ic (σκοπείω, I see), viewed by the naked eye, opposed to micro-
scopic; Macros'partine'tum, a salt marsh plant association in which Spartina is dominant (Ganong); macrosporan'giate, possessing macro-
sporangia; ~ Flow'ers, carpellary flowers, pistillate flowers destitute of stamens; Macro'sporangium (σπορα, seed, áγγεῖον, a vessel), (1) a sporangium containing macro-
spores; (2) the nucellus of the ovule of Planerogams; Macro'spore; (1) the larger kind of spore in vascular Cryptogams; (2) the embryo-sac in Planerogams.

Macro'spor'oid (εἶδος, resemblance), resembling the genus Mac'rosporium, Fries.

Macro'spor'ophore (μακρός, long)
( + Sporophore), an organ support-
ing macrospores; Mac'rosporo'phyll (φυλλόν, a leaf) = CARPEL; macro-
sporophyll'ary, carpellary; macro-
sty'lous (στύλος, a post), long-styled;

Macrosym'biont (συμβίος, I live with), the larger of the associated organisms in symbiosis; Macro'therm (θέρμη, heat) = MEGATHERM; macro-
thermophil'us (φιλέω, I love), dwell-
ing in the tropics; Macrothermopo-
my'ta (φυτόν, a plant), tropical plants; Macrothermophy'ta (Clém-
tes). [Note.—These words would have been better coined from mega-, instead of macro-.;] Macrozoogonon'id'ium (κοιον, an animal; + gonidium), in Ulthrix: the larger kind of zoon-
spore, which germinates independently; cf. Microzoogonidium;

Macrozo'o'spore, a large zoospore when compared with others of the same species.

Mac'ula (Lat.), a spot; pl. Mac'ulae: (1) areolated pits of Coniferae; (2) also organs on the aerial stem of Cyathophorum, large round white dots in two rows, probably water-storing organs; Macu'lation, the arrangement of spots on a plant (Crozi-r); maculif'or'mis (formis, shape), used by Koerber for apothecia which are shaped like irregular spots; mac'ular, mac'ulate, mac'ulose (maculosus, spotted), blotched or spotted.

madefactus (Lat.), moistened, as plants in an herbarium previous to examination.

Madu'ra, the fungus-foot disease sup-
posed to be caused by Chionype Car'teri, Berk.

Mag'moid (máγμα, drags; εἶδος, like), in Lichens, "like an Alga, consisting of spherical green cellules" (Leigh-
ton).

Magneto'tropism (máγνης, a magnet; τροπή, a turning), a theoretic term for a possible tropic force of a magnet.
Magnetotropism

upon responsive particles in a plant (Pfeffer).

Magnocaric'ta, pl. (magnus, great), associations of tall-growing species of Carex.

Maio'sis=Meliosis; maiot'ic=meiotic.

Majo'quadr'at, Clements's term for a square of four quadrats.

Mak'roflora ( + Flora), applied by Leveir and Sommier to the luxuriant vegetation of some of the valleys in the Caucasus.

Malc'og'amy (malaxia = mollusca; γάμος, marriage), used in cases of Malacophilia (φήμα, I love), plants which are fertilized by snails or slugs; adj. malacoph'iolous.

Mal'a'coid (malaxis, soft; elos, like)-mucilaginous; malacophyll'ous (φύλλον, a leaf), with soft or fleshy leaves.

Male, a plant or flower which bears stamens or their analogues; ~ Cell, the smaller of two unequal gametes; ~ Flow'ers, staminate flowers; ~ Or'gans, those structures which, in fertilization, are concerned, as the stamens, antheridia, etc.; ~ Pro'thal'lium, one which bears antheridia only; ~ System, all that part of the flower which belongs to the stamen.

Mal'a'lic (malum, an apple), pertaining to apples, as ~ Ac'id, which is said to be the most frequent of organic acids in cell-sap.

Malico'rium (Lat.), the rind of the pomegranate.

Malig'nant Oedem'atous, disease in animals resembling anthrax, and like that, caused by a bacillus.

Malleo'rous, a shrub-steppe largely composed of Eucalyptus about the height of a man.

Mal'leolus (Lat., a small hammer), a layer; a shoot bent into the ground and half-divided at the bend, whence it emits roots.

Malloco'cus (μαλλός, a lock of wool; κόκκος, a berry), downy fruited.

Malpighia'cei, hairs attached by their middle, frequent in the order Malpighiaceae; malpighia'ceous, relating to Malpighiaceae, as the peculiar hairs of many species; Mal'pigr'ian Cells, those which compose the outer layer of the seed in Malpighiaceae, with a "luminous line" composed of Lignin.

Malt'ase or Malt'in, a ferment found in all germinating cereals, and of greater activity than diastase (Dubruntant); Malt'ing, germinating seeds of barley until the radicle (acrospire) is produced, and then checking the further germination by means of heat; Maltodex'trin, a body intermediate in properties between maltose and dextrin; Malt'ose, a sugar formed by the action of diastase on starch.

Malva'ceous, resembling or belonging to the order Malvaceae.

Mamelon (Fr., nipple), the floral axis (Treib); ov'ular ~, the papilla which precedes the formation of the nucellus in Cycas (Treib).

Mamm'il'a (Lat., a nipple or teat) = Mammilla.

Mam'miform (mamma, a breast; forma, shape), breast-shaped, conical with rounded apex.

Mam'mil'la (Lat.), a nipple or projection; used for granular prominences on pollen-grains; mam'mill'ar, mam'milla'ris, mam'millate, mammilla'tus, having teat-shaped processes; mammill'liform (forma, shape), applied to those papillate protuberances on a petal which give it a velvety appearance.

Mam'mose (mammo'sus, full-breasted), having breast-like protuberances.

Man'cus (Lat., maimed), deficient or wanting.

Man'ic'a'te manica'tus, (Lat., long-sleeved), applied to pubescence so dense and interwoven that it may be stripped off, "like a sleeve."

Man'na, the hardened exudation from various trees, as from Fraxinus Ormus, Linn.; Man'nan, a hemicellulose; Man'nite, a sweet substance in the sap of the tree mentioned; Man'ni'tose, sugar from the pith of ash, oak and elder;
Mannose, a sugar resulting from the hydrolysis of cellulose; Mannocellulose (± Cellulose), a constituent of gymnosperm wood, which on hydrolysis yields abundant Mannose (Bertrand).

Manometer (μανόμετρον, rare, scanty; μέτρον, a measure), apparatus to measure the pressure of gas or liquid.

Mantissa (Lat., an addition or make-weight), shrubs, mostly evergreen.

Man'ny-head'ed, with many distinct buds on the crown of a root.

Ma'qui, a Corsican term for dense thickets of shrubs, mostly evergreen.

Marattia'seons, akin to or resembling the fern genus Marattia.

Mar'bled, stained with irregular streaks of colour.

Marces'cent, marces'cens (Lat., withering), withering without falling off; mar'cident (Lat.), withered, shrunk.

Mar'cor (Lat., decay), withering; flaccidity caused by want of water.

Marg'ela (dim. of margo, a border), the elliptic ring round a stoma formed by the guard-cells.

Mar'gin, Margo, the edge or boundary line of a body; mar'ginal, mar'ginalis, placed upon or attached to the edge; ~ Bas't, a strong development of a hypoderm on the edges of the leaves of certain families, as Illicineae and Myrsineae; ~ Glands, glands on the incurved margin of the pitchers of Nepenthes; ~ Growing point, in a flattened member when the marginal cells remain embryonic and capable of growth; ~ Ov'ule, an ovule borne on the margin of a carpel; ~ Pit's, pits which traverse the outer walls of the epidermis in leaves (Solereder); ~ Veil, a membrane enclosing the hymenium in the young stage of Agaries, the Velum partiale; Margina'les, leptosporangiate Ferns whose sorii arise from the margin of the frond (Bower); cf. Superficialles; mar'ginate, margina'tus, margina'rius, broad-brimmed, furnished with a margin of distinct character; mar'gined, marginate; margini'ci'dal (caedo, I cut), dehiscent by the disjunction of the united margins of the carpels, a form of septicidal dehiscence; Mar'go thal'lo'des, the rim of the shield of a Lichen formed by the thallus.

Marine, mar'i'naus (Lat., pertaining to the sea), growing within the influence of the sea, or immersed in its waters.

Marit'im'us (Lat., marine), belonging to the sea, or confined to the seacoast.

Mark'ings, used of various forms of thickening on the cell-wall, as annular, reticulated, spiral, etc.

Marmora'tus (Lat., marbled), having veins of colour, as some marbles.

Mar'ram-grass association, formed of Ammophila, on sand dunes.

Mar'row, used by Blair for the pith.

Marsh plants = Helophytes.

Mar'sp'ial (μαρσπόδιον, a pouch), geocalyceous or pouch-fruited, used of certain Hepaticae; Marsup'iwm, the fruiting receptacle of the same; mar'sup'oid, (εἶδος, resemblance), marnaup'iwm.

Mas, mas'culus, masculinus (Lat.), male; staminate, or with corresponding structures.

Masked, personate.

Mass, (1) usually written Maste; (2) Mass, pl Masses, used by Sir J. E. Smith for Sori, Sori.

Mas'ta (Lat., a lump), the mass or substance of a body; ~ semina'lis, the flesh of some Fungi (Lindley); ~ sporoph'ora; ~ theci'gera, the sporangia of some Fungi (Lindley); Mass'es, (1) collections of anything;
in unusual quantity, as pollen-masses; (2) used by Sir J. E. Smith for Sorb.

**Mas'ula** (Lat., a little lump), (1) the hardened frothy mucilage enclosing a group of microspores in Heterosporous Filicineae; (2) in Phanerogams, a group of cohering pollen-grains produced by one primary mother-cell, as in Orchideae; also styled Pollen-mass.

**Mast**, the fruit of such trees as beech, and other Cupuliferae.

**Mass'tic** (μαστιχ, gum), a resinous exudation from *Pistacia Lentiscus*, Linn.

**mast'igopod** (μαστιγιόποδ, a whip; ποώς, ποδός, a foot), a stage in the development of Myxogastres, the contents of each spore escape as a zoogonidium enclosing a nucleus and contractile vesicle, with a single ciliation; **Mas'tigospores, -ae ( + Spore), plants with flagellate spores (Clements).**

**mas'toid** (μαστίόδ, a breast; εἶδος, like), nipple-like.

**Mat**, a closely intertwined vegetation, with roots and rhizomes intermixed; ~ Ge'ephytes, pl. (+ GeophyTE), perennial spot-bound plants, mostly monocotyledons.

**Math**, an old term for crop, as aftermath = second crop.

**mato'nioid** (εἶδος, resemblance), like the Fern genus Matonia.

**Ma'trix** (Lat., the womb), the body on which a Fungus or Lichen grows; ~ Pol'linis, the cell in which pollen-grains are developed; the pollen-mother-cell.

**matrocl'i nous** (ματρόκλε, a mother; καλώ, I incline), used of hybrids which have the characters of the female parent.

**matteuo'cioid** (εἶδος, resemblance), akin to or like the Fern genus Matteuccia.

**Mattul'la, or Mat'tula** (matta, a mat), the fibrous material surrounding the petioles of palms; cf. Me'dulla (3).

**Matura'tion, Matura'tio** (Lat.), ripening.

**matures'cent** (mature'scents, becoming ripe), approaching maturity (Crozier).

**matut'i'nal, matut'i'lis, matut'i'num** (Lat.), pertaining to the morning; plants flowering early, as *Ipomoea purpurea*, Roth.

**max'i mal** (最大限度, greatest), employed to denote the utmost which an organism can endure as, the greatest degree of heat.

**Mazae'dium** (deriv. f.), the fructification of Calceol, the spores free from the asci and forming a powdery mass in nearly closed heads.

**Mead'ow, disyll.,** usually grass-land artificially maintained by mowing and grazing.

**meal'y**, farinaceous.

**mean'driform** (μαλακόδεσμος, a winding river; forma, shape), having a winding direction, as the anther-cells of Cucurbitaeceae.

**Mea'tus** (Lat., a passing) intercel'lularis, an intercellular passage; ~ pneumat'icus, an air-passage.

**Mechanomorph'osis** (μηχανόμορφη), contrivance; μορφωσις, shaping), a word coined by Sachs to express mechanical changes in structure produced in the larger groups by similar external causes, as leaf-like organs in Algae and Phanerogams; *Mechanot'ropism* (τροπή), a turning), a general term for all orienting movements in response to mechanical agencies.

**Me'conine** (μέκον, a poppy), an alkaloid contained in opium; *Mec'o'nium*, botanically, the juice of *Papaver somniferum*, Linn.

**med'ial, me'dian, media'nus** (Lat., in the middle), belonging to the middle; *me'dian Bract'oeole*, one inserted at the middle of the pedicel; ~ Chor'isis, the multiplication of a single organ in the median plane; ~ Line, the central line of a bilateral organ as the midrib of a symmetric leaf; ~ Plane, when used of a flower in the plane of bract and axis; ~ Wall, in Archeogniates, the wall in a plane at right angles to the basal wall dividing the pro-
embryo into lateral halves; ~ zygomorph’ous, capable of division into similar halves by a plane passing through the middle; cf. SAGITTAI SECTION; **Mediananisophyll’y** (+ Anisophyll’y), the form of leaves on median shoots, as seen when the twigs are normally decussate.

**Medica’gophyll** (Medicago, Tourn.; + phyll), the characteristic chlorophyll of Lucerne, *Medicago sativa*, Linn.

**medif’ixus** (*medius, middle; flexus, fastened), fixed by the middle; **Mediocor’tex** (+ Cortex), the central layer or layers of the bark, usually characterized by inert refractive fungal masses (Groom); **Medioform** (+ Form), an intermediate form not due to hybridity (Kuntze); **Medioloc’oform** (locus, a place), a local Medioform (Kuntze).

**mediterraneus** (Lat., midland), (1) inhabiting spots far from the sea; (2) occurring in the Mediterranean region.

**medivalvis** (*medius, middle; valva, a valve), arising from, or on the middle of the valves.

**Medull’a** (Lat., pith, marrow); (1) the pith; (2) the central looser portion of the flesh in certain Fungi; (3) the “Mattulla” of palms (Stormouth); ~ **Seminis**, the albumen of seeds; **medullary, medulla’ris** (Lat., seated in the marrow), relating to the pith, pithy; ~ **Bund’les**, the more lateral vascular bundles of the leaf-trace in Monocotyledons; ~ **Casts**, impressions of the internal cavity of *Calamites* in solid material; ~ **conjunctive Tis’sue = Pith**; ~ **Crown, = ~ Sheath**; ~ **Phlo’em Bund’les**, independent phloem bundles developed just within the ring of normal vascular bundles; ~ **Rays**, plates of parenchyma or cellular tissue radiating from the pith to the cortex; the “silver-grain” of joiners; ~ **Sheath**, tracheids forming a circle round the pith, the primary xylem bundles project- ing into the pith from the cambium.

**megaceph’alus** (*méga, large; kephal, head), used of large capitula of Compositae; **Megalochlor’oplast** (+ Chloroplast), compound chlorophyll granules in *Tillandsia*, composed of Microchloroplasts (Billings); **Megaconid’ea**, pl. **Megacon’ids** (*kévis, ashes), Zukal’s term for the large conidia borne in pycnidia of certain Ascomycetes; **Mega’gam’etes** (*gamétes, a spouse*), the larger motile sexual cells of Algae, presumably female; adj. **mega’gam’etai**.

**Megalagn’oid’ium** (*mégálos, large; + Goni’dium) = **Macrogonid’ium**.

**Mega’phan’erophytes**, pl. (*méga, large; + Phanerophyte*), trees exceeding the height of 30 metres; **Mega’phyll’idae** (*phyllos, a leaf*), the Ferns, as possessing broad fronds; **meggaphyli’ous**, the leaves or leaf-like expansions large (Jeffrey); **Mega’phyll’y (*phyllos, a leaf*), the possession of large leaves; **Mega’plan’kton** (+ Plankton), distinct from ordinary plankton by inclusion of megaephytes and Algae of special groups (Warming); **Mega’planogam’éte** (+ Planogame’ta), Brebner’s term for a large planogame, presumably female; **Mega’prothall’us** (+ Prothallus*), the prothallus producing archegonia; **Mega’sporang’ium** (+ Sporangium*), the correct form of Macro’sporangium; **Megar’chid’ium** (*ápóthitos, a rudiment*), = **Nucellus**.
megarhizous (ῥίς, a root), large-rooted; megascopic (σκοπεῖν, I see), vision with the naked eye; megasporous (-σπορος), a sorus which gives rise to megasporangia in Salvina; megasporangē [four syll.] (σπορά, seed; ἀγγείον, a vessel), a sporangium which produces megaspores; megaspore, the more correct form of MACROSPORE, (1) the larger spores of vascular Cryptogamis; (2) used for Ovule; (3) = EMBRYO-SAC, primary ~, the megaspore mother-cell (Gibbs); megasporoearp (καρπός, fruit), the development of the megasporangium in Azolla, finally containing the single perfect megaspor; megasporocyte (κύτος, a hollow vessel), the early state of the embryo-sac; megasporogenēsis (γενεῖσις, beginning), the development of a megaspor; megasporophyll (φύλλον, a leaf), (1) a carpel; (2) a sporophyll which bears megaspores; megatherm, adj., megathermic, the correct forms of MACROTHERM, MACROTHERMIC, requiring much heat, as tropical plants; megazooid (ζώον, an animal; εἶδος, resemblance), large motile daughter-cells of certain unicellular Algae (Hazen); megazoo sporangē (σπορά, a seed; ἀγγεῖον, a vessel), in Hydrodictyon, the special sporangium which contains a swarm of megazooospores, the protoplasm of a cell giving rise to a large number, each provided with four cilia; megazoospore (+ Zoosporē), a motile spore, larger than those termed MICROZOOSSPORES; meg'ecad (+ Ecad), a group of several ecads of close affinity.

Megistotherm (έθερμος, hot), a plant requiring high uniform temperature; adj. megistothermic.

meiogyrous (μείως, less; γύρος, round), rolled inwards a little; mei'on, prefixed to an organ, shows it is less than some other organ understood; meiophyll'ly (φύλλον, a leaf), diminution in number of the leaves in a whorl, as compared with the preceding whorl.

Meio'sis (μείωσις, reduction), applied to reduction divisions of chromosomes (Farmer and Moore); adj. meiotic; ~ Euapog'amy, when the nuclei of the mother-cells of the sporophyte have the haploid number of chromosomes.

Meiosporangē (μείων, less; + SPORANGIUM), Sauvageau's name for the smaller plurilocular sporangia enclosing zoospores of Ectocarpus vírecescens, Thuert; mei'ostates (στάτας, a standing), the intermediate products of metabolism, comprising (a) ANASTATES, formed during anabolism, and (b) KATASTATES, during katabolism (Parker); mei'o'stemonous (στήμων, a filament), with fewer stamens than petals; meiotax'y (τάξις, order), the suppression of entire whorls; mei'otherm (θέρμη, heat), a plant inhabiting cool temperate regions; all are hardy in England.

Melampy'rine, Melampy'rite, a substance occurring in Melampyrum nemorosum, Linn.; the same as DULCITE.

melangeoph'ilus (μέλας, black; γη, earth; φιλέω, I love), dwelling in l'am; Melangeoph'y'ta (φυτών, a plant), loam plants; Melangeoph'y'ta, loam or alluvium plant formations (Clements); Mel'anin, a black pigment of bacteria; Mel'anism, a disease producing blackness; melanochlor'us (χλωρός, pale green), blackish green, atrovirens; Mel'anophyll, the chief colouring matter of Diatoms (Warming, Handbook, Engl. ed., p. 18); melanophy'llus (φύλλον, a leaf), having leaves of a dark colour; melanosp'ermous (σπέρμα, seed), having dark-coloured seeds or spores.

melasmatic (μήλασμα, black spot) Tis'sue, a group of large cells round the vascular bundles in the stems of Calamites, with dark brown or black contents.

melastoma'ceous, resembling or pertaining to those plants of which the genus Melastoma is the type.
Melezitose (Fr., mélezé, larch), a sugar from the larch.

Melib'iasé (mel, honey), a synonym of Raffinose.

Mel'linus (μελίνος, pertaining to quinces), like quinces, or quince-coloured.

Mel'tosite (mel, honey), sugar from Eucalyptus “Manna,” produced in Tasmania; also spelled Mel’itoze, a synonym of Raffinose; Mel’izitase, an enzyme present in Sterigmatocystis nigra, Sacc.; Mel’izitose, a sugar existing in Alhagi Maurorum, Linn.

Melior'ose (Ital.), the name of a variety of the orange in which the carpellary whorl is multiplied, producing an appearance of proliferation (Masters).

Mel'leus (Lat., pertaining to honey), (1) with the taste or smell of honey; (2) honey-coloured.

Mel'ligo (Lat., honey-like juice), used for “Honey-dew,” the exudation of Aphiides.

Mel'linus (mel, mellis, honey), the colour of new honey.

Melittoph'ilæs (μελίττα, a bee; φίλεω, I love), flowers which are adapted for fertilization by the larger bees; the colour and scent are attractive to man also (H. Mueller); adj. melittoph'ilous.

Melon'ida †, Melon'id'iæum † (μηλον, an apple; εἶδος, like), an inferior, many-celled fruit, as an apple; mel'o'iform (forma, shape), melon-shaped; irregularly spherical with projecting ribs as in Melocactus.

Mem'ber, any part of a plant regarded with reference to its form and position.

Mem'brane, Membra'na (Lat.), a delicate pellicle of homogeneous tissue; Membra’na gongylif’era, the hymenium of Fungi; membrana'ceous, -ceus (Lat.); mem'branous, thin and semi-transparent, like a fine membrane, as the leaves of Mosses; mem'branous Layer, ~ My cel i'um, interwoven hyphae forming a layer; membranogen'ic (γένος, race), produc-
tive of a membrane; Membra’nula † the indusium of Ferns.

Memnon'ius (Lat., from Memnon), (1) brownish black, nearly as dark as piceus; (2) = matutinus.

Men'del's Law, the gametes of a heterozygote bear the pure parental allelomorphs completely separated from one another, and the numerical distribution of the separate allelomorphs in the gametes is such that all possible combinations of them are present in approximately equal numbers (Lock); men’delize, to work in accordance with Mendelism as stated; Men'del'ities, pl., facts in harmony with the foregoing.

Meneblaste'ma (μήνη, moon = a month; βλάστημα, a sprout), Minks’s term for the soredia of Lichens.

Menisca'tus (μελίκατος, a crescent), “a cylinder bent into half a circle” (Lindley); menis'coid, menisco'ideus (εἴδος, like), thin and concavo-convex, like a watch-glass; Menis'cus, pl. Menis'ci, applied by H. H. Dixon to crescentic bubbles in woody-tissues.

Menisper'me, an alkaloid from the genus Menispernum.

Menstrua'lis, men'strua'ns (Lat.), lasting for a month or so; cf. Bim'estris, Trimestris.

Menta'gra (Lat., an eruption on the chin) paras'i'tica = Sycosis; Men'ta'graphyte (φυτόν, a plant), the Fungus supposed to cause the disease Mentagra or Sycosis.

Menthol'ogist (Mentha, λάγος, discourse) an expert or writer on mints, the genus Mentha.

Men'tum (Lat., the chin), an extension of the foot of the column in some Orchids, in the shape of a projection in front of the flower.

Merench'yma (μέρος, a part; ἕγγυμα, an infusion), spherical cellular tissue; ~ Cells, unpitted cells in the pith of trees, with intercellular spaces, and much elongated radially; cf. Palisade Cells; merench'matous, belonging to or like Merenchyma; Mericarp, Meri'carp'iun (καρπός, fruit), a portion
of a fruit which splits away as a perfect fruit; as the two carpels in Umbelliferae; mericy'clic (κύκλος, a circle), occupying a part only of the diameter, as spirally-arranged leaves (Čelakovský).

merid'ia'nu{s} (Lat., belonging to noon), at mid-day or noon; towards the south (in northern latitudes); merid'ia'na, applied by O. Mueller to the plane in Diatoms which contains the perivalvar axis.

Mer'idisk (μέρος, a part; δίσκος, a disc), term proposed by Clos for any process upon the receptacle apart from the floral organs, whether glandular or not (Crozier); Mer'i'phyte (φυτόν, a plant), employed by Lignier for the vascular tissue of the leaf; Mer'i'plast (πλαστός, moulded), a protoplast in a polyplast which remains distinct, and does not fuse with its fellows (Pirotta); Mer'i'sm, (1) Bateson's term for the repetition of parts to form a symmetry or pattern; (2) division of cells, cellular structures, or dichotomous division of organs (Massart); merismat'ic (μέρισμα, a share), dividing into parts or similar portions; ~ Tis'sue, formative tissue, cf. Meristem.

meris'moid (εἶδος, resemblance), having a likeness to the fungus-genus Merisma.

Mer'ispor'e (μέρος, a part; σπόρα, seed), the segment of a sporidesm; Meri'spor'ocyst (κύστις, a bag), the simple or branched Sporocyst of Cephalidea, considered as a departure from the type of fructification of the Mucoraceae (Vuillemien);

Mer'i'stele (στήλη, a pillar), a portion of the stele of a monostelic stem received by each leaf; restricted by Brebner, by excluding Actino'oste'le and Haplo'oste'le from it; further particularized into DI-, EU-, Haplo-, Mono-, Tetra-, Tri-Meristic types; meristic Varia'tion, see Merism.

Mer'i'stem (μεριστής, divisible), nascent tissue, capable of being transformed into special forms, as cambium, etc.; Pri'mary ~, forms the whole tissue of very young organs; Sec'on'dary ~, occurs in organs along with permanent tissue, usually in thin layers; meristem'atic, pertaining to the Meristem; meri'stogen'ic (γεννάω, a begetter), produced by Meristem, actively dividing cell-tissue.

Mer'i'thal, Merith'al'lus (μέρος, a part; δαλὰς, a young shoot), an inter-node; meroblas'tic (βλάστος, a bud) Embryogen'y, when only a part of the spore is concerned, cf. holo'blastie; Merocon'id'ium, pl. Meroco'nid'ia (+ Conidium), conidia which arise from the simultaneous septation of a hypha in Zygomycetes, and mature together, while Acroconid'ia mature in succession from the apex (A. Fisher); Merog'am'y (γαμός, marriage), reduced autophagy, which does not require the participation of the whole of a second gamete, but only its cytoplasm or nucleus (Dangeard); Merog'on'y (γόνος, offspring), fertilization of the oogonia of Cystosetra, without nuclei (Winkler); Meroplank'ton (+ Plankton), that found only at certain seasons of the year (Forel); adj. meroplankton'ie.

meros- as a prefix, and its forms -merous, -merus, as suffixes, denote parts or numbers, as dimerous, etc.

Mer'otype (μέρος, part; τύπος, a type), a specimen collected from the original type in cultivation, by means of vegetative reproduction (Swingle); syn'chrono'us ~, taken at the same time as the original (Swingle).

Mes'ad (μέδος, in the middle), a mesophyte (Clements); mes'arch (ἀρχή, beginning), applied by Solms-Laubach to those bundles in which the protoxylem lies in the interior of the primary strand of the wood, thus partly centripetal and partly centrifugal; mesendobiot'ic (εὐδος, within; βίος, life), applied to a mesosaprophyte, as Pythium, etc.; Mesendo'zoa (ζωόν, an animal), animals resemb-
ling Fungi, as Torubia; Mesenter'ica (πυγάρε, an intestine), “the mycelium of certain Fungals” (Lindley); Mesid'ium, a strongly developed, thickened portion of the mesochil in the flower of certain orchids; Mes'istem, contracted from Mesomeris'tem, the thickening ring of Sanio, a ring of tissue producing the bundle system; Mes'o'blast (βλαστός, a bud), the nucleus; Mesoblaste'sis, medial growth from Lichen hyphae (Minks); Mes'ecarp, Mesoscar'pium (καρπις, fruit), the middle layer of a pericarp; Mesocauleorh'i'za (καυλός, stem; πίθος, root), Gaudichard's term for “the line of demarcation between the ascending and descending systems in his ‘Phyta,’” (Lindley); Mes'o'chil, Mesochil'i'um (χειλος, lip), the intermediate part of the lip of those Orchids which have it separated into three distinct parts; Mes'o'chite (χιτων, a tunic), the middle layer surrounding the egg in Fucaceae, composed of cellulose and attached at the base (Farmer); Mesochthonoph'i'lus (χθόν, the ground; φιλεω, I love), dwelling in midlands; Mesochthono'phy'ta (φυτών, a plant), midland plants; Mesochthonophy'tia, midland plant formations (Clements); mesoclad'ous, -dus (κλάδος, a branch), possessing branches of medium length (Russow); Mesocol'la (κόλλα, glue), a supposed intermediate layer of the cuticle between the upper and lower surfaces; Mesocor'tex (+ Cortex), the middle cortex (Groom); Mesocot'y'yl (+ Cotyle'don), an interpolated node in the seedling of grasses, so that the sheath and cotyledon are separated by it (Čelakovský); Mes'o'cycle (κύκλος, a circle), a layer of parenchyma between the phloem and xylem of Goechienia (Boodle); Mes'ocyst (κυστις, a bag), the definite central nucleus of the embryo-sac with which the second antherozoid fuses to form a Trop'hyme (Van Tieghem); Mesoder'mis (δέρμα, skin), the middle layer of tissue in the theca of a Moss; Mes'odes, pl., the two medium cells of the embryo-sac of Angiosperms which contain the polar nuclei (Dangeard); Mesog'amy (γάμος, marriage), a process of fertilization in certain Urticaceae, intermediate between Basigamy and Acrogamy (Pirotta and Longo); adj. meso'gam'ic; Mesogonid'i'um (+.Goni'dium), a gonidium which is partially enveloped in new tissue; mesogoni'micus (γώγομος, productive), having the gonidial layer in the centre (Wallroth); mesohydrophy'tic, intermediate between mesophytic and hydrophytic; plants which incline to a damper habitat than the true Mes'o'phyte (Whitford); mesohygrom'phic (μορφή, shape) = mesophytic; Mesomel'i'tae, pl. (μέλλη, honey), Huxley's term for a series of Gentianeae which have honey-glands in the central portion of the flower; cf. Perimel'i'tae; Mesomeri'stem = Mesistem; mesometatropic (+ metatropic), when the “first ovary receives pollen from an anther associated with a second ovary, but the second ovary receiving pollen from the anthers of the first plant not associated with the first ovary” (K. Pearson); mesomorphous (μορφή, shape), applied to plants not specially protected against desiccating influences; Mesomyce'tes (μύκης, a mushroom), a group intermediate between Phycomycetes and the higher Fungi (Warming); Mesocpet'al'um (πεταλον, a flower-leaf), Pfitzer's term for the Labellum of Orchids; Mesophane'rophy'te (+ Phanerophyte), perennial plants from 8 to 30 metres in height, with buds partially protected; Mesophanerophy'ti'um, a formation of mesophanerophytes (Vahli); mesoph'ilus (φιλεω, I love), dwelling in moist lands; Mesophile'em (φιλεις, bark), the middle, or green bark; Mesophorbi'um (φωρβη, pasture), alpine meadow formation (Diels); Mes'ophyll, Mesophy'l'i'tum (φύλλον, a leaf), (1) the interior parenchyma
of a leaf, the whole interior ground tissue of the blade; (2) the demarcation between leaf and leaf-stalk;
mesophyllous, -ious (φυλλον, a leaf), having leaves of medium length or average size for the genus (Russow); 
Mesophyte (φυτων, a plant); (1) Warming's term for those plants which are intermediate between Hydrophytes and Xerophytes; avoiding both extremes of moisture and drought; (2) moist land plants.

Mesophyt'a, pl. moist land plant formations (Clements); mesophyt'ic, relating to plants which require an average amount of moisture only; Mesophy'tism, possessing the power of withstanding a certain amount of aridity; Mesophy'tum, a mesophytic formation (Clements); Mesophy'tum, (1) a name given by Clariou to the Collar or junction of stem and root; (2) by Lindley given as the demarcation between the internode and petiole; Mesopodium (ποδις, ποδός, a foot), the intermediate part of a leaf, the petiole or leaf-stalk; mesoprotein (Protée, εīδος, resemblance), leaves which have sclerous cells derived from the middle zone of the mesophyll (Vesque); Mesoptereid'tum (Pteris, bracken), an association of Pteris, Holeus lanatus and Scilla festalis (Woodhead); Mesossapro'bia (σαπρός, rotten; βίος, life), organisms requiring a medium amount of impurity, as Algae in contaminated waters; Mesosaprophy'te (+ Saprophytë), used of Fungi whose mycelium is wholly within the host, but whose fruit-bodies are produced externally; Mesosperm (σπέρμα, seed), the second membrane or middle coat of a seed, the sarcoderm; Mesospore (σπορα, seed), (1) Dietel's term for an Uredo-spore which apparently will only germinate after a resting period; (2) the middle portion of the spore of Isoetes (Fitting); Mesospori'tum, the middle coat of pollen in Angiosperms (Fitting); mesostatic (στατικός, standing), completing the succession under mesophytic conditions (Clements); mesosty'ious (+ Stylis'), in trimorphic plants those which possess flowers having styles of intermediate length; Mesothamni'um (θάμνος, a copse), Diels's term for maquis, formed of hard-leaved shrubs; Mesothec'ium (θηκη, a case), (1) the intermediate layer of cells in the wall of the anther; in ripe anthers it often occurs as the inner layer by disappearance of the endothecium proper; (2) the ThéciUM of Lichens; Mesotherm (θερμ, heat), a plant of the sub-tropical or warm temperate zones, in Britain needing protection against frost; adj. mesotherm'ic; mesothermophil'us (φιλα, I love), dwelling in the temperate zone; Mesothermophy'ta (φυτων, a plant), pl. = Mesotherm; Mesothermophy'ta temperate plant formation (Clements); mesoti'arch (+ triarch), when in a triarch stele the two principal xylem bundles are more or less fused (Prantl); mesotrophic (τροφή, food), applied to the peat of transitional moors; mesotrep'ic (τροπή, a turning), applied to successions which become mesophytic (Clements); mesoxerophy'tic, midway between mesophytic and xerophytic; cf. plants affecting a dryer habitat than pure Mesophy'tes (Whitford); mesoxyl'ic (ξυλον, wood), a synonym of mesarch.

Mes'mates, used by A. C. Jones for Symbionts.

Mes'tom or Mes'tome (μεστός, replete), Schwendener's term for the ducts of a bundle, those parts which do not conduct to its strength; cf. Stereome; Mes'tome-bundle, a fibro-vascular bundle; ~ Sheath, bundle-sheath.

Metabiosis (μετά, with; βίος life), symbiosis, with one of the organisms preparing the way for the other; not synchronous; metabiotic, relating to Metabisis; Metablast (βλάστος, a bud), the Nucellus.

metabol'ic (μεταβολή, change), applied
to chemical changes in living organisms; ~ *Équitétè*, those species whose fertile stems subsequently form branches and become green (Goebel); ~ *Force*, vital activity; **Metabolism**, the sum of the chemical changes in a living cell, usually restricted to constructive change; cf. **Anabolism**, **Katabolism**; metabolize, to change as described; metabolite, a product of metabolism. **Metacel lulose** (*metà, with; + *Cellulose*), found in Lichens and Fungi; it is the same as *Fungine*; **Metachlamydéeae** (*χλαμύς, a cloak*), (1) C. MacMillan's proposed term for Compositae; (2) Engler's term for *Gamopetalar*; **Age of**, C. MacMillan's term for the present age, subsequent to the Glacial Epoch; adj. **metachlamydeous**; **Metachlorophyllín** (*+ Chorophyllín*), a class of chlorophyll derivatives, the crystallizable chlorophyll (Tsve-tt); **Metachromatin** = **Volutin**; **Metachromosomes** (*+ Chromosomes*), certain bodies found in the hyphae of Ascomycetes which appear to be of the nature of Chromatin; **Metachrome**, (*χρώμα, colour*), the changing from one colour to another; adj. **metachromatic**; **Metacollenchyma** (*+ Collenchyma*), a result of secondary metamorphosis which has taken place at a late period (C. Mueller); **Metacorm** (*κορμός, a log*), the plant body after the differentiation of its permanent members; adj. **metacormal**; **Metacrasis** (*κράςης, a mixture*), kinetic metabolism, transmutation of energy; **Metaderma** (*δέρμα, a skin*), a modified tissue which takes the place of cork in some structures, but does not possess the properties of cork (A. Meyer); **metad'romous** (*δρόμος, a course*), a form of venation in which in a single Fern-frond the first set of nerves in the segments are given off on the upper; or the lower (basal) side of the midrib (Plantl); **metagamétal** (*+ Gamete*) **Rejuvenescence**, a cell or mass of cells acting as a gamete or zygote (Hartog); **Metagammophyte** (*γάμος, marriage; φυτόν, a plant*), C. MacMillan's proposed name for his highest group of Phanerogams; a synonym of "Siphonogamia"; **Metagenesis** (*γενισίς, a beginning*), M'Nab's term for true alternation of generations; **Metagy mnosper'mae** (*+ Gymnosperm*), the higher Gymnosperms (Jeffrey); **Metagyny** (*γυνή, a woman*), with male flowers sexually mature before female (Loew); protandry; **Metakinesis** (*κίνησις, a moving*), the separation of the threads in the metaphase stage of nuclear division; **Metamer** (*μείρος, a part*), used by Sachs to denote a *Phyton*, or one of a number of similar parts of a series; **Metamerization**, the multiplication of floral elements. **Metamorphogen'esis** (*μεταμφόρφωσις, transformation; γένεσις, beginning*), the process by which organs change from their normal to abnormal conditions, by means of transitional forms (Worsdell); **Metamorphosis**, in botany the change of one organ into another, as stamens into petals; syn. **Metamorphy**; adj. **metamorphosed**, changed. **Metanaphyto'sis** (*μετανάφυτωσις*), the formation of the floral envelopes; **Metan'dry** (*ανήρ, ανήρθος, a man*), the female flowers ready before the male; protogynous; **Metane'ma** (*νήμα, a thread*), C. MacMillan's name for the second stage in the germination of Mosses which succeeds the protoneema; adj. **metane'mal**; **Metanthèsis** (*ανθήσις*, flowering), retarded floral development, as opposed to *Proanthèsis* (Wittrock); **Metaphasis** (*φασίς, a phase*), in nuclear division the separation of the daughter chromosomes; **Metaphéry** (*φαρέο, I carry*), the displacement of organs, as when alternate become opposite, etc.; **Metaphlo em** (*+ Phloem*). Van Tieghem's term for a simultaneous growth of bast-tissue with the
Metaxylem; Metaphyll'a, pl. (φύτων, a leaf), the mature leaf, as opposed to the juvenile form (Goebel); Metaphy'ta (φυτών, a plant), (1) plants which manifest sexuality or indicate by accessory characters that in their ancestral lines sexually complete progenitors have occurred; (2) plants with tissue differentiation; cf. Protophyte, adj. metaphytic; Met'aplasm (πλάσμα, moulded), Hanstein's term for the protoplasm which contains the formative or granular material; metaplastic (πλαστικός, moulded), formed of Metaplas'm; Metaplas'stid, used to designate the metaphytic organism (Moore); Metaplas'y, any progressive change of cells, other than by growth or division, such as by change of cell-contents (Kuster); Metar'abin (μετά, with, beyond, sharing with; + Arabin), a substance present in some varieties of gum arabic, possibly identical with the "Pectose" of sugar beet; Met'asperm (σπέρμα, seed), (1) a sporophyte in which the egg-organ is aborted, and no purely vegetative cells are to be found in either male or female plants; (2) a synonym for Angiosperms; (3) applied by Boulger for the large-celled secondary prothallium in Selaginella, the secondary endosperm in Gymnosperms, and the endosperm, originally so-called, formed after fertilization by the division of the secondary nucleus of the embryo-sac in Angiosperms; metasper'mic, metasperm'mous, angiospermous; Metaspor'o'phyte, C. MacMillan's expression for a Cryptogam of the highest specialization, as Selaginella.

Metastasis (μετάστασις, a removing), (1) the sum of the changes undergone by the products of assimilation in the cells; metabolism; (2) the shifting of an organ to some unusual position (Moquin-Tandon).

Metasynde'sis (συνδέωσις, a binding together), when the chromosomes are paired end to end; Telosynapsis.

metaton'ic (μετά, with; τόνος, a strain), used of a stimulus which reverses action; metatop'ic (τόπος, a place), refers to imbricate bud-covering which has departed from the course of the normal genetic spiral, by secondary development (Pax); metatrach'eal (τραχεία, the wind-pipe), applied to wood-parenchyma when forming tangential bands (Solereder); metatrophi'c (τροφή, food), applied to bacteria restricted to substances fabricated by higher organisms (Jones); Metatrophi'sm, the correlated catabolism of the reserves andabolism of the living tissues (Hartog); Met'atype (τύπος, a type), a specimen from the original locality, recognized as authentic by the describer himself.

Metax'in (μεταξίν, between), a proteid, the material of the fibrils of plastids.

Metaxy'lem (μετά, beyond; + Xylem), the central wood as distinguished from the peripheral xylem-strands (Scott).

meteor'ic (Mod. μετέωρος, in mid air), applied to flowers whose expansion depends upon the weather.

metis'toid (μετά, = sharing; ἵπτως, a web; el'dos, like), composed of differentiated cells, each cell being dependent on the other cells of the organism (Hartog).

metoe'cious (μετά, beyond; ὀικός, house), existing on different hosts, heteroeocious; Met'onym (ὄνυμα, name), a name rejected because an older valid name was based on another species of the same genus (O. F. Cook); metox'enous (ἔνων, a host), the same as Metoe'cious.

Metrogond'ium (μητροχία, mother; + οινούς, name), Mete'нийan Glands, organs peculiar to Plumbaginaceae which secrete mucilage and sometimes chalk.

Met'uloids (μετάλα, a small pyramid; el'dos, like), modified cystidia, encrusted with lime, which project
from the hymenium of *Penicophora*, giving it a velvety appearance.

*Mia*um, *Mia*ma (*μια&mu, defilement), Naegeli's term for those diseases which are due to microbes.

*Micel*la (L. Lat. from *mica*, a crumb), an aggregation of molecules in the manner of a pleon, but in larger numbers (Nageli); *miesel'lar A*g're-gate, a combination of Micellae.

**Micraeroxyl** (*μικροδεις*, small; ἀνηρ, air; ξυλον, wood), dwarf woody plants, with one main axis, and branches free from the soil, as *Calluna*, or *Empetrum* (Lindman); *Micran*дрε (ἀνυρ, ἀνδρός, a man) = D*W*RM-MALE; micro-αρσε'φιλος (ἀνηρ, air; φιλων, I love), Beijerinck's term for anaerobic, needing but little free oxygen; *Microplan*ospore (+ *Ar*lanospore), non-motile spores of small size, possibly due to unfavourable surroundjings (Thaxter); *Mi*croba*τρια*, pl. (+ *Bacterium*), minute bacteria; *Microb'asis* (βασις, a base), a variety of the carcerule, as in Labiates; *Mi'crobe*, pl. *Micro'bin* (βίος, life), Pasteur's term for such organisms as Schizomyzetes, bacteria; *Microbiol*ogy (+ *Biology*), used by Duclaux for the biology of bacteria and enzymes; *microbio'tic, relating to microbes; *Microcen'trum* (κέντρων, a sharp point), applied to the granular inclusions in the atmosphere of lencocytes; probably the equivalent of Centro'some (Farmer); *Microchlor'oplast* (+ *Chloroplast*), chlorophyll granu-les in *Til'landsia* of minute size, consisting *MEGA*Chloropla*st* (Billings); *Microclo'cus*, pl. *Microcol'cei* (κόκκος, a kernel), a genus of bacteria, sometimes used to express microbiotic organisms; *Microcon*β'i, *Microconidi'um*, pl. *Microconidia* (+ *Conidium*), the smaller conidia, when two sizes are produced; *Mi'crocy'st* (κυβης, a bag), an amoeboid cell which is surrounded by a membrane, the resting state of swarm-cells of Myxogastes; *Mi'croder'm* (δέρμα, skin) = *MICROBE*; *Mi'cro-

di'odange (+ *Diode*; ἀγγειον, a vessel), Van Tieghem's term for pollen-sac; *Microdi'ode*, the same botanist's expression for pollen-grain; *Microflora* (+ *Flora*), (1) the alpine flora, especially when small and massed (Freshfield); (2) the microscopic flora of a given locality; *Mi'croform* (forma, shape), used of a heteroeocious Fungus with teleutospores only, which germinate only after a resting period; *Microfung*i (+ *Fungus*), minute Fungi; *Microgam'etes* (+ *GAMEte*), the smaller and male motile cells of Algae; *Microgam'etophyte*, the individual bearing the male sexual organs of a dioecious species; adj. microgametophy'tic; *Microge'oxyl* (γῆ, the earth; ξυλον, wood), lowly woody plants, with numerous stems arising from a subterranean root-stock, as *Rosa* or *Vaccinium* (Lindman); *Mi'crogerm* (germen, offshoot) = *MICROBE*; *Microgonid'ium* (+ *GONIDium*), (1) a small gonidium, as compared with others produced by the same species; (2) small bodies in Cyanophyceae derived from the division of gonidia (Brand); *Microluc'hen* (+ *LICHEN*), minute Lichens; *Micromellitophila'e* (μελιτ-τα, a bee; φιλων, I love), applied to those flowers whose fertilization is effected by small bees and similar insects; the attraction is incomprehensible by human sense; *Microm'eter* (μετρων, a measure), a device or apparatus to measure minute dimensions; *Micromili'meter*, the thousandth part of a millimeter, and the unit of microscopie measurement, denoted by the sign μ; *Micromyiofihila'e* (μούης, a fly; φιλων, I love), flowers which are fertilized by small flies which are often imprisoned; adj. *micromyi-ophila*e; *Mi'cron*, a micromilli- metre; *micron*ic, visible under the microscope; *Micronu'cleus* (+ *NUCLEI*), derivatives of the nucleolus by its breaking up; *Micropar'asites* (+ *PARASITE*), minute organisms
belonging to their respective categories; Microphanerophytes (+ Phanerophytes), trees and shrubs attaining the height of two to eight metres (Ranikier); microphylline (φύλλων, a leaf), composed of small leaflets or scales; microphyllous, small leaved; Microphyte (φυτόν, a plant), (1) used of bacteria; (2) used by Schimper for the smallest Algae, as Diatoms; adj. microphylic; ~ Formation, a community exclusively composed of Lichens or Algae; Microphytology (+ Phytology), used chiefly of bacteriology, but also applied to any branch which is entirely dependent on microscopic research; Microprothallus (+ Prothallus), the reduced prothallus due to the germination of a microspore in Pteridophyta and Gymnosperms; Micropteres {πτερόν, a wing}, furrows in the stems of plants; Microspuccinia, having telenospores only (Plowright); Micropycnid (πυκνός, dense) = Pycnoconidium; micropyляр, relating to the Microspore; ~ Funnel, the lower part of the ~ Tube where it expands to join the seed cavity; ~ Membrane, the integument lining the Microspore; ~ Scar, the spot on the ripe seed occupied by the microspore (Kerner); ~ Tube, the passage formed by the Microspore; Microspore (σπόρον, a root), the aperture in the skin of the seed formerly the foramen of the ovule; it marks the position of the radicle; microsporiferous (φέρω, I bear) Tube = Exostome; Microsclerote (σκληρός, hard), a sclerotium modified by unfavourable vital conditions; after a resting period it develops into a peritheciun (Zukal); Microsoma, Microsoma, pl. Microsoma, (σώμα, a body), in the plural applied to small granules embedded in the protoplasm; Microsorus (+ Sorus), the male sorus in Azolla; Microspécies (+ Species), species founded on very minute differences, as those in Erophila by A. Jordan; Microsporangium (+ Sporangium), a sporangium which produces microspores; microsporangiate Flower, male, or staminate flower; Microspore (σπόρα, seed), (1) the smaller sized spore in heterosporous plants, as Selaginella; (2) of late years applied to the pollen-grain; adj. microsporic, microsporous; Microsporocarp (κάρπος, fruit), the growth from which the microsporangia of Azolla are produced; Microsporocyte (κύτος, a hollow), the mother-cell of a microspore or pollen-grain; Microsporangitiésis (γένεσις, beginning), the development of the pollen-grain, or microspore; Microsporophore (+ Sporophore), an organ which bears Microspores; Microsporophyll (φύλλον, a leaf), a leaf-like organ bearing microsporangia; microsporophyllary Flower, a male or staminate flower; Microstome (στόμα, a mouth), a small orifice; microstomous, applied to flowers having narrow apertures; Microstylvospor (στύλος, a column; σπόρα, seed), stylosomes of a small size, as in Locularia; microstylvous, short-styled, as applied to dimorphic flowers; Microsymbicnt (+ Symbiont), the smaller of the two associated organisms; Microtherm (θέρμη, heat), used for plants characteristic of the arctic alpine zone, in England needing protection from drought and direct sunlight; adj. microthermic; microthermophilus (φιλέω, I love), dwelling in boreal regions; Microthermophyta (φυτόν, a plant), boreal plants [note the distinction from Microtherms]; Microthermophytia, boreal plant formations (Clements); Microtome (τομή, a cutting), an instrument for section-cutting for microscopical purposes; microtrichal, microtrichous (θρίς, τρίχος, hair), used of pubescence when so minute as to be observable only under the microscope, but sometimes perceptible to the touch (Williams); Microtype (τύπος,
a type), the type of a Microspecies; Microzoogloea (ζων, an animal; γλοίς, a sticky substance), a stage of Schizomyctetes when they are immersed in a gelatinous envelope; Microzoogonidium (+ GONIDIUM), a motile form of microgonidium; microzoophilous (+ ZOOPHILOUS), pollinated by insects and other small animals (Hansgirg); microzoophilous (φιλος, fear), repelling the visits of insects or other small animals (Hansgirg); Microzoospore (σπόρα, seed), (1) a motile spore, small in size compared with others of the same species, (2) employed by Dodel for Gametozoospore; Microzooid (εῖδος, resemblance), a small motile reproductive cell in some unicellular Algae, as Sphaerella (Hazen); Microzyme (ζων, yeast), Béchamp’s name for microbes and small ferments.

Mictium (μικτ𝑤, mixture), a mixed formation (Clements).

Mid, intermediate; used by H. C. Watson for ~ agrarian, and ~ arctic zones of vegetation; ~ Error, see Deviation; ~ Race, an intermediate capable of being improved by artificial selection (de Vries).

Midbody, a translation of the Germ. “Zwischenkörper,” probably the homologue of the cell plate in the higher plants (Timberlake).

Mid'dle, central; ~ Lamel'la, the membrane or primary septum between any two cells; ~ Lam'ina, in a lignified cell-wall, the portion between the ~ Lamella and inner lamina; ~ Lobe, see Lobe, Middle.

Mid'rib, the principal nerve in a leaf.

Mid'summer Growth, a second start into growth after ceasing; it does not occur in all trees.

Migrant (migrans, wandering), a plant that is migrating or invading (Clements); Migration (migratio, change of habitation), (1) movement of plants by invasion, becoming denizens of places in which they are not native; (2) the passage of a nucleus from a vegetative to a fertile cell in Phragnidium, etc.; ~ Circle, a circle employed to measure migration (Clements); migratory, passing or migrating.

Migr'ate (Dat. sing. of ego, I), as an authority it means the particular form accepted as the true one by the author using it.

Milk'roflora = Microflora.

Mil'dew, a disease in plants caused by the attack of the conidial form of Erysipheae; frequently used in a popular sense for any small parasitic Fungus.

Milia'rius (milium, millet), minute glandular spots on the epiderm; Henslow spells it “miliaris”; Military Glands = Stomata.

Milk, an opaque white juice; the latex; ~ Sac, laticiferous vessels in some species of Acer; ~ Sap = Latex (Crozier) ~ Ves'sels, laticiferous vessels.

Mill'sail shape, molendinaeous.

Mimetic (μιμητικός, imitative), used of organs or plants which resemble each other in external appearance, but not in characteristic structure; Mim'icry, resemblance to some other species, usually serving as protective.

Mim'otype (μιμός, an imitator; τόπος, a type), forms distantly resembling each other, fulfilling similar functions, and thus representing each other in different floras.

Min'iate, minia'tus (Lat., coloured with cinnabar), the colour of red lead; more orange and duller than vermilion.

Minimal (minimus, least), (1) in the least degree; (2) the lowest condition at which a phenomenon can exist; Min'imum, Law of the, growth proportioned to the quantity of the nutrient constituent present in least amount, which regulates the total assimilation.

Minus (—), used of spores whose nuclei are presumably female (Blakeslee).

Minu'te, minu'tus (Lat., small), very small, inconspicuous.

Miophylly = Meiophylly (Crozier).
miostemonous = MEIOSTEMONOUS.
Mire, a north-country word for a marsh or boggy place.
Mischom'any (μιχής, a pedicel; μανία, madness), increase in the number of pedicels, as in Rhus Cotinus, Linn., Muscaria comosum, Mill., etc.

Mist'oforn (mistes, mixed; ± Form), a hybrid or cross from forms which themselves have varied from the original; Mistoproliform (proles, offspring), fertile hybrids of Mistoforn (Kuntze).

mis'tus, mix'tus (Lat.), cross-bred.
Mitochon'dria, pl. (μιτρως, a thread or web; χυμός, a grain) = CHROMIDIA; Mitokinet'icism (κινησις, motion), kinesis which reveals itself by a thread structure (Hartog), adj. mitokinet'ic; Mit'om, Flemming's term for the network of threads of protoplasm; Mit'o'sis, Flemming's term for nuclear division; Karyokinesis of Schleicher; adj mito'sic, mito'tic.

Mi'tra (μίτρα, a head-dress), (1) the galea of a corolla; (2) the thick rounded pileus of some Fungi; mi'triform, mitriform'is (forma, shape), mitre-shaped; ~ Calyp'tra, one which is entire at the base (W. J. Hooker).

mixed (mixtus) For'est, one composed of various kinds, growing intermingled; ~ Forma'tion, caused by the intermingling of two or more neighbouring formations (Clements); ~ Inflores'cence, one in which partial inflorescence develop differently from the main axis, as centrifugal and centripetal together; ~ Ves'sels, those having thickenings of more than one description, as annular and spiral (Crozier).

Mix'ie (μίξης, a mingling), Mair's term for the fusion of two similar nuclei; the product he terms Mix'ote; Mixochima'era (± Cima'era, a monster), the artificial mingling of spore material, producing (+) (−) and neutral mycelia (Blakeslee); Mix'otroph (τροφή, food), applied to any plant whose insufficient chlorophyll contents does not ensure a proper assimilation (Pfeffer); Mix'tae, applied to homosporous Ferns producing sporangia in succession in time but not in space (Bower); mixtro'phic, half-saprophytic (Pfeffer); mixtiner'vius (Lat.), having veins of various sizes.

Mne'mon (μνημον, unforgetting), Coutagne's term for the elementary factors of heredity.

mi'oid, (1) resembling the Moss genus Mnium; (2) used by E. Newman as resembling any kind of Moss.

mo'ble, mo'bilis (Lat.), (1) easily moved, movable or versatile; (2) "modified for migration" (Clements); (3) as moving sands; Mobili'deser'ta, pl. (+ Desert), include a variety of plant communities on unstable substratum, as of shifting sand-dunes and scree; Mobil'ity, power of movement; cf. Motil'ity.

Mock-plums, abnormal growths known also as Bag-plums.

Modifica'tion Forms, inconstant variations due to alteration in external conditions (Hedlund).

modioliform'is (modiolus, a small measure, navel of a wheel, etc.; forma, shape), like the navel of a wheel, depressed, with narrow orifice, as the ripe fruit of Gna'theria.

Mod'u'lus (Lat., a measure) of elasticity = ELASTIC LIMIT.

Mol'ecule (molecula, a small mass), an aggregation of atoms, hence the ultimate particle of a chemical compound; cf. Pleon, Micella; adj. mole'cular.

molen'dina'ceous, -ccus, -a'ris (Lat., pertaining to a mill), furnished with large, wing-like expansions.

Moline'tum, a plant association composed of Molinia caerulea, Moench (Warning).

mol'tis (Lat.), soft; usually meaning pubescent

molyb'deus, molyb'dos (μολύβδος, lead), lead-coloured; sad, neutral grey.
Mon- (μόνος, one), in Greek compounds = one; monac'mic (ἀκοινός, a point), applied to heric Diatoms having but one maximum in the year; cf. Daicmic; Monacronh'ia (ακρον, at the end; πετά, a root), plants whose roots are derived from a single mother-cell, as most vascular cryptogams, except Lycopodium and Isoetes (Van Tieghem); adj. monao'rorhize; Mon'ad, occasionally used for Zoo- spore; Monadel'phia (ἀδελφός, brother), a Linnean class in which the anthers are united by their filaments into a single brotherhood; adj. monadel'phian, mona- del'phous; monan'der, Necker's term for monan'drian, monan'drous (ἀνδριώτης, a man), with one stamen; monan'drous, having but one perfect stamen, as most orchids (S. Moore); Monan'dria, a Linnean class, with one-stamened flowers; Monan'dry, the condition in question; monan'gic (αγγείον, a vessel), (1) Prantl's word for a sporangium when enclosed by a hood-like indusum; (2) used of a sorus containing one sporangium; monan'gial is a synonym; monan'thous (ἀνθός, a flower), one-flowered; monarch (ἀρχή, beginning), applied to a xylem-bundle which consists of one protoxylem-group; ~ Bun'dle, one in which there is only one strand; monari'ous (ἀνθρώπως, male), Necker's expression for monandrous; Monas'ter (ἀστήρ, a star), in nuclear division the mother-star, the chromosomes forming a ring round the central spindle; monax'ial (+ axiaI), applied to a nuclear spindle of one axis, but not necessarily ending in fixed points (Hof); Monax'on (ἀξον, an axle), when the two transverse axes of an organ or organism are equal; mon'éci'ous = monoe'cius; Monem'bryony (ἐμ- βρωυ, an embryo), the production of one embryo only; adj. monem'bryonic; moner'gic, an abbreviation of monergid'ic, consisting of one energid, that is, one unit or nucleus (Goebel).

Mon'eroid, like the genus Monera, in which the protoplasm forms the whole structureless body of the fully developed organism, which is devoid of a nucleus; a presumed protistoid body.

Mon'grel, a cross or hybrid.

moniliform, moniliform'is (monile, a necklace; forma, shape), necklace-shaped; like a string of beads.

Mon'ism (μίνος, one), employed by L. H. Bailey for "the doctrine of oneness; the supposition that all phenomena and all forms of life are derived from the unfolding or evolution of one single principle and substance."

Monob'asis, monobas'ic, one, base), when the root is reduced to a small unbranched portion, as though it were only the base of the stem; adj. monobas'ic; Monoblast'eis, used by Schneider for Mesoblast'esis; Monobil'as'tus (βλαστός, a shoot or bud), used of Lichen-spores when possessing a single cell; Monocar'o'tin (+ Carotin), a lipochrome pigment allied to Carotin, the colouring of the root of the carrot; Mon'ocarp (καρπός, fruit), an annual or other plant that flowers but once (Crozier); monocarp'e'an = monocarp'ific; monocarp'ellary, composed of one carpel only; monocarp'ic, bienni'al- ~, a biennial plant; peren'ni'al- ~, a plant which lives many years before fruiting and perishing; monocar'pian, monocarpia'nus, monocarp'i'cus, monocarp'ous, only fruiting once; monocel'lar (cellula, a little cell), cited by Crozier for unicel'lular; monocel'phalous, -ous (κεφαλή, a head), bearing a single head or capitulum; monochas'ial (χασίς, separation), a cyme with one main axis; Monochas'ium, Monochas'as'y, a uniparous cyme, either pure, or resulting from the reduction of cymes (Urban); Monochlamyd'ae (κλαμύς, a mantle), a large division of Phan- ergams which have only one set of 237
floral envelopes; mono- 

"ichlamydeous, -deus, having only one kind of perianth; monochro-mic (χρωμα, colour), of one tint, unicolorous; monochron'ic (χρόνος, time), arising but once (Clements); monoc'li nous, -nus, monoclin'ian (κλίνη, a bed), (1) hermaphrodite, having both stamens and pistils in the same flower; (2) applied to the capitulo of Composites which have only hermaphroditic florets; the condition is Mon'oclinui; monococ'mic (κορμός, a trunk), expressive of those trees which have one main axis bearing lateral branches of bilateral structure (A. H. Burtt); Monocotyle' don (κοτυλήδων, a hollow), a plant having but one cotyledon or seed- 

lobe; Monocot'ylae was suggested by L. Ward as a shortened term; monocotyle'donous, with a single seed- 
lobe, as grasses and palms; monocot'y lous = Monocotyle' donous; monococ'y clic (κόκλος, a circle), (1) when the members of a floral series are in one whorl, as the calyx, corolla, etc.; (2) annual plants; the state is Monocy'cliy monocys'tic (κύκλος, a cavity), of one cell or cavity; mono- 

cylis'm (δείκτης, a bond), possessing a single vascular bundle or meristele; used of petioles (Scott); monodichlamyde'ous (δί, twice; χλωμός, a mantle), having either one or both sets of floral envelopes; monody'namous (δύναμις, power), with one stamen much longer than the others; Monoc'cia (οικός, a house), a Linnean class characterized by having flowers with the sexes separate, but on the same plant; mono- 

olec'ious, -cious, the stamens and pistils in separate flowers, but borne on the same in- 

dividual; ~ Homog'am'y, fertilization from another inflorescence of the same plant (Delphino); monoc'li 

ously poly'ga'mous, having herm- 

aphrodite and unisexual flowers on the same specimen; Mono- 

ec'ism, the state of possessing monoeocious flowers; Monóepigyn'ia (ἐπί, upon; 

γυνή, a woman), a class in Jussieu's system containing monocotyledons with epigynous stamens; Monoen- 

ergid (ἐνεργός, active), used of a protoplast possessing a single nucleus (Faull); Mon'ogam (γάμος, mar- 

riage), a plant with simple flowers, but united anthers; Mono gam'ia, a Linnean order in the Composites with united anthers, but flowers free on the same receptacle; monogam'i- 

icus, Neck'ers term for monogamous; Mono- gen'esis (γένεσις, beginning), non-sexual reproduction; adj. mono- 

gen'etic; ~ Reproduc'tion, asexual reproduction; monogeno'dif fer'ent, used of hybrids in which the gametes differ from each other in one single point (Johannsen); mono- 

eg'onous (γένος, race, offspring) = Endogen'ous; monog'enus (1) monocotyle- 

donous; (2) monotypic (Crozier, Dict. p. 18); Monog'ony (γόνος, offspring), means the same; Mon' 
	nograph (γράφω, I write), a systematic account of a particular genus, order, or group; Mon'ogyn (γυνή, a woman), a plant having a single pistil in a flower; Monogyn'ia, a Linnean order, having a solitary pistil or style, though it may have many carpels; monogyn'i an, monog'y nous, -nus, possessing but one pistil; monogynae'cial (γυναικείον, women's quarters), simple fruits resulting from the pistil of one flower; Mono hy'brid (+ Hybrid), a cross from parents which differ by one character only (De Vries); Mono hy'pogyn'ia (ὑπό, under; γυνή, a woman), a class in Jussieu's system containing monocotyledons with hypogynous stamens; monoicodi- 

mor'phic (+ Dimorphic), cleisto- 

gamic; monoi'eous (οικός, a house), used by bryologists for monoeocious; monokar'ic (κάρπος, a nut), having a single nucleus (Pirota); mono- 

lep'iidus (λεπίς, λεπίδος, a scale), one-scaled; Monole'psis (λήψις, a receiving), false hybridism, where the characters of one parent only are transmitted (Bateson); mono-
obus (Λοβὸς, an ear-lobe), used by Spruce for one-lobed; _monoloc'_ular; _monolocula'ris_ (loculus, a little place), one celled, unilocular, applied to ovaries, etc.; _Monomer'istele_ (+ _Meristele_), a single out-going leaf-trace (Brebnner); _monomer'ous_ (μερός, a part), formed of a single member, as a fruit which may be of one carpel; _monomorph'ous_ (μορφή, shape), of one form only, not polymorphic (Bailey); _monopetal'alous_, -_alus_ (πέτα_λον, a flower-leaf), (1) literally one-petalled; (2) gamopetalous, where the corolla is composed of several petals laterally united; _monoph'_agalos_ (φύγος, a glutton), applied to a Fungus confined to a single species as its host; _monophyletic_ (φυλή, a tribe), originally descended from one tribe, as opposed to polyphyletic; _monophyll'icus_, -_icus_ (φυλλον, a leaf), (1) one-leaved, as an involucrem of a single piece; (2) used of a leaf-bud where a single leaf is subtended by an investing stipule; (3) gamosepalous or gamopetalous; _Mon'o plast_ (πλαστός, moulded), the organic form element of protoplasm, which group into polyplasts (Vogt); adj. _monoplasm'atic_; _Mon'opode_, _Monopod'i um_ (ποὺς, πόδος, a foot), a stem of a single and continuous axis; adj. _monopod'ial_; _monopet'rous_ (πετρόν, a wing), one-winged; _monopyr'e'ous_ (πύργος, a kernel), containing a single stone or nutlet; _monosep'alous_, -_alus_ (+ _Sepalum_), gamosepalous, the segments of the calyx being united; _monosiphon'ic_ (σιφών, a tube), applied to Algae consisting of a continuous tube, an algal filament of a single row of cells; _monosi'phonous_ (σιφών, a tube), consisting of a single tube, as some Algae; monosphonic; _Mono'sis_, the isolation of an organ from the rest; _Mon'o'somes_, pl. (σώμα, a body), used by Gates for aberrant chromosomes which pass undivided into one of the daughter-nuclei; _Mon'o'sperm_ (σπέρμα, seed), a plant of one seed only; _monosperm'ous_, -_mus_, one-seeded; _monos'pi'rous_ (σπέρα, a twisted cord), Spruce's term for that condition of the elater in Hepaticae, which consists of a single spiral; _Monospi'rus_, an elater of this kind; _monospo'rang'iate_ (+ _Sporangium_), (1) unisexual; (2) applied to a flower with sporangia borne on separate axes, as the beech and oak; (3) having one sporangium; further distinguished as _macro-_ or _micro-_sporangiate, as they bear sporangia of the kind indicated; _Monospo'rang'ium_, used by Sauvageau for the organ which produces monospores; _Mon'ospore_, a special spore in _Ectocarpus_, by Sauvageau considered to be a _Gema_; _monostach'ous_ (στάχυς, a spike), arranged in one spike; _monoste'lous_ (στήλης, a pillar); _monoste'lous_, having but one stle or central cylinder of vascular tissue; _Monoste'ly_, the state of having a single stle; _monostich'ous_, -_clus_ (στίχος, a row), (1) in a single vertical row; (2) applied to bacteria arranged in one row or chain (C. Jones); _monostroma'tic_ (στρώμα, bed-covering), consisting of a single layer; applied to the leaves of Mosses and the thallus of Algae when so composed; cf. _distr'matic_; _monostyl'ous_, -_lus_ (+ _Stylus_), having a single style.

_Mono'sy_ (μονόσης, deserted), Morren's term for the abnormal isolation of parts due to (a) _Ade'smy_ or (b) _Dialysis_.

_monomysym'etrical_ (μόνος, one; _σύμμετρος_, proportionate), used of a flower which can be bisected in one plane only; _zygomorphic_; _monothal'am'ic_, _monothal'am'ous_ (θάλαμος, a bed-chamber), (1) applied to apothecia consisting of a single chamber; (2) when galls consist of only one interior chamber; _monothal'mic_, derived from a single flower, as most fruits (Crozier); _monoth'e'cal_ (θηκη, a case), having a single loculus or cell; _monot'ocous_, -_cus_ (τόκος, childbirth), fruiting once only, as annuals and biennials, monocarpic; _mono-
top'ic (τόπος, a place), (1) originating once only (Clements), (2) arising from one centre (Drude); monotrich'ous (μονότριχος, hair), having one bristle or cillum, as certain Flagellata; monotroph'ic (μονότροφος, food), nutrition confined to one host-species; cf. polly'tropic; monotrop'ic (μονότροφος, a turning), applied to bees which visit only one species of flower; monotyp'ic (μονότυπος, a type), having only one exponent, as a genus with but one species; Mono'xen'y (μίσχος, a host), used of a parasite on one host only; autoeious; mnoxy'l'ic (μικρόνυμος, wood), used of vascular bundles in which the centrifugal part is primary xylem.

Monsoon' For'est, Schimper's term for tropical, deciduous high-forest, with heavy rainfall and long dry season.

Mon'ster, Mon'strum (Lat., an unnatural production), an abnormality; Monstro'sity Monstro'sitas, some conformation deviating from the usual and natural structure; adj. moun'trous.

mont'a'ne, monta'num (Lat.), pertaining to mountains, as a plant which grows on them.

Moo'rant, ranges from sea-level to the high hills in Britain, with peat, and ericaceous plants as chief vegetation; ~ Province, an area in which climatic factors tend to produce moors (Crampton).

Mor'i'a (μόρια, a share), parts of a flower in general, as pentamor'ius, all parts in fives.

Mor'in (Morus, mulberry), a principle derived from the yellow heartwood of fustic, Maclura aurantiaca, Nutt.; the name is derived from Morus, to which genus the plant was formerly referred; mor'inus, Hayne's term for mulberry black; the deep purple of the ripe fruit of Morus nigra; Moroxym'ase (μορόξυμον, leaven), an assumed enzyme in the mulberry, now believed to be a mixture of diastase and zymase.

Morph'a's'ia (μορφή, shape; ἀναθεσία, perception by the senses), Noll's term for the tendency to assume definite relations of symmetry.

Morph'ia, Morph'ine (Μορφή, the god of sleep), the best known of all the alkaloids contained in the opium poppy.

Morphogen'esis (μορφογένεσις, shape; γένεσις, beginning), the production of morphogenet'ic; morpho'gen'ous Ir'ritants, external factors requisite for inception of propagation (Herbst); Morphog'eny (γένος, offspring), the study of adaptations of the plant in its natural surroundings (Jaccard); Morpho'raphy (μορφογραφία), anatomy and descriptive histology (Vuillemin); morpholog'ical, relating to Morphology; ~ Spec'cies, Parmentier's term for such specific forms as occur in Rosa, which are assumed to have departed from their ancestral form in consequence of varied environment; Morphology (λόγος, discourse), the study of form and its development.

Morpho'sis (μορφώσις, a shaping), the manner of development; the order in which organs form from their earliest to their final condition.

mor'phus (μορφή, shape), in Greek compounds = appearance, as rhizo'morphus, having the appearance of a root.

mor'ulose (mor'ulus, dark-coloured), dark, almost black (Solereder); cf. mor'inus.

moso'ic (Fr., mosaique, from late Lat. musaicus, tessellated work), (1) applied to hybrids which display patches of varying character (Bateson); (2) Mosa'ic, a disease ascribed to some physiological cause, showing patches on the leaves of tobacco and other plants.

mos'chate, moscha'rous (moschus, musk), musky.

Moss, (1) the common name for bryophyte; (2) a lowland moor; ~ Moor, usually higher in the centre, with growth of Sphagnum; "Hoehmoor" of the Germans; ~ Tun'dra (Finnish), flat or undulating tract, devoid of
forest, in the north of Russian Siberia; Mossing, covering decorticated trunks with moss, to induce the production of renewed bark in Cinchona culture.

Mother, used in the sense of "parent"; ~ Cells, those which divide to form other cells; ~ Plant, (1) the parent plant, from which vegetable portions have been derived; (2) the female or seed-bearing parent of a hybrid; ~ Skin, a continuous ribbon like figure of chromatin in the early stages of nuclear division, further divided into close ~, looped ~, and loose ~; ~ Star = Monaster, a stage of nuclear division.

Mother-of-Vinegar, the active agent in acetoce fermentation, Saccharomyces Mycderma, Reess.

Moth-flowers, adapted for moths as pollinating visitors: they are usually white flowers.

Motile (motus, a moving), moveable; ~ Region, (1) the region of elongation in growing members; (2) in mature members a distinct organ, such as the pulvinus in Mimosa pudica, Linn.

Motility (Fr., motilité), the power of movement; ~ of Protoplasm, a suggested emendation of "contractility" of protoplasm.

Motion-dicogamy (+ Dicogamy), when the sexual organs vary in length or position during flowering.

Motor (Lat., a mover); ~ Reflex, negative chemotropism, a reactive motion; ~ Zone, another term for Motile Region.

Mould, applied to microscopic saprophytic Fungi, such as Mucor and its allies.

Moveable, the same as Motile, (1) used of a versatile anther whose attachment is slight, therefore apt to be moved by wind or slight shock; (2) with colours, "shot" or changeable (J. S. Henslow); (3) the annulus of an Agaric when it detaches itself from the stipes and remains free.

Movement, motion, continuous or transient; ~ of Variation, see Allasotonic.

Mox'a (native name), the woolly leaves of Artemisia Moxa, DC.

Mu'cedin (muca'dus, moudy), a tough viscid body associated with gluten in vegetable gelatin (Goodale); muc'dinous, musty, mouldy.

Mucic (mucus, nasal secretion), relating to gum; Mu'cilage (Fr.), vegetable gelatine belonging to the amyllose group of carbohydrates; ~ Canal; ~ Cavity, space caused by the breaking down of the cell-wall of neighbouring cells; ~ Cells, cells whose contents are gum or similar secretions; ~ Slit, an opening on the under surface of the thallus in Anthocoreteae, like a stoma without guard-cells, leading into a cavity filled with gum; mucilaginous, slimy, composed of mucilage; Mu'cine, a constituent of wheat-gluten which is soluble in water; Mucocellulose (+ Cellulose), alluded to under Celluloses; mu'co'id (edos, resemblance), a secretion resembling that formed by the mucous membrane of animals.

Mu'cor, an albuminoid substance occurring in species of Mucor (De Bary); mu'corine, mucidinous, resembling the genus Mucor; mucorineous, resembling the Mucorineae; Mucormycoses (+ Mycosis), any disease in animals due to mucorine Fungi (Barthelot).

Mu'cous, mucous (Lat.), slimy; cf. Mucus.

Mu'cro (Lat., a sharp point), (1) a sharp terminal point; (2) used by Arthur and Holway for Micromillimetre (= μ); cf. Micron; Mu'cro'na = Mucro (Lindley); mu'cronate, mucronatus, possessing a short and straight point, as some leaves; Mu'cra'nation = Mucro; mucronulatus (Lat.), dim. of mucronate.

Mu'cus (Lat., nasal secretion), gum-like matter soluble in water; mu'cous, mucilaginous.

Mu'darin, a substance occurring in the
bark of the "muder," Calotropis gigantea, Dryand., and C. procera, Dryand.

Mue'iier's Bodies, ~ Corpus'e'cles, metamorphosed glands found in certain myrmecophilous plants, as Cecropia adenopus, Mart., which forms a velvety coating on the under side of the base of the petiole; they are utilized as food by ants.

Mule, in botany, means cross-bred, a hybrid.

Mul'ga Scrub, chiefly composed of thorny acacias, forming an impenetrable thicket (Warming).

mult'ig'ular, multangular'is, mult-angular'us (multus, many; angularis, an angle), many-angled; multicap'-sular (capsula, a small box), having many capsules; multioll'ate (ciliatum, an eyelash), with many cilia; multiceps, multicip'ital (caput, a head), with many heads; it refers to the crown of a single root; multicos'-tate (costa, a rib), many-ribbed; the ribs running from the base of a leaf towards its apex; multiden'tate (dentatus, toothed), with many teeth; multidigita'to-pinnat'us, having many secondary petioles with digitate-pinnate arrangement (J. S. Henslow).

multifaria'm (Lat., many-ranked), many ranked, as leaves in vertical ranks; multifar'ious, multifar'ius, (Lat., manifold).

multifer'ous, -rus. (multiifer, bearing much), often bearing, fruitful.

multif'd, multif'idus (Lat.), cleft into many lobes or segments.

multiflor'ous, -rus (mulnus, many; floris, a flower), many-flowered; multifolia'tus (folium, a leaf), many-leaved; multijug'ate, multijuga'tus, multijugous, -us (jugum, a yoke), having many pairs or jugae; multijug'ate Types, phyllotaxis in which the parastichy ratios are divisible by a common factor (Church); multilat'er'al (latius, a side), many-sided, having several flattened surfaces; ~ Sym'metry, radial disposition of parts; mul-
tiloc'ular, multilocula'ris (loculus, a little place), many-celled, as an ovary; ~ Spore = sporo'desm; Multilocula'res, compound spores; multino'dal (nodus, a knot), used of a branch comprising one or more internodes (Shaw); multinu'clear, (+ Nucleus), multinucleate, having many nuclei; multinu'cleate, having more than one nucleus to a cell; multip'a'rous (paria, I bring forth), many-bearing, applied to a cyme which has many axes; multipar'tite, multiparti'tus (partitus, divided), many times divided, much cut.

mult'i'plex (Lat., with many folds), where many of the same parts occur together; Multi'plex, an individual resulting from multiple fusion of the product of a fertilized ovum (Worsdell); multiple Corol'la, one that has more than one whorl of petals; ~ Fruits, the fruit of a flower-cluster when confluent into one mass; ~ Pri'mary Root, a root with several main divisions from the crown, as in Dahlia (Crozier); ~ Spi'rais, a system of more genetic spirals than one (Church).

multiplic'ate (multus, many; plica, a fold), folded often or repeatedly; ~ Flow'er, a double flower; Multiplica'tion, multiplica'tus (Lat., increasing), augmentation, pleiotaxy, pleio-
phyllly: adj. multiplic'a'tus; multi-pol'lar (polus, a pole), with more than two poles; ~ di'arch, a stage in spindle formation during nuclear divi-
sion (Overton); ~ Spin'dle, Guign-

mard'n, multiseria'lis, multiserie'alis, multiserie'alis (series, a row), in several series; multisili'quous (+ Siliqua), having many pods or seed-
vessels; multisiste'lic = POLYSTELIC.
Mummification of fruits, used by Tuber to express the fungal resting body or seerotium.

Mumo'nia (Momonia, or Muminia), relating to the province of Munster.

mu'niens (Lat.), fortifying; munien'-tia Fo'lia, protecting leaves which overhang or otherwise guard parts which need protection.

mu'ral, mura'lis (Lat., pertaining to a wall), growing on walls; mura'rius (Lat.) means the same; mura'li-divi'ded = mu'riform.

mu'ricate, muri'catus (Lat., like murex), rough, with short and hard tubercular excrescences; muric'ulata, muri'culatus, diminutive of the preceding.

mu'riform, muri'formis (murus, a wall; forma, shape), (1) flattened cellular tissue, with cells resembling bricks in a wall; (2) Koerber applies the term to certain Lichen-spores.

muri'rus (Lat., of mice). mouse-coloured.

Mu'sa-form, gigantic tropical herbs with perennial, epigean, evergreen stem of involute leaf-sheaths, such as Musa (Warming).

Mus'cardino' (Fr.), a silkworm disease caused by Botrytis Bassiana, Bals.

mus'car'ian (musca, a fly), Beccari's term when flowers attract flies by a putrid stench (Praeger).

muscar'iform, muscariform'is (muscarium, a fly-flap; forma, shape), (1) fly-brush shaped; (2) like the genus Muscaria as to habit or in-florescence; Mus'carine, a poisonous alkaloid from Amanita Muscaria, P. Karst.; Muscar'ium (Lat.), a loose and irregular corymb.

Mus'ci, sing. Muscaus (Lat.), Mosses; mus'ciform, musciform'is (forma, shape), Moss-like in appearance; mus'cicole, muscie'lonous (colo, I inhabit), growing on Mosses; mus'-coid (elbos, like), resembling or belonging to Moss; Muscol'ogy (λόγος, discourse), a hybrid term for Bryology; an account of Mosses.

mush'room-head'ed, a cylindric body topped by a convex head of larger diameter; fungiform.

mu'table, (1) = mutabilis; (2) able to produce mutants (Clements);

mut'a'bilis (Lat.), changeable, either in form or colour.

Mut'a'tion (mutatio, a changing), De Vries's term for "species" derived by progressive or sudden changes in several generations of seedlings;

~ At'avisim, a tendency to revert;
degress'ive ~, when a change takes place in the partial latency of a character; progress'ive ~, when an entirely new character appears;

regress'ive ~, when an active or present character becomes latent;

Mu'tant, G. Henslow's name for a "species" so raised.

mu'ticous, mut'icus (Lat., curtailed, docked), pointless, blunt, awless.

Mu'tilate (mutillus, maimed); mu'tilus (Lat., maimed), applied to a flower nearly or wholly wanting the petals.

Mu'tualism (mutual + ism), the same as Commensalism; that is, an association of two organisms which is beneficial to both; also termed Mu'tuat Par'asitism; adj. mutualis'tic.

Myceliconid'ium (μύκης, a mushroom; ἕλος, excrescence; + Conidium), A. Fischer's term for Stylosphere.

Mycele' = Mycelium; myce'lian, relating to a mycelium; ~ Lay'er = membranous Mycelium; ~ Strand, fibrous mycelium; Mycelia'tion, taking on the aspect or form of Mycelium (A. S. Wilson); myce'-lioid (elbos, resemblance), resembling a mycelium (Archer); Myce'litha (λέθα, a stone), an old term for Sclerotium; Mycel'ium, the vegetative portion of the thallus of Fungi, composed of hyphae (Trattinick); filament'ous ~, the thread-like loose felting of hyphae; mem'branous ~, the layer formed by the interweaving of the hyphae; myce'-loid (elbos, like), resembling a mycelium; mycetoge-net/ic (γένετως, a parent), producing Fungi; ~ Metamorph'osis, deformation of parts by Fungi; myce'tog'enous (γένος, race, offspring),
producing Fungi; ~ Chloran'thy, the development of green in organs normally of some other colour, due to a fungous parasite; ~ Chlor'isis, where the chlorophyll is bleached by the action of hyphae of some Fungus (Tubeuf); my'cetoid, myce-to'id'eous (είδος, like), fungoid; with the appearance of Fungi; Myce-tology, Myceto'gia (άγος, discourse), = Mycology; Myceto'zoa (ζώον, an animal), De Bary's term for Myco gastroes; adj. myceto-zo'an.

Mychogam'ia (μυχός, recess), self or direct fertilization, as opposed to Hercogamy (Clements).

My'cina, in Lichens, a globular stipitate apothecium.

Mycocecid'ium (μύκης, a mushroom; κηνίς, κηνίδος, a gall-nut), a gall produced by a Fungus; Myco-doma'tia (δωματίον, a little house), fungus-chambers, formations of peculiar character found on the roots of plants, regarded by Frank as possessed of the power of attracting Fungi and digesting them; My-colog'ist (άγος, discourse), one skilled in the knowledge of Fungi; Myco-log'y, the science of Fungi; My'coma, the body of a Fungus (A. Braun); Mycomyc'es, the higher Fungi; Mycomyc'ophytes (φυτόν, a plant), Marchand's term to include Fungi and certain Lichens; myco-ph'thorous (φθόρος, destruction), a Fungus parasitic on another Fungus, as Hypécrea fungi-co'da (Rutland); Mycoph'thytes, Marchand's name for Lichens other than Mycomycophytes; Mycoplas'ma (πλάσμα, moulded), (1) Frank's term for bacteroids, as the rhizobia on leguminiferous roots; (2) an assumed property of the protoplasm of parasitic Fungi of remaining latent in the seed of the host, and reawakening to complete its cycle, on the return of favourable conditions; adj. mycoplas'mic; Myco-plas'ma, Eriksson's term for a latent symbiotic form of Puccinia which may exist in the seed and develop into a mycelium when the host has developed; Mycopro'tein (+ Prote'in), a gelatinous albuminoid resembling protoplasm, of which the putrefactive bacteria are composed; Mycorhi'zome (+ Rhizone), mycorrhiza-like structure in Coral'lo-rhiza and Epipogium roots; Myco-rhi'za, preferably Mycorri'hza (ρίζα, a root), the symbiotic union of Fungi and roots of plants; it may be ectotrophic, feeding outside, or endotrophic, obtaining its nourishment internally; farther as ectotrophic, ~ entirely outside, or endotrophic, ~ entirely within the cells; adj. mycorri'zic; My'cose, My'cosin, the special nitrogenous substance of the cell-wall in Fungi corresponding to the animal substance chitin (Gilson); Myco'sis, a disease in animal tissue caused by species of Eurotium; mycotroph'ic (τρόφη, food), employed of plants possessing mycorrhiza.

My'croast = Microcyst.

Mycropro'tein = Mycprotein.

My'cropyle = Microple.

My'crozyme = Microzyme.

Myioph'ilae (μυία, a fly; φιλέω, I love), plants which are fertilized by diptera; their flowers are dull in colour and their odours are disagreeable to man.

Mykoklep'tic (μύκης, a mushroom; κλέπτης, thievish), applied to the hairs on the rhizome of Corallo-rhiza inimata, R. Br., "which seize the mycelium."

Myoch'rous (μῶς, a mouse; χρῶσ, of the skin), mouse-coloured.

Myr, used in Norway and Iceland for any kind of Moor.

My'r cioid (είδος, resemblance), like My'rina or akin to it (F. v. Mueller).

Myri'aspor (μυριάς, a myriad; + SPORE), having innumerable spores.

Myriophyll'oid (είδος, resemblance), like Myriophyllum or having affinity with it.

Myrmecobra'mous (μυρμής, an ant; βρώμη, food), applied to plants
affording food to ants (Hausgirg); myrmecoch'orous (κωπώς, I spread abroad), dispersed by means of ants; Myr'mecoch'óry is the state itself; Myrmecodoma'tia (δωματίων, a little house), shelters formed by plants in which ants live; adj. myr'mecod'omous, affording shelter only; myrmecophil'ious (φιλέω, I love), plants which are inhabited by ants and offer specialized shelters or food for them; Myrmecophil'ism, the state described; myrmecoph'o'bic, myrmecoph'obous (φιλέω, I fear), shunning ants, used of plants which by hairs, or glands, repel ants; Myr'mecophy'tes (φυτόν, a plant), ant-plants; Myrmecosymbio'sis (+ Symbiosis), the mutual relations between the ants and their host-plants; adj. myrmecosymbio'tic; myrmecotroph'ic, (τρόφος, food), furnishing food; myrmecox'enous (ένως, a host), supplying both food and shelter.

My'r'osin (μύρον, sweet juice), a glucoside occurring in the seed of Brassica sinuopoides, Roth, and other Crucifers. Myrrh, an aromatic gum-resin yielded by Commiphora Myrrha, Engl. myr'tiform, myr'tiform'is (μύρις, the myrtle; forma, shape), resembling the myrtle; myr'toid, myr'toideus (εἶδος, like) is a synonym.

Myrtill'i'nis (Mod. Lat.), myrtle-green.

My's'trin, a peculiar carbohydrate found in Mystropectalon, Harv. (H. Gibson).

myu'rus (μύς, a mouse; ὀβρᾶ, a tail), long and tapering like a mouse's tail.

Myxamo'e'ae or Myxamo'me'ae, pl. (μύς, mucus; ἀμωβή, interchange), the swarm-spores of Myxogastres; Myxobacter'ia (+ Bacteria), applied to those bacteria which form colonies united by a gelatinous covering (Thaxter); Myx'o'bìa (βίος, life), Schüller's term for Haeckel's Protista, i.e. Protophyta + Protozoa; Myxogas'ters, an Anglicized form of Myxogastres (γάστρη, belly). Fries's term for the group of "Slime Fungi," otherwise known as Myxomyce'tes and Mycytozo'a; adj. myxogas'trous; myxomyce'tous, relating to the same group under its name of Myxomyce'tae; Myxomon'ad (μοῦς, a unit), a swarm-spore of Myxomyce'tes; Myx'ón, a constituent of wheat-gluten precipitated by alcohol; Myxoph'y'ceae (φυκός, seaweed) = Schizophyceae; Myx'o'phyte (φυτόν, a plant), Wettstein's name for Rhizopoda regarded as plants; Myx'opod (ποὺς, ποδός, a foot), the amoeboid stage in contrast to the mastigopod; Myx'ospore (σπόρο, a seed), a spore formed in the sporangia of Myxogastres; adj. myxos'porous; Myxothal'lophy'tae (+ Thallophytae) = Myxogastres; myxotroph'ic (τρόφος, food), feeding by the ingestion of solid particles.

na'creous (Fr., nacre, mother-of-pearl), with pearly lustre (Heinig). Nährlo's'ung (Germ.), a nutrient solution for laboratory cultures; by mycologists usually restricted to a solution of horse-dung.

Nail, as a measure, about half an inch in length, the average length of a finger-nail; unguicularis.

Nail-head Rust, due to Cladosporium herbari'orum, var. citri'cola.

na'ked, wanting its usual covering, as without pubescence, or flowers desti-tute of perianth, or buds without scales; ~ seed'ed, (1) gymnosper-mous; (2) formerly used of Labiates, from a false idea of the fruit.

Nama'tad (νᾶμα, νάματος, a stream; + AD), a brook plant; Namati'um, a brook formation; namatoph'i'lus (φιλέω, I love), brook-loving; Namatoph'yta (φυτόν, a plant), brook plants (Clements).

nan'an'drous (νάνος or νάννος, a dwarf; ἄνήρ, ἀνδρός, a man), used of certain Algae which produce Dwarf-malen; Na'nism, Ghodat's term for becoming dwarf; Nanna'nder, a dwarf-male (Wittrock); cf. nan'androus; Nann'oplankton (+ Plankton), free
floating organisms of extremely small size; Nanophanerophytes, pl. (+ Phanerophytes), shrubs not exceeding 2 metres in height (Raunkiær); Nanophanerophytum, a formation of the shrubs in question; nanus (Lat.), dwarf, cf. Pumilus.

napaceous (napus, a turnip; + aceus); napiform (forma, shape), turnip-shaped or rooted.

nappy, tomentose.

Nareine (nären, numbness), an opium alkaloid forming silky, inodorous, bitter crystals.

Naretine (nären'tik<s>, making numb; τπρη<ν>, a turning), movement due to a narcotic cause.

Nardetum, an association of Nardus stricta.

Nardine, pertaining to Nard, Nardo-stachyis Jutamansi, DC.

nascen (nascor, to be born), in the act of being formed; ~ Tis' sue = Meristem.

Nastie (nast<s>, pressed close), automatic curvature of a dorsiventral organ influenced by continued growth in length (De Vries); adj. nastio.

nastant, nautans (Lat., swimming), floating under water, that is, wholly immersed.

native, used by H. C. Watson for undoubtedly indigenous.

natural, produced or effected by nature; ~ Family, a group of genera formerly styled Order, but since 1905 the latter has been restricted to a superior group; ~ Graft, when branches are naturally united by "approach"; ~ Order, an assemblage of Families, inferior to Class; ~ System, an arrangement according to the affinity of the plants, and the sum of their characters, opposed to any artificial system, based on one set of characters; Naturalization, the act of becoming naturalized; naturalized, of foreign origin, but established and reproducing itself as though a native.

Nau'cum, pl. Nau'ca (Lat., a trifle), (1) the fleshy part of a drupe (Lindley); (2) seeds with a very large hilum (J. S. Henslow); Nau'cus, certain cruciferous fruits which have no valves.

nautiform (nauticus, pertaining to ships or sailors; forma, shape) = navicular (Crozier).

eubulous, nebulous (el<s>, resemblance), spirally formed, like the shell of a Nautilus (Heinig).

navy-shaped, round and depressed, with a small opening, modioliform.

Naviculaceae, pl. (navicula, a boat), free frustules of Diatoms like those of the genus Navicula; naviculiform (forma, shape) = naviculoid; navicular, navicul'aris, boat-shaped, cymbiform; naviculoid (el<s>, like), like the genus Navicula.

necrides, pl. (nekph<s>, dead; el<s>, resemblance), certain cells in Cyanophyceae which become gelatinous and disappear (Brand); necoeoleopterophilous (neksp<s>, dead; + Coleopteron; φιλος, I love), when fertilized by carrion beetles;
necrog'énous, -us (γένος, offspring), applied to certain fungal parasites which hasten the decay of the plants on which they live; necroph'ágous (φάγω, I eat), applied to saprophytes; Neo'roplasm (πράσμα, moulded), the homologue of protoplasm in a dead seed; Neo'roplast, a protoplasm whose organization has suffered irreparable injury and is dead; Necro'sis, (1) cinder in plants; (2) used by Escom as meaning the death of an organism; Nec'totype (τόπος, a type), applied to forms formerly existing but now extinct; fossil.

Ne'cotar (νεκταρ, the drink of the gods), a sweet fluid extruded from various parts of the plant; in the flower it is called honey; ~ Flow'ers, without coloured perianth or petals, producing sticky pollen, as Salix; ~ Glands, the secreting organs which produce the nectar; ~ Guides, lines of colour leading to the nectary; ~ Marks = ~ Gu'ides (Crozier); ~ Spots = ~ Gu'ides; Nex'tarium, or Ne'ctary, (1) the organ in which nectar is secreted, formerly applied to any anomalous part of a flower, as its spurred petals; (2) employed by Linnaeus for the utricle of Carex; Nectarif'erous, -us (fero, I bear), nectar-bearing; Nectarily'ma (ειλαώ, I wrap round), any appendages to a nectary, as the long hairs in Meny'anthes; Ne'ctar'ius = Ne'ctary; Nectarostig'ma (στύγμα, a spot), some mark or depression indicating the presence of a nectariferous gland; Nectaro'the'ca (θήκη, a case), the portion of a flower which immediately surrounds a nectariferous pore.

Ne'ctism (νηκτίς, swimming), swimming by means of cilia, as zoospores; Ne'o'ton, Haeckel's term for plankton in active movement; originally restricted to animals.

Ne'edle, the stiff linear leaf of Con'i-ferae; dou'ble ~, the specially metamorphosed leaf-organ of Sciadop'itys; ~ shaped, acerose, acicular.

ne'gative (νατισιοι̇ς, that denies), implying denial or absence of some quality or substance; ~ Geo'tropism, apogeotropism, the growing in a contrary direction to gravitation; ~ Hel'i'ropism, apleiotropism, shunning light; ~ Pre'sure, when gases in plants are at a lower tension than air, in consequence of the withdrawal of water.

Ne'idioplank'ton (νηδια, a nymph; + Plank'ton), Forel's term for plankton organisms possessing swimming apparatus.

Ne'ism (νεσμ, new), the origin of an organ on a given place, as the formation of roots in a cutting.

Ne'k'ton = Nex'ton.

Ne'ma (νήμα, a thread), a filament.

Ne'mati'um, water margin plant-forma tion (Ganong); cf. Nam'a'tium.

Ne'mathae'ce, Nemathae'cium (νημά, a thread; θηκη, a case), a wart-like elevation of the surface in some Algae containing antheridia and paraphyses or cystocarps; Ne'mat'tablast (βλαστός, a bud), = Nemato'plast.

Ne'matodes (νηματώδης, thread-like), in botany, applied to Coniferae.

Ne'matogone (νημα, a thread; γον, offspring); Corren's term for an asexually produced gemma on the protonema of Mosses; adj. nemato'genous, Ne'me'ae, "Cryptogams whose sporules elongate into a thread-like form in germination" (J. S. Henslow); cf. Ne'moblast'us; ne'meous, thread-like, filamentous (Crozier); Nematomy'ces (μύς, a mushroom), a synonym of Hyphomycetous Fungi; Ne'matop'last (πλαστός, moulded), thread-shaped plastids observed in the cytoplasm of Momordica Elaterium; Ne'moblast'us (βλαστός, a bud), used by Willdenow to include Mosses and Ferns.

Nemora'lis (Lat., sylvan), inhabiting woods and groves; nemor'o'rose, nemor'o'sus (Lat., full of woods), used as if a synonym of nemoralis.

Ne'ogae'an, ne'o-ge'us, (νέος. new; γη, earth), New World, that is, American or West Indian; cf. Amp'hi-
neogeic

Neutrifiers

GAEAN, GERONTOGAEXAN; neoge'ic, migratory on recent geological formations (Crampton); neomorphogenous (μορφή, shape; γένος, race), causing a new growth in contrast with that existing; Neophyte (φυτών, a plant), a newly introduced plant (Rikli); Neoplasm (πλάστας, moulded), a new individual arising from one or more previously existing protoplasts, as the fertilised egg-cell (Hanstein); neotropic (τροπή, a turning), South American, in plant distribution; Neotype (τύπος, a type), a specimen from the original locality whence the true type was obtained, which had been lost or destroyed.

Nepenth'in, a proteolytic enzyme occurring in the pitchers of Nepenthes.

Neph'roid, nephroi'deus (νεφρόδεσ, the kidneys; εἴδος, like), reniform, kidney-shaped; Nephros'ta, Necker's term for the sporangia of Lycopeodium.

Neptic'ic (νηπίων, young), applied to the first leaves of seedlings developed immediately succeeding the embryonic stage of the cotyledons.

Ne'reid (Nereis, a sea nymph), a mythologic name used by Warming to designate water-loving plants which grow on rocks and stones; ~ Forma'tion, a community of Algae (Warming).

Ner'itic (νηρίτης, son of Nereus), applied to plankton which is coastal; Neroplan'kton ( + Plankton), Haeckel's term for neritic plankton.

Ner'a'lis (Lat., pertaining to the nerves), (1) synonym of loculicidal, the dehiscence being along the midrib of the carpels; (2) relating to the midrib of a leaf, as a prolongation of it—as a tendril.

Nerva'tion, Nervu'tio (nervus, a nerve), venation, the manner in which the foliar nerves or veins are arranged; ner'vate, nervu'tus (Lat.), nerved or veined; Nerve, Ner'vus, in botany, a simple or unbranched vein or slender rib; nervet, ner'veiger (gvo, I bear), having nerves, in a botanic sense; ner'veless, without apparent nerves; Nervimoti'ty ( + Motility), used by Dutrochet to denote the stimulating effect of the substratum on a growing organ; ner'vose, nervo'sus (Lat., sinewy), full of nerves, or prominently nervet; ner'vulose, nervul'o'sus, diminutive of nerves; Ner'vures, the principal veins of a leaf.

Nest-epi'phyte (+ Epiphyte), an epiphyte which accumulates humus around itself for its growth; ~ Leaves, pl., dimorphous-leaved ferns, those possessing heart-like bases acting as accumulators of humus (Goebel); ~ Roots, negatively geotropic roots of epiphytes which form nest-like masses within which humus accumulates (Goebel).

Nest'ling, nidulant (Crozier).

Net-knot = Karyosome.

Net-plasma'dium ( + Plasmodium), a state of Acrasieae, due either to fusion or merely contact (Olive).

net'ted, reticulated, net-veined with any system of irregularly anastomosing veins.

Neuramphi'pet'alæ (νευραμφίπέταλæ, a nerve or sinew; αμφί, around; πεταλος, a flower-leaf), Cassini's name for the Compositae; Neura'tion (+ ation) = Nerva'tion (Crozier).

Neurop'terid, akin to or resembling Neuropteris.

Neur'o'se, neuro'sus = Nerveose.

Neu'ter (Lat., neither of two), sexless, as a flower which has neither stamens nor pistils; ~ Flow'ers, functionally asexual flowers; neu'tral, pertaining to neither sex; ~ Axis, that common to the several I-girders in stems (Haberlandt); ~ Lam'ina, the plane of zero-tension in a stem (or girdle) when subjected to a bending force (Haberlandt); ~ Zone, in Characeæ, that line or place where rotating streams of protoplasm flow beside each other in opposite directions, the "indifferent line" shown by the absence of chlorophyll granules; neutrifor'us

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Neutriflorus, a flower, used of the ray-florets of Compositae when neuter; Neutrophile (φιλέω, I love), a hybrid word for elements which do not take up either acid or basic stains, as hyalosomes.

New, the first publication of a genus, species, variety or form.

Newtonian Curve, called also the binomial or Galtonian curve, a graphic representation of variations plotted geometrically in two dimensions; the Half-Galtonian Curve is a similar scheme, from the maximum to minimum, or vice versa.

Nexus (Lat.), a connection.

Nicked, emarginate or notched

Nicotian, tobacco-coloured, from the genus Nicotiana; it usually means a full brown; Nicotian, an alkaloid found in tobacco-leaves.

Nido sus = nidoro'sus (Lat., reeking), having a foul smell, as of burnt meat or rotten eggs.

Nidulans, nidulans (Lat., nesting), (1) partially encased or lying free in a cavity, as the gemmae of Marchantia; (2) embedded in pulp, as the seeds in a berry; Nidulatus (Lat.), nested, nestling; Nidularium, "the mycelium of certain Fungals" (Lindley). Note.—There is a genus of Fungi named Nidularia, Fries.

Nidus (Lat., a nest), a favourable place for a seed or spore to germinate.

Niederblätter (Ger.) = Cataphylla.

Ni'ger (Lat.), black.

Night-position, the position assumed by leaves during darkness, the edges usually being turned towards the zenith.

Nigre'do (Lat.), blackness; nigres'cent, nigres'cens (Lat.), turning black; nigricant, nigricans (Lat.), becoming black; this and the last are used for tints which turn black with age; nigrītus (Lat.), blackened, clothed in black.

Nipo'tum, an association of Nipa palms.

Ni'pho- (νιφω, to snow), Drude's prefix for terms to denote snow.

Nip'ple = Papilla.

Niteli'us (Lat., pertaining to a dormouse), dormouse-coloured.

Nit'id (Crozier), = nit'idus, nit'idus (Lat., shining), smooth and clear, lustrous.

Nitri'fication (nitrum, nitre; +ifica'tion), the action of a nitric ferment resulting in the production of nitrates and nitrates; Nitrobacteria (+ Bacteri'a), bacteria which produce nitrification by their action; Nitrocellulose (+ Cellulose), see Cellulose.

Nitrophil'ious (νιτροφων, potash or soda; φιλέω, I love), used of alkali-loving plants; Nitr'ophytes (φυτόν, a plant), potash-loving plants, thriving best on soils affording most alkalies (Schimper).

Nit'schia-plank'ton (+ Plankton), floating masses of the Diatom-genus Nitschia.

Nival'flora, the flora above the snow-line; Nivalis (Lat., snowy); (1) growing in or near the snow; (2) more correctly snow-white; Niv'e'ous, Niv'eus (Lat., snowy), snow-white; pure and lustrous.

Nix'us (Lat., an effort), affinity, as of one species to another of the same genus.

No'bis (dative pl. of ego, I), used as an authority in defining species, etc.

Nocone'mum (deriv. I), Necker's term for the sporangium of Selaginella (?).

Nocturnal (nocturnalis, by night), occurring at night, or lasting one night only.

No'dal (node's, a knot), relating to a Node; ~ Cell, a cell at the base of the oogonium in Chara interposed between the egg-cell and the stalk-cell, with the "Wendungszelle"; ~ Di'aphragm, any septum which extends across the hollow of the stem at a node; ~ Flexus, the not or transverse girdle of bundles which sometimes exists at a node;
nod’ding, hanging down, mutant.

Node, *No’dus* (Lat., a knot), that part of a stem which normally has a leaf or a whorl of leaves; the "knot" in a grass-stem; Lindley gives the following modifications: closed ~; comp’ound ~; divi’ded ~; entire ~; o’pen ~; sin’gle ~; see his Glossary (1849), p. lxxi.: nodif’erous (*fero, I bear*), bearing nodes; no’dose, no’dosus (Lat., knotty), knotty or knobby, chiefly used of roots; No’dos’ity, No’dos’itas (Lat., knottiness), a woody swelling; No’d’ule, No’dul’us (Lat., a little knot), (1) a small knot or rounded body; (2) = Coa’l-ballS; ~ of Diatoms = Stau’ros; no’dulose, nodulo’sus, the diminutive of no’dose.

No’menclature (*nomenclatura*, a list of names), the names of things in any science; in botany frequently restricted to the correct usage of scientific names in taxonomy.

Nom’ad (*vom’os, a pasture*), a pasture plant (Clements) [NOTE.—Not to be confused with the homonym derived from *vomás, vomádoS* wandering; cf. nomad’ic, used of certain steppe plants, blown from their original station]; Nomi’um, pl. No’mi’a, pasture formation; nomo’col’a (colo, I inhabit), nomoph’ílus (phil’é, I love), dwelling in pastures; Nomo’phy’ta (pom’ta, a plant), pasture plants (Clements).

No’molo’gia (*vómás, custom; lá’gos, discourse*), relating to the laws which govern the variations of organs; nomos’per’mous (σπέρμα, seed), used by Radikofen to denote the seed normally occurring in the order, tribe, or genus.

non-anal’ogous = divergent (Osborn); non-mari’time, inland (Kearney); Non-occurrence, employed by Kearney to denote absence from a given locality; non-saline, shunning salt, as plants of inland localities (Kearney); non-undulate, flat, not wavy (Kearney).

no’nutS (Lat.), ninth.

nor’mal, normal’is (Lat.), according to rule, usual as to structure.

Nos’ology (*vódos, disease; lá’gos, a discourse*), see Vegetable Nos’ology.

Nos’toc-lay’er, in Lichens when the Algal layer consists of *Nostoc* or allied forms (De Bary); nostocha’ceous, resembling *Nostoc* or allied to it (Archer); no’sto’cine means the same.

notate’, notas’tus (Lat., marked), marked with spots or lines.

notted, emarginate, nicked.

noteroph’ilous (*vor’pós, moist; φιλέω, I love*), applied to plants which are intermediate between hydrophytes and xerophytes; by Warming termed mesophytes.

Nothog’amy (*vó’dos, bastard; γάμος, marriage*), heteromorphic xenogamy, crossing of various varieties in contradistinction to Hy’bridogamy; Nothog’am’ia has been proposed by Clements for hybridization generally.

noth’us (Lat.), false or bastard, usually applied to the false root of a parasite.

notorri’zal (*vó’ros, the back*; pl’ca, a root), used for incumbent; the radicle being on the back of the cotyledons in certain Cruciferæ; nototi’ral (τριβος, I beat), pertaining to those flowers described by Delpino as no’tor’to, whose stamens and styles turn so as to strike their visitors on the back; syn. notor’tri’bous.

no’vem (Lat.), nine; ~ digita’tus, nine-fingered; ~ lo’bus, nine-lobed; ~ ner’vius, nine-nerved.

No’vif’orm (*novus, new*), a Cultiform of recent origin (Kuntze).

nu’bilus (Lat., dusky), greyish blue (Hayne).

Nucament’um (Lat., a fir cone or catkin), an amentum or catkin; nuca’men’taceous, -ceous, (1) having the hardness of a nut; (2) synonym for indehiscent, monospermal fruit.

Nucel’la = Nucel’lus (Lat., a small kernel), (1) the kernel of an ovule; (2) the body of the ovule or macrosporangium containing the embryo sac or macrospore; Nucel’lum, Germain’s form of Nucel’lus.
nuciferous (nux, a nut; fero, I bear), bearing or producing nuts; nu'cle-form (forma, shape), nut-like in shape.

nu'clear (nucleus, a kernel), pertaining to a nucleus; ~ Association, the fusion of protoplasts which contain them; ~ Bar'rel, a stage immediately preceding the nuclear spindle; ~ Diao, the mother-star stage; ~ Division, either direct by fragmentation, or indirect by karyokinesis, the entire history of the division of the cell-nucleus; ~ Fi'brils, chromosomes; cf. Spindle-Fi'bres; ~ Fil'a-ment, the chromatin or chromatic filament; ~ Fu'sion, the union of two nuclei; cf. Syngamy; ~ Osmo'sis, the theory that the nucleus enlarges in the manner of a sap-vacuole (Lawson); ~ Plate, the demarcation of the daughter-cells in nuclear-division, see Mother-STAR; ~ Red'u'action, when a smaller number of segments occur than at the previous divisions of the parent-cycle (Hartog); ~ Ring, the equatorial arrangement of chromosomes; cf. Mother-STAR; ~ Sap, the intermediate matrix (Schwarz); ~ Spindle, slender filaments from the poles, and crossing the equator, beginning in the skein stage, and completed in the mother-star; ~ Star = Aster; ~ Threads = Spindle-Fi'bres; nu'cleated, having a nucleus or nuclei.

Nu'clei; pl.: Blad'der ~, found in latex, which seem to increase by direct division (Molisch); Giant ~ of certain species of Aloc, remarkable for their size; Thread ~, long drawn out, in the mucilage of Amaryllideae (Molisch).

Nu'clein, Strasburger's term for Chromatin.

Nu'cleo-con'troso'mes (nucleus, a kernel), a term used by G. Karsten in describing the nuclear division of Psilotum trigutrum, Sw.; probably the same as Strasburger's "secretion bodies"; ~ Hy'aloplasm, Strasburger's word for LININ; ~ Id'io-plasm, the formative part of the nuclear hyaloplasm; ~ Mi'croso'mes (Strasburger) = Chromatin! Nu'cleocho'ly'te ma (χυόλος, juice), Strasburger's term for the fluid which fills the spaces in the LININ.

nu'cleolate, nu'cleolated (nucleus, a kernel), possessing a nucleusel; Nu'-clecle, Nucle'olus, a sharply defined point in the cell-nucleus; Nucle'o-lo-Nucle'olus, = Endo'nucleus; Nu'cleo'phy'jea (φυτόν, I grow), tubular, septate projections in certain fungi which correspond to the base of the perithecium, and ultimately become ascophyses; Nu'cleoplasm (αναθάμα, moulded), nuclear protoplasm, the nucleo-hyaloplasm of S. Vines; nucleoplasmic Ten'sion, after cell-division when the increase of protoplasm and nucleus cannot proceed equally; this tension causes an increase of the nucleus and chromatin (R. Hertwig); Nucleopro'teoid (~ Proteoid), any protein which is a characteristic constituent of the nucleus.

Nu'cleus (Lat., a kernel), (1) the kernel of an ovule or seed, the Nu'cellus; (2) an organized proteid body of complex substance; it contains one or more nucleoli, and divides either directly by Fragmentation, or indirectly by Karyokinesis, otherwise called Mitosis; (3) the hilum of a starch granule; (4) in Lichens, the disk of the apothecium, containing asci; (5) in Fungi, the centre of the perithecium; (6) a clove or young bulb; ~ Bar'rel = Nu'clear Bar'rel; ~ of the Em'byro Sas, the secondary nucleus; ~ of O'o'sphere, that in the oosphere (female pronucleus) with which a sperm-nucleus (male pronucleus) coalesces to form a germ nucleus; closed ~, that kind of nucleus which occurs in the higher plants, cf. Open ~; gam'eto ~, the nucleus of a gamete; gen'erative ~, an active nucleus in karyokinesis; Germ ~, a nucleus resulting from the fusion of a male and female pronucleus; cf. Pro'nu'cleus; O'pen ~, the central body

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of Phycocliromaceae, of much looser structure than in higher plants, and destitute of true nuclear membrane (Hieronymus); Rejection, sister-nuclei to the female nucleus which play no part in fertilization (Hartog); ~ Spin'dle = Nu'cule Spindle.

Nu'culan = Nu'culea'niun (nu'culea, a small nut), Richard's term for a drupaceous or baccate fruit containing more than one stone or seed, adopted by Lindley for a superior stony-seeded berry, such as a grape; Nu'cule, Nu'cula, (1) a diminutive of Nut'let; (2) the female sexual organ of Chara; nu'culo'sus (Mod. Lat.), containing hard nut-like seeds.

nuuoments'a'ceous, an error for Nuca-mentaceous.

nu'de, nu'dus (naked), bare, naked, in various senses.

nud'icau'lis, nud'icau'lis. (nudus, naked; caulis, a stem), naked-stemmed, not leafy; nu'dins'culus (Lat.), somewhat bare.

null'iner'vis (nullus, none; nervus, a nerve), = Ene'vis.

nu'mero'sus (numerus, many), in botany indefinite, not readily counted; the sign is ~.

Nupha're'tum, an association of Nuphar (Warning).

nup'tial (nuptialis), pertaining to marriage, employed to denote intra-floral nectaries.

Nursing-foot = Haust'rum.

Nut, Nu'x (Lat.), a hard and indehiscent one-seeded fruit, often vaguely applied to such fruits as those of the Labiatae and Cyperaceae; spu'rious ~, a fruit which owes its hardness to something other than the pericarp, as in Mirabilis; Nu'x bacc'a'la, a nut enclosed in a pulpy covering, as in the Yew.

nu'tant, nu'tans (Lat.), nodding.

Nu'tation (nu'tatio, a nodding), the revolution of the growing tips of young organs; ~ Chor'isis, Fitting's term for a separation due to the growth of a tissue; revol'ving ~ = Circumnu'tation.

Nut'let, the diminutive of Nut; cf. Nu'cule; variously applied to any dry independent fruit, as an achene, or part of a schizocarp.

Nu'trieicm (nutriëcius, that nourishes), a form of symbiosis in which the Fungus becomes the nurse and feeder of the other symbiout, as in Mono-tropa; Nutrit'ion, the process of promoting the growth or repairing the waste caused by vital phenomena.

Nux (Lat., nut), see Nut.

nyctan'thous (nu'c, nu'natos, night; nu'nos, a flower), used of night-flowering plants; Nyctan'thy, the condition of nocturnal flowering.

nycti'gamous (nu'ktygamous, marrying by night), flowers which close by day, but open at night, often scented.

Nyctinas'tism, Nyctinas'ty (nu'c, nu'natos, night; nu'natos, pressed close), = Nyctitropism; adj. nyctina'stic; nyctipela'ling'ic (+ Pelagic), floating organisms which rise to the surface only at night (Forel); nyctitrop'ic (τρόπη, a turning), placing the leaves as during the night; Nyctitropism, assuming the sleep position.

nymphae'a'ceous, resembling or akin to the waterlilies, Nymphaeaceae; Nymphae'tum, an association of Nymphaea (Warning).

nymphaeiform'is (nympha, a pupa; forma, shape); Koerber applies this to chrysalis-shaped spores of some Lichens.

Oak wood Associa'tion, woods in which the oak is dominant.

Oan'gium (αν, an egg; ἀγγεῖον, a vessel), an apocaytal oogonium which forms oospores by free cell-formation, as in Saprolegniaceae (Hartog).

ob, as a prefix; means inversely or oppositely; as obovate, inversely ovate; sometimes, but incorrectly, used for sub-

obela'vate (ob, inverse; clavatus, club-shaped), attached at the thicker end; obcompres'ed, obcompres'sus (compres'sus, pressed together), flattened the other way, antero-posteriorly instead of laterally;

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Obconic, obconical, obconicus (crown, a cone), conical, but attached at the narrower end; obturer-date, obcordatus (+ coriatus), inversely heart-shaped, the notch being apical; ocheliform, ocheliformis, are synonyms; ochelata-tus (+ crenatus), ♯, denticulate; ochereous (current, running ♯ running together and adhering at the point of contact; obdiplostemonous, -ous (διπλός, double; στήμων, a thread), where the stamens are double the number of the petals to which the outer series are opposite; obdiplostemony, the condition itself; Ob'iforms, in rosa those forms with very glandular teeth and glands on margins of calyx (Almquist).

Ob'ices (pl. of obex, a barrier), Clements's term for hindrances to plant distribution; they may be biolog'ical ~, as constitution of the plants, or physical ~, as the shutting in, as by mountains.

Ob'mbri cate, obimbriatus (ob, inverse, + imbricatus), when the imbrication is from above, downward; oblan'ceolate, oblan ceolatus (+ lanceolatus), strictly speaking this cannot occur, but the word is used for tapering towards the base more than towards the apex; ob'late (latus, broad), flattened at the poles, as an orange.

Ob'l'igate (obligatus, obliged), necessary, essential; the reverse of fa cul'tative; ~ Gam'ete, a gamete which is incapable of further development without union with another gamete; ~ Par'asite, an organism in which parasitism is imperative in order to attain complete development; ob'ligative, ob'ligatory, as in obligate; ~ Sym'biont, an organism which is dependent upon another for its existence.

Oblig'ulate, obligulatus (ob, inverse, + ligulatus), used of ligulate florets of Compositae extended on the inner side of the capitulum instead of the outside; obliguliflor'ous (floris, a flower), florets which are obligulate, as in Zo'ya.

Oblique', ob'il'gunus (Lat., slanting), (1) slanting; (2) of unequal sides.

Obliter'ated (obliteratus, erased), suppressed; Obliera'tion, suppression.

Ob'long, oblongus (Lat., rather long), much longer than broad, with nearly parallel sides.

Ob'o'val, obova'lis (ob, inverse, + ovalis), reversed ovate, the distal end the broader; ob'ovate, obova'tus, practically the same as the last; ob'o'void (eidos, like), an obovate solid; obrin'gens (+ ringens), ♯ a ringlet floret of the Compositae, with an anterior lip one-fifth, and the posterior lip four-fifths of the whole, as though the lower lip were uppermost; obrotund'us (+ rotundus), ♯ somewhat round.

Obscure', obscur'us (Lat., dark), (1) dark or dingy in tint; (2) uncertain in affinity or distinctiveness; (3) hidden.

Ob'so'lete, obsole' tus (Lat., worn out), wanting or rudimentary; used of an organ which is scarcely apparent or has vanished; obsoles'cent (+ escens), nearly obsolete.

Obstruc'tus (Lat., blocked up), where hairs or other appendages partially close the throat of a tubular corolla.

Obsubul'atus (ob, inverse, + subulatus), very narrow, pointed at the base and widening a little towards the apex; ob'sutura'lis (sutura, a seam), ♯ applied to the suture of a pericarp; septifragal.

Obtec'tus (Lat.), covered over by something; obtect'ovo'numus, when the principal and longest veins are connected only by simple cross-veins; obt'e'gens (Lat.), covering over.

Obtura' tor (obturatus, stopped up), (1) a small body accompanying the pollen-masses of Orchids and Asclepiads, closing the opening of the anther; (2) caruncle (J. D. Hooker), (3) a process of the wall of the ovary descending on the micropyle, in Plumbago.
obturinatus

obturbina’tus (ob, inverse, + turbina’tus), reverse top-shaped, swollen at the bottom, narrowed at the top.

obtuse, obtusus (Lat.), blunt or rounded at the end; ~ ang’led stem-angles rounded, as in Salvia pratensis, Linn.; obtusus’culus (Lat.), somewhat obtuse.

obval’late, obval’latus (ob, about; vallatus, walled round), apparently walled up, guarded on all sides; obvalla’ris, surrounded as by a wall, as in Narcissus obvallaris, Salisb.

ob’verse, obver’sus (Lat., turned towards); (1) the side facing, as opposed to reverse; (2) used when the point of a radicle in a seed approaches the hilum; ob’versely, in an obverse form.

ob’volute, obvolu’lens (Lat., wrapped round), a modification of convolute, when the margins of one organ alternately overlap those of an opposite organ, such as half-equitant; obvolu’tive is a synonym.

Occlu’sion (occlusus, shut up), the process by which wounds in trees are healed by the growth of callus, then said to be occlu’ded (M. Ward).

occula’tus (Lat.), hidden.

Occu’pa’tion, “possession of the ground by plants” (Clements).

Ocean ad (oceanus, belonging to the ocean, + ad), an ocean plant; ocean’ic, applied to organisms living in the open sea; ocean’icus, used of a marine plant; Ocean’ium, an ocean formation; oceanoph’illus (φιλαω, I love), ocean-loving; Oceanophy’ta (ϕυνβ, a plant), ocean plants (Clements); oceanophy’ticus, relating to ocean plants.

ocel’late, ocella’tus, ocella’ted (ocellus, a little eye), with a circular patch of colour.

Ocel’lus (Lat., a little eye), (1) an eye-spot as in Halionyx, a genus of Diatoms; (2) an epidermal cell of a leaf which is sensitive to light (Haberlandt).

Ochthi’um, or Ochthi’on (ὀχθι’ον, a conduit), a plant succession occasioned by drains or ditches (Clements).

ochra’ceous, -ceous (ochra, yellow earth), ochre-coloured, yellow with a tinge of red.

O’chrea=OCREA; o’chreade=OCREAD. ochroleu’cous, -cous (ὀχρα, yellow earth; λευκός, white), yellowish white, buff.

Och’thad (οχθαθ, a bank, + ad), a bank plant; Ochth’ium, a bank formation; ochthoph’illus (φιλαω, I love), bank loving; Ochthophy’ta (ϕυνβ, a plant), plants of banks or dikes (Clements).

O’crea (Lat., a grave), a tubular stipule, or pair of opposite stipules so combined; o’create, ocrea’tus, provided with ocreae.

Octagyn’ia (οκτώγυνα, eight; γυνή, a woman), a Linnean order of plants with eight-styled flowers; octagyn’ous, octagyn’icus, having eight styles; octam’erous (μέρος, a part), in eights; octan’der (ανήπ, ανόδος, a man), with eight stamens; Oc’tan’dria, a Linnean class of plants with eight stamens; octan’drous, having eight stamens.

Oc’tant (octus, a half-quadrant), the division of an oospore; ~ Wall, applied to the septum which cuts the oospore into octants.

octan’therous (οκτώθερος, eight; άνθηρος, flower), having eight fertile stamens; octari’nus (ακτήρ, a male), Necker’s term for octandrous; oce’nu cleate (+ NUCLEUS), having eight nuclei (Harper); octodiploid (+ diploid), applied to a nucleus formed by the fusion of eight diploid nuclei (Némec).

octofa’rius (L. Lat.), in eight ranks or rows.

octogyn’ous = OCTAGYNOUS.

octoloc’ular (octo, eight; oculus, a little place), applied to an eight-celled fruit or pericarp; octopot’a’lous, -lus (ποταλος, a flower-leaf), with eight petals; octora’diata (rādius, a ray), with eight rays, as some Composi’tæ; octosep’a’lous (+ sepala’tus, a conduit), a plant succession occasioned by drains or ditches (Clements).
lum), with eight sepals; octospérmous (απέρμα, seed), eight-seeded; Ocot'spore (απορά, seed) = the Carpóspore of Porphyraeaceae; octosp'orous, eight spored; octo-ste'monous (στήμων, a thread), with eight fertile stamens; octos'tichous, -us (στίχος, a series), in eight rows; octotrip'loidal (τριπλόδος, threefold), used of a nucleus, formed by division of syntriploid nuclei and subsequent fusion (Némec).

oc'ulate (oculns, an eye) = ocellate;
Oc'ulus, (1) the first appearance of a bud, especially on a tuber; (2) the depression on the summit of some fruits, as the apple.

d'ly pin'nate, with a terminal leaflet, imparipinnate.

-odes (είδος, resemblance), a suffix for similar to; as phyllodes, like a leaf.

odon'toid (όδονος, ὀδόντος, a tooth; είδος, resemblance), tooth-like dentate (Heinig).

odora'tus (Lat.), fragrant, usually restricted to sweet-smelling O'dours, which, in flowers, are sometimes due to essential oils which can be distilled off; at other times the scent cannot be collected by chemical means.

Ooce'sis = Ecesis.

Oecology, and similar words derived from oeciura, dwelling, will be found under Ecology, etc.

Oede'ma, pl. Oede'mata (οἴδημα, a swelling), (1) the tumid glands on woody tissues of Conifers; (2) proposed in place of "substitute Hy'dathodes"; (3) = Intumescences.

oodogonia'ceous, pertaining to Oedogonium or its allies.

Oek'iphytes (οἴκης, a dwelling; φυτόν, a plant), native cultivated plants for ornament or use (Naegeli and Thellung).

offi'cinal, officina'lis (Lat., of the shops), used of medicinal or other plants procurable at shops.

Off'set, a lateral shoot used for propagating, as in the houseleek; Off'-shoot, an offset.

often-bear'ing, producing more than once in the season, multiferous.

-oides, -oideus, -odes, -ides, suffixes from είδος, resemblance; as petal-oideus, resembling a petal.

Oid'ium, pl. Oid'ía (οἶδος, an egg; ἴδιον, a diminutive), a term used to denote concatenate conidia (Cooke); not to be confounded with the form-genus Oidium, Link, the conidial stage of Erysipheae.

Oil, used for any fluid fat-bodies in plants, chiefly stearic, palmitic, or oleic acids; ~ Cells, gum-cells; ~ Plas'tids, Elaioplasts; ~ Tube, a synonym of Vitta in the fruit of Umbelliferae.

oleag inous, -us (oleaginous, pertaining to the olive), oily and succulent.

ole'io (oleum, olive oil) Ac'id, a glyceride or fat occurring in plants; O'lein or O'leine, one of the vegetable fats.

ol'eus (Lat.), smelling, especially sweetly odorous.

ol'eoïd (ολέα, είδος, resemblance), used of plants whose leaves are traversed by fibres, as in the olive (Vesque).

Oleorea'in (oleum, olive oil + Resin), the natural admixture of a resin and an essential oil, forming a vegetable balsam or turpentine.

oleo'so-loc'ular, applied to those Lichen-spores whose cells appear as drops of oil.

oI'éanum (Arab., ol or al, the; Lubán, milk), a bitter and aromatic gum-resin from several species of Boswel'lia; the frankincense of commerce.

oligan'drous, -rus (δάλυος, few; ἄρηπ, ἄρδος, a man), with few stamens; oligan'thous, -thys, (άρδος, a flower), few flowered; ol'igarch (ἀρχή, origin), (1) applied to a vascular cylinder containing but few bundles (Crozier); (2) when a stele possesses few protoxylem elements; oligody'nam'ic (ὀνυμάς, power), Naegeli's term for the poisonous condition of
water containing minute traces of copper or brass; it kills delicate cells of Spirogyra; oligom'erous (μέρος, a part), parts consisting of few members; Oligom'ery, of few parts; oligonitroph'ilous, used of bacteria which occur in nutritive media wanting in nitrogenous compounds (Beyerinck); oligope'lic (πηλός, clay), applied to plants which prefer certain rocks which yield a small amount of clayey detritus (Thurmann); Oligoph'yria (φύρη, a leaf), Necker's expression for a bract; oligophyl'ous, having few leaves; oligopasm'nic (ψάμμος, sand), for plants affecting certain granite and dolomite formations (Thurmann); both of these classes belong to the Dysgeogenous series; Oligosapro'bia (σαπρός, putrid; Bios, life), organisms which flourish in waters but little contaminated; oligosperm'ous, -mus (σπέρμα, a seed), few-seeded; oligoste'monous (στήμων, a thread), with few stamens; Oligota'xy (τάξις, order), the decrease in the number of whorls in a flower; oligotroph'ic (τροφή, food), plants which grow on poor soil and compete for the nutritive salts in it (Warming); ~ Peat, moor peat (Weber); oligotrop'ic (τροπή, a turning), employed by Loew for bees which visit a restricted range of plants.

Olisthi'um, or Olisthi'on (ὁλίσθως, slipperiness), a succession of plants on landslips (Clements).

oliva'ceous, -ceus (oliva, an olive, + Aeceus, (1) olive-coloured; (2) = olive'us (Lat.), the colour of a ripe olive; olivas'cens (Lat.), turning olive-coloured; olivaeform'is (forma, shape), shaped like an olive, drupaceous; ol'ive-colour, ol'ive-green, yellowish green darkened with black; oliv'i'color (color, colour) = Oli'va-ceous).

holopetalar'ius (ὅλος, whole; πέταλος, a flower-leaf), the floral envelopes changed partially or wholly, as stamens or pistils changed into petaloid organs; the correct form would be holopetalar'ius. Ombrom'eter (ὀμβρός, a storm of rain; μέτρον, a measure), Clements's name for a rain-gauge; Om'brophile (φίλεω, I love), Wiesner's term for a plant which likes rain; ombroph'ilous, rain-loving; Ombroph'il'y, the condition described; Om'brophobe (φόβος, fear), a similar term for a plant disliking rain; ombroph'obic, hating rain; Ombroph'oby, dislike or impatience of rain; Om'brophyte (φυτόν, a plant), a shade-loving plant (Hansgirg).

omniv'orous (omniaeors, all-devouring), applied to parasites which attack many species and are not confined to one host-plant.

Omplephy'um (μοπλεκτής, interlaced; φυτόν, a plant), applied to a monadelphous flower, the stamens being in one bundle.

Om'phalode, Omphalo'dium (ὀμφαλός, navel; εἶδος, like), the mark in the hilum through which the vessels pass to the chalaza.

Omphalo'dium, Kerner's term for Hilum (1); om'phaloid (εἶδος, resemblance), navel-like, umbilicate (Heimg).

- on, suffix employed by Clements to denote "Family."

omagra'ceous, pertaining to Oenothera, a pre-Linnean name of which genus was Onagra, Tourn.

On'ospores, -ae (ὄγκος, a hook, + Spore), plants having hooked seeds to aid in dispersion (Clements).

one-ribbed, having one prominent rib, as in the leaves of many grasses; ~ si'ded, (1) turned to one side; (2) the parts turned the same way; (3) unequal sided.

onisco'form'is (Oniscēus, a wood-louse; forma, shape), Koerber's word for certain Lichen-spores resembling a wood-louse in shape; onis'cus (Lat.), used for lead-coloured, from the tint of the same creature.

Onomatolo'gia (ὄνομα, a name; λόγος, discourse), the rules to be observed in the construction of names.
Ontogeny (ὄντος, things existing; γενώς, race, offspring), the development of an individual in its various stages; adj. ontogenic/ic.

Ooblast'sic (όβν, an egg; βλάστης, a bud) Filaments, see next; Ooblast-ema (βλάστημα, a sprout), Filaments, the Fertilizing Tubes of Schmitz; O'oocyst (κύστις, a bag), (1) a female organ, an Oogonium; (2) Vuillemin's term for an envelope of the egg which is due to the cells composing that structure; Oogam'ete (+ Gamete), a female gamete (Hartog); oog'amous (γάμος, marriage), conjugation in which the two coalescing gametes are of dissimilar form; Oog'amny, the reverse condition of Isogamy; the female gamete never active, the male a spermatozoon, and the product an Oosperm (Hartog); Oogem'ma (γεμμα, a bud), Caruel's term for Archegonium; Oogen'sis (γεννησις, beginning), (1) the formation of the Oosphere, the early stage of the ovule; (2) the differentiation of a large resting cell (ososphere) to fuse with a small motile cell (sperm) into a zygote (Hartog); O'ogene, Oogo'nium, pl. Oogo'nia (γονή, race, offspring), a female sexual organ, usually a spherical sac, containing one or more oospheres; oog'o'nial Tube = Neck-Canal; ookinetic (κινητικός, putting in motion), tending to produce the female element; Col'yysis (Κολυσις, a loosing), viridescence, especially in carpels and ovules (Penzig); Oomy-ce'tes (ούμυς, a mushroom), those Fungi which reproduce sexually by antheridia and oogonia, the result being an oospore (Tubef). 

O'o (όβν, an egg), proposed as an equivalent of Ego (P. F. Myles); Oonang'ium, the embryo sac (Radlkofler); Oone'ion (υνή, a nymph), Radlkofler's term for Archegoni-um; O'onyle (όνυ, raw material), the unfertilized female organ of any sort (Radlkofler); Oonuc'leus (+ Nucleus), the nucleus of an oosphere, cf. Sperm-nucleus; O'ophore (οφόρω, I carry), the Oophyte in Archegoniatae; Oophor-ridan'gia (ἄγγειον, a vessel), J. Smith's name for the macro-sporangia of Marsilea, etc.; Oophor-idium, a sporangium containing macrospores in Selaginella; O'ophyte (οφυτόν, a plant), that portion of the life-cycle of a plant during which it bears sexual organs; the same as Oophor-e; O'oplasm (πλάσμα, moulded), the protoplasm of the oosphere; ooplasm'ic, relating to the ooplasm; O'oplast, Ker-ner's term for Oosphere; O'osperm (σπέρμα, seed), the product of the fusion of a male and a female cell; O'osphere (σφαιρά, a globe), a naked and nucleate mass of protoplasm, which, after coalescence with the sperm-nucleus, develops into an oosperm; the egg or ovum; Com'aiound ~, one which contains several or many functional sexual nuclei, as in Albugo (Stevens); oos'phec'ric, relating to the Oosphere; Oospor-an'ge = Oospar'angium, pl. Oospor-an'gia (σπόρα, a seed; ἀγγεῖον, a vessel), the sacs or sporangia which produce oospores; O'ospore, the immediate product of fertilization in an oophore; Oothe'ca (θήκα, a case), the theca or sporangium of Ferns. 

opa'cus (Lat., shady, giving shade), (1) not transparent; (2) dull, not shining; opake and opaque are Anglicized forms of the word. 

o'pen, (1) not closed; (2) expanded, the opposite of diffuse; ~ Bun'dle, one which retains a portion of cambium capable of further differentiation; opposed to closed bundle; ~ Forma'tion, when the plants are scattered (Clements); ~ Nu'cleus, the nucleus of Cyanophyceae (Hieronymus). 

O'pening, expanding or becoming unclosed; ~ Cells, those special cells by which the deliscence of sporangia and pollen-sacs takes place (a) either by tangential contraction on drying, or (b) by
a thickening which causes a hinge-like motion of the cells themselves (Schinz); cf. Lip-cells; ~ of Flowers, the expansion of the members at the period of maturity; anthesis.

opercular, operculated, operculatus (operculum, a lid), furnished with a lid, as in many Mosses and Myrtaceae; Operculum, (1) the lamina of the leaf of Sarracenia (Heckel); (2) the lid of the flower in Eucalyptus; (3) the Operculum of Mosses; operculiform (forma, shape), shaped like a lid; Operculum, (1) a lid or cover which separates by a transverse line of division, as in the pyxid, and Moss capsules; (2) also in some pollen grains; (3) the cover of certain asci, which falls away at maturity (Traverso).

operatus (Lat., hidden), the same as fictus.

ophioglossaceous, akin to or resembling Ophioglossum.

ophiure (ophis, a snake; ophæ, a tail) Cells, used by Jonsson for Astrosclereids of Tschirch; the name is from their resemblance to Echinoderms.

ophrydaceous, resembling or allied to the genus Ophrya.

opisthélial, an error for opisththalial (ópisththéios, hinder) Poré, Tschirch's name for the posterior border of a stoma; opisthodal is a synonym; cf. Eisolad; opisthodromous (ópisthmos, a course), a flower is so termed when the genetic spiral is assumed to pass on its shortest way from the bract to the first floral segment by the back of the flower, between it and the axis of the stem.

Opium (Lat., dried poppy-juice), the concrete juice from the capsules of Papaver somniferum, Linn.; ~ Alkaloids are numerous, the best known being Morphia.

Opium (ópiow, poppy juice), a parasitic plant formation; opophilus (φιλόω, love), sap-loving; Opophyta (φυτων, a plant), parasites (Clements).

Opullium (δωδρία, arms), Necker's word for Scyphus.

Opportunism (opportunus, convenient), the direction in metamorphosis due to the factors potent at the moment (Ganong).

opposite, oppositus (Lat., standing in front); (1) set against, as leaves when two on one node; (2) one part before another, as a stamen in front of a petal; oppositipinnatus, with leaflets on the same plane at right angles to the common petiole; oppositiflorus (flos, floris, a flower), having opposite peduncles; oppositifolious (folium, a leaf), (1) with opposite leaves; (2) opposite a leaf, as a tendril; oppositipetalous, -ius (πέταλον, a flower-leaf), placed before a petal; oppositisepalous (+ Sepal), situated before a sepal; oppositivus (Lat.), when one part stands before another, the reverse of "alternate."

Opposospermata (φύσις, φύεως, sight; σπέρμα, a seed), tubercles on the surface of some Algals containing spores (Lindley).

Opsigony (φυγονος, posthumous), the production and development of proventitious buds (Wittrock); cf. Prolepsis.

-opsis (ophis, appearance), employed for those Fungi in which uredospores are rare or wanting, theaecidium giving rise to teleutospores, e.g. Pucciniospsis.

optimal (optimus, best), the most advantageous for an organism or function; Optimum refers to the degree of temperature, light, etc., which best conduces to the vital activities of a given organism.

Opulastera-num, a "layer" of Opulaster (Clements).

O'rae (ora, extremity) Radi'cum = Spongioles.

Or'ange, (1) the fruit of Citrus Aurantium, Linn.); (2) a secondary colour, red and yellow combined, taking its name from the tint of the fruit mentioned.

Orbicular, orbicul'aris (Lat., cir-
cular), of a flat body with a circular outline; orbicul\-ate, orbicu-
lar'us, disk-shaped; Orbic'u-lus, (1) the fleshy corona in the genus Stapelia; (2) a round flat hymenium in Fungi.

Orbil'la (orbis, an orb), the shield of certain Lichens, as in Usnea.

Orchel'la, a general term for Lichens which yield dyes, as Lecanora, Roccella, etc.

Orchid'a'ceous, -eus, (1) furnished with two tubers at the roots, as species of the genus Orchis and its allies; (2) pertaining to the order Orchideae; orchid'ean, orchid'eous, relating to the Orchideae; O-rchid'o-logy (άγος, discourse), the study of Orchids.

Or'chil, also known as Cudbear, and Litmus, a valuable dye from Lecanora tartarea, Ach., and other Lichens.

Or'cin, the colouring principle from various tintorial Lichens.

Orcula'seform'is (orcula, a small tun; forma, shape), used by Koerber for cask-shaped Lichen-spores.

Or'der, Or'do (Lat., methodical arrangement), in botany, a group between genus (tribe, suborder) and class; or'dinal, relating to an order, as ~ Char'acter, that which marks it off from kindred orders.

Or'ead (ópeías, a mountain nymph), a sun-plant or heliophyte.

Or'gadi'um (óryás, a meadow), an open woodland formation; orgado'cólica (colo, I inhabit); and orgado'phil'us (φιλέω, I love), dwelling in open woodland; Orgado'phy'ta (φυτών, a plant), open woodland plants (Clements).

Or'gan (óryanov, an instrument), any definite part of a structure, as a cell, a fibre, a leaf, etc.; Or'gans of Reproduc'tion, those which are concerned in the production of seeds or spores; in Phanerogams the stamens and pistils are so termed; ~ of Vegeta'tion, those connected with the growth simply, as roots and leaves; organ'ic, organ'icus, relating to living organs; ~ Cen'tre, the point or axis around which growth takes place, it may not be the structural centre; Or'ganism, a body possessing organic structure; Organog'eny (γένος, race, offspring), or Organogen'esis (γένεσις, beginning), the formation and development of organs from their primitive condition; adj. organogen'etic; Organog'raphy (γράφω, I write); Organolo'gy (άγος, discourse), the study of organs and their relations; Org'anoid (εἴδος, like), an organ of apparently unknown function (Swingle); organoplastic (πλαστικός, suitable for being wrought), with the power of producing organs; Organophysio'logy, the requisite modification in structure to enable a species to settle in a given place (Drude).

Orgy'a (órgwa, a fathom), six feet in height; orgys'ilis, a fathom long, the height of a man.

Orienta'tion (orients, the east), (1) the correct placing with regard to the quarters of the compass; (2) generally means relative position, as applied to organs, etc.; in'verse ~, applied to the inversion of the ovuliferous scale bundles in Coniferae.

Or'ifice, Orifício (Lat., an opening), an opening by which spores, etc., escape; ostiole.

Or'igin, employed by Hartog to express the German "Anlage"; cf. Fundament, Incept, Inception, Primordium, etc.

Origs'oma = Orygoma.

Ornitho'amous (órius, óriados, a bird; γάμος, marriage), fertilization effected by birds; Ornithoph'ilae (φιλέω, I love), plants habitually fertilized by pollen brought by birds; adj. ornitho'philous.

Or'mogon, cited by Crozier, = Hor-mogone.

Orph'ilus (óros, a mountain; φιλέω, I love), dwelling in sub-alpine regions; Orphy'ta (φυτών, a plant), sub-alpine plants; Orphy'ti'a, sub-alpine plant formations (Clements)
<table>
<thead>
<tr>
<th>Orthoblast</th>
<th>Osteosclereids</th>
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<td>Orthoblast (ὀρθόβλαστος, upright; ἀναστάσις, a bud), used by Cramer for confer-void prothallia growing in an ascending direction; orthoclados, a brach, straight branching (Russow); Orthenochyma (ἕνηξέω, I pour in), Williamson's correction of Orthoschyma, Binney's term for parenchyma of vertically arranged cells; adj. orthenchymous; Orthogenesis (ὄρθογενέσις, development along definite lines; orthoheliotropio (+ heliotropic), directed straight to the source of light, as linear leaves and grasses may do; orthomorphous (μορφή, shape), radial and erect (Wiesener); Orthophototaxy (ὀρθοφωτοταξία, light; τάξις, order), the direct arrangement of such organisms as Volvox and Spirogyra assume under the stimulus of light (Oltmanns); orthophototropio (τρόπος, a turning), the direct influence of light shown in Vaucheria, Physcomyces, and shoots of flowering plants (Oltmanns); Orthophyte (φυτόν, a plant), Janet's term for a plant, the gametophyte + sporophyte; Orthoploeceae (πλοή, a twining), those Cruciferae which have conduplicate cotyledons; orthoploeceous, -ceus, when the incumbent cotyledons are folded round the radicle; Orthospermae (σπερμα, a seed), plants whose seeds have albumen flat on the inner face, neither in volute nor convolute; orthospermous (σπέρμα, a seed), having seeds with endosperm grooved on the ventral side, as in Carum; orthostichous, straight ranked; Orthostichy, pl. Orthostichies (στίχος, a row), a vertical row, as in phyllotaxis; orthostomaticous (στόμα, a mouth), with a straight opening; orthostomatic (ακτός, arranged), used by S. Moore in the sense of normal, applied to an interval in the Phorurum; orthotropoal, orthotropous (τρόπος, a turning), used of an ovule with a straight axis, the chalaza being at the insertion and the orifice or foramen at the opposite end, farthest from the hilum; orthotropio, assuming a vertical position; Orthotropism is the condition described; Orthotype (τύπος, a type), a genus provided with a type by original designation (O. F. Cook); adj. orthotypic.</td>
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Orygoma (ὀργύμα, a ditch or pit), Necker's term for the cup of a Marchantia containing gemmae. Os, Oris (Lat.), a mouth or orifice. Oscillating = versatile; oscillatory, ally of the genus Oscillatoria. Osculum (Lat., a little mouth) = Ostiole. Osmometer (ὀσμόμετρος, a thrusting; μέτρον, a measure), an instrument to measure Osmosis; Osmose, Osmosis, the diffusion of liquids through membranes; Osmic, Osmotic, the increased size of a nucleus, attributed to absorption of fluid through the nuclear membrane (Anstruther); adj. osmotic. Osmopores (ὀσμοπόροι, scent; = Spore), certain Uredineous spermagones, characterized by their having a scent (Vuillemin). Osmotaxis (ὀσμοταξία, arrangement), rearrangement of moving organisms in response to the influence of fluids; adj. osmotactic; Osmotropism (τρόπος, a turning), tropic stimulus due to osmotic action (Pfeiffer); adj. osmotropic. Oscicula, Osciculum (Lat., little bone), the pyrene of a fruit, as a medlar. Ossified (os, osis, a bone; facio, I make), becoming hard as bone, as the stones of drupes, such as the peach and plum. Ostariphytum (ὀσταρίφυτον, a little bone; φυτόν, a plant), a plant which produces a drupe or drupe-like fruit. Osteosclereids (ὀστέον, a bone; σκληρός, hard). |
Overlap'ping, suggested to denote right or left, as right edge ~, =
sinistrorse (i.e. dextrorse seen in
front); left edge ~, = dextrorse
(i.e. sinistrorse viewed from the
front).
overlying, a suggested rendering of
incubous (Potter).
overtop'ping, the gradual assertion
of predominance of certain limbs of
a branch system over the others
(Potoníë).
o'viform, oviform'is (ovum, an egg;
forma, shape), ovoid, egg-shaped;
Ovocene'rum (kétrpv, a sharp point),
a central mass of fine-grained proto-
plasm surrounding the nucleus in
the organism of Achlya (Trow); o'void, ovóideus (élíos, resemblance),
an egg-shaped solid; ovoíd'al, having
the outline of an egg; ovula'ris
(Mod. Lat.) = ovoid; ovulá'tus,
(1) possessing ovules; (2) somewhat ovoid (J. S. Henslow);
Ov'ule, Ov'ulum, the young seed in
the ovary, the organ which after
fertilization develops into a seed;
~ Tube, a thread-like extension
of the amnios, rising beyond the
foramen; ovulifé'rous (féro, I bear),
bearing ovules; adj. ovulár; Ov'um,
(1) the ovule; (2) = Zygote;
(3) = Oosphe're.
oxal'ic, pertaining to Oxalis, wood
sorrel; oxalida'ceous, referring to
the genus Oxalis, or its allies; ~
Ac'id, a vegetable acid of frequent
occurrence, abundant in Oxalis;
oxalifé'rous (féro, I bear), pro-
ducing oxalic acid or its salts;
Oxalíleú'cite (+ Leucíff), Van
Tieghem’s name for a vacuole which
contains oxalic acid.
Oxó'dad (észëdôns, sour), a plant of
a humus marsh (Clements); Oxo-
di'ón, an association on acid soil;
Oxódi'um, a humus marsh formation
(Clements).
oxyacan'thous, -thous (léxs, sharp;
êkavéa, a thorn), furnished with
many thorns or prickles; oxyca-
ropus (karpóς, fruit), when fruit is
sharp-pointed; Oxoyel'luloses +
CELLULOSE) constitute the main mass of the ground tissue of Phanerogams, and occur with lignin in the walls of wood-cells; Oxychro'matin (+ CHROMATIN) granules in the linin thread, taking stain from acid tar-colours such as eosin (Heidenham); cf. Basichromatin; Oxy'dases, a general term for oxydizing enzymes (J. R. Green); Oxy'genase, a doubtful enzyme, considered to be a peroxydase.

Oxygenotax'is (δἐβυς, sour; -γεν-, producing; ῥαγι, order), Pfeffer's term for Oxygenot'rropism (τροπή, a turning), movements induced by the presence of oxygen; Acrorropism; oxygeoph'ilus (γη, earth; φιλεω, I love), dwelling in humus; Oxygeo'phyta (φυτον, a plant), humus plants; Oxygeophyti'a, humus plant formations (Clements); Oxyli'um (λιον, mud), a humus marsh formation; oxylophilus (φιλεω, I love), humus loving; Oxylophy'ta (φυτον, a plant), humus plants (Clements); adj. oxyloph'ytic.

Oxy'tropism (δἐβυς, sour; τροπή, a turning), movements caused by an excess of acid.

Pachycar'pus (παχυς, thick; καρπος, fruit), having a thick pericarp; pachyelad'ous, -dus (καλλος, a branch), thick-branched (Russow); pachyder'matous; pachyder'mous (δέμα, skin or hide), applied to Mosses when the cells or capsules are firm and resistant; Pachyne'ma (νημα, a thread), in nuclear division, the period of the thick, unsplit spirem in late synopsis; Pachyno'sis (παχυνος, I make thick), plant-growth in thickness; pachyphy'tious (φυλανον, a leaf), thick-leaved; pachystich'o'sus (στιχος, a row), thick-sided, applied to cells only; pachy'tone (ταινια, a ribband) Loops, when gamomites are in pairs during nuclear divisions, later on dividing longitudinally (Stevens).

Pack'et-form, the association of bacteria in such colonies as Sarcina; Packing-cells, Hillhouse's equivalent of Ger. Füllzellen; = Complementar-ty-cells?

Pad, (1) a cushion-like growth; cf. Subarchensporial Pad; (2) a popular name in the United States for the floating leaves of water-lilies; (3) the central portion of the lens or contracted tissue of the plinth of Conostoma (F. W. Oliver).

Paedog'amy (παις, παιδος, a child; γαμος, marriage), copulation of two gametes from the same gametangium (Hartmann); paedog'amous Auto'gamy, the copulation of the nuclei and gametes, in place of the complete gametes (Hartmann); Paedogen'esis (γενεσις, origin), applied by Costerus to cases of extreme precocity, as where the seedling of a tree flowers when only a few inches high.

Pa'gina (Lat., a leaf), the blade or surface of a leaf,

Pag'yum (παγος, a peak), a succession of plants on glacial soils; pago'philus (φιλεω, I love), dwelling on foothills; Pagophy'ta (φυτον, a plant), foothill plants; Pagophyti'a, foothill plant formations (Clements).

painted, having coloured streaks of unequal density.

paired, (1) conjugated; (2) used of the teeth in the peristome of Mosses; Pairing-cell, an equivalent of Game'te.

pala'ceous, -ccus (pala, a spade or shovel; + Aceous) when the edges of an organ, especially of a leaf, adhere to their support.

palaean'ceous = Palaeaceous.

Palaeobiologi'ist (παλαιος, ancient; bios, life; λαγος, discourse), a student of fossil plants; Palaeobot'anist, a student or expert in fossil botany; Palaeobot'any (βοτανη, a herb), fossil botany, the study of plants in a fossil state; palaeoge'ic (γεα, earth), applied to soils derived from the older formations; Palaeophyto'logy (φυτον, a plant; λαγος, discourse),

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the science of palaeobotany; palaeotrop'ic (πρωτή, a turning) Flo'ra, the tropical flora of the old world.

pa'lar, pala'ris (Lat., pertaining to a pale or stake), when the root is perfectly continuous with the stem; pala'ri-ramo'sus, when a palar-root has many branches.

Pal'ate, Pal'a'tum (Lat., the palate), (1) the prominent lower lip of a ringent corolla; (2) the projection in the throat of a personate gamopetalous corolla.

Pale, Pa'lea (Lat., chaff), (1) the chaffy scales on the receptacle of many Compositae; (2) the inner bract or glume in grasses, called "Palet" by North American writers; (3) the ramenta or chaff scales on the stipe of many Ferns; Pa'lea clathra'ta, the latticed scale of Ferns (Luerisen); pales'ceous (+ Aceous), chaffy, furnished with paleae or chaff-like in texture; palea'seform'is (formis, shape), resembling paleae; Pal'eola, a diminutive of palea, or of secondary order, applied to the Lodico'le of grasses; pal'eo'late, paleo'latus, furnished with a lodicule; paleo'lit'erous (fero, I bear), bearing paleae; pal'eous, chaffy.

Pala'rophytol'ogy = Palaeophtyto'logy.

Pal'et = Pa'lea.

Paling'en'sis (παλιγ'νησις, again; γενεσις, a beginning), Haeckel's term for the doctrine of simple descent; also written Pal'in'geny; adj. palin'genetic.

Pal'isade Cells, perpendicular elongated parenchyma cells on the surface of most leaves; ~ Par'ench'y'rna, ~ Tis'sue, tissue composed of the said cells; palisa'dic, relating to the palisade cells.

pal'lens (Lat., wan), pale in colour; palles'cent, becoming light in tint; pal'lid, pal'l'idus, somewhat pallid; pal'lid'us, slightly pallid.

Pal'lium (Lat., a covering or garment), a presumed gelatinous envelope of Diatoms.

Palm (palma, the palm of the hand), three inches, the width of the hand; ~ veined = Pal'mately veined; pal'mar'is (Lat.), the breadth of the palm, about three inches; pal'mate, pal'ma'tus, lobed or divided, so that the sinuses point to the apex of the petiole; pal'mately, in a palmate manner, as ~ cleft = Pal'matified; ~ com'pound, ~ divided, ~ lobed = Pal'matil'o'bate; ~ ner'ved = Pal'matinervis; ~ part'ed = Pal'matipartite; ~ veined = Pal'matinervis; pal'matif'id, pal'ma'tif'idus (findo, fidi, to cleave), cut in a palmate fashion nearly to the petiole; pal'matiform'is (forma, shape), the venation arranged in a palmate manner; pal'matil'o'bate (lobus, lobed), palmately lobed; pal'matin'er'vis (nervus, a nerve), palmately nerv'd; pal'matipart'ite (partitus., divided), cut nearly to the base in a palmate manner; pal'mat'i'sect, pal'matise'ct'us (sectus, cut), palmately cut.

Palmel'ia (παλμός, palpitation), the zoogloea stage of Schizomycetes, etc., when embedded in a jelly-like mass; not to be confounded with the Algal genus, Palmella, Lyngb.

Palmel'tin, Phipson's name for the colouring-matter of Palmella cru'enta, Agh.; palmel'toid (el'dos, resemblance), characteristic of the genus named.

Pal'mid, J. Smith's term for Palms, Cycads and Tree-ferns of palm-like aspect.

palmifer'ous (palma, a date palm; fero, I bear), producing palms.

pal'miform (palma, palm of the hand; forma, shape) = Pal'matiform; palmin'er'ved, pal'miner'vis = Pal'matinervis.

palmit'ic (palma, a palm), relating to palms, as ~ Acid, derived from Pal'mitin, a glyceride, a solid fat occurring in palm oil.

palmogloea'an, allied to Palmogloea, or resembling it (Archer).

Palmog'rapher (palma, a palm; γράφω, I write), a describer or monographer of Palms.
Pal'mus (Lat., the palm of the hand), as a measure may denote a SPAN or a PALM, nine inches or three,
pal'ud'ial (palus, a marsh), H. C. Watson's term for natives of marshes, wet all through the year; pal'ud'ine, palu'din'sus (Crozier) = pal'udo'se, paludo'sus (Lat., boggy), growing in marshy places.
palumbei'us (Lat., of wood-pigeons), lead-coloured.
palus'ter (Lat., swampy), palus'trine, palus'tris, inhabiting boggy ground; the latter Latin form is more usual in botanic usage.
Pam'pas, the grass-steppes of South America, xerophilous in character, patchy, with taller grasses than meadows have; usually with two periods of rest, caused by drought in summer and cold in winter.
pam'phil'form (pampinus, a tendril; forma, shape), resembling the tendril of a vine; Pam'pin'o'dy {eld's, resemblance}, the change of foliar parts into tendrils (Worsdell).
Pan, a hard layer or substratum of earth impervious to plant-roots.
Pan-apos'pory (nās, pantós, all; + Apospory), the condition of prothalli being developed aposporously over the entire surface of the frond.
pan'ary, cf. PANNARY.
pandur'ate, pandura'tus (pandura, a musical instrument), fiddle-shaped, as the leaf of Rumex pulcher, Linn.; pandu'reiform (forma, shape), fiddle-shaped, drawn in at the middle.
Pangen'esis (nās, pantós, all; γένεσις, a beginning), a theory that each separate unit of a body throws off minute gemmules during all stages of development, which may develop at once, or remain dormant and be transmitted through the reproductive cells to later generations; Pan'gens, De Vries's term for the active particles assumed in Darwin's theory of Pangenesis; Pan'gen'osomes (σῶμα, a body), pl Strasburger's term for a complex of pangen's.
Pan'icle, Panic'ula (Lat., a tuft), a loose flower-cluster, as a branched raceme or corymb; pan'i'cled, furnished with a panicle; panic'u'late, panicula'tus (Lat.), having an inflorescence of the kind described; panic'u'liform (forma, shape), panicle-shaped (Crozier).
Panifica'tion (panis, bread; facio, I make), the fermentative changes by which dough is converted into bread.
Panmix'ia (nās, pantós, all; μιξ, a mixing), Weismann's term to denote the agency of modification or evolution which results from the cessation of natural selection.
pan'nary (panis, bread), pertaining to bread, or suitable for making it (Crozier); more correctly pan'ary.
Pannexter'na (pannus, a cloth; ex-ternus, outside), = Epicarpium; pan'niform, panneform'is (forma, shape), having the appearance or texture of felt or woolen cloth; Panninter'na (internus, within) = Endocarpium; pannos'us (Lat., ragged), botanically, the same as panniform.
panpho'tomet'ric (nās, pantós, all; φως, φωτός, light; μέτρων, a measure), used of leaves which adapt their position to both direct and diffused light (Wiesner); Pansperm'ism (περμα, a seed), the universal diffusion of germs throughout the atmosphere.
pan'tachob'ryu's (pantachob'ryus) = Epicarpium, on every side; βυς, I grow, growing in a circular manner.
pantog'enous (nās, pantós, all; γένος, race, offspring), applied to those Fungi which grow everywhere, and are not confined to a single host; pantotac'tio (παντός, arranged), used of the position of the sori in Trichomanes reniforme, where they may arise from any vein.
Papa'rin, a peptic enzyme from Carica Papaya, Linn.
papa'vera'ceous, belonging to, or resembling the poppy, Papaver; papa've'rous, resembling a poppy.
Papayo'tin, the dried leaves of Carica Papaya, containing a digestive enzyme.
papery, having the texture of paper, cf. CHIARACEOUS, PAPYRACEOUS.

papilionaceous (papilio, a butterfly; + aceous, a butterfly-shaped corolla, as in the sub-order Papilionaceae of Leguminosae.

Pap'il'la (Lat., a nipple), pl. Pap'il'lae, (1) soft superficial glands or protuberances; (2) "Also the aciculae of certain Fungi" (Lindley); pap'il'lar, papilla'ris, papil'lary, resembling papillae; pap'il'late, pa-pilla'tus (Lat., bud-shaped), having papillae; papilli'ferous, -rus (tero, I bear), producing papillae; pap'il'iform (forma, shape), shaped like a papilla; pap'il'lose, papillo'sus (Lat.), covered with papillae.

papilliferous (pappus, plant-down; tero, I bear), bearing pappus; pap'pi'form, pappi'form'is (forma, shape), resembling pappus; Pap'po, Blair's word for the down of thistles; pap'-pose, pappo'sus, pap'pous, having pappus; Pap'pus, thistledown; the various tufts of hairs on achenes or fruits; the limb of the calyx of Composite florets.

Pap'u'la (Lat., a pimple), a pimple or small pustule; papuli'ferous, -rus (tero, I bear), bearing pustules; pap'ulose, papulo'sus, pap'ulous, papillose.

papya'ceous, papyraceous (Lat., made of papyrus), (1) papery; (2) white as paper; ~ Ferns, filmy Ferns.

parabol'ic, parabol'ical, paraboli'cus (para'bolik), a parabola), in botany, ovate-oblong or ovate, obtuse and contracted below the apex, used of a leaf.

Parabux'ine (para, beside, + Buxine), and Parabux'in'idine, alkaloids occurring in Buxus sempervirens, Linn.; Paraca'l'la (+ Callus), a substance resembling the callus of sieve-tubes, but differing in reaction and chemical constitution; Paracarp'ium (kap'ros, fruit), (1) an abortive pistil or carpel; (2) the persistent portion of some styles or stigmas; paracarp'o'sus, used to indicate ovaries whose carpels are joined together by the margins only

(Goebel); Parace'lu'lose (+ Cellulose) forms the epidermal cells of plants; Parachro'mat'in (+ Chro-matin), the same as Iinin; para-chromatoph'orous, having pigment chiefly in the cell-wall (C. Jones); parachromophoric (chry'o'ma, colour; φορέω, I carry), applied to bacteria whose colouring is an excretory product, but adheres to the organisms; Paracor'ola (+ Corolla), any appendage to a corolla, the corona of a flower.

Parachute' (Fr.), sometimes applied to fruits which are readily carried by wind, by means of membranous expansions or pappus, recalling the action of a parachute.

paracotyledonary (para, beside, + Cotyledon), used of the axis, derived from the anterior inferior segment (quadrant) of the oosphere of Marsilea (Vines); Para'cyst (ka'this, a bag), (1) morphologically an andridium, in Pyronema; (2) Tulasne's term for gametes in Peziza, etc.; Paradiphyl'lium (ði's, twice; φόλλον, a leaf), a double leaf resulting from dichotomy of the lamina (Kronfeld).

par'afinoid (+ Paraffin, eidos, resemblance), Kerner's term for a group of scents, such as those of the Rose, Lime, and Elder.

Paragalac'tan (para, beside, + Galac-tin), a reserve substance in the seeds of lupins; Parag'any (γάνος, marriage), vegetative or gametangial nuclei lying in a continuous mass of cytoplasm which fuse to form a zygote nucleus; apocy'tial ~, the vegetative nuclei of an apycytium which fuse to form an "Oospore" in Saprolegnieae (Hartog); Paragen'esis (γένεσις, beginning), all modes of reproduction resulting in a body which simulates a zygote in the same or allied forms (Hartog);

Paraheli'o'de (γάλος, the sun), or Para'sol, a peculiar set of spines in Cactaceae (Darbishire); Paraheli'otropism (+ Heliotropism), diurnal sleep, the movements of leaves to
avoid the effects of intense sunlight; adj paraheliotropic; cf. parathermotropic; Parali' nin (+ Linin), the substance composing the nucleohyaloplasmand (Schwarz).

**Parallel** (παράλληλος, parallel), extended in the same direction, but equally distant at every part; ~ Chor'isis, lateral separation into two or more members; ~ _ner'dal, ~ -ner'vis, ~ veined, parallellivenous, straight nerved or veined; (1) the lateral ribs straight, as in Alnus; (2) the entire system straight, as in the leaves of grasses; ~ Spires, a former term for spirals in phyllotaxy; **Parallelgeotropic** (+ Geotropism), when an organ directs itself axially towards the constraining force; parallelodromous, -mus (δρομός, a course), having parallel veins, as in lilies (Ettinghausen); **Parallelotropism** (τρόπος, a turning), movement towards the source of light parallel to its rays, as the leaves of grasses placing themselves directly toward the sun; **Ortho-**geotropicism; adj. parallelotropic; Par'allelotype (τύπος, a type) = **Paratype**.

**Paramerid'ian** (παρά, beside, + Meridian), used of planes in a Diatom-frustule which are parallel to the meridian (O. Mueller); **Paramit'om** + Mitom, Flemming's term for the more fluid portion of the cell-substance contained in the Mitom; the paraplasm of Kupffer.

**Para'mos**, extensive fell-fields in South America (Warming).

**Paramutualism** (παρά, beside + Mutualism), employed by Elenkin in the case of facultative Lichens, cf. parasaprophytism; **Paramyth', Paramy' lum** (μύλος, fine flour), a mucilaginous substance probably akin to starch, in the cytoplasm of some Algae, as Phaeophyceae and Rhodophyceae; **Paramasty** (μαστός, pressed close), continued growth lengthwise of lateral parts (De Vries); **Parame'mata**, pl., _μα, a thread), the paraphyses of Algae; parame'matal Fil'aments = **Paranemata**; Para' nu'clein = **Parachromatin**; Para' nuc'leolus (+ Nucleolus), a secondary nucleus when there are more than one (Strasburger); **Paranucleus** (+ Nucleus), an apparently additional nucleus, generally near the true nucleus, and sometimes budded off from it; **parapers'tic** (+ Pectic) Ac'id, derived from pectin by the action of alkalies; **Parapet' alous**, hydrogenated pectin; parapetal'alous, -s (πέταλον, a flower-leaf); parapetal'aloid (εἶδος, likeness), (1) bearing a parapetalum; (2) of stamens which stand on each side of a petal; **Parapetal'alum**, any appendage to a corolla, consisting of several pieces (Moench); **Paraphototropism** (+ Phototropism), the same as Diaphototropism, the act of placing at right angles to incident light; adj. **paraphototropic**; **Paraphyllia**, pl. (φύλλον, a leaf), leaf-like bodies produced near the leaves of Mosses, but not like stipules at definite points; **Paraphyllum** (φύλλον, a leaf), (1) = **Stipule**; (2) a foliaceous expansion in some calyces; (3) a small interfoliar-appendage on Moss-stems; **Paraphysagone** (γόνον, offspring), the initial elements giving rise to the branching terminated by the paraphyses; **Paraphyses** (φυσις, growth), (1) sterile filaments occurring in the fructification of Cryptogams; (2) the rays of the corolla in Passiflora, the parastades; (3) formerly used for the cystidia of Fungi; ~ En'velope, the peridium of Uredineae; adj. **paraphysate**; **Paraplas'ma** (πλάσμα, moulded), the more liquid interfilar portions of protoplasm; **Paraplectenchy'ma** (+ PLECTENCHYMA), a modification of hyphal-tissue (Lindau); **Parasaprophytism** (+ SAPROPHYTISM), the same as **Endosaprophytism**; **paraste'monal** (στήμων, a filament = stamen), employed by Huxley for structures which arise from, or close to, the insertion of the filaments with the corolla.

**Parasite** (παράσιτος, one who lives at another's expense), an organism subsisting on another (the host); ~ **Saprophyte**, a parasite which kills...
its host and then continues to feed on it; parasit'ic, deriving nourishment from some other organism; ~{\textit{Castration}}, sterility induced by the effects of a parasite; parasit'ised, infected by a parasite; Par'asitism, the state of preying upon another organism; Parasi'tus spu'rius = {\textit{Epiphyte}}; Parasperma'tia (+ Spermatia), small reproductive bodies resembling spores, found in some Algals (Lindley).

Paras'tades (\textit{παραστάς}, a door-post), the coronal rays of \textit{Passiflora}; cf. Parapeta'la.

Parasta'men (\textit{παράστημον}), or Paraste'mon (\textit{στήμων}, a filament), an abortive stamen, a staminodium; Parast'ichy, Parastich' thesis (\textit{στριχος}, a series), a secondary spiral in phyllotaxis; Parastrophe (\textit{στροφή}, turning), employed by Senec in place of Apostrophe; Par'astyle (+ Style), an abortive style; Parasymp'biont (\textit{συμβίος}, I live with), one of the members constituting Parasym'biosis; Parasymp'bioso'sis (+ Sym'biosis), (1) when the hyphae of a parasite envelope the Algal constituents of a Lichen and inflict injury (Zopf); (2) a synonym of Parasaprophytism, etc. (Élenkin); Parasynap'sis (+ Synapsis), the parallel pairing of chromosomes; adj. para'synaptic; Parasynde'sis (+ Synde'sis) = Parasynapsis; parasynca'tic (\textit{τακτός}, arranged), used of the disposition of sori on the aborted vein, which does not prolong the axis (Prantl); Paratag'ma (\textit{ταγμα}, an ordinance), Pfeffer's term for a mass of \textit{Micellae}; Parath'ecium (\textit{θηκη}, a case), the circumscribing walls of the Lichen thecium; paratherm'o-tropic (\textit{θερμός}, warm; \textit{τροπή}, a turning), proposed by Macfarlane for paralheliotropic, in such cases as the movements of leaves in \textit{Drosera}, \textit{Oxalis} and \textit{Mimosa}; paraton'ic (\textit{τάος}, tension), effect of light in retarding growth; paratrach' eal (\textit{πράχεια}, the windpipe), applied to wood-elements arranged about the vessels; paratransap' ic (+ Trans-APICAL), sections parallel to the straight transapical axis or plane in Diatoms (O. Mueller); paratransvers' san (\textit{transversus}, lying across), used of the planes parallel to the transversal plane of a Diatom frustule (O. Mueller); Par'atroph = Para'site; paratroph' ic (\textit{τροφή}, food), able to exist only in animals or plants, (C. Jones); Paratrop' ism (\textit{τροπή}, a turning), shortened from PARALLEL OTROPISM; Par'atype (\textit{τύπος}, a type), (1) a specimen belonging to the original series, but not the type selected by the author; (2) Schroeter's term for subordinate groups, as "Curvuletum" or "Firmetum," from Carex curva and \textit{C. firma}; paraval'var (+ Valve), applied to those planes which are parallel to the valvar plane of a Diatom, either epithelial or hypothecal (O. Mueller).

Parell'inus (Mod. Lat., from parellus; Fr. parelle, dye-lichen, as Lecanora parella), litmus violet (Hayne).

Parench'yma (\textit{παρεγχύμα}, I pour in beside), used by Grew, and since his time for the tissue composed of cells more or less isodiametric, especially such tissue as the pith and mesophyll; ~ Trach' eids, short pithed spiral ducts or vessels; parenchym' atous, consisting of parenchyma, spongy, porous.

Parich'nos (\textit{παράχνος}, beside; \textit{χνος}, a footprint), the two lateral prints on the leaf-scar of Lepidodendreae.

Par'ies (Lat., a house wall), pl. Par'ietes, the wall of any organ; pariet' etal, pariet' a'tis, borne on or belonging to a wall; ~ U'tricule, used by Noll for the layer of protoplasm next the cell-wall; Pari' etin, the colouring-matter found in the Lichen, \textit{Physcia parietina}, De Not.

Paripin' nate, paripinna'tus (Lat.), pinnate, with an equal number of leaflets, that is without a terminal one.

Parme' leine, pame'lioid (\textit{ελθος}, resemblance), like the genus Parmelia, having shield-like apothecia.

paroe' cious (\textit{παράπα}, beside; \textit{ολκός}, a
house), in Mosses, having the male and female organs in the same inflorescence, the male being naked in the axils of the lower bracts; pareous is a synonym.

Paronych'sium, an association of plants of *Paronychia* (Clements).

Parorthot'ropism (παρα, beside; ὁδός, right; τρόπ, a turning), Archangeli's term when leaves place themselves with the lamina vertical, but not necessarily meridional.

part'ed, part'ite, parti'tus (Lat.), cleft, but not quite to the base.

Parthemb'ryosperrn (παρθενόβος, virgin, + Embryosperm), C. MacMillan's term for a *Parthenosperm*, with parthenogenetic embryo, and endosperm resulting from fertilization;

Parthenapog'am'y (+ Apogamy), the fusion of the nuclei of vegetative cells; adj. parthenapog'amous; Parthenos'perm (+ Endosperrn), a plant whose endosperm is parthenogenetic, and embryo the result of fertilization (C. MacMillan);

Parthenocarpy (καρπος, fruit), Noll's term for the production of fruit without true fertilization;

Parthenogam'ete (+ Gamete), a gamete which develops without pairing (Hartog); Parthenog'am'y (γυμος, marriage), the preliminary stage of fertilization exhibited by macrogamete or macrogametangium, presumably female (Hartmann);

Parthenogen'esis (γενεσις, origin), a form of apogamy in which the oosphere develops into the normal product of fertilization without a preceding sexual act; diploid, = Parthena'pogamy; generative, = haploid, = if the oosphere is provided with the reduced number of chromosomes; somatic, = Parthenapogamy; parthenogenetic, arising without fertilization; Parthenog'eny = Parthenogenesis;

Parthenogon'id'ia (γονος, offspring), reproductive cells in a colony of *Volvox Globator*, Linn., acting asexually;

Parthenomix'is (μιξη, intercourse), Winkler's term for Par-

*Parthenogamy*; *Parthenosperm* (σωπο-μα, a seed), (1) a body resembling a zygospore, but not resulting from the coalescence of the contents of two sexually different cells; (2) a plant having parthenogenetic embryos (C. MacMillan);

*Parthenospore* (σωπο-ρα, a seed), is the same thing.

par'tial, par'tialis (Lat.), in botany usually means secondary, as *Involu'cre, Ped'uncele, Pet'iole, Um'bel*; it is opposed to "general."

par'tible, partib'ilis (Lat., divisible), ultimately separating, or easily separable.

part'um (Lat., partly); other expressions are ex parte, pro parte.

Partit'ion (partitio, a division into parts), (1) a wall or dissepiment; (2) a separated part or segment; (3) the deepest division into which a leaf can be cut without becoming compound (Lindley).

parti'tus (Lat.), = parted.

Par'tridge-wood, oak-wood destroyed by Stereum (Tubef).

parturi'tal (parturio, I bring forth), employed by C. A. White for sexual.

parviflor'us (parvus, small; flos, floris, a flower), having smaller flowers than in its congeners; parvifoli'ate, stem dominant, internodes long, leaves small, as in elm, wallflower, etc. (Worsdell); parvifo'lius (folium, a leaf), with smaller leaves than the allied species; Parvo-caric'eta, a large plant of *Carex* (Warming); par'vus (Lat.), small.

pas'cual (pasqua, a pasture), H. C. Watson's term for plants which grow in pastures and grassy commons, amongst less rank herbage than "pratal"; pas'cuen (Lat.), relating to pastures.

Passage Cells, cells in the exodermis or endodermis of roots which retain thin unaltered walls, by which water can pass.

Pas'salus (πδσαλος, a peg), a gamo-scapalous calyx.

Pasteuriza'tion, the preservation of
fermenting liquids by heating to about 140° Fahr., so as to germinate and then destroy, Fungi and their spores contained in the fluids treated (Crozier).

Pae'tids, an error for PLASTIDS (Zimmermann).

Pat'anas, pl., grass-lands in Ceylon derived from savannah woodland (Pearson).

Pat'ella (Lat., a small dish), an orbicular sessile apothecium, with a marginal rim distinct from the thallus; patellar'oid (el'dos, likeness), resembling a patella; patel'liform, patelliform'is (forma, shape), shaped like a small dish, circular and rimmed; Patel'lula, a diminutive patella; patel'lulate, possessing patellulae.

pa'tent, pa'tens (Lat.), spreading; patentis'simus (Lat.), extremely spread out.

pat'eriniform (patera, a dish or saucer, forma, shape), saucer-shaped.

Path'-finders = HONEY-GUIDES, lines of colour leading to nectaries; ~ point'ers, defensive protection, such as prickles, etc., against undesirable insect-visitor (Kerner).

patho'genic, patho'genous (πάθος, suffering, disease; γένος, race, offspring), producing disease; Patho'geni'ty, the quality of disease-giving; Pathol'o'gy (λόγος, discourse), the science of diseases; Veg'et'a'tion ~, that department of botany which treats of plant diseases.

patrocl'in'ous (πατρός, father; κλών, to slope), displaying the characters of the male parent (De Vries).

pat'ulous, -lus (Lat.), standing open, spreading.

panec'li'form, -rus (πανεκλή, few; φθορίς, a flower), few flowered; paneci'li'form (folium, a leaf), having few leaves; panocijuga'tus (jugum, a yoke), with only a few pairs of leaflets in a pinnate leaf.

Paul'ospore (παύλον, a pause), Klebs's term for CHLAMYDOSPORE.

Pauper'culae, pl. (pauperculus, rather poor), depauperate generations, as the dwarf-males of Oedogonium, etc. (A. Braun).

pau'si'ous (pau'sia, a kind of olive), olive-green.

pavoni'ניס (Lat., pertaining to a peacock), peacock-blue.

pear-formed, ~ shaped, obovoid or obconic with a tapering base.

Pearl-glands, structures in Pterosper'mum javanicum, etc., contained in cups serving as food-bodies for ants; the cups are probably metamorphosed stipules (Raciborski).

pearl-grey, "pure grey, a little verging to blue" (Lindley).

Peat, the soil formed on moors; entroph'ic ~, fen-peat; mesotroph'ic ~, from transitional moors; oligotroph'ic ~, moor-peat.

Pèbrine (Fr.), a disease of silkworms caused by Nosema Bombycis, Naeg., a bacterial organism; it is also named GATTINE.

pec'teroid, resembling the fossil fern Pecopteris; pecopt'erid means the same.

Pec'tase (πηκτας, coagulated), an enzyme which forms vegetable jelly from pectic substances occurring in the cell-wall.

Pec'ten (Lat., a comb) † = Sterigma.

pec'tic (πηκτής, coagulated), relating to pectin, as pec'tic Acid, supposed to form a large part of fruit-jelly; Pec'tin, or Pec'tine, a jelly-like substance in fruits; cf. Pectose; pectina'ceous (+ ace'ous); resembling pectin; gelatinous; Pec'tinase, a cytolytic enzyme.

pec'tinate, pectina'tus (Lat., like a comb), pinnatifid with narrow segments set close like the teeth of a comb; pec'tinatory, applied by De Bary to two series of vascular bundles whose members alternate with each other as the teeth of two combs.

Pec'tines, pl. (pecten, a comb), fimbriae on the corolla of some Gentians, constituting the corona (Huxley).

pectinifer'ous (φερων, I bear), used of a characteristic brown coating of
the spores of *Albugo*, *Pectin* being its constituent (F. L. Stevens).

**Pectos** (πέκτος, coagulated), a substance allied to mucilage which occurs in unripe fruits (Frémy); *pectoscic* Ac'id is associated with pectic acid in fruit jelly; *Pectoceluloses*, cf. *Cellulose*.

**pedalin'eous**, allied to the order *Pedalinae*.

**pedalin'erved**, etc. = *PEDATINERVED*, probably a misprint in Henslow's Dictionary.

**peda'lis** (Lat.), a foot long or high.

**ped'aate**, *pedatus* (Lat., footed), in botany, palmately divided or parted with the lateral divisions two-cleft; **ped'ately cleft** = *PEDATIFID*; ~

**veined** = *PEDATINERVED*; **pedat'-ifi'd, pedatif'idus (findo, fidi, cleft), divided in a pedate manner nearly to the base; pedatiform'is (forma, shape) = *PEDATIFID*; *pedatil'o'bus, pedatiloba'tus, pedatil'o'bed* (λαόβς, earlap), palmate, with supplementary lobes at the base; **pedatin'erved, pedatin'ervis** (nervus, a nerve), when the midrib stops short, and two strong lateral nerves proceed from its base, giving rise to others which extend only to the apex; *pedatipar'tite, pedatiparti'tus (partitus, divided), with pedate venation, and the lobes nearly free; pedat'isect, pedatise'ctus (sectus, cut), pedately veined, the divisions nearly reaching the midrib.**

**Ped'estal** (Fr., from *pes, pedis, a foot*), the persistent base of a leaf which disarticulates from it, *cf. Pulvinus*.

**Ped'icel**, *Pedicell'us* (Mod. Lat.), (1) an ultimate flower-stalk, the support of a single flower; (2) in Hydropteridaceae the sporophore; *pedicel'late, pedicella'tus, pedicula'tus*, †, borne on a pedicel; **Pedicle** = *PEDICEL*; *Pedicel'i'lulus* (dim. of *pedicellus*), a filiform support to the ovary in certain Compositae; *Pedic'ulus*, (1) = *PEDICEL*; (2) the stalk of the apple and other fruits; (3) the filament of an anther, as ~ *Anther'ae*.

**Pedif'erus** (*pes, pedis, a foot; fero, I bear*), furnished with a stalk or support (J. S. Henslow); *Pedil'is*, the contracted upper portions of the calyx tube in such florets of Compositae as have a stipitate pappus; *pedila'tus, furnished with a PEDIILIS*.

**pedio phi'lus** (*πεδοφίλος, level country; φιλέω, I love*), dwelling in uplands; *Pediophy'ta* (*φυτών, a plant*), upland plants; *Pediophy'ta*, upland plant formations (Clements).

**Pedun'cle**, *Pedic'ulus*, the general term for the stalk of a flower, it may also bear a cluster of single flowers; *peduncular'is*, relating to a peduncle or a modification, as *peduncular'es Cir'rhi*, tendrils proceeding from a peduncle; **peduncu'late, pedunculatu's, peduncul'u's*, furnished with a footstalk; *peduncu'lea'num*, with a modified state of the peduncle (J. S. Henslow).

**Peel**, the rind or skin of fruit; Grew spells it "Pill."

**Peg**, an embryonic organ at the lower end of the hypocotyl of seedlings of *Cucumis*, *Gnetum*, etc., lasting till the cotyledons are withdrawn from the testa.

**Pela'gad** (πέλαγος, the sea, + AD), a plant of the sea surface; *Pelagi'um*, a surface sea-formation; *pe'lag'ic, inhabiting the open ocean, as distinct from the shores; *pelagoph'i'lis (φιλέω, I love)*, living in the sea surface; *Pelagophy'ta* (*ϕυτών, a plant*), surface sea plants (Clements).

**Pel'ios** (*πελίδος*), black, livid.

**Pel'licle**, *Pellico'ula* (Lat., a small skin), a delicate superficial membrane, epidermis; *pelli'cular's*, having the character of a pellicle; *pelli'colose*, furnished with a skin (Stevenson).

**pell'i'tus** (Lat., covered with skin), "skinned, deprived of skin or apparently so" (Lindley).

**pell'u'oid**, *pelluc'idus* (Lat., transparent), wholly or partially transparent.

**Pelochthi'um** (*πηλός, clay; ὑθή, a
pel'ta (Lat., a small shield), (1) the round shield-like apothecium of Pet'-
tideae, etc.; (2) a bract attached by its middle, as in Peppers; pel'tafl (findo, fidi, to cleave), when a pettate leaf is cut into segments; pel'tate, pet'tal'us, target-shaped, as a leaf attached by its lower surface to a stalk, instead of by its margin; pel'ta-to-di-gi-ta'tus, a digitate leaf with the petiole much enlarged at the insertion of the leaflets; pet'ti-deus, pet'-ti-ti'form (forma, shape), orbicular or buckler-shaped, as the apothecia of many Lichens or the caps of Agarics; pen'iner'ved, pel'ti-nerv'is, -nervus (nervus, a nerve), with ribs arranged as in a peltate leaf; pel'toi'deus (eidos, resemblance) = pel'tideus.

Pelo'tia (πελώτια, monstrous), an irregular flower become regular by an exceptional development of complementary irregularities; irreg'u-lar ~ by the symmetric multiplication of the irregular portions; reg'u-lar ~ by the suppression of the irregular parts; pel'o-ric, relating to Peloria (Potter); Pelorisation, the process of conversion of a flower to a regular form, from its normal irregular form.

Pelchthi'um, pentadelphous

bank), a mud bank formation; pel'chthoph'ilus (φιλεω, I love), living on mud banks; Pel-chtho-
phy'ta (φυτων, a plant), plants of mud banks; Pel'chthophy'ti'a, plant formations of mud-dwelling species (Clements; Pel'gen'ety (γενόσ, offspring), amount of clay in soil, as affecting the plants growing on it; pel'gen'eous, applied by Thurmann to those rocks which yield a clayey detritus, and the plants which thrive thereon; Pel'oph'ilae (φιλεω, I love), clay-loving plants; Pel'-
ophile, a plant occurring on clay; pel'phi'ulous (φιλεω, I love), Warm-
ing's variation of pelogenous; pel'opsam'mio (ψάμμιος, sand), yielding clay and sand; pelopsammog-
'enous, giving rise to clayey sand (Thurmann).

Pen'dent, pen'dens (Lat.), hanging down from its support; Pend'ent, used by Grew for Anther.

Pen'dulous, pen'dul'us (Lat.), hanging, pendent; penduli'nnus (Lat.), hav-
ing the habit of being pendulous (De Candolle); Penduliflor'ae (flos, floris, a flower), Delpino's term for wind-fertilized pendulous flowers.

Penic'e'llate, an error for the next.

Penio'il'late, penicill'a'tus (penicillus, a little brush), pencil-shaped;

peni'cil'iform, penicilliform'is (forma, shape), shaped like an artist's pencil; Penicil'lium, a tuft of hairs.

Pen'nat'e, penna'tus (Lat., winged, = pin'naate; pen'nat'tic'ssus (cy'tsus, cut), with incisions of a leaf in a pinnate manner; pen'nat'ifid, pen-
utif'ids = pinnatifid; pen'ni-
form (forma, shape), with ribs as in a pinnate leaf, but the upper segments confluent at the apex, as in the date palm; pen'niner'ved, pen'niner'vis (nervus, a nerve); pen'nive'nius (vena, a vein), pinnately veined.

Pen'tacamar'us (πεντέρας, five; καυμάρα, a vault), with five loculi; pentacar-
pel'lar'y + carpellary), having five carpels; Pentachae'nium or Pent-
take'nium (+ Ach'enium), having the structure of a crenocarp, but with five carpels instead of two; pen'tacoo'cous, -cus (+ Coccus), with five cocci elastically splitting away from the main axis; Pen-tacot'y'l, a seedling with cotyledons so divided as to appear to possess five seed-leaves (De Vries); pen'ta-
cy'clic (κυκλός, a circle), a flower with five whorls of members, cf. Pentamero'ous; pen'tadae'tylonus (δακτυλον, a finger), five-fingered, or with five finger-like divisions; pen'tadel'phous, -phus (ἀδελφός, a brother), with five fraternities or
bundles of stamens; **pentagonal** (γωνία, an angle), with five angles; **Pentagynia** (γυνή, a woman), a Linnean order of plants having five pistils; **pentagynous**, with five pistils or styles; **Pentakémium** = **Pentachaenium**; **pemat'ericus**, -rus (μέρος, a part), with parts in fives, as a corolla of five petals; **pentan'dria**, a Linnean class of plants possessing five stamens, the largest in that system; **pentan'drous**, five-stamened.

**pentan'gular** (πεντάγωνος, five-angles), five-angular, pentagonal.

**pentapet'alous**, -lus (πέντε, five; πεταλοῦς, a flower-leaf), with five petals; **pentaphylet'ic** (φυλή, a tribe), used of hybrids which are composed of five strains, five species or forms being represented in the hybrid; **pentaphyl'lous**, -lus (φύλλον, a leaf), with five leaves; **pentap'terous**, -rus (πέταλον, a wing), five-winged; **pentarch** (ἀρχή, beginning), with five points of origin, applied to the xylem strands in a stele; **pentarch'icus**, J. S. Henslow's emendation of **pentarch'icus** (ἄρχων, male), Necker's term for **pentandroi**s; **pentasep'alous**, -lus (+ Sefalum), having five sepals; **pentaspérmous** (σπέρμα, a seed), five-seeded; **pentastich'ous** (στειχος, a row), in five vertical ranks; **pent'soses**, a name given to compounds resembling glucose, but having only five atoms of carbon in the molecule.

**Pep'o** (Lat., a pumpkin), **Pep'ondia** †; **Peponid'ium** †, a gourd fruit, a one-celled, many-seeded, inferior fruit, with parietal placenta and pulpy interior.

**Pep'sin** (πέψις, cooking, digestion), the digestive principle or peptic enzyme.

**Pep'tase** (πεπτικός, promoting digestion), a fibrin-digesting enzyme (Vines); **peptic**, digestive; ~ **Fer'ments**, those enzymes which convert proteids into peptones.

**Pep'tones** (πεπτός, cooked), albuminoids after being acted on by ferments, as proteids, which are the final result of their action; they are present in germinating seeds; **peptonising**, applied to enzymes so acting.

per-, in Latin compounds increases their force as per-similis, very like.

**Perano'sis** (πέρανις, I penetrate), change in the permeability of protoplasm.

**Perapet'alum** † (πεπτό, about + Peta-lum), any appendage to a petal, a synonym of **NectarilYma** and **Parapetalum**; **Paraphyllum** (φύλλον, a leaf) = **Paraphyllum**.

**percurren't** (percurrens, running through), extending throughout the entire length.

**Perem'bryo** = **Perembryum**.

**Perem'byrum** (πεπτό, about; ἐμβρυον, an embryo), that part of a monocotyledonous embryo investing the plumule and radicle, not externally distinguishable.

**Perench'yma** (πέραν, a sack; ἐγχύμα, an infusion), cellular tissue containing starchy matter (Stormonth).

**Perenna'tion** (perennitas, continuance), lasting, a perennial state.

**peren'iate, peren'ants** (Lat.), **peren'na'ting, peren'ial, peren'nis** (Lat.), lasting the whole year through; **Peren'ial**, a plant which lasts several years, not perishing normally after once flowering and fruiting; ~ **Herb**, the above-ground portion dies each year, the root persisting; ~ **Mon'ocarp**, applied by Möbius to such plants as *Agave americana*, Linn., which live long, but die after once flowering.

**per'fect, perfectus** (Lat., complete), (1) applied to a flower which is hermaphrodite; (2) of an organ which has all its constituent members.

**perfol'i ate, perfoliata'tus** (per, through; folium, a leaf), used when a stem apparently passes through a leaf, as in *Bupleurum perfoliatum*, Linn.

**per'forate, perfora'tus** (Lat., pierced), pierced through, or having translucent dots which look like little
holes, as in *Hypericum perforatum*, Linn.

Per'sormes, pl., in *Rosa*, those with doubly serrated leaves and glabrous calyces (Almquist).

perfo'ssus (Lat., dug or pierced through), perforolate.

perfü'sus (Lat., poured over), completely covered.

pergame'neous, -neus (pergamenta, parchment), like parchment in texture; *pergamenta'ceous*, -ceus (+ acesous), resembling parchment.

Per'iachene (περίαχην, about, π + a chin), a term including *Epiachene*, for an Achene arising from a partially superior flower (Villari); Perian'dra, pl. (ἄνθρο, ἀνθόδος, a man), the bracts of the male inflorescence in *Mosses*; perian'dricus (ἀνθρικός, manly), used of a nectary when it is ranged round the stamens; Per'ianth, Perian'thium (ἄνθιος, a flower), (1) the floral envelopes, calyx or corolla, or both; (2) in *Hepaticae* the inflated envelope surrounding the fertilized archegonium, the Cole'sule or vagnule; perian'theus, perian' ETHial, relating to the Perian'th; perianthia'nus, relating to or possessing a perianth; Perianthio'ma'nia (μανία, madness), an abnormal multiplication of perianth segments; periax'ial (+ axial) Wood, the so-called outer wood, as in the stems of Bignoniacae; Peri'blast (βλαστός, a bud), a misprint for Peri'plast; Periblaste'nis (+ Blast'esis), the enveloping of gonidia by surrounding tissue.

Per'iblem (περιβλημα, clothing), a layer of nascent cortex beneath the epidermis.

pericalyc'ius (περίκαλυξ, about + calyx), = peri stami'neus; Pericam' bium (+ Cambium), thin walled cells of the central cylinder in contact with the inner face of the endodermis; the pericycle; adj. pericam'bial; ~ Sheath, a rhizogenous tissue within the endodermal sheath; Per'icarp, Perica'rium (καρπός, fruit), (1) the wall of a fructified ovary; (2) applied also to the wall of the capsule in *Mosses*; (3) improperly used of the protective husks surrounding certain fruits; adj. pericar'pio, pericar'pial, pericar'pialis; Pericar'yoplasm = Peri'karkyoplasm; Pericau'loge (καύλος, stalk), the outer portion of the stem, including the leaf-trace bundles, derived theoretically from the fused bases of the leaves (Potionié); perico'ntal (κέντρον, a sharp point) Cell = Auxilia'ry Cell; perico'nticus, applied to perigynous stamens arranged concentrically with the calyx; Per'ichaeth (Crozier) = Peri'chaeatum; Peri'chae'tium (χαιρ, a mane), (1) the involucre around the base of the seta in *Mosses*; (2) W. J. Hooker's name for the perianth in *Hepaticae*; perichaet'ial perichaeti'alis, relating to the same, as ~ Bracts, ~ Leaves, the organs composing the perichaetium itself in *Mosses*, and the involucre in *Hepaticae*; Per'ichyle (χυλός, juice), a plant whose water-storing tissue is between the epidermis and the chlorenchyma, as *Rhizophora*; perichy'lous, employed of the aqueous tissue when between the epidermis and chlorenchyma (A. Schimper); Pericladi'ium (κλάδος, a branch), the sheathing base of a leaf when it surrounds the supporting branch; periclin'nal (κλίνω, I bend down), curved in the same direction as the surface or circumference; ~ Chimaie'sa = Graff'Hybrid; ~ Planes, planes which conform to the exterior; Peri'cline = Peri'clinium; Peri'clines, pl. periclinal walls; Peri'clinium (κλίνω, a bed), the involucre of the capitulum in *Compositae*; Perici'linoides, false involucre formed of the scales of the receptacle in *Compositae*, surrounding the sides of an elevated receptacle at its summit, as in *Evax*; Pericoce'cium, that portion of the protocoele which envelopes the nucleus; in germ. Kerntasche (Hanstein); Perico'lium (κολεύς, 273
a sheath) = Perichaetium; pericorolla'tus (+ Corolla), used of a dicotyledonous plant with a gamopetalous perigynous corolla; Pericy'cle (κύκλος, a circle), the outermost zone of cells of the stele immediately within the endodermis; inter'nal ~, Flot's term for the pro-cambium retained on the inner side of the vascular bundle; pericy'clic Sect'ors, interruptions of the pericycle of the root in certain Mosses, by tissues of cells whose walls are very slightly thickened (Campbell); Perider'm, Perider'ma, Perider'mis (δέρμα, skin or hide), the outer bark or epiphloem, at first restricted by Mohl to tough cork in distinction to the soft cork, now extended to the cork cambium and its products; phellogen; Per'idescm (δέσμη, a bundle), the layer of cells which surround each vascular bundle beneath the special endoderm in astelic stems (Van Tieghem); adj. perides'mic.

Perid'inin, one of the colouring-matters found in the Peridineae.

Perid'iole, Perid'iolum, pl. Perid'iola (dim. of Peridium from πηλίδων, a little pouch), (1) a chamber of the gleba forming a nest of spores, free or attached by a funicle within the peridium of the sporophore; (2) "a membrane by which the spores of some Algae are immediately covered" (Lindley); Perid'ium, a general expression for the outer enveloping coat of a sporophore upon which the spores develop within a cavity; ~ exter'num, the outer layer which opens in various ways and separates from the ~ inter'num, the inner layer directly enclosing the gleba; ~ mitrifor'me, "the receptacle of certain Fungals" (Lindley); adj. perid'anl; as ~ Cells, the outer cells of a peridium which are coherent.

Peri'droma (περιδρόμη, a circuit), Necker's term for the rhachis of Ferns.

Periench'yma (περί, about; ἕχωμα, an infusion), irregular cellular tissue, chiefly in glands and spheroidal masses (J. S. Henslow), cf. Perenchyma; Perifor'ium = Periphori um; Perigam'ium (γάμος, marriage), the portion of the fertile reduced branches of Mosses, which contain the archegonia; Perigloe'a (γλως, glue), the entire gelatinous investment of a Diatom (Bulham); Perigone, Perigo'nium (γόνη, offspring), (1) a synonym of Perianth; (2) the same of Perichaetium; (3) the involucre of the male inflorescence in Bryophytes; adj. perigo'nial, as ~ Leaves, the perichaetal leaves (excluding Bryophytes); perigonia'rius, (1) with the character of a perigone; (2) double flowers, resulting from transformation or multiplication of the floral organs taking on the character of perianth segments; Perigyn'nan'dra, Perigyn'nan'dra, -drum (γόνη, a woman; ἄνηρ, ἄνδρας, a man), (1) the involucre of Compositae; ~ commu'nis, ~ exter'ior, the involucre, ~ inte'rior, the corolla of a composite floret; Perigyn'ium, (1) the hypogynous setae of sedges; (2) the flask or utricle of Carex; (3) any hypogynous disc; (4) the involucre of the female inflorescence in Bryophytes; perigen'ynous, literally means round the ovary, used of organs adnate to the perianth, or adnate with the lower part of the pistil; perihadromatic (- Hadrome), surrounding the hadrome; Perikar'yoplasm (κάρυον, a nut; πᾶσαμα, moulded), a zone of granular protoplasm seen in Cobaea scandens, Cav., in the cytoplasm of the resting pollen mother-cell on its approaching division (A. A. Lawson); perileptomat'ic (+ Leptomere), surrounding the leptome; peri-medul'larly (+ Medullary) Zone, the peripheral region of the inner tissue outwardly bounded by the protoxylem; cf. circummedul'lary;
**Perimalitae**

.started

Perimel'itae (mel, honey), having honey-glands placed in the lower portion of the perianth, as in certain Gentianaceae (Huxley); Perimer'istem (+ Meristem), consists of several layers of cells which at first divide in every direction, but subsequently divide tangentially in the external region (Guillaud); perimicrop'ylar (+ Microple), situated near or round the micropyle; Per'in, the outermost layer of sculpturing on pollen; perinect'arial (+ Nectary), surrounding the nectarial area, as in certain Gentians (Huxley); Per'inium (Mod. Lat.), the outermost of the three coats of a Fern spore; the epispore.

perin'teger (Lat.), quite entire. perinu'cleolar (περίκλεος, about, + NUCLEUS); Vac'tole, a clear zone surrounding each nucleolus in prophase of pollen-mother-cells (Stevens).

Period, la'tent, see LATENT PERIOD.

Period'ic Movements, used to express the opening and closing of flowers, the nyctitropic movements of leaves, etc., when occurring habitually and with some regularity.

peripet'alous, -us (περίπτερος, flower-leg), around the petals.

 периphae'ricus (περιφάερις, the circumference of a circle), peripheric, circumferential; perih'er'al, surrounding; ~ Steles, four long curved steles in Psaronius from which adventitious roots take their origin (Zeiller); ~ Tis'sue, in roots, the piliferous layer furnished with root hairs; *peripher'ic, peripher'icus, pertaining to the circumference, as of an embryo coiled round the outside of the albumen; peripher'ico'termini'lis, belonging to the circumference and apex of a body, used of stems which grow both in length and breadth.

*Periphlo'ëm (περίφλωμ, about + phloëm), the phloëm-sheath or pericambium; periphloem'at'ic, applied to concentric bundles in Ferns; Periphoran'thiium (φορέω, I carry; ἀνθα, a flower), the involucre of Compositae; Periphor'ium, a fleshy and elongated support to the ovary, with the corolla and stamens attached to it; J. S. Henslow spells it “Periforium”; Periphra'gram (φράγμα, an enclosure), the pericycle of the stem (Dangeard); Periphyl'ls, Periphyl'lia + pl. (φύλλα, a leaf), the hypogynous scales or lodicules of grasses; Periphyllog'eny (γένος, race, offspring), bearing numerous leaflets round the edge of a leaf-blade (Weismann); Periph'yses, pl. (φύσες, growth), hairs of like origin to Paraphyses but arising from the hymenium of Ascomycetes at places destitute of ascii (Bennett and Murray); Periplasm (περίλασμα, moulded), protoplasm in the oogonium and the antheridium which does not share in the conjugation; cf. Gonoplasm; Periplas'tic (περίλαστικός, moulded), a hyaline structure enveloping the cell-nucleus; Peripodi'um (πόδιον, a foot) = Perichaetium; perip'eterous, -rus (περιπετευότας, a wing), *peripetal'is, surrounded by a wing or border; Periscy'phe (σκύψης, a cup), Desvaux's word for Perichaetium; Perisp'erum, Perisper'mium (σπέρμα, a seed), (1) the ordinary albumen of a seed, restricted to that which is formed outside the embryo sac; (2) the pericarp or even the integuments of a seed; perisper'mico, *perisper'micus, perisper'mat'is, (1) furnished with albumen; (2) “when the perispem is reduced to a single lamina, or when the seed is not furnished with a true perisperm” (J. S. Henslow); *Perisporan'gium (σπορά, a seed; ἀγγείον, a vessel), the indusium of Ferns, a membranous covering of the sorus; Perisp'ore, Perisper'mium, -rum, (1) the membrane or case surrounding a spore; (2) the mother-cell of spores in Algae; (3) = Perigyn'ium; (4) an incrustation containing much silica, outside the exospore of Isoetes (Fitting); *Perisporin'ium, the outermost membrane of pollen in
Angiosperms (Fitting); **Peristach’yum** (στάκχος, a spike), the glume of grasses; **Peristam’nia** (+ *Stamen*), **Periste’mones** (στάμνος, a filament), pl., applied to petalous dicotyledons with perigynous stamens; **Per’istem** (abbrev. from *Perimeristem*), young cortex in a nascent condition; **Per’istome**, **Peristom’ium** (στάμνος, a mouth), the fringe or its homologue round the orifice of a Moss-capule; **perist’omate**, **peristomat’ic**; **perist’omatus**, provided with a peristome; **peristoma’tic**; **peristoma’ticus**, when perigynous stamens are attached round the mouth of the calyx tube; **peristy’licus**, (+ *Stylus*), when epigynous stamens are inserted between the styles and limb of the calyx; **Perisyphe**, more correctly **Pericycphus**; **Perithall’ium** (θαλλός, a twig), the upper layer of calcareous Algae (Rothpletz); **Perithe’ce** = **Perithe’ciun**, pl. **Perithe’cia** (περίκτης, a case), (1) a case with a small opening containing asci, in Lichens; (2) in Fungi, a receptacle enclosing spores which are naked or in asci; **perithe’cioid** (ελθός, like) **Glánds**, those on the pitcher of *Nepenthes*, resembling the perithecium of *Sphaeria* (Macfarlane); **peritrió’chous** (περίτριχος, a hair), the whole surface beset with cilia (Jones); **peritró’pal, peritró’pous** (- *pos*), a turning), used of a seed which is horizontal in the pericarp, or of a radicle which is directed to the side of a pericarp; **perixylemat’ic** (+ *Xylem*), said of concentric bundles in the roots of *Acorus*, Juncaceae and Cyperaceae (Laux); **perixy’lic**, Van Tieghem’s expression for *Mesarch* + *Exarch*; **Perizo’niun** (κόνιο, a belt), the thin non-silicious membrané of a young auxospore.

**perlár’ius, perlár’i tus** (Late Lat., *perla*, a pearl), (1) shining with a pearly lustre; (2) furnished with rounded tubercular appendages (J. S. Henslow). **Note**: not to be confounded with *perlatus*, carried through, derived from *perfero*.

**perlátent** (*perlatus*, enduring), applied by De Vries to a permanently fixed character.

**per’manent, per’manens** (*permaneo, I persist*), persistent; ~ **Quad’rat**, a square of one metre each way, so marked as to permit of study from year to year (Clements); ~ **Tis’sue**, fully formed tissue, as distinct from merismatic or generative tissue.

**Permeability** (*permeabilitas, that can be passed through*), applied to protoplasm, etc., and further distinguished as **extrameability** and **intrameability**, the power of allowing the passage of certain substances out of or into its vacuoles respectively (Janse).

**permó’bile** (*per = very; mobilis, easy to be moved*), very easily moved, as many sand dunes.

**Permuta’tion, Permuta’tio** (Lat., a changing), enlargement of the floral envelopes with abortion of the sexual organs (Penzig).

**permuta’tus** (Lat.), completely changed.

**Pernic’iasm** (*pernicies, destruction*), Tubeuf’s term for the killing of host-cells by a parasitic fungus.

**Per’nio** (Lat., a chilblain), a local affection resembling an ulcer, caused by cold.

**Perocid’ium** † (*peripl., about; ὄρχις, a testicle), Necker’s term for *Percia*.

**per’onate, perona’tus** (Lat., leather booted), thickly covered with a woolly covering becoming mealy.

**peronocar’pic** where occurring, probably a misprint for *Pyrenocarpic*.

**Perovula’tae** (*per., much or very; ovulatus, ovuled*), otherwise *Semina’tae*, Van Tieghem’s terms for phanerogams furnished with true seeds.

**Perox’y’dase** (*per., very + *Oxydase*), an enzyme causing increased evolution of oxygen.

**perpe’lic** (*per., much; πέλας, clay*), Thurmann’s term for rocks which yield clay, pure and abundant, also for the plants which thrive thereon.
perpendicular

per dic'ular, per dic'u lar(is) (Lat.), used of an organ with its direction vertical, either (a) to the horizon, or (b) to its attachment; ~ Sys tem, = FIBRO-VASCULAR SYSTEM (Crozier).

per psam'mic (per, much; ȋdμος, sand), yielding an abundance of sandy detritus, with the flora thereon growing.

per pusil'lus (Lat.), very small.

Per'quadrat, a quadrat of 16 square metres or more.

persici'olor (persicum, a peach; color, colour), persici'nus (Lat.), peach-coloured, a rosy pink.

per sis'tent, persis'tens (Lat., persevering), (1) remaining till the part which bears it is wholly matured, as the leaves of evergreens; (2) in the culture of Algae, when the supply of prepared water keeps the culture even; Persis'tence, constancy, as ~ of Varia'tion, the variety or tendency to vary persisting.

per sondate, persona'tus (Lat., masked), used for a bilabiate corolla having a prominent palate.

Perspira'tion (Crozier), see Tran spiration.

pertusar'oid, resembling the Lichen genus Pertusaria.

pertu'sate, pertuse', pertu'sus (Lat., perforated), having slits or holes.

Pé'rlula (Lat., a little wallet), (1) the scale of a leaf-bud; (2) Lindley also gives it as a projection in the flower of Orchids, the Mentum, the Mentum = Per a the cium; per ulat e, perula'tus, furnished with protective scales.

per val'var (per = through; valva, a valve) Ax'is, the main longitudinal axis of a Diatom frustule, the line which forms the centre of the dividing plane, penetrates the cell-cavity in the epi- and hypothecal directions at equal distances from the enclosing walls, and unites the centres of the valves (O. Mueller).

Per ver'sion (perversio, a turning about), (1) turned aside; (2) O. Mueller's term for turned upside down in the case of Diatoms; per ver'ted, so turned.

per'vious, per'vius (Lat., passable) having an open passage-way.

Pes, Ped'is (Lat.), a foot, (1) used in such compounds as longipes, long-stalked; (2) a foot of twelve inches measurement ± 30.5 cm.; cf. Foot.

Pet'al, Pet'alum (πέ ταλος, a flower-leaf), (1) one of the leafy expansions in the floral whorl styled the Corolla; the word was taken by Blair from Columna; (2) of the Hop, the scales of the strobile; ~ -like, ~ -shaped, petaloid; petala'tus, possessing petals or a corolla; petalif'erous, bearing petals; Petali fic'a tion (factio, I make) = PETALODY; pet'aliform, petaliform'is (forma, shape), petal-shaped; pet' aline, petali' nus, petal-like, or relating to petals; Pet'alode (εἰδος, resemblance), an organ simulating a petal; pet aloid'ens (Lat.), (1) = PETALODY; (2) having petals; Pet'alody, the metamorphosis of stamens or other organs into petals; pet'aloid, pel taloi' denus, like a petal, or having a floral envelope resembling petals; ~ An'ther, an anther borne on a petal, the filament resembling a petal; Petaloma'nia (μανία, madness), an abnormal multiplication of petals; Petaloste'mones (στήμων, a filament), plants with flowers whose stamens are adherent to the corolla; pet'alous, Blair's term for having petals; Pet'al'y, the condition of possessing petals (J. M. Coulter).

Pet'ascopores -ae (πέ ταρος, a broad brimmed hat, + Spore), plants having seeds with parachute-like appendages (Clements).

petiola'ceus (petiolus, a little foot or leg, + AECUS) (Lat.), having reference to the petiole by attachment, transformation, or appearance; petiolae'neus or petiolea' nus (Mod. Lat.), consisting of the petiole or of some modification of it; pet'i oians (Lat.), producing petioles; used by Dr. Burchell; pet io' lar, petiol'aris, pet'io lar y, borne on, or pertaining to a
petiolate; petiolate, petiolat'us, having a petiole; Pet'iole, Pet'iolus, the footstalk of a leaf; ~ Gut'ter, the leaf-stalk grooved and leading down to hairy buds or grooves on the stem (S. Elliot); ~ Trace, the strand of vascular tissue, sectionally shaped as H, connecting the petiole and the stem in Diplolabis (Gordon); Pet'iolule, Petiol'lulus, (1) a small petiole; (2) the petiole of a leaflet; petiol'ulate, petiolo'la'tus, having a petiole; petiolo'lar, petiolo'laris, belonging to a petiolute.

Pet'rad (πέτραδ, a rock, + AD), a rock plant (Clements).

Petae'us (Lat.), growing amongst rocks.

Pet'rifact (petra, rock; facio, I make), a fossil, due to petrification (Stopes); Petrification, formerly applied to all fossils, now restricted to those completely penetrated by silicic acid or calcium carbonate, and so preserved in a solid form.

Petri'um (πέτριον, a rock), a rock formation; Petrochthi'um, pl. -i'um (πέτρον, a bank), a rock bank formation; petrochthoph'ilus (φιλέω, I love), living on rock banks; Petroch-thophy'ta (πυρόν, a plant), rock bank plants (Clements).

Petro'dad (πέτραδ, stony, + AD), a plant of a boulder field; Petrod'i'um, a boulder field or stone formation; petrodoph'ilus (φιλέω, I love), dwelling in boulder fields; Petrodophy'ta (πυρόν, a plant), boulder field plants (Clements).

petroph'ilus (πέτρος, a rock; φιλέω, I love), rock dwelling; Petrophy'ta (πυρόν, a plant), rock plants (Clements); Pet'rophy'tes, rock plants, subdivided into Lithophy'tes and Chomophy'tes.

petro'sus (Lat., rocky), growing amongst stones.

Pezizaxan'thine (+ XANTHIN), a special orange colouring-matter, also termed Pezi'zin, Rosoll's name for the same pigment in Peziza aurantium, Pers., etc.; pezi'zoid (εἴδος, resemblance), peziza-, or cup-shaped.
Phalanx

Philootherm

a band of soldiers), bundles of
stamens in diadelphous and poly-
dadelphous flowers; phalarsiph'tus
(φάλαρσίφτος = φάλαρσις, stony soil + AD), "a rock field plant" (Clements); Phell-
'ad (φέλαθος, cork; δέρμα, skin), the outer-
most layer of the periderm, consisting
of true cork and phelloid (Hoehnel).
Phell'ad (φέλαθος, stony soil + AD), "a rock field plant" (Clements); Phell-
'ad (φέλαθος, skin), the innermost layer of the periderm;
Phel'logen (γενώς, I produce), the central layer of the three in the periderm, the active cork-producing
layer; adj. phellogenetic; phel-
loid (εἶδος, resemblance), cork-like, as tissue which approaches cork in
quality; Phel'loid, non-suberized
layers in the phellem (Hoehnel);
phelloph'ilous (φηλός, I love), dwelling in stony fields; Phellosphy'ta
(ϕηλός, a plant), plants growing
amongst loose stones (Clements).

Phan'er'ic, pl. (φανερός, manifest), any
organisms which are visible under
the microscope without the use of
reagents (Maggi); phaneran'thus
(ἀνθος, a flower), where the flower is
manifest; phaneran'therus (ἀθρός,
flowerly), when the anthers protrude
beyond the perianth; phanerog'am'ic,
phanerog'amous, phanerog'amus,
(γάμος, marriage), having mani-
ifest flowers; phanerog'amic wood,
secondary or centrifugal wood;
phanerog'amian, pertaining to
Phan'ergams, plants with flowers
in which stamens and pistils are
distinctly developed; Phase-
rog'amy, the condition of Phane-
rog'ams; phanerop'orous (πόρος,
a way or passage), applied to stomata
which lie in the same plane as
the epidermis; cf. cryptop'orous;
Phan'erosphy'tes (ϕυτόν, a plant),
plants whose bulbs and tender extre-
mities, which must pass the rest-
ning season, are on upright perennial
stems, such as trees and shrubs
(Raunkier).

Pharmacognos'y (φαρμακογνώση, a drug;
γνώση, knowledge), the knowledge
of the distinctive features of vege-
table drugs (E. M. Holmes).

Phase'olin, a reserve proteid occurring
in Phaseolus seeds, forming their
main proteid store; Phaseo-llun'atin,
a glucoside in linseed and other
Leguminosae.

Phel'lem (φελλός, cork) = cork
(Streasberger); Phelle'ma, the outer-
most layer of the periderm, consisting
of true cork and phelloid (Hoehnel).

Phell'ad (φελαθος, stony soil + AD), "a rock field plant" (Clements); Phell-
'ad (φελαθος, skin), the outer-
most layer of the periderm;
Phel'logen (γενώς, I produce), the central layer of the three in the periderm, the active cork-producing
tissue; adj. phellogenetic; phel-
loid (εἶδος, resemblance), cork-like, as tissue which approaches cork in
quality; Phel'loid, non-suberized
layers in the phellem (Hoehnel);
phelloph'ilous (φηλός, I love), dwelling in stony fields; Phellosphy'ta
(ϕηλός, a plant), plants growing
amongst loose stones (Clements).

Phen'ic, (φήνης, I love; θερμή, warmth), used by J. G. Baker for
plants which need warmth to complete their life-cycle.

phlebo'idal (φλεβ, φλεβῶς, a vein), has been applied to spiral annular, or porous moniliform vessels (Cooke); **Phlebomor'pha** (μορφή, form), the mycelium of some Fungi.

**Phleum'etum**, a plant-association consisting of **Phleum pratense**, etc. (Ganong).

**Phlobaph'enes**, pl. (φλοιός, bark; βαφή, a dyeing), amorphous brown colouring-matters of the bark; **phloe'o'des** (έδος, resemblance), bark-like in appearance; **Phlo'ém', Naegeli's term for the bast elements of a vascular bundle; it is separated in exogens from the wood (xylem) by the cambium; ~ **Com'missure**, the apposition of phloem elements as the beginning of a central strand (Brebner); ~ **Islands**, groups of bast-strands surrounded by xylem (Chodat); ~ **Parenchy'ma**, cn. Bast-Parenchyma; ~ **Ray**, a ray or plate of phloem between two medullary rays; ~ **Sheath**, a layer of thin-walled cells surrounding the vascular tissue next within the cortex, best seen in roots; **Phloé-o'ter'ma** (τέρμα, a limit), the innermost layer of primary cortex; **Phloeo'trach'eides** (+ Tracheid), the vascular elements of the haustorium of parasitic Santalaceae (Benson); **Phloes'um't', the cortical tissues; **Phlorid'zin** (φλώς, a root), a white crystalline substance which gives the bitter astringency to the root-bark of the apple, pear, cherry, and plum-trees; **Phlorogiu'n'cin**, a body of frequent occurrence in the bark of trees, derived from glucosides.

**Phlyktioplank'ton** (φλυκτόν, a blister, + Plankton), Forel's term for organisms supported by hydrostatic means.

**pho'bic** (φόβος, fear), repulsive; **Pho'bis**, Massart's term for repulsion of plants; **phobochemo'tactic** (chem + τάκτις, arrangement), a chemical influence which is repellant, as in swarm spores of ***Myxomycetes***; **Phobochemotaxis**, the condition described; **Phobophotaxis**, Phobo-phototropic (φως, φωτός, light; τροπή, a turning), movements induced by shunning light; adj. **phobophotactic**.

**phoenic'eous, phoe'nic'eus** (Late Lat.), scarlet; red with a little of yellow added.

**phoeos'porous = Phaeosporous**.

**Pho'ma-stage**, the perithelial stage of Beetroot Rot, *Phoma Batae*; the ascigeral stage is that caused by *Sphaerella*.

**Phoran'thium** (φωρᾶς, bearing; ἀνθος, a flower), the receptacle of the capitulum in Compositae.

**photoil'ic** (φωτός, φωτός, light; αἰδός, moving, motile), used of the sleep of plants; pho'tic, influenced by, or adapted to, the action of light, well-illuminated, as the margins of pools, etc.; **Pho'tism**, Massart's term for the emission of light under stimulus; **Photo-aesthe'sia** (κατασκήνωσις, perception), Csapék's term to express the power of an organ to respond to the stimulus of light; **Photob'ia** (βίος, life), pl., Tulasne's term for ecto-parasitic Fungi; **Photoblast** (βλαστός, a bud), used of a shoot developed above the soil, and adapted to live in light and air (Kirchner); **photocleistogam'io** (+ Cleistogamic), used of flowers which do not open in consequence of the rapid growth of the outer side of the petals, due to **photohyponasty** (Hansgirg); **Photocleistog'amy** is the condition; **Photocli'n'ny** (κλίσις, I bend), response due to the direction of the incident rays; **Photope'inas'ty** (+ Epinasty), epinasty induced by the action of light (Detmer); **photogen'ic** (-γεν-, producing), used of bacteria which are luminous; **Photochar'mose** (ἀποξή, a joining), response to light stimuli (Clements); **Photohyponas'ty** (+ Hyponasty), hyponasty caused by the effect of light (Vines); **Photo-kine'sis** (+ Kinesis), movement.
induced by light; *photokine'tic* (πλωτικός, having the power of movement), moving in consequence of the stimulus of light; *Photole'pay* (Λήψις, a seizing), catching the light; Wiesner’s equivalent for the German “Lichtgenuss”; *Photolysis* (λύσις, a loosing), the arrangement of chlorophyll granules under the stimulus of light, including both apostrophe and epistrophe; *Photom'eter*, an instrument for measuring the amount of light; *photomet'ric* (μέτρων, a measure), (1) applied to organisms which turn either end to the direction of the light-rays; (2) leaves which assume a definite position in light, to obtain the most of it, or to screen themselves from too much (Wiesner); *Photom'etry*, the response to the amount of light (Oltmanns); *Photomorph'osis* (μορφώσις, configuration), that kind of mechanomorphosis which depends upon light as the cause; *Phono'as'ty* (παστός, pressed close), one-sided growth in length of an organ, due to the unrestricted action of light (De Vries); adj. *photonas'tic*; *Photop'a'thy* (πάθος, suffering) = *Phototaxis*; *photoph'i'lic = photophilous*; *photoph'ilous* (φιλέω, I love), sun-loving plants; *Photoph'obism* (φοβεω, I fear), avoidance of light; *photoph'y'gous* (φυγη, flight), applied to shade plants; *Photoplagiot'ropy* (πλαγιός, placed sideways; τροπή, a turning), a tendency to arrangement obliquely towards incident light (Goebel); adj. *photoplagiotrop'ic*; *Photosyn'tax* (σύνταξο, I put together), the formation of complex carbon compounds from simple ones under the influence of light (Barnes); *Photosyn'thesis* (σύνθεσις, a putting together), a proposed emendation of “photo-syntaxis”; *phototac'tic* (τακτικός, qualified to arrange in order), Strasburger’s term for taking up a definite position with regard to the direction of light-rays; *Phototax'is* (τάξις, order), the definite self-arrangement of organisms under the stimulus of light; *phototon'ie* (τόνως, tension), the increasing irritability by the influence of light; *Photot'onus*, (1) the normal mobile condition resulting from the alternation of day and night; (2) proposed by Nagel for botanic use instead of *Photokinesis*, which is considered more appropriate for zoolologic use; *Photot'o'phy* (προφή, food), unequal increase on one side of an organ, due to the incidence of light in relation to the parent shoot (Oltmanns); *Photot'ropism* (τροπή, a turning), a synonym of *Heliotropism*; *Photot'rum* (coined by analogy of Spectrum), S. L. Moore’s term for the whole scale of illumination affecting *Photolysis*; *Phototype* (τύπος, a type), a photograph of a type specimen; an abbreviation of the word *Photograph'otype* (M. Kellerman).

**Phrag'ma**, pl. *Phrag'mata* (φράγμα, an enclosure), a spurious dissepiment in fruits; *Phrag'matospore* (σωρά, a seed), a multicellular spore, capable of germinating from more than one point (A. Braun); *phrag'mifer* (fero, I bear), *phrag'miger*, *phragmig'erus* (gero, I bear), divided by partitions; *Phragmite'tum*, Warming’s term for an association of reeds, *Phragmites*; *Phragmoba'sid, Phragmobasid'ia*, pl. (+ Basid), septate basidia in Basidiomycetes (Van Tieghem); *Phrag'moplast* (πλαστός, moulded), Nemec’s term for a connecting spindle between two nuclei in the same cell which is sometimes produced; *Phragmosp'o'reas* (+ Spore) used of Fungi whose spores are multiseptate (Traverso).

**Phreti'um** (φρήτειον, a water tank), a tank formation; *phrestoph'ilus* (φιλέω, I love), dwelling in tanks; *Phrestoph'yta* (φρέτον, a plant), tank plants (Clements).

**Phry'gana**, pl. (φρύγανα, sticks for firewood), an old term for prickly and stiff under-shrubs.
Phyllocyanin

Phyllocyanin, a pigment occurring in the Peridinaceae; Phycocystomes \( (\text{στήμων}) \), a filament, "hypogynous or other scales adhering to the disk" (Lindley); Phycocyanin \( (\text{Xanthin}) \), the yellowish-brown pigment of Algae.

Phyogblastema (Φυγαρ, a fugitive; βλάστημα, a sprout), Minks' term for a modified form of soredia in Lichens.

Phykechyma (Φυκός, sea-weed; ιγχυμα, an infusion), "the elementary tissue of Algals" (Lindley); Phykoerythrin = Phycocyanin; Phykoerythrin = Phycocyanin.

Phytila, pl. of Phyllum (Φύλλον, a tribe); a system of organisms arranged in the assumed succession of development; adj. phyletic; ~ Margin, the true indium of Blechnum (Bower).

Phylla, pl. (Φύλλον, a leaf), the verticillate leaves which form the calyx; used in composition as diphyllous, two-leaved, etc.; Phylilade, a cataphyllary leaf; Phyllary, Phyllaris, a member of the involucre of a Composite flower; Phyllidium, term proposed by Bower for the homologue of the leaf in the gametophyte; Phyllile'sia, the correct spelling of Phillilexia; Phyllite, a fossilized leaf; Phyllobiology (+ Biology), the biology of the leaf, in its widest sense; adj. phyllobiologic; Phylloblastus (βλάστου, a bud), Koerber's term for Lichens which have a flat leaf-like expansion of the thallus; Phyllobryon \( (\text{Βρύον}) \), a moss), the contracted pedicel of an ovary, as in some peppers (Lindley); Phylloclade, Phylloclad'ium (κλάδος, a branch), (1) a flattened branch assuming the form and function of foliage; (2) a thalline outgrowth of a Lichen (Lindsay); Phyllocol'ly (κόλας, glue), the production of new leaflets from the leaf surface (Penzig); Phyllocy'anin (κύανος, blue), a blue pigment occurring in
Phylocyanin

chlorophyll, which when combined with phylloxyanthin produces a green tint; cf. KYANOPHYLL; Phyllode, Phyllophyte (φυλόφυτον, a plant), (1) =CORMOPHYTE; (2) a plant which draws its nourishment chiefly from its leaves (Boulger); (3) a plant possessing leaves or leaf-like organs (Hansgirg); Phyllode, pl. (πούς, ποδός, a foot), dead leaves in Isoëtes;

Phyllophytum, a leaf regarded morphologically as an axis, branched or unbranched; phyllophonous, used of the genus Hieracium when the radical leaves are in full vigour at the period of flowering; Phyllophorphyrin (πορφύρα, purple dye), a by-product of chlorophyll, in dark red-violet crystals; Phyllophoricis (πτώσις, fall), an unnatural fall of leaves; Phyllophorum (πολύς), a root, an organ intermediate between leaf and root, as the capillary leaves of many water plants (Clos); phyllophorum, a tube, having a tubular central cylinder in the higher plants, where leaf-gaps are constantly present (Jeffrey); the condition in Phyllosiophon;

Phyllocheron (τάος, a peacock), Schunck's word for a product of chlorophyll, resembling phylocyanin, but dull green in tint; Phyllophytacis, Phyllophytum (τάος, arrangement), the mode in which the leaves are arranged with regard to the axis; discontinuous ~ with a definite break of ratios; falling ~, passing into a lower series; rising ~, passing into a higher series (Church); adj. phyllophytic; Phyllophytum (τάος, a type), a type of leaf; Phyllophanthin (ΧΑΝΘΩΝ), the yellow colouring-matter of leaves, xanthophyll; Phyllophyllum (εύνη, a scar) ½, (1) the scar left on a branch by the fall of a leaf; (2) H. Gibson's term for that stage in the embryo of vascular plants at which the first leaf and root appear (Parker);

Phyllophyllum, used for the free portion of the pulvinus, in Pinus (Masters). Phyllophyllum (φυλόφυλλον, a tribe; γεών, lineage), ancestral history deduced from development; adj. phyllophytic.

Phytophyton, (φυλότυπον, natural) Drought, used of soil when it contains very little free water.
the frond of an aquatic Alga; (2) a branch of Chara (Lindley).

Physiognomy, botan'ic (φυσιογνωμία, science of judging by features), the habit of a plant or plant community; adj. physiognom'ic; physiologic (λόγος, discourse), relating to physiology; ~ Drought, soil is thus dry when containing a considerable amount of water, which is, however, scarcely available for plant-life; ~ Bae'ces, ~ Spe'cies, forms differing by internal habit of parasitism, and not by morphologic difference; also styled biologic ~ or habita'tion ~; 

Physiology (veget'able), the science of the vital actions or functions of plants and their parts.

Phys'odes (φύτρα, a bladder; ελδος, likeness), vesicles in Algae filled with liquid containing structures, formerly called "microsomes" (Crato).

Phy'tal'bumose (φύτον, a plant, + albumos), a protein found in seeds, as of Abrus; Phy'teris (ερΐς, strife), plant migration and competition (Clements); Phy'to-al'bumin, see Albumin; Phy'toben'thon (βένθος, depth), vegetation of the depths (Forel); Phy'tobiol'ogy (βίος, life; λόγος, discourse), the study of the vital functions in plants; Phy'to-blast (βλαστός, a bud or sprout), Baillon's term for a cell in its first stage of development; Phy'tocecid'ia (κεκίς, or κηπόνιον, a gall), galls produced by other plants (Lundström); Phy'to-chem'ery (+ chem), the chemistry of vegetation and its products; Phy'tochliore (χλωρός, green) = Chlorophyll; Phy'tocy'yst (κοντίς, a bag), Baillon's expression for a cell with its walls, cf. Phy'toblast; Phy'toder'ma (δέρμα, a skin), any fungous parasite growing on the skin; Phy'toderm'ata, pl., skin diseases caused by Fungi; Phy'todoma'tia, pl. (δωμάτιαν, a little house), shelters in which other plants live (Lundström); Phy'todynam'ica (δυνάμις, power), relating to the movements of plants (Sachs); Phy'to'é-ros'ía, a misprint of Lindley's for

Phy'toter'osia; Phy'toflag'ellates, another name for Flagellata; Phy'togel'in (γελό, I congeal), the gelatine of Algae; Phy'tog'amy (γάμος, marriage), cross-fertilization of flowers (A. Gray); Phy'tog'en'eny (γένεσις, beginning), the origin and development of the plant; Phy'toge'ny, means the same as the last; Phy'togeog'en'esis (γένεσις, beginning), the origin of plants in geologic time (Kuntze); Phy'togeog'rapher (γραφέω, I write), an expert on plant distribution; Phy'togeog'raphy, Phy'togeog'raphia, geographic botany, the science of plant distribution; Phy'togno'sis (γνώσις, knowledge), botany, phytoogy; Phy'togon'id'ium (+ Gonidiwm); an immobile goni-dium, capable of independent germination (A. Braun); Phy'tog'raphist (γραφή, a writing), a describing botanist; Phy'tog'raphy, the description and illustration of plants, descriptive and systematic or taxonomic botany; Phy'tohae'matins (αιμα, αιματος, blood), colourless chromogens becoming pigments under the action of oxygen in the presence of oxydases (Palladin); phy'toid (ελδος, likeness), plant-like; Phy'tolite (λίθος, a stone); Phy'tolith, a plant in the fossil condition; Phy'tolithol'ogy (λόγος, discourse), (1) the study of fossil plants, palaeobotany; (2) the science of plant distribution as affected by soil or rock; Phy'tol'ogist, a botanist; Phy'to'l'ogy, Phy'tol'ogia, botany, the study of plants; Phy'tol'y'sis (λυσις, a loosing), an error (?) for Photoly-sis; Phy'tome, Phy'toma, pl. Phy'to'mata, the vegetative body or substance of all plants (A. Braun); phy'tomastig'opod, see Mastigopod; Phy'tomer, pl. Phy'tom'era (μέγος, a part), the unit of a plant, an internode with its leaves; an emendation of Phy'ton, applied by Gaudichaud to a plant-unit, out of a succession of which plants are built up; adj.
Phyton′ie; Phyton′melane (μέλας, black), a black structureless layer found in the pericarp of many Compositae (Hanasek); Phyton′metry (μέτρον, a measure or standard), a comparison between plants, or the different plans of their growth; Phyton′morph′osis (μορφωσις, a shaping), any change induced by plants; by Appel used for galls caused by plant parasites; Phyton′myxa′ceae = Myx′omycetes; Phyton′opy, Phyto−n′nia′ia (νιός, law), (1) botanic physiology; (2) study of the organs of plants; cf. Phyton′omy (Heinig); Phyton′omyxe′ia (νιόμα, a name), plant organography; Phytopalaenont′ology = Palaeobotanist; Phytopa−pathology (παθολογικά, relating to diseases), vegetable pathology, the science of plant-diseases; Phyto−phenology (+ Phenology), the observation and recording dates in leafing and flowering of plants; Phytoplan−kton (+ Plankton), floating pelagic plant organisms; Phytople−u′ston (+ Pleuston), plants which are lighter than the surrounding water, and consequently float on the surface; Phytopoli′tus (πολίτης, a citizen), a plant which is or seems to be parasitic; Phytopluteoce′sid′ia (κηνίς, a gall), galls caused by Fungi (Loew); Phyto−statis′ics (στατικά, causing to stand), the various causes which tend to produce equilibrium in the energies of a plant; Phyto− stroto−tes [trisyll.], Phylostroto′lae (στρωτός, spread), distributed as surface plankton (Clements); Phyto− tero′sia (τέρας, a monster), Desvaux′s term for plant pathology; Phyto−teratol′ogy (+ Teratology), the study of monstrous growths in plants; Phyto−tomy′ (τομή, a cutting), plant anatomy, or histology; Phyto− troph′ia (τροφή, nourishment), plant culture; phyto−topograph′ical (τοπός, a place; γράφω, I write), relating to descriptive local botany; the flora of a given locality; Phyto− trozo′id′ (ζώον, an animal; ἥλιος, likeness) = Antherozoid; Phytozo′on, of Phytozo′on, antherozoids, mobile fertilizing bodies formed in antheridia.

pic′eua (Lat.), pitchy black.

Pic−nid′ium = Py−c nid′ium.

Pic′ro−erythr′in (πικρός, bitter, + Ery− thrin), a substance found in Lichens; Florotox′in (φωκα, poison), a crystalline narcotic bitter ingredient in the berries of Cocculus indicus, the mediaeval and trade name of Ana− mirta paniculata, Coleb.; adj. pic′roto−x′ic.

pic′tus (Lat., painted), adorned with colour, as though painted.

Pie′tra fung′a′ia (Ital.), "Mushroom−stone," the sclerotium of Polyporus tuberaster, Fr.

Piezot′ropism (πείζω, I press hard; τροπή, a turning), movement by compression acting as stimulus (Massart).

Pila′ris † (Lat., from pilus, a hair), composed of small hairs, pilose.

pl′eate, pila−et′us (Lat., wearing the pileus), having the form of a cap or Pileus; pl′eiform′is, pileiform′is (forma, shape), pileus shaped; Pile−ola, Pile′olus (pileolum, a little cap), (1) a small cap or cap-like body; defined by J. S. Henslow as a primordial leaf like an extinguisher, which encloses the bud; (2) the diminutive of Pileus; (3) "the receptacle of certain Fungi" (Lindley); (4) the plumule in grasses (Van Tieghem).

Pileorhi′za (πιλερος, pileus, a cap; βίος, a root), the root-cap, a hood at the extremity of the root; Pileus, (1) a convex expansion terminating the stipe of Agarics, and bearing the hymenium, now extended to all sporophores in which the hymenium faces the ground, the Cap; (2) used by R. T. Lowe to express the habit of Convolvulus Caput−Medusa, Lowe.

Pi′li, pl. of Pi′lus (Lat., a hair), hairs.

Pilid′ium (πιλίδιον, a night-cap), an orbicular hemispherical shield in Lichens, the outside changing into a powdery substance, as in Calicium.

pilifer′ous, -rus (pilus, a hair; fero, I
bear), (1) bearing hairs, or tipped with them; (2) hair-pointed (Lindley); ~ Lay'er, the young superficial tissue of roots, producing the root-hairs, when present; piliform, (forma, shape), applied to the point of a nerve in Mosses, when like a long flexuose hair; piligerous (géro, I bear), bearing hairs.

Pill, Grew's spelling of Peel.

Pilocarp'ine, the active principle of Pilocarpus, a genus of Rutaceae.

pil'ous, pilous'us (-L), a hair, used by J. Smith for Ferns bearing glandular hairs; pilose, pilosus, pil'ous, hairy, any kind of pilosity, usually meaning having soft and distinct hairs; Pilosity, Pilositas, hairiness; pilosus'culus (Lat.), slightly hairy; Pilosism, abnormal hairiness in plants; ~ deforming ~, when in excess and completely disfiguring the species; physiolog'ical ~, occasioned by circumstances, as growth in a dry soil; teratolog'ical ~, when it becomes a disease, cf. deforming.

Pil'ula † (Lat., a globule), (1) a cone like a galbulus; (2) any spherical inflorescence.

Pil'us (Lat.), a hair.

pimpinell'oid (élósos, resemblance), akin to or resembling the umbelliferous genus Pimpinella.

pim'pled, papillose.

pin-eyed, a florist's term for those flowers of dimorphic species, which have long styles, the stigma showing itself at the mouth of the corolla-tube.

Pineken'ya (πνας, a table; εγχυμα, an infusion), the muriform tissue of medullary rays, whose component cells are tabular; Pinench'ya is a shortened form.

Pina'res, forests of Pinus canariensis with xerophytic undergrowth in the Canary Islands (Warming).

Pinc'h'ing-Bod'ies, the Cor'puncula of Asclepiads; the junction of the pollinia which cling to the leg of an insect visitor; ~ Traps, another name for the same mechanism; the German equivalents are Klemm-körper and Klemmenfallen; Pinchtrap Flowers, those adapted for insect visitors able to draw out the pollinia.

Pine'tum (Lat., a pine-grove), (1) a work devoted to Coniferae; (2) a collection of the same in a garden.

Pinheir'oa, forests composed of Arau'caria brasiliensis (Warming).

Pi'nite, a glucoside, sweet and crystalline, derived from Pinus Lam'bortiana, Doug.

Pin'na, pl. Pin'næ (Lat., a feather), a primary division of a pinnate leaf, its leaflets, which sometimes themselves are pinnate, are restricted by Bower to the "branches of the first order borne upon the phyllopdium," the axis of the leaf; ~ Trace, the vascular bundle connecting a pinna with the stem or principal petiole; ~ Trace Bar, an arc of xylem formed by the fusion of two entering pinna traces of Diplo'labis (Gordon); pin'nate, pinna'tus, with leaflets arranged each side of a common petiole; ~ with an odd one = imparipinnate; pinna'tely, in pinnate fashion, as ~ com'pound, ~ cleft, ~ decom'pound, ~ divi'ded, ~ lo'bed, ~ par'ted, ~ ter'nate, ~ trifo'liolate, ~ veined; pinna'tifid, pinna'tif'idus (fíndo, fídi, to cut), pinnately cleft; pinnatillo'bate, pinnatillo'ba'tus, pinnatillo'bus (lobus, a lobe), pinnately lobed; pinnati-par'tite, pinnatifarti'tus, pinnately parted; pinnatiscis'sus (scissus, cleft), pinnately divided or cut; pinnat'isect, pinnatisect'us (sectus, cut), pinnately divided down to the rhachis; pin'niform (forma, shape), like a feather; pinniner'ved (nerus, a nerve), pinnately veined, the veins running parallel towards the margin; pin'nulate, with pinnules; Pin'nule Pin'nula, pl. Pin'nullæ, (1) a secondary pinna; (2) in Diatoms, thickened ribs on the valves, as in Pin'nularia.

pi'noid (pi'mus, a pine; élósos, resemblance), like a pine-needle.
Pinometer

Pinom'eter (πινω, I drink; μέτρον, a measure), an instrument for observing the transpiration stream in plants.

Pip, (1) the popular name for the seeds of an apple or pear; (2) “small seeds or seed-like bodies including the bulbs of Lily of the Valley” (Crozier); (3) a florist’s term for a single flower of a truss.

Pip'erin, the active principle of white and black pepper, Piper nigrum, Linn., a white crystalline body isomeric with morphine; pip’era'tus, piperi’tus (Lat., peppered, peppery, having a hot, biting taste.

pisa'ceus, Pis'til, Pit, Pitch, a resinous exudation from the spruce, Picea alba, Link, etc.

Pite'erous, Pip'stilla, pistillig'erous; Pistillod'y, the change of floral organs into carpels; CARPELLODY suggested as more correct.

Pit, (1) a small hollow or depression, as in a cell-wall; (2) the endocarp of a drupe containing the kernel or seed-stone (Crozier); ~ Cham'ber, the cavity of a bordered pit on each side of a closing membrane; primor'dial ~, Sanio’s term for oval patches in the wood of Pinus within which only bordered pits arise, a “primary pit area” (Groom).

Pitch, a tubular or cup-shaped vessel, the terminal portion of a leaf-blade, usually containing a secreted digestive field; an as-cidium; ~ -shaped, campanulate, but contracted at the orifice.

Pit'fall Flowers, transitional flowers, such as Asarum, which contain small Diptera.

Pith, the spongy centre of an exo-genous stem, chiefly consisting of parenchyma; the medulla; ~ Flecks, dark marks in timber due to the cavities made by the larvae of insects in the cambium, but later filled up by cellular tissue (Hartig).

pit’ted, marked with small depressions, punctate; used in a restricted sense for pits in cell-walls; ~ Ves’sels, dotted ducts, vessels with secondary thickenings leaving thinner spots.

pitu’tous (pituita, phlegm), relating to mucus (Crozier).

Pityria’sis (πιτυροφ, scurf) versic’olor, a skin disease caused by Microsporon Furfur, Rob.

Place-con’stant, an invariable factor of plant-life in a given locality; ~ -condi’tion, or ~ -hab’it, the sum of these under varying conditions; ~ -mode, the prevalent condition of size, number, colour, etc., of organs of a plant in a given locality (Shull).

Placen’ta (Lat., a cake), (1) the organ which bears the ovules in an ovary, often the margin of the carpelliary leaves; (2) in Cryptogams, the tissue from which sporangia arise; ~ -shaped, placentiform; Placen’ta’rum, placenta; Pla’centary, a placenta which is long and narrow and bears many ovules; placen’tary, relating to the placenta; Placen’ta’tion, Placenta’tio, the disposition of the placentae; placenti’ferous (fero, I bear), bearing placentae;
placentiform, *placentiformis* (forma, shape), quirt-shaped or like a flat cake; *Placentoid* (*elidos*, resemblance), organs described by Chatin as occurring in the antlers of certain Dicotyledons to assist in the dispersion of pollen.

placochromatic (*pladé*, *plános*, a flat body; *χρωματικός*, relating to colour), used of Diatoms with endochrome in plates or discs; cf. coccochromatic.

placo'des (*plakódés*, flat), used by Koerber for Lichens resembling a rounded plate in figure.

placo'doid (*elidos*, resemblance), like the genus *Placodium*, with orbicular thallus, adpressed and lobed.

*Plaço*phytes (*pladé*, a flat body; *φυτόν*, a plant), a term applied by Schuett to the Peridineae, Diatomaceae and Desmidaceae; cf. Saccophytes; *Placo*planius (*plastós*, moulded), elioplats attached to the inner surface of the margin of the chromatophores in certain Diatoms (Mereschkowsky).

Plad'oboles [trisyll.], *Pladob'olae* (*pládos*, moisture; *βολός*, thrown), plants distributed by the action of damp (Clements).

plagioid'romous (*plágios*, oblique; *δρόμος*, a course), applied to tertiary leaf-veins when at right-angles to the secondary veins; *Plagio-heliotropism* (= *Heliotropium*) = Plagio'phototropism; *Plagiophototauxy* (*φῶς*, *φωτός*, light; *τάξις*, order), the oblique arrangement of chlorophyll granules with regard to incident light (Oltmanns); *plagiotrop'ic* (*τρόπος*, a turning), assuming an oblique position to the rays of light, as the leaflets of *Robinia*, *Trapaecolus*, etc. (Oltmanns); *Plagiophototropism*, the condition itself; *plagiotropic*, having the direction of growth oblique or horizontal; *Plagiotropism*, the condition described.

plain, applied to a margin which is not undulate, though it may be sinuate (Crozier).

plait'ed, plicate.
Plankton; Plan'tae tris'tes, even-
ing flowering plants, as Matthiola
binary, DC., etc.; plan'tal, per-
taining to plants; Plan'ticle, the
embryo in a seed; Plan'tlet, a little
plant; Plant'ling, a small plant, a
product of recent germination
(S. Moore); Plant'tule, Plan'tula =
Plumule; Plantula'tio = Germina-
tion.

Plasm, Plas'ma (πλάσμα, that formed),
used for Protoplasm; Plasm-sac
(+ Sac) of Diatoms, a colourless
layer of protoplasm forming a lining
to the frustule and enclosing the
cell-contents (O'Meara); Plas'ma-
embrane, an equivalent for the
German “Hautschicht” (Mottier);
Plasmamoe'bae (+ Amoeba), amoeb-
biform masses of protoplasm, the
actinophrydia of Gobi; Plas'masome,
or Plasmat'osome (σῶμα, a body), a
protoplasmic corpuscle, shortened to
Plasome; plasmat'ico, ready, or serv-
ing for growth, plastic; plas'mative,
Beccari’s term for period of creation
of species; Plasmotogennyl'icae
(γεννάω, I beget; σῶ = materia),
Radlikofer’s term for Angiosperms
and Gymnosperms: plasmatop'arous
(παρό, I bring forth), in germina-
tion the whole of the protoplasm of a
gonidium issues as a rounded mass,
which at once becomes coated with
a membrane, and puts out a ger-
tube; Plas'mochy'mum (χύμα, that
which is poured), the thick fluid
albuminous substance of the cell-
body (Strasburger); Plas'mode =
Plasmodium; Plasmoder'ma (δέρμα,
skin) = Ectoplasm; adj. plasmo-
der'mal; Plasmodes'ma (δεμος, a
bond), connecting threads of proto-
plasma passing through pores in
the cell-walls; adj. plasmodes'mic;
Plasmod'ia, Caruel’s term for
Myxogastres; plasmo'dial, plas-
modic, pertaining to a plasmodium;
~ Gran'ules, minute, strongly re-
flective granules in certain Myxo-
gastres; Plasmodia'tion, the as-
sumed softening of the outline of
a spore on its germinating (A. S.
Wilson); Plasmodie'resis (διαλπερσις,
division), the division of protoplasm,
which may be (a) akinetic, or (b) kar-
yokinetic; Plasmo'diocarp (καρπός,
fruit, an asymmetrical sporangium
of Myxogastres (Rostafinski); Plas-
modigens (γένος, race, offspring),
C. MacMillan’s word for the proto-
plasmic units of a plasmodium;
plasmodioph'orus (φορέω, I carry),
producing a true plasmodium;
Plasmodi'dium, a mass of naked
much-nucleated protoplasm, show-
ing amoeboid movements; aggre-
gated ~, the myxamoebæ congre-
gated without fusion, each cell
giving rise to a spore or foot-cell;
fused ~, union of myxamoebæ and
subsequent fructification (Van Tieg-
hem); Plas'molyte, the substance
causing plasmolysis; Plas'molysis
(λύω, a loosing), a separation of
the living protoplasm from the
cell-wall by osmotic action; Plas-
molization, the same condition;
plas'molysed, subjected to plasmol-
ysis; adj. plas'molytic; plasmo-
ph'agous (φαγóω, I eat), absorbing
the living organic matter of the
host-plant without selection (Boul-
ger); Plas'mop'tysis (πτύσις, I eject),
the extrusion of protoplasm from
bacteria, with subsequent envelop-
ment by a membrane; Plas'masome
(σῶμα, a body) = (1) Nucleo-
lus; (2) Bioblast; Plasmosyn'agy
(αναγωγικ, I collect), accumulation
of the proplasts of the polioplasm
and of the plastids included in it,
due to plasmolytic irritation
(Tswett); Plas'ome, a living ele-
ment of protoplasm, shortened from
Plasmatosome (Wiesner); plas'tic,
capable of being moulded or modi-
ified; ~ Equivalent, of consumed
carbon in a body is the amount
contained in the substance of the
organism (Waterman); cf. Respi-
ra'tory Equivalent; ~ Prod'ucts of
katabolism, those which remain an
integral part of the organism
(Parker); ~ Sub'stances, those em-
ployed in building up, as cellulose,
starch-grains, proteids, etc.; Plasticity, (1) the quality of being plastic; (2) the condition characterized by ready response to stimuli (Clements); Plastid, Plastidium, a protoplasmic granule in active cells, differentiated as centres of chemical or vital activity, as Chloro-, Chromo-, and Leucoplastid; ~colours, those due to plastids in the cells, as distinct from coloured sap (Wheeldale); Plastidplasm, (+ Plasm), a supposititious substance differing from other forms of protoplasm by morphological characters (B. M. Davis); Plastidule, Elsberg's term for the smallest mass of protoplasm which can exist as such; Plastin, an essential element of the entire protoplasmic cell-contents, including the nucleus and the chromatophores (Zacharias); Plastogamia (γάμος, marriage), the fusion of cytoplasm into a plasmodium, the nuclei remaining distinct (Hartog); adj. plastogamous; Plastog'eny (γένος, race, offspring), when cytoplasmic elements undergo a reorganization by fusion (Hartog); Plas'toid (εἴδος, likeness), a needle-shaped body found in the stalk-cells of the tentacles of Drosera, becoming rounded under stimulus; a rhah-doid; Plastotosome (σώμα, body) = Chondriosome; Plastotype (τύπος, a type), a cast from an original type, as of a fossil plant.

Plastic, a flattened structure; cf. Nuclear ~, Sieve ~.

Plat'e-rings, the external concentric strands of vascular tissue in Medullosa (Jeffrey).

Plateau' (Fr.), (1) the tubercular disk in a bulb which produces the scales upwards, and the roots downwards, cf. Crem' (Crozier); (2) a similar structure in certain Compositae, interposed between the ovary and the other floral organs (Leaco).

Platyca'pic, platycar'pous (παλαιός, broad; καρπός, fruit), broad-fruited; Platygenid'ia, pl. (+ Goni'dium), gonidia in broadly spreading groups.

Platylob'eeae (λοβός, a lobe), used for certain Crucifers with flat cotyledons; platyl'obate, broad-lobed; plathyphyl'lous (φύλλον, a leaf), broad-leaved; Plat'ysemms (σφέρα, a seed), applied to certain fossil fruits, flattened in transverse section; cf. Radiosperm's (F. W. Oliver); adj. platysper'mic.

Plecten'hyma (πλεκτής, woven; ἕχυμα, an infusion), a tissue of woven hyphae; a pseudo-parenchyma, further divided into Paraplectenchyma and Prosoplecticenchyma (Lindau).

Pleio blasts'us (πλεῖος, more; Βιαστός, a bud), used by Koerber for those Lichen spores which germinate at several points; Pleiochas'tium (χάος, separation), each relative main axis of a cyme producing more than two branches; adj. pleiochastic; pleio'clyclic (κύκλος, a circle), perennial as ~ Herbs; Pleiog'eny (γένος, race), an increase from the parental unit, as by branching or interpolation of members; Pleiom'ery (μέρος, a part), having more whorls than the normal number; Pleiomor'phism, Pleiomor'phy (μορφή, change), the occurrence of more than one independent form in the life-cycle of a species; adj. pleiomor'phous; Pleiop'ontism, Delphino's term for Polyomor'phy; Pleiopetal'ly (πεταλός, a leaf), doubling in flowers (De Vries); adj. pleiopetal'alous; pleiophy'llous, -lous (φύλλον, a leaf), with leaves having no apparent buds in their axils; Pleio phy'ly, having numerous leaves from the same point, or more than usual the number of leaflets in a compound leaf; Pleiopyre'nium (+ Pyre'ntium), small apothecia in one verruca, in Lichens; pleio sperma'ous (σφέρα, a seed), with an unusually large number of seeds; Pleiotax'is, Pleilotax'y (ταξις, order), increase in the number of whorls in
a flower; Pleiot'omy (τόμος, a cut), multiple dichotomy or fission (Wordsdell); Pleiotrache'ae (→ Trachea), "membranous tubes or tracheae containing a compound spiral fibre" (Cooke); Pleiox'eny (ξένος, a host or guest), where a parasite can invade several species of host-plants (De Bary).

ple'num (Lat.), full, as Flos plenus = a double flower.

Pleochro'icism (πλέον, more; χρώμα, colour, complexion), with various colours in the cell-wall; syn., Pleochro'mism (χρώμα, colour), adj. pleochro'ic, pleochrois'tic; Pleoge'amy (γάμος, marriage), Loew's term for methods of pollination varying in respect of time, etc.; fe'male ~, gynodioecious united with gynomicroecious; male ~, androdioecious united with andromonoecious; Pleog'eny (γένος, race), mutability of function; adj. pleogenet'ic; Pleomor'phism (μορφή, shape), mutability of shape; adj. pleomor'phic; Pleomor'phy, the same as Pleio-morphism; adj. pleomor'phous = Pleiomorphous.

Ple'o'non, Naegel's term for an aggregate of molecules, but smaller than a Micella.

Ple'o'nas'm (πληνάσμα, a surplus), redundance in any part (Crozier).

pleoph'agous (πληθόν, more; φάγος, a glutton), not restricted to one host; feeding on various species; Pleoph'ag'ism is the condition; pleophylet'ic (φυλή, a tribe), descended from numerous lines, polyphyletic; pleo'ric, an error for peloric; pleotroph'ic (τροφή, food), feeding on various substances, not restricted to one (C. Jones).

Ple'o'rome (πληρώμα, that which fills), the cylinder or shaft of a growing point enclosed and overarched by periblem; ~ Sheath = Bundle-sheath.

pleisiomorph'ous (πλησιός, near; μορφή, shape), nearly of the same form (Crozier); Plei'siotype (τύπος, a type), a specimen compared with a species, and newly described and figured.

Pleu'ra (πλευρά, a side or rib), the girdle or hoop of Diatoms (O. Mueller); Pleurench'yma (εγχύμα, an infusion), woody tissue; pleuroblas'tic (βλαστός, a bud), (1) used of certain forms of Fungi, producing lateral outgrowths serving as haustoria; (2) employed by Celakovsky to denote the early stages of the monocyte-donous embryo; cf.acro'blastic; pleurocar'pous, -pus (καρπός, fruit), applied to those Mosses which bear their fructification on lateral growths, cf. acrocarpous.

pleurocoeca'ceous, pleurocoec'o'id (έδος, resemblance), like the genus Pleurococcus, or its allies.

pleurodi'seous (πλευρά, a side or rib; δισεός, a quoit), when an appendage is attached to the sides of a disc; pleurogy'n'ius, pleurogy'nus (γυνή, a woman), used when a glandular or tubercular elevation rises close to or parallel with the ovary; pleurogy'rate, pleurogy'rat'us (γυρός, round), when Fern-sporangia have the annulus horizontal; pleuropla'stic (πλαστός, moulded), Prantl's term for a leaf in which the central portion first attains permanency, the meristem being marginal; pleuror'hi'zal, -ζαλ (ζαλ, a root), when an embryo has its radicle against one edge of the cotyledons, which are then acum bent; Pleur'osperms (σπέρμα, a seed), Angiosperms which began with chalazogamy, but have become porogamous (Nawaschin); adj. pleuro'sper'mic; Pleurospor'ang'ium (σπορά, a seed; σπείρα, a vessel), a sporangium which produces pleurospores; Pleur'ospore, a spore formed at the sides of a basidium in Basidiomycetes (Van Tieghem); pleurotri'bal, or pleur'o'tri'ble (τρίβω, I beat), used of flowers whose stamens are adapted to deposit their pollen upon the sides of insect-visitors.

Pleu'ston (πλευστικός, ready for sailing), (1) plants which float by reason
of their relative lightness (Forel); (2) modified since to include rootless, free-floating, submerged spermatophytes (Warming); ~ flora, practically Phytoplankton.

plexoeblas'tus = (πλέκσις, a knitting; βλαστός, a bud), when cotyledons rise above ground in germination, but do not assume the appearance of leaves; plex'uus (Lat., a twining), a network.

Plie'a, pl. Plie'ae (plico, I fold or plait), (1) a plait or folding; (2) the lamella in Fungi; (3) a disease of entangled twigs, the buds producing abnormally short shoots; plie'cate, plie'ctus, folded into plaits, usually lengthwise; plie'atilla (Lat.), the property of folding together; Pli'cation, a fold or folding; plie'ative, plie'ati'us = Plicate; Pli'a'ture, a fold or doubling; plie'at'ilate, the diminutive of plicate (Crozier); plie'iform (forma, shape), plait-like.

Plinth, the taping free end of the nucellus of certain fossil seeds; ~ Jack'et, the epidermis of the soft integument surrounding the plinth.

Plocoear'pium (πλοκος, a chaplet; καρπός, fruit), a fruit composed of follicles ranged round an axis; Plocoear'pium, an error for the last.

Plug, a growth of protoplasm which closes the pore-openings in the cells of certain Algae, homologous with the Stopper of Ballia (H.Gibson).

Plum-pock'ets = Bag-plums.
pluma'tus (Lat.), feathered, pinnate.
Plumba'gine, a crystalline principle in the roots of Plumbago.
plumb'eus (Lat., leaden), lead-coloured.
Plume (Lat., the down of a feather), Grew's term for the Plume; plu'mose, plumi'o'sus (Lat.), feathered, as the pappus of thistles.

Plu'mule, Plu'mula (Lat., a little feather), the primary leaf-bud of an embryo; ~ bulb, a bulb produced directly from germination of the seed; cf. Runner-bulb (Blodgett); plu'mular, relating to the plumele; ~ Ax'is, the primary axis.

plur-, plu'ri (Lat.), used as a prefix for many or several, as plurilocular, many-celled, etc.

Plur-an'nual (+ Annual), L. H. Bailey's word for an annual plant, which is so only by being killed by the cold at the end of the season, as Reseda odorata, Linn.; plur-i-cell'ular (+ Cellular), many-celled; plur'i-ceps (-ceps from caput, a head), with more than one head, as many roots; plur-icil'i-ate (+ Ciliate), having many cilia; plur-i-fol'ius (folium, a leaf), having several leaves; plur-i-fol'i-ate, with several or many leaflets; plur-i-flor'ous, -rus (flos, floris, a flower), with several flowers; plur-i-gamet'ic (+ Gamete), consisting of many gametes or sexual units; plur-iloc'u'lar, plur-i-lo'cal'ris (loculus, a little place), many-celled; plur-i-parti'te, plur-i-part'i'tus (partitus, divided), deeply divided into several nearly distinct portions; plur-i-pet'al'alus (πεταλον, a flower-leaf), polypetalous; plur-i-sep'tate (septum, an enclosure), with several partitions; plur-i-spor'ous (σπόρα, a seed), having two or more seeds; plur-i-val'en't (valens, strong), used of nuclear divisions in which each element is composed of two normal elements (Haecker); plur-i-val'vis (+ Valva), many-valved, as opposed to uni-valved or folliculate; plur-i-vor'ous (voro, I devour), Dietel's term for those Fungi which inhabit indifferently hosts belonging to widely different orders of plants.

plus (Lat., more) or +, applied to spores whose nuclei are presumably male (Blakeslee).

Pluvifrutici'o'eta, pl. (pluvia, rain; fruticetum, a thicket), rain-scrub; Pluvii'gino'sa, pl. (lignosus, woody), rain-scrub and rain-forest combined; Pluviusyl'vae, pl. (sylva, a wood), rain-forest.

Pneu'machore, an error for Pneu'ma-tode.

Pneumath'o'dium (πνεύμα, πνεύματος, breath, air), (1) cf. Pneumatode;
Pneumathodium

(2) an αέρατινος Root, as in Taxodium; pneumat'ic Tis'sue, open tissue containing much air (Kearney); Pneu'mato-chymif'era [Va'ssa] †, spiral vessels (Lindley); Pneu'matode (δδος, a way), any opening of the nature of a lenticel or stoma (Jost); Pneu'matophore, Pneumato-ph'orum (φορέω, I carry), (1) used of air-vessels of any description, as tracheids; (2) intercellular spaces in Rhizosphereae (Karsten); (3) † the membranous tube of a spiral vessel (Lindley); pneumatotac'tic (τακτικός, apt for arrangement), applied to those zoosporos whose irritability is dependent on the presence of dissolved gases, the products of respiration of the zoospores in the sporangium (Hartog); Pneumatotax'y, the condition desribed; neg'ative ~, the irritability which determines the escape of certain spores, as in Achlya; Pneuma'toferus (φερό, I bear), the external membranous tube of spiral vessels (J. S. Henslow).

Pnoi'um (πωιόν, a blast), a succession of plants on ζεόλια (drifting) soils, such as blown sand (Clements).

Po'ad (πῶδα, meadow, + AD), a meadow plant (Clements).

Pocilli'tus, pl. Pocil'lī (poccillum, a little cup), the scyphi of Cladonia, so termed by Nylander.

Pocket, of Lemna, a hollow in the leaf, whence a new leaf arises (Potter); ~ -leaves, specialized leaves which collect humus; Mantle-leaves; ~ -plums = Bag-plums; Pock'eting, applied to an intrusion of cortex (Lang).

 poc'iliform, pociliform'is (poccillum, a cup; forna, shape), shaped like a goblet or drinking-cup.

Pod, a dry and many-seeded dehiscent fruit, a legume or siliqua; ~ -like, applied to such fruits as those of Corydalis, Hypecoum, and Cleome.

pode'tiform (+ Podetium from πῶδα, πωδός, a foot; forna, shape), shaped like a podetium; Pode'tium, (1) a stalk-like elevation rising from the thallus and supporting an apothecium in some Lichens; (2) also applied to the support of the capitulum of Marchantia; and (3) the seta of Mosses; Pode'ta † is given by Lindley as a synonym.

podicel'late, Lighton's term for stalked, as applied to Lichens.

Podicil'lum †, a very short podetium (Lindley); Pod'ium, Pod'us, a footstalk or similar support; Pod'ocarp, Podocar'pus (καρπός, fruit), a stipitate fruit, that is, when the ovary is borne by a gynophore; podo'ceph'alous, -lus (κεφαλή, a head), with a pedunculate head; Podog'ynum (γυνή, a woman), an elevation in the centre of a flower which carries the ovary, a gynophore; adj. podogyn'icus, podog'ynum; podop'terosis (πτερόν, a wing), having winged peduncles (Crozier); Pod'osperm, Podosperm'ium, -ma (στέρμα, a seed), the stalk of a seed, the funicle.

poeclitherm'ic = Poikilothermic.

Po'gon (πόγων, a beard), used in composition to denote any collection of long hairs.

poikilodynam'ic (ποικίλος, various; δύναμις, power), in hybrids when the character of one parent is practically absent; poikilother'mic (θέρμη, heat), rising and falling in response to varying temperature (Jones).

Point'al, an old term for Pistil; point'less, muticus; point'letted, apiculate.

Point'er Cell, an English equivalent for Deuter Zell.

Po'ium (πῶδα, meadow), (1) a plant association in which Poa is a predominant genus (Ganong); (2) a meadow formation (Clements).

Polache'na, Polacke'na, Polake'niun (πολὰς, many; α, without; χάδω, I gape), Richard's term for a fruit like a cremocarp, but composed of five carpels, cf. Pentachenum.

po'lar (πόλας, a pivot), (1) relating to the poles of an organ; (2) derived from the smaller ends of a flattened
rootlet (Lopriore); ~ biloc’ular, applied to Lichen spores which have cells at the opposite apices; Bod’y, Bod’ies, a portion of the protoplasm of a mother-cell thrown off as nucleated cells from the oospore before fertilisation; ~ Cap, an ill-defined region of kinoplasm, generally larger than a centrosphere, for insertion of spindle-fibres (B. M. Davis); ~ Cell, = ~ Body; ~ Corpus’cle, the central mass in each Aster of a dividing nucleus; ~ Glob’ule, = ~ Body; ~ Nu’cleus, a fourth nucleus in each group at the two extremities of the embryo sac, which move towards the middle of the embryo sac and there coalesce to form the secondary nucleus; ~ Plates, the achromatic spheres at the poles of the spindle in mitosis; ~ Rays, sometimes applied to the astral rays as opposed to the spindle-fibres; pola’ri- biloc’ular, used of two-celled spores with a thick central wall traversed by a connecting tube, the lumen of the cell at the extreme end; Polar’ity, (1) the condition of having distinct poles; (2) the assumption of a direction pointing to the poles, as the compass-plant, Silphium laciniatum, Linn.

Polem’bryony = POLYEMBRYONY.

Polemoni’e’tum, a plant association of Polemonium (Clements).

po’l’eward [dissyl.], towards the poles, in nuclear division.

Polexost’y’lus (πολός, many; ἐξ, out; στόλος, style) = CARCERULE.

Pol’ioplasm (πολίδος, grey; πλάσμα, moulded), Tswett’s term for the circulating portion of the cytoplasm.

Pol’itropism = POLYTROPISM.

poli’tus (Lat.), polished.

pollasch’thic, preferably pollachan’thic (πολλαχή, often; ἄνθος, a flower), applied to plants which flower more than once, as opposed to haraxanthic plants; perennials (Kjellman); pollachig’emus (γεωντέω, I bring forth) = POLYCARPIC.

Poll’ard, a tree dwarfed by frequent cutting of its boughs a few feet from the ground, and subsequent thick growth of shoots from the place where cut; poll’arding, cutting back to produce a mop-headed growth.

Pollen (Lat., fine flour), (1) the fertilising dust-like powder produced by the anthers of Phanerogams, more or less globular in shape, sometimes spoken of as “Microspores”; (2) the antherozooids of Mosses (Hooker and Taylor); ~ Carr’ier, the retinaculum of Asclepiaids, the gland to which the pollen-masses are attached, either immediately or by caudicles; ~ Cells, cavities of the anthers in which pollen is formed; ~ Cha’mber, (1) a cavity at the apex of some ovules beneath the integuments in which the pollen-grains lie after pollination, as in Cycas; (2) the extine of the pollen in some Coniferae dilated into two hollow expansions to facilitate dispersion by wind; ~ Flow’ers, those which afford no nectar to insect visitors, but only pollen; ~ Grain, Gran’ule, the small bodies which compose the entire mass; the latter term is also used for the contents of the grain; ~ Mass, pollen-grains cohering by a waxy texture or fine threads into a single body; ~ Pre’pott’ency, when one kind of pollen is more effective in fertilisation than another; ~ Sac, the micro-sporangium in Phanerogams; ~ Spore = ~ Grain; ~ Tet’rad, ~ Tetrahe’dron, the shape of certain groups consisting of four grains cohering in a pyramid, as in Oenothera; ~ Tube, the tube emitted by a pollen-grain passing down from the stigma to the ovary and ovules; ~ ~ ecto’trop’ic, the course of the pollen-tube in acrogamy, proceeding along the conducting tissue of the style to the micropyle; ~ ~ endotrop’ic, in basigamy, when their course is towards the base of the ovule (Pirotta and Longo).—The various markings of the pollen-grains in
Acanthaceae have received special names from L. Radtkofer and G. Lindau, which have been used in their original form in the "Flora of Tropical Africa"; the following account of them may be useful:

Daub'en (~ (Stave ~) a modification of Schalen- or Spalten ~, with broadened fissures having a stave-like insertion; Do'sen ~ (Box ~), elliptic, with three longitudinal stripes and a pore in each; Facet-tier'ter ~ (Facet ~), with faceted surface; Fal'ten ~ (Fold ~), with smooth surface and three deep longitudinal grooves; glat'ter ~ (smooth ~), destitute of prominent markings; Gür'tel ~ (Girdle ~), having a zone of varied marking; Kam'mrad ~ (Cogwheel ~), having regular projections on the equatorial region; Knüt'chen ~, an abbreviation for Knötchen'do'sen ~ (Nodule ~), having a tuberculate surface; Lin'sen ~ (Lens ~), doubly convex in form; Rah'men ~ (Frame ~), with six small and three broad streaks between the poles; Rip'pen ~ (Rib ~), with longitudinal ribs having punctate markings on them; run'der ~ (round ~), spherical in form; Scha'len ~ (Shell ~), with three slits, which do not reach the poles, and without pores, the pollen-tubes emerging from the slits, cf. Spalten ~; Spal'ten ~ (Fissure ~), with three longitudinal fissures, sometimes with pores in them; cf. Schalen ~; Span'gen ~ (Clasp ~), main ribs three, smaller ribs six, with three pores in the equatorial region, one between each two of the smaller ribs; Sta'chel ~ (Spine ~), having a spiny surface, pores from three to many; Wa'ben ~ (Honeycomb ~), having an areolate surface; pol'lenate, to fertilise by pollen; Pol'lenation = Pol'lination; pollenifer'ous, -rus (fero, I bear), pollen-bearing; Pol'lenine, the contents of pollen-grains; Pollen'o'dy, the develop-

ment of sporogenous tissue of the nucellus into pollen, in place of an embryo-sac (Wor'dell); Pol'lenoid = Pol'linoid.

Pol'lex (Lat., a thumb), an inch in length, nearly 25.4 mm.

Pollica'ria (Lat., pertaining to a thumb), an inch in length, about the length of the end joint of the thumb.

Pollina'rium, pl. Pollina'ria (pollen, fine flour), (1) = An'droecium; (2) = Cyntidium.

Pollina'rius (Lat.), pertaining to fine flour; pollino'sus, as though dusted with pollen.

Poll'mate (pollen, fine flour), to apply pollen to the receptive surface of the female organ; pol'limated, pollina'tus, when a stigma is supplied with pollen; Pol'lination, the placing of the pollen on the stigma or stigmatic surface; lat'er al, ~, cf. Pleuro-tri bal; o'ver ~ cf. Nototri bal; un'der ~, cf. Sternotri bal; pollin'ic Chamb'er = Pol'len-Chamber; pollin'icus, composed of or bearing some relation to pollen; Pol'inide, a single antheridial corpuscle (Siridot; Pol'linium, pl. Pollin'ia, a body composed of all the pollen-grains of an anther-loculus, a pollen-mass; Pol'liniza'tion = Pol'lination; Pol'linoid, in Ascomycetes, a male sexual organ which conjugates with a female organ, directly or by outgrowth; Pol'linoids (élos, resemblance), naked motionless masses of protoplasm, spherical or elongated, sometimes beaked, acting in the place of antherozoids in Florideae.

Polot'ropism (πόλος, a pivot; τροπή, a turning), the tendency to direct proximal or distal extremities to the same point or pole (Vöchting).

Pol'verine (Ital., polverino), calcined ash of a soda-yielding plant.

Polyadel'phi a (πολύς, many; ἀδέλφος, a brother), a Linnean artificial class with stamens grouped into several brotherhoods or bundles; adj. polyadel'phous, polyadel'phian; poly-
polyadenous

ad' enous (ἀδήνα, a gland), with many glands; Pol'yam, a phylogenetic transition form (Correns); Polyandria (ἄνδρα, ἄνδρος, a man), a Linnean class of plants possessing many stamens in each flower; polyandri'an, polyand'rous, having an indefinite number of stamens; Polyand'ry, the state of having many stamens; polyan'thous, -anthus (ἄνθος, a flower), having many flowers, particularly if within the same involucre; polyarch (ἄρχη, beginning), when a stele possesses many protoxylem groups; polyar'ni'us, (ἄρνης, male), Necker's term for polyan'drous; Polyas'ter (+aster), when several centres exist in a cell, united by spindles (Hartog); poliax'ial (+αξιαλ), used of an inflorescence in which the flowers are borne on secondary, tertiary, etc., branches; polyblas'tus (βλαστός, a bud), Koever's term for those Lichens which have polyseptate spores; polycam'-arus (καμάρα, a vault) = polyca'reptic; polycarpel'ary (Carpellum), of many carpels, free or united; polycar'pic, polycar'picous (καρπός, fruit), fruiting many times, indefinitely; used by De Candolle to denote a perennial herb; polycar'pous, -pus, (1) = polycarpic; (2) of a flower in which the gynaecium forms two or more distinct ovaries; cf. monocarpic; polycarp'halous, -halus (κεφαλή, a head), bearing many heads or capitula; polycarp'hal'iflora, (κεφαληφόμενα, Pili, are, hairs divided at the end into several arms (Lindley); polychlor'is, an error for polychoryis; Polychor'oion † Polychorion'ides †, Polichor'is (χόροις, folial cornch), synonyms for Etar'io; Polycho'r'ite (χόρος, colour, complexion), the yellow colouring matter of saffron; Polychroma'tism (χρώμα, colour), variation of colour or tint in the same corolla (Lindman); adj. polychro'mat'ic, having various colours in the same organ; Poly'chrome, a substance occurring in the bark of the Horse-chestnut which gives rise to varying colours; polychron'ic (χρόνος, time), arising at two or more times (Clements); polyci'l'iate (+ciliate) having numerous cilia; Polycladia, Polyclad'y (κλάδος, a branch), plica, a supernumerary development of branches and leaves; adj. polyclad'-eous; Polyco'lymus, Polycly'ny (κλαύν, a branch), a synonym of Polycladia; polycoc'cous, -cus (κόκκος, a kernel), having many cocci; polycorm'ic (κορμός, a trunk), expressive of such trees as the fastigate Irish yew, which has a number of erect radial axes (A. H. Burt); Polycotyle'don, pl. Polycotyle'dones (+cylotylosed), a plant which has several cotyledons, or when the seed leaves are so divided as to appear many; adj. polycyte'ol'deous; Polycy'te'dony, an increased number of the cotyledons, more than two; polycy'clic (κύκλος, a circle), when the members of a-series, such as a calyx, or corolla, are in several circles; Poly'cyst, the condition of a stem which possesses accessory vascular strands besides the principal cylinder (Tansley); polycys'tic (κύστις, a bag), composed of several cells (Baillon); Polycyst'in, pigment from Polycystis Flas-aquae, allied to carotin (Zopf); polydelman'ous = polydalm'ous (Crozier); polyde'mic (δύμος, district) occurring in more than one formation or natural district (Clements); Poly'derm (δέρμα, skin), a tissue composed of endodermal and parenchymatous cells, forming the endomere layers of the central cylinders (Mylius); polyem'brane († Embryo), having more than one embryo in a seed; Polyem'bryony, the production of more than a single embryo in an ovule; adj. polyem'brony'ic; poly'er'gic, from polyergid'ic (πολυεργόν, work), used by Goebel of the Vasculars; polyflor'ous, -rus (φλορις, a flower), a barbarism for multiflorous or polyanthous; Polygam'ia, a Linnean class containing plants with polygamous flowers;
polygam'ian = POLYGAMOUS; polyg'amous (γάμος, marriage), with
hermaphrodite and unisexual flowers
on the same, or on different indi-
viduals of the same species;
Polyg'amy, the condition described;
polygamodioe'cious, dioeciously
polygamous (Crozier); Polygen'esis
(γένεσις, origin), Clement’s term for
POLYPHYLIESIS, multiple origin;
Polyg'eny (γένος, race), Huxley’s
term for POLYPHYLIESIS.
polygona'ceous, allied to, or resem-
bling the genus Polygonum; Poly-
gon'e'tum, a plant association of
that genus (Clements).
polygon'atus (πολύς, many; γόνον, a
knee), where the stem has many
polyg'on'us (γωνία, an angle),
multangular; polygyna'ceial (γυ-
ακεῖον, the women’s house), having
multiple fruits formed by the united
petals of many flowers; polygyn'ons,
polygyn'icus (γυνή, a woman), having
many distinct styles; Polygyn'ia, a
Linnean order of plants so constitu-
ted; Polyg'y'ny = POLYGAMY;
polyg'y'rus (γόρος, a circle), in several
whorls or circles.
Polyhed'ron, pl. Polyhed'ra (πολύεδρον,
a solid of many bases), a stage in
the growth of Hydrodictyon, when
the hypnosperm or resting spore
breaks up into several megazo-
ospores which put out horn-like ap-
pendages; these polyhedra break
up into zoospores.
polykar'ic (πολύς, many; κάρυν, a
nut), multinucleate; polylep'idos
(λεπίς, λεπίδος, a scale), having
many scales; polymer'ic, polym'er-
ous, -rus (μέρος, a part), with
numerous members to each series
or cycle; polymor'phic, polymor-
phous, -phus (μορφή, a change),
with several or various forms; vari-
able as to habit; Polymorph'ism,
displaying many diversities of form;
Polymor'phy, the existence of
more than one form of the same organ
on a plant; Polynye'rus (νευρίς, a
sinew), where the veins of a leaf,
especially the secondary veins, are
numerous; polynu'cleate (+ nu-
clete), having many nuclei; Poly-
oe'cism (οίκος, a house), the state of
plants whose flowers differ in sex
(Knuth); polyoi'cous, a combina-
tion of (a) AUTOICOUS, (b) HETE-
ROICous, or (c) SYNOCous, with
DIOCous Mosses; polyovula'tus
(+ Ovulum), furnished with many
ovules; polypet'alous, -lus (+ 
Petal), having several distinct
petals; polyph'agous (φαγός, a
glutton), used of Fungi occurring
on several or many species; Poly-
phore, Polyphor'ium (φορέω, I carry),
a torus with many pistils, as of a
strawberry; Polyphyle'sis (+ phy-
letic), descent from more than one
line of descent; adj. polyphylet'ic;
Polyphyll, an increase in the normal
number of organs in a whorl;
polyphyl'ious (φυλλον, a leaf),
having many leaves; Polyphyl'y =
Phylomania; Polyphylog'eny (+ phy-
logeny), lineage through several
lines; Pol'yplast (πλαστός, moulded),
(1) a group of monoplasts which
are the organic elements of pro-
toplasm (Vogt); (2) the multicellular
stage of the embryo, before the dif-
ferentiation of cell-layers or organs
in Mosses, Ferns, etc. (Parker);
polyplas'tic, applied to septate
spores.
polypod'a'ceous, allied to or resem-
bling the genus Polypodium.
polyp'o'roid, polyp'orous, relating to
the fungus genus Polyporus.
polyrhi'zal, polyrhi'zous (πολύς, many;
ρίζα, a root), (1) having numerous
rootlets; (2) where parasites have
many distinct rootlets apart from
their haustoria; Polysapro'bia, pl.
(σαπρός, rotten), organisms which
are adapted to live in foul water
(Kolkwitz); Polysar'ca (σάρκα, σαρκός,
flesh), an unnatural growth due to
excess of nutriment; Polysce'us (+
σχέος, a stall), Desvaux’s term for
an Etærio as in Magnolia; poly-
sep'alous, -lus, (+ Sepal), with
many distinct sepals; poly'phi-
noun's (σφων, a tube), applied to a
filament of several coherent longitudinal rows of cells; **polyspermal, polyspermatous, polyspermous**, -mus (σπέρμα, a seed), when a pericarp has numerous seeds; **polysporangiate** (+ **sporangium**), having many sporangia; **Polyspora** (σπορά, a seed), a multicellular spore composed of **merispores** (Bennett and Murray); **polyspored = polysporous**; **polysporous**, containing many spores, used of Cryptogams, as in asci when more than four or eight spores occur; **polystachous** (Crozier) = **polystachyous** (στέχυς, a spike), having many spikes; **polystelic, polystelous** (+ **stelie**), with more than one plectron strand at the growing point, so that the stem has more than one stеле, as in **Gunnera**; **Polystele'y**, the condition specified; adj. **polystelic; polystelous, -lus (στήλως, a filament),** having many stamens, polyandrous.

**polystichous** (πολύστιχος, in many lines), when leaves are borne in many series, as the leaf-scars in **Caulopteris**.

**polystigmus** (πολύστιγμος, many, + **stigma**), with many carpels, each originating a stigma; **polystigmonous, -mus (στήγας, a mouth),** many-mouthed, with numerous suckers or haustoria; **polystromatic (+ stroma), possessing many stomata; polystylous, -lus (+ **style**), with several styles; **polysymmetrical** (αὐσμετρικά, apt proportion), having bilateral symmetry in more planes than one, actinomorphic; **polytaxic** (τάξις, order), a character varying in a discontinuous manner (Coutagne); **polythalamic** (θάλαμος, a bed-chamber), (1) having more than one female flower within the involucre; (2) derived from more than one flower, as a collective fruit; **polythelious** (θηλίος, a nipple), used of a flower which contains several distinct ovaries; **polytostenous, -cus, (τόκος, a birth),** fruiting year after year, caulocarpous; **polystemonous,** -mus (τομή, a cutting), apparently pinnate, but the pinnae not articulated to the common petiole; **Polytomy**, (1) in an inflorescence, having more axes than in dichotomy; (2) a false pinnation; **polytopic** (τόπος, a place) applied to species supposed to be of independent origin in more than one place.

**polytrichaceous, resembling or akin to Polytrichum**; **Polytrichetum**, a formation of the genus **Polytrichum**; **polytrichous**, employed by Nilsson, when the ground under heather is carpeted with mosses.

**polytrichous** (πολύτριχος, many; **θρίχη, τρίχης, a hair),** having many hairs; **polytrophic** (πολυτροφός, food), obtaining food from a wide area of selection (Jones); **polytrophic**, Loew's term for bees which visit a wide circle of flowers; **Polytropism** (πολυτροπία, a twinning), Archangeli's term when leaves place their lamina vertically and meridionally, the two surfaces facing east and west; **polytypic** (τύπος, a type), applied to a genus having several species; **Polyxenous** (τυχόν, a guest), = **pleiixenous**; **Polyzygo'sis** (πολύγος, a yoke), the conjugation of more than two gametes (Crozier).

**poma'ceous** (πομα'κος), a fruit, + **aceous**, relating to apples; **poma'ceus**, (lat.), apple-green (Hayne); **Pome**, **Po'mum**, an inferior fruit of several cells, of which the apple is the type.

**pomeridia'num** (lat.), in the afternoon.

**pomiferous** **po'mifer** (πομή, a fruit; **fero, I bear),** pome-bearing; **po'miform, pomiform'is** (forma, shape), shaped like an apple; **Pomology**, **Pomolo'gia** (λόγος, discourse), the science of edible cultivated fruits.

**Pomo'na**, an account of the fruits cultivated in any given district or country; the name is mythological.

**pon'tic**, belonging to the ancient Pontus, (1) the Black Sea; (2) a north-eastern province of Asia Minor.
Ponti'um (πόρος, the sea), a deep sea formation; pontoph'ilus (φιλέω, I love), dwelling in the deep sea; Pontoph'yta (φυτόν, a plant), deep-sea plants (Clements).

poo'c'ola (πόα, grass, meadow; κόλο, I inhabit); pooph'ilous, pooph'ilus (φιλέω, I love), meadow-loving plants which consort with grasses (Pound and Clements); Pooph'yta (φυτόν, a plant), meadow plants (Clements); Po'phyte, a plant inhabiting meadows; adj. poophyt'ic, pratal.

popu'leus, the blackish-green of poplar leaves, Populus nigra; Po'pulin, a crystallisable substance from the bark of the aspen, Populus tremula, Linn.

poranc'drous (πόρος, a passage; ἀνήρ, ἀνδρός, a man), when the anthers open by pores.

porca'tus (porca, a ridge), ridged; employed by Lemaire.

Pore, Po'rus (πόρος, passage), (1) any small aperture, as in anthers, for the emission of pollen in the pollen grains themselves, in the epidermis as stomata or water-pores; (2) in Poly-porus, any of the tube-like openings, forming the hymenium; (3) large pitted vessels or tracheids in wood; (4) an opening in the prickles of Victoria regia; (5) cavities in soils not occupied by solid substances (Warming);

Pores, air = (1) STOMATA; (2) Pneumathodes; ~, bordered, in Sphagnum, the opening surrounded by a distinct thickened ring; Fore Canal', the passage through a pit between neighbouring cells; ~ Cap'sule, a capsule dehiscing by pores, as in the poppy; ~ Cir'cle, the zone in the annual rings of certain trees, such as an oak which displays numerous tracheids; ~ Cork, cork-cells in lenticels with intercellular spaces between them (Klebahn); ~ Pas'sage, the stomatic passage between the inner and outer cavities; ~ Space, ~ Vol'ume, the sum of the spaces in soils not taken up by solid particles; ~ a'pical ~, cf.}

Hydathodes; cor'tical ~, = Len-ticel; Porenc'hyma (ἐγκυμία, an infusion), tissue of elongated cells, and apparently pierced by pores; pitted tissue; porici'dal (ceelo, cecidi, to cut), applied to anthers which open by pores, porandrous; pori-form (forma, shape), like a pore (Leighton); Poro'gams (γάμος, marriage), phanerogamous plants which are fertilised by way of the chalaza instead of the micropyle (Treub); Porog'amy, the condition described; adj. porog'amous; Por'o'ids (έλθος, resemblance), small circular dots in the cell-wall of Diatoms resembling pores (O. Muller); Porom'eter (μέτρον, a measure), an instrument to measure the dimensions of stomata; por'o'se, por'o'sus; por'o'us, pierced with small holes; ~ Ves'sels, pitted or dotted vessels.

porphy'reus (πορφύρες, purple), purple in colour, purpureus; porphyroleu'cus (λευκός, white), light, purple.

porra'ceous, porra'ceus (Lat.), leek-green.

porrect', porrec'tus (Lat., stretched out), directed outward and forward; cf. arrect.

por'us (Lat.), somewhat porous.

Por'us = Pore.

positive, the absolute or effective condition, opposed to negative, and prefixed for emphasis to such terms as Geotropism, Heliotropism, Hydrotropism, etc.

postcarpotrop'ic (post, after, + CARPO-TROPIC), curvature of the peduncle at the maturation of fruit to help in dissemination; postcotyle'donary (+ Cotyledon), after the development of the seed-leaves.

Pos'teriform (posterus, last, + Form), the late derivative of an ancestral form (Kuntze).

poste'rior (Lat., coming after), (1) next or towards the main axis, superior; the reverse of ANTERIOR; (2) in anthers = EXTROSE.

Postfertiliza'tion (post, after, + Fertilization), the processes from fertilization of the ovule to its maturation;
Postfloration (flores, flower), persistence of the floral envelopes after flowering (Lindman); postgenital (genitalis, pertaining to birth), refers to structures or characters which appear subsequent to birth, as contrasted with congenital (Worsdell).

post'ical, post'i'cous, post'i'cus (Lat., that which is behind), on the posterior side, next the axis; extorse; Spruce and others use “postical” for the ventral or rooting face of the stem of Hepaticae.

postmeio'tic (posti, after, + MEMOTIC), after reducing divisions in karyokinesis (Farmer); Post-phyl'lobe (φύλλον, a leaf), Potonie's term for leaves; Postreduction (+ REDUCTION), a reduction occurring in the metaphase of the second mitosis (Moreau); Post-spor'ophyll (+ SPOROPHYLL); Postsynapsis (SYNAPSID), the processes of nuclear division succeeding the contraction known as synapsis; adj. postsynap'tic; Post-troph'ophyll (TROPHOPHYLL); Post-trophospor'ophyll (+ SPOROPHYLL); these two and the last but one are similar refinements by the same author; refer to Sporophyll, etc.; postventitious, -tius (post, after; venio, I come), applied to growths which arise subsequent to their normal time; cf. PREVENTITIOUS.

Pot'amad (ποταμός, a river, + AD), a river plant (Clements); Potami'um, a river formation.

Potamogetone'tum, a formation of species belonging to the genus Potamogoton.

Potamoph'lus (ποταμός, a river; φύλλον, I love), river-lying (Clements); Potamoplank'ton (+ PLANKTON), the floating vegetation of inland waters; Potamophy'ta (φυτόν, a plant), river plants (Clements).

poten'tial (potentia, force, existing in possibility, not in action; used in opposition to KINETIC; ~ Gam'etophyte, one which is functionally asexual; ~ Par'asite, a saprophyte which can live equally as a parasite; ~ Sap'rophyte, a parasite capable of existing as a saprophyte.

Potetom'er (ποτής, a drink; μέτρον, a measure), apparatus for measuring the amount of water given off by the leaves of plants (Moll); Poto'meter, (1) a similar instrument for measuring the flow of liquids in tissues (F. Darwin); (2) for measuring absorption (Clements).

Pottia'ceous, allied to the moss Pottiaceae; pott'ioid (elbos, likeness), resembling the genus Pottiaceae.

Pouch = SHICLE; ~ shaped, hollow and bag-like, as the spur in many Orchids; digestive ~; used by Van Tieghem and Douliot for the root-cap of the lateral roots of Leguminosae and Cucurbitaceae.

Powder-seed, minute seeds or spores (Ridley).

pow'dery, covered with a fine bloom, as the leaves of Primula farinosa, Linn.; ~ Mil'dew, a destructive disease of the vine, due to Uncinula spiralis; the conidial stage is known as Oidium Tuckeri.

pra-, or pre- (praes, before), expresses priority in time or place.

prae'cox (Lat., early ripe), appearing or developing early; precocious.

Praeflora'tion (praefloratio, blossoming before time) = AESTIVATION.

Praefoliation (praes, before; folium, a leaf = VERNATION; Prae'form (+ FORM), an early form, the original ancestral strain (Kuntze); Prae'forms, in Rosa, PERFORMS with glandular teeth (Almqvist).

praes'morse, praes'morous (Lat., bitten at the end), as though the end were bitten off.

Praemuta'tion (prae, before, + MUTATION); the inner preparation of a plant, for the outward manifestation; Mutation (De Vries).

praero'sus (Lat.), apparently gnawed off.

praesus'tus (Lat., burned at the end), looking as if scorched.

prasinous, pras'inus (Lat.), grass-green, leek-green.
+

;

primary

pratal

premeiot'ic (?Jre, before, -f meiotic),
previous to reducing divisions in
karyokinesis.
praemorse.
premorse' (Crozier)
potentia,
Prepo'tency {pre, before
power), the quality by which certain
pollen fertilizes a given pistil, in
Prerepreference to other pollen
duc'tion (-f Reduction), a reduction occurring in metaphase of first
mitosis (Moreau).
Presenta'tion {praesentatio, a placing
before) Time, the period required for
an organ to take up perception

a meadow), H. C.
Watson's term for those p^^^^^^
which grow in meadows or luxupraten'sis (Lat.),
riant herbage
growing in meadows, or pertaining
thereto; Pra'tum (Lat), meadow,
the dominant plants are herbaceous

pra'tal {pratum,

=

;

;

and the vegetation closed.
AeciPreaecid'iospore {pre, before,
diospore), the trichogyne of certain
authors (Moreau) Preaecid'ium (
Aecidium), young caeoma, a sorus
which precedes the aecidium in

;

+

;

Uredine Fungi (Moreau) praeangiosper'mous (+ Angiospeem), existing before the Angiosperms came
into being Preang'iosperms, early
forms of plants previous to the
evolution of plants with closed
preclepsy'droid (+ Clepovaries
sydroid), the early state of the leaf
;

(Macdougal).
Pres'sure {pressura, a pressing), stress
or distributed force causing turgor
or compression root~, pressure existing in the root- tissues tending to
cause the rise of liquid in the stem.
Presynap'sis {pre, before, -f Synapsis),
the condition of nuclear division
before the stage known as synapsis
preventit'ious
presynap'tic
adj.
{venio, I come) Buds, dormant eyes,
present on any given portion of the
which produce epicormic
stem,
branches (Hartig) ; prever'nal {vernalis, of the spring), early spring

;

;

;

trace in Ophioglossaceae (Lang).
Pre-bract'eole {pre, before, + Bracteole), the sub-sporal bract in
Chara ; it may be restricted to a

;

;

single swollen cell (Allen).
preoator'iuB(Lat., relating to petitioning), used for a rosary, as the seeds
/- contex'tus, necklaceof Ahrus
shaped, moniliform.
pre'cius (Lat.), preco'cious=PRAEcox.
;

flowering.

Prickle, outgrowths of the rind or
prickly,
bark, as those of the rose
armed with prickles.
pri'mary, prima'rhis (Lat., cliief), (1)
used of the part first developed
(2) the main divisions of a leaf or
umbel '- Ax'is, the main stem

conspicuous"

"very
predom'inant,
(Braithwaite) in excess (Leighton).

;

;

+

FertilPrefertiliza'tion
ization), the early state of an ovule
as far as completed pollination
{jpi-e,

Preflora'tion
Prefolia'tion

=
=

before,

Praefloration
Praefoliation

;

;

;

'~
;

Prefonna'tion {foi-moUio, a shaptheory of the function of
germ-plasm, a complex substance
whose ultimate factors direct the
vital activities of the cell, and
Preresultant form of the plant
liau8tor'iTun(-l-HAUSTORiUM), papillate epidermal cells of Cuscuta, by
which nutriment is obtained before
the formation of haustoria (Peirce).
prehen'sile {prehensio, a seizing) Type,
ing), the

;

those flowers whose insect visitors
grasp the style and stamens so as
to cover their breasts with pollen
and so efifect crossing (Delpino).

301

;

consists

Bast,

of

sieve tissues
Cor'tex, the

-'
and parenchyma
Periblem -^ Des'mogen, = Procambium -^ Lamella, of a spore,
;

;

;

the outermost layer of its coats,
wall
original
representing the
'- Lay'er, see " tapetal cell " (infra)
-^
Leaves, the primordial leaves;
is

;

;

Meg'aspore, megaspore mothercell, the early stage of the embryo<- Mem'bers, the primary shoot
sac
-^

;

and root

;

<-'

cell- wall

;

-^

Mem'brane, the first (?)
Merlstem, the embry-

-^
onic tissue of a young organ
Petiole, the main rhachis of a com;

pound leaf

;

--

Phlo'em

=

~ Bast

;


<table>
<thead>
<tr>
<th><strong>Procarp</strong></th>
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<tbody>
<tr>
<td>~ Root, the main root developed from the radicle; ~ Shoot, the main stem developed from the plumule; ~ Structure, a nascent organ, as of root or shoot; ~ Suspensor, the filamentous row of cells preceding the actual embryological divisions, the early stage being the pro-embryo; ~ tape'tal Cell, or Lay'er, the source whence the tapetum is formed by bipartition of a cell or layer of periblem; the other part of the division becoming the archesporium; Tis'sue, (a) that first formed or (b) formed during the first season's growth; ~ Wood, the wood developed by the procambium.</td>
</tr>
</tbody>
</table>

| **Primigen'ius** (Lat., first produced) = PRIMITIVUS. |
| **Pri'mine, Pri'mina (primus, first),** the outer integument of an ovule. |

| **Primi'tive, primi'ti'us** (Lat., first of its kind), applied to the part first developed; specific types, in contrast to varieties and hybrids; ~ Wall, a boundary between the ooplasma and periplasm of the oosphere in Cystopus Biliti, De Bary (Stevens). |

| **Primofilice.pl** (primo, at first, filix, a fern) a group of Fern-like plants, presumed to be the progenitors of the true Ferns (Arber). |

| **Primor'dia, pl. of Primor'dium (Lat., the beginning), a member or organ in its earliest condition; the German "Anlage"; primor'dial, pri-mordia'lis, first in order of appearance; ~ Cell, a naked cell, one without a cell-wall; ~ Epider'mis, the epidermis when the first formed; ~ Leaf, an intermediate form between the cotyledon and those of the adult plant produced by growth from the plumule; ~ Tis'sue, ground tissue; ~ U'tricule, the outer layer of cell-protoplasm lining the inner surface of a vacuolated cell; by some considered the same as Ectoplasma. |

| **Primospore** (primus, first; σπορα, a seed), term proposed by C. MacMillan for those cases in which the spore is but little differentiated from an ordinary cell of the parent organism. |

| **Primule'tum, Clements's term for an association of Primula.** |

| **pr'o:r (Lat., earlier), cited by Clements for "earlier, used of alpine aspects."** |

| **prismatic, prismatic'icus** (Lat., like a prism); ~ Lay'er, Farmer's term for a layer of cells in Isoetes surrounding the xylem cylinder (Campbell); prism-shaped, with flat faces separated by angles; Prismench'yma (ψυχημα, an infusion), prismatic cellular tissue. |

| **Pris'on Flow'ers**, those which imprison their insect-visitors until fertilization is effected. |

| **Proan'giosperms (pro, for, + ANGIO-sperm),** an Angiosperm in the act of becoming so from some ancestral form (Saporta and Marion); Pro-angiosper'my, the state in question. |

| **Proanthes'is (πρό, early; ἀνθησις, flowering),** flowering in advance of the normal period, as some flowers appearing in autumn in advance of the ensuing spring (Pax); Pro-antho-strob'ilus (+ ANTHOSTROBILUS), the flower of the hypothetic ancestors of the Angiosperms (Arber and Parkin). |

| **Prob'able Er'ror, see Deviation, prob'able.** |

| **Probas'id (pro, for, + Basidium), Van Tieghem's term for an organ intermediate between a basidium and a sporophore in Basidiomycetes, bearing a telentospor.** |

| **probosc'id'us (proboscis, a snout), having a large terminal horn, as the fruit of Martynia.** |

| **Procam'biun (pro, for, + CAMBIUM), the embryonic tissue, consisting of somewhat elongated cells, from which the vascular tissue is eventually formed); Pro'carp, Procar'pium (καρπος, fruit), an archicarp with a special receptive organ, the trichogyne. |
proce'rus (Lat.), very tall, as a tree.
Pro'cess, Proces'sus (Lat., a pro- lagation), any projecting appendage, Proces'sus Hymen'ii, "the aciculae of certain Fungas" (Lindley); see also BANDS, in fruit of Zostera minor.

Prochos'i'um (πρόχωρος, a deposition of mud), a succession in an alluvial soil (Clements, 1905).

Prochro'matin (pro, for, + Chroma'tin), the substance of nucleoli (Pfitzer); Prochro'mogen (+ Chromogen), Palladin's name for the form in which chromogens appear in the cell; in conjunction with an enzyme it becomes a chromogen; Prochro'mosome (+ Chromosome), a definite collection of chromatin granules in somatic and germ cells, corresponding to, but smaller than, chromosomes (Overton).

procrastina'tus (Lat.), deferred; cf. Septio.

procum'bent, procum'bens (Lat., leaning forward), lying along the ground.

Prodophyi'tium (πρόδοδος, a pioneer; φυτόν, a plant), an initial formation (Clements).

Prod'romus (Lat., a forerunner), frequently employed in botanic works, which are intended should be followed by more complete treatises.

Prod'ucts (productus, brought forth), substances resulting from metabolism or chemical changes in plants.

Pro'duct'tum ‡ (productus, lengthened) = CALCAR.

Pro-em'bryo (pro, for, + Embryo), (1) in Characeae, the product of the oospore, upon which the Chara-plant develops as a lateral bud; (2) in Archeogniatae the product of the oospore before differentiation of the embryo; (3) ‡ the youngest thallus of a Lichen; proem'bronyon'ic, relating to a pro-embryo, as the ~ Branch in Chara, a propagative body having the structure of a pro-embryo arising from a node of the stem.

prob'minens (Lat., projecting), used of an unusually extended part.

Profer'ment (pro, for, fermentum, leaven) = ZYMogene; Pro'file-ile, of leaves, when turned edgewise to strong light (Warming); progam'- etal (+ Gamete), of the nature of a Progam'ete, a cell which divides to form gametes, or occasionally passes into a gamete (Hartog);

Progam'etange, Progametan'gium (ἀναγεννώμενος, a vessel), resting bodies in Protomyces macrosporus, Unger; progam'ic (Hartog), progam'ous, in advance of fertilization; the sex fixed before fertilization (Correns); ~ Cell, a cell formed in the pollen-grain which has the sperm-nucleus (Goebel); Progameta'tion, employed by Maire to denote the act of synkaryons becoming progametes;

Progamet'ophyte (φυτόν, a plant), the plant which produces progametes (Maire); Progemma'tion (+ Gem-mation), when stylospores are given off from basidia, new terminal cells being developed from older or basal cells (Nylander); progeoeos'thetic (γῆ, earth; αἰσθητικός, perceptible), applied to the root-tip when tending downwards.

progred'iens (Lat., advancing), extending at one part, and dying in the rear.

Progress'ion (progressus, an advance), the evolution of an inflorescence by progressive expansion, in sequence of development (Guillard); progress'ive, advancing; ~ Metamorph'o'sis, the appearance of organs in an ascending scale, as when petals are replaced by stamens; opposed to retrogressive Metamorphosis.

Progym'nosperms (pro, for, + Gymnosperm), prototypic Gymnosperms, as Bennettites (Saporta-and Marion); Pro-Heap'tic (+ Ἑπατικός), a hypothetic original thalloid state of the higher plants (Lignier); Prohydrotro'pism (+ Hydrotropism), turning towards a source of moisture (Macdougal); adj. prohydro'tropic.

Pro-Ly'co pod (+ Lycopod), a hypo-
thetic ancestor of vascular plants, itself derived from the Pro-Hepatic form (Lignier).

Proios'pory = Propory.

Projectu'ra (Lat., a jutting out), a small longitudinal projection on some stems where the leaf originates;

Prokaryogam'ete (κάρπων, a nut, = nucleus; γάμος, marriage), the nucleus of a primary progamete (Maire);

Prokaryogametisa'tion, quantitative reduction (Maire).

Prokine'sis (πτωσις, before; κίνησις, a moving), the early stage of nuclear division, up to the Aster.

pro'late (prolatus, a bringing forward), drawn out towards the poles.

Prole (Crozier), = Pro'les (Lat., offspring), (1) progeny; (2) sometimes used for race; (3) † the species.

Prole'pa'sis (προλατησις, anticipation), (1) a foreshadowing, something of anticipation; (2) "hurried development as in the disease known as 'peach-yellows' where axillary buds develop into branches the first year" (Crozier); prolep'tic, anticipatory; prolep'ticus (Lat.), used by Wimmer instead of praecox.

Proleta'rian (proletarius, a citizen of the poorest class), a name suggested by M'Leod to denote plants having only a small reserve, and self-fertilized; cf. CAPITALIST.

proli'fer, prolif'erus, prolif'erous (proles, offspring; fero, I bear), bearing progeny as offshoots; Prolifer'a'tion, Prolifera'tio, development prolificously; prolif'ic, prolif'erous (M. Lat., producing offspring), fruitful, fertile; ~ Cells, reproductive cells (Wittrock); prolif'ed, grown out into proliferation, as a tuft of leaves from a cone; Prolifica'tion, the production of terminal or lateral leaf-buds in a flower; prolig'erous, -rus (fero, I bear), prolific, in Lichens applied to the spore-bearing portion of the apothecium (J. S. Henslow); cf. LAMINA PROLIGERA.

prometa'trop'ic (πρόθετο, before; μέτα, from; τόστρο, a turning), in crossing, when the interchange is between the plants, the pollen of one going to the other, but the pollen not from anthers associated with the ovaries fertilized (K. Pearson).

prom'inent, prom'inens (Lat., jutting out), standing out beyond some other part.

Promito'sis (πρόθεσις, before, + Mitosis), simple or "dumb-bell" nuclear division in Gymnadeniurn.

Promyce'le (Promyce'lium (pro, for, + Mycelium), the short-lived product of tube-germination of a spore, which abjoints a few spores unlike the mother-spore, and then perishes; promyce'lium, relating to a promyceliwn; ~ Spores, those generated in asc (Cooke); the Sporidia of continental mycologists (Plowright).

pro'nate, "inclined to grow prostrate" (Crozier).

prone, pro'nuus (Lat., leaning forward), lying flat, especially the upper face downward.

Prong-cells, parenchymatous cells of a special form, containing silica bodies.

Pronu'cleus (pro, for, + Nucleus), the nucleus of a conjugating gamete, which on coalescing with another pronucleus forms the germ-nucleus.

Proodophy'tia (προδοφυτία, in advance; φυτή, a plant), initial plant formations (Clements).

Pro-Ophiogloss'um, an assumed ancestral form of Ophioglossum (Campbell).

Prop, used by Withering for Stipule; ~ -roots, the aerial roots of Rhizophora.

propaculifer'ous; Propaculum, errors for propaguliferous; Propagul'um.

prop'a'gative (propago, a set or layer), tending to increase by asexually produced growths, as gemmae, soredia, etc.; propagaculiferous (fero, I bear), bearing off-sets, as Scenipervivum.

Propa'gulum (dim. of propago, a set or layer), (1) an off-set; (2) in Lichens, the powdery organs which constitute the Soredia; Propa'go, pl. Propa'gines, (1) a bulblet; (2) the branch bent down for layering.
propendent, propen'dens (Lat.), ranging down.

proper, true, or correctly understood;
~ Juice, any characteristic "fluid" of a plant, as the "milk" of lettuce, etc.; ~ Valves = Spathe-valves.

Properim'eristem (pro, for, + Peri-meristem), a synonym of Peri-meristem.

Proph'asis, pl. Proph'assas (πρόδ', before; φάνας, an appearance), the changes in the mother-nucleus previous to division, including the formation of the nuclear plate and the longitudinal division of the chromosomes; Prophlo'ém (+ Phloem), (1) Proto-phloem; (2) the cylinder of elongated cells with thickened walls, occurring in the seta of some Mosses round the protoxylem; prophototac'tic (τακτικός, arranging), turning towards light (Macdougal); the condition itself is Prophototaxis; Prophotot'o-ropism (πρόπτωρ, turning), moving towards the centre of the radiating light (Macdougal); Pro'phyll, bracteole, cf. Prophyllum; Pro'phyllum (φύλλο, a leaf), the bracteole at the base of an individual flower, in German "Vorblatt"; prophylla'tus, provided with prophylla; prophyl'laid (εἶδος, resemblance), like prophylla.

Proph'yasis = Proph'yasis.

Prophy'togams (πρόδ', before; φυτόν, a plant; γάμος, marriage), Focke's proposed name for vascular Cryptogams.

proprious (Lat., special, peculiar), partial.

pros- (πρός, towards), employed to denote positive phenomena by Rothert, as in the four following terms:—Prosaerota'tics (+ Aerotaxis), the stimulus of oxygen on the movement of zoospores and other motile organisms; pros'chairsilmet'ic (χαιρεσίμη, I rejoice; λίμνη, a pool), occasionally belonging to Limno-plankton (Forel); Proschemo'taxis + Chemotaxis), attraction by certain substances, shown by bacteria, antherozoids, etc.; adj. proschemo-
tactic; Proscol'la (κόλλα, glue), a viscid gland on the upper side of the stigma of Orchids, to which the pollen-masses become attached, the Retinaculum; Prosem'bryum (ἐμβρύο, an embryo), = Perispem'mium; Prosen'chyma (ιγκυμα, an infusion), tissue of lengthened cells with tapering ends which overlap; adj. prosen'chymatous; Prose'nt'hesis (ένθεσις, a putting in), when whorled flowers have a gap between two successive whorls; generally the divergence of this gap is greater than that of the whorl; if less, it is negative Prosent'hesis (Eichler); Prosgalvanotax'is = Galvanotaxis; prosgeotrop'ic (+ geotropic), the positive influence of gravity on organs during growth; the condition is Prosgo'tropism; prosheliotrop'ic (+ heliotropic), turning towards the source of light; the state is Prosheliotropism; Proshade'taxis (+ hydrotaxis), negative osmotaxis; Pros'plasm (πλάσμα, moulded), used of pathologic tissues caused by parasites as in galls (Trotter); adj. prosplast'ic; Pros'plas'y = Hypertrophy; Prosmo'taxis (+ osmotaxis), movement of motile organisms in consequence of the influence of fluids; Prosphtotax'is (+ Phototaxis), definite arrangement as the result of the action of light on organisms capable of response; Pros'physes (φύσις, growth), "abortive pistillidia of the muscal alliance" (Lindley); Prosp'lectench'yma (+ Plecten-chyma), a modification of hyphal tissue (Lindan).

Prosporan'gium (πρόδ', for; σπορά, a seed; ἀγγείον, a vessel), (1) in Chytridaceae, etc., a vesicular cell whose protoplasm passes into an outgrowth of itself, the sporangium, and then divides into swarm-spores; (2) in Phaeosporaceae, an early formed sporangium, formed of a layer of the filament combined with an outgrowth (Kuckuck).

Pros'pory (πρώιός, precocious; σπορά,
a spore), abbreviated from Proiros-
pory), the precocious development of spores in certain Algae; Protody
(στάσις, steady), the early fruiting stage described above.

prostelic (πρόδω, for, + STELE), when an axis consists of a single concentric bundle (Jeffrey).

Prothermotaxis (πρόθεσ, near, + THERMOTAXIS), movement of bacteria or zoospores towards warmth;
Prothigmotaxis = THIGMOTAXIS.

prostrate, prostratus (Lat., thrown to the ground), lying flat.

Prostypus (πρόστυτος, embossed) = RAPHIS.

Protal'bumose (πρωτότος, first, + ALEU-
mose); one of the primary albumoses, soluble in hot or cold water;
protandrous (ἀνήρ, ἄνδρος, a man), the anthers mature before the pistils in the same flower; Protan'dry, the androecium ripening before the gynaecium, the pollen being dispersed before the pistils are receptive; Protanthe'sis (ἀνθώσις, flower-
ing), the normal first flower of an inflorescence (Guillard).

protea'ceous, relating to or resembling the order Proteaceae.

Pro'azines, pl., enzymes capable of acting upon proteid substances, both EREPHASES and PEPTASES (Vines).

Proteo'tive (protectio, a covering) Layer, in leaf-fall, a layer of cells becoming lignified, and then suber-
ised, the whole of the protoplasm being withdrawn; this layer forms the scar the leaf has fallen (Lee); Proteo'tive Sheath = ENDO-
dermis.

Pro'teid, (1) a group of albuminoids, more or less resembling albumen; with water, the group of proteids constitute the bulk of protoplasm; (2) used also for ~ Gran'ule or ~ Plas'tid; ~ Ba'sis, that portion of protoplasm which is not composed of granules, it is sometimes absent; ~ Cry'stal = CRYSTALLOID; ~ Gran'ules, reserve materials, or aleurone granules; ~ Vac'ules, nuclei of cells of the tapetal layer in Gymnosperms (Chamberlain).

Pro'tein,a group of complex nitrogenous substances, as NUCLEIN, etc.; adj. pro'teinic; ~ Cry'stal = CRYSTAL-
loaid; ~ Grain = ALEURONE GRAIN;
proteina'ceous (+ AEOUS), pertaining to protein, or composed of it.

Pro'teism (Proteus, a sea-god able to assume various shapes), the faculty of lower organisms of changing their shape, as in Flagellates, Myx-
omyces, etc. (Massart).

Pro'ten (Sachs) = PROTENCHYMA.

Protench'yma (πρωτός, first; ἐγχύμα, an infusion), fundamental or ground tissue; Protene'ma = Protonema, the filamentous embryo in Mosses.

Pro'teo-bacte'ria (PROTEID + BAC-
teria), organisms capable of transforming nitrogen compounds into protein (Lipman); Proteocfa'ction, the process named; Proteohydrol'ysis (+ HYDROLYSIS), the decomposition of proteids by hydrolysis; adj. pro'tehydrolytic.

pro'teoid (εἶδος, resemblance), applied by Vesque to leaves provided with sclerous cells, as in Protea.

Proteol'ysis (+ PROTEID, λύσις, a loosing), the breaking up of proteids by enzymes; proteolyt'ic (λυτικός, able to loose), decomposing proteids; ~ En'zyme, an unorganized ferment which is the active cause in breaking up proteids; Pro'teose, a soluble albuminoid found in gluten; Pro'teo-
somes (σώμα, a body), granular precipitations in the cells caused by the action of certain alkaloids, as caffeine; Proteosynthe'sis (συνθεσις, composition), building up proteids.

protan'drous (πρωτέρως, first; ἄνήρ, ἄνδρος, a man), the anthers ripe before the pistils in the same flower; protandrous, one kind of dichogamy (Delpino); Protan'dry, the condition described; proteran'thous, -thus (ἀνθός, a flower), where flowering precedes leafing, hysteranthous; proterog'yrous,-nus (γυνή, a woman),
proterogynous

when the pistils are receptive before the anthers have ripe pollen (Delpino); Protog'yn, the state described; protoperpet'alous (πέταλον, a flower leaf), the state of obdiplo-stemonous flowers, when the epipetalous whorl of stamens is the inner (Schumann); protosep'es'alous (+ Sepalum), as above, when the whorl in question is the outer; Pro'to-terotypes (τύπος, a type), primary types; all specimens which have served as the basis for descriptions and figures of organisms; further divided into Holotype, Cotype (or Syntype), Paratype, Lectotype, and Chirotyp e.

Prothall'aetae (πρόθαλλα, for; θάλαλος, a sprout), Haeckel’s term for Mosses and vascular Cryptogams; Prothal'liacells, in Cycads usually two, the second of which gives rise to the antheridial cell; ~ Tubes, embryo sac tubes (Pearson); prothall'iform (forma, shape), resembling a prothallus; prothal'line, prothal'loid (εἴδος, resemblance), pertaining to a prothallus, or resembling one; Pro-thali'ium, pl. Prothali'lia, Prothal'lus, a thalloid oophyte or its homologue resulting from the germination of a spore, usually a flattened leafy expansion and bearing sexual organs; bul'bous ~, a fleshy or tuberous form; expand’ed ~, a filamentous or flattened form (Farmer and Digby); Prothallog'ama (γάμος, marriage), Carl uel’s general term for the vascular Cryptogams; Prothal'logams, vascular Cryptogams.

protis'toid (Protista = Protophyta + Protozoa, from πρῶτος, the very first; εἴδος, resemblance), in cell-division, not influenced by the cells forming part of a complex multicellular body (Hartog).

Pro'toblast (πρωτόσατος, first; βλαστης, a bud), Baillon’s term for the cell before the formation of a cell-wall, the naked mass of protoplasm; Proto-caul'ome (+ Caulome), the first developed axis, frequently evanescent; Protochlor'ophyll (+ Chloro-

PHYLL), a pigment found in etiolated leaves with carotin and xanthophyll (Monteverde); Protoclorophy'lline, a product of reduction of the green principle of chlorophyll (Timiriazeff), cf. Protophylline; Protoc'home some (+ CHROMOSOME) in Hydrocybe, a variable number of chromatophile granulations which at the end of the prophase unite into two chromosomes (Maire).

protoooe'coid (εἴδος, resemblance), resembling the algal genus Proto-coccus.

Protocollench’yma (πρωτόσατος, first; + Collechnyma), the earliest formed elements of collenchyma; Proto-corm (κορμός, a trunk), (1) the tuber of Phylloglossum and other Lycopods, the only branch which develops into next year’s tuber; (2) extended to cover the whole embryo before the primary differentiation is complete (Lyon), cf. M eta-corm; adj. protooer’mal; Pro’toderm (δέρμα, skin), the rudimentary dermal tissue derived from the primary meristem of the apical region; Protoo'rch’aeta (δοξά, reception), primary successions of plants (Clements); Protoe'phyte (+ Ephyte), a plant which is primarily an epiphyte pure and simple; cf. Hemi-ephite; Protogamophy’ta (γάμος, marriage; φυτόν, a plant), a group of plants so named by C. Mc-Millan, without definition; Pro-tog‘amy, when gametes combine without fusion of the nuclei (Dangeard); Pro’togene (γένος, descent). K Pearson’s term for the dominant or A element in inheritance; cf. Allogen; Protogen’esis (γένεσις, a beginning), reproduction by budding; protogen’ic, protogenetic (γένος, race, offspring), in development, structures formed when tissues begin to differentiate; cf. Hypero-genic; Protogenid’ium (+ Goni-dium), the first generation of a succession of gonidia (A. Braun); Protograph (γραφω, I write), the original figure of a species or variety.
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| Prototroph | Protogynous (γυνή, a woman) = PROTEROGYNUS; Protogynum = PROTEROGYNYN; Prototrophadrome (+ Hadrome) = PROTOXYLEM; Protophelemicryptophytes (+ Hemicyryptophytes), plants whose aerial shoots have scales or undeveloped leaves at the base, and fully developed leaves towards the middle of the stem, as in Veronica, Epilobium, etc. (Raunkiaer); Prototep'tome (+ Leptom) = Protophloëm; Protolog (λόγος, a word), the original description of a genus, species, or variety (Schuchert); Protologys (λόγος, a loosing), decomposition of chlorophyll with dissociation of CO₂ under the influence of light (Wager); Protomeristem (+ Meristem), the meristem of the growing point forming the foundation of a member; Protomyec'tome (+ Mycelium), Eriksson's term for a plasmic mass formed between the cells of parasitic fungi as mycelial filaments or in the intercellular spaces; Protone'ma (νήμα, a thread), the confervoid or plate-like growth in the Mosses on which the conspicuous plant is developed as a lateral or terminal shoot; adj. protone'mal, also protone'matoid; ~ Em'bryo, of Cutleria multifida, Grev., a form of eml'ryo which reproduces the normal plant (Church); Pro'tonema = PROTONEMA; Protophloëm (+ Phloëm), the first-formed elements of bast in a vascular bundle; Protophyll, Protophyllum (φύλλον, a leaf), a leaf borne by a Proto'corm; a cotyledon or primordial leaf, especially used of a Cryptogam; Protophylline, Timiriazeff's alternative name for PROTOCHLOROPHYLLINE; Pro'tophyt = Protophyta (φυτόν, a plant), a plant of the sexual generation (Bower); Protophyte, pl. Protophy'ta, the simplest plants, the lower unicellular Cryptogams; Protophy'ti'a, applied by Clements to initial stages of succession in plant growths; adj. protophy'tic; Protophy'tology (λόγος, discourse) = Palaeobotany; Pro'toplasm, Protoplasm'ma (πρωτόσμα, moulded), the viscous living substance in plants, into which all nourishment is taken, and from which all parts are formed; various modifications of it have special names; Pro'toplast, the unit of protoplasm capable of individual action, a cell either with or without a wall (Hanstein); protoplasi'tic, used by Henfrey for PROTOPLASMIC; Protoplast'id, an individual or presumable primitive type; Protoplas'tin, Hanstein's term for a hypothetical substance, the ultimate source of vital movement and chemical combination; Protopteridophy'ta (+ Pteridophyta), a hypothetical primitive group of Pteridophytes, from which the known orders may be supposed to have been derived (Bower); Protopslerench'yma (+ Sclerenchyma), used for certain collenchyma which resemble true hard bast; the provisional collenchyma of Haberlandt; protosiphonog'amie (+ Siphonogamic), used of the germination of pollen on the ligule orcone-scale in certain Gymnosperms, thence passing to the microyle; Pro'tospore (σπόρα, a seed), (1) a spore which develops a promycelium; (2) certain energids or unicellular bodies in Pillobulus, etc., the ultimate product of cleavage (Harper); Protopor'ophyte (φύτον, a plant), C. MacMillan's term for certain Cryptogams not otherwise defined; Pro'toste'le (+ stele), a simple and primitive form of stele; it has been applied to Haplo- and Actino-stelles (Brebner); adj. pro'toste'lic; Pro'tostrophe's, pl. (στροφή, a turning), secondary spirals in the development of leaves (Lindley); Prototthallog'amie, pl. (+ Thallog'amæ), Ardisson's term to include Angiosperms, Gymnosperms, and vascular Cryptogams; Protothal'lus (θάλλος, a shoot) = Hypothallus, the first-formed stratum of a Liehen; Pro'totroph (τροφή, nourishment), a "lodger" in Lecidia intumescens,
Prototroph

Nyl., which eventually gets its nourishment by means of another lodger, a different Lichen (Minks); prototrophie (προτόφη, food), requiring no organic compounds for nourishment (C. Jones); Prototrophism, or Prototrophy, is the state itself; the peculiar commensalism also styled "Wet-nurse relationship"; also spelled Pro'trophy; Pro'totype (τύπος, a type), the assumed ancestral form, from which the descendants have become modified; adj. prototyp'ic; Protoxy'lem (+ XYLEM), the first-formed elements of wood in a vascular bundle; protozoophil'ous (κρύων, an animal; φιλεω, I love), used of certain water-plants which are fertilized by small animals, or protozoa; Protoxy'gote (+ ZYGOTE), K. Pearson's term for a homoyzogote possessing the dominant AA elements in inheritance; cf. ALLOZYGOTE; Pro'trophy = Prototrophy; pro'tropic (προθ, in front of, + TROPIC), movement towards the exciting cause (Rotkhet).

protrud'ing (protrudo, I thrust out), exserted.

pro'tub'erans (Lat.), bulging out, Pro'tuberan'tia elonga'ta, "the aciculae of certain Fungals" (Lindley).

proyect'us (Lat.), carried forward.

Provid'ence (provincia, a government), an area in which climate tends to dominance, as of woodland or moorland (Crampton).

provine' (Fr., provigner), to layer a vine.

proxi'mal (proximus, next, nearest), the part nearest the axis, as opposed to DISTAL.

proxy'lar (πρόξυλον, ready for; ξύλον, wood), capable of forming wood; Proxyle', Proxy'lem = Protoxy'lem; Prozy'mogen (+ ZYMOGEN), a material formed of the chronatin of the nucleus which is extruded into the cytoplasm, there becoming zymogen (Macullum).

Prui'na (Lat., hoar-frost) semina'lis, "the spores of certain Fungals" (Lindley); pru'inate, pru'ina'tus, pru'inose, pru'inous, having a waxy powdery secretion on the surface, a "bloom."

Pru'nase, an enzyme found in many species of Prunus; Pru'nasin, a glucoside associated with it.

prun'i'ferous (prunum, a plum; fero, I bear), bearing plums; pru'ni'form, pruniform'is (forma, shape), plum-shaped; pru'ni'us (Mod. Lat., from prunum, a plum), plum-colour (Hoyne); Pru'nus † = DRUPE.

pru'rient, pru'riens (Lat., itching), causing an itching sensation.

Psam'mathophy'ta, an association of Psamma arenaria on sand dunes.

Psammogen'ity (ψάμμος, sand; γένος, offspring), amount of sand in the soil, as affecting the plants growing thereon; psammog'enous, producing a sandy soil (Clements); Psam'mophile (φιλέω, I love), a plant affecting light sandy soils (F. A. Lees); psammophil'ous (φιλέω, I love), sand-loving, as the vegetation of dunes; Psam mop'yhyte (φυτόν, a plant), a sand-plant, confined to sandy habitats, as dunes; Psammo'phyti'a, used by Clements for sand or sandstone plant formations.

Pseudacran'thic (ψευδής, false, + ACRANTHIC), applied to flowers from dichasial shoots which are apparently terminal (K. Schumann); Pseudan'nu'al (+ ANNUAL), an herbaceous plant which hibernates as a tuber or bulb (L. H. Bailey); Pseudan'nulus (+ ANNULUS), an apparent annulus of specialized cells, exterior to the peristome in Mosses; pseudan'tthic (ἀνθός, a flower), a flower which simulates a simple flower, but is composed of more than a single axis, with subsidiary flowers (Delpino); Pseudan>this, the state in question; Pseudapog'amy (+ APOGAMY), the
fusion of gametophytic nuclei, morphologically but not sexually differentiated (Farmer and Digby); facultative ~, of occasional occurrence; obligate ~, essential; Pseudaz'is (+ Axis) = SYMPODIUM; Pseudem'bryo (+ EMBRYO), a group of cells cut off in the endosperm of Balanophora (Gates); pseudohomonymic (+ Homonym), used by F. N. Williams for a partial homonymy, as in Gastrolychnis and Gastrosilene; Pseudin'ulin (+ INULIN), a subordinate constituent of inulin (Tancret); pseudoadventive (+ ADVENTIVE) Bud, young branches of Lycopods which have been arrested at a very early stage (Bruchmann); pseudooatoi'cous (+ AUTOICOUS), a dioecious Moss when occasionally autoicous; pseudobiat'orine, falsely biatorine, having an apothecium without a conspicuous thalline margin; Pseudodobulb (+ BULB), a thickened and bulb-like internode in Orchids; a corm; Pseudobul'bil (+ BULBIL), (1) a growth from the roots of Aciotopsis javanica, Reinw., composed of two internodes, and bearing leaves at the apex; (2) a structure replacing a sporangium in asporophyll of certain Ferns; pseudocalce'rous, used by F. A. Lees for plants growing on clay-slate, etc.; Pseudocamb'ium (+ CAMBIUM), Williamson's term for a meristematic tissue resembling cambium; Pseudocapillit'ium (+ CAPILLITIUM), Lister's term for a structure in Enteridium, consisting of the perforated walls of the component sporangia; Pseudocar'p, Pseudocar'pium, Pseudocar'pus (καρπός, fruit). (1) a fruit with its accompanying parts, as a strawberry; (2) Galbulus (J. S. Henslow); Pseudoce'lulose (+ CELLULOSE), see CELLULOSE; Pseudocéphalo'dium (+ CEPHALO-DIUM), a growth formed in the prothallus by a germinating hypha investing an algal colony of some other type than the normal gonidia of the Lichen (Forsell); Pseudocho'romatin (+ CHROMATIN) = PROCHROMATIN; Pseudocho'romosomes (+ CHROMOSOME), amalgamated filaments of chromatin, passing into the spireme stage and then segmenting into chromosomes (Berghs); Pseudo'cilium (cilium, an eyelash), a motionless whip-like body, proceeding in pairs from each cell of Apiocystis Brauniana, Naeg. (Correns); Pseudoele'stag'my (+ CLEISTO-GAMY), when flowers remain closed, but the genitalia are quite normal in size and function (Hansgirg); Pseudocolumell'a (+ COLUMELLA), in certain Myxomycetes, a mass of lime-knots confluent in the centre of the sporangium, resembling a colu-mella but remaining free from the stalk; Pseudocor'tex (+ CORTEX), in certain Algae a tissue of secondary branches appressed to the stem, or cells in the same position (Bennett and Murray); pseudocos'tate, pseudoco'star'tus (costatus, ribbed), false-ribbed, as where a marginal vein is formed by confluence of the true veins; Pseudocotyle'don (+ COTYLEDON) = PROEMBRYO; Pseu'docyst's, pl. (κυστίς, a bag), green protoplasmic bodies destitute of definite cell-wall in Protococcoideae; Pseudody'stropy (δυσ- = bad; τροφή, a turning), when eutropous insects gain access to honey by secondary means, as when certain bees bore through to the nectaries, instead of entering by the opening of the flower (Loew); Pseudoeal'ters (+ ELATER), sterile cells in the spore-capsule of Antho- ceros, which form a netted tissue and later break up into a more or less connected chain; Pseudoesphe'mer (+ EPHEMER), a flower which lasts a little over a day expanded and then finally closes (Hansgirg); Pseudo'epin'as'ty (+ EPI-NASTY) = GEOTRO-PISM; Pseudo'epiph'yte (+ EPIPHYTE), a plant whose stems die away at the base, and the upper part derives its nourishment from its own aerial roots, as Aroids (Went); Pseu'do-fecun'dation (+ FECUNDATION), two nuclei of four
Pseudo-fecundation

combine to form the egg, the other two form the albumen (Guignard);

**Pseudogam'etange** (Gametange), certain swellings in Ascomycetes which give rise to gametophores (Dangeard); **Pseudogamy** (γάμος, marriage), (1) parthenogenetic fruiting, as pollination without impregnation of ovules; (2) the fusion of two vegetative nuclei (Fraser and Chambers); (3) a pseudosexual copulation of two cells not specially differentiated for reproduction (Hartmann); **Pseudo-gen'us** (Genus), Lindsay's term for a Form-Genus; a condition, not an independent genus; **pseudo-geogen'ous** (γεως, the earth; γενναω, I bring forth), intermediate between dyes- and eugeogenous rocks, such as Yoredale Limestones (F. A. Lees); **pseudogran'ular** (+ Granulae), a state resembling granulation, but not truly so; **pseudogyra'tus** (γυρος, curved), falsely ringed, as when the annulus is confined to the vertex of the sporangium in Ferns; **Pseudo-haustor'ium** (Haustorium), an immature or rudimentary organ observed in seedlings of *Cuscuta* (Kinzel); **pseudo-hermaph'rodite** (+ Hermaphrodite), Kerner's term for flowers which have become functionally unisexual by the alteration of either stamens or pistils; **Pseudo-hermaphrodi'tiam** (Hermaphroditus, having the characters of both sexes), the occurrence of spermatoogenous filaments within the oogonium of *Nitella* (Ernst); **Pseudohybrida'tion** (Hybrida, a mongrel), Millardet's term when the resultant hybrids are practically the same as either parent, showing no signs of crossing; **Pseudohymen'ium** (+ Hymenium), a covering of sporidia, resembling the hymenium of Fungi; **Pseudoi-mpregna'tion** (+ Imagination), the coalescence of the two nuclei of the cells of a teleutospor (Dangeard and Sapin-Trouffy); **Pseudola'tex** (+ Latex), Heckel's term for an abundant gummy juice, white or colourless, in certain species of *Vanilla*; **Pseudoliber** (+ Liber), Guillaud's term for libriform tissue, derived from secondary meristem without genetic affinity with the cambium or vascular bundles; **Pseudoli'chen** (+ Lichen), a Lichen which does not possess an algal layer of its own, but is parasitic on another Lichen-thallus; **Pseado-ma'qui**, a xerophytic evergreen bush-formation, capable of withstanding a severer winter than *Maqui*; **Pseudomeio'sis** (+ Meiosis) = **Pseudo-reduction**; **Pseudomito'sis** (+ Mitosis), nuclear division intermediate between mitosis and amitosis in the teleutospores of *Colesporium Tussilaginis*; after the spireme the chromatin becomes granular and no chromosomes are formed (Blackman); **Pseudomix'is** (μιξις, a mingling) = **Pseudoapogamy**; adj. **pseudomorphic**; **Pseudomonocotyle'don** (+ Monocotyledon), Di-cotyledons the early abortion of one of the cotyledons, as in *Capsella* (Fay); **Pseado-monocotyle'donous** (+ Monocotyledon), having two or more cotyledons consolidated into a single mass, as in the Horse-Chestnut; **Em'bryo**, having one cotyledon only developed, although two were originally indicated; **Pseado-morph** (μορφή, a form), an unusual or altered form, a term borrowed from mineralogy; **Pseudomorph'ism**, the condition of a *Pseudomorph*; **pseudomorph'ytas** (φυτον, a plant), when a capitile inflorescence affects the form of a capitulo of *Compositae*; **Pseadomema'the'cium** (+ Nemata'chium), a thread-like body in certain Algae, which is now stated to be a parasitic Alga, *Actinococcus subcutaneous*, K. Roseny. (Darbishire); **Pseudonod'ule** (+ Nodule), a space on a Diatom valve devoid of markings resembling a nodule, but not thickened; **Pseadonu'clele** (+ Nucleole), described by Rosen as a cyanoiphilous nucleole; **Pseadonu'cleolus** (+ Nucleolus), pl. **Pseadonu'cleoli**, structures which form part of the chromatic network, and are
used up in the formation of the chromosomes (Wager); **Pseudonucleoli** (+ Nucleus), name given by Gates to a cavity containing chromatin masses surrounded by a definite membrane during the process of cytomiysis; **Pseudoparaphyses** pl. (+ Paraphysis), organs growing in company with paraphyses but of much greater development (Traverso); **Pseudoparasite** (+ Parasite), a false parasite, either (a) a Saprophyte, or (b) an Epiphyte; **Pseudoparenchyma** (+ Parenchyma), a tissue resembling parenchyma, but the cells not organically related; **pseudoparenchymatons**, possessing symphyogenetic cellular tissue; **Pseudoperianth** (+ Perianth), the cup-shaped envelope of the archegonium which develops after fertilization in certain Hepaticae; **Pseudoperidium** (+ Peridium), employed by Maire for the exterior of the sporophore in Endophyllum; the peridium of the acedium of the Uredineae generally; adj. **pseudoperid'ial; Pseudoperithe'cium** (+ Perithecium), a covering of sporidia resembling a perithecium; **Pseudopheloid**, cork-like tissue in Angiopteris (Hannig); **pseudophotomet'ric** (+ Photometric), used of leaves which do not conform to the action of light, as in Sedum (Wiesner); **pseudophyllopodous** (+ Phyllopodous), in Hieracium when the lower leaves of a normally phyllopodous species are more or less appressed to the ground (Zahn); **Pseudoplankton** (+ Plankton), organisms accidentally found floating (Forel); **Pseudoplasmoidium** (+ Plasmodium), myxamoebae aggregating into colonies, the first stage of fructification in Acrasiæae (Olive); **Pseudopode = Pseudopodium; Pseudopleustion** (+ Pleuston), the pollen of Conifers floating in quantity (Schroeter); **pseudopodal** (πούς, ποδός, a foot), resembling a pseudopodium (Archer); **Pseudopodium** (+ Podium), (1) a temporary changeable foot-like pro-

trusion of protoplasm in the plasmodium of Myxogastres; (2) the stalk-like extremity of the oophyte bearing a sporogonium or gemmae in Mosses, etc.; **Pseudo-polyembryony** (+ Polycaryony), the occurrence of either (a) coalescence of ovules, (b) division of the nuccelus, or (c) development of several embryo-sacs in one nuccelus (A. Ernst); **Pseudopore** (+ Pore), in Sphagnum leaves, thickened rings without perforations (Russo); **Pseudoppyre'niun** (+ Pyrenium), the perithecium of “certain Fungi” (Lindley); **Pseudoramus** (+ Ramulus), a spurious branch in certain species of Nostoc, a young filament adherent to an older one for part of its length; **Pseudoraph'e** (+ Raphé), an apparent raphé in Diatoms, a transitional form towards its entire disappearance; **Pseudoreduction** (+ Reduction), (1) the period of tetrad formation in nuclear division (Rueckert); (2) an association in prophase of somatic chromosomes in pairs (Gregoire); **Pseudorhize** (ρύζη, a root), (1) a root shaped like a turnip or carrot in bulbous Monocotyledons (Royer); (2) a root-like mycelial structure which develops at the base of a carpophore from its cells (Fayod); **Pseud'osphrub**, produced by the growth of suckers after cutting back of Ulmus, etc.; **Pseudosp'erm. Pseudosper'mium** (σπέρμα, a seed), (1) any fruit which is indehiscent and resembles a seed, as the “nuts” or carpels of Labiatae; (2) C. MacMillan’s term for plants possessing facultative seeds; e.g. Selaginella; cf. Eusperm; adj. **pseudosperm'ic, pseudosper'micus, pseudosper'mons**; **Pseudosporan'ge**, **Pseudosporang'gium** (+ Sporangium), an organ producing gemmae or propagula, a simulated sporangium (Davis); **Pseudospore** (σπορα, a seed), (1) a gemma or asexual vegetative bud; (2) Olive’s term for Microcyst, the resting stage of Acrasiæae; **Pseudo'staur'os** (+ Stauros), a broaden-
ing of the stauros in some Diatoms; Pseud’oste le (+ STELE), when a petiole assumes the conditions of a stem, with similar arrangement of tissues (Tansley); adj. pseudoste’lic; pseudoste’reus ‡ (στερέος, solid), partly grown together, as the buds-scales of the crown-imperial; Pseudostip’ules (+ STIPULE), lowermost leaflets in Crataegus, Cineraria, etc., the true stipules being parts of the leaf-sheath (Worsdell); Pseudosto’ma (+ STROMA), the perithecium of certain Fungi; Pseudostroph’i ole (+ STROPHIOLE), Sernander’s term for a part of the floral axis which remains attached to the nutlets in Labiatæ; pseudosynap’tic (+ SYNAP'TIS), shrunk together, as in synapsis of the nuclear filament in mitosis; pseudoterm’inal (terminalis; pertaining to boundaries), intercalary inflorescence ceases and a false terminal flower appears (Parkin); Pseudo- dot’pe (τύπος, a type), an erroneous indication of a type (O. F. Cook); adj. pseudotyp’ic; Pseudosyn’carp (+ SYNCARP), a collective fruit; cf. Syncarp; Pseudothal’itus ‡ (+ THALLUS), the axis of a crowded inflorescence as a Glomerule or Umbel; Pseudotrich’ophore (+ TRICHO’PHORE), a vegetative filament of Algae, which simulates a trichophore; pseu’dou-nicell’ular (+unicellular), apocytial, as Caulerpa; pseudovas’cular (+ VASCULAR), apparently composed of vessels (Williamson); Pseudo-ves’sels, the components of such tissue; Pseudoviv’ipary (+ VIVIPARY), the production of leafy rooting shoots in the floral region, side by side with the flowers, as in Juncus bifonius, Linn. (Ponicié); pseu’doxeroph’ilous (+ xerophilous), a subxerophilous condition, the plants exhibiting less sensitiveness to moisture (F. A. Lees); Pseudo-yeast (+ YEAST), any yeast which does not produce fermentation; Pseudozy’gospore (+ ZYGOSPORE) = AZYGOSPORE.

psilo- (ψιλός), a Greek prefix, usually meaning slender, but more correctly used for bare or naked.

Psil’ad (ψιλας, bare, + AD), a prairie plant (Clements); Psili’um, a prairie formation; psiloca’ola (colo, I inhabit), and psiloph’ilus (ϕιλέω, I love), inhabiting treeless prairies; Psiloph’yta, Psilophyty’s (ϕυτόν, a plant), prairie plants (Clements); psilosta’chys, which is cited by A. Gray as bare-spiked, under the form psilo- stach’yus.

psilota’ceous, resembling Psilotum.

Psychoph’ilae (Psyche, ϕιλέω, I love), plants which are fertilized by diurnal lepidoptera, possessing brightly coloured flowers, with honey in the flower tube.

psycho- (ψυχρός, cold), Drude’s prefix for “frost.”

Psychrocleistog’amy (ψυχρός, cold, + Cleistogamy), cleistogamy induced by want of warmth (Hansgirg); Psych’chrograph (γραφω, I write), a psychrometer which records automatically; Psychrokli’nny (κλίνα, I incline), Voechting’s term for the behaviour of growing parts under the influence of low temperatures; Psychrom’eter (μέτρον, a measure), an instrument for measuring humidity by the fall of temperature; psychrom’etric, applied by Pfeff er to the hygroscopic movements of plants (Voechting); Psych’chrophy’tes (ϕυτόν, a plant), alpine plants, on soil which hinders root-action by its low temperature.

psydomorphy’tus = PseudomorphYTUS.

Ptenophyli’um (“πτενοφυλλος [late Greek], with deciduous leaves”), a deciduous forest formation; Pteno’phylloph’ilus (ϕιλέω, I love), dwelling in deciduous forests; Pteno’phylloph’yta (ϕυτόν, a plant), deciduous forest plants.

Ptenophyti’um (πτενόπνευμα, winged; ϕυτόν, a plant), intermediate plant formation (Clements).

Ptenothal’iun (“πτενοθαλάς, deciduous”), a deciduous thicket formation; ptenothaloph’ilus (ϕιλέω, I
Pteridosperma'ta
Pu'ber
ptero-
Pterid'graph'ia
Pterid'um,

Pterod'ous

Pterid'ph'ist, (2)
wing-
for
pubes^cent,
aidj.
Pu'berty,
pter'idoid
ypo^),

Pteno-thalophy'ta
ptera'tus
Pteramp'elid
(Pterid'us, a wing; 

Pterid'o'dum, a plant),

Pterid'o'ma, the body or substance of a Fern; Pter'idophyte (ftvvn, a plant), a Fern, or closely allied plant;
pteridophy'tic, Fern-like; Pter'idosp'er'mum (ftp6ma, a seed), MacMillan's term for plants with obligatory and pteridophytic seeds, and mono-morphic embryos, as Lepidostrobus; adj. pterido'sperm'ic, pteridospermous; Pterido'spermaphy'ta (ftp6na, a plant), pteridophytic seed-bearing plants (L. Ward).

Pterid'y'num (ftp6'num = fp6'num, winged = PTERYGNUS).

Pterocar'pous, -mus (ftp6n, a wing; k arbitrary, fruit), wing-fruited; pterocau'lations, -lis (kal6s, a stem), wing-stemmed; Ptero'dium, = SAMARA; pterogo'num (g6vnia, an angle), pter-noid, pter6'ous (6d6s, resemblance), (1) having an elevation of surface assuming a wing-like appearance; (2) J. Smith uses "pteroid" for Fern-like; pterop'o'dous (pOUS, p6'dos, a foot), wing-footed, the petiole being marginally winged.

Pterop'sida (ftp6pis, a fern; 6fis, sight), the group of Filicales, Gymnosperms, and Angiosperms, with ample leaves; phyllosiphonic Vasculariae (Jeffrey); adj. pterop'sid.

Pterosper'mous -mus (ftp6n, a wing; sp6'ma, a seed), with the seeds winged; Pter'o'spores, ae (+ Spore), plants having winged seeds (Clements).

Pteryg'ium (ftp6'num, a little wing), a wing.

Pteryg'o'posus, -mus (ftp6'num, a wing; tQUS, tQd6s, a foot), having the peduncle winged; pterylgosp'er'mous -mus (sp6'ma, a seed), = pterosper-mous.

Pteryg'y'num (ftpe'num, winged), wing-seeded.

P'to'maine (ftp6'ma, calamity; corpse), used of any alkaloid due to the activity of pathogenous bacteria.

Pty'al'in (ftp6'alos, saliva), a ferment contained in saliva which transforms starch into a sugar capable of fermenting.

Pty'cho'des Ptycho'des (ftp6c, ftp6'os, a fold), the primordial utricule; Pty'cho'des (el6s, resemblance), the outer surface of the same (Hartig).

Pty'x'ia (ftp6'sis, a folding), vernation.

Pu'bens (Lat., arrived at puberty) = pubescent; Pu'ber (Lat.), maturity, as of flower or fruit; pu'bera [Ae'tas], the period in a fruit succeeding the fertilization of the ovules; Pu'berty, Pu'beras, the transition from a young state to maturity of function; pu'ber'ulus (dim. of Lat. puber, downy, ripe), slightly hairy; Pu'bes (Lat.), Pubes'cence, the hairiness of plants; pubes'cent, pubes'cens, clothed with soft hair or down; pubig'erous (gero, I bear), pubescent.

Puccin'i'a, a genus of Uredineous Fun-gi; for its divisions, see Autoe'u-, Brachy-, Eu-, Hem-, Heteroeu-, Lepto-, Micro-, and Opsis-, Forms.

Pu'fing, the emission of spores in a cloud; the equivalent of the German "Staunen."

Pu'ffs, Sir J. E. Smith's equivalent for Pilid'ia in Lichens.

Pugio'iform, pugioniform'is (pugio, a dagger; forma, shape), dagger-shaped.

Pul'root, a special form whose function is to contract, and so draw the plant deeper into the soil (Goebel).

Pul'vat'us (Lat.), clothed in black.

Pulley-sshaped, compressed and usually grooved in its circumference.

Pul'ulate (pullulo, I bud), to bud.
as in spring; **Pullulation**, sprouting; especially characteristic of the yeast-plant.

**pul'ius** (Lat., dusky), black or nearly black.

**pulp**, **Pul'pa** (Lat., the flesh of fruit), the juicy or fleshy tissue of a fruit; **pulp'-ose, pul'posus, pulpy**.

**Pulsation** (**pulsatio**, a beating), of vacuoles, the rhythmic increase and decrease of size in naked zoospores and plasmodia.

**Pulsel'ium** (**puls**, I beat), a posterior flagellum of a zoospore (Lankester).

**pulveraceous** (Lat., containing a powder, or having a powder-like appearance), powder; **pulvera'ceo-delities'cent**, powdered, as if dusted over.

**Pulv'ilium** (Lat.), in botanic gardens, a hot-bed.

**pul'vinate, pulVin'a'tus** (Lat.), cushion-shaped; **pulvin'iform, pulvi'niform'is**, having the shape of a cushion or pad; **pul'vinoid** (elbos, resemblance), cushion-shaped; **Pul'vinoid**, a portion of a petiole, usually swollen, resembling a Pulvinus, but frequently non-mobile (Bose); **Pulvi'nulus**, pl. **Pulvi'nuli**, simple or branched excrescences on the surface of some Lichens, soredia; **Pulvi'lius** (Lat., a cushion), an enlargement close under the insertion of a leaf, the swollen base of the petiole, as in **Mimosa pudica**, Linn.

**Pul'vis** (Lat.), dust, powder, etc.

**Pulvis'culus** (Lat., small dust), “the powder contained in the spore-cases of some Fungi” (Henslow).

**pu'milus** (Lat., dwarfish), low or little.

**Pump-form**, applied to Papilionaceous flowers, with concealed anthers, as *Lotus, Coronilla*, and *Ononis*.

**Pun'as**, pl. Andine fell-fields, most of the plants having stout tap-roots (Warming).

**Punct'a**, pl. of **Punct'um** (Lat., a point), the marking on the valves of Diatoms; **punctate, puncta'tus** (Lat.), marked with dots, depressions or translucent glands; **puncta'ta Va'sa** = dotted vessels; **punctiflor'us** (flos, floris, a flower), having dotted flowers; **puncti'form** (forma, shape), in the form of a point or dot, reduced to a mere point; **punctic'ulate, puncticula'tus, puncticulo'sus**, minutely punctate; **Punct'um Vegetatio'nis**, the growing point.

**pun'gent, pun'gens** (Lat., piercing), ending in a rigid and sharp point, as in a holly-leaf.

**punic'eous**, -ceus, crimson.

pure, applied to forests, means un-mixed, the growth being confined to one form; ~ **Cul'tures**, uncontaminated by admixture of any other form than that under observation; *e.g.* a race of yeast-plants obtained from a single individual; ~ **For'est**, restricted to a single form; ~ **Line**, the descendants from a single plant by self-fertilization.

**pur'ple**, a secondary tint, a mixture of red and blue in varying proportions.

**purpur'ius** (Lat.), pertaining to purple; **purpur'a'ceus** (Lat.), becoming or turning purple; **pur'puratus** (Lat.), empurpled; **purpure'l us** (Lat.), purplish; **purpu'reus** (Lat.), purple; **Pur'purine**, a colouring principle in madder, **Rubia tinctoria**, Linn.; **purpuri'nus** (Lat.), somewhat purplish.

**purse-shaped**, pouch-shaped.

**pus'ilus**, (Lat., petty), very small, or weak and slender.

**pus'tular** (**pustula**, a pimple), having slight elevations like blisters; **pus'tulate, pustula'tus**, as though blistered; **Pus'tule**, (1) a pimple or blister; (2) used by Sir J. E. Smith for VARIOLA; **pustulo'se, pustulo'sus** (Lat.), blistered or pimply.

**Pus'sula** (Lat., a bubble), the contractile vesicle in Peridiniae (Schütz).

**Pusz'tas**, pl., Hungarian steppes, closely resembling those of southern Russia (Warming).

**Puta'men** (Lat., shells, rind), (1) the shell of a nut; (2) the hardened endocarp of stone fruit; **putamina'-
ceus ( + aceous), having the texture of the stone of a drupe.

Py'cni'd, Py'cni'de, Py'cni'di'um, pl. Py'cni'di'a (πυκνός, dense), a cavity resembling a pyrenocarp in Lichens, etc., containing gonidia (pycnocnid-ia or stylospores); Py'cni'dio'phore (φόρω, I carry), a compound sporophore bearing pycni'dia; Py'cni'dio'spore (σπόρα, a spore), a spore produced in a pycnidium; Py'cni'um, a sorus of Uredineae in the initial stage (Arthur); adj. py'cni'ial; the spores are termed Py'cno'spores; py'cnoceph'al'ous (κεφαλή, a head), thick-headed, as when Composite flower-heads are clustered closely; Py'cnocon'idi'um ( + Conidium), a conidium produced in a pycnidium; a stylospore; Py'cnocon'gi'dium ( + Gonidium) = Pycno'spores; Py'cnocon'idi'un ( + Conidium), a conidium produced in a pycnidium; Pycno'spore (σπόρα, a seed), = Pycnocon'idi'un; Py'cno'spores (σπόρα, a spore), in compact spikes.

Py'cno'sis (πυκνωσις, condensation), used by Maire to express atrophy by becoming dense and thickened.

Py'gmae'us (Lat.), dwarf, pygmy.

Py'coyan'ase, the enzyme of Bacillus py'cocyanus.

Py'rogenc'tic (πυρός, pus; γένεσις, beginning), pus-forming, the function of certain bacteria; py'rogenc'tic = Py'genc'tic.

Py'ract'hus (πῦρ, fire; ἀκανθα, a thorn), with red or yellow spines.

Pyramid'al, pyrami'da'lis (Lat.), pyramid-shaped.

Py'ren'e, Py're'na (πυρήνη, kernel or stone), (1) a nucule or nutlet; (2) a small stone of a drupe, or similar fruit; Py'renaro'rum, a pear-fruit, pome-like, but tapering; Py'rena'rius, a drupaceous pome, as in Crataegus; Py're'nin, Schwarz's term for the constituent of the body of the nucleus; cf. Amphi'pyre'ni'n.

Py're'ni'um, an old name for the receptacle of Sphaeraceous Fungi; Py're'noc'arp (καρπός, fruit), (1) = Perithecium; (2) = Drupe; pyrenocar'pic; pyrenocar'pous, relating to a pyrenocarp, or perithe- cium; pyren'o'deous (έλδος, resemblance), like a pyrenoid, wart-like; pyreno'dine, "globular and nuclear" (Leighton); Py'ren'oid, minute rounded granular colourless bodies, embedded in the chromatophores, amyllum centres (Schmitz); Pyrenol'ich'enes ( + Lichen), Wainio's term for a series of Lichens analogous to Pyrenomy'cetes, that is, Fungi possessing perithelia.

Pyrenopsid'ian, similar to the genus Pyrenopsis.

Py'ri'd'ion (pyrus, or pirus, a pear), used by Linnaeus for the pear-fruit, a tapering pome; pyr'i'ferous (fero, I bear), pear-shaped; py'riform, pyr'i'formis (forma, shape), resembling a pear in shape.

Pyri'um (πῦρ, πυρός, fire), "a burn succession" (Clements); pyroph'il'ous (φιλέω, I love), growing by preference on burnt earth.

Py'rithophyll (πυρόδης, flame-coloured; φίλλων, a leaf), the colouring-matter contained in the Peridineae (Warming).

Pyx'i'date, pyx'ida'tus (Lat., box-like), furnished with a lid, as some caps- sules; Pyx'id'ula † = Pyx'id'i'un, Moench's term for the fruit of Amaranthus, a dehiscent capsule, sometimes used for the following: Pyx'is, (1) a capsule with circum-scissile dehiscence, the upper portion acting as a lid; (2) † the theca of a Moss; (3) "the same as Scyphus" (Lindley).

quadrangular, quadrang'ular, quadrangular'is, (Lat.), four-cornered; quadrang'ulus, quadrangula'tus, (Lat.), having four angles, which are usually right angles.

Quad'rant (quadrans, a fourth part), the quarter of an oospore, which is so divided by the ~ Wall; Quad'rant, a square marked out for study of the vegetation therein contained, usually one metre square = 1 0936
of an English yard (Clements); Chart ~, with the position of each plant marked; denu'ded ~, the original plants cleared away; ma'jor ~, a square of four units, each side being two metres; Per'quadrat, one of sixteen metres; per'manent ~, intended for study from year to year; quadricaps'u'lar (+ Caps ula), having four capsules; quadricotyle-do'neus (+ Cotyle don), apparently with four cotyledons, each normal cotyledon being divided to the base; quadriru'ral, quadriru'ris (crus, eruris, a leg), with four supports; quadriden' tate, (dentatus, toothed), having four teeth; quadridigita-tot-pinna'tus (digitus, a finger), with four digitate divisions, each of which is pinnate; quadrigidigita'tus, divided into four divisions; Quadriri'ere'mus (+ Ere mus) = Coen o rium; quad rifar'ious, -rius (Lat., fourfold), in four ranks, as leaves; quad rifid, quad ri' fidus (Lat.), four-cleft, to about the middle or below; quad ri'foil (folium, a leaf) = quadri foli ate, when the petiole bears four leaflets at the same point; quad ri fo liolate, strictly, with four sub ordinate leaflets, but sometimes used as an equivalent of quadri foliate; quadrifur'cate (furcatus, forked), dividing into four branches; quad rigem' in ate (geminus, a twin), growing in fours; quadrihila'tus (+ Hil um), having four apertures, as in some pollen-grains; quadriju'gate, quadrijug'a'tus, quadriju'gous, -gus (jugum, a yoke), having four pairs of leaflets; quadrilo'bate (lobus, a lobe), with four lobes; quadri loo' ular (loculus, a little space), having four cells, as some anthers; quad ri'nate, quadri nald's, quadri'nus, with four leaflets at the end of a petiole, in a digitate arrangement; quadrinuc' leate (+ Nucle us), used of a cell with four nuclei, from the division of a binucleate cell; quad ripar'tite, quadriparti'tus, (partitus, divided), four-cleft, nearly to the base; quadrifolyl'lous (φυλλον, a leaf) = quadri foliate; quadripo' lar (polus, a pole), in nuclear division, when four daughter nuclei arise at the same time; quadriv'al ent (valo, to be effective), (1) applied to a cell which divides into four daughter cells; (2) ~ Chro'mosom es, having four chromosomes in one, theoreti cally; cf. Ri valent; qu ad riv al ve, quadrivalv'ular (valva, a door-leaf), four-valved.

quaquaver'sal (quaqua, wheresoever; verso, I turn round), directed or bending in every direction.

Quar'tospore (quartus, fourth; σκυπά, a seed), C. MacMillan's term for a spore enclosing protective and more or less vegetative cells as in Riccia; Quar'tine, a fourth integument of some ovules, "in reality a mere layer of either the secundine or" nucellus (Lindley).

quasiradia'tus † (quasi, as though; radiatus, spoke), slightly radiant, as where the florets of the ray in some Compositae are small and inconspicuous.

Qua's sine, a bitter principle in quassia wood.

quater' nary, quater'nate, quaterna'tus (quaternarius, consisting of four), an arrangement in fours; quater'n i (Lat., by fours), growing four together.

Querce'tum, an association of oaks, Quercus; ~ Ro' buri = consisting of Q. Robur, etc.; Quer' cite, a glucos ide derived from acorns, sweet like sugar, but not fermenting with yeast. Quer citrin, a glucoside in quercitrin bark; its colouring matter, and a commercial dye-stuff.

Quetelet'-Gal'ton Curve. See Newto nian Curve.

quilled, normally ligulate florets which have become tubular.

qui'nary (quini, five each), in fives; qui'nate, quina'tus, growing together in fives, as leaflets from the same point.

quincun' cial (quincuncialis, containing five-twelfths), (1) arranged in a quincunx; (2) in aestivation
partially imbricated of five parts, two being exterior, two interior, and the fifth having one margin exterior, the other interior, as in the calyx of the rose; Quin’ceunx (Lat., the fraction \( \frac{1}{6} \)), (1) an arrangement like the five on dice, four at the corners, and one in the centre; (2) in five ranks, quinquenarious; (3) “the disposition of objects so that the intervening spaces are all hexagons” (Crozier).

Quin’ia, Quinin’, or Quinine’, an alkaloid occurring in the bark of species of Cinchona, Remija, etc.

Quin’icine and Quin’idine, alkaloids from Cinchona bark.

Quinin’, see Quinia.

quinquant’gular, quinquangular’is (quinquangulus, five-cornered), five-angled; quinquecap’cular (+ Capsula), with five capsules; quinqueco’state (costatus, ribbed), having five ribs; quinquened’ate (dentatus, toothed), with five teeth; quinquen’arious, -rius (farium, suffix = rank), in five ranks; quinquefa’dad (fid, the root of findo, I cleave), five-cleft; quinquefo’liate, quinquefolia’tus (quinquefolius, five-leaved), with five leaves; quinquefo’liolate, quinquefo’liolaris, with five leaflets; quinquaj’gate (jugum, a yoke), in-five pairs, as of leaflets; quinquel’obate, quinqueloba’tus (lobnis, a lobe), five-lobed; quinquelo’cular, quinque’locularis (loculus, a little space), five celled; quinquener’ved, quinquener’vis, -vus (nervus, a nerve), the midrib dividing into five, that is, the main rib, and a pair on each side; quinquepar’tite, quinquepar’titus (partitus, divided), deeply divided into five parts; Quinquer’e’mus (+ Eremus), a five-celled gyno- basic fruit, as Gomphia; quinquaval’vate, quinquevalve’, quinqueval’vis (valva, a door-leaf), five-valved; quinquevein’ed, “the same as quinquenerved” (Crozier).

Quin’ine, Quinti’na (quinus, the fifth), a supposed integument of an ovule, the fifth from the outside, “in reality the skin of the” nucellus (Lindley); Quin’tospore (σπόρης, a seed), C. MacMillan’s term for a spore which has attained sexual potentiality, as in vascular Cryptograms and Phanerogams.

quin’tuple, quin’tupled (quinquplex, five-fold), multiplied by five; ~ -nerved, quinquenerved; ~ ribbed, quinquestate; when of five ribs the four lateral arise from about the base of the mid-rib; quintupli- ner’ved, quintuplivein’ed, quinquenerved, five-veined.

Rab’doid (rab’dos, a ro) = Rhab’doid.

Race, (1) a variety of such fixity as to be reproduced from seed; (2) used also in a loose sense for related individuals without regard to rank; Adapt’ive ~ or Biological ~ a Race distinguished by its physiological characters, not by its morphology; Between’ ~, consisting of (1) Half- ~, showing a small number of plants with racial characters, the majority being of the original specific type; (2) Mid- ~, showing racial characters in about half the seedlings produced, or various combinations; Habit’ation ~, or Physiological ~, those not differing morphologically, but showing great difference in vital function, as in parasitism.

Racema’tion (racematic, the gleaning of a vineyard), a cluster, as of grapes; Racem’, Race’mus (Lat., a bunch of grapes), an indeterminate or centripetal inflorescence with lengthened axis, and equally pedicellate flowers; racemifer’ous (fero, I bear), bearing racemes; racemi’flor’us (flōs, floris, a flower), flowers borne in a raceme; race’miform, racemiform’is (forma, shape), in the form of a raceme; rac’emose, race’mo’sus, rac’emous, having racemes, or raceme-like; race’mulose, race’mulo’sus, a diminutive of the last, somewhat racemose; Rac’emule, a small raceme.

rachemorph’hus (Lindley) = rachi- morph’hus.
Rachilla = Rhachilla.

rachimor'phus (ῥάχης, the backbone; μορφή, shape), the small zigzag flowering axis of some grasses, as Rottboellia; preferably rhachimor'phous.

Ra'chis = Rhachis; Ra'cheae, used by J. Smith as the plural of Rachis; ra'chiform = rhachidiform; Rach'i-tis, in botany, a disease producing abortion in the flower or seed.

ra'dial, ra'dialis (radius, the spoke of a wheel), (1) radiating, as from a centre; (2) belonging to the ray, as in the flowers of Composites; (3) = actinomorphic; ~ Bun'dle, a bundle or steele which has strands of bast and wood in different radii, a frequent occurrence in roots; ~ Plane, any plane which passes through the axis of growth, and cuts the surface at right angles; ~ Strand, large cells forming with the hypodermal strand in the stem of Bryophytes, wedge-shaped masses of tissue (Tansley); ~ Sym'metry, cf. radiosymmetric; ra'dio-ac'tive, applied to substances which give off emanations of radium; Radiat'trop-ism, the influence of radioactive minerals upon plants, neg'ative or pos'tive, inhibiting growth or favouring it; adj. radiatrop'ic; ra'diant, ra'di'as, radiating as from a centre; ~ Um'bel, when flowers on the outside are conspicuously larger than those which form the rest of the umbel; ra'diar, a system of branching uniformly on all sides (Goebel); ra'diate, ra'dialus, (1) spreading from or arranged round a common centre, as the circumference of a circle; (2) bearing rays, or ray-florets; ~ veined = palmately veined; ra'diating, passing in a straight line from the centre; ra'di'a'tiform, radiatiform'is (forma, shape), when the ligulate florets of Compositae increase in length outwards; ra'di'a'tum (Lat.), in a radiate manner; Radia'tion, used in a special sense as the emanation of radioactive agents upon plants.

rad'ical, radica'lis (radix, radicis, a root), arising from the root, or its crown; rad'icant, rad'i'cans (Lat., striking root), rooting, usually applied to stems or leaves; ra'di-ated, having a root or roots (Crozier); ra'dicating, rooting; Radica'tion, Radica'tio, the root-system of a plant, its disposition and branching; radica'tus (Lat.), possessing roots, especially a tap-root; Rad'i'cel, Radicel'la, = Radic ula; Radicella'tio (Lat.) = Ra'dica'tion; radicel'o'ous, -la (colo, I inhabit), (1) when the flower is seated immediately upon the crown of the root; (2) dwelling in the root as a parasite; radieif'erous (fero, I bear), root-bearing, or rooting, as prostrate stems; radi'cifor'ous, -rus (flos, floris, a flower), flowering apparently from the root; radio'iform (forma, shape); radi'ci'num (Lat.), of the nature or appearance of a root; Rad'icle, Rad'i'cula, the hypocotyledonary and primal internode, the rudimentary root of the embryo; Rad'i'cula byssol'dea, the mycelium of Fungi; rad'ico'se, radico'sus (Lat., having many roots), having large or abundant roots; radio'lar, pertaining to the radicle; radiculiform'is (forma, shape), shaped like a radicle; Radici'cola, radicul'o'dium, the apex of the radicle in grasses; radicul'o'se, radiculo'sus, bearing rootlets.

Ra'diosperms (radius, spoke of a wheel; στήριξ, a seed), certain fossil fruits, circular in transverse section (F. W. Oliver); cf. Platysperms, adj. radiosper'mic; radiosymmetric'ic, displaying symmetry from the centre, as opposed to a bilateral symmetrical.

Ra'diu's, pl. Ra'dii (Lat., a ray), (1) the ray of Compositae, the outermost florets when distinct in form from those composing the disk; (2) a partial umbel in Umbelliferae; (3) the structures known as medullary rays; ~ medulla'ris = Medullary Ray.

Ba'dix, pl. Rad'i'ces (Lat., a root),

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the root or descending axis, the developed rudicle.

Raphe, akin to Rubus radula.

Raphia, Raphia, or Roifi, the native Malagasy names for the fibre-like material obtained from the leaves of Raphia pedunculata, Beauv., and R. vinifera, Beauv.

Raffinase (Fr. raffiner, to refine), an enzyme which decomposes Raffinose, a sugar occurring in beets, and germinating cereals.

Rain Forest, due to sufficient precipitation, as High  ~, having over 72 inches rainfall annually; Hot ~, equatorial evergreen forest-zones of the Amazon and Congo basins; Tropical ~, corresponding to the last; Subtropical ~, practically the same as High ~; Rain-leaves, those which are adapted to shed the rain from their surfaces, and generally are acuminate, cf. Drip-Tip.

Rama (ramus, a branch), belonging to branch; Rhamnu'trum+ (-astrum, a suffix = likeness), a secondary petiole or petiolules of compound leaves; Ramal, rameat'is, pertaining to a branch; ramear'ius, restricted to aerial roots, which arise from branches (J. S. Henslow).

Rament'a, pl. of Rament'tum (Lat., scrapings, shavings), thin chaffy scales of the epidermis, as the scales of many Ferns; Ra'ments = Ramenta; ramenta'ceous, -ceus (+ aeeous), possessing ramenta, clothed with them.

Rama'eous, rama'ceus (Lat.), belonging to a branch.

Rami, (Fr.), the fibre of Rhea, Boehmeria lenacissima, Hook. et Arn.

Ramif'erous, -rus (ramus, a branch; fate, I bear), bearing branches, ramose; Ramifica'tion, -tio (facio, I make), the scheme of branching or separation into branches; ramifi-ca'tus (Lat.), branched; ramifor'mus, -rus, (-flos, -floris, a flower), flowering on the branches; ra'miform, ramiform'is (forma, shape), shaped like a branch; Ra'miform (+ Form), an extreme modification of Gregiform, usually of monophyletic origin (Kuntze); ra'mil'lar, term employed by Massart for those buds of climbers which develop into short branches, fruit or leaves, cf. Sarmentary; ramip'-arous (vario, I bring forth), producing branches, ramose; ra'mose, ramlos'sus, ra'rous, branching, having many branches; ramosis'tus, very much branched; ramify, to branch; ram'ular, pertaining to a branchlet; Ra'mulet, used by Grew for the vascular straunds in the shell of a nut; ramuline, applied to leaves on the branches of Mosses; ra'mulose, ramulo'sus, having many branchlets; Ra'mulus (Lat.), a branchlet; Ramun'culus, a twig, the ultimate division of a branch; Ra'mus (Lat.), a branch; Ramus'- culum (Lat.), -lus, (1) the same as ramulus, a branchlet; (2) * the mycelium of certain Fungals* (Lindley).

Rand, the latest formed layer of a starch-grain (Salter).

Range, the region over which a given form grows spontaneously.

Rank, a row, especially a vertical row.

Ranunoula'ceous, (1) buttercup yellow (Hayne); (2) allied to the genus Ranunculus; Ranuncul'es'tum, an association of Ranunculus; ranuncu'loid, resembling that genus.

Raps'ceous (rapum, a turnip), fusiform or turnip-shaped.

Ra'phal (raph, a seam), relating to the KAPHE; Raph'e (pr. raph'y), Raph'ia (1) in a more or less anatropous ovule a cord or ridge of fibro vascular tissue connecting the base of the nucellus with the placenta, the adherent funicle; it may occur on the side of the ovule turned to the axis (ventral), or on the external face of the ovule, that in dorsal; (2) in Diatoms, the median line or rib of a valve, and may be heteropolar or isopolar (O. Mueller); (3) the suture between the carpels in Umbelliferae (Crozier).
Raphia = Raffia.
Raphid, pl. Raphides, Raphida, or Raphides (Raphis, Rapides, a needle), needle-shaped crystals in the cells of plants; raphidian, pertaining to raphides; ~ Cell, one which contains raphides; Raphidines, Radkofer's term for free, needle-shaped cells, with partly lignified cellulose-walls, occurring amongst phloem-islands in certain Acanthaceae;
Raphidoplankton (+ Plankton), floating organism of a needle- or spindle-shape (Forel); raphoid (ellipses, resemblance) Fibres, Roulet and Chodat's term for Raphidines.
Rare-ripe, early ripe, precocious; rath-ripe (Crozier) means the same.
Rariform (rarus, infrequent, + Form), a new form having imperfect connections with its surroundings (Kuntze).
Rarous (Lat., not close or thick), thinly placed, not congested.
Ratoom', a shoot from the root of a plant which has been cut down (Crozier).
Raumparasit (Germ.) = Aulophyte. ra'ven-black, Lat. pullus, coracinus. ra'vidus, ra'vus (Lat.), grey or tawny, applied to doubtful tints.
Ray, Ra'dius, (1) the marginal portion of a Composite flower, when distinct from the disk; (2) a branch of an umbel, a partial umbel; ~ Flo'ret, Flow'er, an outer floret, ligulate or tubular, of Compositae; ~ Parenchyma, thick-walled cells elongated radially; ~ Trache'id, pitted cells; medullary ~, the primary rays in the tissue between the different bundles, passing radially outwards, the secondary rays are derived from the fascicular cambium, their extremities being the bast and the wood; subsidiary are: ~ agg'regated ~, compound ~, foliar ~, multi-se'riate = secondary ~; unisere'riate ~ = primary ~; wood ~ = medullary ~; Bays, distended, lines of ray-tracheids, of peculiar shape; fusiform ~, are walled by a flattened epithelium, and further surrounded by thin-walled parenchyma arranged radially; unisere'riate ~ or ray-parenchyma, the cells being vertical and singly placed over one another.
Reaction (re = back; actio, a performing), (1) term used to denote any alteration in organization or form consequent upon Stimulation; (2) the effect of the formation upon the habitat (Clements); ~ Time, the period needed for an organ to show response to stimulus (Macdougal).
Recapitulation (recapitulo, to go over the points again) Hypothesis, that every organism in its individual life-history recapitulates the various stages through which its ancestors have passed in the course of evolution.
Recaule'scence (re, back, + Caulescent), the adnation of leaves on their stalks to the stem (C. Schimper).
Receptacle, Receptacle (Lat., a reservoir), (1) that part of the axis which bears one or more organs, the torus; (2) in Fungi, variously applied, usually a hollow or cup-like body containing other bodies, as (a) Léveillé's term for a sporophore; (b) = Stroma; (c) an apothecium in Ascomycetes; (d) a pycnidium; (e) the inner portion of the sporophore supporting the gleba in Phalloides; (f) a cup of the Lichen-thallus, which contains soredia; (3) the placenta; ~ of a Flow'er, the axile part of the blossom which supports the sepals, petals, stamens and pistils; ~ of Inflorescence, the rhachis or axis of the head, spike, or other dense cluster; ~ of Oil, a cyst containing an oily secretion, as in the rind of an orange; ~ of Secretion, any cavities of the interior containing special products; Receptacle accidents, indeterminate passages filled with secretion; ~ caespiformis, the vittae of the fruit of Umbelliferae; ~ Suco'proprii; ~ tubulosa, Cinenchyma, of laticiferous vessels;
~vesiculo'sa, receptacles of oil; receptac'ular, receptacular'is, pertaining to the receptacle, or attached to the receptacle; ~ Tube, the calyx-tube.

receptive (N. Lat., receptivus), having the quality of receiving; ~ Spot, (1) the point in the oosphere of Ferns, etc., where the antherozoids enter; (2) where the hyaline spot on a large planogamete where it will coalesce with a small (male) planogamete.

Recess' = Sinus.

recip'rocal (reciprocus, going backward and forward), mutual; ~ Autophagy, sexuality in primitive forms of Algae; the gametes acting mutually (Dangeard); ~ Hy'brid, hybrids between the same parents, each being fertilized by the other.

reci'minate, recepta'ius (Lat., bent back), turned or bent downward; recli'n'd, recli'ning, having its base on the ground, also one plant pressed on another.

reclu'sus (Lat., laid open), improperly used for inclu'sus.

recon'ditus (Lat., concealed), hidden, not readily seen.

Recrud'esence (recrud'esco, to open afresh), the production of a young shoot from a ripened infructescence.

recti'formus (rectus, straight; flos, floris, a flower), where the axes of the florets are parallel to the main axis of the inflorescence, as in some Compositae; Rectigrada'tion (gradatio, a structure of steps), a qualitative change, the genesis of a new character (H. E. Osborn), cf. Allo'metron; rectiner'ved, rectiner'vis, -vis (nervus, a nerve); reci'tive'nus (vena, a vein), straight-veined, parallel-veined, as in grasses; Rectipetal'ity (peto, I seek), Voechting's term to express the tendency of organs to grow in a straight line; rectip'tive (peto, I seek), applied to certain stimuli which continue a formative impulse; rectise'rial (series, a row), in straight ranks; rec'ius, in a right line, straight, not curved.

Recurre'nce (recurro, I run back), the repetition of the same type in an inflorescence (Guillard); recur'rent (recurrents, running back), in vena'tion, when the veinlets return towards the main rib.

recur'vate, recur'ved, recur'vus (Lat., bent back), curved backward or downward.

recuti'tus (Lat., skinned), apparently bare of epidermis.

red, a general term for the most vivid of the primary colours, in Latin ruber; ~ brown, porphyreus, according to Lindley; ~ Mould, due to species of Fusisporium; ~ Rust, attacking the tea plant is Cepha'eurus myc'oides, P. Karst; ~ Snow, discoulouration of snow by Haematococcus nica'lis, Agardh, etc.

re'd'ivive (redivire, renewed), of herba'ceous perennials, the plant dying down each year, and growing the following year from an underground bed.

Reduced Ves'sels, a term used by Rothert for (a) replacement of bordered pits by simple pits, (b) an incomplete development of the thickening bands and their lesser arrangement; ~ Fertiliza'tion, in the absence of spermata (normal male cells) the female cell fuses with a vegetative or another female cell; ~ Mem'bers, those which having ceased to act normally, have retrograded, as the tubers of potatoes were originally shoots.

Redu'ction (reductio, a leading back), (1) when the development of the mature organism falls short of its ancestry; (2) diminution, as of the number of chromosomes in nuclear division; ~ Div'ision = nuclear Reduction; ~ Se'ries, changes brought about by arrest.

re'd'uplicative, reduplicate'us (Lat., doubled) = re'd'uplicative, reduplica'tivus, doubled back, a term of aestivation when the edges are valvate and reflexed; Reduplica'tion, an increase of parts by the insertion of additions on the same plan, as of whorls, etc.
Reed-swamp, a formation of tall, usually monocotyledonous plants growing in standing water.

Reefed (reflecto, I bend back), reflected.

Reffect (reflectus, bent back) Centrum, a term suggested by Czapek for a potential link between the organ of perception and that of response; ~ Movement, a term employed by Massart for certain responses to stimuli, usually classed under Reaction; reflexed', abruptly bent or turned downward or backward; Reflexion, a teratological change in position.

Reflorescence (refloresco, I blossom anew), flowering again, a second blossoming.

Refraction, refractus (Lat., broken), bent sharply from the base backward.

Reg, applied in Algeria to alluvial desert.

Regeneration (regeneratio, a reproduction), vegetative growth after a wound or amputation and the drying of the surface.

Regeneration (regenerino, I sprout again), resumption of germination after it has been completely interrupted (L. H. Bailey).

Region, the area occupied by given forms; ~ of Distribution, H. C. Watson's term for the British regions defined by him; adj. regional; ~ Successions, cycles due to secular change (Cowles); Regions, austral ~, southern parts of the globe; boreal ~, northern portions; tropical ~, within the tropics.

Regma (Réyma, a fracture), a fruit with elastically opening segments or cocci, as in Euphorbia, a form of schizocarp; Regmacarp, Regmacarpium (kapros, fruit), a general name for a dry and dehiscent fruit.

Regression (regressio, a retreat), Galton's term for Resurrection; regressus (Lat., gone back), (1) the same as reflexus; (2) the change from one organ into that which preceded it, as of petals into sepals; regressive, in hybrids, applied to those characters which become more or less dormant; cf. Dominant.

Regular, reguliris (Lat., according to rule), uniform or symmetrical in shape or structure; of a flower, actinomorphic; ~ Peloria, peloria which have not produced their normal irregular parts; regularisflorus (flor, floris, a flower), when a disk or head of Compositae contains only tubular florets; regularisformis (forma, shape), approximating regularity; Regularity, symmetry;

Regulation, the ability to preserve the normal state and function in spite of unfavourable circumstances; Auto- ~ or Self- ~, the inherent power of an organism to adjust itself.

Rejection-nuclei, pl., certain nuclei which do not become part of the functional oospheres, the nuclei of abortive oospheres (Hartog).

Rejuvenescence (re, back; juvenescor, I grow young), the formation of a new cell from the protoplasm of a cell already existing; metagam etal ~, see Metagame Rejuvenescence.

Retic (reticûs, left) or retrogressive, applied to stable plant formations due to past climatic factors (Crampton); Belict, a species properly belonging to an earlier type than that in which it is found (Clements).

Reliquiae (Lat., leavings) = Indiviae.

Remote', remus (Lat., distant), scattered, not close together, the same as rarous.

Renarius (renes, the kidneys), reniform.

Renacent (renes, I revive) = Re-divive.

Renewal, the act of forming anew; ~ of Cells = Rejuvenescence.

Reniform, reniformis (renes, the kidneys; forma, shape), kidney-shaped; reniformis-cordatus, combined heart and kidney shape, as the leaves of Asarum europaeum, Linn.

Ren net, vegetable, an enzyme which curdles milk, found in the flowers of Galium verum, Linn., and other plants.
Reorientation

| Reorientation (← Orientation), alteration of relative position of organs. | Resinosis
| Repair', making good, as ~ of Waste, restoring the spent material. | Reprogression (re, back; progressus, advanced), when in an inflorescence, the primordial flower at the summit opens first, followed in succession from the bottom upwards (Guillard). |
| repand', repand'ius, repand'ous (Lat., bent backwards), with slightly uneven margin, less so than "sinuous." | rep'tant, rep'tans (Lat., crawling), REPENT; creeping on the ground and rooting. |
| reparative (reparo, I repair) Steles, four bands corresponding to the four orthostichies of leaves, in Psaronius (Scott). | Repulsion (repulsus, a driving back), the opposite to COUPLING; a mutual avoidance by organisms or allelomorphs. |
| Repent, rep'ens (Lat., creeping), prostrate and rooting. | Res herbæria, (Lat.), the science of plants; botany. |
| Repi'um [† Rhepi'um] (prépou, I sink), succession of plants on soils which have subsided (Clements). | Reserve' (reservus, laid up), a storage; ~ Cellulose, a special thickening in the cells of seeds, such as the date, which can be turned to account in germination as food material; ~ Material, the plastic products of metabolism, assimilated food material in a resting condition, as starch and other carbohydrates; ~ Proteid, nitrogenous substances stored in the plant, as proteids, amides, etc.; ~ Tra'cheids, tracheid-like cells from the parenchyma sheath, for the storage of water (Heinricher). |
| Repla' cement, a theory of fertilization which assumes that the female cell gets rid of certain elements which leaves it an imperfect cell until fusion with the male cell replaces them. | Resilient (resiliens, springing back), springing or bending back, as some stamens. |
| Reple'tum (repletus, filled), a fruit with the valves connected by threads, persistent after dehiscence, such as in Orchids, Aristolochia, and some Papaveraceae. | Res'in (resina, resin), a term applied to a group of oxidised hydrocarbons, solidified or hardened turpentine, and insoluble in water; ~ Cell, a cell which secretes resin; ~ Ducts, canals which contain fluid resin; ~ Flux, an unnatural and abundant flow of resin caused by the attack of Armillaria mellea, Sacc. on Conifers; ~ Gland, a group of cells which form resin; ~ Glut = Resin-Flux; ~ Pas'sage; ~ Plates, found in conifers most frequently in contact with the medullary rays (Groom); ~ Tube, an intercellular passage containing resin, a resin-duct; resiniferous, -rus (fero, I hear), secreting resin; Res'ino'cysts (ku'ròs, a bag), hemispheric structures in the cell-wall of the hairs of the stem and leaf of Begonia (Schoennett); Resino'sis = Resin-Flux. |

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Respiration

Respiration (respiratio, breathing), the gaseous interchange between the plant and the air in which the plant absorbs oxygen, and gives off carbon dioxide; aerobic ~, carried out by an enzyme in the presence of oxygen; anaerobic ~, performed by a catalytic enzyme in the absence of free oxygen; fermentative ~, due to enzyme action, possibly an exaggerated anaerobic function (Barnes); Insulation ~, the plant gives off oxygen in the decomposition of vegetable acids; Internal ~, gives off carbon dioxide, but does not absorb free oxygen, as in yeast-fermentation; Normal ~, as defined; Vinculation ~, oxygen is absorbed, but no carbon dioxide is given off; it occurs in the early stages of germination of oily seeds (Detmer); adj. respiratory, as ~ Cavity, ~ Chamber = Stomach Chamber; ~ Equivalent, the percentage of carbon which has re-appeared in a given body as carbon dioxide (Watermann); cf. Plastic Equivalent; Respirometer (μέτρων, a measure), an instrument to measure gaseous exchange in respiring material as germinating seeds (Ganong).

Rest, induced in cold climates by loss of temperature, in hot climates by want of moisture; resting, in a dormant state; ~ Cell, an isolated cell which has passed into a quiescent state; ~ Nucleus, a nucleus not in the act of division; ~ Period, the time during which dormancy is maintained, the involution period; ~ Sporangia, in Saprolegnia occasionally formed on old mycelia, their contents being zoospores; ~ Sporangium, dormant gonidia of such Fungi as Saprolegnia, which ultimately give rise to swarmspores; ~ Spore, a spore with a thick integument, needing time before germinating, usually passing the winter or dry season in a dormant state; ~ Stage, the resting period; ~ State, quiescence, as of winter spores, or dormant bulbs; ~ Swarm-Cell, naked masses of protoplasm with amoeboid motion, in Confervaceae.

Resistant (Crozier); restsans (Lat., standing still), persistent.

Restililis (Lat., restored), perennial.

Resolution (resoluto, an uniting), the division of a coenocyte into uninucleate cells (Hartog).

Restinga, a Brazilian forest, forming a transition from the littoral to the xerophytic forests (Warming).

Resupinate, resupinatus (Lat., bent back), upside down, or apparently so, as when the hymenium of a Fungus is uppermost.

Resurrection Plants, those which after being dried, when placed in water assume their living position, as Anasatica and Selaginella lepidophyllum, Spring.

Retama Bushland, in the South of Spain, may be regarded as allied to shrub steppes: the name is Spanish for Genista and similar shrubs.

Retardation, the influence of light on growth in certain structures.

Rete (Lat., a net), network; reticulate, reticulatus, netted like network, as in certain cell-thickenings; ~ veined, netted veined; reticulataed Vessel, one with netted thickenings (Crozier); Reticulation, network, the regular crossings of threads; Reticuloplasma (+Plasma) = Alveolarplasma; Reticulum (Lat., a little net), (1) a membrane of cross-fibres found in Palms at the base of the petiole; (2) applied to the network of linin in the nucleus; retiform (föro, I bear), retiformis (forma, shape), apparently netted.

Reticulatae, possessing Reticulaculum.

Reticulatus (Lat.), hooked; Reticulum (Lat., a tether), (1) the gland to which one or more pollinia are attached in Orchide; (2) in Asclepiads, a horny elastic body to which the pollen-masses are fixed, the Corpusculum of Bentham, Pollen-carrier of N. E. Brown, Translator of the Germans; (3) the funicle in most Acanthaceae, which is curved.
like a hook, and retains the seed till mature.

retinerv'd, retinerv'is, retinerv'ius (rete, a net; nervus, a nerve), net-veined.

Retort' Cells, special enlarged cuticular cells with an apex more or less recurved in Sphagnum.

retrac'tus (Lat., drawn back), when cotyledons are so far prolonged at their base as completely to hide the radicle.

retrac'c' on, retrac't'us (Lat.), bent back; retrac'c'ed, retrac't'us (Lat.), bent back, reflexed; retrac't'ed, retrac't'us (Lat.), refracted.

Retrogress'ion (retrogressus, a movement backward), reversion or development towards simpler organization; retrogress'ive, (1) decadent in structure, (2) when a stable plant-formation is due to past climatic factors (Crampton); ~ Metamorph'osis, in teratology the occurrence of organs of lower grade in place of the normal structures, as pistils converted into stamens or petals; ~ Mut'a'tion, when an active character becomes latent (De Vries); cf. Regressive.

retorse', retror's'sum (Lat.), directed backward or downward; retror'sely aco'late, with prickles turned back or down, as in Galium Aparine, Linn.

retors'erate (retro, backward; serratus, sawed) = RUNCINATE; retror'c'ted, retror'c'tus, inverted; Retror's'sio (Lat.), an inversion.

Bet'ting, the steeping of flax or hemp in water to obtain the fibro-vascular portion freed from the cellular.

retuse', retu's'sus (Lat., blunted) with a shallow notch at a rounded apex.

revert'us (Lat.), carried back; cf. Septum.

reversed', rever'sus (Lat., turned back), upside down, resupinate; Revers'ion, Revers'sio, a change backward, as to an earlier condition; ~ Shoots, exhibiting the young or larval form of foliage.

revolu'b'illis (Lat.), capable of being rolled back; revolu'late, revolu't'tus (Lat.), rolled back from the margin or apex; revolu'tiv'us (Lat.), in aestivation when the edges roll back spirally on each side, as in Rosemary.

Revol'ver Flow'ers. Kerner's term for those flowers "which exhibit within their outer portals a number of fine tubes resembling the barrels of a revolver."

revol'ving Nuta't on (Sachs), = Circumnu'tation.

Rhabarb'arin, a proximate principle of rhubarb; rhabbar'b'arin'us, rhubarb-coloured, the colour of the officinal root, orange brown.

rhabdocar'pous (hab'dox, a staff; karpos, fruit), long-fruitled; fruits shaped like a rod; Rhab'doid (el'dos resemblance), a rod-shaped body found in the cells of the tentacles of Dro'sera, and in the mesophyll cells of Dionaea, becoming more spherical on stimulation; Rhab'dolith (el'dos, a stone), a detached portion of a Rhab'dosphaere (σφαίρα, a sphere), applied to certain pelagic Algae, Rhabdosphaera tubifer and R. cla'viger, G. Mur' and Blackm.

Rhab'dus†, the stipe of some Fungi (Lindley).

Rhache'ola (ραχ'ις, a backbone), = Rhachi'll'a, a secondary axis in the inflorescence of grasses; Rha'chis, Rach'is, the axis of an inflorescence or compound leaf or frond.

rhacimor'phous, see Racimorphous.

rhag'ad'ose (ραγ'ις, a chink), cracked or fissured.

rhamsa'ceous, resembling or belonging to Rhamnaceae; Rham'nase, an enzyme acting upon glucosides which occurs in the berries of Rhamnus infectoria, Linn.; Rham'nin, the colouring matter of the same fruit.

Raph'e (ραφ'η, a seam), usually spelled Raphe.

Raph'is, pl. Raph'ides (ραφ'ις, a needle), more usually occurring as Raphins and Raphides.

Rhe'gma, = Regma.
### Rheine

Rhe'ine, a proximate principle of the officinal rhubarb, Rheum.

rheotacic, adj. of Rheotax'is (τάξις, order), a synonym of Rheotropism.

Rheot'ropism (ῥέω, I flow; τροπή, a turning), the phenomena in a growing organism produced by the influence of a current of water (Jönsson); adj. rheotrop'ic.

Rhepi'um, cf. Ῥῄpiium.

rhexigenetic (ῥήξις, a rending; γένος, offspring), the origin of tissues when formed by mechanical rupture (De Bary); also written rhexig'genous; rhexolytic (λυτικός, able to loose), when gemmae are detached by the rupture of a cell and the disorganization of its contents (Correns).

Rhipid'ium (ῥιπτής, a fan), a fan-shaped cyme, the lateral branches being developed alternately in two opposite directions.

rhizamor'phoid, = rhizomor'phous.

rhizan'thous. -thus (ῥίς, a root; άνθος, a flower), root-flowered, flowering from the root or seeming to do so; cf. radicalis; Rhizan'thants, plants so characterized, Rhizogens; rhiz-auto'icous, in Mosses when the male inflorescence is on a short branch, cohering to the female by a rhizoid.

Rhi'zel, Van Tieghem's term for the "base" of the root, that is, the root apart from its radicles. Rhizid'ium, term suggested for Rhizoid in the oophore condition (Bower); Rhizina. pl. Rhizinae, or Rhiz'ines, the root hairs of Mosses, etc., Rhizoids; Rhizinophy'la or Rhizophy'la. pl. (φύλλα, a leaf), the postical bracts of Hepaticae, which bear the rhizoids (Spruce); Rhizio'physis (φύσις, a natural production), an expansion of the radicle, as in Nelm simulator; Rhizob'ia (βίος, life), the organisms which cause root-tubercles in Leguminosae; Rhizoblas'tus (βλαστός, a bud), an embryo which emits roots; Rhizoc'arp (κάρπος, fruit), used of Marsileaceae, which produce sporangia on root-like processes; rhizocar'pous, rhizo'carpic, -picus, (1) root-fruitd, used by De Candolle to denote a perennial herb; (2) producing subterranean flowers and fruit, in addition to aerial, as Cynometra cauliflora, Linn., and Anona rhizantha, Eichl. (Huth); Rhizoc'oles-, Rhizoc'oles, the union of the axes of two individuals of the same species solely by the roots (Morren); Rhizoc'orum (+ Corm), J. Smith's term for the fleshy rhizomes of Iris, Acorus, etc.; Rhizoc'oidea, disease caused by the attack of Rhizoctonia; Rhizoc'otonia, (κτώνος, murder), hyphae twisted into strands like twine which fasten on the roots of trees; Rhi'zoder'mis (δέρμα, a skin), the outermost of the cortical layers (A. Meyer); Rhi'zogen (γένος, race, offspring), (1) a plant which produces a root and flower only, as Rafflesia; (2) parasitic on the roots of other plants; (3) any organ which gives rise to roots or rhizoids; rhizoge'netic, rhizog'enic, producing roots; ~ Cells, ~ Tis'sue, the mother-cells of the peripheral layer of the central cylinder which frequently give rise to all the tissues of the rootlet; Rhizog'enum, the dilated base of the frond in some Algae, from which proceed holdfasts (J. S. Henslow); Rhi'zoid (εἶδος, resemblance), a hair, frequently branched, serving as a root in Mosses and Hepaticae, not morphologically distinct from the protonema, the same as Rhizine; Rhi'zoid, rhizoid'enus, root-like; rhi'zo'id'al Cell, a small cell in the antheridiurn of Iso'etes (Belajeff); rhizo'matiform (forma, shape), resembling a rhizome in shape; Rhi'zone, Rhizo'ma, pl. Rhizo'mata, (1) the rootstock or dorsiventral stem, of root-like appearance, protrate on or under ground, sending off rootlets, the apex progressively sending up stems or leaves; (2) = Caudox (J. S. Henslow); (3) = Radicile (Henslow); ~ Ge'ophytes, perennial herbs with horizontal underground shoots, which give rise to leaves and flowers (Warming);
rhizomatie, -cus, rhizomatose, having the character of a rhizome; rhizomic is used by Harvey for the same thing; Rhiz'omorph (μορφή, shape), a root-like branched strand of mycelial hyphae; rhizomorph'ic, -phoid, -phous, (1) root-like; (2) resembling a rhizomorph; Rhizoph'-agist (φαγείν, to eat), Boulger's term for a plant which is nourished by its own roots, an autophyte or rhizophyte; rhizoph'ilous (φιλέω, I love), growing attached to roots; Rhiz'o'phore (φορέω, I carry), a leafless branch in Selaginella, which eventually emits true roots. Rhizophore'tum, an association of Rhizophore, such as the mangroves on the margin of salt-water lagoons.

rhizoph'o'rrous (βίγα, a root; φορέω, I bear), giving rise to roots; Rhiz'o-phyll (φυλλον, a leaf), Schuett's name for a compound pigment in Algæ, consisting of Phycocerythrin and Floridean Green; Rhizophyll'aceae (φυλλον, a leaf, + acēa), a division of Ferns proposed by E. Newman for those in which the fronds are attached to the rhizome or root; rhizophylla'ceous, resembling such Ferns; rhizophyll'ous, when roots proceed from the leaves; Rhizoph'y-sis = Rhizophys'is; Rhizoph'y'te (φυτον, a plant), (1) = Rhizoph'a-gist; (2) Van Tieghem's term for Vascularis; Rhiz'o'plast (πλαστός, moulded), (1) a chromatic thread which starts from the blepharoplast towards the interior of the cell (Dangeard); (2) the intermediate fibril of Gymnodinium (Pavillard); Rhizopo'dium † (πονδός, ποδός, a foot), the mycelium or "spawn" of Fungi; rhizop'o'dous, used in the sense of amoeboid; Rhizotax'is, Rhizotax'y (τάξις, order), the system of arrangement of the roots; Rhiz'ula †, the protonema of Mosses, etc.

Rhododendre'tum, an association of Rhododendron.

Rhod'o'gen (ροδό, a rose; γένος, offspring), an easily oxidizable body in the beet (Reinke); rhodole'u'cus (λευκός, white), reddish-white; Rhodo'l'ogist (λαγός, discourse), a student of Rhodology, that part of botany which treats of roses; Rhod'o'phyll (φυλλον, a leaf), a name for the compound pigment of the Red Algae (Reinke), cf. Rhizophyll; Rhodoph'y'ta (φυτον, a plant), the Red Algae (Wettstein); Rhodopla'stid, the chromatophore of Rhodophyceae (Darbishire); Rhodosperm'min (σπέρμα, a seed), rose-coloured granules arising from the effects of reagents in cell-contents.

Rhoi'um, trisyll. (φόσ, a stream), "a creek formation"; rhooph'ilus (φιλέω, I love), creek-dwelling; Rhophyt'a (φυτον, a plant), creek plants (Clements).

rhom'beus, rhom'bic, rhom'bicus (ρομβος, a top), shaped like a rhomb, an equilateral oblique-angled figure; rhombifo'lius (folium, a leaf), rhomboidal-leaved; rhombiform'is (forma, shape), rhomb-shaped; rhom'boi'dal, rhomboi'deus, rhomboi'dal, rhomboid'a'tis (elōs, resemblance), approaching a rhombic outline, quadrangular, with the lateral angles obtuse.

Rhoptom'eter (ροπτών, something absorbed), an instrument to measure absorption of water by the soil (Clements).

Rhya'cad (ρύξ, a mountain torrent, + αί), a torrent plant (Clements); Rhyci'um, a torrent formation; rhycophil'us (φιλέω, I love), torrent-loving; Rhycophy'ta (φυτον, a plant), torrent plants (Clements).

Rhynchospore'tum, an association of Rhynchospori; rhynchospor'ous (ρυχος, a beak; σπόρα, a seed), when the fruit ends in a beak.

Rhysi'um, or Rhysi'on (ροψ, a flowing), a plant succession on volcanic soil (Clements).

Rhytido'ma (ρυτίδωμα, a wrinkle), the
formation of plates of cellular tissue within the liber.

**Rib**, a primary vein, especially the central longitudinal or midrib; ribbed, furnished with prominent ribs.

**Ricino'lein**, the glyceride of Ricinoleic Acid, present in the seeds of *Ricinus*.

**Ric'tus** (Lat., the opened mouth), the mouth or gorge of a bilabiate corolla.

**Ridge**, an elevated line on the fruit of Umbelliferae; either primary or secondary.

**rig'ens** (Lat.), stiff, rigid; **riges'cent**, **riges'ceus**, having a stiff consistence.

**right-hand'ed** = *dextrorse*; cf. Appendix C.

**rig'id, rig'idus** (Lat.), stiff, inflexible; **rigid'u'los, somewhat rigid.

**Ri'ma** (Lat., a cleft), (1) a chink or cleft; (2) the ostiole of certain Fungi (Lindley); **rima'tus**, ‡ (Mod. Lat.), rimose; **ri'miform** (*forma*, shape), shaped like a cleft; **ri'mose, rino us, ri'mous**, with chinks or cracks, as old bark; **rimulo'sus** ‡(Mod. Lat.), a diminutive of **rimose**.


**Rind**, (1) the outer bark of a tree, all the tissue outside the cambium; (2) sometimes restricted to the tissues exterior to the active phloëm; (3) the outer layer or cortex of Fungi; (4) in Lichens the *Stratum corti-cale*, also styled **Rind-lay' er**.

**Ring**, see *Annulus* for the various senses in which it is used; ~ **Bark**, the outer bark when disengaged in strips or layers (Hartig); ~ **Fascia'tion**, the apical division of a stem or flower by the formation of a central, circular, inversely-orientated set of tissues corresponding to the external normal set (Worsdell); ~ **Pores**, vessels in wood when arranged in the annual rings as seen in transverse section; ~ **Scale**, disease caused by *Tranetes Pini*, Fr.; ~ **Type**, an appearance in nuclear division; ~ **Wood**, the innermost part of the wood (Solereder);

**Ring'worm**, a disease of the skin due to *Trichophyton tonsurans*, Malmsten.

**rin'gent, rin'gens** (Lat., gaping), wide open, gaping, as the mouth of a labiate corolla; **ringenti'f'rus** (*flos*, a flower), the receptacle of such Compositae as bear ringent florets (J. S. Henslow); **ringenti'form'is** (*forma*, shape), apparently gaping.

**ripa'rian, ripa'rious, ripa'rior** (Lat., frequenting river-banks), growing by rivers or streams.

**Ripe**, mature, the completion of an organ or organism for its allotted function; **ri'pening**, maturing.

**riva'lis** (Lat., pertaining to a brook), growing by a brook-side.

**ri'vose, ripu'sus** (Lat. well-watered), having sinuate channels (Crozier).

**rivularia'ceous**, resembling the genus *Rivularia*; **rivula'riod** (*elos*, resemblance), means the same.

**rivula'ris** (*rivulus*, a rill), growing by watercourses; **rivu'lose**, (1) having small sinuate channels (Crozier); (2) marked with lines like a rivulet (Stevenson).

**rizo'mic**, an error for **Rhizomatic**.

**robori'nis** (Mod. Lat., from *robur*, *roboris*, oak), the grey colour of last year's oak twigs (Hayne).

**Rod-fructifica'tion**, special simple **goniophores** in Basidiomycetes; **Rod'lets**, straight rigid bacteria.

**Roff'ia** = **Rafia**.

**Rogue**, a gardener's name for a plant which does not come true from seed; a variation from the type.

**Root**, the descending axis, growing in the opposite direction from the stem, endose, mostly developing underground, and absorbing moisture from the soil; ~ **Bacil'lus**, a bacillus which has its station on roots, as the nitrifying bacteria; ~ **Cap**, large cells which form a cap-like covering for the smaller cells in rear (growing point); ~ **Cl'imbers**, plants which clamber up tree trunks by their root-like holdfasts; ~
Hairs, slender outgrowths from the cells of the piliferous layer of the newly formed portions of roots; ~ Knot, a disease of cucumbers and tomatoes, due to eelworms; ~ Leaf, a leaf springing from the base of the stem; ~ Parasit'ism, when plants are partially parasitic and their roots penetrate others, as in Rhin-an-thus; ~ Pock'et, the false "Cap" in Lemna roots; ~ Pole, the sent of new growth when the root is detached; ~ Pres'sure, (1) the forcing of fluids into the xylem by osmotic force in the roots; (2) see Exu-dation Pres'sure; ~ Rot, diseases due to fungi; White ~ ~, caused by Rosel-tinia necatrix, and Black ~ ~, by Thielavia basicola; ~ Sheath = Coleorrhiza.

Root's'talk, the primary unbranched root in a young plant.

Root's'tock = Rhizome; ~ Tu'bercles, the result of attack by Fungi or bacteria, a case of symbiosis, and source of nutrient nourishment to the host.

Root, adventit'ious, any not developed as a branch of the primary root, but from other members; aéral ~, used of those which are developed above ground, as of epiphytes; pri'mary ~, that developed at the opposite pole of the embryo to the shoot, the main descending axis.

root'ing, radicant.

Roof'let, (1) a very slender root, or (2) the branch of a root; (3) appendages of Stigmari'a in quinuncial order on its surface.

to-p'y, funicular.

ror'idus (Lat., bedewed), dewy, covered with particles which resemble dew-drops.

rosa'cean, used by botanists to indicate an affinity or likeness to Rubus rosaceus.

rosa'ceous, -ceus (rosa, + aceous), (1) arranged like the five petals of a normal rose; (2) belonging to the order of which Rosa is the type; (3) rose-colour, pink.

rosel'a'tus = (1) rosulatus, or (2) Rosaceous.

Rosel'la (dim. of rosa) = Rosette', a cluster of leaves or other organs in a circular form, as Plantago major, Linn.; ~ Plants, those with short internodes and closely-set leaves, usually epigeous and evergreen (Warming); ~ Shoot, a cluster of leaves on a branch from the same point; — double ~, = Dyaster; Peach ~ ~, a disease attacking peach-trees, shown by short rosette-like growths in spring; the Umbil'i-cal ~ of Diatoms is a central star-shaped projection or depression of a few larger cells, as in Cosci-nodiscus.

Ros'eolus (Mod. Lat.), pink or pinkish. Rose'tum (Lat.), a rose-garden.

ros'eus (Lat.), rosy, pale-red pink.

Ro'sile, a "society" of Rosa (Clements). Ros' in, crude Resin; ros'inous (Grew) = resinous.

Ros'tel = Rostellum.

rostell'a'te, rostell'a'tus (rostellum, a little beak), the diminutive of rostrate, somewhat beaked; Rostel'lum, (1) a small beak; (2) applied by Linnaeus to the caudicle or radicle; (3) a narrow extension of the upper edge of the stigma of certain Orchids, the abortive anterior lobe; (4) the projecting free ends of perithecia in certain Fungi (Travers); ros'trate, rostr'a'tus, with a beak, narrowed into a slender tip or point; ros'trifor'm (forma, shape), beak-shaped; Ros'trum (Lat., a beak), (1) any beak-like extension; (2) the inner segment of the coronal lobes in Asclepiads.

Ros'ula (dim. of rosa), (1) a small rose; (2) = Rosette; a collection of clustered leaves, as the Houseleek; ros'ular, ros'u'lar, ros'u'late, rosula'tus, collected into a rosette.

Rot, applied to various diseases of fungous or bacterial origin.

rota'ceus t (rota, a wheel, + aceus) = rotate', rota'tus, wheel-shaped,
circular and flat, applied to a gamopetalous corolla with a short tube; *rotate-plane*, wheel-shaped and flat, gamopetalous and without a tube; *Rotation, Rotatio*, the internal circulation of the protoplasmic contents of a cell cyclosis; ~ of Gyration, the peculiar rotation in Characeae; ~ of Protoplasm, the movement round and within the cell; *rota'plane* = *rotate-plane*; *ro'tiform*, *rotiform's* (forma, shape), wheel-shaped, as of a gamopetalous corolla with spreading limb and a short tube.

**routand', routand'us** (Lat., round), rounded in outline, somewhat orbicular, but a little inclined towards oblong; *rotaunda'tus* (Lat.), rounded; *rotundiform', *rotundiform's* (forma, shape), wheel-shaped, as of a gamopetalous corolla with spreading limb and a short tube.

**rout', rubr', ruber** (Lat., red), red in a general sense; *rubes'cent*, *rubes'cens*, turning red.

**rubia'ceous**, belonging to Rubiaceae.

**rub'colous** (*rubus*, a bramble; *colo*, inhabit), parasitic on brambles, or attached to them; J. S. Henslow spells it *rubicolous*.

**rubicun'dus** (Lat., red, ruddy), bluish red.

**rubid'us** (Lat.), reddish; *rubid'eus* (Mod. Lat.) means about the same.

**rubig'inose**, *rubiginos'us*, *rubig'inosus*, *rubigin'cus* (*robiga* or *rubigio*, rust), rust-coloured, usually implying it is due to glandular hairs.

**Rubol'ogist** (*Rubus*, a bramble; *λόγοs*, a discourse), a mongrel term for Batologii-T, a student of brambles.

**Ru'bor, Rube'do** (Lat.), redness of any kind.

**ru'deral, ruderalis** (from *rudus*, old rubbish), growing in waste places, or among rubbish; ~ Plants, those which are characteristic of rubbish heaps, etc.; *Ru'derals*, plants growing on rubbish heaps or waste lands (Thornber).

**Ru'diment** (*rudimentum*, a first attempt), (1) an imperfectly developed and functionally useless organ, a vestige; (2) has been suggested as an equivalent of the German term "Anlage"; cf. *Entept, Primordium*; *rudimen'tal, rudimen'tary*, arrested in an early stage of development; ~ Or'gans, those whose development has been arrested at an early stage.

**rufes'cent, rufes'cens** (Lat.), becoming reddish.

**Ruffl'le**, used by Withering for the *Volva* of Fungi; *ruffled*, with a strongly waved margin (Crozier).

**rufid'ulous** (N. Lat.), somewhat red.

**rufous, ruf'us** (Lat.), reddish, of all shades.

**Ru'ga, pl. Ru'gae** (Lat.), a wrinkle or fold; *ru'gate*, wrinkled.

**rug'ged, scabrous** (Crozier).

**rug'ose, rugo'sus, ru'gous**, covered with, or thrown into wrinkles; *ru'gulose*, *rugulo'sus*, somewhat wrinkled.

**ru'minate, rumina'tus** (Lat., chewed), looking as though chewed, as the albumen of the nutmeg; ~ *Endo'sperm*, mottled in appearance, due to the infolding of a dark inner layer of the seed-coat into the lighter coloured endosperm; *Rumi'nation*, the condition described.

**run'cinate, runcina'tus** (runcina, a large saw), saw-toothed or sharply incised, the teeth retrorse.

**Run'dle**, used by Withering for *Umbel*; and *Run'dlet*, for a partial or secondary umbel.

**Run'ner**, (1) a stolon, an elongated lateral shoot, rooting at intervals, the intermediate part apt to perish, and thus new individuals arise; (2) in Fungi, mycelial stolons, as in *Rhizopus*; ~ *bulb*, a bulb formed by
a stolon, as distinct from one formed
direct from the main axis; run'ning,
reptant, reptant.'

rup'es'tral (rupes, a rock), H. C.
Watson's term for plants of walls
and rocks; rup'es'trine (Crozier),
rup'es'tris, growing among rocks,
or as Lichens, on rocks; some
write it rup'es'ter; Rupie'ola (colo, I inhabit), a plant which dwells
among rocks; adj. rup'ic'olous.

rup'tile, rup'tilis (ruptus, broken),
dehiscing in an irregular manner;
ruptin'er'vis, ruptin'er'vus (N.
Lat.), when a straight-ribbed leaf
has its ribs interrupted and swollen
at intervals; rup'tur'ing, bursting
irregularly.

rup'ra'lis (Lat., rustic), growing in
peculiarly rural places, as the thatch
of a cottage.

rus'ciform (Ruscus, forma, shape),
with leaflets recalling the shape of
the phyllodes of Ruscus aculeatus,
Linn.

rus'sus (Lat., red); russet, when
meaning reddish-brown.

Rust, a fungous disease in cereals
caused by Puccinia graminis, Pers.;
it is also applied to other diseases
of plants from similar attacks;
rusty, rubiginose, ferruginous, the
colour of iron rust.

ruta'ceous, having affinity with the
Rutaceae.

ru'tilant, ru'tilans, ru'tilus (Lat., red,
glowing), used for plants having
glowing flowers: red, orange,
yellow, or an admixture of these.

ry'tidocar'pus (puris, puritus, a wrinkle;
kap'tos, fruit), when the surface of
the fruit is covered with wrinkles.

Sabulic'ola (subulum, sand; colo, I in-
habit); a plant growing on sandy
places; sab'ulose, sabul'o'sus, grow-
in sandy places; J. S. Henslow
prints the former word sabul'i'cus;
sab'u'line (Crozier), is a synonym.

Sac (saccus, a bag), a pouch, as Air ~,
an empty cavity in the pollen of
Pinus—Em'bryro ~, see Embryo
Sac; Tan'min ~, a cell secreting or
containing tannin; Sac's, water, pe-
culiar bowl-shaped leaflike organs
in Hepaticae (Warming); sac'cal, re-
lating to a sac, as the Embryo Sac;
sac'cate, sac'catus, bag-shaped; Sac'
cosporae, -ae (+ Spore), Clements's
term for plants having fruit en-
veloped by a membrane.

sacchar'atus (saccharum, sugar),
sugary, or yielding sugar, as the
sap of some species of maple; Sac-
charifica'tion, the conversion of
starch into sugar; sacchari'ferous
(fero, I bear), sugar-bearing; sac-
char'i'nes (Lat.), sugary; Sac'cha-
rose, cane-sugar; Saccharophyli'ly
(φυλλον, a leaf), the production of
"Sugar" leaves, cf. Amylophyllly.

sac'ciform, sac'ciform'is (saccus, a bag;
forma, shape), bag-shaped; Sac'
cul'us (Lat., a little bag), the per-
dium of Fungi; Sac'cus, sometimes
applied to the corona of Stapelia,
etc.

Sac'co phyles (άκκος, a sack; φυτων, a
plant), Schuett's term for all plants
which are not Placophytes.

Saccel'i'nes (Lat., a little bag), (1) a
one-seeded indehiscent pericarp,
inclosed within a hardened calyx, as
the Marvel of Peru; (2) applied to
such fruits as those of Chenopodium,
which burst irregularly.

Sachs's Cur'vature, a curved growth
of the root, due to a difference in
the rate of growth of the two sides
of the organ (Wiesner).

Sack = Sac.

sad'dle-shaped, applied to such valv-es
of Diatoms as those of Coscinodiscus.

Sal'fron, the dried stigmas of Crocus
sativus, Linn., which yield a yellow
dye; ~ col'o'red, = crocatus.

sagit'tal (sagitta, an arrow), applied
to a section; the median line in
plane of division of bilateral sym-
metry; introduced into botany from
zoology.

sag'ittate, sagitt'a' tus, enlarged at the
base into two acute straight lobes,
like the barbed head of an arrow;
sagit'tiform, sagittiform'is (forma,
shape), arrow-shaped.
Sa'go, granulated starch obtained from the pith of certain palms, especially from species of *Sagrus*.

**Saint'-Valery' Ap'ple**, a monstrously in which the petals are sepalous, the stamens absent, and a double row of carpels present.

Sal'ep, the dried tubercles of some species of *Orchis*, also spelled Sal'op, Saloop'.

Salice'tum, (1) a collection of willows; (2) a volume so entitled devoted to the genus; (3) recently applied to a plant association of *Salix*; Sal'icin, a glucoside occurring in the bark of willows, species of *Salix*; Salicol'o gist, (1) an expert or student of the genus *Salix*; or (2) of willow-barks only.

Salicorne'tum, Ganong's term for a plant association consisting of *Salicornia*; a salt marsh; salicor'ioid (ειδος, resembling), akin to or resembling *Salicornia*.

Salicyl'ous Ac'id occurs in many flowers, especially of *Spiraea*, probably by oxidation of its corresponding alcohol, Saligenin.

sa'lient (saliens, springing forward), projecting forward.

Salig'enin, an aromatic substance formed by the decomposition of Salicin, etc.

saline', salin'us (sal, salis, salt), (1) consisting or partaking of the qualities of salt; (2) growing in salt-marshes; ~ Matters, chemical salts occurring in plants, the union of acids with bases.

Salitra'les, Argentine salt-steppes.

salmo'neus (salmo, a salmon); sal'monic'olor (color, colour), salmon-coloured, pink with a dash of yellow.

Sal'op, Saloop' = Salep.

Salpig'gan'thy (σάρτγαδιτί, a trumpet; άνθος, a flower), the transformation of ligulate or disk-florets of Compositae into conspicuous tubular florets (Morren).

Salsole'tum, an association of *Salsoia*. salu'ginoas, salsugino'sus (salsugo, saltiness), growing in places inundated by salt or brackish water, as saltings; sal'sus (Lat., salted), is used in the same sense.

Salt'bush'land, of the Mediterranean region consists of *Salicornia fruticosa*, with *Atriplex portulacoides* and *Statice*; Salt-des'ert in Persia, is destitute of a single plant or grass; ~ -glands, excreting salts in leaves; ~ -steppe, incompletely furnished with plants, which are usually grey with scales or hairs, or with wax (Warming); ~ Swamp, found in still maritime inlets, with *Phragmites* and *Scirpus* (Warming).

Salt'atory (saltatorius, pertaining to dancing) Evol'n'tion, showing discontinuous advance with long strides.

Salt'ings, salt-marshes, the grass being overflowed at high-water, leaving numerous muddy channels.

sal'ver-form, ~ shaped, hypocratimi'phous (A. Gray).

Sama'ra (or Same'ra, Lat., the fruit of the elm), an indehiscent winged fruit, as that of the sycamore; samari'deous, sam'aroïd, samaroi'deus (ειδος, resemblance), used of a fruit resembling a samara.

Sam'bucchini, a terpene derived from *Sambucus nigra*, Linn.

san'guine, sanguin'eus (Lat., blood-red), the colour of blood, crimson.

San'nio's Bars, rods stretching across from one tracheid to another in coniferous wood; ~ Law, the order of cell-division of the cambium, as set forth in Pringsheim, Jahrb. ix. 60; ~ Rims, markings on the radial walls of tracheids, especially the springwood of *Pinus* (Groom).

San'talin, a resinous substance from red sandal-wood, *Pterocarpus santalinus*, Linn. f., whence its name.

San'tonin, a bitter principle from wormwood, *Artemisia Santonicum*, Linn.

Sap (sapa, new wine boiled thick), the juice of a plant; the fluid contents of cells and young vessels consisting of water and salts absorbed by the roots and distributed through the tissues; ~ Cav'ities, vacuoles; ~ col'our, flower-tints due
to coloration of the sap, and not to plastids (Wheeldale); ~ -part'icles, vesicular bodies present in cell-sap (Price); ~ Per'iderm, distinguished from ordinary periderm by its cell-wall and contents being in a living condition, serving as absorption tissue (Wiesner); ~ Pres'sure, the force exerted on passing upwards through the tissues; ~ Rot, Poly-porus adustus attacking the sap-wood of Liquidambar; ~ Ves'sicle, a vacuole surrounded by a thin skin of protoplasm; ~ Ves'sel, a duct or continuous vessel; ~ Wart'ing, ruptures and corky outgrowths in the bark of stems and branches when grown under glass; ~ Wood, the new wood in an exogenous tree, so long as it is pervious to the flow of water, the alburnum; the sap of oak is Grew’s term for the alburnum of that tree; Sap’a = Sap; sap’less, dry, destitute of sap; Sap’ling, a young tree.

sap’id, sap’idus (Lat., savoury), having a pleasant taste.

sapon'a'ceous (sapo, soap, + aceous), soapy, slippery to the touch; sapo-na'rius (N. Lat.), having scaring qualities like soap; Sap'onin, a soap-like principle from Saponaria officinalis, Linn., and other plants.

Sap’or (Lat., flavour), the taste which a plant offers.

sapota'ceous, relating to or resembling Sapotaceae.

Sapri'um (σάρπος, rotten), a saprophytic plant formation (Clements); Sapro'bina (Blós, life), a general term for organisms growing in polluted water; saprogen'ic, saprogen'eous (γένος, offspring), growing on decaying substances.

saproleg'nia'ceous, saproleg'nious, allied to or resembling Saprolegnia.

Sapromyoph'ilae (σάρπος, rotten; μοια, a fly; φιλω, I love), plants which are fertilized by carrion- or dung-flies; the flowers are putrid-smelling; adj. sapromyoph'ilous; Sap'rophyle, a plant growing on humus; sapro-ph'ilous (φιλω, I love), humus-loving; Sap'rophyte (φυτω, a plant), a plant which lives upon dead organic matter; adj. saprophytal, saprophy'tic; Sap'rophytism, the state of subsisting on humus or similar material; — symbio'tic ~, a phanerogam which subsists by means of a mycorrhiza, or felting of hyphal tissue on the roots; Saproplankton (+ Plankton), foul-water plankton, such Flagellates as Euglena, etc.

Sarco'basis (σάρξ, sap, flesh; βάσις, base), a carcerule, used for gymo-basis when very fleshy; Sar'coearp Sarcoear'pium (καρπός, fruit), (1) the succulent and fleshy part of a drupe; (2) a general name for a baccate fruit; Sar'cocaul (καυλός, a stem), a fleshy stemmed plant, as the Cacti and many Euphorbias (J. Smith).

Sar'code (σαρκώδης, flesh-like), Du-jardin’s term for protoplasm; Sar'co'dy, the acquirement of a fleshy consistency (Wordsell).

Sar'coderm, Sarcooder’na, Sarcoeder’mis (σάρξ, flesh; δέρμα, skin), a fleshy layer in seed-coats between the exopleura and the endopleura; sar-coi'des (ε玎ος, resemblance), having the appearance of flesh.

Sar'coll'in, a glucoside from sarcocolla gum, itself an exudation from Astragalus fasciculifolia, Borzi.

Sar’coma †, a fleshy disk.

Sar'cospores, -ae (+ spore), Clements’s name for plants having fleshy fruits; Sar'cotes’ta (+ Testa), the fleshy outer seed coat, as of Cycas (F. W. Oliver); adv. sarcotes’tal.

Sar'ment, Sar'mentum (Lat., twigs, brush-wood), a long slender runner, or stolon, as in the strawberry; sar'menta'ceous, -ceus (+ aceous), sarmentifer'ous, -rus (fero, I bear), sarmentose; sar'mentary, applied by Massart to the buds of climbing plants which develop into long slender branches and tendrils; Sar'mentid’ium †, a group of cymes or spikes arranged centrifugally as those in the cyme itself (Lindley); sarmentit'ius, belonging to twigs.
(Henslow); sar'mentose, sarmento'sus, sarmentous (Lat., full of twigs), producing long and lithe runners; Sarmen'tum, a runner, cf. SARMENT.

Sar'nnian, H. C. Watson's term for plants confined to the Channel Islands; Sarnia = Jersey.

sathrophil'ious (saθrɒɪs, decayed; φιλέω, I love), applied by Pound and Clements to those Fungi which feed on “offal”; Sathrophy'ta (φυτον, a plant), human plants; Sathrophy'tia, saprophytic formations (Clements).

Sat'iform (+= FORM), a NOVIFORM which is reproduced by seed (Kuntze).

sati'vus (Lat.), that which is sown or planted, as opposed to spontaneous or native.

satura'te-vi'rens (Lat.), green as grass; a full deep green.

Satura'tion, Relative = Relative SATURATION.

Sat'us (Lat., a sowing), arising from seed sown.

Sauro'cho're (σαῦρος, a lizard; χαρέω, I spread abroad), a plant disseminated by lizards or snakes (Borzi);

Saurocho'ry (χαρίς, asunder) is the condition; sauroph'ilous (φιλέω, I love), the adj. of Sauroph'ily, used of fruits adapted for this mode of dispersion.

sau'sage-shaped, allantoid.

Sautel'lus (Fr. sautelle, a vine shoot), a bulbil, such as those of Lilium tigrinum, Ker; misprinted by J. S. Henslow as “Santellus” with an erroneous derivation.

Savan'nah, xerophilous grassland containing isolated trees (Schimper).

saw-toothed, or sawed, serrate.

sax'atile (Crozier), saxa'tillus (Lat.), dwelling or growing among rocks; sax'i cole, saxic'o line, saxic'olous (colo, I inhabit), growing on rocks, as do many Lichens; Saxic'ola, a dweller among rocks, printed by J. S. Henslow as “saxicolus”;

saxif'ragous (frag, the root of frango, I break), rock-breaking, as plants which grow in crevices seem to be; saxo'sus (Lat.), stony.

Scab, a disease due to various Fungi, causing roughness of the cortex; in the potato it is ascribed to Sorosporium scabies, Fisch. de Waldh., in the United States attributed to Oospora scabies, Thaxter.

scab'er (Lat.), rough, scurvy; scab'-rate, scabra'tus, made rough or roughened; scab'rid, scab'ridus; scab'ridous (Lat., rough), somewhat rough; scabrid'ulous and scabridi'usculus, slightly rough; Scabri'ties (Lat.), roughness of surface; scab'-rous, = scaber, rough to the touch.

scalar'iform, scalariform'is (scalaris, pertaining to a ladder; forma, shape), having markings suggestive of a ladder; ~ Conjuga'tion, when the entire algal filament is concerned in the act of conjugation (A. W. Bennett); ~ Duct, ~ Ves'sel, a vessel having scalariform markings, as in many Ferns; ~ Marking, an elongated pit of a scalariform vessel (Crozier).

Scale, (1) any thin scariosus body, usually a degenerate leaf, sometimes of epidermal origin; (2) a trichome, if disc-like; (3) sometimes used for GLUMES; ~ Bark, outer bark which is thrown off in scale-like portions, as in the plane-tree; ~ -formed, shaped like a scale; ~ -hairs of Ferns, clothing the stipes, often resembling a leaf; ~ Leaves, catalaphyllary leaves, usually on under-ground shoots, but sometimes on the above-ground portions; ~ -trace, the strand connecting scale with stem in Bryophytes; Scales, inter-sem'inal, the scales of a cone-like fruit which are between successive seeds or ovules.

scall'oped, crenate.

scalpel'liform, scalpelliform'is (scalpellum, a lanceet; forma, shape), shaped like the blade of a penknife; often set vertically.

scaly, squamose, scariosus; ~ Bark, that which is thrown off in patches, as in the plane-tree; ~ Buds, leaf-buds of a strong character, that is, well protected by scales; ~ Bulb, one having separate scales, as in lilies.
scandent, scan'dent, scan’dens (Lat., climbing), climbing, in whatever manner.

Scape, sca'pus (Lat., a stem, (1) a leafless floral axis or peduncle arising from the ground, as in Cyclamen; (2) the stipe of Fungi; Scapel'lis †, the neck or caulis of a germinating embryo (Lindley); sca'peless, desti-tute of a scape.

Scaphi’dium (scaphium, a hollow vessel), the sporangium of Algae; Scaph’ium †, the keel of a papilionaceous corolla; Scaph’obrya (βρυα, I sprout), a term applied to the Marattiaceae, an order of Ferns in which the frond rises from between two stipular appendages forming a socket.

Scap'h’oid (σκα&otilde;μ, a boat; el’os, resemblance), boat-shaped; scaph’y-form (forma, shape), used by J. Smith for boat-shaped.

Scap’ifi’rous, -rus (scapus, a stem; flōs, floris, a flower), having flowers borne on a scape; sca’piform, scapiformis (forma, shape), resembling a scape, a stem wanting leaves; scapig’erous (gero, I bear), scape-bearing; sca’po’id (el’os, resemblance), scapiform (Crozier); sca’pose, scapo’sus, having scapes; Sca’pus (Lat.) = Scape.

Sca’r, a mark left on a stem by the separation of a leaf, or on a seed by its detachment, a cicatrix.

Sca’riose, scario’sus, sca’rious (scaria, Late Lat., a thorny shrub), thin, dry and membranous, not green.

Scarin’et, vivid red, having some yellow in its composition, coccineus.

Scarr’ed, marked by scars.

Scarr’ose †, a variant spelling of squar’rose.

Scat’tered, without apparent order.

Schimp’er-Braun, cf. Fibonacci series.

Schista’ceous, -ceus (schī-tos, a stone easily split, e.g., slate, + aecus), slate-coloured, a deep-toned grey; schis’tose, schi’tosus, slate, as to tint.

Schisto’g’amae (σχιστός, cleft; γάμος, a marriage), used by Ardissone to designate the Characeae; Schisto’g’ams, Schistogam’ia, Caruel’s terms for the same.

Schizob’olites (σχιζόω, I split; βόλις, a missile), a product of catabolism, due to decomposition of a body of definite composition (Beyerinck); Schiz’ocarp (καρπός, fruit), a pericarp which splits into one-seeded portions, mericarps or ‘split-fruits’; Schizoc’ot’yly (κοτύλη, a small vessel), division of a cotyledon, either by forking or complete separation into two (Worsdell); schizogen’ic Devel-op’ment, development arising from division; schizog’enenous = schizogenetic; schizo’lys’genous (λυσίς, a loosening), arising from splitting or tearing of the tissues, applied by Tschirch to those cavities which arise at first from splitting of the cell-wall, but are enlarged by the breaking down of surrounding tissues; schizoly’tic (λύτικος, able to loose), applied to those gmae which are detached by splitting through the middle-lamellae of the cells (Correns); schizog’nous = schizo- gonous; schizo’mérous (μερός, a part), splitting into portions; Schizomycetes (μύκης, a fungus), Naegeli’s term for bacteria (Cohn); Schizont’ (σίζω, σίζων, being), employed when nuclei divide or split in a distinctive manner; schizo’ génous (γένος, race), Correns’s term for the same phenomenon as that called isogénous by De Vries; not breeding true; Schizophy’tae (φυτά, a plant) was also used by Cohn for Schizomycetes; Schiz’ophytes, plants which increase by fission; Schizo’spor’eae (σπόρα, a seed), a name proposed by Cohn for the Schizomycetes; Schizoste’ly (στήλη, a column), when the single primitive stele breaks up into as many distinct strands as there are vascular bundles; adj. schizoste’lous; schizotra’cheal, tracheae dividing.

Scia’d (σκία, shade; + ad), a sciophyte; Scia’sias, a shade form of any plant (Clements).
scimitar-shaped, acinaiform.
Sci'on, a young shoot, a twig used for grafting.
scloph'tious (σκλήρος, shade; φιλέω, I love), shade-loving; Sci'ophyll (φύλλον, a leaf), the leaf of a shade plant; Sciophy'ta (φύλλον, a plant), plants of the shade; Sciophy'ta, shade plant-formations (Clements).
Scirpe'tum, Warming’s term for an association of Scirpus plants.
sci'sile (scissile, easily split), separating.
Scis'sion (scissio, a cleaving) Lay'er = Absciss - Layer; scissip'arous (pario, I bring forth), used for Fissiparous, as bacteria.
scitamineous, referring to the Scitamineae.
sci'uroid, sciuroi'des, sciuroi'deus (σκυλωψ, a squirrel; εἴδος, resemblance), curved and bushy, like a squirrel’s tail.
Scleran'thium (σκληρός, hard; ένδος, a flower), an achene enclosed in an indurated portion of the calyx-tube, as in Mirabilis; Sclere'nchyma (σκληρόμα, an infusion), (1) formerly applied to stone-cells, Sclere'ids; (2) afterwards proposed for bast or liber cells, which are immensely thickened, with their protoplasm usually lost; ~ Cells, all thick-walled cells which retain their protoplasm (Tschirch); ~ Adj. sclerenchym'atous; as ~ Tis'sue, composed of thick-walled cells; Scle'reid, a sclerotic or stone-cell, a strongly thickened or lignified cell; it is sometimes spelled Scle'rid; scle'rified, hardened; scle'rised, sclerosed; Scle'rites, pl. large, thick-walled ideoblasts with the walls of their numerous arms thickly set with small crystals (Seward); Scle'rization, the process of becoming hardened; Scle'roblast (θάλασσα, a bud), a stone-cell, or sclereid; Scle'roca'u'ty (kau'λάς, stem), the possession of dry hard stems, as in Ephedra (Schimper); Sclerocypera'ceae, a division of that family characterized by sclerotic elements in place of assimilatory mechanism (Plowman); Scler'o'gen (γενός, offspring), the hard lignified deposits in such cells as those which compose the shell of the walnut, or grit-cells of the pear; Sclerogen'ia, Berkeley’s term for induration of parts amounting to a disease; Sclerogon'idia, pi. (+ GONIDIUM), loose, yellowish or colourless gonidia, of uncertain function; scle'roid, sclerovi'dus (εἴδος, resemblance), having a hard texture; Scleromyce'tes, pl. (μύκης, a mushroom), an obsolete name for the Sphaeriaceae; sclerophyl'lious, sclerophyl'lus (φύλλον, a leaf), having hard and stiff leaves; Sclerophyl'ly, the condition itself; Sclerophy'tes, pl. (φυτόν, a plant), a shrub or bush having sclerophyllous leaves, usually evergreen and resistant to summer-drought; sclerop'odous (ποὸς, πόδος, a foot), when persistent peduncles become hard and horny; sclero'sed, hardened, lignified; Sclero'sis, the hardening of a tissue or cell-wall by lignification of a membrane or intercellular deposits; Sclerot'es'ta (+ Testa), the hard bony seed-coat, as the middle coat of Cycas; Sclerote', a proposed emendation of Sclero'tium; sclero'tic, hardened, stony in texture; ~ Cells, grit-cells or sclereids; ~ Nests, characteristic groups of dark-coloured tissue of uncertain origin seen in sections of Lyginodendron; ~ Parench'yma, grit-cells or stone-cells in pears, etc.; Sclero'tiet, A. S. Wilson’s name for a small Sclerotium; small concretions of lime have been also termed, in error; Sclerotin'iose, a disease of lettuce caused by Sclerotin'tia Libertiana; sclero'tioid, scle'ro'toid (εἴδος, resemblance), like a sclerotium; Sclero'tium, pl. Sclero'tia, (1) a compact mass of hyphae in a dormant state, occurring in several groups of Fungi; (2) also applied by some to the resting stage of the plasmodium of the Myxogastres.
scobic'ular (scobis, sawdust) = scohi-
FORM (Crozier); *scobicula'tus*, in fine grains like sawdust; *scob'i form, scobiform'is* (forma, shape), having the appearance of sawdust.

Scobi'na (Lat., a rasp), the zigzag rhachis of the spikelet in some grasses; *scobi' nate, scobina'tus*, when the surface feels rough as though rasped.

Ecrole'dite (σκωλης, a worm), Tulasne's term for the vermiciform archicarp of Ascobolus pulcherrimus, the "Vermiform Body" of Woronin;

Scolecop'o'ra († Spora), spores having a long, worm-like shape (Traverso).

Scorpi'o'id, scorpi'o'id'ales, scorpioida'lis (σκορπιών, a scorpion; εἶδος, resemblance), when the main axis (pseudaxis) of inflorescence is coiled like the tail of a scorpion, more strictly with flowers two-ranked, these being alternately thrown to opposite sides; ~ Gym' e, or Cincin' nus, the lateral branches developed on opposite sides alternately as in Boraginaceae; in some English text-books erroneously given as "helicoid"; ~ Dichot'o' my, when alternate branches develop dichotomously; ~ unip'a'rous Gym' e, a cymose branching when the right and left forks are alternately the larger.

Scoticap'lank'ton, floating masses of Ceratum.

Scopo'thilus (σκότος, darkness; φιλέω, I love), dwelling in darkness; Scotophy'ta (φυτών, a plant), "darkness plants"; Scotophy'tia, darkness plant formations (Clements).

Scotot'o'pism = Skotot'o'pism.

Scott'ish Type of Distribution, used by H. C. Watson for those plants in Great Britain whose headquarters are in Scotland.

Screw'lines, spirals in phyllotaxis (Solms-Laubach).

Scri'nium (Lat., a case), Necker's term for the fruit of Myrtaceae, as of Lecythis; adj. scrina'ceus.

Scribo'cule, scribucula'tus (scrobi culus, a little trench), marked by minute or shallow depressions, pitted; *Scrobicula'tion*, employed by algologists for the minute depressed markings in Desmidiae; *scrobiculo'sus*, pitted or punctiform.

Scroll-gall, Kermer's term for malformations caused by insects on leaves, which curl up on the side attacked.

Scro'tiform, scrotiform'is (scrotum, a pouch; forma, shape), pouch-shaped; Scro'tum, the pouch or volva of some Fungi.

Scrub, stunted growth, due to want of water, with strong transpiration.

Scurf, small bran-like scales on the epidermis; *Scur'finess*, the appearance produced by membranous scales; scurf' y, lepidote, scaly.

Scu'tate, scuta' tus (scutum, an oblong shield), buckler-shaped; scuta'li Pi'li = scales.

Scu'tel (scutella, a salver) = Scute'lum; scutella'ris, scu'tellate, scutel la'tus, shaped like a small platter;

Scu'telliform scutelliform'is (forma, shape), patelliform, but oval and round (Lindley); platter-shaped (A. Gray); Scutel' lum, pl. Scu'tel'la, (1) a second and anterior cotyledon in grasses, as in wheat (Scribner); (2) the conical cap of the endosperm in Cycadaceae; (3) in Lichens, such an apothecium as in Parmelia, with an elevated rim derived from the thallus.

Scu'tiform, scutiform'is (scutum, a shield; forma, shape), buckler-shaped; ~ Leaf, the first formed leaf in Salvinia, the protophyll which differs in shape from those which succeed it.

Scu'tum (Lat., a shield), (1) used by Jacquin to denote the outer corona in Duvalia, Haw.; (2) the broad dilated apex of the style in Asclepiads.

Scym'itar-shaped (A. Gray) = Scimi tar'shaped.

Scyph'a or Scyph'us (σκόφος, a cup or goblet), (1) a cup-like dilatation of the podetium in Lichens, having shields on its edge; Scy'phi, pl.
“open cups” (Leighton); (2) the corona of Narcissus (Lindley); scyphiform (forma, shape), cup-like; scyphiph’orons (φόδεω, I carry), bearing cups; Scyphog’eny (γενδεω, I produce), Morren’s term for the production of ascidia; scyph’ose, possessing scyphi; Scyph’ulus, the colesule or VAGINULE of Hepaticae.

Scy’tinum (σκοτινος, leathern), used by Necker to denote an indehiscent pulpy pod, as of the Tamarind.

scytone’matous, allied to the genus Scytonema (Archier); Scytone’min, a brown pigment peculiar to that group of Algae.

sea-green, glaucous.

Seam, see Tracheid-seam; ~ Cells, flat cells with thickened walls, which direct the line of rupture in the stomium of Fern-sporangia (Goebel); ~ Nod’ules = Coal-Balls.

Sea’sonal Amphichro’matism (+ Amphichromatism), the production of two differently coloured flowers on the same stock, due to the season (Lindman); ~ Hetero’chromatism (+ Heterochromatism), different colours in the flowers of the same inflorescence due to season (Lindman).

seba’ceous, seba’ceus (Lat., a tallow candle), like lumps of tallow.

sebif’erous (sebum, tallow; fero, I bear), bearing vegetable wax or tallow.

Sec’ondary, secundar’ius, not primary, subordinate; ~ Bast, the result of the continued activity of the cambium, a formation of bast of the same essential character as the primary bast, but not forming a part of the original bundle; ~ Bud, additional to the usual bud, when more than one occurs in or near the axil; ~ Cor’tex, successive formations of liber or bast within the cortical sheath and primary cortex, exclusive of the secondary cork, phelloderm; ~ Des’mogen, formed from the cambium and destined to become secondary permanent tissue; ~ Emb’ryo-sac, the central utricles of Welwitschia, which correspond to the corpuscula of Coniferae (J. D. Hooker); ~ Form’ations, those formations which have arisen through human interference; the “Substitute Associations” of W. G. Smith (Warming); ~ Fun’gus, a parasite or saprophyte which attacks a plant after it has been injured or killed by some other Fungus; ~ Growth, additional or subsequent to primary growth; ~ Hy’brid, a hybrid one or both of whose parents were also hybrids; ~ Li’ber, = ~ Bast; ~ Medul’lary Rays, those which are intermediate between the primary rays, and do not extend to the pith; ~ Mem’bers, all those which are developed from the primary members, if borne directly, they are said to be of the first order, if on the latter, of the second order, and so on; ~ Mer’istem, a cambium which arises in an organ after its first development, by means of which further growth is possible; ~ Myce’lium, rhizoid attachments to the base of the sporophore resembling the normal mycelium; ~ Nu’cleus, the nucleus of the embryo-sac, resulting from the union of the two polar nuclei; ~ Pedun’cle, a branch of a many-flowered inflorescence; ~ Pet’iole, the footstalk of a leaflet; ~ Root, a lateral root, or a branch from the primary root; ~ Scleren’ch’yma consists of elongated procenchymatous cells having lignified walls marked with narrow oblique bordered pits; ~ Spore, a spore borne on a promycelium or derived from another spore; ~ Struc’ture, (1) any structure not primary, or (2) after it has grown beyond its early condition; ~ Tis’sue, refer to Desmogen, Vascular Tissue, etc.; ~ Wood, derived from the cambium but not in the original bundle as first formed, it
differs from the primary wood vessels by not having spiral or annular vessels like those on the protoxylem (Vines).

Sec'ondine = SECUNDINE (Crozier).

Secre'tion (secretio, a dividing), a substance formed from the fluids of the plant by the agency of glandular cells; ~ Bod'ies, secretory sacs; secre'tory, producing a secretion; ~ Sac, a unicellular or aggregated sac containing excreta as gum, resin, oil; ~ Space, an intercellular space containing similar products of secretion; ~ Tis'sue, as above, it forms a storehouse for the waste products of the plant.

Sec'tile, sect'ilia (Lat., cut or cleft), as though cut up into portions, as the pollen of some Orchids.

Sec'tion (sectio, a cutting), (1) a thin slice taken usually for microscopic inspection, in a given direction; (2) an important division of a genus.

Sec'tor (Lat., one who cuts), the term pericy'clic ~, is used by Bastit for interruptions of the continuity of the central cylinder of the subterranean portion of Polytrichum, as viewed in cross-section; Sec'tors, cf. PERICYCLIC SECTORS.

Sec'tus (Lat., cut), parted, completely divided to the base; in composition it forms the suffix -sect.

Sec'und, secun'dus (Lat., following or second), parts or organs directed to one side only, usually by torsion; secunda'tus (Lat., second in rank) is given by J. S. Henslow as synonymous; secundifo'rus (flos, floris, a flower), the flowers all turned in the same direction; sec'un'dine, the second, that is, the inner coat of an ovule; Secundi'nae inter'nae, an old term for ALBUMEN of a seed; Secun'dospore (~ Spore), C. MacMillan’s term for a spore which can also act as a gamete, as in Ulothrix.

Se'des Flor'is (Lat.) †, the torus of a flower.

Se'dile, Clements's term for a society of Sedum.

sediment'ary Yeast, bottom-yeast.

Seed, (1) the fertilized and matured ovule of a phenerogamous plant; (2) provisionally used in fossil botany, for certain seed-like fruits; ~ Bed, Blair’s word for PLACENT; ~ Bud, in Milne’s Dictionary is cited for OVARY; ~ Coat = Testa; ~ -gen’us, any fossil genus of which the seed or fruit is the only portion known; ~ Leaf, ~ Lobe = Cotyledon; ~ -ped’icels, of Bennetíttes, the strand supporting each seed; ~ Sport, a seminal variation; ~ Stalk, the FUNICLE or podosperm; ~ -stems, the seminiferous spadix of Bennetíttes; ~ Varia’tion, a variation arising from a seed, and not bud; ~ Var’iety, a variety produced from a seed-sport, or one which comes true from seed; ~ Ves’sel = Pericarp; Seed’a ge, proposed by L. H. Bailey for the state or condition of being reproduced by seed; Seed’ling, (1) a plant produced from seed, in distinction to a plant propagated artificially; (2) a young plant so produced.

sege’talis (Lat., pertaining to standing crops), growing in fields of grain.

Seg'ment, Segment’um (Lat., a piece cut off), (1) one of the divisions into which a plant organ, as a leaf, may be cleft; (2) each portion of meristem which originates from a single SEGMENT CELL; ~ Cell, the basal portion which is successively cut off from the apical cell in growth; ~ Halves, in Hepaticae the two external cells in apical-cell division, the remaining cell being in'ternal; Segmenta’tion, (1) division into members; (a) similar, as in a thallophyte, or (b) dissimilar, as in a cormophyte; (2) the division of the apical cell; the primitive cell-divisions of the embryo.

se'ggregate, segrega’tus (Lat., separated), kept apart; a Se’gregate is a species separated from a super-species.
Segrega'tion (segregatio, a parting), the
dissociation of characters from each
other in the formation of the germs
(Bateson).

seirol(y'tic (σειρά, a rope; ἄντικες, able
to loose), separation of hereditary
characters; Sei'rosepore (σειρά, a
seed), a spore produced in a branched
row resulting from the division of
terminal cells of particular branches
in certain Ceramiaceae; adj. seiropo-
sporic.

seismonast'ic, seismon'ic (σεισμός, a
shaking), sensible to vibration;
Seismotrop'ism (τρόπη, a turning),
the power of appreciating and re-
sponding to vibration (Pfeffer).

sej'u'gous, sej'u'gus (sæ, six; jugum,
a yoke), having six pairs of leaflets,
as some pinnate leaves.

Sela'go Type the presence of alternate
fertile and sterile z uses, as in Lyco-
podium Selago (Bower).

Sel'agraph (σέλας, a flash; γράφω, I
write), an instrument for the auto-
matic recording of light values
(Clements).

Selection, Na'tural, Darwin's ex-
pression for that which Herbert
Spencer has termed the "survival of
the fittest."

Seleinotrop'ism (σελήνη, the moon;
τρόπη, a turning), movements of
plants caused by the light of the
moon (Musset).

Self, a florist's term for having the
same tint throughout, without
markings of other colours or tints;
~ bred, the offspring of self-
fertilized flowers (F. Darwin); ~
col'oured, uniform in tint; ~
ferti'litic, producing fruit from its
own pollen; ~ Fertiliza'tion, ferti-
lized by its own pollen; ~ Par'asit-
ism, parasitic on its own species, as
sometimes happens with Vicia
; ~ Pollina'tion, the pollen of the
same flower brought into close contact
with its own stigma; ~ Steril'ity,
when pollen though ripe is inopera-
tive on the stigma of its own
flower; selfed, [monosyll.], fertilized
by its own pollen.

sellaform'is (sella, a saddle; forma,
shape), saddle-shaped.

Se'men (Lat., seed), the seed of
flowering plants; ~ cor'nicula'tum,
the receptacle of certain Fungals
(Lindley); ~ multi'plex = Sporid-
semes'ter (semestris, half-yearly) Ring,
the ring produced in the wood of
many tropical trees, in consequence
of two periods of growth and rest in
the year.

Se'met (semen, seed), a term used by
Grew and others for Anther,
cf. Semine.

sem' i (Lat.), half; semi-adhero'nt,
semi-adhe'rens (adherens, sticking),
half-adherent, that is, the lower
part or half; semi-amplec'tens, ~
ample'ctus (Lat., wound about),
equitant; ~ amplecti'vus is also
said for the same; semi-amplex'i-
caul, semi-amplexicaul'is (amplexus,
embracing; caulis, the stem), ap-
plied to leaves whose lower portion
half embraces the stem; semi-
amplex'us, half-embracing; semi-
amat'ropal, semi-anat'ropous (+
anatropous)=amphitropous; semi-
aquat'ic (+ aquatic), term for
those water-plants which root in
the soil, but produce aquatic leaves,
otherwise living as land-plants; semi-
aumatic (+ automatic), nearly
automatic in response to a stimulus,
Sem'i-autom'atism is the state (Bose);
semi-calyc'iform (+ calyciform),
half cup-shaped (J. Smith); Semi-
cap'sula (+ Capsula) = Cupule;
Semi'cell, one half of a Desmid;
semicolum' nar, semicolumn'aris (+
columnar), semiterete; semicon-
nate (+ connate), applied to
such structures as the half-united
filaments of certain willows (Wim-
er); semi-cor'date, semicorda'tus
(+ cordate), heart-shaped on
one side only; semicordiform'is
(forma, shape), somewhat cor-
date; semicyli'ndra'ceus, ~ cyli-'n-
dricus (+ cylin'dricus), semiterete;
Sem'i-des'ert, a transition between
desert and wood- or grass-land
with true seed-coats; Semina'tio, the act of natural dispersion of seeds; Se'mine, used by Grew to include both his Semet and Chive, the genitalia; semini'ferous, -rus (fero, I bear), (1) seed-bearing; (2) used for the special portion of the pericarp bearing the seeds; (3) = Dicotyledous; ~ Scale, in Coni-ferae, that scale above the bract-scale on which the ovules are placed and the seed borne; semini'fic (facio, I make), forming or produc- ing seed; Semini'fication, propagation from seed; semini'form'is (forma, shape), applied to re repro- ductive bodies in Cryptogams which are not part of the fructification; Se'menin, a sinistrorse carbohydrate occurring in reserve-cellulose in the endosperm of some seeds (Reiss); Se'minose, a dextrose form from ordinary cellulose belonging to the group of grape-sugars (Reiss); Se'mi- nule, Semin'ulum, = Spore; Semii'nilifer'us (fero, I bear), (1) that part of Cryptogams which bears the spores, a sporophore; (2) the cavity of the ovary while the ovules are yet unfertilized.

semi'orbic'ular, semi'orbicul'atus (semi, half, + orbicu'lar), half-round or hemispherical; semi'o'val, semi'o'valis, semi'o'vate, semi'o'vatus (+ oval, half-oval, one side only, or ovate in longitudinal halves; semi'petalo'id'ens (+ petalo'id), petaloid; of the shape or texture of a petal; semi'pollica'ris (pollex, a thumb-breadth; about half an inch in length; semira'dian, semira'diate, semi'radia'tus (radius, emitting beams), when only a portion of the outer florets of a Composite are radiant and different from those of the disk; semi'reni'form, semi'reni'form'is (renes, the kidneys; forma, shape), kidney-shaped on one side only; semi'reticul'atus (reticulatus, netted), when one of several layers is netted, the others membranous; semi'rev'et'us (revectus, carried back), cf. Septum; semi'sagitt'ate, semi-
**sagittala'tus** (sagitta, an arrow), arrow-shaped on one side of the longitudinal axis; **semisamari'oeus** (+ samaroides), partially samaroid, used of the fruit known as *amara*; **semisep'tate**, **semisep'ta'tus** (+ septatus), half partitioned, the disposition not projecting far enough to divide it into two cells; **semi-stam'inate**, **semistamini'arius**, -ris (+ Stamen), when part of the stamens are changed into petals; **semisymphlste'monias** (+ συμφων, I unite; στήμων, a stamen), when some of the stamens cohere, the rest remaining free (J. S. Henslow); **semi-terete**, **semiteres** (teres, round and tapering), half-terete; **semitrigr'y'nu's** (της, three; γυν, a woman), when of three styles two are united half way, the third being free on the ovary (Meissner); **semival'vate**, **semivalvatu's** (+ valvate), when the valves of a fruit are only partially dehiscent; **semivertic'il'late** (+ verticillate), subverticillate (Crozier); **semi-xeroph'y'tic** (+ xerophytic), showing a strong tendency to xerophytic conditions.

**semipervi'rent**, **semipervirens** (Lat.), evergreen, retaining its leaves during the winter; **Sempervirentipra'ta**, pl. (pratum, a meadow), meadow associations dominated by species mostly evergreen, in temperate climates, where frequent rain enables them to grow during most of the year.

**senary**, **senari'us** (Lat.), belonging to, or containing, six.

**Senes'cence** (senesco, I grow old), the ageing of protoplasm; a term used by Maupas for the condition of the offspring of a long-continued series, which, after continued fission, ultimately degenerate, and lose first the power of conjugating, and finally that of fission; **senescent**, growing old or effete.

**sensib'ilis** (Lat.), sensitive, manifesting irritability; **sensitive**, **sensitu'veus**, responsive to stimulus, as the leaves of *Mimosa pudica*, Linn.; ~ *Tis'sues*, those in which the sensibility resides; **Sen'sitiveness**, irritability; **sens'ory**, sensitive.

**Sep'al**, **Sep'alum** (σκέρνη, a covering), Necker's convenient term in universal use for each segment composing a calyx; **sep'aline**, **sepall'ius**, **sep'alous**, relating to sepals; **sep'aloid**, **sepalo'ideus** (elsos, resemblance), resembling a sepal; **Sepaloid**-dy, the metamorphosis of petals into sepals or sepaloid organs; **Sep'al'ulum**, Necker's diminutive for a small sepal.

**sep'arate** (separatus, put apart) *Flowers*, those of distinct sexes, dichlinous; **sep'arating Layer**, the **Abscess-layer**, as in leaf-fall; **Sep'aration**, multiplication by naturally detachable portions, such as gemmae, bulbils, etc.; ~ (or frac'tional) Cul'tures, a method of obtaining a pure culture by repeated inoculation in successive media; selecting the surviving species or form; ~ **Layer**, the abscess layer in defoliation, whence the leaf is ultimately detached.

**sepi'a'ceus** (sepa, a cuttle fish), sepia-coloured, a dark clear brown.

**Sep'icola** (sepes, a hedge; colo, I inhabit), an inhabitant of hedges, J. S. Henslow prints it *sepicolus*.

**Sep'ta**, pl. of *Septum* (Lat., a hedge or enclosure), any kind of partition, whether a true dissepiment or not; **septa'lis** (Lat.), belonging to a septum; **sep'tal**, H. C. Watson's term for plants growing in hedgerows; **sep'tate**, **sep'ta'tus**, divided by a partition; ~ **Spore** = *Sporidesm*.

**septem'fid** (septem, seven; fid, the root of *findo*, I cleave), cut into seven divisions; **septempar'tite** (partitus, cut), divided into seven lobes; **septena'te**; **septem'anus**, **septem'nus**, having parts in sevens, as in a compound leaf, with seven leaflets arising from the same point; **septa'tal-pin'inate**, used by Babington for those brambles which have seven pinnules in each leaf.

**septici'dal**, **sep'ticide**, **septicida'lis** (sepium, a hedge or enclosure; caedo, I cut), when a capsule dehisces
through the disseipments or lines of junction; septic'eous (fero, I bear), bearing the partition or dissepiment.

septifo'lious (septem, seven; folium, a leaf), seven-leaved.

sep'tiform, septiformis (septum, a hedge; forma, shape), having an appearance of a dissepiment, as the placenta of Plantago; septifragal, septifragus (frag, the root of frango, I break), when in dehiscence the valves break away from the dissepiments; septi'lis, of or belonging to dissepiments; Septio (Lat.), a fencing in; ~ praeco'x, a cell-wall formed early in development; ~ proc'rinasta, a cell-wall delayed in progress (Brand); septu'late, having spurious transverse dissepiments, (a) sparsely septate, (b) indistinctly septate, its true sense; Sept'u'm, a little portion of any kind; Sept'u'm, a partition or dissepiment; ~ revect'um, applied by Brand to a cell-wall advanced into a branch of Cladophora; ~ revect'um, a cell-wall formed across the stem of the same; ~ semi-revect'um, when the cell-wall forms an angle of 45° (Brand).

septu'lin'eris, -eris (septulum, in sevens; nerrus, a nerve), seven-nerved, applied to a leaf.

Se'reh, a disease of sugar-cane, probably due to Hypoecrea Sacchari, Went.

se'rial, seria'lis, se'riate, seria'tus (series, a row), disposed in series of rows, either transverse or longitudinal.

seri'cous, seri'cus (Lat.), silky, clothed with close-pressed soft and straight pubescence.

Se'ries (Lat.), (1) a row; (2) by A. Gray used as equivalent to subkingdom, by others used for various groups.

sero'tinal, sero'tinous, -inous (Lat.), that comes late), produced late in the season, or the year, as in autumn.

Ser'ra (Lat., a saw), the tooth of a serrate leaf; serraefo'lius, preferably serratifo'lius (folium, a leaf), having serrate leaves; ser'rate, ser'ratus, beset with antrorse teeth on the margin; ser'rate-cil'iate, toothed, and with a marginal series of hairs; serr'atulus, slightly toothed, denticulate; Ser'rate, Serratu'ra, the toothing of a serrate leaf; ser'ulate, serrula'tus, serrate, but the teeth minute; Serrula'tion, (1) being serrulate; (2) a serrulate tooth.

ser'ried, close together in rows (Crozier).

Ser'tulum (sertum, a garland), (1) † a simple umbel; (2) a selection of plants described or figured; Ser'tum, used for an account of a collection of plants.

se'samoid (Sesamum, + elidos, resemblance), granular, like the seeds of sesamum.

ses'qui (Lat.), a prefix meaning one and a half; sesquip'al'or, (1) when the stamens are half as many again as the petals or sepals; (2) when a fertile flower is accompanied by a nueter flower, as in some grasses; sesquipeda'lis (Lat.), a foot and a half in length; sesquicereip'rocal (reiprocatio, alternation), applied to hybrids between an F1 individual and one of its parents (De Vries).

ses'sile, ses'silis (Lat., sitting, as though sitting close, destitute of a stalk.

Se'ston (σπόρος, sifted), plankton material retained by very fine meshed sieves; Sestonol'ogy, the science in question.

Se'ta (Lat., a bristle), (1) a bristle or bristle-shaped body; (2) the sporophore of a Moss, the stalk which supports its capsule; (3) the arista or awn of grasses, when terminal; (4) a peculiar stalked gland in Rubus; (5) by cyperologists used for the bristle within the utricle of certain species of Carex; it represents the continuation of the floral axis (C. B. Clarke); seta'ceous, -ceous (+ -aceous), bristle-like; applied to a stem it means slender, less than
subulate; seta'ceo-serra'tus, having the serratures ending in a bristle-like point; seti'e'rous (gero, I bear), bristle-bearing; se'tiform (forma, shape), in the shape of a bristle; setig'eron (gero, I bear), bristle-bearing; se'tose, seto'sus (Lat.), bristly, beset with bristles; (2) having setae usually ending in glands (Babington): Se'tula, (1) the stipe of certain Fungi (Lindley); (2) a minute bristle; se'tuliform (forma, shape), thread-like; se'tu-lose, setulo'sus, resembling a fine bristle.

Sex, Sex'us (Lat.), in botany, male or female functions in plants.
sexan'gular, sexangula'ris, sexan'gulus (Lat.), six-angled.
sexfari'ous, -us (sex, six; fariam, suffix = in rows), presenting six rows, extending longitudinally round an axis; sex'i'fdd (jid = cleft), six-cleft (Crozier); sexloc'ular (locu'lus, a small cell), six-celled.
sexpar'tite, sexpar'ti'us (Lat.), cut into six segments.
Sex'tant (sextans, a sixth part), a radial cell division of segments in three series, a sixth part of the original (De Bary).
sex'tuplex (Lat.), six-fold or six-times.
sex'ual, sexual'is (Lat., pertaining to sex), (1) the distinction of sex; (2) applied to the phenomena of conjugation generally; ~ Genera'tion, the stage which bars the sexual organs; in Ferns the prothallus; ~ Sys'tem, Linnaeus's artificial arrangement by the number and position of the sexual organs.
Shade-leaves, those adapted to modified light; ombrophile; ~ plants, (1) quick-growing plants, employed to protect permanent trees, and removed when that result is attained; (2) used by Clements as shade-loving plants.
Shaft, Withering's word for Style.
Shag ха'irs, = Villi, in German "Zotten"; shag'gy, villous.
Shake, defect in timber due to the attacks of Trametes Pini, Fr.; also known as Bark-, Heart-, or Ring-shake.
sharp-pointed, acute.
shearin'g, displacement of the particles of a body by lateral strain; Shear-resis'tance, the property inherent in a body which resists shearing.
Sheath, (1) a tubular or enrolled part or organ, as the lower part of the leaf in grasses; (2) a limiting layer of surrounding cellular tissue, as the BUNDLE-SHEATH; (3) the lower, longer portion of the cell-wall in division of Oedogonium (Potter); sheath'ing, enclosing as though by a sheath.

Shell, conduction'ing, Dickson's term for a ledge within the ascidium of Cephalotus follicularis, Labill.
Shell, (1) the hard envelope of a nut; (2) a mass of layers in the cell-wall.
SheI'ter-par'a'site, see Domatia.
Shield, (1) an apothecium or disk arising from a Lichen-thallus, containing ascii; (2) in Characeae, one of the eight cells forming the globule; (3) the staminode of Cypripedium (S. Moore); (4) in Coniferae, the thick rhomboid extremity of the cone-scales (Potter); ~ shaped, in the form of a buckler; clypeate, peltate, or sentate.
Shif'ting, the same as Gliding Growth; in Germ. Verschiebung.
Shing'le-banks, accumulations of rolled pebbles, due to tides or sea-currents.
shi'ning, lucid, a clear and polished surface.
Shoot, (1) a young growing branch or twig; (2) the ascending axis; when segmented into dissimilar members it becomes a Stem; ~ Pole, that point where new shoot growth begins, cf. Root-pole; leaf'y ~, a branched shoot; thal'loid ~, an unsegmented shoot.
Short-rods, short bacteria.
Sho'shungraph (Sanscrit, shoshun, suction; γραφ, writing), apparatus to record suctional response in plants (Bose).
Shot, or Chott, a hollow which in Algeria accumulates water with salts;
a "salt spot"; Shot-hole, an attack on plum trees and their allies, due to the fungus Cercospora circumscissa, small holes being formed in the leaves.

Shoul’der, in Lagenostoma that part which curves inwards towards the apex of the seed.

Shrub, a woody perennial of smaller structure than a tree, wanting the bole; ~ Lay’er, chiefly formed of hazel, with sallow and dogwood; ~ Stra’tum, in mixed woodland from about 3 to 15 feet in height; ~ Wood, when shrubs form the chief feature; shrub’by, like a shrub; Shrubb’let, an undershrub.

Sib’ling (Sib, bird fanciers’ term for in-bred), applied to a pair of plants from the ovaries or the pollen of the same plant (Pearson); Sib’ship, the relationship in question.

Siccides’e’rta, pl. (siccus, dry, + de’sertum, a desert), steppe formations; Siccisimi’des’e’rta, pl., deserts on which less than half of the substratum is covered with vegetation; sic’e’us (Lat.), dry, juiceless, containing little or no watery juice; sicicita’te (Lat., abl. absolu.), in the dry state, that is, herbarium specimens.

Si’cle, = Drepanium (Potter).

Sick’le-stage, of nuclear division, Zimmerman’s term for the Para-nucleus of Strasburger, a crescent-shaped body at one margin of the nucleus, supposed to represent a stage in the disappearance of the nucleolus.

Sieve’-cells, the individual cells which constitute the Sieve Tubes; ~ Disk, ~ Field, ~ Plate, the pierced plate on the transverse or lateral walls of vessels covered on both sides by callus; ~ Fores, the openings in a sieveplate; ~ Tis’sue, long articulated tubes, whose segments communicate by means of the sieveplates; ~ Tubes, the tubes composing the tissue described; ~ Xy’lem, applied by Chodat to groups of sieve-cells in the wood of Dictella.

Sieverse’tum, a plant association in which Sieversia is the predominant factor (Clements).

Sigilla’rian, resembling or allied to Sigillaria, a genus of fossil plants whose surface is marked with numerous scars; sig’illate, sigillatus (Lat., sealed), as if marked with impressions of a seal, as the rhizome of Polygonatum.

Sig’matoid (σιγμα, the Greek σ; el’dos, resemblance), or sig’moid, sigmo’i’des, doubly curved in opposite directions, like the Greek σ.

Signs, arbitrary symbols for shortly stating certain facts; a selection of those more generally used, is given in Appendix A.

Silene’tum, an association of Silene (Clements).

Silie’cous (silicèux, silicens, a flint), pertaining to silica, as ~ grasslands, or silie’cule, showing a preference for siliceous soils; silicie’laus, colo, I inhabit), used of Lichens which grow on flints; Silicifica’tion, the deposition of silica in tissues; Silic’ion, denoting the prevalence of silica in the soil; Sil’ico-cell’ulose (+ cellulose), the condition of tissue when silicex is intimately blended with it is as in Equisetum hyemale, Linn. (Tschiirch).

Sil’icule, Silie’cula, Sil’icule (Lat., a little husk or pod), (1) a short silicula, not much longer than wide; (2) ‡ = Carpo’clonium of Algae; silic’ulose, having silicules as fruits, or resembling a silicule.

Sil’iqua (Lat.), Silique’ (pr. Si’lee’ck), (1) the peculiar pod of the Cruciferae, two valves falling away from a frame, the Replum, on which the seeds grow, and across which a false partition is formed; (2) ‡ by Blair employed for Legume; Silique’l’a, a subordinate part of a fruit such as the poppy, consisting of a carpel with two extended placetas; silique’form (forma, shape), shaped like a silique; silique’ose, siliquo’sus, when the fruit is a silique, or resembles one.

sil’ky, sericeous.
Sil'ver-grain, the appearance in radial longitudinal section of exogenous wood, especially of oak, due to shining plates of the medullary rays; ~ leaf, a disease of plum-leaves, ascribed to Stereum purpureum.

sim'ply, having a lustre like silver.

sim'i lar Parts †, elementary organs or tissues (Lindley).

sim'ilifor'ous (similis, like; flos, floris, a flower), applied to an umbel when its flowers are all alike; Similisym'metry (+ Symmetry), when the two halves of a Diatom valve are similar (Schuett); consimilarity.

simp'le, sim'plex, of one piece or series, opposed to compound; ~ Fruits, those which result from the ripening of a single pistil; ~ Gland, a single cell containing a special secretion; ~ Gonidiophore (+ Gonidiophore), a single hypha as in Pencillum; ~ Hairs, not compound or branched, the prolongation of a single epidermal cell; ~ Inflores'cence, a flower cluster with one axis, as a spike, spadix, or catkin; ~ Leaf, of one blade, with incomplete segmentation; ~ Nuts'a'ion, nutation in one direction only; ~ Pits'il, consisting of one carpel; ~ Pit, ~ Pore, with only a slight enlargement at the centre, where it meets the neighbouring cell; ~ pri'mary Root, a tap-root; ~ Spor'ophore, a single hypha or its branch; in German, Fruchtadfen; ~ Stem, a stem which is unbranched.

sim'pli'si'mus (Lat.); entirely simple.

simul'ta'neous (simultanous, Late Lat., at the same time) Whorls, when the members are of the same age and developed at the same time.

Sina'grin, or Sin'igrin, a glucoside occurring in the seeds of Brassica sinapoides, Roth, formerly termed Sinapis nigra, Linn., the origin of the name.

Sina'pin or Sina'pisin, an alkaloid from Brassica alba, Boiss. (Han-bury and Flückiger).

sing'le, used of a flower which has only one set of petals, as opposed to double or any approach to doubling.

Sing'uliform (singulus, separate, + Form), a plant in which one organ varies independently of another (Kuntze).

sinis'trad = sinistral.

sinis'tral, sinis'tro'se, sinistror'sus, turned to the left; cf. dextrorse, and Appendix C.

Sin'un'sin (sinister, the left), a carbohydrate from Urginea and other bulbs, formerly regarded as a gum; Sinistrostly'ly (+ Style) in enantiostylious flowers when the styles are bent to the left (Knuth).

Sin'ker, (1) the secondary roots of Mistletoe, Viscum album, Linn., forming laterals which strike perpendicularly downward into the wood of the host; (2) similar growths in Pilostyles Ulei (Solms).

sin'kate, sinua'tus (Lat., curved), with a deep wavy margin; sin'uated, deeply waved; sin'uolate, sinuola'tus, repand, faintly or minutely sin'uate; sin'uose, sin'uous, sinuate.

Sin'us (Lat., a curve, a fold), (1) a recess or re-entering angle; (2) a pore in some Fungi (Lindley); (3) the recess between the half-cells of Desmidiae; (4) in Lagenostoma the space between the free portion and the nucellus and the integumental lining; (5) in the same genus, the gaps in a fimbriated micropyle (Oliver).

Siot'ropism (σελόν, I shake; τρώπο, a turning), stimulus by shaking, as with Mimosa pudica Linn.

Si'phon (σπόν, a tube), a pericentral elongated tube in the frond of Poly-siphonia and allied Algae; sipho'neous, relating to Algae, possessing tubular structure; sipho'nic, tubular, as applied to a Dictyosteile; Siphoniph'yton (φυτόν, a plant), a Composite with all its florets tubular; Si'phonogam (γαμος,
Siphonogam, plants fertilized by means of pollen-tubes; all Phanerogams; adj. siphonogamic, siphonogamous, the condition being Siphongamy; siphonosteal (στήλη, a column), having a tubular stele (Jeffrey); Siphonosteole (+ STele), the central vascular cylinder when complete as a tube.

Siraplankton (+ PLankton), floating marine vegetation mainly composed of Thalassosirea.

sirostoid (εἶδος, resemblance), like the genus Stirosiphon, in which the cells occur in two or more rows; sirosiphonic, allied to Siroisiophon (Archer).

Sister-cells, cells of the same generation produced by the division of a single (mother) cell, as the pollen-grains of a tetrad.

Situs (Lat., situate), (1) the position occupied by an organ; (2) the mycelium of some Fungi (Lindley).

Skaphoplankton (σκάφος, a skiff, + PLankton), boat-shaped organisms floating as a mass (Forel).

Skein, a condition of the chromatin in the nucleus in the initial and final stages of division; daughter ~ or mother ~, according to their development.

Skelétón (σκελήτος, mummy), any framework which persists after the destruction of the organ by fire or corrosion, as the remainder of the cell-wall in ash, or the starch grain after partial solution by an enzyme.

Skin, a thin external covering, the cuticle or epidermis.

Skiophyte (σκιά, shade; φυτόν, a plant), a plant which is not adapted to full exposure, but prefers shade.

Skoliotropic (σκολιός, bent; τροπή, a turning), curved, cf. Campyloptopus.

skotophile (σκότος, darkness; φιλέω, I love), = geophilous; Skototropism (τροπή, a turning), seeking darkness; aphelotropic.

Slacks, pl., Yorkshire name for shallow valleys, due to glacier lakes in the Ice-age.

slashed, laciniate.
slate-grey, the colour of slate, schistaceous.

Sleave, the smut of oats due to Ustilago Avenue.

Sleep, the repose of plants, with changes in position of organs such as leaves, due to absence of light; ~ Movements, positions taken by leaves during the night, nyctitropic movements.

Sleeping (or Slee'py) disease of Tomato plants, the result of Fusarium Lycopersici.

slen'der, long and thin.

Sli'ding Growth, a gradual change in the relative position of vessels, fibres, etc., due to their development in a longitudinal direction.

Slime-flux, a flow of liquid from diseased fruit and forest trees, due to the attacks of various Fungi, producing a fermentation of the cortical elements down to the cambium zone (Massee); ~ Fungi = Myxogastres; ~ Moulds, a popular term for Myxogastres, otherwise called Myxomycetes and Mycetozoa; ~ Strings, metabolized material in a state of flux, which passes by the pores of the sieve-plates from one sieve-tube to another (A. W. Hill).

sl'i'ly, mucous.

Sling-fruit, applied to any fruit which by possessing contractile tissue projects its seeds to a distance.

Slip, (1) described by Loudon as a shoot from the collar or lower part of the stem of a plant, used for propagation, stem-suckers; (2) a popular name for Cutting, but not used by cultivators.

snarat'dine, snarat'dinus (σμάραγδος, an emerald), emerald green.

Smil'acine, a crystalline body occurring in the roots of the officinal sarsaparilla, Smilax.

smo'ky, smoke-coloured, famous.

smooth, (1) not rough, opposed to scabrous, free from hairs; (2) glabrous, as opposed to pubescent.

Smut, disease in grain produced by
various species of *Ustilago*; ~ Spores, reproductive bodies of *Ustilaginae*.

**Snaill-plants**, those which are supposed to be fertilized by snails and slugs, malacophilous plants.

**Snow-white**, white of absolute purity, niveus.

Snow-flushes, pl. (Germ. Schneetälchen), dark patches of soil, due to accumulated deposit from melting snow, the vegetation is known as *Anthelietum*; ~ leaves, Jungner’s name for certain leaves which are thin or leathery, folded in the bud, and with no pulvinus; winter-leaves; ~ patch-flora = ~ flushes.

Sob’ole, Sob’oles (Lat., a sprout), a shoot, especially from the ground; soboliferous (fero, I bear), bearing vigorous shoots.

Sobri’form (sobrinus, a cousin, + Form), a Versiform which belongs to a Subgregiform, as Rubus moluccanus, Linn. (Kuntze).

so’cial (socialis, pertaining to companionship), (1) when individuals of the same species usually grow in company, and occupy a considerable extent of ground; (2) dominant species which give the main character to the vegetation (Drude); (3) completely grouped; ~ (a) competitive ~, when the roots of the competing plants are at the same level; (b) complementary ~, when the component plants root at different levels; (c) exclusive ~, a pure growth; (d) inclusive ~, permitting the entrance of other forms (Clements); ~ Flowers, Knuth’s term for Compositae, the flowers being grouped into heads.

Soci’ety (Plant), (1) see Association; (2) an area characterized by a principal species; it is shown by addition of ile, as Androsacile for a society of *Androsace* (Clements).

soft, applied to tissue which readily yields to the touch; ~ Bast, the tissue of sieve-tubes and parenchyma, opposed to the HARD BAST of layers of fibres.

Sola’nin, a poisonous crystallizable alkaloid in many species of *Solanum*, especially in *S. nigrum*, Linn., the potato, and the tomato.

So’lar (sol, solis, the sun) Plants, Grew’s name for those which twine with the sun, that is dextrorse; Solari’um, in botanic gardens a spot for exposing plants to the full rays of the sun.

sold’ered [disyll.], united together.

sole, applied to a carpel to denote the end furthest from the apex (Goebel).

sol’aeform, soleaeform’is (solea, a sandal; forma, shape), slipper-shaped, almost resembling an hour-glass.

Solen’a’idy (σωλην, a tube; ἀλβοια, genitals), the conversion of the genitals into barren tubes (Morren).

Soleniaplank’ton (+ Plankton), floating neritic vegetation characterized by abundance of *Rhizosolenia* (Warm.

Sole’nostele (σωλην, a tube, + stele), an amphiphilic vascular tube with widely separated leaf-gaps; per’forated ~, in which gaps other than leaf-gaps occur (Tansley); Solenosten’te is the condition; solenosten’tic (στήλη, a pillar), having a tubular stele with internal and external phloem (Van Tieghem).

Solfatar’as, pl. (It., solfo, sulphur), hot sulphur springs, round which grows a special xerophilous vegetation (A. F. W. Schimper).

sol’id, sol’itus (Lat.), not hollow, free from cavities; ~ Bulb = Corm.

sol’itary, solita’rius (Lat., lonely), (1) single, only one from the same place; (2) Stokes used this for monotypic genera; (3) species of which the individuals occur in extreme isolation; ~ gregarious, a single clump of one species.

solubilis (Lat., that may be loosed), separating into portions or pieces; Solubili’ty, Solubil’itas, the condition of being readily loosed.

solute’, solu’tas (Lat. unbound), free, not adherent, becoming separate; Solu’tion, the detachment of various whorls normally adherent; the opposite of Adhesion.
Soma (σώμα, a body), the body as distinguished from the germ or reproductive portion (L. H. Bailey), pl. Somata, granules of any kind; Som-plasm (πλάσμα, moulded), Weismann's term for the protoplasm of the body or vegetative portion, in opposition to the germplasm; somat'archous (ἀρχή, beginning), that kind of cell-division in which one portion continues the reproductive function and the other transmits the somatic function (De Vries); Som'ia, starch-like structures in the flovvia of pollen-grains (Saccardo); somat'ic Apog'amy, when the cell which gives rise to the sporophyte possesses the haploid chromosomes; = Euapogamy; Cell, (1) cell not specially modified, the opposite of a reproductive cell; (2) a cell with unreduced number of chromosomes (Benson); somatogen'ic (γένος, offspring), Weismann's word for "acquired characters"; Soma-phytes (φυτόν, a plant), the higher plants, possessing adult parts and organs; adj. somatophytic; Soma-t'ropism (τρόπος, a turning), Van Tieghem's term for the directive influence of the substratum on the growth of an organism; frequently shortened to Soma'tropism; adj. somatropic.

Soot'y, fuliginous; mould, on Citrus, caused by various species of Meliola which cause sooty patches on the fruit and leaves.

Sor'al, relating to a Sorus.
Sor'bin, a glucose occurring in Pyrus, some species of which were formerly ranked under Sorbus.
Sor'did, sor'didus (Lat., fouled), dirty in tint, chiefly applied to pappus when of an impure white; sor-di'dis'simus, very dirty coloured, grey.
Sored'e (σωρός, a heap), a proposed emendation of Sore'dium, pl. So're-dia, in Lichens a single algal cell or group of them, enveloped in hyphal tissue, which is able to grow at once into a thallus when detached; a brood-bud; sore'dial, pertaining to a soredium; Branch, a branch produced by development of a soredium into a new thallus, while still attached to the mother-thallus; So're-di'ate, Sore'id'ius, bearing small surface patches; sore'dii'derous (fero, I bear), bearing soredia.
Sore'ma (σώρευμα, what is heaped), a heap of carpels belonging to one flower; Sore'uma = So'redi'dum (J. S. Henslow).

Sor'gin, Passerini's term for the product of transformation of Sor'ghorn'bin, the natural pigment of Sorghum vulgare, Pers.

Sor'dium, Hicks's variant of Sor-e'dium.
Sor'if'erous (σωρόφόρος, a heap; fero, I bear), bearing sori; Sor'ophore (φορέω, I bear), a gelatinous cushion on the ventral edge of the sporocarp of Marsilea, and Ferns; Sor'o'sphaeres (σφάλαξ, a ball), globular groups of wedge-shaped spores in Sorosphacra.

Sor'or'es (Lat., sisters), used of physiological species (Schröter).
Sor'o'se, Sor'o'sis, Sor'o'sus (σωρός, a heap), a fleshy multiple fruit, as a mulberry or pine-apple; adj. sor'ose.

Sor'rowful Flow'ers, "those which exhale their odours only at certain hours of the day, as Pelargonium triste," Soland. (Crozier); cf. Plantae Tristae.

So'rus, pl. So'ri (σωρός, a heap), (1) a cluster of sporangia in Ferns; (2) in Synchitrietea, a group of sporangia from a single swarm-cell; (3) a heap of soredia forming a powdery mass on the surface of a thallus; Canals', cavities in the young sporangia of certain Pteridophytes (Campbell); Gametang'i'um, reproductive bodies in Geraudia on the assimilating cells (Kjellman); Sporang'i'um, reproductive bodies crowded into groups on the branches of Kjelmania; Fus'ion, several sori which have run into one, without apparent distinction.
spadic'eous, *spadi'ceus* (σπαδικός, a palm-branch), (1) as to colour, date-brown; (2) having the nature of, or bearing a spadix; *spadic'ose*, resembling a spadix; *Spa'dix*, a spike with a fleshy axis, as in Aroids.

Span, usually about nine inches, between the extremities of the thumb and little finger, *Dodrans*; sometimes the small span of seven inches is intended, the space between the thumb and middle finger when stretched.

Spanand'ry (σπανάδρης, scarce; ἀνθρ., ἀνθρώπ., a man), Marchal’s term for disappearance or extreme rarity of males in normal bisexual lines of descent; *spanan'thus* (ἀνθρός, a flower), having few flowers.

Spang'les, used by J. E. Smith for *Patellulæ*.

Sparga'niun-cor'tex (the genus *Sparganium, + Cortex*), applied to fossil stems with a vertical system of fibrous strands which do not anastomose, as *Medullosa*; ~ Type, the cortex having short, radiating bands of fibrous sclerenchyma running vertically without anastomoses (Kidston).

sparse, *spar'sus* (Lat., spread open), scattered; *sparsifo'rus* (flos, floris, a flower), with scattered flowers; *sparsifo'lius* (folium, a leaf), with scattered leaves.

Spars'ioplasts (πλαστός, moulded), *ELAIOPLASTS*, variable in position and numbers (Mereschkowsky).

Spartine'tum, a plant association made up of *Spartina* (Ganong).

spart'oid (σπαρτός, esparto grass; ἀνθρ., resemblance), used by Fayod for persistent mycelium which is corticated.

Spathe, *Spath'a* (σπάθη, a spatula), a large bract enclosing a flower cluster, usually a spadix; ~ Valves, the bract-like envelopes beneath the flowers in certain Monocotyledons, as *Allium* and *Narcissus*; *spatha'ceous, -ceus* (+ aceus), spathe-bearing, or of the nature of a spathe; *spathæ'us*, having a very large spathe (Lindley); *spa'thal, spa'thate, spathèd*, furnished with a spathe; *Spathel'la*, an old name for the glumes of grasses, sometimes also the paleae were included; *Spathel'ula*, a palea of a grass; *Spathili'la*, a secondary spathe, as in the inflorescence of Palms; *spa'thos, spathe-like; spat'hulate, spat'hula'tus, spat'ulate*, oblong, with the basal (proximal) end attenuated like a druggist’s spatula.

Spawn, mycelium.

Spec'ialized Form, Erikson’s term for Biological Race.

Spec’cies (Lat., a shape, kind, or sort), the particular kind, the unit in classification, the aggregate of all those individuals which have the same constant and distinctive characters; they may be distinguished as *biologic* ~, *morphologic* ~, or *physiologic* ~, according to the basis of discrimination; ~ element’ary ~, a true unit, not a collective species; ~ Hy’brid, a hybrid between two species of the same genus; ~ Soror’es, Schröter’s term for any two species of *Uredineae* which inhabit two distinct hosts, but show no morphological difference, as in *Puccinia*; ~ spec’tic ~, relating to a species; ~ Cen’tre, the particular spot where the species is supposed to have originated; ~ Char’acter, the diagnosis which separates one species from another; ~ Name, the Latin apppellative appropriated to a given species, usually an adjective, but sometimes a substantive used in apposition.

Spec’imen (Lat., an example), a plant, or portion of one, prepared for botanic study.

spec’tans (Lat., looking), “se invicem spectantia folia,” = opposite-leaved.

Spec’trophore (spectrum, an appearance; φορέω, I carry), apparatus designed by Reinke to determine
the action of the different rays of light in the elimination of oxygen by plants.

Speranthy (σπειρα, a twist; ἀνθός, a flower), when a flower assumes a twisted form.

Sperimea (σπειρίμα, a fold or coil), in Lichens, a gonidium.

Speirogonimia (σπειρα, a twist; + GONIMIA), gonimia single or scattered; Speirostichies (στίχος, a row), a spiral series (Hance).

Spergulin, a fluorescent substance occurring in the seeds of Spergula.

Sperm (σπέρμα, a seed) Cell, a male reproductive cell, as (α) an antherozoid, (β) a pollen-grain; usually a minute, active cell, whose function is that of fusion with a large resting cell (ososphere), to form a zygote; ~cell, sometimes restricted to the spermatozooid mother-cell; ~Chromatin, that portion of the male nucleus which is receptive of staining; ~Nucleus, the nucleus of a male gamete (male pronucleus) which coalesces with the nucleus of an oosphere (female pronucleus) to form a germ-nucleus; Spermagone, Spermagonium (γόνος, offspring) = Spermogone, etc.; Spermamoebae (+ Amoebae), Pringsheim’s term for certain specialized portions of the antheridial protoplasm of Saprolegniae, which fertilize the oosphere; Spermangium (ἄγγειον, a vessel), the sporangium of an Alga (Lindley);

Spermaphore, Spermaphorium (φορέω, I carry), (1) the placenta; (2) the funicule; Spermaphytes (φυτόν, a plant), used to include both Angiosperms and Gymnosperms; all plants except Cryptogams (Sachs); adj. spermaphytic; Spermapiodium or Spermadophororum (ποὺς, πῶς, a foot), a branched gynophore in Umbelliferae; Spermatum, H. Gibson’s term for Antheridium; Spermary, = (1) Pollentube; (2) employed by T. J. Parker for a male organ of reproduction, as a gamete; Spermatange, Spermatium (ἄγγειον, a vessel), (1) the antheridium of Bangiaceae (T. Johnson); (2) by A. Braun employed for spermogonia and antheridia generally; Spermatia, pl. of Spermatium, male non-motile gamete-cell; Spermatid, Spermatidium (εἶδος, resemblance), (1) the mother-cell of antherozoids; (2) formerly used for an Algal spore; spermatiferous (φερῶ, I bear); spermatig'eros (γερῶ, I bear), bearing spermatia; Spermatocyst (κύστις, a bag), the mother-cell of antheridia, especially of Mosses; Spermatocyste (κύτως, a hollow), (1) Goebel’s term for the preceding; (2) used by Shaw for four primary organs, each containing a pair of blepharoplastoids, the eight secondary or spermatid mother-cells each contains two blepharoplasts (Coul., Bot. Gaz. xxvi., Dec. 1898, p. 449); Spermatoozygium (κύτως, a hollow vessel), a simple sporangium containing spermatozoids (A. Braun);

Spermatogamète, Hartog’s term for a male gamete; Spermatogenèsis (γένεσις, a beginning), the development of the male elements, antherozoids, pollen-grains, and analogous bodies; spermatogenous (γεννάω, I beget), (1) productive of the male element; (2) producing seed; Spermatogonidium (+ GONIUM), A. Braun’s term for Spermatozoid; Spermatogonium (γόνος, offspring), the male gametogonium, a cell which divides to form gametes, or itself passes into the state of one (Hartog); Spermatoidium, one of “small cells containing gonidia in Algae” (Lindley); Spermatokålium (καλιά, a cabin), name given by Gibelli to the peritheciurn of Verrucaria; spermatokinetic (κυνηθικός, having the power of movement), tending to produce the male element in plants; Spermatophore (φορέω, I carry), a structure bearing
Spermatophytic

a spermatium; spermatophytic, relating to seed-bearing plants; Spermatophyte (φυτόν, a plant), a Phanerogam, a plant with true seeds; Spermatoplasm (πλάσμα, moulded), the protoplasm of a male cell; Spermatoplasm (πλάσμα, moulded), a male sexual cell; spermatoplasmic, relating to the Spermatoplasm; Spermatosphaeria, pl. (σφαίρα, a ball), Ittigsohn's term for a presumed male body in Spirogyra, declared by Pringsheim to be an undoubted error; Spermatostrotes, -ae (σπαρτόω, spread), plants distributed by seeds (Clements); Spermatothamnia (θάμnos, a bush), the antheridial filaments of Rhodophyceae (A. Braun); Spermatozoid (ζων, a living creature; ἔδως, resemblance), a male ciliated motile gamete produced within an antheridium; Spermatozo'non, by Shaw taken as the product of a biepharoplast; spermic, relating to a seed (Crozier); spermid'eous, producing seed; Spermidium = Achenes; Spermo'carp (καρπός, fruit), the fruit of Characeae (Bennett and Murray); spermo'carpous has been used as a synonym of Phanerogamous; Sperm'oderm, Sperm'oder'mis (δέρμα, a skin), the covering of a seed, the seedcoat; Sperm'odoph'orum (δόδος, a way; φόρω, I carry), the gynophore in Umbelliferae; Spermogem'ma (γέμμα, a bud), Caruel's term for Archeogonium; Sperm'ogone, Sperm'ogon'i'mum (γόνος, offspring), a cup-shaped receptacle in which spermatia are abjonted, differing from a pycnium by its smaller spores; Sperm'oneu'cleus = Sperm'nu'cleus; Sperm'ophore, Sperm'o'phor'um (φορέω, I carry), (1) the gynophore in Umbelliferae; (2) the placentas; (3) the modified shoot of the thallus of certain Algae, producing male organs (Darbishire); Sperm'ophyte (φυτόν, a plant), cited by Crozier for a Phanerogam or flowering plant; Sperm'otheca (θήκη, a case) = Pericarp; sperm'-ous = spermic; Sper'motype (τύπος, a type), Swingle's term for a specimen cut from a seedling raised from the original type; Sper'mum, a seed or its analogue.

Spha'elate (σφαίρα, gangrene), dark and withered as though dead; Sphae'elia, formerly a genus, now known to be the conidial stage of ergot, Claviceps purpurea, Tul.; Sphae'elic Acid is derived from ergot (Tuber).

Sphaeraphid'es (σφαίρα, a sphere; ἄφις, a needle), clusters of crystals in plant-cells of a more or less spherical form; Sphaeroplank'ton (+ Plankton), floating vegetation chiefly composed of Halosphaera viridis; Sphaerenchyma (σφαίρα, an infusion), spherical cells composing cellular tissue, as the pulp of fruits.

Sphaeria'ceous, sphae'roid (ἔδως, resemblance), resembling or allied to the Fungus genus Sphaeria.

Sphaer'ites (σφαίρα, a sphere), starch grains which have been asserted to be crystallized bodies; Sphaerobac'teria (+ Bacteria), bacteria with extremely small rounded cells which become detached; Sphaeroblastus (βλαστός, a bud), a cotyledon which rises above ground, bearing at its apex a rounded tumour (Lindley); Sphaerocar'pous (καρπός, fruit), when a fruit is globular; Sphaeroseph'alus (κεφαλή, a head), having flowers in a close globular head; cf. Sorosis; Sphaerocor'isis (+ Chorisis), the division of an axis in all directions, as in "witches-broom," etc. (Fermond); Sphae'ro-crys'tals = Sphaeraphid'es; sphae'roid (ἔδως, resemblance), globular, any solid figure approaching that of a sphere; ~ Cell, a reserve-receptacle in some calcareous Lichens (Zukal); syn., spheroid'al; Sphaerophy'tum (φυτόν, a plant), a Fern, its sporangia being globular; Sphae'rospore, Sphae'rospor'a (σφορά, a seed), a name proposed in substitution for Tetra'spore; Sphaer'ula, a globose per-
idium emitting sporidia buried in pulp (Lindley); ~asc'ic era, the receptacle of certain Fungi (Lindley).

**Spaphne'tum**, a plant society of *Sphagnum* moss; *Spagni'on*, a *Sphagnum* moor; *Spagni'opra'tum* (pratium, a meadow), moss-moor, dependent upon rain rather than underground water; examples, *Sphagnion*, Eriophoretum; *Sphagnol'ogy* (λόγος, discourse), the study of the genus *Sphagnum*; *sphagnoph'ilous* (φίλος, I love), applied to *Sphag'ophytes*, pl. (φυτά, a plant), those plants which prefer to grow on sphagnum cushions; *sphagno'sus*, used by Nilsson to denote a *Sphagnum* undergrowth to a heath; *sphag'nous*, resembling or allied to the genus *Sphagnum*.

**Sphaleroc'cum**, -pium (σφαλερός, unsteady; καρπός, fruit), an accessory fruit, as an achenie in a baccazzytume.

**sphe'neoid** (σφήν, a wedge), wedge-shaped, cuneate (Heinig).

**sphenophyl'laeous**, resembling or allied to the extinct family of Sphenophyllaceae.

**Sphenop'sida** (δέσμη, appearance), Scott's name for a group of plants allied to Lycopsida, consisting of Equisetales and other articulate vascular cryptograms.

**sphenop'teroid** (εἶδος, resemblance), like the fossil genus Sphenopteris.

**Sphere-crys'tals** and **Sphe'ro-cryst'als** (σφαίρα, a sphere) are synonyms of *Sphaeraphides*; **Sphere'yeast**; a growth form of *Mucor* which resembles yeast; **spher'i'cal**, **sphe'ricus**, relating to a sphere; **sphe'ricus** *L'i'mes* = orbital; **Sphe'roblast** (βλαστός, a bud or shoot), a wood-ball on the beech and other trees, from a dormant eye, disconnected from its vascular bundles (Ward); **spherogen'io** (γένος, race), the self-wounding of amoeboid organisms (Pfeffer); **Sphe'rules**, rounded bodies occurring in the sporangioles of *Selaginella* (Janse).

**Sphinct'riform** (forma, shape), having the apothecia almost sessile, as in *Sphinctrina*.

**Sphingoph'ilae** (σφίνγος = Hawkmoth; φίλος, I love), flowers fertilized by hawkmoths and nocturnal lepidoptera; they have a strong, sweet smell, and honey in the flower-tube (H. Mueller); adj. **sphingoph'ilous**.

**Sphrigo'sis** (σφρήγος, to be full of sap), rankness (Berkeley).

**Sphyg'mism** (σφυγμός, the pulse), the formation of contractile vacuoles through some stimulus (Massart).

**Sphyri'um**, or *Sphyri'on* (σφύρος, ankle), a plant succession on "collowlival" soils (Clements) = talus or scree.

**Sp'i'ca** (Lat.) = **Spike**.

**sp'i'cate spica'tus** (Lat., spiked), like a spike, or disposed in a spike; **spicif'erous**, -rhus (φυζό, I bear); **spiciflor'us** (filos, floris, a flower); **spiciform**, **spiciformis** (forma, shape), spike-like; **spicig'ero'sus**, -rhus (φυζό, I bear), bearing flower spikes; **spico'se**, and **spicous** (Crozier) = **spicate**; *Spic'ule*, *Spic'ula* (spicu'tum, a small needle), (1) a diminutive or secondary spike; (2) the point of a basidium in Fungi; also (3) their aciculae; (4) a fine, fleshy, erect point (Lindley); **spic'ular**, spiky; **spic'ulate**, spicula'tus, with a surface covered with fine points; **Spicula'tion**, Nylander's term for a hyphal constriction in spore-formation, the extremity being left as a spicule.

**Spike**, *Spica* (Lat., an ear of corn), (1) an indeterminate inflorescence, with flowers sessile on a common elongated axis; (2) an aggregation of sporophylls at the apex of the shoot; *com'pound ~*, an inflorescence consisting of spikes.

**Spil'kelet**, *Spic'ula*, a secondary spike, a cluster of one or more flowers subtended by a common pair of glumes, as in grasses.

**spiladoph'ilus** (σπιλαδός, σπιλαδός, a crag, occasionally clay; φίλος, I love), "dwelling in clay"; **Spilad'ophy'ta** (φυτά, a plant), "clay
Spiladophytia

spiral filament which makes up the nuclear spindle; ~ Pole, an extremity of the nuclear spindle; ~ Hairs, resembling malpighianous hairs, attached centrally, with the ends hooked (De Bary); ~ shaped = fusiform; Achromat'ic, or Nu'clear, the thread-like protoplasmic figures in nuclear division between the poles.

Spine, Spina (Lat., a thorn), a sharp-pointed woody or hardened body, usually a branch, sometimes a petiole, stipule, or other part; Spine-arm, in the genus Najas, the representative of a barren stigma (Rendle); ~ Cell, (1) a transitional ~ Arm (Rendle); (2) in Chara, certain cells of the cortex on the internodes, ending in a spine; Spines of the leaves, as of Holly, hardened extremities of the lobes, or spiny elevations; Spinel'la (dim. of spina), a prickle; spinello'sus, armed with small spines or hairs; spines'cent, spines'cens, ending in a spine or sharp point; spinicar'pous (καρπός, fruit), with spiny fruit; spinif'erous, -rus (fero, I bear), bearing thorns; spinifo'lius (foliium, a leaf), having spiny leaves; spiniform (forma, shape), thorn-like; spin'i ger, spinig'erous (gero, I bear), bearing or producing thorns; spin'ose, spinosi'sus, spinous', spiny, having spines; Spin'ula (Lat.), Spin'ule, a diminutive spine; Spinula'tion, a minute spine or prickle; spinule's'cent, slightly spiny, or having spinules; spinulif'erous, -rus (fero, I bear), having small spines; spin'ulose, spinulo'sus, with small spines or spinules; sp'iny, beset with spines, or resembling a spine.

Spr'inal, spira'lis (spira, a coil), as though wound round an axis; ~ Duct, a spiral vessel; ~ Flower, when the members are arranged in spirals and not in whorls; ~ Mark'ings, secondary deposits in tracheids; ~ Phyllotax'y, see Phyllo'taxy; ~ Tors'ion = Torsion; ~ Ves'sels, ducts having markings in a spiral form; Spi'r'alian, monstrosity of a flower due to torsion.

Spire (σκείπα, a twist), (1) a young leaf or shoot of grass; (2) "the continuation of the trunk in excurrent trees like pines" (Crozier); (3) one turn of a coil or twist; (4) when spiral curves become vertical spiral rows (Church).

Spi'ren, or Spi'reme (σκείπμα, a coil), a preliminary stage of nuclear division as in Lilium, the nucleus assuming an involved filamentous condition or "ribbon" from which the chromosomes are formed.

Spi'rical, (σκείπα, a twist), a delicate coiled thread in the surface cells of certain seeds and achenes which uncoils when moistened, as in Col-lomia; Spir'ilum, pl. Spir'il'la, (1) a term for Antherozoid; (2) also see next; Spirobac'teria, pl. (+ Bac'terium), bacteria which form spirally curled filaments, as the genus Spirillum, Cohn; Spirofi'bril'lae, pl. (cf. Fibril), Fayod's term for the spirally twisted hollow threads which he asserts constitute all living protoplasm; Spi'roid, a delicate thickening in the cells of the tentacles of Drosera (Kerner); Spi'rioolism, the coiling of an organ in development (Morren); Spirolo'beae (λαβός, a lobe), Cruciferae which have cotyledons folded transversely and the radicle dorsal; Spirolo'beus, with the cotyledons spirally rolled up, shown thus ☐ ☐; spiropho'tot'ropous (φῶς, φωτός, light; τρόπος, a turn), the majority of plants, those whose leaves so surround the axis, that the light in turn falls upon all (Drude); Spi'ro'spart (σπαρτός, sown, scattered), hypothetically the finest spirals of hyaloplasm, which constitute the Spirofib'ril'lae (Fayod).
Spithama (σπιθαμή, a span), a span of seven inches, from the tip of the thumb to that of the forefinger; spithamae's-us (Mod. Lat.), measuring a short span.

splen'dens (Lat., gleaming), glittering or shining.

Splint, a forester's term for Alburnum or Sapwood.

split, cleft or divided, parted; ~ Fruit = Cremocarp; ~ Lay'er, a loose felt of hyphae in Geaster, connected with the inner peridium, and torn into flakes at maturity.

split'ting, employed of hybrids, to denote division of characters from the parents.

spodoch'rous (σποδός, ashes; χρόνα, colour), of a grey tint.

Spong'elet = Spongiole; Spong'iole (spongia, a sponge), a name given to the root-tip, formerly thought to be a special absorbing organ, the Epiblema of Schleiden; Spong'iola radic'a'lis, De Candolle's name for the root-cap; ~ pistilla'ris, the extremity of the pistil, the stigma; ~ semina'lis, the caruncle of certain seeds; Spong'iolas'm (πλάσμα, moulded), the assumed spongy basis of proplasm; spongio'sus (Lat.), spongy, soft; Spong'iphy'll (φύλλον, a leaf), a shade leaf (Clements); spong'y, having the texture of a sponge, cellular and containing air, as in many seed coats; ~ Cor'tex, cortical tissue with air-bearing intercellular spaces, frequent in water-plants; ~ Parench'y'ma, loosely aggregated tissue, or having conspicuous intercellular spaces.

Spone'ilia (Lat., espousals), Planta'rum ♀ = Anthesis; the fertilization period.

sponta'neous (spontaneus, voluntary) Gener'ation, the assumed origin of living organisms from non-living matter.

spoon'form, "having the inner surface of a leaf concave or dish-shaped, as the outer leaves of a cabbage-head" (Crozier).

Spor'a (σπορά, a seed), = Spore; ~ cellulo'sa, ~ compos'ita, ~ multi-local'us = Sporides'm; spor'al, relating to a spore; ~ Arrest', partial or complete arrest of the development of the spores themselves, and consequent loss of reproductive function (Bower).

spora'dic (σποραδικός, dispersed), widely dispersed or scattered.

Sporadophy'tium (σποράς, σποράδος, scattered; φυτόν, a plant), open plant formation (Clements).

Spor'an'ge, Sporan'gium (σπορά, a seed; ἀγγείον, a vessel), (1) a sac endogenously producing Spores; (2) "sometimes applied to the volva among Fungals" (Lindley); Sporang'i'dium, (1) the columella of Mosses; (2) "the spore-case of certain Fungals" (Lindley); (3) C. Mueller's term for the Moss-capsule; Sporangio'dy, the change of sterile tissue into sporangia, as in Botrychi'tum; sporangiog'eno's (γένος, race, offspring), giving rise to sporangia; Sporang'i'ole, Sporan'giola, or Sporan'giolium, (1) a small sporangium in mucorini produced in addition to the larger sporangia; (2) formerly used for Ascus; (3) organs of an endophyte in Selaginella, composed of filaments rolled into the shape of a ball (Janse); (4) Sporangio'los'n is used in a double sense by Lindley: (a) for spore, (b) a case containing sporidia; Sporangio'li'ferum (φερόν, I bear), the axis on which the thecae of Ferns are borne (Lindley); sporangio'rous, bearing sporangia; Sporan'giophore, Sporangio'ph'or'um (φορέω, I carry), a sporophore bearing a sporangium, such as the sporophyll in Equisetum, or the columella in Ferns; sporangioph'o'rous, bearing sporangiophores; Sporan'giospore (σπορά, a seed), a term proposed for the spores of Myxogastres; Sporan'gi'sm, the condition of producing sporangia; Sporan'gium, cf. Sporang'i.
bion; in Cryptogams the ana'logue of seed in Phanerogams, understood by Saccardo as a Basidiospore; further particularized by C. Mac-Millan into Pri'mo, Secun'do, Ter'tio, Quar'to, and Quin'to-spores, according to their assumed development; cf. Car'pospore, Kinospore, Paulosspore, etc.; ~ Bul'bins, abortive apothecia in certain Lichens; ~ Case, = Spor'angium; ~ Cell, a spore, or a cell which gives rise to a spore (Crozier); ~ Forms, the divisions of a genus according to the characters of the spores, as, for example, in Puccinia (Arthur); ~ Group, = Sporidesm; ~ Hy'brid, a hybrid arising in the gametophytic stage; ~ Init'ialia, small processes borne by the fertile hyphae of Graphiola, which produce spores by one or more bipartitions of their contents (E. Fischer); ~ Lay'er, a layer of mother-cells of the spores of Phascum; ~ -sac = Moss-capssule (Berkeley); ~ Sport, a variation arising from a sexual reproductive act; cf. ~ Hy'brid; Spor'eling, a young plant from a germinated spore; Spor'e-plasm (πάδαμα, moulded), the protoplasm in a sporangium destined to produce spores; Spore'tia, pl., generative chromidia (Goldschmidt); Spor'id, see Sporidium; Spor'id esem (δησύδα, a bond), a pluricellular body, becoming free like a spore, in which each cell is an independent spore with power of separate germination; spor'id'eus, bearing spores; acotyledonous (Henslow); sporidifer'-erus (+ Sporidium, fero, I bear), bearing sporidia; sporidiform'is (forma, shape), shaped like a sporidium; sporidig'erus (gero, I bear), sporidifer'us; Spor'id'iole, Sporidi'olum, pl. Sporidi'iola, formerly used for spores in the lower Cryptogams; Sporid'ium, (1) a synonym or diminutive of Spore, or a granule which resembles a spore (Fries); (2) a spore abjected from a promycelium; (3) by Saccardo the term is used as equivalent to Ascospore; it should be restricted to spores generated in ascii, i.e. promycelial spores (Plowright); Sporidoch'ia, Sporidoch'ium (βοχείων, a holder), "the receptacle or even the stipe of certain Fungals" (Lindley); spor'i'eronus (fero, I bear), spore-bearing; Sporifica'tion, the process of producing spores (Ganong); spor'o-antherid'ic, Brebner's term for that condition of Haplospora when spores and antheridia are borne by distinct individuals; ~ -hermaph'rodite, when some are hermaphrodite and others bear asexually produced spores; ~ -oogonous, bearing spores in one individual and oogonia in another; Spor'o'blast (βλαστός, a bud), (1) Kœber's word for Merispora; (2) applied to secondary cysts in Gymnodinium; Sporo'carp, Sporocar'pium (καρπός, fruit), (1) a many-celled body resulting from a sexual act as from an archicarp, serving for the formation of spores; (2) the induvium or body enclosing the sporangia in Hydropteridea; Spor'o'cide (κιόδο, stem of caedo, I cut or kill), a germicide, any agent which destroys the vitality of spores or germs; Sporocladi'um (κλάδος, a branch), a branch on which the reproductive bodies of some Algae are found; Sporoconid'ium (+ Con- idium), used by A. Braun for Acrospora; Spor'o'cyst (κύστις, a bag), a unicellular structure, producing asexual spores (Davis); Sporocy'cta, the sporangium of an Alga; Spor'ocy'te (κύτως, a hollow), Goebel's term for the mother-cell of a spore; Sporocy'tium, a simple sporangium containing spores (A. Braun); Spor'o'derm, Sporoder'mis (δέρμα, a skin), the integument of a spore; Sporodoch'ium, pl. Sporodoch'ia (βοχείων, a holder), the sporiferous apparatus in Fungi belonging to Tuberculinae, cf. Sporidochia; Sporogam'ia (γάμος, marriage), a
term which has been suggested for the heterosporous Cryptogams; Sporog"ema (gemma, a bud), A. Braun’s term for the oogonium (nucule) of Chara; Spor"ogen (γένος, offspring), a plant which bears spores, a Cryptogam; Sporogen"esis (γένεσις, origin), the origin and development of seeds or spores; sporog’enous (γενικ, I beget), producing spores; ~ Fil’maments, Oltmann’s term for certain outgrowths of the fertilized carposporium of Budr"es-naya; the ooblastema-filaments of Schmitz; ~ Lay’er = Hym’enum; ~ Nu’cleus, the nucleus resulting from the fusion of the nuclei of the spermatium and the carposporium of Florideae (Oltmanns); Spor’ogone, Sporogon’ium (γονή, progeny), the sporocarp in Musciinae, the whole product of a sexual act remaining attached to the oophyte or plant bearing the sexual organs; spor’oid (είδος, resemblance), spore-like (Crozier); Sporomyce’tes (μύκης, a mushroom), Marchand’s term for a group to comprise Myco-, Siphio-, Theca-, and Basidio-myce’tes; Spor’on’t (οντα, things in being), the sporogenous stage of Plasmodidiophora (Schwarz); Spor’ophore, Sporoph’orum (φόρος, I carry), (1) the Placenta; (2) a branch or portion of a thallus which bears one or more spores; (3) in Ferns and Mosses, the Sporophyte; (4) a spore-containing capsule (Lyon); Spor’ophase (φάσις = appearance), the production of a fruit-body giving rise to spores (Tansley); Sporoph’y’as, A. Braun’s term, the same as Sporophy’d’ium (dimin. of φατά, a shoot), T. F. Allen’s term for the nucule of Characeae while still unfertilized; Sporo’phyll, Sporophyll’ium (φύλλον, a leaf), (1) a leaf which bears spores; (2) a leaf-like division of the thallus of an Alga bearing fruit, as in Carpo’clonium; adj. sporophyl’ary; ~ Leaves, stamens and pistils; Sporo’phylo’dy, the change of vegetative leaves into sporangiferous organs (Worsdell); Spor’ophyte (φυτόν, a plant), in Ferns and Mosses, the plant in the life-cycle of alternation which produces spores; sporophy’tic, belonging to Sporophytes: Spor’osome (σώμα, the body), the body which actually serves for reproduction (Potonié); Sporosteg’ium (στεγός, a covering), the cellular envelope of the nucule in Chara (Allen); Spor’ostrotes, -es (στρωτες, spread), plants distributed by means of spores (Clements); Sporotami’um (ταμείον, a storehouse), the cellular layer immediately beneath the disk of the shield of a Lichen; Sporo’thalam’ium (θάλαμος, a bed-chamber), compound or branched sporophores, as of fruticoses Lichens or Agarics (A. Braun); Spor’ozoid (ζώον, a living creature; είδος, resemblance), a Zoosp’ore.

Sport, variation starting from a bud or seed.

Spor’ula, Spor’ule (dim. of Spora), (1) a small spore; (2) a spore produced in a perithecium, but not in an ascus (Ellis and Everhart), (3) formerly used vaguely for spore; sporul’iferous -erus (έρος, I bear), sporul’ig’enous (γενος, offspring), producing sporules; sporul’ig’erous (έρος, I bear), bearing sporules; Sporula’tion, the production of spores (Crozier).

Spor’us, Lindberg’s emendation of Spora.

Spot, a disease of orchids, apparently caused by chill.

Spot-bound, stationary, sedentary.

Spot’ed, when colour is disposed in spots on a ground of a different colour.

Spread’ing, having a gradually outward direction, as petals from the ovary.

Spring-wood, the wood produced early in the year, characterized by larger ducts and cells than the later growths.

Sprout, a shoot or germinated seed; ~ Cell, one produced by sprouting, or vegetative growth; ~ Chain, a chain of cells so produced; ~ Gem’ma,
Sprout Stability

Chain-gemma; Germination, the germination of a spore in which a small process, or germ-cell, protrudes from the surface, becomes cylindrical, and finally abjoints as a Sprout-cell.

Sprout'ing, the form of an excrescence in a cell, becoming cut off by a transverse wall; Fun'gus, growth-form in which the thallus consists of sprout-cell or chain.

Spumes'cent, spumes'ens (spumesc, I become foamy), frothy-like in appearance; Spu'mose, spumo'sus, frothy.

Spur, (1) a hollow and slender extension of some part of the flower, usually nectariferous, as the calyx of Larkspur or the corolla of the Violet; (2) sometimes a solid spur-like process; (3) a contracted lateral bearing shoot, sometimes, in forests, with a few foliage leaves in a tuft, and a terminal bud; (4) a buttress-like projection of a tree-trunk; (5) see Ergot; foliar ~, a short branch, bearing leaves only; fruit ~, a short branch which bears blossom buds, as in the Peach; spurred, calcarate, producing a spur.

Spur'ious, spur'ius (Lat., illegitimate), counterfeit, false; Branch = Pseudoramulus; Dissip'ement, a partition in fruit but not from the primary inolding of the margins of a carpel or upward growth of the torus; Fruit = Pseudocarp; Tis'sue, cell-aggregation of felted hyphae in Agarics, or of coenocytes in certain Algae; Whorl, organs developed at different times, which, by some displacement, appear at the same level.

Squa'ma (Lat., a scale), a scale of any sort, usually the homologue of a leaf; Fructi'fera, a seminiferous scale; Squama'ceous (+ Acesous), scaly; Squa'mate, squama'tus, furnished with scales; Squama'tio, the unnatural formation of rosettes of scale-like leaves as in the Rose-Willow; Squam'ella, (1) diminutive of Squama, a scale of the second order, or reduced in size, as in the disk of Composites; pl. Squamel'lae (2) = Lodicules.

Squamell'eous, -us (fero, I bear), scale-bearing; Squamell'iform (forma, shape), shaped like a scale; Squa'mel'ula, (1) a sub division of the pappus-limb in Compositae; (2) a scale-like appendage within the tube of certain corollas; Squamifer'ous, -rus (fero, I bear), bearing scales; Squamif'o'rous (flos, floris, a flower), having a perianth of scale-like bracts, but not disposed round an axis as in Coniferae; Squa'miform, squami'form'is (forma, shape), scale-like; Squamig'erous (gero, I bear), scale-bearing; Squamo'dy (dodo, a way), the change of foliar organs into scale-leaves (Worsdell); Squa'moid (eldos, resemblance), squamiform (Crozier); Squa'mose, squamo'sus, squa'mous, scaly or scale-like; Bulb = Caly Bulb (Crozier); Squamo'sis, a disease of the orange-tree, the bark scaling off, believed to be a form of Gummosis (Butler); Squa'mulate = Squamulose (Crozier); Squa'mule, Squa'mula, (1) the hypogynous scale of grasses, the lodicule; (2) Squa'mulæ intervagina'les, the axillary scales of Halophila; Squa'muliform, squamuliform'is (forma, shape), resembling a small scale; Squa'mulose, squamulo'sus, beset with small scales.

Squa'rose, square'rous, qua'rous (Lat., rough, scurfy), rough or scurfy with spreading and outstanding processes, as the tips of bracts; Squar'reso-denta'tus, having teeth which do not lie in the plane of the leaf, but at an angle; Squa'rulose, squarrulo'sus, diminutive of squarrose.

Sta'ble (stabilis, able to stand), fixed, not changeable; Forma'tion, opposed to migratory formations, occurring on palaeogeic or past geological processes (Crampton); Stabiliza'tion, the tendency of succession in which each stage becomes more stable (Clements); Stab'ilized, settled; Stabi'ity, (1) the condition
of fixedness; (2) when the plant makes little or no response (Clements); stab'iloplasts (πλαστός, moulded), elaioplasts which are fixed in number and position.

stag-head'ed, a forester's term for a tree which is bare of leaves at the top.

stair'case Response', when successive stimuli by increasing molecular mobility greatly enhance responses (Bose).

stale, botanically when growth ceases in cultures; stale'ness (dissyl.), the condition itself; stale'ning, becoming stale (Balls).

Stalk, any lengthened support of an organ, as the seta of a Moss; ~cell, the cell arising from division of the antheridial cell in Pinus, which does not become the generative cell; stalked, borne on a stalk; ~Gland, a glandular hair; Stalk'et, a secondary petiole, the stalk of leaflets.

Sta'men, pl. Sta'mina, or Sta'mens (stamen, a filament), a male sporophyll in a flower, one of the elements of an androecium consisting of anther and filament; ster'ile ~, a body belonging to the series of stamens, but without pollen; sta'minal, stami'nælis, stami'næris, stami'næal, staminæal'is, relating to stamens, or consisting of stamens; sta'minal Col'unm=Androphore; ~Leaves, the stamens regarded as metamorphosed leaves; Sta'minalpode (πόδος, a foot), Goethart's name for the organs in the androecium of Malvaceae which produce the stamens on their margins; sta'minate, applied to flowers which are wholly male; stam'ineous, -neas (Lat., consisting of threads), relating to stamens; Staminid'ium, pl. Staminid'idæ = Antheridia; stami'nif'erous, -rus (fero, I bear), staminif'erous, -russ (vōr, I bear), stam'en-bearing; Sta'minode, Staminio'dium, (1) a sterile or abortive stamen, or its homologue, without an anther; (2) = Antheridiun (Gray's Manual, ed. I, p. xxxvi); Sta'minody, the conversion of other floral organs into stamens; sta'mino'sose, staminino'sus, when the stamens form a marked feature of the flower.

Stand (Germ.), a pure association, as a beech wood.

Stan'dard, (1) the fifth or posterior petal of a papilionaceous corolla; (2) a tree or bush with a clear stem; Stan'del's, old expression- for the standards in a copstice.

stans (Lat., standing), supporting itself in an erect position.

Star'lings, small central steles in the fossil Medulloseae.

Starch, a carbohydrate of the same percentage composition as cellulose; an amylose which occurs abundantly in grains as a reserve material in plants; ~ Bul'der, a plastid which forms the starch-grain; ~ Cel'idose, the framework of starch-grains, remaining after the soluble parts have been removed; ~ Genera'tors = Leuco-plastids; ~ Grain, ~ Gran'ule, a body of definite shape, varying according to the plant which produces it, having the appearance of parallel layers around a hilum; ~ Lay'er, a form of bundle Sheath, consisting of a single layer of cells filled with small grains of starch; ~ Produ'cer = Leucoplastid; ~ Sheath, the innermost layer of the primary cortex; ~ Star, of Chara stelligera, Bauer, stellate nodules or internodes on the roots, filled with starch; ~ Sub'stance, A. Meyer's term for the pure starch material, apart from any associated or transformed matters which may be also present.

star'ry, stellate.

starved, when a plant or part is less developed than the normal condition, by want of nourishment.

Stas'ad (στάς, a standing or pause, + AD), a plant of stagnant water (Clements); Sta'simorphy (μορφή, a shape), a deviation from the normal, arising from arrest of development; Sta'sis, used to denote retardation especially of longitudinal growth;
**Stassium, a stagnant water formation; stasoph'illus (φιλέω, I love), dwelling in stagnant water; Stasoph'yta (φυτών, a plant), stagnant water plants (Clements).**

**State, the most trivial variation from the type.**

**Statice'tum, an association of Statice, Linn.**

**Sta'tion (statio, a standing still), botanically means a particular locality for a given plant.**

**Sta'tocysts (στάτος, standing still; κούτσις, a bag), gravitational sense organs, sensory cells containing free starch-grains and ectoplast, sensitive to the pressure of these grains (Haberlandt); Sta'tocyctes = Sta'tocyctus; Sta'tolith (λίθος, stone), starch grains regarded as causing curvature by their weight; Sta'toplasts (πλαστός, moulded), movable starch grains; Statosper'rus (στέρμα, a seed), when a seed is straight or erect within the pericarp; Sta'tosporace (σπόρα, a seed), a resting spore.**

**Staurogam'ia (σταυρόδος, a stake or cross; γάμος, marriage), Delphino's term for cross-fertilization; adj. staurogam'ic.**

**Stauromat'ic, resembling the genus Stauroma; isidiooid.**

**Stau'ros (σταυρός, a stake or cross), in Diatoms, (1) the central nodule of the valve; (2) a transverse band without markings; Stau'rophyll (φυλλον, a leaf), Clements's term for a leaf consisting of palisade cells; staurophyl'lus, cruciate.**

**Stéarin (στέαπ, suet), an abundant ingredient of animal and vegetable fats; Stearup'tene (πυρνός, winged = volatile), a solid crystallizable matter allied to camphor, present in many essential oils.**

**Steganochamaephyt'ium (στεγανώδης, roofed over, + Chamaephyt'ium), dwarf-shrub association under trees (Vahl); Steganocryptophyti'um (+ Cryptophyt'ium), an association of hemicyrptophytes and geophytes under an u1-per layer (Vahl).**

**Stegi'um (στεγή, a roof or covering), term proposed by Miers for the thread-like appendages sometimes found covering the style of Asclepiads; Steg'mata, pl., flat, tabular cells in certain Ferns, etc., containing a mass of silica in contact with their inner wall (Mettenius); also termed Covering-plate; stegocar'pic, stegoca'pour (καρηνός, fruit), applied to those Mosses whose capsules have a distinct operculum.**

**Stel'lar (στήλη, a pillar), possessing a stele; Stele, an axial cylinder of tissue passing from thepleromeunto the older tissues, in which the vascular tissue is developed; sometimes more than one, cf. Polystely, Schizostely; also peripheral ~; Reparative ~; stel'lic, relating to a stele or its tissues.**

**Stelidi'um, pl. Stelidi'a (στελίδιον, a small pillar), Ridley's term for the teeth of the column in Bulbophyllum.**

**Stel'late, stella'tus (Lat., starry), star-shaped or radiating like the points of a star; ~ Hairs, hairs of a star-like form; ~ Scales, trichomes, discs borne by their edge or centre; stellif'erous (gero, I bear), star-bearing; stelliform'us (forma, shape), star-shaped; stellig'erus (gero, I bear), star-bearing or producing; stella'to-pil'o'sus, covered with stellate hairs; stelliner'vus (nervus, a nerve), star-ribbed, as the leaves of Hydrocotyle vulgaris, Linn.; Stel'lula (Lat., a little star), (1) a whorl of perigonial leaves in Mosses; (2) a small rosette; stel'lular, stel'lulate, stellula'tus, diminutive of stellate.**

**Stelolem'ma (στήλη, a pillar; λέμα, bark or skin), a sheath of thickened perispermic or stelar tissue in angiosperous petioles (Strasburger).**

**Stem, the main ascending axis; ~ Bud, the plumule; ~ clasping, amphexi-cal; ~ -form, in Germ. Stamform, the anastomous form (Kuntze); ~ Leaf, a leaf given off from the stem, as opposed to a radical leaf; ~ Par'asite, a parasitic plant which lives on the stem of its host, as Loranthaceae; ~ Ten'dril, a tendril which is morphologically a stem structure; subter-
ra'nean ~, a rhizome; stem'less, having no visible stem, acaulous; Stem'let, a small stem, such as the plumule.

steno'carpus (στένος, narrow; καρπός, fruit), narrow fruited; steno'chric (χωρέω, I spread abroad), applied to a family, genus or species, with a range of distribution over a narrow area of constant climate, and confined to one, or very few, plant-formations (Drude); Steno'chry is the state in question; stenohal'ine (ἀλς, ἀλς, salt), applied to organisms which can endure only 3 or 4 per cent of salt in solution (Forel); stenopo'etalous (πέταλον, a flower-leaf), narrow-petalled; stenoph'o'tic (φῶς, φωτός, light), requiring a constant amount of light, within narrow variation; stenophyl'lous, -lus (φύλλον, a leaf), (1) narrow leaved; (2) Beccari's term for plants on river banks, etc., with linear or very narrow leaves; Stenoph'yllism is the state in question; Steno'sis, (1) cell-formation with constriction of the original cell-wall; (2) the contraction of a passage; steno'ther'mic (θερμ, heat), needing a uniform temperature.

stehano'carpus (στηθανώδης, wraith-ing; καρπός, fruit), with fruit arranged so as to resemble a crown; Ste'phanodoph'y'tum (φυτόν, a plant), a plant producing an inferior achene, as Compositae.

ste'phanokon'tan, relating to Stephano'kontae, a class of green Algae, whose zoospores are characterised by a crown of cilia round the anterior end.

Steph'anoum (στήφανος, a crown), a synonym of CREMOCARP and CYPselA.

Steppe, a wide, treeless plain of grassland (Schimper); cf. PRAIRIE, PAMPAS; ~ -per'iod, a time following the Tundra-period in Switzerland, when steppe plants were dominant.

Ster'eid (στερέος, solid), a lignified cell from the stereome.

Stereo'nta'ceous, allied to the genus Stereodon.

Streogene'nyla (στρεγέννα, solid; γένος, race; ἑστη = materia), Radlikofler's term for Bryo'phyles; Ster'eom or Ster'eome, the elements of a bundle which impart strength to it, the fibres, or strengthening tissue generally (Schwendener); stereo-mat'ic, resembling or composed of Stereome; Stereone'ma, pl. Stere- one'mata, solid threads which make up the capillitium in Fuligo (Zopf); Ster'eoplas'm (πλάσμα, moulded), the solid part of protoplas'ma (Naegeli); stereosperm'ous (σπέρμα, a seed), with solid seed (Heinig); Stereot'axis (τάξις, order) = Thigma'taxis; Stereo'ropism (τροπή, a turning), a definite direction towards the substratum (Loeb).

Sterig'ma, pl. Sterig'mata (στηρίγμα, a prop), (1) in Fungi, a stalk from which a spore is abjuncted; (2) any leafy prolongation or elevated line from the blade of a leaf down the stem by decurrence; (3) Desvaux's name for Carcerule; Sterig'mum is a synonym of the last definition.

ster'ile, ster'ilis (Lat.), (1) barren, as a flower destitute of pistil, or a stamen wanting the anther; (2) used for a male or staminate flower; (3) free from living organisms, such as bacteria; ~ Basid'i'um, a body in the hymenium of Agaries like a basidium, but not producing spores, possibly a paraphysis; ~ Cells, cells of unknown function in the pollen-grains of Cyca's and microspores of Isoetes and Selag'iella; Steri'lity, Steri'litias (Lat.), barrenness, incapacity of producing seeds; Self ~, when the pollen is inactive on the stigmas of the same flower (Knuth); Sterili'za'tion, the act of sterilizing; ster'i'lize, to make free from living organisms or their germs.

sternoti'bal (στερνοτιμόν, the, breast; τρήβω, I beat), Delpino's term for those flowers whose anthers are so
arranged as to dust their pollen on
the under part of the thorax of
their insect visitors; stern'tribe,
sternotri'ous, are synonyms.

Ster'lone = STEREOME (Crozier).

Ster'rhad (στερράθος, rugged—of countries,
+ AD), a moor plant (Clements);
Sterrh'iun, a moor formation; ster-
rophi'linus (φιλέω, I love), moor-
loving; Sterrophy'ta (φωτόν, a plant),
moor plants (Clements).

Ste'somy (στήσωμα, fut. med. of
ιστημι, to stop), Morren's term for
an arrest of metamorphosis.

Stich'id = STICHIDIUM.

Stichid'iun (στιχίδιον, a little row or
rank), (1) in Rhodophyceae, a special
branch of the thallus with embedded
tetragonidia; (2) = CARPOCLONIUM.

stichocar'pus, stichocar'picus (στιχονς,
a row; καρπός, fruit), when fruit is
disposed along a spiral line; stich'us,
in Greek compounds = row or rank,
usually vertical.

stictopet'alus (στικτόν, punctured;
πτεράλων, a flower-leaf), when petals
are covered with glandular points.

Stig'ma, pl. Stig'mata, or Stig'mas
(στίγμα, a point), (1) that part of
the pistil or style which receives
the pollen; (2) a point on the spores of
Equisetum; (3) a caducous point on
the apex of the columella in Mosses;
(4) an old name for STERIGMA; (5)
a coloured spot in unicellular Algae;
~ Disk, a disk forming the stigmatic
surface as in Asclepiads; ~ of Mosses
(Hook. Musc. ed. 2), the mouth of the
archegonium.

stigmatic, resembling Stigmaria in
structure or affinities; Stigm'aria,
roots of fossil plants having regular
dotted or pitted markings; Stig'ma-
rhize (μζα, a root), a form of Stig-
maria, regarded by Renault as a
root; Stigmarmhizome (+ RHIZOME),
Renault's term for a form of Stig-
maria which he considered a rhizome.

Stig'matae (στίγματα, a point), Van
Tieghem's term for Phanerogams
having stigmata; Stigmastate'mon
† (στήματων, a filament), a body formed
by the union of anthers to the

stigma (De Candolle); stigmat'ic,
stigmat'icus, relating to the stigma;
~ Cells, of archegonia, = Lip-
cells; ~ Chamber, that part of
the rostellum in Orchids in which
the retinaculum is developed; ~ Flu'id,
~ Secre'tion, the viscid fluid secreted
by the stigma at maturity, securing
the adhesion of pollen grains and
their subsequent germination; Stig-
mat'icae, Knuth's term for wind-
fertilized flowers with conspicuous
stigmas; stigmatif'erous (fero, I
bear), stigma-bearing; stigmati-
form'is (forma, shape), shaped like
a stigma, or having the appearance
of one; stigmatol'deus (εἶδος, re-
semblyance) = stigmatiformis; Stig-
matop'horus (φώρων, I carry), that
part of the style of Compositae which
bears the stigmas; stigm'atose, stig-
mat'sus, provided with stigmas, or
having them conspicuous; Stig'ma-
tospore ( + Spore) = OSMOSPORE;
Stig'mula, a division of a stigma,
when present.

Stilid'ium (στίλιος, a small post), a
canal-like portion of the archegonium
of a Moss.

Stiliplan'kton (+ PLANKTON), floating
marine vegetation, chiefly consisting of
Rhizosolenia styliformis.

still, dormant; ~ Spore, a resting
spore.

Stilogonid'ia = STYLOGONIDIA.

Stilt-roots, the oblique adventitious
roots of the Mangrove and similar
forms (Kerner).

Stimula'tion (stirulatio, incitement),
the act of being roused by some ex-
citing cause, such as heat or light;
cf. REACTION; Stimula'tors, pl.,
tactile hairs or bristles which trans-
mit stimuli to the sensitive motor-
tissue (Haberlandt); Stim'uli, pl. of
Stim'ulus (Lat., a goad) = (1)
Sting; (2) the particular active agent
which produces definite changes in
the organism, as moisture, light, etc.;
stim'ulus, stimu'losus, covered with
stinging hairs; stim'ulous (Lat.),
stinging.

Sting, a hollow hair seated on a gland
which secretes an acid lymph, as in nettles.

Sting'ing-hair = Sting.

Stinking-smut, of wheat, is Tilletia Triticci (Winter).

Stip'ate (stipatus, surrounded), pressed together, crowded; Stipa'tion, an accumulation in the tissues or cavities.

Stipes, Sti'pes (Lat., a stock or trunk), a support such as (1) the stalk which bears the pileus of Agarics; (2) the "leafstalk" of a Fern; (3) the support of a gynaeicum or carpel.

Stip'el, suggested by F. v. Mueller for Stipella.

Stipella, Stipell'um (dim. of Stipula), a minute stipule on a partial petiole of compound leaves; stipell'ate, stipella'tius, furnished with Stippellae.

Stipell'us (dim. of Stipes), a synonym of the filament of an anther.

stip'iferus † (stipes, a stock; fero, I bear), bearing small flower-stalks, as the receptacle of some Composites; stip'iform, stipiform'is (forma, shape), having the appearance of the trunk of an endogenous tree, as the Papaw; stip'itatae, stipit'a'tus, having a stipe or special stalk; stip'i'tiform, stipitiform'is = stipiform.

stip'tious = stypticus, astringent.

stipula'ceous, -ceus (Stipula+-aceus), (1) belonging to a stipule; (2) with large stipules; stip'ular, having stipules, or relating to them; stip'ulary, (1) occupying the place of stipules, as some tendrils; (2) formed of stipules (Crozier).

stip'ulate, stipula'tus, stipular'is, (1) having stipules, or conspicuously provided with them; (2) with scales which are degenerate stipules; stip'uliform, stip'uliform'is (forma, shape), shaped as though a stipule; Stipula'tion, Stipula'tio, the arrangement of the stipules; Stip'ule, Stip'ula (Lat., stubble), an appendage of a leaf on each side of the leaf-insertion of those plants which possess them; stipule'a'nis, resulting from the transformation of a stipule; cf. pseudo-stipule; stipulif'erous, -rus (fero, I bear), bearing stipules; Stip'ulode, a stipular organ of one cell, in one or more rows subtending the branchlets in Chara; stip'u'lose, stipulösus, having very large stipules.

stirpa'lis ‡ (stirps, a trunk, a plant), growing upon a stem; Stirps, pl. Stir'pes, (1) a race or permanent variety, as the Red Cabbage; (2) formerly equivalent to species; (3) a stem (Kerner), as Stirps cirrho'sus, a tendril-bearing stem; ~ clath'rans, a lattice-forming stem; ~ fluctu'ans, a floating stem; ~ humifüsus, a prostrate stem; ~ pala'ris, an erect, unbranched stem; ~ plec'tens, a weaving stem; ~ radi'cans, a stem which climbs by means of roots; ~ volu'bilis, a climbing stem.

Stock, (1) a synonym of Race; (2) the stem which receives the scion in grafting; (3) a caudex or rhizome which emits roots.

Stole, Sto'lon, Stol'o (Lat., a shoot), a sucker, runner, or any basal branch which is disposed to root; stolonif'erous -rus (fero, I bear), sending out or propagating itself by stolons; stolon'iform (forma, shape) Stem, "a slender creeping stem with minute leaves" (Dixon and Jameson).

Stom'a, pl. Stom'ata (στόμα, a mouth) or Sto'mate, (1) a breathing pore or aperture in the epidermis, surrounded by two guard-cells, leading into an intercellular space communicating with internal tissue; according to Tschirch of four types; angiosper'mal ~, archego'nia, ~ eiso'dial ~, and opisthe'ial ~; (2) the ostiole of certain Fungi, cf. Epi'phragma; sto'matal, sto'matic, pertaining to stomata; sto'matic Cells = Guard-cells; ~ Cleft, an actual stoma without the guard-cells; stomatif'erous, -rus (fero, I bear), bearing stomata; Stom'a'tium = Stoma; Stomat'ograph (γραφω, I write), an instrument for measuring stomatal variation; sto'matos, in Mosses, possessing stomata; Sto'm'iun, an opening on the side of Fern-
Striga, between the lip-cells, through which dehiscence takes place.

**Stone**, the hard endocarp of a drupe; ~ **Cells**, the individual cells which have become hardened by secondary deposit, the components of sclerogen; ~ **Fruit**, a drupe such as a plum or peach.

**Stool**, (1) a plant from which offsets or layers are taken; (2) when several stems rise from the same root, as in wheat.

**Stop'per**, a word applied by Archer to the callus-plates in Algae; ~ of **Pol'len**, hyaline protoplasmic deposits in pollen-tubes (Degaguy).

**Stop'les**, the projection or lidos in pollen-grains which fall away to admit of the passage of the pollen-tube.

**Stor'ax** = **STYRAX**.

**Stor'ey**, the same as **LAYER**.

**strag'ling**, divaricate.

**Strag'gulum** † (Lat., a covering), the paleae of grasses.

**straight**, in a right line, not curved; ~ **ribbed**, ~ **veined**, when the ribs run in a straight line, as in the leaves of many Monocotyledons.

**Strain**, (1) in atavism, the influence of some ancestor; (2) a slight variety of race.

**Strá'men** (Lat.), straw; **straminel'lus** (N. Lat.), somewhat straw-coloured; **stramin'eous**, -eus, straw-like or straw-coloured.

**Strand**, (1) a bundle of vascular tissue, resembling a cord; (2) shore, as ~ **plants**, used by C. MacMillan for shore plants; ~ **Myce'lium** = mycelial strand.

**strangulated** (strangulatus, choked), contracted and expanded in an irregular manner.

**Strap**, the ligule of a ray floret in Compositae (Crozier); ~ **shaped**, ligulate or lorate.

**Strá'ta**, pl. (stratum, a layer), layers of tissue; **Stratifica'tion** (facio, I make), (1) the successive deposition of layers on the cell-wall, and the arrangement of the said layers; (2) the differences in vegetation at different vertical levels; the various stages may be called strata or layers (Yapp); **strat'ified**, disposed in layers; ~ **Thal'lus**, a Lichen thallus in which the gonidial layer or layers are evident; **strato'se**, in distinct layers (Crozier); **Strá'tum**, a layer of tissue; ~ **cellulo'sum**, the bark layer next within the epidermis; ~ **cortica'le**, any bast layer; ~ **gonidia'le**, ~ **gon'im**on, the Algal layer in Lichens; ~ **lig'neum**, a layer of wood; ~ **medul-la're**, the medulla or pith; ~ **sporidif'erum**, the flesh of Agarics; ~ **sporoph'orum**, the hymenium of Fungi. For ecological purposes there are: ~ **Ground** - immediately above the soil; **Field** - formed by grass and herbs; **Shrub** - of the taller shrubs; **Tree** - , composed of trees.

**Straw**, the jointed hollow culm of grasses.

**Streak**, a disease in *Lathyrus odoratus*, ascribed to *Thielavia basicola*, Zopf.

**Streaming**, the flow of protoplasm as in Myxogastres.

**streptotrich'ial**, belonging to the genus *Strigophthrix*.

**Strepsine'ma** (στρεπτώ, I will twist; νῆμα, a thread), delicate parallel threads twisted about each other in the nucleus in a stage of synapsis; adj. **strept'esite**.

**streptocar'pus** (στρεπτός, twisted; καρ'πος, fruit), when fruit is marked spirally.

**Stri'ae**, pl. (stria, a furrow), markings on the valves of Diatoms which present the appearance of lines; **stri'ate**, strid'lus, marked with fine longitudinal parallel lines, as grooves or ridges; **Stria'tion**, of cell-wall, markings believed to be due to the manner of formation in bands by the protoplasm.

**strict**, stric'tlus (Lat., drawn together), close or narrow and upright, very straight.

**Strig'a** (Lat., a swathe), “a small straight hair-like scale” (J. S. Henslow).
strigillose (strigilis, a currycomb) =
strigose (Henslow).

strike, to emit roots as from a cutting.

String, any fibre or strand (Hillhouse).

striate, finely striate.

striped, marked with longitudinal stripes of colour.

Strob'il = Strobile; strobila'ceous,
-ceus (στροβίλας, a cone, + aceous), relating to or resembling a cone;
strob'ilate means the same; Strob-il'e, Strob'ilus, (1) an inflorescence largely made up of imbricated scales, as the Hop or Fir-cone; (2) cf. strobiloid; (3) the special form of the assumed type of the angiospermous flower (Arber and Parkin);

Strobilifer'ous, -rus (fero, I bear), cone-bearing; strobil'ina, cone-like;

strob'iliform, strobiliform'is (forma, shape), cone-shaped; strob'iloid (el'dos, resemblance), cone-like; ~ The'ory, the assumed origin of Pteridophytes, in those forms whose sporophytes are the most primitive, as Lycopodium and Equisetum (Bower).

Stro'ma (στρώμα, a mattress), a cushion-like body, on or in which the perithecia are immersed, a compound Fungus-body; ~ Starch, in certain Algae, as in Hydrodictyon, the fine starch deposited throughout the chlorophyll-body; stroma'toid (el'dos, resemblance), having the nature or seeming of a stroma; stroma'tous, producing stroma (Crozier).

strob'uliferous, -rus (strob'bus, a spiral shell; fero, I bear), strob'u'liform, strob'iliform'is (forma, shape), when the fruit is spirally twisted; Strom'bus, a spirally coiled legume, as in Medicago;

strom'bus-shaped, like a snail-shell.

Strophan'thine, a poisonous alkaloid from Strophanthus hispidus, DC.

Stroph'es, pl. (στροφή, a turning), any spirals shown in phyllotaxy;

stroph'ic, applied by Rothert to a twisting movement in Chemotaxis and Phototaxis, as contrasted with APOBATIC or repulsive movements;

Stroph'iole, Stroph'iola (strophiolum, a small chaplet), an appendage to the hilum of some seeds, a caruncle; stroph'iolate, possessing such appendages.

Stroph'ism (στροφή, a turning), a tendency to twist in response to some external stimulus (Czapek);

Strophog'en'esis (γένεσις, origin), differentiation of a single original generation into the phases regarded as alternation of generations (Strasburger); Strophoma'nia (μάνια, madness), special torsion, as in the stems of certain monstrosities; Strophota'xis (τάξις, order), arrangement due to the twisting movement;

Stroph'y = Strophism.

Struc'ture, Struct'u'ra (Lat., fitting together), the peculiar organization of plants, with special modifications; adj. struo'tural; ~ Bot'any, includes Organography, Morphology, Anatomy, and Histo'ogy of plants.

Stru'ma (Lat., a scrofulous tumour), a wen or cushion-like swelling on an organ; strumif'erous (fero, I bear), having a strumous or goitre-like swelling; stru'miform, stru'miform'is (forma, shape), with the appearance of a wen; stru'mulose, stru'mulo'sus, somewhat strumous, or having a small struma; stru'mose, stru'mo'sus; stru'mous, as though serofulous; stru'mously, with cushion-like swellings.

Stych'nia, Stych'niin, a powerfully poisonous alkaloid from Strychnos Nux-vomica, Linn.

strychn'i'bus (Mod. Lat.), the colour of the seeds of Strychnos Nux-vomica (Hayne).

Stud'y-set, the principal set of a collector's plants, enriched by notes.

stuffed, solid, farcate (Crozier).

Stu'pa or Stup'pa (Lat., the coarse
part of flax), a tuft or mass of hair or filaments matted together; *stuti'peous, stuti'peus or stutip'eous, woolly; stutio'se, stutio'sus, tow-like, with tufts of long hairs.

*Styg'ius (Styx, Stygis, an infernal river), used of plants which grow in foul waters.

*Stylar (stylus, from στυλός, a column), relating to the style, as ~ Brush, the collecting hairs of flowers, cf. Collectors; ~ Canal', the tube or loose tissue through which the pollen-tubes pass; ~ Column, the column of Orchids; ~ Foot = Stylopod'ium; *Stylans (+ Style), used by Burchell for a gradual enlargement of the style into the ovary; *Styli'tus (Lat.) = Stylus; *Stylus, (1) the usually attenuated part of a pistil or carpel between the ovary and the stigma; ~ of Hepaticae, ~ Interlobule; ~ of Mosses, (1) an old term for the neck of the archegonium; (2) the ostiole of certain Fungi (Lindley); *Styletal'ble, used by Haworth for the flattened apex of the style in Asclepiads; *Styli'tiform, styli'tiform's (forma, shape), style-shaped, drawn out; *Stylifer'ous (fero, I bear), bearing a style; *Styli'nis (Lat.), belonging to the style; *Styliplank'ton (+ plankton), floating neritic vegetation composed of Rhizosolenia styliformis; *Stylis'cus = Stylar Canal.

*Stylodeus (Lat.), furnished with a style; *Stylo'dium, Mod. Lat. from Stylus, (1) a style-like stigma, as in grasses, and Compositae; (2) a false style, as the appendages to the anthers of Cynornorum.

*Stylogonid'iurn (στυλός, a column, + Goni'di'um), a gondium formed by abstraction from special hyphae in such Fungi as Accidionycetes and Basidionycetes, that is, uredo-, teleuto-, and basidio-spores; *Sty'loids, pl. (el'sos, resemblance), columnar crystals occurring in plant-cells (Solereder); *Sty'lopod, Stylopod'iurn (πόδος, πόδος, a foot), the enlargement at the base of the styles in Umbelli-
| sub-basal (+ basal) Cell, the cell next below the basal cell in Angiospermae (Wiegand); sub-Bellar'dian, slightly resembling Rubus Bellardi (Rogers); subbiator'ine (+ biato-rine), somewhat as in the Lichen genus Biatora; subbi-fido-rum'pens (+ bifidus), "bursting into somewhat two divisions" (Lindley); sub-bilocula'ris (+ bilocularis), with partitions which do not quite join, but leave a small interval; subbys'oid (+ byssoid), somewhat cobwebby; subcaules'cent (+ caulescent), with a very short stem, a trifle more developed than acaulescent; subces'pitose (+ caespitose), somewhat tufted (Crozier); Subclass (+ Class), a group of Orders or Cohorts next in rank to a Class, or intermediate between Class and Cohort; subconcate'nate (+ concate-nate), growing in imperfect chains or connections; subconica'lis (+ conical), slightly conical; subconitu'm (continus, unbroken), rarely or imperfectly separte (Crozier); subconvolu'tous, subconvolu'tus (+ convolute), partially convolute; subco'piosus (copiosus, plentifully), "scattered somewhat loosely" (Clements); subcor'date (+ cor-date); subcordifor'mis (+ cordiform), somewhat heart-shaped; subcre'nate (+ crenate), obscurely crenate; subcul'trate (+ cultrate), slightly culate; subden'droid (+ dendroid), somewhat tree-like; subden'tate (+ dentate), imperfectly dentate; subdenticu'late (+ denti-culate), with small or imperfect marginal teeth; subdisfor'mis (+ difformis), having some amount of irregularity; Subdioe'cism (+ dioecism), a tendency to be dioecious; subdomin'ant (+ dominant), less than dominant, but present in some force; sub'effuse (+ effuse), slightly spreading; subentire (+ entire), having very slight marginal incisions; subeph'e'droid (el'sos, resemblance), like the genus Ephedra; subepider'mal (+ epider'mal), below the epidermis; ~ Tis'sue, = Hypoderma.

Su'ber (Lat., the cork-oak), cork or phellogen; sub'er'ous, = suberose; Sub'er'ification (facio, I make) = Sub'erization; Su'berin, the substance of cork, nearly the same as cutin; ~ Mem'brane, with cell-walls turned into cork; Suberinla-mel'la (+ lamella), a thin layer of cork-like tissue in the cortex (Höhnell); Suberiza'tion, conversion into cork, cutinization; su'berized, converted into cork; sub'erose, sub'er'o'sus, sub'er'ous, corky in texture.

Sub'erect, suberec'tus (sub, somewhat, + erect), nearly erect, but nodding at the top (Babington); suberose' (+ erosus), slightly gnawed in appearance.

Sub'baxal (Lat., support, underlayer), that part of the axis which bears cataphyllary leaves (Kerner).

Subfamily (sub, below), a group of genera within a family; subflex'uose (+ flexuose), somewhat wavy; Subforma'tion (+ formation), a plant-formation of lesser grade; Subforms, pl. (+ form), in Rosa, with irregular serration and glan-dular calyx-segments (Almquist); subgeni'cule (+ geniculate), slightly bent or kneed; Subgenus (+ genus), a group, ranking as a section, or possibly a true genus held doubtful; subglobos'e (+ globose), nearly globular; subglu'mae'cous (+ glumeaceous), somewhat glumeaceous; subgrega'rious (gregarius, belonging to a herd), "arranged in loose groups" (Clements); Subgregi'form (grec, gregis, a flock; + form), a Versiform which has varied in different localities or countries (Kuntze); sub'hymenial (+ hymenial), below the hymenium; ~ Lay'er or Subhymen'ium = Hypothecium.

Subic'ulum (Lat., an underlayer), a felted or byssoid stratum of hyphae, bearing perithecia.

subim'bri'cate, subimbrica'tus (sub, somewhat, + imbricate), somewhat overlapping.
subinsipidus (sub, below; insipidus, tasteless), almost devoid of flavour; subja'cent (jacens, lying), lying just below (Dixon and Jameson); Sub-king'dom, the main division of a kingdom, a primary botanic division, as Phanerogams and Cryptogams; sub-Koeler'ian, somewhat resembling Rubus Koeleri (Rogers).

subla'tus (Lat., lifted up), when the ovary has a support, real or apparent.

sublenticular (sub, somewhat, + LENTICULAR), more or less doubly convex; sublim'toral (+ LITTORAL), employed by H. C. Watson for those plants which have a tendency to grow near the sea, but not actually shore-plants; subma-r'ginal (+ MARGINAL), near the margin; subma-r'time plants characteristic of the sea, but also occurring inland, as Armeria maritima.

submerged', submersed', submer'sus (Lat., dipped or plunged under), growing under water; submersi'bilis (Mod. Lat.), capable of existing when submersed; Submersipra'ta, pl. (pratum, a meadow), formations of macrophytic aquatic plants, with submerged or floating leafy shoots.

submicron'ic (sub, below; μικρος, small), used of objects visible only under the ultra-microscope.

subnas'cent (subnascur, I grow up under), growing or arising from below some object.

subnal'ger (Lat., somewhat black) = nigricans; sub'nu'de (nudus, naked), nearly destitute of covering, as leaves or hairs; sub'ob'tuse (+ OB'TUSE), slightly obtuse or blunt; suborbici'lar (+ ORBICULAR), nearly circular; Subor'der, Subordo, a group of genera lower than an order; sub'o'vate (+ OVATE), somewhat ovate; subpeduncu'late (+ PENDUNCULATE), supported on a very short stem; subperi'phere'icus (+ PERIPHERIC), nearly peripheral, used of an embryo, such as in Atriplex (S. F. Gray); subpeti'o'lar, subpetiola'ris, subpet'i'olate (+ FETIOLATE), under the petioles, as the buds of Platanus; Subquad'rat (+ QUADRAT), a quadrat of 1 to 8 decimetres (Clements); subramea'lis (+ RAMEAL), growing on a branch below a leaf; subra'mose, subrama'sus, subra'mous (+ RAMEOS), (1) having a slight tendency to branch; (2) with few branches: subrig'id (+ RIGID), slightly rigid; subro'seus (+ ROSEUS), somewhat rose-coloured, pinkish; subrotund' (+ ROTUND), roundish; subscyphiform (+ SCYPHIFORM), somewhat boat-shaped; Subsec'tion (+ SECTION), the division of a genus below a section, a small section; subser'rate, subser'rat'us (+ SERRATE), vaguely serrate; subses'sile (+ SESSILE), nearly sessile, almost devoid of a stalk; Sub'shrub, an under-shrub, or small shrub which may have partially herbaceous stems.

subsid'ary (subsidiarius, serving for support) Cells, certain epidermal cells which are less thickened or situated lower than the guard-cells which they surround (Strasburger).

subsig'il'larian (sub, somewhat), Sigillaria stems without ribs (Arber and Parkin); subsim'ple (+ SIMPLE), with few divisions; Subspe'cies, a group of forms ambiguous in rank, between a variety and a species, usually marked by an asterisk(*); subsp'o'ral (σπορα, a seed) Cells, applied to certain colourless cells in Pithophora, found in spore-bearing individuals (Wittrock).

substantiv'e (substantivus, self-existent) Varia'tion, used by Bateson to denote change in actual composition.

subst'i'tute (substitutus, put in place of) Associa'tion = secondary For-ma'tion; ~ FY'bres, like libriform fibres, but a much reduced form of prosenchyma, the “Ersatzfasern” of Sanio; Substitu'tion, Lopriore's term for healing processes by formation of new growth from secondary meristem.

substoma'tic (sub, below, + STOMATIC)
Chamber = stomatic Chamber; substom'inal has the same meaning; substra'tose (+stratose), somewhat stratified, or in layers.  
subtend' (subtendo, I stretch underneath), to extend under, or be opposite to; subten'ding Leaf, that leaf whose axil gives rise to a bud or peduncle.  
subterete' (sub, somewhat, +TERETE), somewhat terete.  
subterra'neous, subterra'neus (Lat.), underground.  
Substrac'tion (subtructus, drawn off) Stage, employed by Bateson for the loss of a factor.  
subtremell'oid (sub, under; el'dos, resemblance), gelatinous, somewhat resembling Tremella; Sub'tribe (+TRIBE), a division between a tribe and a genus; subtro'pic (+tropic), applied to half-hardy plants which in temperate climates can thrive in summer only.  
Su'bula (Lat., a small weapon), a fine sharp point; Su'buile, Duval-Jouve's term for the terminal, non-twisted portion of the awn of grasses; su'bulate, subula'tus, awl-shaped; Su'buli, pl., "the aciculae or sharp processes formed by some Fungals" (Lindley); su'bulifer, subulif'erous (fero, I bear), bearing sharp points; su'buliform, subuliformis (forma, shape), awl-shaped.  
subum'bellate (sub, somewhat, +umb'ellate), somewhat umbellate, as in the inflorescence of some Rosaceae; Subvari'ety, Subvari'etas (+variety), a trifling variety or form; subven'tricose (+ventricose), somewhat inflated; subvertic'ilate, in imperfect or irregular whorls; subxeroph'ilous (+xerophilous), preferring dry situations, but not confined to them.  
Successa'neum (succeedaneus, substituted), a substitute.  
Succession (successio, a following), appearing in successive intervals, on soils of differing character.  
Successive (successivus, following) Whorl, one whose members did not originate simultaneously, but in succession.  
succif'erous (succus, sap; fero, I bear), producing or conveying sap.  
succine'ntus (Lat., ready) = circin'at-us.  
succin'eus or sucin'eus (Lat., of amber), amber-coloured; Suc'cinite, the commonest and best known form of amber, resin exuded by Pinus succinif'era, Goep., ‡; Suc'cinosis, Conwayz's term for an abnormal occurrence of resin in fossil amber-trees.  
succise', succi'sus (Lat., cut off), as if abruptly cut or broken off at the lower end.  
suc'cose, suc'co'sus (Lat., juicy), succulent, sappy.  
suc'cubous, -bus (Lat., lying under), the oblique insertion of distichous leaves of Hepaticae, so that the upper overlaps the lower on the dorsal side of the stem, as in Plagiochila.  
suc'culent, succule'ntus (Lat., sappy), juicy.  
Suc'cus (Lat., sap), any juice which can be expressed from a plant.  
Suc'er, (1) a shoot of subterranean origin; (2) an haustorium, sometimes restricted to the penetrating organ or papilla.  
Su'crase (Fr., sucre, sugar, +ase) = inver'tase; Su'crose (+ose), a group of sugars, such as cane-sugar and maltose.  
Suc'tor (suctus, sucked), J. S. Henslow's term for the haustoria of Bartsia and other root-parasites.  
Suda'tion (sudatus, sweated out), exudation of water containing a small amount of substances in solution; as opposed to Secretion.  
Suffrutes'cent, suffrutes'cens (sub, somewhat; frutex, a shrub), obscurely shrubby; Suf'frutex, an undershrub; su'fruticose, sufrut'ico'sus, suffruci'tose, somewhat shrubby.  
suf'ful'tus, (1) supported or propped; (2) Sufful'tus, a plate or disc forming the basis of a bulb; when much
lengthened gives rise to the term *Bu multiplicus* (Endlicher).

Sugar, a group of sweet, crystalline substances and soluble in water (sucrose and glucose); Beet ~, extracted from specially selected strains of Beta vulgaris, Linn.; Cane ~, or saccharose, from Saccharum officinarum, Linn.; Fruit ~ = Lævulose; Grape ~ = Glucose or Dextrrose; Inverted ~, occurs in some ripe fruits and honeydew; Maple ~, from Acer saccharinum, Wangenh.; Palm ~, from species of Arenga, etc.

sulcate, sulcul'us (Lat., furrowed), grooved or furrowed.

Sulci, pl. of Sul'cus (1) small grooves or Fossulae in some Diatom valves; (2) lamellae of certain Fungi (Lindley); sulci'form (forma, shape) = sulcatus.

sulfureous, etc., see SULPHUREOUS, etc.

Sulphobacter'ia (sulphur, brimstone, + Bacteria), those microbes which reduce sulphur out of its solutions; Sulphonica'tion, the production of sulphur by bacteria (Lipman); sul'phur-coloured = sulphureous; ~ Rain, pollen from pines brought by currents of air; Sulphur'ia, Planchard’s name for Algae which reduce sulphates from waters containing those salts; sulphure'lus, slightly sulphur-coloured; sulphu'reous, -reus, the colour of brimstone, a very pale yellow; sulphures'cens, becoming sulphur-coloured; sulphuritus, sulphury in tint.

Summer-spore, any spore which germinates quickly, and retains its vitality a short time only, as conidia and uredospores, in contrast to winter- or resting-spores; ~ -wood, that formed during the middle of the growing season.

Summit, used by Grew and his successors for Anther.

Sun-leaves, leaves adapted to develop in full exposure to the sun; ~ -plants, plants which prefer full sun-light; their stems are often short, and their leaves have the palisade cells well-developed (Willis), super (Lat.), above; often modified into supra-; superagrarian (+ agrarian), a name applied to a zone which includes the region of vegetation in Great Britain above the limits of cultivation; superarc'tic, those plants which are confined to the highest zone in Great Britain, the most alpine of the flora in our islands; superfic'ial, superaxil'laris (+= axil'laris), growing above an axil; supercompos'itus = superacomposi'tus; Superfres'cence (crescio, I grow), the state of a parasite (Crozier); superfres'cent, growing above or on another body; superdecom'pound = superfade'compound; Superfes'cundation (+ Fecundation), the union of more than two gametes.

Superfic'iales, pl. (superficialis, on the surface), applied to leptosporangiate Ferns, with sori arising from the surface of the frond (Bower); cf. Marginales.

superfi'cianus (Lat., on another’s land), on the surface of an organ.

Superfici'es (Lat., the surface), Cor'poris, ~ Placenta'ris, “the hymenium of certain Fungals” (Lindley).

Superflua, pl. of Superflu'm (super'-flus, overflowing), a Linean order of Syngenesia (Compositae), containing plants with the florets of the disk hermaphrodite, and those of the ray female.

Superfoet'a'tion (super, above; fetus, pregnant), the fertilization of an ovary by more than one kind of pollen; superfolia'ceous = suprafoliaceous; superfoli'linus = superfoli'lius; Superforms, in Rosa, those with doubly serrated leaves and glandular calyx-segments (Almquist).

Superior (Lat., higher), (1) growing or placed above; (2) also in a lateral flower on the side next the axis: the posterior or upper lip of a corolla is the superior; ~ O'vary, when all the floral envelopes are
inserted below it, on the torus; cf. 
HALF-SUPERIOR.
supernatant (supernatans, swimming 
above), floating on the surface.
supernumerary (supernumerarius, 
over and above), additional; ~ 
Buds, are either ADVENTITIOUS ~, 
or POSTVENTITIOUS ~.
Superparasite (super, above, + 
Parasite), a parasite of a parasite; 
Super-plant, a plant which grows 
upon another, either as an epiphyte 
or parasite.
superposed, superpositus (Lat., placed 
over), vertically over some other 
part; Superposition, placed ver-
tically, or in parts of the flower, 
opposite.
Super specie(s) (super, above, +Species), 
a group of sub-species or new species 
regarded as an entity; Supertuber-
tion (+ Tuber), the production of 
secondary tubers upon the normal 
primary tubers.
supervacuous (Lat.), redundant.
supervolute, supervolu'tus, rolled 
over, when applied to plants, the 
same as CONVOLUTE; superva-
olutive, supervolti'vus, convolute 
estivation.
supine, supinus (Lat., lying on the 
back), prostrate, with face turned 
upward.
supporting (supporto, I carry or bring 
up) Fibres, in nuclear division those 
fibres which run from pole to pole of 
the spindle; ~ Plant, a plant upon 
or in which another grows; a host 
plant (Crozier).
Suppres'sion (suppressio, a keeping 
back), complete abortion.
supra = above, in compounds from 
Latin; supra-axil'larv (+ AXIL-
LARY), growing above an axil; 
supracomp'o site, supracompos'itus, 
suprodecompos'itus (compositus, com-
posed), excessively subdivided; 
supracuta'neous (cutis, skin), above 
the epidermis; supranodal (+ 
nodal), above a node; suprafoli'ceous, -ceus (+FOLIACEOUS), inserted 
above the petiole, growing above a 
leaf; suprafol'i us (folium, a leaf), 
growing on a leaf; su'pra-litt'oral 
(litoralis, pertaining to the seashore), 
a coast region above high-water 
mark (Warming); suprater'rea'neous 
(+ TERRANEUS), used by Spruce 
as the opposite of subterraneous, as 
~ Perianth; cf. Spruce, Cephaloza, 
p. 92.
supreme' (supremus, highest), as the 
top or highest point.
surculiger'ous, -rus (surculus, a young 
branch; gero, I bear), bearing 
suckers; surculose, surculous, 
producing suckers; Sur'culus, (1) 
a sucker, a shoot rising from an 
underground base, as from the root; 
(2) the leafy stem of Bryophytes 
and Lycopods (Bischoff); Sur'culum 
is used by J. Smith for the rhizome 
of a Fern.
sur'curred (Fr., sur = upon, + cur-
rent = running), having winged 
expansions from the base of the 
leaf prolonged up the stem.
Sur'face-yeast, the same as HIGH-
Yeast.
Sur'foyl, Grew's word for outer scales.
sur'sum (Lat., upwards), directed up-
ward and forward; ~ hamulo'sus, 
bordered with hooks pointing to the 
apex.
sur'vival (Fr., survivre, to outlive) 
Character's, those which do not 
become merged or lost in transmission 
(Lotsy).
suspend'ed, suspens'us (Lat., hung up), 
hanging directly downward, or from 
the apex of a cell; Suspen'sor (1) of 
the embryo, a thread of cells at the 
extremity of a developed embryo; 
(2) the cell which supports the con-
jugating cell in Mucorini; pri'mary 
~, the whole of the row of cells 
preceding the actual embryological 
divisions.
sut'ural, sutura'lis (sutura, a seam), 
relating to a suture; Su'ture, (1) a 
junction or seam of union; (2) a line 
of opening or dehiscence; sutura'rius, 
possessing a suture.
Swang, local Yorkshire term for moor-
land bogs, particularly those in 
hollows.
Swarm, a number of spores or unicellular Algae of similar origin, which remain in company without being united; cf. ADELPHOTAXY; ~ Cell, ~ Spore, a motile naked protoplasmic body, a zoospore; Swarm'ers, zoospores; swarm'ing, moving by means of cilia, applied to zoospores.

swim'ming, used vaguely for aquatics which float or have floating leaves; also restricted to those wholly immersed and free; ~ Appara'tus, in Azolla, three apical episporic spongy masses of tissue, surrounding a central conical body with an array of fine filaments (Campbell).

Switch-plants, plants whose leaves are wanting or reduced, with green shoots acting in place of leaves.

sword-shaped, ensiform.

sycobac'rous, -rous (συκ- νός, frequent; καρπός, fruit), able to produce fruit many times without perishing, as trees and herbaceous perennials.

Sy'con = Sy'con'ium, or Sy'con'us (σύκον, fruit of the fig-tree), a multiple hollow fruit, as that of the fig.

Syco'sis (σύκωσις), a skin disease ascribed to species of Microsporon.

Sygolli'phy'tum, Necker's name for Synccolliephy'tum (συγκόλλως, glued together; φυτών, a plant), a plant in which the perianth becomes combined with the pericarp.

Syke, (1) Yorkshire vernacular for a rivulet, which drains out of a bog; (2) the bog itself.

Syl'va, or Sil'va (Lat., a wood), applied to an account of the trees of a district, or a discourse on trees; syl'van, relating to woods; sylvat'ic'us or silvat'icus, growing amongst trees; sylves'tral, used by H. C. Watson for plants which grow in woods and shady places; sylves'tris or silves'tris, growing in woods; sylves'trine (Crozier), growing in woods; Syl'vula, (1) a plantation; (2) a small SYLVA.

sym, a modification of syn (συν), with; symbas'ic (βάσις, a pedestal), based on several types; Symbas'is, the condition of having several independent types; Sym'bion (βίος, life), an organ which lives in a state of Symbiosis; Sym'biont (Symbio'tes, of Tubent), an individual existing in Symbio'sis, the living together of dissimilar organisms, with benefit to one only, or to both; also styled commensalism, consortism, individualism, mutualism, nutricism, prototrophy and syntrophy; antagonis'tic ~ is a struggle between the two organisms; conjunc'tive ~, where the symbionts are intimately blended so as to form an apparently single body; contin'gent ~, when one plant lives in the interior of another for shelter, not parasitism, in Germ. Raumparasitism; disjunctive ~, when the association is only temporary (Frank); mutualis'tic ~, when of reciprocal advantage; symbio'tic, relating to symbiosis; ~ Sap'rophytism, the condition of a higher plant, as a Phanerogam, in symbiosis with a Fungus (Mac-dougal); symbiotroph'ic (προφή, food), deriving nourishment by symbiotic relationship (Kirchner).

Symmetran'thus (συμμετροσ, commensurate; ἀνθος, a flower), when a perianth is divisible into equal parts by several planes of division; symmet'r'ic, symmet'rical, (1) actinomorphic; (2) similar in the number of members in calyx, corolla, and androecium; symmetricar'pus (καρπός, fruit), a fruit which is symmetric, as first defined; Sym'metry, Sym'met'ria, (1) capable of division into similar halves; (2) "used of topography when it shows uniform changes" (Clements); bilat'er'al ~, (1) capable of equal division in one plane only; (2) "where the areas occur in two similar rows (Clements); ma'jor ~, that of an organism, as a whole; mi'nor ~, that of part of an organism, as of a flower; multi-lat'eral ~ = radia'lar ~; ra'dial ~, (1) capable of equal division in more than one direction through the centre; (2) "a condition in which
the different areas are concentric"
(Clements).

Symm'ix'is (συμμίξις, mingling), chromosome pairing in which there is an actual interchange of chromosome parts (Haecker).

Sym'pathy (συμπάθεια, fellow-feeling), (1) the faculty of ready union in grafting; (2) readiness to hybridize, or receive foreign pollen; adj. sympathet'ic.

Sym'pede (συμπέδε, with; πεδ, a fetter), symmetry by an intersecting plane; Sym'pedae, pl., applied by O. Mueller to those Diatoms having superficial symmetry; Sympet'alae (πέταλον, a flower leaf) = Gamopetalae; sympetal'icous, the cohesion of the stamens to the petals, as in Malva; sympetal'alous, -lous, with united petals, gamaopetalalous.

Sym'phianthe'rous, -rous (συμφιάσις, I cause to grow together; ἀνθηρός, flowery), a synonym of Synantherus and Syngenius (J. S. Henslow); symphicarp'ous (καρπός, fruit), with confluent fruits; symphigenet'ic (γέννω, a race), formed by union of previously separate elements; symphyan'therous = symphiantherous; sym'phycarpous = symphicarpous.

Symphy'lode (συμφύλος, with; φυλλόσ, leafy), cone scales of Abietinae (Celakovsky); Symphy'tol'dium, the combined ovuliferous scales in the flower of certain Coniferae (Warming); symphy'l'ous, gamophyllous; symphyogenet'ic = symphigenetic; symphyost'e'monous (στήμων, a stamen), having the stamens united.

Sym'physis (σύμφυσις, growing together), (1) coalescence; (2) fusion of parts (Bessey); Symphys'ia is a synonym.

Symphy'ste'monous = symphyostemonous.

Syn'my'than'therus = symphyantherus.

Synmy't'ic (σύμφυτας, innate), formed by fusion of several nuclei, as a gameto-nucleus (oogamate) of Peronos'o'reae or (isogamate) of Dasycladus (Hartog); symphy'tog'y'nas (γυνα, a woman), the calyx and pistil more or less adherent, the ovary being inferior; symphy'tothe'lus (θηλυκ, a nipple) = symphy'tog'y'nas.

Sym'plast (συμπλάστ, with; πλαστ, formed), an assemblage of energids, as in Cauverpa prolifer, Lamour.; Sym'plo'cium. or Sym'plo'kium (πληκτος, I plait), old names for the sporangium of a Fern; Sym'pode, Sympod'ium (ποῦς, ποδός, a foot), a stem made up of a series of superposed branches, so as to imitate a simple axis; adj.; sympod'ial. ~ Dichot'omy, where at eachforking, one branch continues to develop and the other aborts; Sympoly'morphism (+ Poly'morphism), the occurrence of various forms in a given organ in the same individual (Lindman).

syn (συν, with), adhesion or growing together; cf. sym; synac'mic (αυξή, a point = prime of life), adj., of Synac'my, the stamens and pistils mature together, being the opposite of Heterac'my; Synan'grium (αυξή, αυξόμενος, a man), the cohesion of the anthers of each male flower in certain Aroideae: Synan'thry, Morren's term where stamens normally separated are soldered or united; Synan'gia, pl. of Synan'gium (γέννω, a vessel), (1) an aggregated exannulate Fern sporangium forming a series of loculi, as in Marattia (J. Smith); (2) the anthers in Ephedra; adj. synan'gial; synan'gic, relating to a Synangium; synan'thricus (αυξή, flowery), the growing together of anthers, as in Compositae, syngenious; Synan'th'erae, a name for Compositae; adj. synan'therous: Synantherol'gist (λόγος, discourse), an expert in the study of Compositae; Synan'th'era, a flower with coalesced anthers; Synan't'hē'sis (αυξή, flowering), simultaneous anthesis, stamens and pistils ripe at the same time, synacmy; Synan'thody ('ελθος, resemblance), the lateral adhesion of two flower-buds on the same stalk, or on two peduncles which have become fasciated; Synan'thy (αυξόμενος, a flower), (1) C. Morren's term for the adhesion of
two or more flowers; (2) fruit resulting from pollen from the same flower (Pearson); adj. synan'thmic, syn-an'thous; Synanthrophy'tum (σύνθες, with; ἀνθόσ, crowded; φυτή, a plant), whose fruit is compounded of many carpels [the word as cited by J. S. Henslow seems to be an error for Necker's group Synathrophytum]; Synan'throse, a sugar found in the roots and tubercles of certain Compositae.

Synaph'osis (συναφιστημι, I join in revolt), change in the cohesion of plasma.

Synap'tis (συνάπτω, I join), the condensation of the nuclear filament to one side of the nucleus previous to heterotypic mitosis; adj. synap'tic; ~ Knot = Synapsis; ~ Pe'riod, the time during which synapsis takes place.

Synap'tase (συναπτός, joined), the same substance as EMULSIN.

Syn'arch (σύνω, with; ἀρχή, beginning), the fusion of two sexual cells (Meyer).

synarmoph'y'tus, (σύναρμοσ, joined; φυτή, a plant), gynandrous.

Syn'carp, Syncar'pium (σύνω, with; καρπός, fruit), a multiple or fleshy aggregate fruit, as the mulberry, or Magnolia; syncarp'ous, -pus, composed of two or more united carpels; Syn'carpy, the accidental adhesion of several fruits; Syn'car'yocyte (κάρπος, a nut; κυτταρός, a vessel), the egg (Maire); Syncar'yon, a nucleus formed by fusion of two nuclei (Maire); Syn'car'yophy'te (φυτή, a plant) = Sper'ophy'te; Synchor'ion (χορόν, foetal membrane, Mirbel's name for CAREERULE; synchorolog'ic (χορώ, I scatter; λόγος, discourse), relating to the distribution of plant associations and their conditioning factors (Schröter); Synchro'nomagy (χρόνος, time; γάμος, marriage), the simultaneous maturity of male and female flowers on the same stock (Kirchner); synclad'ous (κλάδος, a branch), used when branchlets grow in tufts from the same point; syn-
cotyle'donous, -do'neus (+ COTYLE
don), with coalesced cotyledons; Syn'cotylie'dons, seedlings in which the cotyledons are united (De Vries); Syn'cot'yledonous, the state of cohesion of cotyledons by one margin only; Syn'cyte, Syn'cyt'i'tum (κυτταρός, a small box), a structure derived from the more or less complete absorption of the cell-walls, which places their lumina in direct contact.

Syn'desis (συνδέω, I bind together), the pairing of homologous chromosomes during synapsis.

Syndimor'phism (σύνω, with, + DIMOR-
phism), the different forms of a given organ on the same individual (Lindman); adj. syn'dimor'phic; syndip'loid (+ Diploid), the fusion of two or more diploid nuclei (Némec); Syneccol'o'gy (+ Ecology), the study of plant-communities; adj. synec'colo'gic.

synd'ral, synd'erous, -drus (συνέδρος, of the same seat), growing on the angles.

Syn'ema (σύνω, with; νῆμα, a thread), (1) the column of monadelphous stamens, as in Malvaceae; (2) ♀ that part of the column of an Orchid which represents the filament of the stamens (Lindley); Syner'gids, Syner'gidae (συνεργάδος, an assistant), the two nuclei of the upper end of the embryo-sac, which with the third (the cosphere) constitute the egg-apparatus; Syn'gam'ete (+ GAMETE), C. MacMillan's expression for the cell which arises from the fusion of two gametes; cf. Oosperm, Zygote; syn'game, sex determined by fertilization (Correns); Syn'ga'my (γάμος, marriage), fertilization in modern restricted sense, fusion of a male and female cell producing a zygote; bi'na'ry ~, when sex is present (Hartog); adj. syn'ga'mous, syn'gam'ic.

Syngenes'ia (συγγενε'ια, connate), a Linnean class, with flowers having united anthers, Compositae; symlink'nes'icus = syngenes'ious, syn'genes'ius, (1) with anthers cohering
in a ring; (2) belonging to the order Compositae.

**Syngonim'ia** (σύν, with, + GONIMIA),
gonimia united in clumps; **Syn'-
grammae** (γράμμα, an outline),
Diatoms with linear symmetry (O.
Mueller; **synhap'loid** (+ HAPLOID),
the union of two or more haploid
nuclei (Némeč).

**Synize'sis** (σύνις, to sit together)
= SYNAPSIS.

**Synkar'ion** (σύν, with; κάρυον, a nut)
= SYNCAKYON; **synoc'reate** (+
OCREA), having opposite united
stipules which enclose the stem in a
sheath; **synoc'cious** (αἰκος, a house),
(1) having antheridia and archegonia
in one inflorescence; bryologists
seem to prefer the form **synoi'cous**;
(2) the occurrence of flowers of
different sexes in the same inflores-
cence (Kirchner); **Synne'ma** (σύννεμα, a
thread), a columnar bundle of closely
united conidiophores (Traverso and
Saccardo).

**Syn'onyrm** (συνώνυμος, having the same
name), a superseded or unused
name; **Synon'ymy**, all that relates
to synonyms.

**Synop'sis** (σύνοψις, a glance), a con-
densed description of a genus or other
group of plants.

**synpet'alous** (σύν, with; πέταλον, a
flower leaf) = gamopetalous;
**Synphyllo'dium** (φυλλόδιον, a leaf),
Celakovský's name for Cone-Scale;
**Synph'othy**, the correct abbrevia-
tion of Synphthal'my (σφαλμός,
an eye), see next; — Moquin-
Tandon's term for adhesion of
(1) embryos; (2) buds; **Synph'hty**
(deriv., see last); **Synph'hty**
(Crozier) = SYNPHPTHY; **Syn'plast
= SYMPLAST; **synorhi'zus** (μίκα, a
root), having a radicle whose point
is united to the albumen; **synsep'
'alous, -tus** (+ SEPALUM), gamo-
sepalous, the sepals coalescent;
synasper'mous, adj. of **Synasper'my**
(στέρμα, a seed), the union of
several seeds; **Syn'sperms** (σπερμα,
a seed), plants with "seeds in-
tegrated with placenta" (C. MacMil-
lan); **synspor'ous** (σπόρα, a seed),
propagating by conjugations of cells,
as in Algae" (Stromonth); **Synstig'-
ma** (αστίγμα, a point), when symmetry
is based upon a point; **synstig-
mat'icus** (αστίγμα, a point), when a
pollen-mass is furnished with a
reinactulum by which it adheres
to the stigma, as in Orchids.

**synta'ctic** (συντακτικός, putting to-
gether), used of irregularity which is
zygomorphic (Pax).

**Syntag'ma**, pl. **Syntag'mata** (σύν, with;
τάγμα, an array), Pfeffer's term for bodies built up of Ta-
MATA, themselves aggregations of
MOLECULES; **syntep'alous** (+ TEP-
ALUM), the tepals united; **Synth'-
ease**, a soluble enzyme effecting the
union of sugar and phosphates
(Ivanoff); **syntripl'oid** (+ TRIP-
LOID), the union of triploid nuclei
(Némeč); **syntroph'icus** (τρόφις,
food), epiphytic; **Syntroph'ism** and
**Syn'rophy**, the antagonistic sym-
biosis of Lichen with Lichen; **Syn-
trophs**, "Logders" in Lichens;
**Syn'type** (τύπος, a type) = COTYPE;
synzo'ic (ζων, an animal), used of
intentional dispersal by means of
animals (Sernander); **Synzycho'ry**
(χωρέω, I spread abroad), dispersed
by animals; **Synzyg'ia** (σύγγε, a
yoke), the point of contact of
opposite cotyledons.

**Syphon** = SIPHON.

**Syring'in**, a substance occurring in
**Syringa**, the Lilac; **syrin'gus**,
 lilac-coloured, a light purple.

**Syringoden'dron**, used by palaeo-
botanists for old or partially de-
corticied sigillarian stems; the
name was formerly generic.

**Syr'tidad** (σύρτις, συρτίδος, a sand-
bank, + ad), a plant of a dry
sandbar (Clements); **Syrtidi'um**, "a
dry sandbar formation"; **syrtidoph'-
ilus** (φιλέω, I love), "dwelling
on dry sandbars"; **Syrtidoph'ya**
(φυτών, a plant), "dry sandbar
plants" (Clements).

**Systellophy'tum** (συστέλλω, I wrap
closely, φυτών, a plant), when a
tanked-shaped

persistent calyx appears to form part of the fruit.

**System** (σύστημα, a composition), a scheme of classification; **systematic**, systematische, relating to system; ~ Bot'any, the study of plants in their mutual relationships and taxonomic arrangement.

**Syst'ole** (σύστολον), a contraction, the contraction of the contractile vesicles in certain Algae, plasmodia, and zoospores.

**Syst'rophe** (συστρόφη, rolling up), when strong light causes chlorophyll grains to congregate into a few masses (A. F. W. Schimper); adj. systrophic, as ~ In'terval, or **Systroph'ion**, that portion of the Photo'tax in which systrophe can take place (S. Moore).

**systylius** (σύν, with; στῦλος, a column), the lid fixed to the columella in Mosses, and elevated above the capsule when it dries; **systylous** (Berkeley) = **systylius**; **systylus**, when styles coalesce into one body, as in Rosa systyla, Bast.

**tabaci'rus**, pale brown, "tobacco-coloured;" the name is from *Nicotiana Tabacum* , Linn.

**Tabasheer**, a siliceous concretion occurring in the joints of bamboo.

**Ta'bes** (Lat.), a wasting away, a disease, the loss of the power of growth and consequent wasting away; **tabes cent**, tabes'cens, wasting or shrivelling.

**Tablet** (tabula, a board or plank), (1) the frustule of Diatoms when quadrangular; (2) the rectangular colony of *Goniurn* ; **Tab'ula**, the pileus of certain Fungi; tabular, tabularis, flattened horizontally; ~ Roots, buttress-like roots of certain tropical trees (Kerner).

**tabula'tus** † (Lat., boarded or floored), layer on layer.

**Tachyspore** (ταχύς, quick; σπείρω, I sow), applied to plants which quickly disperse their seeds (Ulbrich); adj. tachyspor'ous.

**ta'ctic** (taktikós, fit for order), reacting to a stimulus by internal change (Wager).

**ta'ctic** (tactilis, that may be touched), sensitive to touch; ~ Hairs or ~ Bris'ties=Stimulators; ~ Papilla', a mechanical sense-organ such as a projecting cell on a tendril; ~ Pit, an unthickened area on the outer wall of a superficial sensory cell.

**tae'mop'terid**, a Fern resembling *Tae'mopteris*, in structure.

**taeni'anus** † (taenia, a band), long, cylindric and contracted in various places; **taeniop'teroid**, in fossil botany, resembling the genus *Tae'niopteris*.

**Tag'ma**, pl. *Tag'mata* (τάγμα, an array), Pfeffer's term for all aggregations of molecules; **tagma'tic Complex**, a higher molecular system.

**Tail**, any long and slender prolongation; ~ point'ed, excessively acuminate, caudate; tailed, said of authors which have a prolongation from the loculus, which part is destitute of pollen-grains.

**Take-all**, an Australian name for the ravages of *Ophiobolus graminis* on wheat; termed "Straw Blight" in England.

**Tala'ra** † (talaria, the winged shoes of Mercury), the wing or ala of a papilionaceous corolla.

**Ta'lea** (Lat.), a cutting, a small branch for propagating.

tall, exceeding the normal height.

**Ta'lus** (Fr., slope), an accumulation of loose fragments at the base of rocks (Warming).

**tangential** (tangens, touching), at right angles to the radial or medullary rays.

**Tan'ghan**, the poison occurring in the ideal poison plant of Madagascar, *Cerbera Tanghai*, Hook.

**Tan'gle**, the same as *Skein* (Crozier).

**Tank-ep'iphyte** (+ *Epiphyte*), epiphytes in which the roots are reduced to anchoring appendages (Schimper).

**tankard-shaped**, thickened and gradually enlarged downward, then
suddenly contracted or ended, as some varieties of turnip (Crozier).

Tan'née, an enzyme occurring in \textit{Aspergillus}; Tan'ni or Tan'nie Acid, an important group of astrigents, especially abundant in some barks, as that of the oak; Tan'nis-sac, ~vesicles, strongly refractive globular bodies in cells, which contain tannin; a\textit{plastic} ~, probably an excretion, as in the germinating date; \textit{plastic} ~, presumably connected with nutrition; capable of being modified; \textit{physiological} ~, believed in this state to be a waste product.

Tap-root, the primary descending root, forming a direct continuation from the radicle; tap-root'ed, possessed of a tap-root.

tap'er, cylindric but angular, and gradually diminishing towards the end; ~ point'ed, acuminate, as the leaf of \textit{Salix alba}, Linn.; ta'pering, regularly diminishing in diameter.


tape'sium (τάπης, a carpet), dense and wefted superficial mycelium, having ascophores seated on it; tape'tal, relating to the tapetum; ~ Cell, cell of a tapetum; ~ Lay'er = Tape'tum; ~ Sept'um, the wall between the megaspore cavity and the nucellus in Palaeozoic seeds (F. W. Oliver); Tapete', a suggested emendation of Tape'tum, a membrane of granular cells investing the sporogenous cells in the archesporium, absorbed as the spores mature.

Taphrench'yma (ταρφρος, a ditch; ἑγχύμα, an infusion), = Bothrenchyma.

Taph'rad (ταρφρος, a ditch, + 	extit{AD}), a ditch plant (Clements); Taph'rium, a ditch formation; taphroph'ilus (φιλός, I love), ditch-dwelling; Taphrophy'ta (φορέα, a plant), ditch plants (Clements).

Tapio'ca, prepared starch of the roots of several species of \textit{Manihot}.

Tarax'acine, a bitter crystalline principle found in dandelion, \textit{Taraxacum officinale}, Weber.

Tar'gets, Smith's term for \textit{Peltae}.

tartar'eous, -eus (Mid. Lat., tartrum, wine tartar), having a rough crumbling surface, like some Lichens.

taw'ny, fulvous, a dull brownish-yellow.

taxa'ceous, taxin'eous, relating to the Taxinæa.

Taxe'tum, an association of yew trees, \textit{Taxus baccata}.

taxiform'is (taxus, the yew; forma, shape), arranged distichously like the leaves of yew.

taxigno'mic (τάξις, order; γνώμη, judgment, Vesque's term for anatomical characters.

taxinom'ic = taxonomic.

Taxis (τάξις, order), used by Czapek to express reaction of free organisms in response to external stimuli by movement; \textit{Taxis}, the tendency of unicellular organisms to arrange themselves according to lines of force or stimulation; \textit{Taxit'ery} (ταξίς, a monster), a modification which is so slight as to admit of comparison with the normal form; Taxol'ogy (λόγος, discourse) or Tax'on'omy (νόμος, law), classification; Taxon'omist, one skilled in classification; adj. taxonom'ic; Tax'y, the constituent of a variation (Cou-tagne), a modality "clearly disjoint."

Tear, a drop of gum or resin in its native state; tear-sh'aped, like the pip of an apple, lachrymiform.

Tectopar'atye (τέκτων, a craftsman, + \textit{ParaTYPE}), a specimen selected to show the microscopic structure of the original type of a species or genus (Chapman); Tectoples'totype (+ \textit{PlesioTYPE}), the same, but with subsequently described specimens; Tect'otyype, a fragment or otherwise for microscopic investigation.

Teeth, (1) any small marginal lobes; (2) in Mosses, the divisions of the peristome.

Teg'men (Lat., a covering), (1) the inner coat of a seed, previously the secundine of an ovule; (2) the glume of a grass; pl. Teg'men'ta, the scales of a leaf-bud; ~
folia’ceae, fulcra’ceae, petiola’ceae, stipula’ceae, modifications of leaves, stipules and petioles, petioles and stipules only (Lindley); tegmina’ tus (Lat.), when the nucellus is invested by a covering.

tegument’ary (tegumen, a cover), relating to some covering; Tegu¬ment’tum, (1) the indium of a Fern; (2) the spermoderm.

Tel’ch’oseme (τελχος, a wall; σως, a body), droplets or spherules composing the cell-wall (Gardiner).

Tek’nospore (τεκνω, I bear children, + SPORE), a spore produced directly from male or female organs of Equi¬setaceae and many Ferns (Radlkofser).

Tel’a (Lat., a web), elementary tissue, as meristem; ~ con¬text’ta, a weft of distinct hyphae, felted tissue; Ger. "Filzgewebe."

Telebol’ites (τελβόλες, a missile), the products of enzyme action (Beyerinck); Telecomito’sis (+ Mit’osis) = KARYOKINESIS.

teleian’thus (τελαες, perfect; ἄνθος, a flower), hermaphrodite.

Teleol’ogy (τελος, gen. of τελος, completion; λόγος, discourse), the doctrine of final causes, or theory of tendency to an end; adj. teleolog’ic; Telecomito’sis (μιτ’οσις, a thread), an indirect division of the nucleus, when the chromosomes divide to rejoin the daughter-nuclei (Dangeard).

Teleutoconid’ium = Teleutoconid’ium (τελεούθ, an end, + GONIDIUM) = TELUTOSPORE; Teleutosor’us (+ Sorus), an aggregation of teleutos¬spores (Arthur and Holway); Tel’eus’tospore (σωροχ, a seed), a resting bilocular spore of Uredinaeae, on germination producing a promycelium; teleutospor’ic, relating to a TELUTOSPORE; teleutospor’iformus (fero, I bear), producing teleutos¬spores’ (Cooke).

Tel’ium (τελος, completion), Arthur’s term for TELEUTOSORUS; adj. tel’ial; Tel’eis’ospores (+ SPORE) = TELUTOSPORE.

tellu’ric (tellus, the earth), applied to ground water, as distinct from rain.

Tel’matad (τέλμα, a pool, + AD), a wet meadow plant (Clements); Tel’mat’ium, (1) Ganong’s expression for a wet marsh; (2) Clement’s expression for a wet meadow formation; Telemol’ogy (λόγος, discourse), account of the origin of moors (Dörfler); telmatoph’ilus (ϕιλω, I love), dwelling in wet meadows (Clements); Telmatophy’ta (ϕυτων, a plant), wet meadow plants (Clements).

Tel’og’amae (τελος, an end; γαμος, marriage), Ardissone’s term for Flo¬rideae; Tel’ogoni’d’ium (+ GONI¬DIUM), a gonidium arising from successive generations in the same cell (A. Braun); Tel’ophase (φασις, an appearance), the last phase of nuclear division; adj. telo’phas’ic; Telosynapsis (+ SYNAPSIS), that form of nuclear contraction in which the chromosomes are paired end to end; adj. telosynap’tic.

Tem’peratures, the sum of, used to mark a given period in the life-cycle of a plant.

temul’en’tous (temulentus, drunken), nodding in a jerky irregular manner; cf. nutans (Heinig).

Tem’ul’in, an active principle occurring in Lolium temulentum, Linn.

Tena’culum, pl. Tena’cula (Lat., a holder), haptera or holdfasts of Algae; adj. tenac’ular.

Ten’dril, a filiform production, cauline or foliar, by which a plant may secure itself in its position; ten’dril’lous, possessed of tendrils.

Ten’sion (tensio, a stretching), due to turgidity in cells, and manifested by movements of parts; ~ Form, Delpino’s term for papilionaceous flowers, with concealed anthers, such as Genista and Ulex.

Tent’pole, a raised central portion of the apex of the prothallus (F. W. Oliver).

Ten’tacle (tentaculum, Mod. Lat., a feeler), a sensitive glandular hair, as those on the leaf of Drosera; Tentac’uloid (εταιος, resemblance), applied to long processes which
Tentaculoid

pass through mammiform protuberances of the perigloea of Diatoms (Buffham).

tenuifo'lious, lius (folium, a leaf), thin or fine-leaved; Tenuinucel-la'tae (tenuis, narrow, + Nucellus), Van Tieghem’s term for those plants with true seeds, in which the nucellus is reduced to a layer of cells or wholly absorbed by the endosperm; ten'uuis (Lat.), thin.

Tep'al, Tep'alum (anagram of petalum), a division of the perianth, sepal or petal; restricted by H. G. Reichenbach to the two unchanged petals of Orchids.

teph'reus, teph'rus (τεφρός, ashy), ash-coloured; tephro'sius, ashy-grey.

Tepida'rium (Lat., a tepid bath-room); in botanic gardens a "Cape House."

Teratog'eny (τέρας, τέρατος, a sign or prodigy; γένος, offspring), the production of monsters; Teratol'o'gy (γένος, discourse), the study of malformations and monstrosities; adj. teratolog'ic.

Ter'cine, Terci'na (ter, thrice), a supposed third integument of an ovule, really a layer of the primine or secundine.

Ter'ebene, a terpene which holds resin in solution, as turpentine; the name is from Pistacia Terebinthus, Linn.; terebin'thine, pertaining to, or consisting of, turpentine.

ter'obrate (terebra, a borer), having scattered perforations; Terebra'tor, Lindan’s name for the so-called trichogyne in Gyrophora; Terebra-torhy'pha (+ ἕγιφα) means the same.

Tere'do (Lat., a boring beetle), disease caused by the boring of insects.

terete', te'res (Lat., rounded), circular in traverse section, cylindric and usually tapering.

tergem'inal = tergem'inate, tergem'i'natus, tergem'inus (three at a birth), "thrice-twin" (Lindley).

tergi'ferous (tergum, a back; ferre, I bear), tergisperm'ous, -us (στέρπα, a seed), bearing dorsal sporangia, as Ferns; Ter'gum, back, dorsum.

ter'minal, termina'lis (Lat., relating to boundaries), proceeding from or belonging to the end or apex; ~ Bud, a bud which is apical.

Terminol'o'gy (terminus, a limit = term; λόγος, discourse), glossology, definition of technical terms; Ter'minus (Lat.), a term, a technical word.

ter'niary, terna'r'ius (Lat., consisting of three), (1) in threes, trimeronous; (2) the result of a third axial order, as derived from the primary; ~ Hy'brid, the result of crossing a hybrid with a species different from either of its parents.

ter'nate, terna'tus (termi, by threes), in threes, as three in a whorl or cluster; ter'nate-pin'nate, when the secondary petioles proceed in threes from the summit of the main petiole; terna'tely trifo'liolate, with three leaflets attached at one point, as in clover (Crozier); ter'nus = TERNATE.

Ter'pene (modif. of Turpentine), a group of hydrocarbons present in turpentine, liquid resin, or essential oils; terp’enoid (εἶδος, resemblance), Kerner’s name for that group of flower-scents produced by terpenes, as Orange-flowers, Gardenia, Thyme, etc.

terpin'nate (ter, thrice, + PINNATE) = TRIPINNATE.

terra'neus † (terra, earth), growing on dry land.

terrest'rial, terres'tris (Lat., pertaining to the earth), used of plants of the dry ground; the Latin terres'ter is also employed.

ter'reus (Lat., earthen), "earth coloured"; ter'ricole, terric'o'lus (terra, the earth; eolo, I inhabit), living on the ground, as some Lichens.

terrig'enus (terrigéna, earth-born) = TERRESTRIAL, a hybrid word used by A. Cunningham.

Terripra'ta (terra, earth; pratum, a meadow), a class of plant-formations developed upon substrata not influenced by ground water, and consisting of grasses, herbs and bryophytes.
Ter'siforms (tersus, neat), in *Rosa*, those forms which have all the ribs of their leaves hairy (Almquist).

Ter'tiospore (tertius, third; σπόρα, a seed), C. MacMillan's term for a fertilized egg which undergoes rejuvenescence and segments into usually four spores, motile and similar to the spores of a gametophyte generation; the result of sporophytic segmentation, as in *Oedogonium*.

tes'sellate, tessel'a'tus (Lat., of squared stones), chequer-work, as in *Fritillaria Meleagris*, Linn.

tessula'ris (tesserula, a small square stone), of cubic dimensions, all sides equal.

Tes'ta (Lat., a brick or tile), the outer coat of the seed, usually hard and brittle.

testa'ceous, testa'ceus (Lat., of bricks or tiles), brick-red.

testic'ular, testic'u'late, testiculo'lus (Lat.), shaped like the tubers of *Orchis*, and fruit of *Mercurialis*; Testic'u'lis ‡, Tes'tis ‡ (Lat.) = Anther.

Tes'tule (testula, a dim. of *Testa*), an old name for *Frus'tule*.

te'ter (Lat., offensive), having a foul smell.

Tetrablas'tus (τέτρας, four; βλαστός, a bud), Koerber's term for those Lichen-spores which consist of four cells; tetracam'arous, -rus (+ Cam'arus), of four closed carpels; tetra-carpel'lary (καρπός, fruit), of four carpels; Tetracar'o'tin (+ Carot'in), a lipochrome pigment resembling carotin.

Tetrachae'niun ‡ (τετράς, four; + Achaen'iun), a fruit of four adherent achenes, as in *Labiatae*; Tetrachocar'pium (τέτραχα, four-fold; καρπός, fruit) = Tetra'spor'e; tetrachat'o'mous, tetrachoto'mon (τέτραχω, I cut), when a cyme, in its restricted sense of fascicle, bears four lateral peduncles about the terminal flower; Tetrachot'o'my, the fission of a stem into four branches of equal rank (Worsdell).

tetraco'seous, -cius (τετράς; four, κόκκος, a berry), (1) consisting of four closed carpels; (2) applied to bacteria when in four segments; Tetracot'yil (+ Cotyledon), a seedling with both cotyledons deeply bifid (De Vries); tetra'cyclic (κύκλος, a circle), when a flower is composed of four whorls of organs.

Tet'rad (τετράδιον, a set or group of four), (1) a body formed of four cells, as in the formation of pollen in the pollen-mother-cells; (2) = Tetras'pore; (3) in heterotypic nuclear division, one division of a chromosome into four parts, forming a set; tetradip'loid (+ Diploid), the fusion of four nuclei (Nemec); Tetradogen'esia (γένεσις, origin), the formation of a tetrad of spores, thus including all the phenomena of Meiosis.

tetrad'y'mous (τετράδυμος, fourfold), (1) having four cells or cases; (2) when the lamellae of an Agaric are arranged so that alternate lamellae are shorter than the intermediates, and one complete lamella terminates a set of four pairs, short and long.

Tetradynam'ia (τετράδια, four; δύναμις, power), a Linnean class which is characterized by possessing tetrady'namous stamens; tetradyn'amous, -mus, having four long stamens and two short, as in *Cruciferae*; tetrafol'ia'tus, tetrafoli'ius (folium, a leaf), four-leaved, more correctly tetraphylyous; tetrag'onal (γωνία, an angle), four-angled; Tetragonid'an'gium (+ Goniad'gium), a sexual reproductive organ in Floridean Algae, producing tetragonidia; Tetragon'id'ium (+ Goni'dium), asexually produced spores of Florideae, etc., usually in groups of four; tetrag'onous (γωνία, an angle), four-angled; Tetragy'n'ia (γυνή, a woman), a Linnean artificial order, the members having flowers with four pistils; tetrag'y' nous, of four carpels or styles; tetrameris'te'lic (+ Meriste'le), used of leaf-traces when composed of four meristeles (Brebner); tetram'erous, -rus (μέρος, 381
part), of four members; tetramorphic (μορφή, shape), having flowers of four forms, varying as to length of style, anthers and stigmas, as in Epigaea repens, Linn.; tetrad'er, tetran'drous (ἄνθρος, ἀνθός, a man), with four stamens; Tetran'dria, a Linnean class of tetradrous plants; tetranu'cleate (+ NUCLEUS), having four nuclei (Brebnner); tetra-pet'alous, -'lus (πέταλον, a flower leaf), having four petals; tetraphyl'tic (φυλτῆ, a tribe), applied to hybrids with four strains in their descent; tetraphyl'lous, -lus (φύλλον, a leaf), four-leaved.

tetraploos'ants (τετραπλόος, fourfold, + ΚΑΥΛΙΣ), having quaternary axes (Fux); tetrap'loid (εἶδος, resemblance), used of a nucleus due to the fusion of four (Nēmeç); Tetrap'loidy, the condition itself.

tetrap'terous τετράς, four; πτερόν, a wing), four-winged, four produced angles; tetrapryrene'us (πυρέν, a kernel), with four stones or seeds in the fruit; tetraque'ter, tetraque'trous (γυδάρα, a square), with four sharp angles; tetra'roth (ἀρχή, beginning), with four vascular strands in a fibrovascular cylinder or stele; tetra'rinus (ἀρρην, male), Necke'r's version of TETRANDOUS; tetraschis'tic (σχησίς,split), dividing into four; tetrasp'elous, -lus (+ SEPALUM), having four sepals; tetrasper'm'ous (σπέρμα, a seed), with four seeds; tetrasper'a'ceous, tetraspor'ic, tetrasp'or'ine, connected with the production of TETRASPORES; Tetrasporan'gium (+ SPORANGIUM), a unicellular sporangium containing tetraspores; Tet'raspore (σπόρα, a seed), a spore formed by division of the spore-mother-cell into four parts; tetraspor'ic, tetrasper'ous, bearing tetraspores; Tetras'ter (+ ASTER), in nuclear division, a spindle of four centres (Hartog); tetras'tichous, -chus (στιχός, a row), in four vertical ranks; tetra'tripl'oïd (+ TRIPLOID), concerning the fusion of the diploid nuclei (Nēmeç).

text'tile, text'ilis (Lat., woven), used for weaving.

Text'ture, Text'tura (Lat., a web), applied by Starbæk to hyphal structures in Discomycetes, thus: ~ epidermo'idea, the walls of hyphae more or less confluent; ~ globo'sa, when the cells are nearly isodiametric, the separate hyphae not distinguishable; ~ intrica'ta, the hyphae running in various directions, with walls not coalescent; ~ ob'īta, hyphae nearly parallel, and having small cavities with thickened walls; ~ porre'o'ta, hyphae with large cavities and no thickened walls; ~ prismati'ca, cells not isodiametric, hyphae not distinguishable.

thal'amiflor'al, thalamiflor'ous, (θάλα-μος, a bed-chamber; flos, floris, a flower), when the parts of the flowers are hypogynous, separately inserted on the thalamus; Thala'miflor'ae, a group of Phanerogams so distinguished; Thala'mium, (1) "a hollow case containing spores in Algals"; (2) "the disk or Lamina prolifera in Lichens"; (3) "a form of the hymenium in Fungals" (all from Lindley); Thal'amus, the receptacle of the flower, the torus.

Thalas'sad (θάλασσα, the sea, + AD), a sea-plant (Clements); thalas'sinus, thalas'sicus (Lat.), sea-green; Thal-assi'um, "a particular sea form-ation"; thalassoph'ilus (φιλο, I love), sea-loving; Thalassophy'ta (φύτον, a plant), sea-plants (Clements); Thalas'sophyte, a marine Alga; Thalassoplank'ton (+ PLANKTON), oceanic plankton (Forel).

Thallid'i'um (θάλλος, a sprout), (1) a vegetative reproductive body, especially amongst Thalliphytes and Musciineae (Kerner); (2) the medul-lary layer in Lichens in a young state; thall'i'ne, thalli'nus, thal'o-dal, thallo'dic, thallo'des, thal'lose, pertaining to a thallus; Thallog'am'ae (γάμος, marriage), Ardissone's term for Algæ; Thal'logams, term used by Focke for Vascular Crypt-
Thallogen (γένος, race, offspring), a synonym of Thallophyte; thalloid (εἴδος, resemblance), having the nature or form of a thallus; applied to Hepaticae in which the vegetative body is not a leafy stem as Marchantia; thalloidal (Crozier), is a synonym; Thallome, a thallus-like growth; cf. Caulome; Thallophyte (φυτών, a plant), a plant whose growth is thalloid, no clear distinction of leaf or axis; Thallostrom (σπρώτος, strown), a species migrating by means of offshoots (Clements); Thallus, pl. Thalli, (1) a vegetative body without differentiation into stem and leaf; in Fungi the whole of the body which does not serve for reproduction; (2) Goebel's term for the organ of attachment in Terniola, a genus of Podostomaceae, composed of coalesced dorsiventral branches; ~ Gonidia, the gonidia in the thallus of a Lichen; the Lichen thallus is subdivided into ~ lepo'des, crustaceous; ~ pla'codes, foliaceous; ~ thamno'des, fruticose.

Thamnium (θάμνος, a shrub), the bushy thallus of such Lichens as Cladonia rangiferina, Hoffm.; thamnoblast'us (θαμ'νοβλαστός, a bud), used by Koerber for a fruticose Lichen.

Thbe'a'ine (from Thebes, where opium was much employed), one of the crystallized alkaloids occurring in the opium poppy.

The'ca (θήκη, a case), (1) the sporangium of a Fern; (2) the capsule of a Moss; (3) an anther; (4) used by Necker for the fruit of Myrtaceae; (5) "a cell of any sort" (Lindley); (6) = Ascus; (7) used by Vines for the loculus of an anther; (8) "a hollow space in the pericarp formed by the doubling of the endocarp" (Gray); The'casphore (φορέω, I carry), the stipe of any plant, homologous with the petiole; The'caspore (σπορά, a seed) = Ascospore; Thecaspor'ae (Traverso) = Sporidia; thecaspor'ous, used of Fungi which have the spores in ascii (Stormonth); theca'tus, bearing a theca; the'cial, possessing thecae or pertaining to them; ~ Al'gae, the hymenial gonidia of Lichens; Thecidion, Thecid'i'um † = ACHENE; theci'erous (ʃero, I bear), bearing thecae or asci; the'ciger, theci'er'us (ʃero, I bear), theca-bearing, applied to the hymenium of Fungi, and branches of Mosses which bear setae; The'cium, a layer of tissue below the epithecium, which contains the sporangia in Lichens (Minks), cf. Epithecium, Hypothecium.

The'ia, an alkaloid in the leaves of Théo, the tea-plant.

The'ke, sometimes used for the theca (ascus) of Lichens.

Thelephor'oid (Thelephorus, εἴδος, resemblance), like the genus Thelephorus.

Thelephor'us (θηλας, a nipple; φορω, I carry), covered with nipple-like prominences.

Thelotre'moid, having tubercular apothecia like those of Thelotrema.

They'g'enous (θηλας, female; γένος, race, offspring), inducing the female element, as ~ Castra'tion, the production of pistils in the male-flowers of a host by Ustilago.

Theobro'mine, the active principle of the cacao-bean, Theobroma Cacao, Linn.; theo bro'minus, the deep chocolate brown of the seed of the same plant.

Theoret'i'co (θεωρητικός, speculative), pertaining to theory as distinct from practice; ~ Di'agram, a floral diagram of the theoretic components, not necessarily the same as seen on inspection.

Ther'i'um, or Ther'i'on (θηρ, a wild beast), a plant succession due to animal agency (Clements).

The'rmad (θηρμη, heat, + AD), a hot spring plant (Clements); ther'mie, warm; ~ Con'stant, the sun of the mean temperatures of the days of active vegetation, up to some definite phase in the plant's life, minus a certain initial temperature.
determined by several years' observations, and varying for the species (Oettinger); **Therm'ium**, a hot spring formation; **Therm'o-cleistog'am y** (+ *Cleistogamy*), when flowers do not expand as a consequence of insufficient warmth (Knuth); **ther'monas'tic** (*vastôs*, pressed), close appression of an organ due to heat; **Thermonas'ty**, the condition described; **thermoph'ilic** (*φιλέω*, I love), applied to those bacteria which thrive in high temperatures; **Therm'o'sis**, change due to warmth upon an organism; **Thermotax'is** (*τάξις*, order), movement induced by heat, moving towards its source; **Ther'motoc'ty** (*τοξοκόν*, poison), death caused by excess of heat, especially if the plant is short of water (Balls); **Thermot'onus**, change in irritability; **Thermotrop'ic** (*τροπή*, a turning), relating to **Thermotrop'ism**, curvature dependent upon temperature (Wortman).

**Therodrymi'um** (**θέρος**, summer; *δρυμός*, a coppice), leafy-forest formation (Diels); **Theromeg'atherm** (+ *Megatherm*), having the high summer temperature of 20° C. = 68° F. and above; **Theromes'otherm** (+ *Mesotherm*), with summer heat of 12° - 20° C. = 54° - 68° F.; **therophyll'ous** (*φύλλον*, a leaf), producing leaves in summer, deciduous leaved plants; **Ther'ophyte** (*φυτόν*, a plant), a plant which completes its development in one season, its seeds remaining latent during the hot season.

**Thick'ening Lay'er**, an apparent layer of cellulos on the inner face of a cell-wall; ~ **Ring**, Sanio's term for a ring of meristem in which the first fibro-vascular bundles originate.

**Thigmomorpho'sis** (**θήγματις**, I touch, + *Morphosis*), change in the original structure due to contact, as the adhering discs of *Ampelopsis*; **Thigmotax'is** (+ *Taxis*), the result of mechanical stimulus; adj. **thigmo-**

tac'tic; **Thigmot'ropism** (*τροπή*, a turning), curvature induced in climbing plants by the stimulus of a rough surface (Czapek).

**Thin'ad** (**θύκος**, a sand heap, + *A*), a dune plant; **Thin'i'um**, a dune formation; **thinoph'ilus** (*φιλέω*, I love), dune-loving; **Thinophy'ta** (*φυτόν*, a plant), dune plants (Clements).

**Thorn**, usually an aborted branch, simple or branched; ~ **Fo'rest**, the CAA-TINGA forests of Brazil.

**Thread**, used by Blair for the FILAMENT ~ -blight, the destructive Fungi on tea-plants, *Stilbum na'-num*; **Thread-indicator**, a form of apparatus for measuring the rate of growth; **thread-shaped**, filiform.

**three-an'gled**, trigonous; ~ **cleft**, trifid; ~ **cornered**, ~ edged, with three sides, plain or incurved, and three acute angles, triquetrous; ~ **leav'ed**, trifoliate; ~ **lobed**, trip lobed; ~ **nerved**, with three principal veins; ~ **parted**, tripartite; ~ **ranked**, with three vertical rows on a stem; ~ **ribbed**, the midrib and one rib on each side more prominent than the rest; ~ **valved**, trivalvate.

**thrice-digita'to-pin'nate = tri-ter-nate**

**Throat**, the orifice of a gamopetalous corolla or calyx, the faucis.

**Thrum** (**Grew**), **Thrum** (**Blair**), (1) the filament of a stamen; (2) in Composite florets, the anthers; **thrum-eyed**, applied to a short-styled dimorphic flower, such as a primrose, the stamens alone being visible in the throat of the corolla.

**Thrush-fun'gus**, the disease ascribed to *Pemium albicans*, Lamens.

**Thuner'der-broom = Witches' broom**.

**Thyll**, **Thy'l'a**. **Thy'lose**, **Thy'llose** (**Germ. Thylle**), cf. **Tylone**.

**Thy'mol**, a crystallized product chiefly obtained from the seeds of *Carum captivum*, but found in many plants, as *Thymus Serpyllum*, whence its name.

**thy'roid** (**θυρός**, a shield; **έδως**, 384
resemblance), shield-like, peltiform (Heinig).

Thyrsus, *Thyrsus* (Lat., the Bacchic staff), a mixed inflorescence, a contracted or ovate panicle, the main axis indeterminate, but the secondary and ultimate axes cy- nase; *thyrsiferous*, -rus, (féro, I bear), bearing a thyrsus; *thyrsiform* (flos, floris, a flower), the flowers in a thyrsus; *thyrsus* (forma, shape), shaped like a thyrsus; *thyrsoid* (elos, resemblance), like a thyrsus; *Thyrsula*, the little cyme which is borne by most Labiates in the axil of the leaves.

Tige, pr. teeg (Fr., tige), stem; Tigel’el = Tigelle’, *Tigellea*, *Tigel-lum*, *Tigellus*, a miniature or initial stem, used for (a) caulicle or hypocotyl, (b) plumule; *tigella’-tus* †, (1) having a short stalk, as the plumule of the bean; (2) when the stalk is well marked; *Tigellu-la* †, a short filament or stalk observed in the truffle; *tigellula’ris*, vascular.

Tig’line, the acid principle in the seeds of *Croton Tigillum*, Linn.

Tiller, a sucker or branch from the bottom of the stem; till’ering, throwing out stems from the base of the stem; Til’low (Crozier) = TILLER.

Tim’ber-line, the upper limit of tree vegetation on the mountains.


Tinct’or’ious, -rius, tinct’or’ial (Lat., pertaining to dyeing), used for dyeing, imprinting colour.

Tin’der-fung’us, *Polyporus fomentarius* Fr.

Tinole’cite (tēlwa, I extend, + lēu-cite), Van Tieghem’s term for directing spheres, the centosomes.

Tip, used by Withering for ANThER.

Tiph’ad (tīpos, pool, + ad, a pond plant; Tiph’ium, a pond formation; tiphoph’ilus (philéa, I love), pond-loving; Tiphophy’ta (phor’ō, a plant), pond plants (Clements).

Ti’rad (tērp, I rub away, + ad), “a bad land plant”; Tiri’um, a bad land formation (Clements).

Tis’see, the texture or material formed by the union of cells of similar origin and character, and mutually depend- ent; tissues united form systems, these again form organs; ~ Cord, central cord (Crozier); aq’ueous ~, a form of hypoderm, consisting of thin-walled parenchyma wanting chloroplastids, but containing much watery sap; Conjun’ctive ~, ground tissue arising from the plerome or young stеле; cuti’cularized ~, modified cell-walls, as epidermis and periderm; embry’onic ~, pro’geny ~, see Ground Tissue; false ~ = spurious ~; glan’dular ~, composed of secreting cells or glands; Ground ~, fundamental tissue, neither vascular nor epidermal, either within or without the stèle; homoge’neous ~, consisting of various kinds of cells; homoge’neous ~, when the cells are uniform; intra-ste’lar ~ = Conjunc’tive tissue; lim’itary ~, epidermal tissue; parenchyma’tons ~, (a) thin-walled, as pith cells; (b) thick-walled, as collenchyma; per’mant ~, adult tissue; pri’mary ~, first formed tissue; pro’senchy’matous ~, woody tissue; sclerenchy’matous ~, thickened or hardened, as fibres or sclereids; sec’ondary ~, resulting from growth from continuous meristematic activity; sieve ~, of long articulated tubes, communicating by means of their sieve-plates in their walls; spu’rious ~, an approach to a tissue, by hyphae massing into a felt, or their apices forming a collective apical growing point; tegument’ary ~, the external epidermal layer; tra’cheal ~, composed of tracheids, especially adapted for the conveyance of liquids; vas’cular ~, the components of the vascular system of a plant.

Tjemo’ro-for’est, or aphyllous-forest; formed by *Casuarina* in Eastern Java and the Sunda Isles.

Tme’ma (τμήμα, section), a cell rup-
tured in setting free a Moss-gemma (Correns).

tufa'ceus (Lat., formed of tufa), (1) tufa-coloured, buffy drab; (2) gritty.

toise (Fr., a fathom), a measure formerly used in France, 6'395 feet, 1'9492 metre, 6 French feet.

toin', a resinous exudation from Myrocliron toluisferun, H. B. K.

tomentose, toment'osus, tomen'tosus, densely pubescent with matted wool, or short hairs; toment'ulose, slightly tomentose; Tomen'tum (Lat., cushioning), (1) pubescence; (2) 

Tomiliar'es, a sclerophyllous vegetation with small rainfall and dry air.

tomip'arous (τωμή, a cutting; παρίσ, I produce), Bory applies the term to all plants which reproduce themselves by fission; Tomi'ange (ἄγγειον, a vessel), the organ which produces Tomies; Tomie, pl. Tomi'es, Van Tieghem's name for asexual reproductive bodies which are neither Spores nor Diodes, living cells which do not arise from an adult stage, but produce an adult individual direct; Tomi'gone (γωνίς, offspring), the organ which produces Tomies.

Tongue = Ligule; tongue-shaped, long, nearly flat, fleshy and rounded at the tip, as the leaves of some Aloeas.

Tone'sis (τόνος, strain), Massart's term to express the ability of an organism to exhibit a strain; Tomie, or Tom'y, the unit of pressure expressed by the action of the Dyne on a square centimetre (Errera); To'noholes, -ae (θολός, a throw), plants distributing the seeds by tension of the carpels (Clements); Tone'sis, changes in turgescence due to intercellular osmotic force; Ton'oplast (παςστός, moulded), De Vries's term for a vacuolar living membrane, controlling the pressure of the cell-sap; Tonotax'is (τάξις, order), sensitivity to osmotic variation (Beyerlück); Tonotrop'ism (τροπή, a turning), response to osmotic stimulus.

Tooth, see Teeth; toothed, dentate; Tooth'let, a small or secondary tooth; tooth'letted, finely denticulate (Lindley).

top-shaped, inversely conical.

Topia'ria, pl. (Lat.), ornamental gardening; topia'rian, top'iary, relating to the same, especially used of trees and shrubs clipped into formal shapes.

top'ical (τοπικός, local), local, confined to a limited area.

tophs'ceous, =$TOFACEUS$ (2).

Topochemotax'is (τόπος, a place, + Chemotaxis); $=$ trophic Chemotaxis; adj. topochemotact'ic; Topogalvanotax'is ( + Galvanotaxis), attraction towards the stimulus by galvanic action; Topograph'ic (γραφή, I write), (1) place-changes due to water, wind, gravity, etc.; (2) used of stable plant-formation where the prevailing factors are physiographic and edaphic (Crampton); Topophototax'is ( + Phototaxis), movement towards the place whence the light comes; Topotax'is (τάξις, order), attraction to some stimulus and movement towards it; adj. topo	act'ic; Topotrop'ism (τροπή, a turning), turning towards a place whence a stimulus proceeds; Topot'otype (τόπος, a type), a specimen of a named species from the original locality.

Tor'als (torus, a bed), Bessey's proposed name for Thalamiflorae.

torfa'ceus, turfo'sus (Henslow), growing in bogs.

tor'iloid, resembling Torilis in habit.

torn, when marginal incisions are deep and irregular.

tor'ose, tor'o'sus (Lat., fleshy, brawny), cylindric, with contractions or swellings at intervals; the diminutive is torul'o'sus.

Tor'sion, a spiral twisting or bending; ap'ical ~, lateral displacement of the apical cell in certain Mosses; resulting in the twisting of the resultant stem (Correns); antidi'romous ~, against the direction of twining, as may be caused by fric-
tion of support; homodromous ~, in the same direction as twining, the internode gyrating in the same way; Torsion-symmetry (+ Symmetry), Schnett's term for those Diatoms whose valves are twisted; torsional, in a twisting manner; ~ Response', when stimulus is applied laterally to an organ (Bose); torsivus (Mod. Lat., squeezed out), spirally twisted, not quite as in contorted, there being no obliquity in the insertion, as in the petals of Orchis; tortilis (Lat., twisted), susceptible of twisting; Tortism, Schwendener's term for Tropism; tortus, twisted; tortuous, tortu'sus, bent or twisted in different directions.

torula'ceous (+ aceous); toruloid, resembling the genus Torula, Pers.

tor'ulose, torulosus (torulus, muscular part), cylindric, with swollen portions at intervals, somewhat moniliiform; ~ Budding, increasing by budding as yeast.

Tor'us (Lat., a bed), the receptacle of a flower, that portion of the axis on which the parts of the flower are inserted; when elongated it becomes the Gonophore and Gynophore; ~ of Pits, the thickening of the closing membrane in bordered pits.

Touch'wood, decayed wood due to Fungus-mycelium, formerly used as tinder.

Tox'in (τοξικόν = poison), in botany, a poisonous secretion by certain Fungi, which kills the cells of the host-plant and facilitates parasitism.

Trabec'ula, pl. Trabec'ulae (Lat., a little beam), a cross-bar, (1) the transverse bars of the teeth of the peristome in Mosses; (2) plates of tissue forming partial septa in the microsporangium of Isoëtes; (3) the lacunar tissue in Selaginella, between the cortex and the central bundle; trabecular, like a cross-bar; ~ Duct, ~ Vessel, a vessel with cross-bar markings; trabeculate, trabecula'tus, cross-barred; Trab'ecule = Trabecula; trabec'u-

lose, used of reticulating fibrils in Lichens.

Trace, a strand of vascular tissue connecting a leaf with the stem, etc.; ~ -gap, the gap in the wood caused by the passage of a leaf-trace bundle in the stele.

Trac'hea (Lat., the windpipe), a spiral duct or water-conducting vessel arising by cell-fusion; used by De Bary to include Tracheid also; tra'cheal, belonging to or resembling tracheae; ~ Cells, tracheids; ~ of the vascular bundles, the woody portion, the cribrose part associated with bast; tra'cheary = Tracheal; Tra'cheid (elbos, resemblance), an elongated closed cell of the wood having secondary thickening and conducting water; the vasiform wood-cell of Goodale; ~ Seam, a group of peculiarly thickened cells found in the leaves of Conifers on both sides of the vascular bundle, and formerly regarded as part of the transfusion tissue; au'tumn ~, having thicker walls and smaller lumina than spring ~, produced early in annual growth; trache'idal, pertaining to tracheids; Trachenth'yma (τχυμα, an infusion), tissue composed of tracheids or spiral vessels; Tra'cheome, stated by Potonié not to be the tracheal, but the hydral system of the bundle, he therefore names it Hydrome.

trachyca'rous, -pus (τραχύς, rough to the touch; καρπός, fruit), rough-fruited; trachysper'mous, -mus, (σπέρμα, a seed), rough-seeded.

Tractel'lim (tractus, dragged), the anterior flagellum of the zoospore of Saprolegnieae (Hartog).

Trac'tion (tractus, a dragging) Fi'bres, certain fibres in the mitotic spindle attached to the chromosomes.

Trag'acanth, a gum which flows from Astragalus Tragacantha, Linn.; Traga'canthin, the same as Bassorin.

trail'ing, prostrate but not rooting.

trajec'tile, trajec'tilis (tractus, a passing over), when the connective completely separates the anther-cells.
Trama (Lat., weft), a mass of hyphae in the lamellae of some Fungi, from which the hymenium springs; Fayod subdivides it thus: ~ contexta, the hyphae usually parallel, or slightly oblique; ~ inversa, when they are derived from the subhymenium; ~ permixta, when without apparent order.

transpical (trans, across or beyond, + apical), used by O. Mueller for ~ axis, at right angles to the apical axis, passing through the centre of the pervalvar (main longitudinal) axis of a Diatom; ~ Plane, the plane at right angles to both valvar and apical planes, passing through the pervalvar and transapical axis (O. Mueller); Trans ect "a cross-section of vegetation" (Clements); belt ~, a band varying in width from a decimetre (= nearly four inches) to a meter; line ~, an enumeration of species found in a direct line between two points; Transsection (sectio, a cutting), a term proposed by C. MacMillan for "transverse section."

Transfer (transfero, I bring over), of water, the passage of water by ducts or cells.

Transformation (transformatio, a change of shape), (1) metamorphosis; (2) morphologic changes in an organ during its existence; adj. transformed: as ~ Branch, may be a tendril, thorn, or similarly changed organ; ~ Cell, the final shape of the cell, as a fibre, tracheid, etc.

Transfusion (transfusio, a pouring out); Tissue, the network of tracheidal cells accompanying the vascular bundle in the leaves of conifers of two kinds: (a) unpitted, with abundant protoplasmic contents; or (b) tracheidal cells, with similar contents; ~ Strand, consisting of parenchymatous or slightly thickened cells at the junction of phloem and xylem bundle elements, when a ring of sclerenchyma is formed.

Transpiration (transitiio, a passing over), the area where change takes place; ~ Cells, cells which are continuations of sieve-tubes, the longitudinal division into sieve-tubes and companion cells stops, and Transpiration-tissue is formed; Level of ~; in seedlings where the root and stem systems meet; high ~, much of the hypocotyl structure hardly distinguishable from the root; intermediate ~, in the region of the cotlet up to the hypocotyl; low ~, begins below the cotlet and is complete in that region (Compton); transitorius (Lat., adapted for passing through), temporary, soon passing away (S. F. Gray); transitory, applied to starch formed of other carbohydrates and not from assimilation direct; the grains are usually small.

Translocator (Lat., a transferrer), employed for the retinaculum of Asclepiads.

Translocation (trans, across; locatio, a placing), the transference of reserve material from one part to another.

Transmigration (transmigratio, a sending across), used for the conveyance of stimulus as in Drosophila and Mimosa pudica, Linne., other leaves acting in sympathy; ~ Cells = Transfusion-tissue.

Transmutation (transmuto, I shift), chemical change by addition or alteration of composition without complete resolution into its elements; ~ of Host, = Lipoxeny.

Transovula'tae (trans, across, + Ovulum), Van Tieghem's term for Planerogams furnished with transitory ovules; Transpiration (spiratio, a breathing), the exhalation of watery vapour from the stomata of plants, not mere evaporation; cuticular ~, the small amount passed through the cuticle (Brown and Escombe); stomatal ~, the normal and chief means of transpiring; Transpirometer (μετρων, a measure), apparatus for measuring the amount of transpiration.
Transport

Transport (transporto, I carry across), the conveyance of assimilated substance from one part to another; translocation.

Transvection (transvectus, carried across), when in Cladophora the basis of the initial branch-cell is partly in contact with the mother-cell and partly against the succeeding cell (Brand); cf. Evection.

transversal (transversus, athwart), lying crosswise; ~ Ax'is of Diatoms, that axis which lies in the transversal plane, cutting the pervalvar plane (main longitudinal axis) (O. Mueller); ~ Wall, that which divides the basal and median walls of the pro-embryo of Archegoniate, at right angles into upper and lower halves; transvers'an Plane, that which passes through the centre of a Diatom frustule vertically to the pervalvar axis (O. Mueller); trans'verse, transver'sus, transvers'allis, across, right and left as to bract and axis, collateral; Lindley gives "broader than long" as the definition of transversus; ~ Cho'risis, when two or more organs instead of one appear above or within another; ~ Geot'ropism = Diageotropism; ~ Heliot'ropism = Diaheliotropism; ~ Planes, those which cut the axis of growth and surface at right angles.

trapeziform, trapeziform'is (τραπεζιων, a figure of four unequal sides; forma, shape), an unsymmetrical four-sided figure, as a trapezium, almost the same as rhomboid; trapezoid, -deus (eidos, resemblance), like a trapezium.

Trap'hairs, the special hairs which confine insects in certain flowers till pollination is effected; cf. Wicker'hairs.

Trap's, pl., Prison-flowers, such as Aristotolochia, which confine insect visitors until pollination has taken place.

Traube's Cells, artificial cells formed by various solutions of gelatine and other colloids, which have been used to explain the phenomena of intussusception.

Traumatic (τραυμα, a wound), due to a wound; Traumat'matism, abnormal growth in consequence of injury; Traumat'otax'is (ταξις, order), or Traumatotax'y, response due to a wound; adj traumatotactic; traumatrop'ic (τραυματοποιητικός, a turning), showing the influence of wounded root-tips; ~ Cur'vature, the bending of roots in consequence of injury to their tips; Traumat'ropism (τραυματοπής, a turning), Pfeiffer's term for the phenomena consequent on the infliction of wounds on the tip of a growing root.

Trechom'eter (τρεχόμετρον) (I run; μέτρον, a measure), an instrument to measure loss of water by surface flow.

Tree, a perennial woody plant with an evident trunk; tree-like, resembling a tree, but smaller; dendroid; ~ Stra'tum, in woodlands, the highest layer, composed of developed trees; Trees, pl.; Can'opy ~, having well-branched crowns; Tuft ~, trunks usually unbranched, as palms, cycads, and arborescent Liliaceae.

Tre'halase, an enzyme which hydrolizes a sugar found in many Fungi and stated to be identical with the "Trehala" (Persian Manna), a waxy excretion produced by a coleopterous larva to form its cocoon.

tremel'loid (Tremella, εἶδος, resemblance), jelly-like in substance or appearance, like the genus Tremella.

tri, in compounds, from Greek (τρίς) or Latin (tres) = three or triple.

Triacha'niun (tri, from tres, three + Achænium), like a cremocarp, but of three carpels; Triacrorhi'zae (εκκοσ, at the end; βλήθα, a root), plants whose roots arise from three initial cells or groups at the apex, as the Phanerogams (Van Tieghem); adj. triac'rorhize; Triadel'phia (ἄδελφος, a brother), a Linnaean order of plants with their stamens in three sets; triadel'phous, filaments in three brotherhoods; Triake'nium = Triacha'niun; trian'der = trian'drous, trian'drian (ἀνήρ, ἀνδρός, a man), having three stamens;
Triandria, a Linnean class of three-stamened plants; triand'gular, triange-lata'ris (angulus, an angle), with three angles; triangu-la'tus (Lat.), three-angled; trian' thous (ἀνβός, a flower), three-flowered, as a peduncle; triarch (ἀρχή, beginning), a fibrovascular cylinder with three ligneous groups; triari'nus (ἀρχην, male), Necker's term for TRIANDROUS; Trias'ter (+ ASTR), in nuclear division when three athers are formed.

Tribe, Tri'bus (Lat., a division of the people), a group superior to a genus, but less than an order.

Tribi'um (τριβή), a grinding down), a succession of plants on eroded soils (Clements).

tri-bia's tus (τρι-, three; βλαστός, a bud), Koerber's term for a Lichen-sporous, which is trilocular and able to germinate from each loculus.

trib'u loid (εἶδος, resemblance), like the fruit of Tribulus, beset with sharp bristles, echinate (Heinig).

Tri'ca (deriv. ?), the button-like apothecium of the genus Gyrophora.

tricam'ar us (trι, three, + CAMAlyUS), when a fruit is composed of three loculi; tricar' in ate (carinatus, keel-formed), with three keels or angles, as certain Diatoms; tricarpel' lary, tricarpellate, tricar'pous, -pus (καρπός, fruit), of three carpels; tricel/lular (+ CELLULAR), consisting of three cells (A. Braun); tricep'h alous, -lus (κεφαλή, a head), triple-headed, with three heads of flowers; Tricha's ium (+ [Di]CHAS-iUM), a cymose inflorescence with three branches (Parkin).

Trichid' i um (θρίξ, τριχῶς, a hair or bristle) = STERIGMA; trichif'er ous (φερόω, I bear), producing or bearing hairs; trich'i form (forma, shape), bristle-shaped (J Smith); Trichi' te, a needle-shaped crystal of amylose in starch grains, stated to form the latter by aggregation (A. Meyer); Trichobacte' ria (+ BACTERIA), those bacteria which possess cilia; Tricho-oblast (βλαστός, a bud), (1) used by Sachs for such IDIOBLASTS as are especially distinguished by their size or branching; (2) employed by Leavitt for specialized cells which give rise to root-hairs; trichocar'pus (καρπός, fruit), when fruit is covered with hair-like pubescence; tricho cep'halus (κεφαλή, a head), when flowers are collected into heads, and surrounded by hair-like appendages; trich'odes (εἶδος, resemblance), resembling hair; Trichogo'ni um (γωνία, race, offspring), a proposed emendation of TRICHOGYNE; Trich'o gyne (γωνία, a woman), (1) the receptive filament of the procarp in certain Algae, by which fertilization is effected; (2) in the Lichen genus Gyrophora, by Lindau termed TERE BRATOR; trichogyn'ial, relating to a trichogyne; Tricholo'ma (λύμα, a fringe), when an edge or border is furnished with hairs.

Trich' o ma, pl. Trichom'ata (τριχώμα, a growth of hair), (1) the filamentous thallus of such Algae as Conferva (Lindley); (2) the filaments in No stoc.

trichom'anoid (Trichomanes, εἶδος, resemblance), like the genus Trichom anes in habit.

Trich'o'me, Tricho'ma (τριχώμα, a growth of hair), any hair-like outgrowth of the epidermis, as a hair or bristle; adj. tricho'mic; Trich' ophore (φορέω, I carry), a row of cells of a procarp bearing the trichogyne in Florideae; adj. trichoph'oric, ~ Cell, the central cell in the procarp of Laboulbenia, becoming fused with the carpogonial cell; Trichoph' orum, the stipe of Fungi when formed of "filaments" (J. S. Henslow); trichophyl' lus (φύλλον, a leaf), hair-like leaves, that is, finely cut; Trichoplank'ton (+ PLANKTON), floating marine vegetation chiefly composed of Thalassiot' thris (Cleve); Trichospor' an ge = Tri chosporan' gium (+ SPORANGIUM), Thuret's term for the multilocular sporangium of the Phaeosporae, apparently of jointed hairs; tricho-
thal’lic (θαλλός, a sprout), when
the shoot ends in one or more
multicellular hairs or tuft of such;
~ Gemma’tion, the origin of young
plants from the hairs scattered on
the thallus of Asperococcus; ~
Growth, with filiform thallus,
the tips bearing tufts of hairs.

trich’omalous, -mus (τριχας), in a three-
fold manner; τουή, a cutting),
three-forked, branching into three
divisions; adv. trich’omously;
Trich‘omy, division into threes.

trioc’eous, -cus (τρυγξ, three; + Coccus),
consisting of three cocci; τρι’color
(color, colour), having three colours
tricos’tate (costatus, with ribs),
having three ribs; tricotyle’donous
(+ Cotyledon), when three cotyle-
dons are present, or when one of two
is so deeply divided as to seem double;
Tricotyle’dony is the condition.

tricous’pid, tricus’pidate, tricuspid’at’us
(tricuspid, having three points or
tines), tipped with three cusps or
pointed tips.

tricus’sat’e (τρυγξ, three, + cussate),
used for whorls of three leaves each,
the leaves of each whorl alternating
with those above and below; cf.
Decus’sate (G. Henslow).

tricy’clic (τρύγξ, from τρόγξis, three;
κύκλος, a circle), when the members
of a series are in three whorls;
Tric’yclly is the state in question.

triden’tate, trident’a’tus (tridens, three-
pronged), three-toothed, trident-
pointed.

tridig’i tate, tridigita’tus (τρυγξ, three;
digitus, a finger), thrice digitate,
ternate.

tridu’us (tridum, the space of three
days), lasting three days.

trid y’mus (τρύγξωμος, triple), when of
three laminae in Agarics, the midd’e
is the larger.

tridy’namous (τρύγξ-, three; δύναμις,
power), when three stamens out
of six are longer than the rest;
tried’er (ἔσπα, a seat), triangular.

trienn’is, triennia’lis (triennium, the
space of three years), lasting three
years.

trif’ar’iam (Lat., triply), trifar’ious,
-three, facing three ways; in three
vertical ranks.

trif’id, trif’idus (Lat.), three cleft.

triflo’rous (τρι-, three; flos, floris, a
flower), three-flowered; triflo’late,
trifoli’tdus, trifol’ius (folium, a
leaf), three-leaved; trifol’iolate,
trifoliolat’us (+ foliolate), with three
leaflets.

triform’is (Lat., having three forms),
beating flowers of three different
kinds, as certain Composites;
trimorphic.

trifur’cates (trifurcuses, with three
prongs), having three forks or
branches.

trig’amous (τρυγς, three; γάμος, mar-
riage), bearing three kinds of
flowers; trimorphic.

trigem’inous (trigeminus, triplets),
tergeminate, trijugate.

tri’gians (τρυγξ, three; glans, an acorn),
containing three nuts within an
involution, as Castanea sativa, Mill.

trig’onal (τρύγγωνος, three-cornered),
three - angled; Trig’on’es, pl.,
Spruce’s term for the thickening
in the angles of the cells of the
leaves in certain Hepatics, or as
in collenchyma; trigono’car’pus
(καρπός, fruit), fruit having three
evident angles; trig’onous, nus,
three-angled, with plane faces.

Trigyn’ia (τρυγς, three; γυνή, a woman),
a Linnean order of plants with three
styles; trigynous, -cus, with three
pistils or styles.

trih’u tus (τρί-, three; Ηλιον),
having three apertures, as in some
grains of pollen; trijugate, triju-
gata’us, trijugous, trijugus (jugum,
a yoke), with three pairs of pinnae;
trilam’ellar (tri, three; lamella,
a plate of metal), applied to
a compound stigma having three
divisions flattened like bands;
trilat’eral, trilat’er’alis (latus,
lateris, a side), prismatic, with
three sides; trilo’bate, trilo’bus
(lobus, a lobe), three-lobed; tri-
loc’ular, trilocul’a’tus ( loculus, a
little cell), three-celled; Trimer’i-
Trimeristele

stele (← Meristele), a stele formed of three members (Brebnner); adj. trimeriste'lic; tri'merous, -rus (μέρος, a part), in threes, three-membered parts.

trimes'tris (Lat., of three months), lasting three months, or maturing in that time, as Lavatera trimestris, Linn.

Trimono'e'cism (τρι, three + Monoe'cism), having male, female, and perfect flowers on the same plant; monoecious, but existing in trimer-phous condition; trimor'phic, tri'morphous (μορφή, shape), occurring under three forms, of stamens and styles, long, short, and intermediate; Trimor'phism, heterogony, with long-, short-, and mid-styled flowers.

tri'mus (Lat.), lasting three years.

triner'veate, trinerva'tus, trinerved', triner'vis, triner'vius (τρι, three; nervus, a nerve), three-nerved.

trinerva'tus (Lat.), with three nerve-likes strands in the placenta; trino'dal (nodus, a knot), with three nodes or joints; Trioe'cia (οἶκος, a house), a Linnean order of plants with trioecious flowers; trioe'cious, with staminate, pistillate, and hermaphrodite flowers on three distinct plants; Trioe'cism, or trioecious Poly'gi'amy, some individuals hermaphrodite, others male, and still others female, as in the ash, Fraxinus; trioe'ciously hermaph'rodite = trimor-phic; trioi'cous, -cus, the mode of spelling preferred by bryologists for trioecious; trioper'culeate, triopercul'a' tus (+ Operculum), having three lids; triov'ulate, triovula'tus (+ Ovu' lum), with three ovules; tripaleo'la'tus (+ Palea), consisting of three paleae, as the flowers of bamboo; tripap'ted (partitus, cleft), parted to the base in three divisions; tripar'tible (partibils, divisible), tending to split into three parts.

tripar'tite (triparti'tus, three-fold), divided into three parts.

tripen'nate, tripenna'tus (tri, three; penna, a feather), = tripinnate; tripet'aloid, tripetaloi'deus (πέταλον, a flower-leaf; εἶδος, resemblance), as if three-petalled; tripet'alous, -lus, having three petals.

triphyle'tic (τρι-, three; φυλή, tribal), used of hybrids containing the blended strains of three species; Triphyll'ome (φύλλον, a leaf), hypothetically three segments to form a carpel, two hypophylls, superior and fertile, the third sterile and inferior (Pasquale); triphyll'-lous, -lus, three-leaved; tripin'nate, tripinna'tus (← Pinna), thrice pinnate; tripinnat'ifid, tripinnatif'idus (fid, from findo, I cleave), thrice pinnatifid; tripinnat'isect (sectus, cut), thrice pinnatisect.

Trip'la'sy (triplasius, threefold), the division of an organ into three analogous structures (Fermond).

Trip'le Fu'sion, a suggested emendation of the term Double Fertilization; ~ nerved, ~ ribbed, ~ veined (triplex, threefold), with a midrib dividing into three, or sending off a strong branch on each side above the base of the blade; trip'lex, triple; triplic'ate, tripli'cap'tus (Lat.), in a triple manner, as triplica'to-gemina'tus, tergeminate; ~ -nerva'tus, tripilinerved; ~ -pinna'tus, tripinnate; triplic'ate-ter'nate, trternate (Crozier); tripliciter (Lat.), thrice repeated; triplicos'tate (costatus, ribbed), having three ribs, triple-ribbed; tripiliform'is (forma, shape), astrilpi'form'is Fölia, "leaves resembling the triple-leaved form" (Lindley); tripilinerved', tripilin'er'tis, -vius (nervus, a nerve), see tripile-nerved, etc.

trip'lo-caules'cent (triplus, triple ~ caulescent), when a plant has a third (tertiary) system of axes; tripilo'caulis (← Caulis) possessing ternary axes (Pax); tripiloid (εἶδος, resemblance), applied to a nucleus having half as many again chromosomes as a diploid nucleus; as by the union of a haploid and a diploid germ; Triploi'dity, the condition described.
**trip'lus** (Lat.), threefold; **trip'o'lar** (+ polar), having three poles.

**Triposplank'ton** (+ **PLANKTON**), floating marine vegetation made up chiefly of **Ceratium Tripos** (Cleve).

**trip'terous**, **trisperm'ous**

**Tri'time**

**tri-ridged**, **ir'mphv**, **tri-os**, **(2)**

**troch'lea'ris**

**trisep'alous**, **trisep'tate** (+ **SEPALUM**), having three sepals; **trisep'te** (-septum), with three septa or partitions, as in many spores; **trise'rial**

**trisep'tate** (+ **SEPTUM**), with three horizontal ranks or series, trifarious; **trisep'tate** (+ **SEPTUM**), three-seeded; **tristach'yan**

**trisect**

**trisul'ca'tus**

**trisul'ca'tus**

**trisul'cates**

**trisul'cates**

**triv'er'ted**, O. Müller’s term for asymmetric as applied to Diatoms.

**triv'ial** (**trivialis**, common-place), ordinary, common; **Names**, the common name of a plant, the adjective, or more rarely, the second substantive appended to a generic name to connote a species.

**Trix'eny** (**trp**, three; **ξενος**, a guest or host), De Barry’s term for the condition of a parasite which passes its career in three host-plants.

**trock'lear**, **trock'lear'ris** (**trocklea**, a pulley); **trock'lear'reform** (**forma**, shape), pulley-shaped.

**Tropax'is** (**tropi**), a turning, + **Axis**, a theoretic plane between the epicotyl and hypocotyl, whence growth proceeds in opposite directions (White); cf. **Transition**.

**trophic** (**trophi**), nourishment, relating to increase in thickness, cf. **Trophy**;

**troph'elic** (**trophi**), 1. I collect, collecting food-material for the plant, as the shell-like barren fronds of *Platycterium* are supposed to do (Archangeli); **Troph'ime** (**trophi**), a nursling), the result of the fusion of the central nucleus of the embryo sac, the mesocyst, with the second antherozoid (Van Tieghem);

**Trophochromid'ia** (+ **CHRÖMIDIA**), Mesnil’s term for vegetative chromidia; **Troph'ogone** (**γόνος**, offspring), a growth in *Ascomycetes* similar to those which produce gametophores, but having a nutritive function (Dangeard); **Troph'ophyll** (**φυλλον**, a leaf), a vegetative leaf or frond, as distinct from one which produces fructification; **Troph'ophyte** (**φύτον**, a plant), (1) an error for **Tropophyte**; (2) the fusion-product in *Welwitschia* and angiosperms, to distinguish it from the prothallus of the lower Cryptogams; it has been mistakenly applied to the endosperm of Cycads (Pearson); **Troph'oplasm** (**πλάσμα**, that formed), the **ALVEOLAR-PLASMA** of Strasburger; **Troph'oplas'mic**, adj. of **Trophoplasm**;

**Troph'oplast** (**πολυόδος**, moulded), A. Meyer’s term for the essential
granules in protoplasm, cf. plastid; troph'opollen ( + pollen), the partition of an anther-loculus or its remains (Lindley); troph'osome (σωμα, a body), any organ which is concerned with supplying nourishment only; troph'osperm, tropho'sperm'tum, trophosper'mum (σωμα, a seed), = placent'a; troph'ospore (+ spore), applied to the spores of Diatoms, Desmids, Bulbochaete and Coleochaete(Radikofier); trophospor'o-some, applied to organs which are engaged in nourishing and also in reproducing the plant (Potonié); trophotax'is (τραχις, order), Stahl's term for trophot'ropism (τραχυ, a turning), phenomena induced in a growing organ by the chemical nature of its environment; troph'y, pl. troph'ies, Wiesner's term for an unequal lateral growth of tissue or organ, depending on its relation to the horizon and the mother-shoot.

trop'ie (τραχυ, a turning), reacting to a stimulus by internal change in an organism (Wager), it may be neg'ative, or pos'itive; trop'ieal, trop'ieus (Lat., pertaining to a turning), (1) growing within the tropics; (2) used for flowers which expand in the morning and close at night during several successive days.

Trop'is (τραχυς, the keel of a vessel), in composition used for the keel of a papilionaceous flower, or resembling the same.

Trop'ism (τραχυς, a turning), a curvature which results from a response to some stimulus; the disposition to respond by turning or bending (Copeland); tropis'tic, movement in response to stimulus (Czapek).

trop'o-, employed as a prefix by Drude, to denote climates alternating between torrential rain and sunny drought; tropodyr'mium (θρυμος, a coppice), savanna forest formation (Diels); tropoph'ilous (φιλεω, I love), loving change of condition as tropophytes; trop'ophyll (φυλλον, a leaf), leaves of shrubs and trees (Potonié); trop'ophyte (φυτον, a plant), applied to the large majority of plants, which are xerophilous and hygrophilous according to season (A. F. W. Schimper).

true-par'asite = obligate-parasite.

trul'lifer, trullifor'mis (Lat.), shaped like a bricklayer's trowel. trum'pet'hy'phae, tubes in Laminariae having swollen portions with transverse septa (F. W. Oliver); trum'pet-shaped, tubular, with dilated orifice. trum'cate, trun'cotus (Lat., shortened), as though cut off at the end.

Trun'cus (Lat., tree-stem), (1) the main-stem or trunk of a tree; (2) in Lichens, the thallus. truss, a florist's term for a flower-cluster.

Try'ma (τραχυς, a hole or opening), Necke'r's term for a drupaceous nut with dehiscent exocarp, as the walnut.

tryp'sin (θρυπτω, I break in pieces), a group of proteolytic enzymes analogous to the pancreatic ferment in animals, such as Bromelin and Papain; tryp'tases, pl. enzymes of the trypsin group (Vines); tryp'tic, relating to tryp'sin, or a similar enzyme.

tubaefor'mis (tuba, a trumpet; forma, shape), trumpet-shaped; tuba'tus (Mod. Lat.) is a synonym.

tube, Tu'bus (Lat., a pipe), (1) any hollow elongated body or part of an organ; (2) the united portion of a gamopetalous corolla or gamosepalous calyx, etc.; ~ cell, the cell which gives rise to the pollen-tube; ~ germina'tion, the germination of a spore in which the first product is a germ-tube; tube-form, tube-shaped, tubular or trumpet-shaped (Crozier); tubes, proth'all'ine = em- bryo-sac tubes.

Tu'ber (Lat., a tumour), a thickened and short subterranean branch, beset with buds or "eyes"; Tu'ber-cle, Tub'er'culum (Lat.), (1) a little tuber; (2) a wart-like apothecium in Verrucaria; (3) any similar excrescence, as on roots, ascribed to the action of symbiotic organisms;
(4) a tuberous root, as of the *Dahlia* (Crozier); *tu’bercled*, covered with warty excrescences, as the seeds of *Silene*; Pri’mary Tu’bercle, is used by Treub to denote an ovoid body formed by the germination of the spore of *Lycopodium*; Tu’bercorm (+ Corm), J Smith’s name for such fleshy roots as the beet, yam, and turnip; tu’ber’cular, having tubercles or like a tubercle; tu’ber’culate, tuber’cula’tus, beset with knobby projections or excrescences; Tu’berculiza’tion, the formation of tubers, assumed to be due to the attack of a Fungus (Bernard); tu’ber’cule, tu’ber’culous, consisting of or having tubercules, tu’ber’l’er’ous (Jero, I bear), tuber-bearing; Tu’berogem’ma (+ Gemma), a budlike tuber, occurring in the axil of the leaves, or as a root-tubercle, which asexually propagates the plant, as in *Ranunculus* Ficaria, Linn.: tu’berose, tu’bero’sus, tu’ber’ous (Lat., full of humps), (1) producing tubers; (2) resembling a tuber.

Tu’b’i, pl. of Tu’b’us (Lat., a pipe), the hymenial tubes of such Fungi as *Polyporus*; tu’bi’fo’rous, -rus (flos, floris, a flower), when the florets are tubular, as in many Compositae: tu’bi’form, tu’bi’form’is (forma, shape), tube-shaped; Tu’b’il’us, (1) an elongated cell of cellular tissue; (2) the tube of the filaments in Compositae; Tu’bi’lar, tu’bi’la’tus, apparently a cylindrical figure and hollow; ~ Flo’ret, in Compositae a disk or regular floret.

Tu’b’ul’us, pl. Tu’b’uli (Lat., a small pipe), (1) the pores or hymenial tubes of some Hymenomycetous Fungi, as *Polyporus*; (2) in Pyrenomycetes, the prolonged apex of peritheicum pierced by a canal, the same as Neck (5); tu’bul’i’fo’rous, -rus (flos, floris, a flower) = tu’bi’fo’rous; tu’bul’i’form’is (forma, shape), = tu’biform.

Tuft, used by Withering for Cyme; tu’ft’ed, caespitose; ~ Hairs, a modification of stellate hairs, but branched from the base upwards (Weiss); ~ Trees, those having unbranched roots, such as palms and arborescent Liliaceae as *Yucca* and Cordyline.

tu’itans (teor, I defend), when leaves assume the sleep-position, appearing to guard the stem.

Tülle (Ger.) = Tylose.

Tum’ble-weeds, a name applied to certain weeds which break adrift when dry, and are blown to a distance, scattering their seeds by the way.

tumes’cent (tumescens, swelling up), somewhat tumid.

tu’mid, tu’midus (Lat., swollen), inflated, swollen.

Tu’n’дра, an extensive flat or undulating tract without trees, but having moorlike plant-communities; ~ Pe’riod, succeeded the Ice-age in Switzerland (Frith and Schroeter).

Tu’nic, Tu’n’ica (Lat., an under-garment), (1) the skin of a seed, the spermoderm; (2) any loose membranous skin not formed from the epidermis (Lindley); (3) the coat of a bulb; (4) the peridium of certain Fungi; (5) employed by Smith for UTRICLE of Carezx; ~ Gras’se, employed by Hackel for those whose leaf-sheaths remain attached after their upper parts have died; tu’n’i’cate, tu’n’i’ca’tus (Lat.), having coats or tunics; tu’n’i’cated is a synonym; ~ Bulb, one covered with complete enveloping coats, as an onion; cf. IMBRI’CATE BULB.

turbar’ian (turbaria, Late Lat., peat pit), a stage in the formation of peat, characterized by the presence of dwarf willows.

tur’bi’nate, tur’bi’n’at’us (Lat., cone-shaped); tur’bi’n’iform’is (forma, shape), shaped like a top.

tur’fa’ceus, tur’fo’sus, = TUR’FACEUS, growing in bogs; Turfo’phi’læ, pl. (φιλέω, I love), bog-plants.

Turges’cence (turgesc, I swell), the distension of a cell or cellular tissue by water or other liquid; turges’cent, becoming turgid.
tur'gid, *tur'gidus* (Lat., inflated), swollen, but not with air; *Tur'gor* (Lat.), turgidity, turgescence.

Tu'rition, *Tu'rio* (Lat., a shoot), a scaly sucker, or shoot from the ground, as *Asparagus*; *turionif'erosus*; *turio'ni-formus*, incising, throwing up turions.

Tur'm'eric (said to be from *terra merita*, valuable earth), the powdered rhizome of *Curcuma longa*, Linn., which yields a yellow dye.

turned, in botany, directed towards; as *in'wards* = introrse; *outwards* = extrorse.

tur'nip-shaped, also termed napiform.

Tur'pentine (terebinthus, turpentine tree), the solution of resins in terebene; *Ves'sels*, tubes in the wood in which the turpentine collects during growth, common in Conifers.

Tu'ssock, a tuft of grass or grass-like plants; *Forma'tion*, occurring in New Zealand and the Falkland Islands, composed of thick tufts of certain grasses.

Twig, a small shoot or branch of a tree; *Clim'bers*, Schenck’s term for certain Brazilian lianes, the young leafy lateral branches being sensitive where in contact with their supports; *Gall*, a morbid growth ascribed to the action of bacteria; *like*, long, flexible and wandlike.

Twin, in pairs, geminate, didymous; *bund'le*, the double leaf-trace of *Ligiodendron*; *Cryst'als*, double styloids.

Tw'i'ners, plants which twine or climb by winding their stems round their support; *twining*, winding spirally.

twist'ed, contorted.

two-armed, used of Malpighiacous hairs; *cleft*, bifid; *edged*, ancipient, laterally compressed with two sharp angles parallel with the axis; *forked*, dichotomous; *lipped*, bilabiate; *part'ed*, bipartite; *ranked*, distichous; *toothed*, bidentate.

tycho'li-met'ic (τυχή, chance, + *limnetic*), *tychope'lag'ic* (πέλαγος, the open sea), used of that floating vegetation which at times is at the surface, and at others is attached to plants or rocks at the bottom; *tycho'pot'am'ic* (ποταμός, a river), *Plank'ton*, the floating organisms of pools and river overflows (Zimmer).

ty'lic'olor (Mod. Lat.), the colour of a woodlouse, slate or dark grey.

Ty'llose, *Tylo'sis* (πύλος, a callosity), a cell intruding into a duct.

tym'paniform (*tympanum*, a drum; *forma*, shape), drum-shaped, as the membrane covering a Moss-capsule; *tym'panoid*, Berkeley’s term for “resembling the head of a drum;” *Tym'panum*, the membrane across the mouth of the capsule of a Moss, the epiphragm.

Type (*typus*, a type), the ideal representative of a group, genus, species; *Spec'imens*, the original specimen from which a description was drawn up; *primary* = *proterotype*; *secondary* or *supplementary* = *plesiotype*, *typical*, *typicus* (Lat.), representing the plan or type; *Cells*, fundamental cells; *Di'agram*, the resultant form from several empiric diagrams; *Spec'imens* = *typotypes*.

Ty'ph'e'tum, Warming’s term for an association of *Typha* plants.

Ty'pi-form (+ *Form*), a constant form arising either by natural selection or by animal adaptations; its existence is frequently dependent on animals (Kuntze).

Ty'ponym (ὄνομα, a name), a name rejected because an older name was based upon the same type (O. F. Cook); adj. *typonym'ic*.

Ty'rosin (*tyros*, cheese), an amide, similar to Asparagin; *Ty'rosinase*, an oxidizing enzyme which attacks the chromogen of certain Fungi (Bertrand); probably a compound.

Ubi'quist (ubiique, everywhere), used by Thurnmann and adopted by Warming for a plant which occurs on any kind of geological formation.

ulig'ino'sus, *uligino'sus*, ulig'inous, *ulig'inar'ius* (Lat., marshy), growing
unarmed

in swamps; ulig'inal, occasionally used for the foregoing.

Ul'na (Lat., the elbow), a measure of about twenty-four inches; ulna'ris, the length of the forearm.

uloden'droid (el'dos, resemblance), like the former fossil genus Ulodendron, Rhode, applied to branches of Lepi-dodendron and Sigillaria, bearing two opposite rows of large, cup-shaped scars (Scott).

ulotricha'ceous, resembling or allied to the algal genus Ulothrix (Kütz.).

u'lothrix (ōðōs, shaggy; θρίξ, hair), (1) in hair-like crisp linear divisions (J. S. Henslow); (2) Ulothrix is a genus of chlorophyllaceous Algae.

ul'ter'iōr (Lat., farther) Pith, cellular structure formed in the axis of the root after the separation of the stele (Frémont).

Ult'imate (ultime, to the last degree) Strength, the minimum load on a tissue which causes its rupture (Drummond).

Ul'to'ian (Ultonia, Ulster), relating to the province of Ulster (Praeger).

ul'tra-seta'ceous (ultra, beyond; seta, a bristle, + aceous), very long-drawn-out.

Um'bel, Umb'ella (Lat., a sunshade), (1) an inflorescence, properly indeterminate, in which a cluster of pedicels spring from the same point, like the ribs of an umbrella; (2) the pileus of certain Fungi (Lindley); compound ~, when each ray itself bears an umbel; cy'mose ~, an apparent umbel, but with the flowers opening centrifugally; a cyme which simulates an umbel; par'tial ~, sim'ple ~, an umbel each of whose rays bears a single flower only; um'bella'te, um'bella'tus, having the inflorescence in umbels; Um'bellet, a small umbel or a simple one; Um-bel'ifier (fero, I bear), a plant which bears umbels; um'belif'erous, -rus, bearing umbels; um'bel'ilif'or'us (flos, floris, a flower), umbellate; um'bel'ilif'or'm, um'bel'ilif'or'mis (forma, shape), umbrella-shaped; Um'bellule, Um-bel'llula, an ultimate umbel in a compound one; um'bel'lulate, um'bel'lul'at'us, having partial or secondary umbels; um'bellul'if'er'ous, -rus (fero, I bear), bearing simple umbels.

um'ber, a cool brown; cf. um'brinus.

umbili'cal (pertaining to the umbilicus, the navel) Cord, a vascular strand by which seeds are sometimes attached to the placenta, the funicle; umbili'cally, as a Lichen thallus centrically affixed to its matrix, or an epithecium which is navel-like; umbili'cate, um'bilica'tus, (1) navel-like, depressed in the centre; (2) = peltate; Umbili'cous, (1) the hilum of a seed; (2) the ostiole of certain Fungi (Lindley); (3) a much-branched rhizoid in some Lichens, as in Umbilicaria; (4) the boss on the valves of some Diatoms.

Um'bo (Lat., any convex elevation), a boss, as the centre of the apophysis of the cone-scales in Pinus Pinaster, Soland.; um'bonate, umbona'tus, bearing anumbo or boss in the centre; umbo'nulate, umbonula'tus, having or ending in a very small boss or nipple.

umbraculif'erous (umbrā'culum, a sunshade; fer, I bear), having the shape of an expanded umbrella; umbracul'iform, umbracul'iformis (forma, shape), having the general form of a parasol, as the stigmas of Sarrucenia; Umbrac'ulum, the stalked capitulum of the sporophore in Marchantia, bearing the reproductive organs on the underside.

umbratic'olous (umbraticus, shady, colo, I inhabit), growing in shady places.

umbrel'la-shaped, umbraculiform.

um'brine, um'brin'us (Mod. Lat.), the colour of raw umber, a cool but turbid brown; burnt umber is deeper and warmer.

umbro'sus (Lat., shady), growing in shady places.

unangula'tus ( unus, one; angulus, a corner), one-angled, as applied to a stem or similar organ.

unarmed', destitute of prickles or
other armature; sometimes it means pointless, muticous.

*u'cate, unc'atus* (Lat.), hooked, bent at the tip in the form of a hook; *U'nei*, pl. of *U'neus* (Lat., a hook), hooks, uncinate hairs.

uncert'ain, indeterminate.

Un'cia (Lat.), an inch; uncertain, one inch in length; about 25'4 mm.

unc'iform, unce'formis (uncus, a hook; forma, shape), hook-shaped; unc'inate, unc'ata, hooked.

uncortica'ted (corticatus, covered with bark), destitute or deprived of cortex.

uncover'ed, naked.

un'cuous, unce'uous (uncus, anointing), having a surface which feels greasy.

Une'us (Lat.), a hook, or hooked hair.

un'date, unda'tus (unda, a wave), waved, undulate; Crozier also gives unda'ted.

un'derleaves, stipules in Hepatics.

un'ndering, used for succuous leaves of Hepaticae (Potter).

Un'dershub, (1) any low shrub; (2) partially herbaceous, the ends of the branches perishing during the winter.

undo'sus (Lat., billowy), undulate, wavy.

un'dulate, unda'tus (Lat.), wavy.

une'qual (un = not, + equal), (1) dissimilar; (2) applied to stamens of diverse lengths, ~ si'ced, irregular; une'qually pin'ate, imparipinnate.

unguic'ular, unguic'u laris, (1) furnished with a claw; (2) the length of the middle finger-nail, about 15 mm. or a little over half an inch; Unguic'u us, the length of the nail of the little finger; unguic'ulate, unguic'u latus, contracted at the base into a claw; un'guiform (forma, shape), like the claw of a petal (Crozier); Un'guius (Lat., a nail or claw), a claw-like base of a petal, as in Dianthus; (2) the length of a finger-nail, roughly half an inch.

un'gulate, unguic'ulatus (Lat., having claws or hoofs), clawed.

uni (from unus, one), in composition, one, or single; uniali'at us (+ alatus), having one wing or recurrent ridge; uni'axial (+ axial), when a primary stem does not branch, though it may innovate, but ends in a flower; unical'caratus (+ calcaratus), one-spurred; unica'psular, unica'psularis (+ capsule), with all the carpels united into one capsule; unica'rinated (carina, a keel), one-keeled (Crozier); unicarp'e'l ater (karplos, fruit), the fruit consisting of a single carpel; Un'nickell (+ cell), a plant which consists of a single cell; unici'lar, uncial'laris (+ cellular), formed of one cell; unicolo'rous, unico'lor (color, colour), of one colour or uniform in tint; unico'sta'tus (+ costate), having a single rib or costa, with a mid-rib; unicole'te'donous = monocotyledonous.

u'nicus (Lat., one only), single or solitary.

uni'embryona'tus (uni from unus, one, + embryonatus), having one embryo; uni'fa'tious (+ farius, as in bifarius), one-ranked (Crozier); uni'ferus (ferus, I bear), bearing once a year (S. F. Gray); unifi'o'rous, -rus (flos, floris, a flower), one-flowered; unifi'o'late, unifo'liatus (folium, a leaf), with one leaf; unifi'o'liate, unifo'liatus, with one leaflet only; unifi'o'ius, single-leafed; unifo'ra'tus (foratus, pierced), opening by one aperture.

uni'formis (Lat., having one shape), used when the receptacle of Composites bears only one kind of florets, as all ligulate or all tubular.

uni'gem'mius (uni = one, gemma, a bud), giving rise to a single bud; unig'enus (gen, the root of gigno, I produce), leafing annually (J. S. Henslow); unij'u'gate, unijuga'tus, unij'u'gus (jugum, a yoke), with one pair of leaflets; unila'biate, unila'biatus (labium, a lip), one-lipped, as the corolla of Acanthus, the upper lip being obsolete, or the lingulate florets of Composites; unilateral,
either unilatera'lis (latus, a side), one-sided, either originating or, usually, all turned to one side; unilocular (loculus, a small compartment), one-celled; uninner'iate, uninervit'us, uniner'vis, uninervi'vus (nervus, a nerve), one-veined or ribbed; unino'dal (nodus, a knot), having a single node.

uninterrup'ted, continuous.

uninuc'lear, uninuc'late, uninuc'lated (uni = one, + NUCLEUS), having a single nucleus; uninucula'tus (oculatus, furnished with eyes), having only one vegetating point.

U'nion (unio, oneness) of gametemes, generally termed Fertilization.

unio'nized (un = not, + ION), when the molecules are undivided (J. F. Clark).

unio'vulate (uni = one, + OVULE), with a solitary ovule; uninipared = unip'a'rous (pario, I bring forth), bearing one, as a cyme giving forth one axis at each branching; unin'pet'alous (+ PETALUM), (1) having a corolla of only one petal, the others not being developed; (2) erroneously used for gamopetalous; uninipo'lar (+ POLAR), with only one pole; uniprophyl'la'tus (+ PROPHYLIA), with only one prophyllum (Buchenau); unise'ptate (+ SEPTATE), having only one septum, as in most teleutospores; unise'rial, uniseria'tis, uniseri'a'te, uniseri'a'tus (series, a row), in one horizontal row or series; unise'xual, unisexua'tis, unisex'u'sus (sexus, sex), (1) of one sex; stamens or pistils only, or their representatives; (2) in hybrids, when the characters of one parent only are reproduced; ~ Hered'ity, the property of transmitting the qualities of one parent only (Macfarlane); uniso'rous (+ SORTUS), consisting of one sorus; unistra'tose (stratum, a layer), of one layer of cells.

U'nit (unitus, joined), the male synangium or anther of Gnetaceae; ~ Characters, or ~ Fa'tors, definite factors in the gameteme which in heredity behave as indivisible entities.

Unitegmin'a'tae (uni = one, tegmen, a covering), Van Tieghen’s term for those Phanerogams which possess only one covering to their ovules; uniteg'minous, having one coat to the ovule; Uniteg'miny, the state itself; unityp'ic (τύπος, a type) = MONOTYPIC; unival'ent (valens, strong), applied to chromosomes of simple character; a pair may contract and thus form a bivalent chromosome; unival'ved, unival'veis, unival'vular (valve, a door-leaf), of one valve or piece, dehiscing by one valve.

Univers'al, univers'al/is (L., pertaining to the whole), general, as ~ Involu'cre, a general involucre; ~ Um'bel, a general or compound umbel.

univert'ed (uni, one; verto, I turn), O. Müllcr’s term for mirror-like symmetry; univesicu'laris (+ VESICULAR) = UNICELLULAR; univ'er'sous (voro, I devour), used of a Fungus restricted to a single host; monophagous (Salmon).

Unili'n'ing (un = not, + line), the separation of parts originally united; chorisis; adj. unilined’ (Lindley); unor'ganized (+ ORGAN), without structure or organs; ~ Fer'ment = Enzyme; unsep'tate + se'ptate), applied to a plant which has not partitioning divisions, as plasmodia or certain unicellular Fungi and Algae; ~ Fi'bres, libiform cells; unstrat'i'fied (stratum, a layer), used of those Lichens which do not show distinct layers of hyphae and gonidia; unsymmet'rical (+ SYM-METRY), irregular.

U'voli, pl. of Uvolo (Ital.), gnars of the olive-trees, used for propagation. Ur'ceolar, ur'ceolate, urceola'tus (urceolaris, relating to pitchers), pitcher-like, hollow and contracted at the mouth like an urn or pitcher; Ur'ceolus (Lat.), (1) a pitcher-shaped organ, as an ascidium; (2) the two confluent bracts of Carex, the utricule; (3) any flask-shaped anomalous organ.
U'rease, an enzyme from the soy bean, Glycine Soja, which acts on urea.

urea'ceus (Mod. Lat.), of a charred black colour (Hayne).

Uredin'ologist (Uredo, a blight, from ur, I burn; λόγος, discourse), one skilled in the knowledge of parasitic Fungi, as Uredo and its allies; Uredin'ois, disease produced by “Rust.” Fungi; Uredin’ium, proposed by Arthur in place of Uredosorus; adj. uredin’ial; Uredin’iospore (Arthur) = Uredospor; Ure’do, a form genus, the hymenium producing uredospores exclusively; adj. uredin’ial, uredin’eous, ured’inous;

Ure’doin’icium (+ Conidium = Uredospore; ure’doform (forma, shape), resembling Uredo in appearance; Uredo-fruit, a group of uredospores; Uredogonid’ium (+ Conidium) = Uredospore; Uredosorus (+ Sorus), a group of uredospores; Ure’dospore (σπορά, a seed), a spore formed by acrogenous ab- junction from a sterigma, germinating immediately and producing a mycelium which bears other uredospores alone, or with telentospores; uredospor’ic (+ Spora), bearing Uredospores; uredosporifer’ous (tero, I bear), bearing uredospores; Ure’dostage, the summer stage of Uredinae, when uredospores only are produced.

u'rens (Lat., burning), stinging, as nettles.

Urn, Ur’na (Lat., a water-pot), (1) the capsule of a Moss; (2) the base of a pyxidium; urn-shaped, urceo late.

u'rophile (οὖροφ, urine; φιλέω, I love), expressive of Algae growing on soil containing much ammonia (Chodat).

urtica’ceous (urtica, nettle, + ACEOUS), pertaining to the order Urticaeae, of which the nettle is the type.

u’stalis (Mod. Lat., from usus, burnt), charred, brownish black; Us'terophyte (σφόδρα, a plant), Berkeley’s name for one of the Ustilagineous Fungi; Ustilagino’sis, disease caused by Ustilago, a genus of Fungi which produces “Smut” in corn, the contents of each cariosp like being replaced by a black powdery mass of spores; ustilag’inosus, like Ustilago, or allied to it; us’tulate, ustula’tus, blackened, as though burned or charred.

U’terus (Lat., the womb), the volva, or receptacle of the Phalloidea.

U’tricle, Utric’ulus (Lat., a small skin, or husk), (1) a small bladdery pericarp, as in Atriplex; (2) a membranous sac surrounding the fruit proper in Carex; (3) any bladder-shaped appendage; (4) a synonym of a parenchymatous cell; Utrici’lum, the spores of certain Fungi (Lindley); utric’ular, utric’ulat’is, utricul’ate, utricula’tus, utric’uliform, utriculiform’is (forma, shape), utric’ulose, utriculo’sus, having bladders, or bladder-like in appearance, inflated.

ut’riform, ut’riform’is (uter, a skin bottle; forma, shape), bag-shaped, utricular; utri’ger’us (tero, I bear), bearing utricles.

uve’rius (vua, a bunch of grapes); u’veous, composed of rounded parts connected by a support, like a bunch of grapes; uvif’erus (tero, I bear), grape-bearing; uviform’is (forma, shape), grape-like.

u’vidus (Lat.), moist, damp.

Vaccinie’rum, an association of Vaccin’ium, such as V. Myrtillus.

vaccin’us (Lat., relating to cows), the colour of a dun cow; bay.

vacil’lans (Lat., swaying), swinging freely, as the anthers of grasses.

vac’uolar, vac’uolate (dim. of vacuus, empty), possessing vacuoles; vac’ular, vacuule, vacuules (vaco, vacule), a cavity in the protoplasm of cells which contains a watery liquid, the cell-sap; Vac’uoles, see Protein-Vacuoles; Vacuoliza’tion, the formation of vacuoles; vac’uns (Lat.), empty or void of the proper contents.

vagiform’is (vagus, inconstant; forma, shape), having no certain figure.
<table>
<thead>
<tr>
<th>Vagina</th>
<th>variifolius</th>
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</thead>
<tbody>
<tr>
<td><strong>Vagī'na (Lat., a sheath), (1) a sheath, as of a leaf; (2) a part which invests another; vag'īnant, vag'i'na'ns, sheathing or wrapping round; vag'i-nate, vagin'a'tus, sheathed; Vagi-ne'l'la, (1) a small vagina; (2) in the plural = Ramenta (Lindley)</strong></td>
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<tr>
<td><strong>vaginer'vis, vaginer'vi'us, vaginer'vo'se (vagus, inconstant; nervus, a nerve), when the veins are arranged without apparent order.</strong></td>
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<tr>
<td><strong>vagini'ferus (vagina, a sheath; fero, I bear), furnished with a sheath; Vag'inule. Vag'inula (Lat., a little sheath), (1) a sheath surrounding the base of the seta in Bryophytes; (2) † a tubular floret in Compositae; vaginul'feri Flor'es, the tubular florets of an anthodium (Lindley).</strong></td>
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<td><strong>vague, va'gus (Lat., unsettled), having no particular direction.</strong></td>
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<td><strong>Vail = Veil.</strong></td>
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<td><strong>Vallec'ula or Valiic'ula (dim. of vallis, a valley), applied to the grooves in the intervals between the ridges in the fruit of Umbelliferae; vallec'u'lar, pertaining to such grooves; ~ Canal', in Equisetum, an intercellular canal in the cortical parenchyma, opposite a groove on the surface (Goebel).</strong></td>
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<tr>
<td><strong>valva'ceus ‡ (valva, the leaf of a door, + aceus), furnished with visible valves; valva'ris (Lat.) = val'vate, valva'tus (Lat.), (1) opening by doors or valves, as in most deciduous fruits and some anthers; (2) when parts of a flower-bud meet exactly without overlapping; Valve, Val'va (Lat., the leaf of a door), (1) a piece into which a capsule naturally separates at maturity; (2) the segment of a calyx meeting in vernation without overlapping; (3) in Diatoms, each half of the silicified membrane in side view; (4) the lid of an ascidium (Crozier); (5) the flowering glume of grasses (Stapf); (6) a partially detached flap of an anther; Val'veae Se'mi'n'um = Cotyledons; valve-view, the Diatom frustule seen from the side, the girdle being then marginal; val'var Plane, that plane which passes through the apical and transapical axes of a Diatom (O. Mueller); valve'a'ns, when a partition arises from the expansion of the inner substance of a valve; valved = val'vate, hence three-valved, five-valved, etc.; Val've'let, Val'vula = Val'vule, (1) a diminutive valve; (2) a flowering glume of grasses; (3) a bract in Cyperaceae; valv'u'lar = valvate; valvu'la'tus (Mod. Lat.), articulate, jointed.</strong></td>
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<tr>
<td><strong>Vanil'lin (Vanilla, an orchid genus) is deposited in the cell-wall on lignification; with coniferin it gives wood-reactions.</strong></td>
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</tbody>
</table>
| **Vapora'rium (Lat., a steam-pipe), in botanic gardens, a stove or formerly a "Bark-stove."

**Variabil'ity, tendency to vary; vari'able, vari'a'bilis (Lat., changeable), not constant in appearance; vari'ians (Lat.), varying; Var'iant, a form arising from a variation; Var'i'ate, one of the separate numerical values from which a curve of variability can be made; Varia'tion (variatio, a difference), (1) a slight variety; (2) a tendency to vary or depart from the type; acqui'red ~, arising during the development of an individual; corre'lated ~, change in one organ causing change in another, though seemingly not connected; discont'inuous ~, arising by distinct steps; genet'ic ~, having its origin in the germ cells; meris'tic ~, change in symmetry and number of part; sub'stantive ~, change in the actual constitution or substance of the parts themselves.** |
| **var'i'coso (varicosus, full of dilated veins), abnormally enlarged in places, used of filamentous organs.** |
| **var'iegated, variega'tus (Lat., party-coloured), irregularly coloured in patches, blotched.** |
| **Vari'ety, Var'i'etus (Lat., difference), a sort or modification subordinate to species; ~ Hy'brid, so called, a cross between varieties of the same species.** |
| **variifoli'us (varius, variegated), possessing leaves of different forms** |
Variola (Mod. Lat., the pustule of small-pox), a pustular skin occurring on the thallus of the Lichen genus Variolaria; variolate, variolat
us, variola'ris (Mod. Lat.), marked as though pitted.

Variolar'oid (elbos, resemblance), with granular tubercles like the fructification of the old genus Variolaria; varioloose' has the same meaning.

Vari'us (Lat., variegated), liable to change or modification.

Var'nish = Blastocolla; var'nished = vernicose (Crozier).

Var'zea, in Brazil, means the partially submerged forest.

Vas, pl. Va'za (Lat.), vessels, ducts. [Lindley (Glossary, p. 98), gives nineteen names for modifications of these.] Va'za exhalan'tia = stomates; ~ pro'pria, sieve-tubes or thin-walled tubular cells of the phloem; va'sal = vas'cular; ~ Bun'dle = Vascular-Bundle.

Vas'cular, vascular'is (vasulum, a small vessel), relating to or furnished with vessels; ~ Bun'dle, a strand of specialized tissue; ~ Bun'dle-sheath, the enveloping cylinder of closely united parenchyma; ~ Cy'linder, the central cord of vascular tissue; ~ Plants, Vasculara'res, those which possess vessels, as Phanerogams and Filicales; ~ Sys'tem, the interior parts in which the vessels occur; ~ Tis'sue, consists chiefly of vessels, in contradistinction to cellular tissue; vasculifer'ous (fero, I bear), producing vessels; vas'culoise, a component of the vegetable skeleton of the cellulose group; Vas'culum (1) = Ascidiurn; (2) a collecting-box for botanic specimens.

Vase-shaped, "shaped like a flower-pot" (Lindley).

Vasicen'tric (vas, vasis, a vessel; centrum, a centre), with parenchyma round the vessel; Vasi'duc'tus (ductus, led) = Raphie; vas'iform, rasiform'is (forma, shape), in the shape of a vessel or duct; ~ El'e'ments.

Vegetative with spiral markings; ~ Wood-cell = Tracheid; vascul'aris = vase-shaped.

Vaucher'ia-gall, an hypertrophied formation on Vaucheria, due to some animal attack, as of Rotifers.

Vau'ted, fornicate.

Veget'able (vegetabilis, animating), belonging to or consisting of plants; [Veget'able, in a restricted sense is a kitchen garden plant, anything cultivated for culinary purposes]; ~ Ac'ids, the most frequent and abundant are citric, ma'lic, oxal'ic, and tartar'ic; ~ Al'bumen, a substance resembling animal albumen [Note, not to be confounded with the Albumen of seeds]; ~ Anat'o'my, the structure of plants; ~ Ca'sein, the same as Legumin; cf. Plant'casein; ~ Cell, see CELL; ~ Fi'brin = Gluten; ~ Glob'u'lin, see Globulin; ~ Iv'ory, the seed of Phytelephas macrocarpa, Ruiz and Pav.; ~ Mu'cus, Mu'cilage, see Mucilage; ~ Nos'o'my, the classification and diagnosis of plant-diseases; ~ Parch'ment, paper after treatment with acids; ~ Patho'logy, the science of the diseases of plants, and remedial treatment; ~ Taxon'o'my, the classification of plants in systematic order; ~ Wax, a substance resembling animal wax, occurring as Bloom on the surface, or in bulk in certain fruits; veg'et'al, (1) having power to produce growth; (2) an abbreviation of "vegetable": veg'etate, to sprout or grow as plants; Veget'a'tion, (1) the process of plant-growth; (2) plants in general; ~ Form, a characteristic plant form, as a tree, shrub, etc.; ~ Types, primary divisions of the ecologists; Lines of ~, the boundary lines of the distribution of a given species (Kerner); veg'etative, growing or causing to grow; ~ Apo'gamy = Apogamy; ~ Cell, (1) the larger of the two cells in a pollen granule, which causes the growth of the pollen-tube; (2) in Selaginella, a portion.
of the apical end of the microspore
cut off by a septum on germination;
~ Cone, the apex of the shoot, a
conical protuberance; ~ Division,
heterotypic nuclear division; ~ No'cleus, any pollen-tube nucleus
which does not take an active part
in fertilization; ~ Org'ans, those
concerned with the growth of the
plant, not the reproduction; ~ pro-
'paggerative Cells, in German "Brut-
zellen" = Gotidua; ~ Reproduc-
tion, asexual increase, as by detached
buds, gemmae, bulbils, etc.; vege-
tist'ic, relating to plants; vege-
tive, having the nature of plants;
Vegetom'eter (μέτρητος, a measure);
electro- ~, apparatus for applying
electric currents to growing crops

Vehic'o'ulum (Lat., a conveyance),
Necker's term for the stigmatic
secretion.

Veil = (1) Velum; (2) Calyptra of
Mosses.

Vein (as distinct from a Ner've),
a strand of vascular tissue in a
flat organ, as a leaf; cos'tal ~,
or pri'mary ~, such as spring from
the midrib; exter'nal ~, a vein
close to the margin; veined, fur-
nished with or traversed by fibro-
vascular bundles, especially if
divided or reticulated; Vein'ing,
the general arrangement of the
veins; vei'nless, destitute of veins;
Vein'let, a small vein, the ultimate
division of a vein; Vein'ulet, a
branch of a veinlet (Crozier).

Veles'men (Lat., a covering), or ~
Radi'cum, a parchment-like sheath
or layer of spiral-coated air-cells on
the roots of some tropical epiphytic
Orchids and Aroids; velamina'ris,
when an anther dehisces by rolling
up one side of a cell from base to
 apex; ve'i'late, vel'a'tus (Lat.), veiled;
velo'sus, applied to Agarics; not
Latin, and presumably a blunder
for velatus, veiled.

Veld, or Veldt, the tree-steppe or
African savannah in South Africa.

Vel'inus (Lat., a fleece), the stipe
of some Fungi.

Ve'lium (Lat., an awning), (1) a
special envelope in Agarics within
which the growth of the sporo-
phore takes place; (2) by Persoon
applied to the Cortina; (3) the,
membranous indusium in Isoetes
(A. Braun); ~ partia'le, marginal
veil; ~ universa'le = Volva.

Ve'lmum (Lat., a fleece), close, short,
soft hairs.

velu'tinous, velu'tinus, velutino'sus
(Mod. Lat.), velvety, due to a coat-
ing of fine soft hairs; vel'vety, an
equivalent of the same.

Ve'na (Lat., a vein); Ve'nae
exter'nae, white veins seen in some
Gasteromycetes and Tubercaceae
in sections of the sporophore, produced
by air tissue in the sporiferous
chambers; ~ inter'nae, ~ lymph-
at'icae, dark-coloured veins, in the
same group of Fungi, denoting the
walls of the sporiferous chambers,
but destitute of air; Ven'a'tion, the
mode of veining.

vene'na'tus (Lat.), poisonous, venom-
ous.

venen'iferous (venenifer, contain-
ing poison), bearing poison.

ven'e'na, veneno'sus (Lat.), very
poisonous.

ve'nose, veno'sus (Lat., veiny), hav-
ing veins; veno'so-nervo'sus ~ when
the primary veins branch and unite
irregularly.

Ven'tor (Lat., the belly), (1) the ex-
panded basal portion of an archeg-
onium in which the oosphere is
formed; (2) by T. J. Parker applied
to the Ovary.

ventila'ting (ventilo, I fan) Pits, in
certain Ferns, resembling lenticels,
and probably pneumathodes (Haber-
landt); ~ Tess'ue, used for the
spongy parenchyma of the leaf.

ventilato'rous (ventilator, a win-
nower), flabellate, fan-shaped.

ventral, ven'tralis (Lat., pertaining
to the belly), (1) the anterior or
inner face of a carpel, opposed to
dorsal; (2) relating to the Ven'ter;
~ Cana'1-cell, a small cell in the
archegonium cut off from the apex.
of the mother-cell of the oosphere next the neck; ~ Su'ture, the ventral seam or line of dehiscence in a carpel; ven'tricose, ventrico'ssus, ven'tricous, swelling or inflated on one side, as the corolla of some Labiaces and Scrophularinaceae; ven-tric'u'lose, ventriculo'ssus (Lat., pertaining to the belly), slightly ventricose.

ventricum'bent (venter; belly; cum-bens, lying down), face downward, prone (Croziers); ven'tri-dor'sal, the reversed position of dorsi-ventral.

Ve'nulae, pl. of Ve'nula (Lat., a small vein), veinlets; ~ commu'nes †, veinlets which proceed from anato-moses of the ~ pro'priae †, those which first leave the costal or primary veins; Ve'nule, employed by J. Smith for veins of secondary importance; ve'nulose, venulo'ssus, profusely veined; venul'o'so-hinoi-deus, having equally curved parallel veins originating in the midrib and not losing themselves in the passage; ~ nervo'ssus, with straight parallel veins connected by cross-veinlets.

Ver-spe'cies, Syme's name for a true species, neither super-, nor sub-species; the epithet is derived from verus.

Ver'a're, an alkaloid derived from Veratrum.

ver'benaceous, allied to or resembling Verbena.

Ver'digris (Fr., Vert-de-gris), the sea-green “rust” of brass; ~ Green, the bluish-green colour of the same.

vermic'u'lar, vermic'u-late, vermicula'tus (vermiculus, a little worm), worm-shaped, thickened and bent in places, as the root of Polygonum bistorta, Linn.

ver'miform (vermis, a worm; forma, shape), worm-shaped; ~ Bod'y = Solecite.

Vermi'lion (Old Fr., Vermillon, the Kermes insect) col'oured, scarlet, brilliant red approaching orange.

Ver'muth-steppe, extensive plains on which the dominant plants are species of Artemisia (Warming). ven'nal, ver'nalis, ver'nus (Lat., pertaining to spring), appearing in spring; Verna'tion, Verna'tio (Lat., casting off a slough), the order of unfolding from leaf-buds, prefolia-tion.

ver'niceous, vernico'ssus (Mod. Lat., varnished), shiny, as though varnished.

Verru'ca (Lat., a wart), (1) a wart or elevation sometimes of a glandular nature; (2) a sessile apothecium, as in Verrucaria; (3) the perithecium of some Fungi.

verruca'roid, resembling Verrucaria as to the verrucae or apothecia.

verru'ciform (verruca, a wart; forma, shape), wart-shaped.

ver'rucose, verruco'ssus (Lat., full of warts); ver'rucous, warty.

verru'culo'sus, verruculo'ssus (verrucula, a small wart), very warty, much covered with warts.

ver'satile, versat'ilis (Lat., movable), turning freely on its support, as many anthers on their filaments.

versicolor (Lat., of changeable colour), versicolor'ous, changing colour, or one colour passing into another.

ver'siform (versiformis, changing shape), altering in shape as it ages.

Ver'siform (versus, turned towards), a form which varies from the stems-form in several particulars (Kuntze).

versip'al'mus (versus, turned; palma, a palm), a palmate arrangement, the divisions not all in the same plane.

ver'tebrate (vertebratus, jointed), contracted at intervals, like the backbone of animals.

Ver'tex (Lat., that which revolves about itself), (1) the apex of an organ; (2) †, the pilens of Agarices; ver'tical, vertica'lis, (1) perpendicular to the horizon; or (2) to the support, usually longitudinal; ~ An'ther, an innate anther; ~ Chor'isis, transverse choris; ~ Leaves, those which stand erect like Iris leaves, with no obviously
vertical

Viciism

dorsal or ventral surfaces; ~ System, the fibro-vascular system (Crozier); ver'tically compressed = DEPRESSED (Crozier).

Verticil, Verticillus (Lat., the whirl of a spindle), a whorl, or circular arrangement of similar parts round an axis; Verticillus spurius = VERTICILLASTER; Verticillaster (~aster, a suffix = small), a false whorl, composed of a pair of opposed cymes, as in Labiataes; verticillate, possessing false whorls; verticillate, verticille, whorled; verticilliform (flos, floris, a flower), when whorls have a spicate arrangement.

Vernacula (Lat., furnished with a small pike), cylindric and somewhat pointed.

Vesicat'tius (vesica, a blister), blistering, as from caustic sap.

Vesicle, Vesícula (Lat., a little bladder), (1) a small bladder or cavity; (2) Grew's term for CELL; multino'culated ~, peculiar bodies found in the hyphae of the endophytic Fungus of the prothallus of Lycopodium clavatum, Linn. (Lang); Vesícula Am'nios, ~ Colliquament'ī, the embryo-sac (Lindley); ~ sporop'hora, the sporophore of a Fungus; vesiculaeformis (forma, shape), bladder-shaped; vesicular, vesicul'ar, vesicular'is, vesicula'tus, composed of vessels; ~ Ves'ells, laticiferous cells; vesic'ulose, vesicul'osus, vest'icul'ous, as if composed of little bladders.

Ves'pertine, vespertin'us (Lat., pertaining to the evening), appearing or expanding in the evening.

Vessell, a duct or articulated tube rendered continuous by the more or less complete absorption of the intervening transverse walls.

Vestibule (vestibulum, a fore court), a chamber above the stoma formed by the depression of the guard-cells, and growth of the cells round them, as in Cycas; vestib'ular, applied to stomata, cf. Vestibule.

Vestige (vestigium, a footstep), the remaining trace of an organ which was fully developed in some ancestral form; adj. vestig'ial.

Vex'il (Crozier) = Vex'il lum; vex'il'lar, vexillar'is (vesillum, a standard), pertaining to the Vexillum; vex'il'lar'y, (1) a form of inflorescence in which the vexillum is folded over the other petals; (2) employed by Plateau to denote the giving an attractive signal to insects; ~ Aestivation, peculiar to papilionaceous flowers; vexil'late, vexill'ar'is, bearing a standard of vexillum; Vexil' lum, the standard or large posterior petal of a papilionaceous flower.

Vi'able (Fr., viable, likely to live), used of seed which is capable of germinating; Viabil'ity, the possibility of growth.

Vi'a'tical (viaticus, pertaining to a road), applied to those plants which grow by the roadside or path.

Vi'bratile (Fr., vibratile), capable of vibration, motion to and fro.

Vib'rio, pl. Vib'riones (vibra, I quiver), minute thread-like bacteria; vib'rioid (ëidos, resemblance), like a vibrio; ~ Bod'ies, special structures, slender, cylindric, and of sharply definite outlines in the superficial layer of cytoplasm of some Algae (Swingle); Vib'rogen, (gen., root of gigno, I produce), subepidermal tissue of thin-walled parenchymatous cells with a large amount of chlorophyll, which seems to play an important part in the movements of tendrils (Penhallow).

Vibris'sae, pl. (Lat., hairs of the nostrils), the sensitive hairs of Dionaea (Boulger).

Vica'tious (vicarius, substituted), supplying the place or function of some other organ (Crozier).

Vice'ni (Lat., twenty each), in twenties.

Vi cine (vicinus, near), used by Clements for species derived from adjacent regions; Vi'cinism, variation due to growth of other plants.
Vicinism

in close proximity (De Vries); Vic'inist, a plant derived from such ancestry (De Vries).

Vicio'lin (vicia, a vetch), a principle from Lathyrus sativus, Linn.

Vigilia' (Lat., keeping watch) or Vigil'iae Flor'u'm, periods during which certain plants open and close their flowers.

Vil'li, pl. of Vil'lus (Lat., a shaggy hair), long weak hairs; villif'erus (feto, I bear), bearing villi; vil'li-form (forma, shape), resembling villi (Crozier); vil'llose, villo'sus, vil'lous, bearing villi; Villos'ity, shagginess, a coating of long weak hairs.

Vi'men (Lat., a switch), a long flexible shoot; vi'min'al, viminal'is, consisting of twigs; vimin'eous, -neus, bearing long and flexible twigs.

Vina'ceous, vina'ceus (vium, wine, + acceus), wine-colour, purplish red.

Vine, (1) the plant which bears grapes, Vitis vin'fera, Linn.; (2) in the United States applied to any trailing or climbing stem, or runner; vines'lis (Lat.), growing in vineyards.

Vingear'plant, or mother-of-vinegar, Mycoderma Aceti, Desmaz.

Vini'color (vium, wine; color, colour), the colour or wine, dark or purple red; vino'sus (Lat.), in botany means the same.

Vio'laceous, -ceus (Viola, + aceous), violet-coloured, ianthinus; violas'cens (+ ascens), becoming violet; vi'olet, vi'oclus, the colour of violets, a cold purple; Vi'line, a poisonous principle existing in Vi'ola odorata, Linn.

vire'lus (dim. of virens), somewhat green or greenish.

vir'ent, vir'ens (Lat., green), (1) green in colour; (2) evergreen; vi'res'cent, vi'rescens, turning green; Vi'res'cence, the development of chlorophyll in place of the normal colouring; cf. Frondescence.

vir'gate, virg'a'tus (Lat., made of twigs), (1) wand-shaped, twiggy; (2) with radiating lines in pileus

of Agarics; either ribs or streaks of colour (Fries), as in Tricholoma virgata, P. Karst.

virgin'eus (Iat., maidenly), (1) the purest white; (2) having arrived at the flowering period (Endlicher, fule Lindley).

vir'gulate, "diminutive of virgate, shaped like a little twig or wand" (Crozier), but virgul'atus also means striped.

Virgul'tum (Lat., a copse), a vigorous twig or shoot.

vir'idans (Mod. Lat.), virides'cent, virides'cens, becoming green; Vir'i'di'na = Chlorophyll; vir'idis (Lat.), green; vir'id'alus, greenish; Vir'or (Lat.), greenness, verdure.

viro'sus (Lat., fetid), "venomous" (A. Gray): having an unpleasant smell.

vis'e'id, vis'cidus (Lat., clammy), sticky from a tenacious coating or secretion; ~ Disk, the retinaculum of an Orchid.

Vis'o'in (viscum, birdlime), (1) a substance intermediate between resin and caoutchouc (Weinling); (2) the sticky substance forming threads uniting pollen-grains (Kerner);

Viscosac'charose (+ Saccharose), an enzyme producing a viscous mass from cane-sugar (Beijerinck); visco'sous, visco'sus (Lat., sticky), glutinous, clammy.

Vit'alism (vitalis, pertaining to life), a directive tendency through the organism alone, and peculiar to life; Vitalist Theory, Pasteur's theory of fermentation as an effect, with vegetation as a cause; Vital'ity, in seeds the period during which the seeds retain their power of germination, varying according to the species.

Vit'e'llin, vitell'i'num (vitellus, the yolk of an egg), the colour of the yolk of an egg; veg'etable Vit'e'lliu, Weyl's term for a reserve proteid found as crystals in potato-tubers; Vit'el'lus, (1) an old name for peculiar albumen which in some cases is deposited within the embryo-sac; cf. Scutellum (2); (2)
an oily substance adhering to the spores of Lycomodium.

vitic'clusus (Vitis, a vine; colo, I inhabit), living on or within the vine; Vitis'aria, a parasite of the vine; J. S. Henslow prints the word vitic'ulus.

Vitio'nls (Lat., a vine tendril), also printed Vitic'ulus = Surculis; vitic'ulose, viticulose, sarmentose, producing viticulae.

vit'reus, vit'reus (Lat., of glass), transparent, formerly used for the light green of glass; vit'ricole (colo, I inhabit), applied to Lichens which are found growing on glass bottles, etc.; vit'reous, "having a glassy appearance" (Lindley).

Vit'ta, pl. Vit'tae (Lat., a fillet), the aromatic oil tubes of the pericarp of most Umbelliferae; ~ of Diatoms, are longitudinal ribs; vit'tate, vit'tatus, bearing vitae; longitudinally striped; Vit'tin, a substance found in the more watery vitiae of Umbelliferae.

Vivip'arism = Vivipary.

vivip'arous (viviparus, producing young alive), germinating or sprouting from seed or bud, while attached to the parent plant; ~ Germina'tion = Vivip'ary, the phenomenon in question.

vixgrega'rious (viz, hardly; gregarious, belonging to a flock), "arranged in small or indistinct groups" (Clements).

void, empty.

vol'uble, vol'ubile, vol'ubilis (Lat., twining), twining round a support.

vol'te', vol'tus (Lat., a rolling), rolled up in any way; Vol'tion, a spiral turn or wreath.

Vol'tin, or metachromatin, granules in the yeast-cell occurring in the nuclear vacuole; possibly a reserve substance (Wager and Peniston).

Vol'va (Lat., a wrapper), a covering or external wrapper, especially the sac enclosing the sporophore of Agarics, ruptured at its apex by the growth of the unfolding pileus.

volvoca'ceous, vol'vocine, constituted like the genus Volvox (F. Blackman); volvocina'ceous, of the nature of the genus Volvox.

Vul'va [from Volva] Vegetabil'ium, a Linnean name for the Stigma; vul'viform (forma, shape), like a cleft with projecting edges.

Wa'dy, Arabic term denoting a valley containing water only in the wet season; cf. Ou'kia, Wed.

Wart, a hard or firm excrescence; wart'y, covered with warts or verrucae.

Wasp-flow'ers, flowers adapted for wasp-visiters, but may also be visited by other insects and be pollinated by them.

Wat'er-bal'ance, the depletion and repletion of moisture in a plant; ~ -blad'ers, hairs acting as water-reservoirs (Warning); ~ Bloom, a sudden development of certain algae in lakes, also known as the "Breaking of the Meres"; ~ Capa'city, the power of a soil to take up and retain liquid; ~ Cells, large suberized cells in the palisade-tissue of succulent plants (Hrebnér); ~ Con'tent, the water in the soil; either phys'i'cal ~, the total amount of soil water; or physiologi'cal ~, the amount available to plant-life; ~ Cult'u're, growth of plants in compound solution of salts; ~ Gland, a group of cells beneath a water-pore, which help to excrete water; ~ -in'take, the amount absorbed under given conditions; ~ Leaf, in Salcinia, a submersed and finely divided leaf, which simulates a root; ~ Loss, the sum transpired; ~ Par'asite, when the host serves only as a root, and provides absorption, conduction and mechanical support, as in Mistletoe, whose house-toria contain no sieve-tubes; ~ Plants, those growing in water, immersed wholly or in part; ~ pol'linated, by means of water; under water as Zo'tera, or on the surface as Vallisneria: hydrophil;
waved, wa'vey, undulate, or sinuate.
Wax, veg'etable, a fatty body occurring as a waste product, either superficially as BLOOM on leaves, or in quantity in fruits and stems as in Myrica cerifera, Linn., and Ceroxyylon Klopstockia, Mart.; wax'y, resembling beeswax in consistency or appearance; ~ Coat'ing, a thin epidermal layer of rods or grains, forming a glaucous bloom on fruits and leaves; ~ yel'low, an impure yellow, cf. cereus, melillus.

Wed = Wa'dy or Ou'ed.

wedge-form, ~ shape, cuneate.
Weed, any useless or troublesome plant which occurs without intentional cultivation.
Weel, a term borrowed from a wicker eel-trap, for an arrangement of hairs which keeps out unbidden insect guests from flowers (Ogle).

Weep'ing, excessive loss of sap from wounds, as in the vine or birch; bleeding; adj. = pendulous in habit.

Welt, a raised stripe on fruit such as the lemon (Crozier); welt'ed is given by Crozier as "flaccid, drooping"; it is probably an error for wilty.

Wendungsziel'en (Ger.), a disc-shaped group of hyaline cells (or a single cell) at the base of the oospore in Characeae.
wett'able, capable of being wetted;
Wettability, the condition described (modern ecological terms).

Wheat-ear Carnation, an abnormal increase or pleiotaxy of bracts.
wheel-shaped, rotate.
whip-shaped, flagelliform.
Whirl (S. F. Gray) = Whorl.

white, when positive colour is absent:

(albus is white generally, niveus, as pure as snow, candidus, radiantly white, etc.); ~ Chlor'ophyll, Gantier's term for chlorophyll which is rich in hydrogen and colourless; the normal green type is stated to be poorer in that gas; ~ heads, = Take-all dis-ease in wheat; ~ Boot-rot, a Fungus scourge in parts of Europe caused by Domatophora necatrix; whi'tened, dealbated, with a darker ground tint; whi'tish, albidus, albulus, etc.

Whorl (pr. hwurl), the arrangement of organs in a circle round an axis; false ~, spurius ~, = Verticil-laster; whorled (pr. hwurl'd), disposed in one or more whorls.

Wick'er-hairs, an awkward and inexpressive rendering of the German "Reisenhaare"; cf. Trap-hairs; Weel.

wild, spontaneous, growing without cultivation or introduction.

Wild'er (Crozier) = Wild'ing, (1) any wild plant; (2) an escape from cultivation.

Wilt-dis-ease, attributed to Fusarium r as infection or F. Lini, on different plants; wilt'ed, become flaccid, the opposite of turgid; wilt'ing, drooping, having lost the quality of freshness; Wilt'ing Coefficient, the amount of water in the soil when a plant droops.

wind-polli-na'ted, the pollen conveyed by the agency of the air; anemophilia.

Win'dows, employed for openings when the flowers do not expand, remaining united at base and apex of perianth, as in Cryptophoranthus (Rolfe); win'dow-bear'ing, the condition described.

Wing, (1) = Ala, any membranous expansion attached to an organ; (2) a lateral petal of a papilionaceous corolla; ~ Bract, the attached subtending bract of Tilia; winged, alate.

Win'ter-an'nu'al, a plant which germinates in autumn, and living through the winter, fruits and dies; cf. Biennial; ~ -kil'ling, destruction by exposure to variations of weather
and temperature; ~ Rot, a disease of stored potato-tubers, due to Nectria Solani; ~ spore, a resting spore.

Witches' Brooms, a disease shown by tufts of shoots, due to attack by Fungi or mites; in German "Hexenbesen"; Steppe-witches, or Winter-wood, withering, wood, witches' winter, ball-like felled masses of plants in steppe regions, which have become detached from their roots and are blown about by the wind.

With'ering, marcescent.

With'ry, a willow twig, a pliable wand.

Wood, = Isatin, the blue colouring matter of Isatis tinctoria, Linn.

Wood, the lignified portion of plants, included within the cambium layer, but exclusive of the pith; the xylem elements of the united vascular bundles; ~ Ball, = Sphéroblast; ~ Cells, are lengthened and thickened, combined into threads, fascicles, or bundles, forming protoscleroma; ~ Elements, the fibres which make up the xylem; ~ Fi'bre, the fibro-vascular tissue; ~ Gum, contained in the wood of Dicotyledons, said to consist chiefly of xylan; ~ Paren-chyma, tissue of thick-walled cells; ~ Ray = Medullary Ray; ~ Bot, due to Stereum hirsutum, Fr.; Au'tumn ~, the outer portion of each annual ring of growth, having smaller ducts and wood cells, with walls much thickened; crypto-gam'ic ~, the centripetal portion of the xylem in the stem of Cycadaceae; Spring ~, the inner portion of each annual increment, consisting of larger, thinner-walled cells and ducts.

Wood'land, woody plants dominating the vegetation.

wood'y, approaching the nature of wood, ligneous; ~ Fi'bre, wood-tissue; ~ Rings, the annulations seen on cross section, which usually denote one year's growth; ~ Ti'sane, xylem; ~ Wedg' es, Williamson's expression for the fibro-vascular bundles in Calamites (W. R. M'Nab).

Wool, long, dense, curled hairs (Crozier); wool'ly, lanate, tomentose, clothed with long and tortuous or matted hairs.

Worm-shaped, more or less cylindric, and contorted.

Woro'nin's Hy'pha, a coiled hypha in some forms of Ascomycetes, occurring in the centre of the future sporocarp, and probably homologous with an aricharp.

Wort (pr. wurt), (1) a plant, especially a cabbage; (2) the sweet infusion of malt, or unfermented beer.

Wound, any injury caused by abrasion or incision in the cortical layers of a tree; ~ Cam'biun, a layer of phellogen resulting from the tangential division of epidermal cells, or from cortical cells beneath the epidermis; ~ Cork, the non-conducting tissue which shuts off fungus-diseased portions of bast from the sound parts; ~ Gum, a substance abundantly secreted in the vessels by the surrounding starch-cells, closing the wound-cavities (Temme); ~ Para'site, a Fungus which attacks the surface of a wound, and so effects an entrance into the tissues of the host; ~ Rot, various forms of decay not accounted for by parasitic Fungi; ~ Wood, abnormal growth, distinguished by its short cells and absence or scarcity of vessels (De Vries).

Wrap'per = Volva.

Wrin'kle, a fold or crease; wrin'kled, rugose, creased.

X-Genera'tion (Lotsy) = Gameto-phyte.

Xan'thein (ξανθός, yellow), a yellow-colouring of plants, the same as Anthochlorin, cf. Xan' thine; xanthel' lus, somewhat yellow; xan'thic, tending to yellow; ~ Flow' ers, those which display yellow in their tints, opposed to cyanic flowers; Xan'thin, (1) a pure yellow substance from chlorophyll (Kraus); (2) a solid insoluble pigment; also Xan'thine, (1) found in seedlings of
Cicer arietinum, Linn.; (2) a mixture of colouring matters described by Kuhlmann as a single body (Green); Xantholeu'citc (+ Leuc'cite), a leucite of an etiolated plant (Van Tieghem); Xan'thones, pl., a series of yellow colouring principles in plants; cf. Flavones; Xan'thophyll (φυλλον, a leaf), a constituent of chlorophyll, a yellow colouring matter insoluble in water; Xanthophyl'idrines, a yellow crys- tallizable pigment, like the last, but soluble in water; Xanthophyl'lines, yellow constituents of Chlorophyll, as Carotin, Erythrophyll, and Christrophyll (Tswett); cf. Chlorophyl'lines; Xan'thopio'rine (πικρος, bitter), a yellow bitter principle from the bark of Xanthoxyhon caribaenum, Lam.; Xanthorham'lin, the yellow colouring matter of the ripe fruits of Rhamnus; Xanthotra'metin (+ Trama), a colour resin in Fungi, as Poly'peros cinnabar'inus, Fr.

Xenemb'ryosperm (ξενος, a stranger, + Embryo; σφέρα, a seed), Mac'Millan's term for a Parthen-embryro'sperm with endosperm arising from fecondation, and the pollen derived from a flower of another stock.

Xen'ia (ξενος, belonging to a guest), Focke's term for the direct influence of foreign pollen on the parts of the mother-plant (Stift).

Xencar'py (ξενος, a stranger; καρπός, fruit), producing fruit as the result of xenogamy; Xenodoch'ae (δωχ, reception), employed by Clements to denote anomalous successions of plants; Xenochro'ma (χρωμα, colour), Focke's term for the effect of foreign pollen producing a change in the colour of the fruit; Xenoénd'osperm, a plant with embryo the result of fecondation, with endosperm partheno genetic, and the pollen derived from another individual (MacMillan); Xenog'ammy (γαμος, marriage), cross-fertilization between sexual elements borne by different individuals (Loew); cf. Gei'tonogamy; Xeno-
morph'osis (+ Morphosis) = Actinomorphosis; Xeno'parasite (+ Parasite), (1) a specialized form of a parasitic fungus when growing on injured parts of a strange host, or on injured parts of its normal host which are immune previous to injury (Salmon); the condition is Xenoparasitism, also (2) artificial parasitism; cf. Ecparasite; Xeno-plas'ma (πλασμα, moulded), employed by Focke to denote change in shape of fruit produced by the action of foreign pollen.

Xe'rad (ξερος, dry, + ἄδ), a xerophyte (Clements).

Xerampel'inus (Lat.), the dull red or purple of dead vine leaves.

Xe'ras (ξερος, dry), a dry form of a plant (Clements).

Xera'd'um (ξερωσια, drought), a success due to drainage or drought (Clements).

Xerio'boles, -ae (ξερος, dry; βολη, a throw), plants dispersing their seeds by the drying up of their carpels (Clements); xeroclas'tic (κλασω, I gape), applied by Ascherson to plants whose fruits burst by desiccation and their seeds or spores are scattered; Xeroch'asy, the condition; Xerocla'stogramy (+ Cleisto-gamy), when flowers remain closed by reason of insufficient moisture (Hansgirg); Xerodry'mum (δρυμος, a coppice), xerophyte-forest formation (Diels); Xerohyl'ad (δαν, forest, + ἄδ), a dry forest plant; Xerohyla'rum, a dry forest formation; Xero'hylophil'us (φιλω, I love), dwelling in dry forests; Xero-hylophy'ta (φυτη, a plant), dry forest plants; Xeromorph'iae (μορφη, change), pertaining to Xeromorph'y, protected from desiccation by special devices, as hair, wax, thick cuticle, etc.; Xeromorph'osis (+ Morphos)is), changes induced by the action of increased temperature as the thickening of the epidermis (Herbst); Xe'rophile (φιλω, I love), a plant which grows in a dry situation; xeroph'ilous, growing in arid places;
Xerophily, the state; xeroph'obous (φόβος, fear), shunning drought; Xerophor'bi'um (φορή, pasture) = Garide (Diels); Xe'rophyte (φυτόν, a plant), a plant which can subsist with a small amount of moisture, as a desert plant; adj. xerophyt'ic; Xerophy'ti'a, dry forest formations (Clements); Xe'ropod'ad (πώς, grass, + AD), a heath plant; Xeropoi'um, a heath formation; Diels's term for Stepp'ar formation; xeropooph'ilus (φιλέω, I love), heath-loving; Xe'ropooph'y'ta (φυτόν, a plant), heath plants (Clements); Xe'ropteride'um (πτέρις, a fern), an association of bracken with heath plants; Xe'rosere, cf. Additions; Xerosi'sum, or Xerosi'ion, a plant association on drained and dried up soil (Clements); xerostat'ic (στατικός, causing to stand), used of successions completed under xerophytic conditions (Clements); Xerothamni'um (θάμνος, a copse), spiny shrub formation (Diels); Xe'rot'herm (θέρμος, heat), capable of withstanding drought and heat; adj. xerother'mic; ~ Period, Briquet's term for the post-glacial period; xerother'eous (θέρμος, summer), adapted to a dry summer, a rainless period; Xerotrop'ism (τρόπος, a turning), the tendency of plants or parts thereof to alter their position to protect themselves from desiccation (Borzi); adj. xerotrop'ic.

Xiph'oid (ξίφος, a sword; ἔλος, resemblance), sword-like, ensiform; xiphoph'il'ous, -lus (φύλλον, a leaf), with ensiform leaves, as Iris.

Xylan (ξύλον, wood), the chief constituent of Wood-Gum); Xyl'leum, the wood elements of a vascular bundle, possessing tracheal tissue; ~ Brid'ge's, connections surrounding phloem-islands; ~ Islands, detached strands of xylem in certain species of Thunbergia (Roulet); ~ Parenchyma, oblong cells which retain their protoplasm, with thick and lignified walls, occurring in longitudinal bands; ~ Plate, ~

Bay, a radial plate of xylem between two medullary rays; cf. Phloēm Ray; xyl'inus, woody, pertaining to wood; Xyli'um, a wood formation; xylolar'pous, -pus (κάρπος, fruit), the fruit becoming hard and woody; Xyl'oehrome (χρώμα, colour), (1) wood-dyes, chiefly tannins; (2) the dark coloured contents of the vessels of the duramen (Hartig); Xylo'dia, Xylo'dium (εἴδος, like), (1) the woody fruit of Anacardium; cf. Xyl'o-podium; (2) an old name for Achene; Xyl'o-gen (γένος, offspring), used by Sachs for wood-substance; Xylo'ma, a sclerotioid body which does not produce branched sporophores, but sporogenous structures within itself; Xylomy'ces (μύκης, a mushroom), a Fungus which grows on wood or bark; Xyl'o-lonite, cellulose manufactured in plastic masses; xylol'ious, -lus (φιλέω, I love), wood-loving; applied to Fungi which attack woody tissue; Xylolphy'ta (φυτόν, a plant), wood-plants (Clements); Xylolp'o'dum (πώς, ὀδός, a foot), a fruit like a nucule, but wanting a cupule, and borne upon a fleshy support, as in Anacardium; Xyl'o'se, a pentose occurring in wood; Xylostro'ma, the leathery felted mycelium of certain Fungi which destroy timber; Xylot'o'my (τομας, a cut), the anatomy of wood, and woody tissues; adj. xylotom'ic.

yearly, annual, of a year's growth.

Yeast (pr. yeest), the minute unicellular organisms which effect alcoholic fermentation in sugary liquids; ~ Bud'ing, giving rise to similar yeast-gonidia; ~ Fun'gus, Saccharomyces Cerevisiae, J. Meyer; sometimes termed Sprouting Fungus:—

Bot'tom ~, Low ~, that which forms at the bottom of the vats, "Unterhefe" of the Germans; Up'per ~, or Barm, that which floats on the surface, the German "Oberhefe"
wild ~, some undesired form, which gives a bitter taste to the word without fermentation.

Ygapô, a Brazilian term for a forest wholly submersed during two months (Trail).

Yponme'ma (όνθ, under; μένω, I remain), Neckar's term for an inferior calyx.

Yuc'cal, the resin from Yucca angustifolia.

Zan'thophyll = XANTHOPHYLL.

Ze'in, a proteid existing in maize, Zea Mays, Linn.

zeloty'pic (ζηλοτυπία, rivalry), asexual (Radlkofer); the condition is Zelot'ypy.

Zenotrop'ism (zenith; τρόπη, a twining), negative geotropism (Fayod); adj. zenotrop'ic.

ze'orine, zeori'num, resembling the Lichen genus Zoora, Fr., the apothecium having a double margin.

Ze'ro-points, the extremes of high and low temperatures which plants can endure without being killed (Schimper); zerozy'gous (ζυγός, a yoke), when a special factor is wholly absent (Hurst).

Zeu'gite (ζυγίτης, yoked together), a Fungus spore derived from the fusion of two nuclei; as a teleutospore (Raciborski).

zig'zag, having short bends or angles from side to side.

Zi'mone = Zy'MOME.

Zoad'ula, pl. Zoad'ulae (Fr. zoadule), Gaillon's term for Zoo'spore.

Zoal'spore (ζωάλ, an animal, Ællo'spore), Radlkofer's term for the zoospore of Bulbochaete and Coleochaete; Zoa'ndrosepore (+ Andro'spore), a motile androspore or antherozoid of Oedogonium (Radlkofer).

zodioph'ilous (ζωδιόφιλος, a little animal; φιλέω, I love) = Zodiophil'ous.

Zolidog'amae (ζωίδιον, an animal; γάμος, marriage), plants in which pollination is effected by animal agency (Kirchner); zidiog'amus, Engler and Pratil's term when an archegoniate plant has ciliated anthero-

zooids; Zoidoph'il'ily (φιλέω, I love), means the same; zoidoph'ilous, pollinated by the agency of animals; Zoidoph'il'aes, plants which are so fertilized.

zo'nal (ζώνη, a belt or girdle), applied to those "plant-formations" by C. MacMillan, which exhibit well-marked radial symmetry as though spreading from one centre; zo'naire, relating to the intermediate depths, the Mesoplankton of some authors (Forel); zo'inate, marked circularly, as the leaves of Pelargonium zonale, L'Hérît.; ~ Tetragon'id'ia, those formed by transverse divisions; cf. cruciate; ~ View, the side- or girdle-view of a diatom frustule; Zone (1) of temperature, with its influence on distribution; (2) a belt of more or less uniform vegetation; (3) the connection between two valves of a Diatom; the hoop or girdle; ~ of Distribu'tion, in Great Britain, altitudes of plant growth as defined by H. C. Watson; divided into in'fer-, mid-, and su'per-; cf. Region; zoned, coloured in rings or circles, as the cap of some Agarics (Stevenson); Zona'tion, (1) the formation of a hollow sphere by the nucleus in metaphasis, with a film of granulated protoplasm which marks the boundary of the compound oosper in Cystopus Blitii, De Barry (F. L. Stevens); (2) the gradual spreading outward from a centre, shown by many plants; Zo'ning, the arrangement of plants according to favourable condition, as Algae by depth of water.

Zoobiot'ic (ζωόν, an animal; Βίος, life), applied to a Fungus whose host is an animal; Zo'ocarp (καρπός, fruit) = Zoo'spore; Zoococide'ia (κητις, a gall), plant-galls produced by animals (Tubiuf); Zo'ochore, a plant distributed by animals (Clements); zooc'horic'ic (ξωρίτης, asunder), employed for those fruits which are separated by animal agency (Sernander); Zoo'chor'y, the state of distribution by animal agency; Zoocoe'nocyte
( + Coenocyte), a free-swimming coenocyte; Zo'ocyst (κυστις, a bag), a cyst, which, in Monadineae, gives rise to ciliated or amoeboid zoo-gonidia; Zoodomat'ia (δωμάτιον, a small house), shelters formed by a plant for those animals which are of benefit to it; Zoog'amæ (γαμος, marriage), plants with motile reproductive elements, Cryptogams; Zo'ogamete (γαμήτης, a spouse) = Planogamete; Zoog'ammy, applied to plants having motile sexual elements, as most Cryptogams; Zoog'le'a (γλεια, viscous, clammy), a stage of Schizomycetes when they are embedded in a jelly-like substance; Zoog'anan'gia (γανή, offspring; αγγειον, a vessel), certain cells in Ctenocladius, which enlarge, become pear-shaped, and hibernate, afterwards producing planogametes (Borzi); Zoog'onidan'gium (+ Goni-dangium), employed by W. West for an organ in certain Algae which produces zoospores; Zoog'onid'ium (+ Goni-dium) = Zoospore; Zo'o'id (εἶδος, resemblance), a motile spore or gamete (Hazen); zooido'gamous (γαμος, marriage), used of gametes when at least one is actively motile, flagellate, ciliate, or amoeboïd (Hartog); Zoomorpho'sis (μορφωσις, a shaping), changes produced in plants from the action of animals; used by Appel for galls when caused by animal parasites; Zo'on, an affix or suffix, in botany denoting anthero-zoid; Zooph'iliae, plants pollinated by animals; zooph'ilous (φιλέω, I love), pollinated by the agency of animals; zooph'obous (φοβέω, I fear), used of plants which protect themselves against animals, such as ants, by hairs, secretions, etc.; Zo'o'sphere (σφαιρα, a sphere), a biciliated swarm-cell of Algae, afterwards an osphere; Zo'o'sperm, Zoosper'ma (σπέρμα, a seed), pl. Zoosper'mata = Zoospore; Zoosporang'iophore (+ Sporangio-s pore), club-shaped or cylindric structures in Peronosporace, which bear the Zoosporangia; Zoosporan'gium (+ Sporangium), a sporangium which produces zoospores or planogametes; adj. zoospor'an'gial; Zo'o-s pore (σπόρος, a seed), a free-moving spore, an asexual reproductive cell with cilia, sometimes a planogamate; adj. zoospor'ic, zoospor'ous, relating to Zoospores; Zoospor'ocyst (+ Sple; κυστις, a bag), the zoosporangia of Saprolegniaceae (Veillemín); Zoos'por'gyssphere (σπόρος, a yoke; σφαιρα, a sphere) = Planogament; Zoosy'gosphere, a motile zygospore.

Zostera'tum, an association of Zoster a; zoste'roid (εἶδος, resemblance), resembling or akin to Zoster a.

Zyg'ogamæ (ζυγός, a yoke; γαμος, marriage), Ardissone's term for Algae, excluding the Florideae; Zyg'ogon'iwm (ζυγόν, offspring), the female conjugating cell in Conjugat a; zygolyt'ic (αὐτικός, able to loose), the separation of alleomorphic pairs of unit-characters; Zygo'mites, pl. (μίτος, a thread), pairs of conjugated filaments; zygomorph'ic, zygomor'phous (μορφή, shape), used of flowers which are divisible into equal halves in one plane only, usually the antero-posterior, cf. Actinomorphic; Sachs extends the meaning to such flowers as may be equally bisected in any one plane, as Dicentra; Zygomorph'ism, or Zygomorph'phy, the state just described; it may be diagonal ~, as in Solanaceae, or transverse ~ as in Papaveraceae; Zygomyce'tes (μύκης, a mushroom), a division of Phycomycetes possessing zygospores (Tubenf); zygomy'cetous, relating to the Zygomyces, a division of the Phycomycetes possessing zoospores; Zygone'ma (ζυγόν, a yoke; νήμα, a thread), a pair of filaments believed to be formed by the approximation of single thread; Zy'gophyte (ζυγόφυτον, a plant), a plant which is reproduced by zygoes, the conjugation of two gametes; applied to Algae which conjugate; adj. zygophy'tic.
zygopteroid (elōs, resemblance); zygopteride’an, resembling or allied to Zygopteris.

Zygo’sia (ζυγός, a yoke), M’Nab’s term for the union of gametes to form a zygote; Zyg’osperm (σπέρμα, a seed), a proposed emendation of Zygospore; Zyg’osphere (σφαιρά, a sphere) = Gamete; Zyg’ospor (σπορά, a seed), a body produced by the coalescence of two similar gametes; Zygospor’ophore (+ Sporophore), the suspensor in Mucorini; Zygosoma, Zygosome’s, pl. (σώμα, a body), bodies formed by the union of gamosomes in pairs, becoming bi-valent chromosomes; Zygotaot’ism, the mutual attraction of sexual hyphae for each other; Zygotaot’is (τάξις, order), arrangement by sexual pairs; the pairing attraction; zyg’ote, applied to a nucleus containing a Zygonema.

Zyg’ote (ζυγωτός, yoked), (1) a body produced by fertilization or conjugation of two gametes; (2) by Bateson extended to denote the individual which develops by somatic divisions from the cell resulting from the gametic union; adj. zygo’tic;

Zyg’otoid (elōs, like), the result of the union of two gametoids, that is, apocytial structures, as in Mucor (Hartog).

Zygoso’ospore (ζυγός, a yoke, + Zygospore), a motile zygospore.

Zy’mase (ζύμη, leaven), (1) formerly applied to the whole group of fermentations; (2) an enzyme occurring in yeast; cf. Anthozymase, and Zythozymase; zym’ic, relating to fermentation; Zymogen (γεννάω, I produce), the “mother of fermentation,” an antecedent body of an enzyme; zymogen’ic, applied to a peptonizing enzyme; Zymohydrol’yis (ὑδρός, water; λύσις, a loosing), fermentation induced by the absorption of water; Zymol’yis, decomposition by the action of fermentations; Zy’mom or Zy’mome, one of the proximate principles of wheat-gluten, cf. Glian; Zymo’sia, fermentation; zymo’tic, (1) relating to fermentation; (2) applied to diseases due to infection by germs, with their rapid increase.

Zythozym’ase (ζυθός, beer, + Zymase), an enzyme in yeast, also found in certain Fungi.
SUPPLEMENT

OF ADDITIONAL TERMS SINCE THE PREVIOUS EDITION.
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The derivations are strictly supplemental to those in the main alphabet.

abiet'iform (abies, a fir-tree; form, shape), used of hairs when shaped like a fir-tree.

Abs'ciss-mech'anism, proposed to replace Absciss-layer (Yapp).

Abund'ance, a synonym for Fre-quency. Clements uses these modifications: co'pious ~ or cope.1 100-50 in a meter quadrat; cope.1, 50-25; cope.2, 25-10; gregar'ious ~, subco'pious; subgregar'ious ~, sparse ~; vixgregar'ious.

Aby'a sal Associa'tion, peculiar to marine depths.

Acaroph'yta, used by Macfarlane for the lowest algae and fungi, "primitive plants."

acentron'ic (κέντρον, a sharp point), wanting a geometric or definite axis.

Aciculisil'vae, pl. (silva, a wood), forests containing needle-leaved trees, coniferous woods.

Ac'o lyes (ἀκόλουθος, attending), employed by Blakeslee for Varieties.

acanth'ous, applied to a symposium with a main axis of annual portions of successive axes, each beginning with scale leaves, and ending with an inflorescence.

acrog'enous, add (2), borne at the tips of hyphae.

Acrog'onel (ἄκρος, apex; γονύ, birth), a concentration of parts making a monocentric axis (V uille-min).

acro'st'ichoid, resembling Acrostichum Linn., a genus of ferns.

acroton'ic = ACROTONOUS

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Actinom'eter (μέτρον, measure), a light-measuring instrument for actinic rays; Actinomyce'tes (μύκης, fungus), delicate branching threads which break up into spore-like bodies (Conn).

Ac'tiva'tors, pl. (actius, active), enzymes which stimulate; opposed to Paralyzers; ac'tive Pro'toplasm, the Androplasm of male gametes (N. Jones).

A'cus (Lat., needle), the needle-like leaf of such conifers as Pinus (Henry).


Addition (additio, an adding) Stage, the gain of a factor (Bateson).

Adiabat'ic (dSia/Saro?, not to be crossed), not transferable, as a product which cannot be transferred to another tissue or part; cannot be translocated.

Ad'sere (ad, to, + Sere), that portion of a sere which precedes its convergence into another at any time before the climax stage (Clements).

Adynamogy'ny (ἀδύνατος, to want power; γυνή, a woman), loss of function in the female organs of a flower (Loew).

Ae'cid'ioid (εἰδός, resemblance), like the genus Aecidium Pers.; Aeci'o-teliospore, with the aspect of an aeciospore, and the nature of a teliospore (Harshberger).

aequichromoso'mal (aeque, equally, chromosomal), the exchange of chromosomes or of their quality (Lotsy); aequi'poten'tial (+ poten-
Alnetum

**Aerial Water**, rain or dew, as distinguished from terrestrial or underground supply; *Aëromorphosis* (μόρφωσις, form), change due to greater exposure to air or wind (Turesson); *aëropermeable*, the permeable part of the root to the passage of gases and liquids (S. Baker); *Aërophila* (φίλεω, I love), algae living fully exposed to the air, and not on the ground (Ivanoff); *Aeroxyl* (ξῦλον, wood), applied by Lindman to trees and woody plants with an evident bole, and branches above ground; cf. *Geoxyl*.

**Aestivaltrifoliate** (*aestas*, summer; *fruticetum*, a thicket), summer coppices; *Aestatisilvae* (*silva*, a wood), woods with leafage in summer.

**Aetiogenetic**, = **AETIOGENIC**.

**Afforestation** (late Lat. *afforestare*), bringing land under the conditions of forest; the act of conversion into forest or woodland.

**Agametosporous**, Janet’s form of *Agamosporum*; *Agamog’ony* (γόνος, offspring) = **SCHIZOGONY**; *Ag’ametes* (trisyl) pl.; reproductive bodies capable of growth to adult form without syngamy; *Agamohypnosporous* (+ *Hypnosporum*), a large resting spore (Wittrock); *Ag’amont* (όντος, things existing), the individual which produces *Agametes*.

**Age and Area**, Willis’s theory that the older a species is within a given country, the greater its area.

**Agglutination**, when bacteria draw together in masses (Conn).

**Agium**, afterwards altered by the author to **AIGIALIUM**.

**Agrol’ogy** (λόγος, discourse), the science of soils, and their support of special vegetation; *Agronomy* (νόμος, custom), agriculture.

**Agrostone tum**, an association of *Agrostis*.

**Aigic’olous** (colo, I dwell), a tenant of stony strand, also applied to an association of such plants.

Air-bags, Withering’s term for **Allicie**; ~-pits, well-developed pits in thick cell-walls for aeration (Jeffrey); ~-spaces, carinal cavities in the fibrovascular strands of *Equisetum* Linn. (Jeffrey).

**Ablinotic**, affected with albinism; ~ Cells, ~ Layers, or *Tis’sue*, those parts when destitute of chlorophyll.

**Albopelliculus** (*pelliculatus*, skinned), having a layer of colourless cells below the epidermis, with a green core, as in *Mesembrianthemum*, Dill. (Correns); *albotunica* (*tunicata*, wearing a tunic), a similar phenomenon in *Pelargonium* L’Hérit.

**Albun’min-cell**, groups of 6–12 small cells, with granular contents and large nuclei on outer flanks of phloem of each bundle in stems of *Gymnosperms* (Church).

**Alchemille’tum**, an association of *Alchemilla* Linn. -ale, suffix for COLONY; cf. *Hordeale*, etc. (Clements).

**Allocho’ric** (χωρός, a place), used of a species inhabiting two or more closely related formations in the same region, as adjoining forest and grassland (Drude). *Allochthonous* (χθόνος, χόνος, earth), applied to peat due to gradual accumulation of drifted material in still water (Forsaith); **allomeristic** (μεριστικός, fit for division), groups which differ meristically from the majority of related groups, as *Veronica* Linn. with a 4-lobed corolla, when most Scrophulariaceae have 5 (Riley); **Allemet’sron** (μέτρον, a measure), “quantitative and intensive characters” (Osborn). All’osomes (σώμα, a body), a general term for aberrant chromosomes.

**Alu’vial Association**, a boundary zone between water and dry land, such as favours the growth of *Tamarix* Linn. and *Hippophæae* Linn.

**Alne’tum**, an association of *Alnus* Linn.
Alpi’no-arctic Forma’tion = An-thelietum.

Alterna’tion, applied by Clements to a mixed succession; Alter’nes, two alternations of dominancy over the same area (Clements).

Al’var, term to denote dwarf growth of perennial shrubs in parts of Sweden (Warming).

Alve’olar Spheres, pl. certain bodies in the cytoplasm of the microsporangia of Cupressus Linn. which do not take stain (Nichols): Alveola’tion The’ory, chromosomes in telophase becoming honey-combed with numerous vacuoles; Al’veoles, pl. vacuoles which split chromosomes into network of chromatin (Grégoire).

Amae’bula pl. -ae, a swarm-spore which creeps like an Amaeba (Minchin).

amara’lioid, like the genus Amaralia Benth. and Hook. f.

amathic’olous (ἀμαθός, sandy soil; colo, I dwell), growing in sandy plains.

ambiat’eral (ambo, both; lateralis, pertaining to the side); ~ Segre’gation, unrestricted to either sex (Bateson); cf. uni’ateral.

Amblystegi’tum, an association formed of the moss Amblystegium Bruch et Schimp.

Amen’ta, pl. add (2) employed by Parlatore for male flowers.

Ammophile’tum, an association of dune-grass, Ammophila Host.

annic’olous (annis, river; colo, I dwell), growing on the sandy banks of rivers.

Amphich’romy (χρωμα, colour), a plant displaying two distinct colours when in flower (Lindman); Amphi’cill’ous (κλινη, a bed) Hy’brids, when in F₁ hybrid progeny, some resemble one parent, the remainder the other (De Vries); Amphicrypt’o-phyles, helophytes having their vegetative organs amphibious (Gams); Amphig’onel (+ Gonel), the reproductive apparatus having polycentric axes (Vuillemin); am-phig’y’ nous (γυνή, woman), when the oogonium of Phytophthora De Bary projects from the top of the antheridium, the male surrounding the female element (Murphy); Amphilep’sis, add (2) when in hybrids the influence of both parents is shown (Bateson); cf. Mono’lep’sis; Amphiph’reids (+ Nereid), amphibious plants; Amph’iphytes, pl. (φύτον, a plant), Gadeceau’s term for the same as the last: Amph’itene (ταινία, a ribbon), the early stage of synapsis (H. J. Müller); amphitrich’ous (θριχός, the hair), having a flagellum at each pole as of a flagellate; Amphitrisyncot’yl, Bexon’s term for a tricotyledonary seedling with special development; Amphi’tact’ism (τακτός, arranged), the mutual attraction of several hyphae for each other, as in Mucor Linn.; zygogtactism.

Amy’loplasts (πλάσμα, that formed), the colourless starch-forming plas’tids of plant cells (Errera); Amylo’stat’oliths pl. (+ Statoliths), starch-grains simple or com’pound.

Anabas’tum, an association of Ana’basis Linn.

Anaphylax’is (ἄνα, up; φυλακ’, caution), sensitive condition from use of antitoxin serum (Conn); ana’poret’ic (πορευτός, going), Martius’s term for botanic skill in the closet, as opposed to peripatetic; An’arhi’zophyte (αύξα, a root, φύτον, a plant), a plant able to root in soil which covers its original spot, as Suaeda Moq. (F. W. Oliver); anarthrodae’t’ylous (αρθρον, a joint, + Da’tyl), with ultimate rays each of a single cell, in Characeae; anatropist’ic = anatropous.

Andro’ecy (οἶκος, a house), occurrence of purely male individuals in a species (Uexküll); Androgy’non, a cladogonid’ium, an hermaphrodite merid (Janet). Androg’y’ny, the monoecious or androgynal state. And’rophile (φιλέω, I love), a plant
partial to the neighbourhood of man; nitrophilous (Woodhead);
And'r'ophore, add, (3) the support of antheridia (West); in'ner ~, torus
bearing inner stamens in Courou-
pita Aubl.; ou'ter ~, ligulate
hooded structure in same, bearing
outer stamens (Thompson); And'ro-
plasm (πλάσμα, that formed), active
protoplasm, as in male gametes
(N. Jones); adj. androplas'mic,
sperm-producing; Andropleog'amy
(+ Pleg'amy), one individual
with staminate, perfect, and andre-
monoeocious flowers (Robinson);
Androzoogo'non'dia, pl. (+ Zoogoni-
dium), male filaments derived from
zoogonidia in Oedogonium Link.,
cf. Gynoconi'dia.

Anectar'ia, pl. (+ Nectar'ium),
flowers lacking spurs (Gates);
anemocho'rous (χώρος, a place),
distributed by wind; Anemo'g amae
(γάμος, marriage), plants fertilized
by the wind (Kirchner); anemo-
g'amous, wind-fertilized (Sernan-
der).
anemo'neous, allied to Anemone Linn.
Anemop'h'obae (φόβος, fear), plants
fearing wind; adj. anemop'h'obous,
(1) the same; (2) plans against
wind damage (Hansgirt); Anemo-
spor'ae, pl. (+ Spora), plants dis-
seminated by wind.
anep'loid (ἀνεπίλοιδη, without), destitute of
chromosomes (Hurst); Aneu-
p'loidy, the condition stated.
An'geose're, cf. Ceneo'sera, the climax
of Angiosperms; Ang'i'spermy,
the state of angiospermous plants.
An'gle-cells, on the edges of the leaves
of gymnosperms forming small
teeth (Church).
An'i'on, an ion charged with elec-
tricity which moves towards the
anode or position pole; it may be
univ'al'ent, biv'al'ent, triv'al'ent or
tetrav'al'ent (Raber).
anisog'amous, cf. Anisog'amy; Ani-
sog'eny (γένος, race), variety in
offspring; anis'okont (κοντός, a
pole), having two unequal flagella;
anisost'ichous (ατίχος, a row),
having unequal rows in the stem-
cortex of Chara Linn.; Anisost'y'ly
(στόλος, a column), short and long
styled flowers in the same species,
without change in sexual properties
(Loew).
anocl'ados (κλάδος, a branch),
branches curving outwards (Rus-
sow).
anomop'h'yllous (ἀνομός, without law),
leaves abnormal for its genus
(Radlkofer); anomosper'mous
(σπέρμα, a seed), seeds abnormal
in its genus.
ant'a'pical (+ ap'i'cal), Kofoid's term
for "posterior" in Dinoflagellates;
~ Plate, that part of the hypo-
valve—the posterior extremity of
the cell—of Peridinaceae, which is
not postcingular (West).
Anten'nae, pl. add, (2) the poles of a
vascular trace extended into arms,
two or four in number (Bower).
anthecologi'cal (+ eco'logical), relating
to one flower and its surround-
ings, such as insect visitors; Anthe-
col'gist, an observer of such
phenomena; Anthecologi'gy, the
study in question.
anthemid'eous, pertaining to Anthemis
Linn.
Anthe'ra, add, (4) used by Parlatore
for the loculi in Coniferae.
Antheridi'um, add, (2) afterwards used
for the mother-cell of antheridia,
cf. Sor'u's; anther'ine, like an anther
(Forbes); Anther'o'blast (βλαστός,
shoot), a term for Androcy'te.
anthocarpo'log'ic, cf. Carpo'logy, the
relation of flower and fruit; An-
thog'onenl (+ Gonenl), with developed
corolla, the popular idea of a
"flower" (Vuillemin); antho'log'ic,
-cal (λόγος, discourse), (1) pertain-
ing to flowers; (2) flower
gathering; Anthoplank'ton (+ Plank'ton), algae which produce the
"breaking" of the meres.

Anthracr'in'y (κρίνο, I separate),
decomposition into humus (Falck);
Anthrag'eny (γένος, race), the for-
mation of peat by decomposition
(Falck).
anthropocho'rous (χῶρος, a place), distributed by the action of man (Rübel); anthropoph'ilous (φιλέω, I love), applied to plants that follow man (Thellung).

antibacte'rial, cf. Bacteria; of substances protective against poisonous bacteria; lysins (Conn); Antibod'ies, protective substances as antitoxins (Conn); Anticonsimi'tude (consimilis, entirely similar), when the plane of a diatom divides the frustule into two similar parts which are doubly inverted (O. Mueller); Antien'zymes, substances antagonistic to soluble ferments; Antiplep'ion (πλείως, full), a lean year or cycle of scarcity (Arctowski); Antisymmetry (+Symmetry), a synonym of Anticonsimilitude; it may be inverted ~, having a part turned upside down; pervert'ed ~, a part turned round, or triverted ~, a part inverted and perverted at the same time (O. Mueller); antitheti'c, p. 27, Interpolation Theory suggested as its substitute (Church); Antit'ropy (τροπή, a turning), applied to secondary roots which arise from the main axis in regular outward direction (Lopriore).

ant'ler-like, ~sha'ped, applied to branched trichomes.

apet'aloid (εἶδος, resemblance), Herbert's term for apetalous.

A'pex Time, when a leaf moves down after a shock; the period between the latent period to its recovery (Bose).

Aphan'imere (α, privative; φαίνω, I appear; μέρος, a part), Delle Valle's expression for Amitosis; Aphercot'ropism (τροπή, a turning), the turning away from an obstruction (G. Henslow); Aphel'biods, pl. (εἶδος, resemblance), pinnules serving as bud protectors in fronds of Gleichenia Sm.; aphototrop'ic, add, (2) Wiesner's term for leaves not affected by light; aphototrop'ic, turning away from light; Ap'hyll'ous For'est, formed of Casuarina Linn. in Java and Sunda; Tjemoro Forest (Warming).

a'pical, add, (2) Kofoid's term for anterior in Dinoflagellates; ~ Cap, striations at the upper end of cells in Oedogonium Link, due to repeated cell-divisions (West); ~ Plate, part of the epivale in Fерi-dineae (West).

aplanoplast'id, Janet's term for non-flagellate cells; cf. Plano-plastid; Aplanospor'angia (+Sporangia), organs giving rise to Aplanospores (West); apogam'ic, asexual (Turesson); apomict'ical, -t'ical, relating to Apomixis; Apospor'gony, suppression of sporogamy; the production of spores after gametic fusion.

appendi'cular, used by M. J. Benson for ovules derived from foliar origins, as capillary leaf-traces.

Approxi'ma'tion (L. Digby) = Association.

Aquipra'ta, damp meadows.

arach'noides, add, (2), seedlings not webbed but resembling spiders.

araucar'ian, araucar'loid, resembling the structure of Araucaria Juss.; Araucarie'tum, an association of Araucaria.

Arb'uscules (arbuscula, a shrub, a peacock's tuft), tufts of hyphae within cells; endotrophic mycorrhiza (Gallaud).

Archebio'sis (Βιοσ, living), early development of life (Troland); adj. archebiot'ic; Arch'en'teron (ἐυτερόν, intestine), a sac in volvox; communicating with outside by a blastopore (Janet); Archiproct'um, an early formed exit for spent material in the same genus; Archisto'ma (στόμα, mouth), a previous formation in the same alga (Janet); Arch'esphaera, the archesperm before fertilization (Bennett and Murray); Archian'giosperms, pl. (+Angiosperms), primitive angiosperms; archchlamyd'eous (κλαμύς, a cloak), term to include Polypetalae and Incompletae (Engler); Archid'ium, Chodat's term for the structure in
higher plants which bears the sporangia; Archigon'ioaphore (γόνος, offspring; φορέω, I bear), a gametophore in cryptogams borne on a specialized branch with a terminal receptacle having female organs; cf. Antheridiophore; Archil'ichens, lichens in which the gonidia are bright green; Archigym'nosperms, gymnosperms fertilized by antherozoids (Jeffrey); Arch'iplast (πλαστός, formed), the protoplasmic unit of Cyanophyceae (Nadson); Archisto'ma (στόμα, a mouth), a primitive oral opening (Janet).

arched, bow-shaped.

arctalp'ine, Clements's term for alpine plants in the arctic zone.

Arctostaphyle'tum, an association of Arctostaphylos Adans.

-are, p. 33, now restricted to the Clan (Clements).

Area, add, (5) ground occupied by a formation or association (Waterman); attachment ~, the junction on the anterior schizont of Peridiniae (Kofoid); ax'ial ~, the smooth surface between the margins of diatoms; cent'ral ~, hyaline space round the nodule of a diatom valve; lat'eral ~, occasional blank marginal spaces of a diatom (West); opt'i mal ~, that best adapted for the growth of a species (Warming); cf. AOE and Area; a'real, belonging to the areas enclosed by the reticulate vessels of leaves (Barton).

are'coid (εἶδος, resemblance), like the Are'ca palm.

Are'g, (1), sand-desert; (2) dunes in Algeria.

ar'il'licated, provided with an āril.

Ar'izophytes (a privative; ρίζα, a root; φύτον, a plant), term to include Bryophytes and Thallophytes.

Aroideol'ogy (λόγος, discourse), a treatise on Aroids.

Ar rhē'no plasm (ἀρρην, male; πλάσμα, formed), male protoplasm; cf. Thelyplasm.

Arroy'o (Span.), a watercourse, especially when dry.

Artemisie'tum, an association of Artemis'ta Linn.

arthroni omorph'ic (μορφή, form), arthonioid.

arthrodact'yloous (ἄρθρον, a joint; δάκτυλος, a finger), the ultimate rays of Nitella Ag., composed of more than one cell apiece.

art'ioploid, applied to "even multiples of the gametophytic number" (Jeffrey); Ar'tioploid'y is the state: cf. Perissoploid.

-as, patronymic suffix, as "Erio-gonas" (Clements).

Ascoli'chenes, add, defined as in symbiosis with algae.

Asco'mata, pl. of Ascoma.

Asexual'ity (a, privative; + sexual), destitute of sex.

Asincronog'onism (σύνχρονος, coeval; γόνος, offspring), Delpino's term for Dichogamy.

Assim'ilates, cf. Assimila'ta, perfected products of the plant's vital functions.

Associa'tion, add, (2), or approximation, the pairing of two threads or half-univalent spiremes to form a univalent chromosome (Digby); complimen' tary ~, where two or more avoid competition by developing at different times or at different depths, as Holcus, Pieris and Scilla (Woodhead); ~ Com'plex, a union of associations to a phytogeographical unit; ~ Frag'ments, varied aspects from normal or optimal (Braun-Blanquet); ~ Types, formed from the series of associations which inhabit them (Nichols).

Assoc'ies (associo, I join with), developmental units of consocies (Clements); transitory units (Tansley).

Asterice'tum, an association of Aster Tourn.

At'ivism, false, Vicinism.

Atelio'sis (ατελής, imperfect), a zoological term used by Gates for dwarfs of normal proportions but reduced size; adj. atelio'xic.

athiorhoda'ceous (a, primitive; θ'ς,
The deposit from rivers, relating to a group of purple sulphur bacteria.

Anotometer (ἀντόμος, vapour; μέτρον, a measure), an instrument for measuring loss of moisture by evaporation.

Atrichous (α, privative; θρίς, τρίχος, hair), destitute of cilia on flagella, therefore non-motile.

Atriplicetum, an association of Atriplex, Syria, etc.

Atrypia (ἀτρύπετος, unfruitful), Ludwig's term for self-sterility.

Attachment-area, the place of junction on the anterior schizont of Peridineae (Kofoid).

Atypic, add, (2) in mitosis, indirect nuclear division, which does not proceed normally.

Aulacanthous (αὐλαξ, αἵλακος, a furrow), stem-cortex of Characeae having secondary grooves more prominent than the primary, and spine-cells apparently seated in the furrow.

Autallogamy (αὐτός, self; ἄλλος, another; γάμος, marriage) = Homodichogamy; Autatrygia (+ Atrygia), self-sterility, its own pollen not ensuring fertilization; Autaminea' Reidis, pl. (άμφι, around, + Nereis), autotrophic a.menous plants; Autocol'ony (+ Ecology), ecology of the individual organism (Turesson); Autophap'tenon (ἐφάπτομαι, I am grasped); autotrophic type of plants, including those which are half-parasitic (Gams); Autobasidiomy'cetes (+ Basidio' mycetes) consist of the subordinate groups;—Hymenomycetes and Gasteromycetes: basidiospores definite in numbers, usually four; Autobiol'ogy (bi'os, life; λόγος, discourse), special biology, as opposed to association (Gams); Autocatal'ysis (κατά, down; λόγος, a loosen), ferment action which generates further quantities of the same substance; adj. autocatalytic; autochorologic (χωρέω, I spread abroad; λόγος, discourse), applied to self-distributed species, genus, family; local botany; autochronologic (χρόνος, time), self-timed, applied chiefly to fossils (Rübel); Autochronology is the condition; Autoclave (clavis, a key), a sterilizer acting by steam pressure; autoclaved [trisyll.], subjected to the operation cited; Autocol'ony (colonia, as plants living beyond usual range), in coenobic algae, the product of a mother-cell (West); Autoecology (+ Ecology), the environment and adaptation of a species, confined to its habitat by local conditions; adj. autoecologic; cf. Synecology; Autogenetic (+ Genetics), changes in florals effected by the conditions of the district and constitution of the plants themselves; autogenotypic (+ genotypic), isogenotypic; Autohybridiza'tion, naturally affected crossing; Autoirrigation (irrigatio, a watering), the automatic supply of water to a culture; Auto-irrigator, the apparatus employed; Autolysis, add, (2), Němc's term for Analysis; aut'olyzed = auto'lytic; autonom'ous (ιέμω, I possess), used of such shoots as independently place themselves in most favourable conditions (Kirchner); autonystomatic (νύφ, νυκτός, night; ναστός, close-pressed) = autonystotrophic; Autone'reids, pl. (+ Nerei s), autotrophic water-plants (Game); autoorh'opous (+ orthotrophic), the tendency of an organism to grow in a straight line forward (Czapek).

Autoparasism (+ Parasitism), a parasite growing upon a parasite as mistle toe upon mistle toe; autoph'ious (φίλεω, I love), self-pollinated (Moss); Autoregu'lation, cf. Regulation; autosclerot'opous (σκολίος, bent; τροπή, a turning), the tendency to grow in a curved line (Czapek); Autosome (σώμα, a body), normal chromosomes (Bridges), cf. Intersex, Supersex;
Autospore (± Spore), (1) protoplast division into spore-like bodies usually assuming the character of mother-cells before being liberated (West); (2), in lichens, daughter-gonidia (Paulson); autotrophic, applied to those bacteria which act directly upon mineral matter (Conn).

Autop'ta (αυτόπτης, an eye-witness), used by Linné and Jaequin for an observer who makes an autopsy.

Aux'imones, pl. (αυξίμως, promoting growth), plant-food accessories, essential to growth, only differing from vitamins in withstanding 150 C., while the latter are largely destroyed by boiling (Bottomley); adj. auximon'ic.

Avicennie'tum, a mangrove association.

Ax'ial Ar'ea, a hyaline area sometimes occurring on diatom valves on each side of the raphe (West); axill'ary shoot, ~ Strand, a bundle in Zygopteris Corda, the state of the main stem (Scott).

Azoospor'ia (α, = not, ζωή, an animal), motionless reproductive cells in certain fresh-water algae.

Azy'gospore (± Spore) = Partheno-spore.

Back-cross, a hybrid of reversed parentage, the male and female parents being interchanged.

Bacte'riad, Hillhouse's term for any bacterium; bacte'rial, pertaining to bacteria.

Baha'da (Span. descent), applied to accumulations of débris on slopes in Central America; adj. baja'dal.

Bambuse'tum, a bamboo forest association.

Barotax'is (βαρός, heavy; τάξις, order), reaction to mechanical stimulus.

Ba'sal Cell, add, (2) sister-cell below antheridial mother-cell.

Basiton'ic = basitonous.

Batzachi'eteum, an association of batrachian Rana catesbeiana Linn.

Beggiatoes'tum, an association of Beggiatoa Trev.

Beha'veiour, dynam'ic, the part played by the species in the development of the community.

Bennettit'e'an, pertaining to the fossil genus, Bennettites Carruth.

benth'ic, relating to Benthos.

Berti'llonage, a combination of figures by measurement of many characters from a person n, applied to botany by J. MacLeod.

Bestand' (Germ.), durable form (Schroeter).

Biator'ine, add, apothecia soft or waxy, and often brightly coloured.

Bif'er'ae, pl. (bifer, twice-fruiting), flowering twice in each year; bifor'us, biflorous, add, (2), old writers meant flowering in autumn as well as in spring; bi-indu'siate, having a double indusium, as Pteris Linn.

Bill, an antique term for Beak.

Biocat'alysts, pl. (+ Catalysis), a synonym of Enzymes; Biochar'acter (χαρακτήρ, to engrave), characters found separable as units in heredity, evolution or individual development (Osborn); Biocoen'o'gy, Biocoeno'sium (κοινός, common vegetation of a unitary habitat; social life; ecology (Gams); adj. biocoenolog'ic; Bio-coll'o'id (+ Colloid), a mixture of a base and an inert carbohydrate as agar and albumen; Bio-commu'nity, ecology is its science (Clements); Bi'omes, evidences of past human communities and climates (Clements); Bi'ont (ντον, things existing), a living being; cf. Metabion't; Protabion't; biophor'ic (φορέω, to bear), having vital and heritable properties (Adami); Biosociol'o'gy, the life of organisms in communities (Du Rietz); adj. biosociolog'ic; Bio-sphere (σφαιρα, a globe), the intermediate part between the atmosphere and the geosphere where life is lived; vegetation is the controlling influence (Clements);
biospheric, agency of plants in migration of peoples (Adams).
bird-footed, pedate.
Bisect, a vertical section of a quadrant to show the layers of soil and roots in normal position; also styled Layer Transect (Clements); bisporous, having two spores; bisstrate (stratum, a layer), used when indumentum is in two layers, the outermost falling off and disclosing the inner, as in Rhododendron falcatum Balf. f. (Balfour).
Blastea, a spherical shell formed of a single layer of cells, developed from a coenobium; adj. blast’ean; Chlorophytes (Chlorophytae), Volvocineae; Blast’eno-spore (+ Spore), a plurilocular spore; blastocoelian (κοίλος, hollow), applied to the central cavity of Volvox (Janet); Blast’ogen (γένος, race), Poulton’s term for Bateson's use of “Mutation,” cf. (3), that is, blastogen’ic Varia’tion; Blast’opore (πόρος, passage), an opening from the Archenteron or cyst in the same alga (Janet); Blast’ula, the mother-cell in Volvox of the sexual elements (Janet).
blechnoid (εἰδός, resemblance), like the fern Blechnum Linn.
Blemato’gen (βλήμα, βλήματος, coverlet; γένος, offspring), the universal veil in Pholiota Fr. (G. F. Atkinson).
Blend Hy’brid (+ HYBRID), allelochemical factor pains blend in an intermediate form (Atkinson).
Bleph’aroplast, add, (2), by zoologists applied to a centrosome, the centre of the kinetic activity of the nucleus (Hertwig).
blister’ed, old term for “bullate.”
Blos’som, add, (2), corolla.
Bod’ies, suspens’ory, = Pseu’do-vacuoles.
Bod’y, central, incipient nucleus.
-bole, “combining term for propulsion” (Clements).
Bord’ered-pores of Sphagnum Dill., openings surrounded by a distinct flattened ring (Russow).
borragin’eous, pertaining to Borago Linn.
botryopt’erid, allied to the fern Botryopteris Presl.
botry’ic, Worsdell’s term for botryoid, like a bunch of grapes.
Bot’ulism (botulus, a sausage), a disease due to a spore-forming anaerobic bacterium (Conn).
brachybiosete’monous (στάμον, stamen), having non-persistent stamens (Delpino); brachyclad’ous (κλάδος, a branch), having short branches; brachydact’ylous (+ DACTYL), the short ultimate rays of Nitella Ag.; Brachyne’ma (νημα, a thread), the condition in meiosis derived from Strepsinema (Chodat); Brach’ysteles, pl., short upper branchlets in Characeae; Brach’ymeiosis (μείωσις, reduction), a second meiotic reduction; Brach’ysomes (οὐμα, a body) = Tetra’ds.
Bracte, R. A. Salisbury’s spelling of Bract.
Bractea, add, (2) Paralatre’s term for connective in conifers; bract’eoid (εἴδος, resemblance), bract-like or bracteate.
bradycarp’ic (βραδύς, slow; καπός, fruit), fruiting after the winter, in the second season after flowering (Wittrock); Bradyspore (σπείρα, I sow), applied to a plant which disperses its seeds slowly (Ulrich); adj. bradyspor’ous; cf. ANEMOC’HOIROS.
Branch-leaf of Sphagnum Dill, a highly developed leaf from the middle or lower part of a sterile spreading branch (Horrell); ~ -gaps, in a fern stele, openings in the central cylinder where a branch is given off (Jeffrey).
Breech Fertilization (Jeffrey) = Chal’azogamy.
brevifur’catus, applied to shortly forked branchlets of Nitelleae; brevischist’ostyle (σχισω, I split, + STYLE), a floral type, with short style, “stigma badly formed, and style folded some distance down” (Gates).
Brig'allow Scrub, formed chiefly of *Acacia harpophylla* F. Muell.

Brochone'ma (βροχός, a loop; νήμα, a thread), the stage of nuclear division in which the spireme is regularly looped in number corresponding to those of the chromosome pairs (Gates).

Brome'tum, an association of *Bromus* Linn.

Bronz'ing, a form of sun-scorch, due to want of moisture in the soil, or defect in root-action during hot, dry periods (Harshberger).

Bul'bil, add, (c), spore-balls of *Urocystis*, Rab. etc. (Hobson).

Bulbo-gemma, bulbil (Bischoff).

bul'ging, in old writers for gibbous.

Bul'k-ra'tio, "the ratio of the diameter of the axis to that of the primordium arising on it" (Church).

Bunch, Withering's term for raceme.

But'tressa, plank-like growths at the base of certain trees.

Bux'e'tum, an association of *Buxus* Linn.

By-fruit, an unusual form of fruit (Van de Walk).

Ca'ble Type, "consolidated filamentous soma" (Church).

Cakile'tum, an association of *Cakile* Linn.

Calamagrostide'tum, the same of *Calamagrostis* Adans., shortened by Clements to *Calamagrostetum*.

cal'amoid, long slender elastic stems as in *Calamus* Linn.

cal'cipete (peto, I seek), seeking chalky soils (Druce).

callyly'tic (+ Callus, λόξος, a loosen), S. Moore's term for a ferment which dissolves callus from sieve-plates.

Cal'lus, add, (2) definitive ~ or fl'nal ~, shows dissolution of the functional elements of the phloem; sea'son'al ~, temporary callus. Cal'lus Pads, that deposited on the sieve-plates of algae (Sykes); ~ Rods, that which passes through the apertures of sieve-tubes (Sykes afterw. Thoday); Harshberger divides the various kinds, as ~ hetroplas'ia, heteroplastic tissue formed; ~ homooplas'ia, from wound-stimuli; ~ hyperto'rophy, abnormal growth with voluminous vesicles; ~ metaplas'ia, from metaplastic change of the cells affected.

cal'ycled, having a whorl of bracts exterior to the true calyx.

camanu'ceous, belonging to *Campanula* Linn.

Cam'pine, African Congo savannah (Warming).

Ca'n'an (Span. a hollow), or Can'y'on, a deep gorge worn by water, between high and steep banks.

Carbohydra'ses, carbohydrate-splitting enzymes.

Car'damine'tum, an association of *Cardamine* Linn.

Carice'tum, pl. -ta associations of *Carex* Linn. as ~ inflatae, of *Carex inflata* Huds., ~ sempervire'n'tis, of *Carex sempervirens* Vill., cf. Stric'tetum; other sections are Mag'no- ~, and Par'vo- ~, of large or small species (Warming).

car'i'nal (carina, a keel) Air Spa'ces, cavities in the fibro-vascular strands of *Equisetum* by the ridges (Jeffrey).

Car'pel, add, (2) a component only of a megasporophyll (H. H. Thomas); (7) ps'en'do-valve (or semi-sol'id ~), with placentae displaced from edges to centre, and double central strand splitting there at maturity (Saunders); sol'id ~, of a fibro-vascular cord, with a few lateral veins or reticulations (id.); valve (or hollow ~), midrib inconspicuous, with reticulate vallation, more or less of leaf-shape (id.).

carpospor'if'rous (+ Carpospore, fero, I bear), producing spores in *Floridae* algae (Phillips); Carpospor'ophyte (+ Sporophyte), a plant which bears carpospores.

Caryomer'ites, pl. (μέπος, a part) = Idiomer'es; they may be monochromosomic or polychromosomic (Chodat); Caryophy'ta (φυτον, a
<table>
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<th>Caryophyta</th>
<th>chasmophilous</th>
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<td>plant), nucleated plants (Macfarlane).</td>
<td>Chasmoph'ilous,</td>
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loving crannies or chinks in rocks; Chasmophy'ly, the condition of cranny-loving plants.

Chelanth'oid (εἴδος, resemblance), allied to or resembling the fern genus Cheilanthes Sw.

Chelocystid'ia, pl. (+ Cystidium, bodies of unknown function, from the face of the lower edges of gills in Agarics (Buller); cf. Pleurocystidia.

Chemosynthesis (σύνθεσις, composition), responsive to chemical action; cf. Photosynthesis.

Chernogens, continental soils developed under a small range of rainfall, permanently grass-covered, as the Russian black soils.

Chias'ma (χιάσμα, two lines crossed), of four chromosome strands, two fuse at crossing, one strand uniting endwise with the other (Janssens);

Chias'motype (+ Type), the basis of "crossing-over" (Chodat).

Chilling, exposure of perennial plants to wintry cold, as necessary for early growth in the following spring (Coville).

Chimaë'ras: hyper ~, is due to similar fusion producing abnormal fruits (Harshberger); nuclear ~, pl. exchange of chromosomes (Lotsy);

perichaetial ~, having a skin of different quality from the core (Bateson); sectional ~, a mutant arising from mixed cells; sectorial ~, due to bud-variation in a branch; Correns adds: albopelliscularis, abbotamica'tus, chlorotid'mis, leucoderm'is, pseudoleucoderm'is.

Chlamydo:bacte'ria (+ Bacteria), bacteria having strong affinities with algae (Conn); Chlamydomone'ta, pl. communities of Chlamydomonas and diatoms (Warming).

Chlorali'no (+ Albino), variegated with green and white in the leaves (Shull); Chlor'en'chym, see Chlorenchyma; chlorococc'cine refers to algae without vegetative cell-division, but only by zoogonia or motile gametes; formerly termed "endospherine" (West); chlorococc'coid, resembling in habit the genus Chlorococcus Fr.; Chlorophyll'in, cf. Chlorophyllan; Chlorophyll'oplast (φύλλον, a leaf; πλαστός, formed), a chromoplast containing chlorophyll as colouring matter (Janet); Chlorophy'ta, green algae; Chlororasta'loliths, pl. (+ Stalolith), starch-containing chloroplasts; chlorotid'mis (δέρμα, skin), with greenish-yellow subepidermal layer and a green core, in Arabis Linn. (Correns).

Chol'ine (χολή, bile), a base derived from lecithin.

Chomophy'tic, adj. cf. Chomophyte.

Chondrioco'n'tes (κοντός, a pole), elongated forms of misochondria from which chromoplasts are derived (Guillermand).

Chorisep'al'y (+ Sepal), having the sepals free; chorolog'ic (λόγος, discourse), topographic (Rübel);

Chorology, the study of migration or area of distribution (Jaccard).

Chott, a salt-spot in the Algerian desert.

Chromid'iosome (σώμα, a body), the ultimate individual particle of chromatin, either inside or outside a nucleus (Minchin); Chromogen'esis (γένεσις, origin), colour produced by bacteria (Conn); Chromolip'oids, pl. (λίπος, grease; εἶδος, resemblance), a fatty colour allied to carotin (Czapek); Chromone'ma (νήμα, a thread), a ripe chromosome of an achromatic core round which is wound a chromatic fibre, as in Paris Linn. (Vejdovsky); chromo-ph'ilous (φιλέω, I love), readily taking stain; Chromoplast, add, (2), used by Janet for a granule containing chlorophyll as a colouring matter; chromosomat'ic, relating to chromosomes.

Chro'nology (κρόνος, time; λόγος, discourse), the appearance of plants in the history of the earth (Rübel).

Chroolepoid'ly = Chroolepoid.

Chrysoherm'id'in (+ Hermid'in), a labile chromogen in Mercurialis Linn.
Chrysophyta

Chrysophy'ta, a group of algae including Chrysophyceae and diatoms.

cichor'aceous, related to Cichorium Linn.

cil'olate, adj. from Ciliola; Cil'iospore (+ Spore), a swarm-spore with a coat of cilia (Minchin).

Cing'ulum, add, (2) the girdle in Peridineae which separates the epivalve from the hypovalve (West).

 Cir'hoids, pl. (ei'dos, resemblance), balls of Cladophora Kütz, which are formed of coiled shoots which do not change their shape.

Clad'ie'tum, an association of Cladium P. Br.

Clad'ina Heaths or Tun'dra, barren peaty lands with plenty of the lichen Cladina Nyl.

Clad'oo-androgonid'ium (+ Androgo'nium), a male androspore or merid, terminal or intercalated (Janet); cla'do'shed, becoming branched (Benson); Cla'do-gonid'ium (+ Goni'dium), the gonidium which gives rise to a merid, either intercalated or subterminal (Janet); Cla'do-gynogonid'iu'm, a female merid (Janet); Cladoph'ora Balls, rounded accumulations of shoots of that algae; cladophora'ceous, allied to Cladophora; Cladophyll'um, add, (3) the special bract in Schoenocampium Nees and Kobresia Willd., the utricles being free at the edges; it may be o'creaform, horn-shaped and more or less attached, or utric'uliform, approaching the guise of the normal utricle (Kükenthal).

Clan, the next group below a society, usually local and restricted (Clements).

Clas'totype (κλαστός, broken; τύπος, a type), a fragment from the original type (Swingle).

cloth'roid, resembling the fungus genus Clathrus Mich.; latticed.

clan'sus (Lat. shut), used of closely placed verticils.

Cla'vis (Lat. a key), an artificial key to a genus or other group of plants, by contrasted characters leading to speedy determination of the units.

cleistocarp'ous, add, (2) used of the peritheciurn of a fungus which has no opening (Harshberger).

Cle'ma (κλήμα, a twig), employed for "branchlet."

clepsy'droid, add, (2) applied to pinna-traces in fossils when in two rows (Scott); Clepsydrop'sis is the state.

Cli'max, the full perfection and development of an association (Clements); adj. climat'ic [= climact'ic]; edaph'ic ~, due to soil; temp'orary ~, balanced growth for a period: ~ Communi'ties, stable type, no further change unless surroundings alter (Tansley and Chipp): ~ U'nings, association, consociation, society, clan (Clements, 1916); ~ Zones, changes due to amount of controlling factors (id.);

Cli'sere (+ Sere), a successional development from one climax to another (id.); adj. cli'seral; Cli'stase (+ Stase), when the climax layer of each stage differs from the preceding or succeeding stage (id.); Cli'strate (+ Strate), change from one climax to another (id.).

Clis'tog'am'y = Cleistogamy.

clo'nal, relating to a bud; Clo'ne, add, (2) the group of plants descended asexually from a single ancestor (Shull); Clo'notype (τύπος, a type), a specimen propagated from the original type by a bud or cutting (Swingle).

Coagula'tion (coagulatio, a curdling), the change from liquid to thick consistency by chemical action, as the formation of a Gel; Co'ag'ulum, hard jelly.

Coal, Moth'er of, charred wood found in the seams (Jeffrey).

Co-dom'inants, pl. used of competing plants; Co-effic'ient Genet'ic, defined as "dynamic behaviour" (Fuller).

coeno'bie, relating to a Coenobium as Volvox (West); Coenospe'cies (+ Species), the total sum of possible
combinations in a genotype compound (Holmberg).

Coenosium (κοινός, common), a community of plants, further subdivided as Biocoenosium, Iso-

Complementary

Col'ony, an initial community of two or more species, the sign is -ale, as "Hordeale" (Clements). Col’ony, Mo’tile, an associated group of algae, not fixed to one place; Palmelloid ~, in form recalling Palmella Lyngb. Col’onies, pl. add, (2) of bacteria grown in plate culture from a single bacterium (Conn).

-coclus, Clement’s suffix for habitat forms, classically—cola.

Columnel’la, add, (6) the central column in the pollen-chamber of the apex of the megasporangium of a cycad (Jeffrey).

comal’ius (Mod. Lat.) having comal tufts (Dixon).

Communities, pl. grouping of plants, they may be fi’nal ~, initial ~, or transi’tional ~ (Warming); cf. Clan.

Compatibil’ity (L. Lat. compatibilitas), botanically means capable of self-fertilisation; adj. compat’ible, fertile.

Compensa’tion-strand (compensatio, weighing), in Saccoloma Kaulf., strands given off by the inner ring of the stele, connecting with outer ring (Bower).

Complementa’tion (complementum, filling up), division of a phyllome, each portion acting as a complete whole (Penzig): Complement’ary Associa’tion, where competition is avoided by the various species rooting at different depths, and coming to the surface at various times of the year (Woodhead).

Com’plex (complexus, comprise), or Forma’tion ~, a higher grade than formation in respect of plants

(Waterman); ~ Mut’a’tion, one with simultaneous changes in several factors in one region of a chromosome (Nilsson-Ehle).

Conduct’ive Hy’phae, those which in dry-rot convey moisture.

Con’dyle, add, (3) the basal granule of Gymnodiinaceae (Dangeard).

Cone-scale, the peculiar cone of Cheiro-

Coniferophyte, a coniferous plant, or one akin to Coniferae.

conioph’ilous (κόνος, dust; φίλος, I love), applied to lichens which benefit by dust (Sernander); Co-nid’iospores pl. (+ Spo’re), non-

Conjugant (conjugo, I unite), a sexual individual of two conjugating, partial karyogamy; Conjug’a’tion, total karyogamy.

Conjug’ation (conjunctio, union), the pairing of two univalent spiremes to become the heterotype chromosome (Digby); conjunc’tus when antheridia and oogonia of Characeae are at the same nodes.

Connect’ive Flaps, vestigial imbricating laminae in gymnospermic cones (Church).

Conn’iving, Herbert’s term for con-

Conodrymlum (δρυμός, a wood); Conophor’ium (φορέω, I bear), synonyms of Conisilvae.

Con’sere, cf. Cose’re.

conspecif’ic, -cus (Mod. Lat.) belonging to the same species; Con’stancy, drawn from the number of times met with in the association in which the plant grows.

Con’tour, cf. Double Con’tour; Cont’-

Con’tary Cross, a hybrid with reversed parentage (H. J. Müller). Con-ver’gence (vergo, I turn), similar results obtained by different methods (Church).

coproph’y’tic (φυτόν, a plant); copro-

Cor’alline, applied to the roots of cycads, due to root-nodules.
cord'iate, Wieland's term for any species of Cordaites Unger.

cordiller'ean, belonging to the Cordilleras (Clements).

Corid'sospores, misprint for Conidio'spores.

Cormophytast'ers (aster, suffix of inferiority), mosses (Trelease); cf. Pseudocormophytes.

Cornes'tum, an association of Cornus Linn.

Correla'tion (cor for con, relatio, carrying back), the inhibiting power of growing buds of Bryophyllum Salisb. have upon the growth of other buds on the same leaf (J. Loeb).

Coryl'es, an association of hazels, Corylus Linn.

Cory'laphad, an alpine meadow plant (Clements).

coryphae'us (κορυφαίος, leading), notable in its genus.

Co'sere or Con'sere (Co + Sere), a series of unit succession in the same spot; an organic unity (Clements);

Co'stase (+ Stase), two or more stases, the record of a cosere (id.)

Co'state (+ Strate), a layer of inorganic matter between stases (id.)

Co'type (+ Type), one of several specimens originally described, without specification of one as the Holotype; Syntype is a synonym.

Cream'ing, in plant-cells, the ascent of protein particles in the cytoplasm, as fat globules cream to the surface of milk (Small).

crenic'olous, dwelling in brooks fed by springs.

Crest: dor'sal ~, dorsal scale in fan-leaved palms (Arber); ven'tral ~, ligule in the same (id.); crest'ing, the graded forking of an organ.

Cre'tin (F. idiot), a monstrous Lathyrus flower with straight stigma protruded from a cleft in the keel (Bateson).

Cribe'lum (Lat. a small sieve), applied to the network of canals connecting the cells of Volvox (Janet).

Cris'ping, the copious marginal incision of a leaf.

Crist'a (Lat. a tuft), used by Druce for the ligule of palm-leaves.

Cross'over or Crossing-o'ver, the interchange of factors in chromosomes, opposed to Linkage; cross-fert'ile, a fertile hybrid: double ~, parents mutually crossed; Cross-frag'ment, applied to chromosomes which have parted and crossed over (R. T. Hance); ~ ster'ile, a sterile hybrid.

Crotone'tum, an association of Croton Linn.

Crym'ion = Crymi'on; Cryoplank'ton (+ Plankton), the plankton of perpetual ice and snow, polar and glacial.

Cryphy'brid (+ Hybrid), a hidden hybrid, apparently a good species, but its nature shown by its reproductive cells being more or less abortive (Jeffrey); Cryptocotyle'do'neae = Monocotyledons.

crystallog'enuous, forming crystals, as ~ Cells (Hillhouse).

Cultivar, a botanical variety, originated under cultivation (L. H. Bailey); Cultiform, a variety risen from culture (Sprague); Cultigen, (1), a plant, group or series, only known in cultivation, opposed to Indigene; (2) Cultigena, T. A. Sprague's suggested Latinized form for Cultigen; Cultispecies (+ Species), one which has arisen under cultivation (Sprague).

curl'ulate (cumulatus, piled up), "heaped on one another" (Her bert).

Cupel'lea (cupella, a small cask), a curved colony of merids (Janet).

cupressin'eous, allied to or resembling Cupressus Tourn.

Curvule'tum, an association of Carex curvula All.

C'ntin, recently defined as a substance present as a continuous external lamella on the outer wall of the epidermis of leaf or stem; cu'tin'ized, transformed into Cutin.

Cyanoherm'idin, cf. Hermidin.
cyath'eoid, like the fern Cyathea Sm.
cyc'a'deid, resembling Cycas Linn.;
cycada'ceous and cyca'deous, akin to that genus; Cy'cadophyte (ψυτρόν, a plant), applied to the whole group of cycad-like plants (Wieland).
cyclo'peroid, used for pinnules like those of Cyclopteris Brongn.
cymbal'iform, the shape of the corolla in Convolvulus Linn.
cymbomor'phus (κύμβος, a cup; μορφή, shape), cup-shaped (I. B. Balfour).
Cynodactyle'tum, an association of Cymodon Dactylon Pers.
Cyst'ospores, add, (2) encysted zoo-
spores of Thraustotheca Humph.
Cyte = Cell; Cy'tea, a monoplas-
tagellate (Janet); Cytec'tydysis =
ECyDySIS; Cy'tioplasm, anglicized form of CY'TOPLASMA; Cytkine'sis,
(1) form suggested for all terms of
KINESIS and MITOSIS; (2) division
of cytoplasm (E. B. Wilson);
Cytolip'oids, pl. (λίπος, grease), the
fat-particles contained in the plant-
cells (Czapke); Cytomi'crosome
(+ MICROsome) = CHONDRIOsome.
Dac'tyl, the ultimate ray of a branch-
let of Nitella.
Darwinizing, fractional culture (Conn).
dav'al'ioid, like the fern Davallia Sm.
Day'Plants, long day plants; if
exposure to light is unduly short-
ened, flowering is prevented or delayed; short day plants, short-
ened light period hastens blooming.
Da'ya, a poorly drained area in
Algeria, slightly undulating, but
not salt.
der'aploid, having five double sets of
chromosomes (Hurst).
decomposed', applied to cortex of
gelatinous, indistinct, or amorphous
hyphae (A. L. Smith).
dec'uple, ten sets of chromosomes
(Blakeslee).
Decurta'tion (decur'to, I mutilate), the
spontaneous fall of branches
(Heckel).
decur'ved (decur'vus, Mod. Lat.), bent
downwards, deflexed.

dedifferentia'tion (de, not; differens,
distinct), loss of DIFFERENTIATION;
an apparent approach to the emb-
ryonic condition (Child); De-
fertiliza'tion (+ FERTILIZATION),
when insects clear away the pollen
(N. E. Brown); Deforma'tion (+ FORMATION), changes of surface,
rapid or slow, due to flood or
earthquakes (Clements); adj. de-
forma'tional; Degenera'tion, add,
(2) when chromosomal, due to
inheritance from parents (Gussow).
dek'asome, = decaploid.
deliques'cent (lique'scer, to melt),
branishing so that the stem is
lost in the branches; opposed to
excurrent; Demineraliza'tion
(minerale, Mod. Lat.), by action of
hydrofluoric acid to free fossils
from extraneous matter (Jeffrey).
dendro'cola, dwelling on trees, epi-
phytic; dendro'log'ic, relating to
trees.
dennstaed't'ioid, like the fern Denn-
staedtia Bernh.
Denu'da'tion, add, (2) area may be
bared by a parasitic plant as Cus-
cuta salina Engelm.
Dep'ea (δέα, a beaker), a cell with
a cap capable of taking in nourish-
ment (Janet).
Depollina'tion (+ POLLiNA'TION),
caused by insects eating pollen from
anthers or stigmata (N. E. Brown).
Deposi'tion (deposito, placing), fresh
soil added as by floods; progres'sive
~, the process continuing; retro-
gres'sive ~, when the fresh earth
is gradually removed.
Dermatoplas'm, the living protoplasm
asserted as forming a part of the
cell-membrane in plants (Wiesner).
Deschampsie'tum, an association of
Deschampsia Beauv.
Deter'miner (deter'mino, I limit), a
unit producing a visible effect
independently of other units of
inheritance (Coulter); they may
be du'plicate, or plu'ral (Shull),
reinforcing each other.
deter'sile (deters'ilis, can be wiped),
referring to the wool on young
branches which readily falls or is cleaned off (I. B. Balfour).

deutoplasmic (πλάσμα, that formed), metabolitic granules of reserve food material stored in protoplasmic substance (Minchin).

dextrotropic (δεξίος, right-hand; τροπή, turning), (1) the movement of Volvox in normal rotation; (2) the direction of spiral cleavages; dexter, used of respective daughter-cells resulting from spiral cleavage (Treadwell).

diagnostic, add, (2) used for plants whose shoots protrude through the soil; cf. epigeic (M. Vahl).

Diagnosis (διάγνωσις, discrimination), shortly-drawn characters to define a species, genus or family (Bischoff, supplementing A. Gray's definition).

diallel (διὰλληλος, crossing), of lines which cross (Schmidt).

diarthrodaclous (+ arthrodactylous), in Characeae each dactyl consisting of two cells; Diate'sia, pl. (ετήσιος, annual), above-ground shoots lasting the entire year (Krause); Dicar'yon (κάρυον, a nut), a binucleate cell of secondary hyphae in Coprinus fimetarius (Bensande); Diclin'ery (Church) = Diclinism; Dicotide'yony, the condition of being dicotyledonous (Jeffrey).

dicksonoid (είδος, resemblance) like the fern Dicksonia L'Hérit.

Dictyoste'ly, having a Dictyoste'le.

Diécodichog'amy (+ Dicho'gamy), some flowers having male flowers in advance of the female, and in others the reverse (Delphino); Di-Hy'brid (+ Hybrid), cf. Dihy'bridism; ~ Ra'tio, the Mendelian proportions of 9:3:3:1; di-m' erous (μείρος, part), seedlings which have two cotyledons and two primordial leaves; Dim'ery, the condition just described (Church).

dineur'oíd, used of pinna-traces in Zygopteridae, fossil ferns, when in four rows as in Dineuron Scott (Scott); dio'e'cious, ~ macran'drous in Oedogonium, where the antheridia are little less in size than the female filaments, and ~ nannan'drous, male plants very small (West); diph'otic (φώς, light), leaves set on stem at an angle to get more light on the upper surface than on the lower (Clements).

Dinoflagella'ta (δίνος, rotation, + Flagellata), infusoria possessing more than two flagella for their propulsion.

Dip' laxy (διπλάζον, double), the division of an axial organ into two parts.

Diplobi'ont (διπλόος, twofold; βίος, life), a plant flowering or fruiting twice in each season; adj. diplobi'on'tic; dip'loid, add, (2) the result of two gametes (Lot'sy); diplost'h' anous, (στέφανος, a crown), a double circle of stipulodes at the base of each whorl of branchlets in Characeae.

dip' terid, resembling the genus Dip'teris Reinw.

Dirup'tion (dirumpo, I break), division.

Disbud'ded, the nascent buds removed; ~ mu'tant, cf. Mu'tant.

Dis'oolith (λίθος, stone), a coccolith shaped like a disc (Lohmann).

dis' color, add, (2) "also any green colour altered by a mixture of purple" (Lindley).

di'sco'tious (dis = not; contiguus, touching), used by I. B. Balfour for rhododendron leaves having gaps between them.

Dis' or Disks, pl. (discus, a quoit); ~ fil'aments, tubular proliferation of thallus-cells in Ulna Linn. (West); cf. Separation-discs.

Disjun'ction (dis = not; junctio, joining), (1) separation of a bivalent spireme into two univalent spiremes; (2) separation of a bivalent or heterotype chromosome into two entire chromosomes (Digby).

disome or dis'some, diploid.

Dissociation, add, (2) fission (Digby).

disterigmatic, having two spores abjected from each of the basidia of certain fungi (Buller).
Distribution

Distributed (distributio, division), the partition of plants over the world according to their needs of growth, temperature, soils, and aspects.

Distroph'ophytes, pl. (+Trophophytes), plants of firm soil with full proportion of moisture (Gadeceau); ditriploid (+triploid), applied to Rumex Acetosella Linn., with a single pair of sex chromosomes and another pair transitional between sex-chromosomes and autosomes (Gates).

Divulsion (divulsus, torn asunder), disruption.

dizygous, (ζυψος, a yoke) dependent on two rows of chromosomes (Frost).

dodecaploid = dodecaploid (Blakeslee).

dominance, preponderance in surface occupied; Dominants, add, (4) genera which have persisted through geologic times to the present (Clements).

Double Reciprocal, hybrid obtained from reciprocally crossing two previously crossed hybrids (De Vries); cf. Reciprocal Hybrid; ~ Roots, when lateral roots of monocotyledone occur in the internodal between two protoxytem bundles (Jeffrey).

drosophile (δροφως, dew; φιλεω, I love), fertilized by dew (Errera).

Dryade'tum, an association of Dryas Linn.

dry'mophytes (δρυμως, coppice; φυων, a plant), bushes and small trees, chaparral and woodlands (Clements); Dry'on, scrub climax (id.).

Dryophant'in (φαυνάζω, to appear), a pathologic colouring-matter from galls produced by Dryophante divisa Adler, on leaves of British oaks.

dryopterid, like the fern Dryopteris Adams.

duodecuple, twelve sets of chromosomes affected (Blakeslee).

duplex, two dominant factors (Blakeslee).

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Durifrutice'ta, pl. associations of Macchia and Garrigues; Duri-ligno'sa, pl. (lignosus, woody), hard-wood plants; Duripra'ta, pl. (pratum, a meadow), pasturage; Durisil'vae, woods of firm-leaved trees.

Dynam'ic Beha'viour, the part played by the species in the development of the community.

dys'ploid, non-multiploid variation in the number of chromosomes, as Carex Linn.; Dysploi'dy is the condition (Jeffrey); Dysteleolog'ue, H. Mueller's term for Dysteleo-log'ist; dystropi'c, Loew = dy stereous.

ecosic, relating to Ecesis; ec'tize, to colonize.

elec'teus (ἐλεκτής, to be chosen out), selected.

Ecodichog'amy (+Dichogamy), monoecious asynchronism in fertilization; Ec'o'graph (γραφω, I write), an instrument to measure the physical factors of a station or habitat (Clements); Eco'logy, the modern spelling for the original ΟΕCΟLOΓY; regulated by biotic, climatic, edaphic, and orographic factors; Ec'ophene (φαινω, I appear), the reaction of Ecotype to extreme habitat factor (Tureson); Ecoproteran'dry (+Proterandry), staminal flowers maturing before the pistillate (Delpino); Ecoproterog'yny (+Proterogyny), pistillate flowers maturing before the staminate (Delpino); Ecosp'e'cies (+Species), a species modified to fit its locality (Turesson); Ec'otype (τύπος, type), a habitat type of plant, a sub-unit of the Ecosp'e'cies resulting to conditions of environment; adj. ecotypi'cal.

ectendotrophic (εκ-, Enotrophic), combined type of parasitism, inward and outward (Melin); intermediate intercellular infection in cortical tissues of mycorrhiza (Rayner).
ectocarpoid, resembling the alga £c^tocarpus Lyngb.

ectokinet'ic (κινητός, movement), applied to a sporangium which dehisces by epidermal mechanism; cf. ENDOKINETIC (Jeffrey); Ecto-plasts (πλαστός, moulded), cyano- phyceen granules in blue-green algae (Fritch); Ect'otroph (τροφή, food), a parasite feeding from outside its host; Ectothio-bacteria (θείων, sulphur, + BACTERIA), which form sulphur outside the cells; Ectothioleuca'ceae, colourless sulphur bacteria with the sulphur outside the cells.

Edaph'ic Cli'max or ~Fo.rma'tion, "an association complex which is related to a specific physiographic area" (Nichols); Edaph'on, the qualities of the soil as regards plant-growth (France).

effig'urate, add, (3) having a thallus like the lichen Placodium DC.

Elect'rolyte (λυτρόν, a release), (1) a compound decomposable by an electric current; (2) the current of electricity evoked by irritation in the pulvinus of Mimosa Linn. (Blackman).

El'eplast, Jeffrey's term for ElaioplasT.

elep'idote, destitute of scurvy scales, non-lepidote.

Eluviation (eluvio, washing away), elution, decanting the finer particles from the heavier by a stream of water; adj. eluvia'ted.

Emargina'tion (ε, from; margo, edge), notching of the leaf-apex.

Emersipra'ta (emersus, emerged); pra'tum, a meadow), upper portions of moist meadows.

E'mophytes, pl. (ἡμών, I sink; φυτόν, a plant), entire plant submerged, no functional stoma'ata (Clements).

-end for -anum, layer societies (Clements).

encap'suled, certain protophytes with a firm envelope (Fritch).

Encyoneme'tum, an association of fresh-water algae, inclusive of Encyonema Kütz.

endobasid'ial, cf. Endobasidium; endoco'nid'ial, relating to endoconidia; Endoconideoph'tora (φορέω, I bear), the organ producing endoconidia in Thielavia Zopf; End'o'derm, cf. Endodermis; endokinet'ic (κινητός, movement), a fruit opening by mechanism of internal origin; cf. Ectokinetic; Endolith'ophytes, pl. (λίθος, stone), lichens which penetrate into rock, adj. endolith'ic; End'ome, the inner layer of Van Tieghem's Placodium, the phellogen, cf. Exome; End'omixis (μίξις, a mingling), the intermingling of nuclear and cytoplasmic substances within the cell; reorganization without conjugation (Woodruff); Endopet'rion, growing in the interstices of rock (Gams); endophilo'ic (φιλοίος, bark), of the inner bark; End'oplasts (πλαστός, moulded), certain bodies in the centroplasma of the blue-green algae (Fricht); Entorhiz'oid (πίθα, a root; εἶδος, resemblance), a rhizoid from the foot of the seta of a moss and growing down within the tissue of the gametophyte; the root of the sporophyte; Endoscop'ic (σκοπέω, I see), the apical pole of a plant-embryo when turned towards the base of the archegonium, as in seed-plants (Bower); End'osome, a vesicle at or near its centre, containing chromatin; Endo-sphaerosi'ra, a small form of male plant in Volvox (Janet); End'otroph (τροφή, food), a parasitic fungus feeding internally on its host; Endothiobacter'ia (θείων, sulphur, + BACTERIA), bacteria which temporarily store sulphur within their cells; Endothioleuca'ceae, colourless sulphur bacteria; Endothiorhoda'ceae, purple sulphur bacteria; En'gram (γράμμα, a letter), the tendency in the nucleus of a somatic cell to be transferred to a sexual cell so as to transmit the special structure or function (Semon).

enne'asome, enne'saploid with nine chromosomes (Blakeslee).
Ensporation (sPORAtion), applied to the reproduction of bacteria (Hort).

Entelechy (ἐντελέχεια, an actuality), (1) actuality, (2) the condition of "intensive manifoldness" with suspension of certain vital functions by a non-spatial, non-perceptual, hypothetical agent (Driesch); adj. entelech'ian.

entomorph'ilous, add, (2) fungi living on insects (Clements and Pounds).

Enzyme; genetic, a formative substance; heterolytic, splitting other substances into more than one; homolytic, turning the subject into more of the same nature; enzymatically, caused by enzyme action.

Eophytic (φυτόν, a plant), used regarding the earliest vegetable life (Saporta); Eoplasm (πλάσμα, that formed), an assumed primitive substance antedating protoplasm (Troland); E'osere (+Serē), a climax of vegetation during an eon or era (Clements); adj. eos'eral; E'ostase (+Stase), a series of layers resulting in part from an eosere (id.); E'ostrate (+Strate), the sum-total of all the strates in the same great vegetative era; a succession after a stase when the inorganic matter exceeds the organic (id.); divided into cenophytic ~, mesophytic ~, paleophytic ~, according to age, as denoted by the terms; all taken together constitute a geostrate.

epeirogenic (ἐπίειρος, the mainland; γένος, race), movement raising continents; cf. orogenetic.

Ephaptomenon (ἐφάπτομαι, to be fastened on), the adnate type of plants (Gans).

epharmonic, add, (2) ~-adaptation or ~-varia'tion, "change in the form or physiological behaviour, beneficial to an organism, evoked by the operation of some environmental stimulant" (Cockayne); Epibiotic'a, pl. (βίος, life), survivors of a lost flora (Ridley);

Ere'mophyte's, those growing on stone or rock, as do many lichens (Wetter).

Epilose (ε = without, + πιλΟΣ), destitute of hairs.

Epiontologic (έντα, things existing; λόγος, discourse), relating to the origin of individuals; the condition is Epiontology; Epiphytot'isms (πτωτός, fallen), epidemic plant diseases; adj. epiphytotic (Harshberger); Ep'iplasts (πλαστός, moulded), spherical bodies within the cytoplasmic lamellae and the blue-green algae (Fritsch); Epi-podium, Bower's term for the apical part of the leaf; epistatic (στατικός, caused to stand), Bateson's term for dominant (Hurst); cf. hyosta'tic; epiterra'nean (terra, the earth), in amphicarpic plants the above-ground fruiting portion, as opposed to the subterranean, as in Sigillaria decumbens Bernh.; Epixyloneae (ξύλον, wood), plants growing on timber, as lichens and fungi (Mirbel).

Equiset'tum, an association of Equisetum Linn.; equiseto'id (εἰςος, resemblance), hairs on stem and leaf of Botryopteris forensis Ren., recalling a miniature Equisetum; Equiseto'sis, poisoning from equisetum as fodder (Pammel).


Erem'ion (ἐρημός, desert), originally Eremi'um; a desert formation (Clements); Ere'mophytes, pl. (φυτόν, a plant), desert and steppe plants (Warming).

Ergology (λόγος, discourse), Delpin's equivalent for Biology.
erileuc’sus (ἐρυλευκός, white on the surface), lustrous white (Balfour).
Erin’emum, pl. Erin’eas, Phytotus mites producing galls on the surface of leaves, resembling fungi.
Eripleogn’amy (ἐρύς, strife, + Pleo-gamy), Loew’s term for flowers, one each with stamens and pistils, perfect, also andromonoecious and gynomonoecious.
Eros’ion, waste by water in various forms; progressive ~, deposits; retrogressive, removal (Cowles).
Er’rera’s Law, “a cellular membrane at the moment of its formation, tends to assume the form which would be assumed, under the same conditions, by a liquid film desti-tute of weight.”
Ese’tulose (+ setulose), destitute of bristles.
Esparte’tum, an association of esparto grass, Stipa tenacissima Linn.
Es’ters, pl. (invented by L. Gmelin), ethereal salts or compound ethers; many are fragrant and are used for artificial fruit essences; Es-terases, fat-splitting enzymes like Lipases.
Etheogen’esis (ἐθός, custom, + Genesis), parthenogenesis of a male individual (Prowasek).
Ethnobot’any, popular as folk-botany.
E’thomere (ἐθός, custom; μέρος a part), when the normal number of chromosomes are present (Della Valle).
-eto’sum, group name denoting the chief species of a subassociation, as “Cistelosum,” concerning Cistus Linn.
Euaposp’ory (+ Apospory), no sexual act of fertilization; Eu-bacter’ia (+ Bacteria), or Haplo-bacteria, true bacteria (Conn); Eu-chro’mosome (+ Chromo-some), an autosome; Euc’y’clic Type, used of flowers which are diplostemonous or pentacyclic, as Geranium Linn. (Church); Eu-geom’phytes (+ Geophytes), their resting period due to want of warmth or light (Massart).
eugle’noid (εὐγλενός, resemblance), resembling the algae genus Euglena Ehrenb. (Minchin).
Eumyc’es (μύκης, a mushroom), true fungi (Conn); Eug’ncles (+ Nucleus), a nucleus containing red corpuscles (Auerbach); Euphy’llode (+ Phylloide), the flattened primary axis of a bipinnate leaf, which has lost its pinnae (Fletcher).
Eurycoe’none (+ Coenose), widely distributed, common (Gams); cf. stenoco’none; Eu’rycysts, pl. Morin’s term for Pointer Cells, the Deuter Cells of Limpricht; cf. stenocysts; eurysynu’sic, widely distributed groups of plants (Gams); cf. stenosynus’ic; ~ Spe’cies, “due to constant and solid grouping” (Rübel); eu’ryther’mal, applied to a species of wide distribution, able to withstand diverse temperatures (Setchell); the condition is Euryther’my; eurytrop’ic, wide adaptation of species of varied condition (Solms); cf. stenotrop’ic; eusporang’iatae, for ferns possessing special sporangia and of primitive type (Bower); cf. leptosporang’iate; eu’troph’ic, applied to a swamp rich in nutrients (Clements).
Evaporim’eter, having the same use as an Atmometer.
Exclu’siveness, closeness of definition or fidelity to its characters of any species in question.
exobasid’ial (+ Basidial), when a sporophore is without a secondary sporiferous branch (A. L. Smith); exocort’ical, belonging to the Exo-cortex; Ex’oderm, the vernacular equivalent of Exodermis; exo-g’amous = exogamic; Exolith’ophytes (+ Lithophytes), mosses and lichens, from their seat of growth (Wetter); Ex’ome, secondary liber (Van Tieghem); exosco’pic (ακοπέω, I see), Bower’s term for the apical pole of an embryo when turned towards the neck of the archegonium, as in mosses, cf. endosco’pic; Exothio-
bacter'iacae, cf. Ectothio bacteriae; Expans'ivity, diruption, di
vulsion (St. Pierre); Extens'ion, final lengthening of the filament
of the stamen-filaments due to water-pressure (Thompson); Exu
da'ses, any exudations from tissues (Priestley).

F₁, F₂, (1) hybrids of the first or secon
d generation; (2) Chauvaud's terms for successive leaf-like organs.
F₀, pure parental type (Engledow).
Fac'tors, pl. elements which con
tribute to produce a result; they
may be divided thus:—biotic ~,
vital functions; climatic ~,
depending on the temperatures;
edaphic ~, depending on the char
acter of the soil; geodynam'ic ~,
the latent forces of the earth;
le'thal ~, fatal or at least injurious;
physiograph'ic ~, the earth's com
bined forces.
Fam'ily, for Family (Clements).
Fat'uoid, a mutation from Avena
sar'vum Linn., resembling A. fatua
Linn. (Huskins).
fauc'ial (fauces, the throat), situated
in the throat or mouth of the peri
anth (Herbert).
Fell-field, (1) Al'pine ~, in the Eu
ropean mountains; (2) Arc'tic ~,
round the North Pole.
Fertiliza'tion, Breech (Jeffrey), =
Chalazogamy.
Fibonacci' An'gle = 137-5° (Church).
Fi'bre, Cen'tral, cf. Central Fibres;
Fi'bro'sis, exaggerated development
of the fibrous strands in Iris
Tourn. (Arber).
Fidel'ity, cf. Exclusiveness.
Fil'a'ment, add, (3) an entire univalent
spireme (Digby); cf. Disc-fila
ments.
Fis'sion, add, (2) longitudinal separa
tion, (1) of the entire univalent
spireme into two threads, and (2)
that of a univalent chromosome into
two daughter-chromosomes (Digby).
Fis'tula, add, (2) medul'lar ~, the
central cavity in the stem of
Equisetum Linn. (Jeffrey).

Fix'ity, the condition of little or
no response to stimuli (Clements).
Flagellar Pore, an aperture in the cell-wall of Peridiniae, through
which the two flagella pass as they
leave the protoplast (West);
Flagel'lidae, flagellates in the strict
sense (Calkins); Flagel'lisporae or
Flagel'ula, a swarm-spore pro
vided with one or more flagella
(Minchin); Flagello'sis, an invasion
by flagellate organisms causing
disease; Flagel'lulae, cf. Flagel
lates (Church).
Flap, an old term for the pileus of an
agaric; Flaps, see Connective Flaps.
Flask-cell, the stalk-cell of the antheridium in Characeae.
Floccula'tion (floccus, a flock of wool),
the aggregation of precipitated
particles into large soft masses
remaining suspended in the medium
(Addams).
florist'ic, relating either to (1) flowers
or floral emblems, or (2) local botany; cf. ~ Geobotany, ~
Phytosociology; Flos ʃ, Para
tore's term for anther in Coni
ferae.
Fluctua'tion (fluctus, a wave), change
due to direct effect of the en
vironment during lifetime; opposed
to Mutation, due to the presence
of specific factors in the organism
(Punnett).
Foliar Base, Bower's term in place
of Eichler's "Blattgrund"; ~
Ray, see Ray, Foliar.
Fo'lioid, a hypothetical conception
of a leaf-like organ.
Forb (Φοβήν, fodder), herb (Clements).
Fore'dune [disyll.], the surface of a
dune exposed to the prevalent wind
(Cockayne).
Fo's'ula, add, (2) a space between
the ridges of an oospore of Charads;
sulcus.
fragariform'is (fraga, strawberries; 
forma, shape), a fruit shaped like
a strawberry.
Frag'ment, portion of a chromosome;
Fragmenta'tion, add, (2) the con-
diction of breaking up before crossing over (R. T. Hance).

*Fre'quency*, the degree of common occurrence of a species; adj. fre'quent.

Frigorid'es'er ta, add, tundra.

Fron'dome, the abstract entity of a frond, corresponding to the allied Caulome and Phyllome (Vuillemin).

Fu'cin, a special substance in the cell-wall of Fucus Linn. (Czapek).

Ful'crum (Lat. bed-post), in lichens the Sporophore (A. L. Smith).

Fun'goid, add, (2) phanerogamous parasites whose autotrophic mother-group is unknown, but distinguish themselves by their fungus-like habit (Johow).

Fu'ture Genera'tions, an expression employed by Buller to denote successive generations of Basidia.

Gallornbro'nes, pl. (galla, oak-apple; rubor, redness), red pigments from plant-galls (Mierenstein).

Game'tocyte (kuros, a hollow vessel), a mother-cell of gametes (Minchin);

Gameto'genesis, add, (2) restricted to mere fusion of gametes (West);

Gameto'gonid'ium (+ Gonidium), the initial plastids of gametes in Volvox (Janet).

Gam'o-gem'mie (sic), the "intimate association of two or several floral rudiments" (Worsdell);

Gamog'on'y (yóvós, race) = Sporog'ony; Gam'ont, a gamete-producing form; cf. Spor'ont;

Gam'om'ery (μέpos, part), when normally distinct petals are joined into a gamopetalous corolla (Engelmann).

gap'ing, ringsent: Gaps, add, (2), branch ~, fol'liar ~, or leaf ~, when openings exist in the siphonostele to permit the passage of vascular tissue to form branch or leaf (Jeffrey).

gashed [monosyll.], lobed.

Gast're'a (γαστηρη, the belly), consists of a Depea with feeding area, surrounded by a sac with communi-

cation outside by a blastopore (Janet).

Gel, a solid formed from a jelly by heat or chemical reagents and irreversibly by the addition of water (Addams); gel'ate, to become coagulated.

Gem'ini (Lat. twins), applied to pairs or bivalent chromosomes (Fisk).

Gem'mipar'ity, used of leaves arising from adventitious buds (Penzig).

Genecol'ogy, ecology concerned chiefly with species; adj. gene'colog'ical;

Genetic Coeffi'cient, or dynamic behaviour, the part played by the species in the development of the community; cf. Geobotany;

Genetics, the study of heredity and variation (Bateson); Genet'icist, a student of genetics.

Genera'tions, pl. add, (2) of basidia ranked as com'ing ~, fu'ture ~, past ~, pres'ent ~, according to their state of growth (Buller).

gen'ic, relating to genes; Gen'ophene (φαίων, I appear), a reaction type of a genotype; Geno'spe'cies (+ Species), embodies the facts of the genotypical construction of the ecospecies; (1) a homozygotic bio-type (Raunkiaer); (2) a geno-
typical construction of a Linnean species (Turesson); Gen'otype (τύπος, a type), Mendelian sub-
units of the genospecies, as the ecotypes are to the ecospecies, i.e. local species (Turesson); ~ Com-
p'ounds, products of recombined Mendelian factors (Turesson); adj. genotyp'ical.

-gen'ous, Clements's suffix for "producing."

Gentiacau'line, a glucoside from Gentiana acaulis Linn.

Geobi'ont (βios, life; δονα, things existing), an inhabitant of the soil, as an alga or moss, in a wider sense, all soil-nurtured plants; Geobot'any (Βοτανι', pasture, grass), phyto-geography; plant distribu-
tion (Grisbach); (1) divided by J. Pavillard into (a) ecologic ~,
(b) floristic ~, local botany; (c) genetic ~, changes, and Phytosociology, q.v.; geodynamic (δυναμικός, power), the influence of soils as agents; Geogenousis (γεωνέσις, origin), botanic origins; adj. geogenetic; geognostic (γεωγνώσις, wisdom); that knowledge of the structure of the earth's stratigraphy; Geophylae (φυλαί, I love), algae growing on bare earth, or mossy ground (Ivanoff); Gerosene (+ Sere), the total plant succession of the geological past (Clements); Geosphere (σφαίρα, a globe), the earth itself as a whole (Clements); Geostate (+ Strate), the entire series of strates, subdivided as Geonestrate, the strate corresponding to the Cainozoic or Tertiary period in geology; the Mesonestrate to Mesozoic ~ and Palaeostrate to Palaeozoic periods; Geoxylic (ξύλον, wood), having a woody stem, partly hypogaeic, partly epigeic; cf. Aeroxylic (Lindman); Geotome (τόμος, a cut), an instrument to cut sods or soil (Clements).

Germules, pl. (germen, a germ), small seeds or other means of distribution (Clements).

Giantism, of gigantic size, giganticism. Ginkgcoid, like the genus Ginkgo Linn.; Ginkgophyte (φοινόκ, a plant), a plant resembling the modern Ginkgo (Wieland).

Gitonogamy, an American form of Geitonogamy.

Gloeocarpoons, when the fruits are immersed in mucus.

Glucostacty (+ Glucose, tactio, touch), maize seedlings which sweat a sugary fluid; glucose (Eyster); adj. glucostacticus.

Glu'moid, glume-like.

Gneta'leans = Gnetaceae (Wieland); gneta'lian, belonging to Gnetum Linn. or Gnetaceae.

Gone'el (νονυς, offspring), floral reproductive apparatus subdivided into Amphigonel, Acrog'onenel, and Anthog'onenel; Gone'let, part of a

Gonel, built up of Gon'ocines, pl., units of Amphigones receptacles (Vuillemin).

Grada'tae (gradatus, furnished with steps), definite succession in time and space in the production of sorus in homosporous ferns; the dominant ferns of the present time (Bower); gradate', the intermediate condition of a fern-sorus (Bower).

Grada'tion, the variation of a given character along a given axis (MacLeod); ~ Curve represents observed values of a character (MacLeod).

Graph, suffix for “a recording instrument” (Clements).

Grass'veld, the predominant feature of South African vegetation.

Gregarin'iform applied to spores which glide along (Minchin); Gregarin'tae, the spores mentioned.

Gregarious (gregarius, belonging to a herd), applied in varying degrees to the frequency of a species (Clements).

Gubernac'ulum (Lat. a rudder), the “trailer” of two flagella (Church).

Gyn'meose ( + Sere), a mesosere or sere of prevalent gymnosperms (Clements); gymnomphylous (φοινόκ, a leaf), having branchlets destitute of cortex.

Gynan'dromorph (άνδρος, a man; μορφή, shape), a female plant assuming the appearance of a male plant; gynecogen'ic (γενος, race), parthenogenic (Janet); Gynecology, ecology of species (Turesson).

Gynoe'cium, formed from γυναικείος and σόκος, which give the corrected spelling [cf. Roeper in Linnaea, i. (1826) 438 in textu]; Gynoe'cy, the occurrence of purely female individuals in a plant (Ueckdill); Gynogonid'ium (+ Gondiulm), Janet's term for Oospore; Gy'nomplasm (πλάσμα, that formed), passive protoplasm as in female gametes (N. Jones); adj. gy neuroplas'mic; Gynopleog'amy (+ Pleogamy), one individual with pistillate flowers, another with perfect flowers, and a third gynomonoecious (Schutz);
**Gyno-zoogonidium** († Zoogonidium), female filaments derived from zoogonidia in *Oedogonium* Link (West).

**Gyp'sophiles** (*gypsum*, plaster of Paris), plants loving chalk.

**Gyrog'onites**, pl. (*γύρος*, round; *γώνιος*, offspring; + *ите*), fossil fruits of *Chara* Linn., at first taken to be shells, "Gyroliths."

H+, see pH; H-†on [hydrogen ion] (*идовь*, pt. of verb to go), a physical term for acid-alkali equilibrium (Duggar). H-ions are acid and bear a positive electric charge; pH-ions are basic, with a negative electric charge; H-pieces, the halves of neighbouring cells of *Tribonema* Derb. et Sol.


**Hairs:** *Muc'ilage* ~, possessed by certain algae; *sheathed* ~, of Sphaelariaceae, the apical cells die and the cell below proliferates through the cavity, leaving a basal sheath (Church).

**Half-sta'men** († *Stamen*), in *Cucumis* Linn., that stamen of the three which has only one loculus (Heimlich).

**Hal'ion**, saline scrub climax (Clements);

**Halone'reid** († *Nereid*), marine association of algae (Warming);

**halophil'ic** = halophilous; ~ *Bacte'ria*, bacteria seated on marine fishes; Hal'esere († *Sere*), a hydroser with salt contents (Clements).

**Hama'da**, a stony desert.

**Haplobacter'ia**, true bacteria (Conn);

**haplo-biotic**, applied to certain Red Algae, as *Scinaia* Bivona;

**Haplochro'mosomes**, single chromosomes, which combine into a pair of myxochromosomes (Chodat);

**hap'loid, add**, (2) the result of a single gamete such as the moss-plant (Lotsy); **Haploi'dy** the state in question; **Hap'lophyll** (**φύλλον**, a leaf), the primitive universal leaf as in *Tmesipteris* Bernh. and lycopods (Benson); **haplostep'h'anous** (**στεφάνον**, diadem), having a single circle of stipulodes at the base of each whorl of branchlets; **haplostich'eous** (**στίχος**, rank), the cortex with one row of cells to each branchlet or bract-cell of Charads;

**hap'teral**, adj. from *Hapteron*.

**Hard'pan**, a hard substratum under the cultivated soil, which requires to be broken up for the penetration of roots.

**Har'tig Net**, an intercellular growth associated with a fungus mantle on the roots of conifers (Frank).

**Hát**, an old term for *Pileus*.

**Head-cells**, (1) cells at the distal end of the manubrium of Characeae, bearing the filaments containing the antherozoids; (2) cells on exterior of node-cells of the stem-cortex bearing spine-cells in certain Charads.

**Heleochare'tum**, shortened from *Heleocharite'tum*, an association of *Heleocharis* R. Br.

**Helichryse'tum**, association of *Helichrysum* Vaill.

**Heli'ôn**, changed from *Heli'um*, swamp scrub climax (Clements).

**heliotac'tic** (**tactio**, touch), light perceptive.

**hemerodiaph'orous** (**ημεροπός**, cultivated; **διάφως**, different), varied under cultivation (Linkola); **hemeroph'ilous** (**φιλεω**, I love), readily cultivated (**ip.**); **hemeroph'o'ous** (**φόβος**, fear), hard to cultivate (**ip.**).

**Hemiang'iosperms**, cf. *Proangiosperms*; **Hemibasidiomyce'tes** († *Basidiomyce'tes*) consist of the Ustilaginales with an indefinite number of basidiospores; **Hemi-cryptophytosynu'sia**, life-forms such as perennial plants with buds on the level of the soil, but not related to each other (Gams);

**Hemicycada'les**, plants akin to * Cycas*, but more or less distinct, bisexual (Wieland); **Hemihetero-**
thallism, semi-dioecism; Hemihomothal'ism, semi-monoecism; hemitrim'erous (μέρος, a part), applied to seedlings with a whorl of three cotyledons, but with a normal pair of primordial leaves (Harris); hemitrop'ic, half-inverted hemizeu'xis (+ ΖΕUXIS), half-yoking; hemizyg'ous (ψυχός, a yoke), half-yoked (Frost).

Hendec'aploid = hendek'asome, having eleven sets of chromosomes.

Hep'edochae (ἐπόδος, I follow; δοχή, succession), a secondary succession, a subserere (Clements).

Heptan'dta (άυτός, a man), a monstrosity in Digitalis Linn., where three divisions of the corolla are transformed into stamens, making seven in all; hept'aploid, hept'asome, with seven sets of chromosomes; heptasterigmat'ic (στειρός, a point), applied to basidia with seven sterigmata (Buller).

Herbalism, herbs when used in magic or medicine (Church).

Hered'ity, add, (2), cf. Mendel's Law.

Hermaprodit'ic = hermaphroditic.

Her'midn (ἐρμής, Hermes, the Latin Mercury), a colourless extract from Mercurialis Linn., by oxygenation yielding a blue compound, Cyanohermidin, and a yellow one, Chrysohermidin (Haas and Hill).

Heterophaptom'enon (ἐφαπτόμαι, grasped), Gams's life-form of more or less parasitic plants; heteroploid, used of chromosomes varying in number, as of 21.5 short, 6 medium, 10 long (De Mol); Het' erism, normal diversity; Heterocaryo'sis (καρπον, a nut), when mycelium is formed from + and − elements containing two kinds of nuclei (Burgeff); adj. heterocaryot'ic; cf. Homocaryosis; Heterocoa'ry is used for a strain of pure line from a single spore (Brierley); Heterocatal'yisis (+ Catalysis), chemical change without the agent itself suffering loss; cf. Autocatalysis; Heterochro'mo'somes pl. (+ Chromosomes), aberrant chromosomes, or allosomes;

Heterochro'my, colour differences between individuals of the same species (Lindman); heteroclec'ma (κλήμα, a shoot), heterophyllous; Heterodist'yrly, with short stamens and long styles in the same plant (Errera); Heterogame'tism (+ Gamete), having gametes of different functions, as male or female; Heteroge'ophytes, saprophytic or parasitic cryptogams (Gams): Heterol'tic En'yzymes, the power of chemical change not restricted to one way (Armstrong); heteromas'tigote (ματικος, a whip), with one or more anterior flagella, and a trailing one behind (Minchin); heteromerist'ic (μερος, part), where floral formulas differ, as in the same group of Rubiaceae, where corollalobes vary from four to ten (Riley); Heterom'ery is the condition; heteromorph'ous (μορφή, shape), differing in shape as sterile and fertile whorls in Charads may be unlike.

Heterophy'letum, an association of Potamogeton heterophyllus Schreb.

Heteroplas'ia (πλαστός, moulded), abnormal tissues differing from normal, and cells also abnormal (Harshberger); adj. heteroplas'tic;

Het' eroplasm, in single spore or pure-line strains, which may occur (Brierley); adj. heteroplas'mic; het' eroploid, other than diploid; Heteroplo'idy is the condition (De Mol); Hetero'sis, a shortened form of Heterozygo'sis, the diverse effects following a cross between heterozygous elements; Heterostyl'ism, add, (2) used by Darwin to replace Heteromorphism; Heterostyl'y is a synonym; Heterothal'lis (θαλλός, young twig), dioecism; adj. heterothal'lic; heterotop'ic (τόπος, a place), changing locality (Dahl); Heterotri'styly, having styles of three lengths, as long, short, and medium; heterozygo' tic, referring to plants derived from heterozygotes.

Hex'aploid, used of a nucleus due to
the fusion of six times the normal haploid number of chromosomes; hexasomic = hexaploid; hexasterigmatic, basidia having six sterigmata (Buller).

Himedia'ta; scrub which sheds its leaves in dry seasons.

Hieraciarch (ἄρχων, chief), an expert in the genus Hieracium Journ.; Hieraciology (λόγος, discourse), the special study of the same genus.

high'er, Hurst's term in place of "dominant."

Hippophaë'tum, an association of Hippophae Linn.

Hippuride'tum, of Sphagnum, cell-membranes within the thickened ring round the pore (Warnstorf).

Holob'ont (βίος, life; δόσα, existing things) = holophyte; holodactylous (+DACTYL), ultimate rays of a Charad each of a single cell; hologamous, adj. of holocamy; Hologenesis (γένεσις, beginning), theory of descent by species developing and then dividing, the mother species disappearing (Rosa); holopetalar'ious, defined under olopetal'arious; Holophyte (φυόν, a plant), growth maintained by its own organs, neither a saprophyte nor a parasite; adj. holophytic; holozoic (ζωόν, an animal), feeding as an animal (West).

Hometerost'yly, shortened from Homometerostyl'y; Homobi'um (βίος, life), an interdependent association of algae and fungus (A. L. Smith);

Homocaryos'is (κάρυον, a nut), when mycelium is of + or - nuclei only; unisexual (Burgeff); homoeophyllous (φύλλον, a leaf), having only one form of branchlet, homoeomorph'ous, sterile and fertile whorls in Charads similar; Homog'eny (γένος, race), inheritance of a common part; adj. homogen'ic, homogenet'ic; homol'ogous, cf. Transformation Theory (Bower); ~ Variation, parallel variations; similar variations in allied species (Vavilov); Homolytic En'zymes, the chemical action confined to one way (Armstrong); homomer'ic (μέρος, a part), having the same number of parts; Homom'ery is the condition; a gene singly can produce as much as many genes in Polymery (Lang); homomer-ist'ic, where subordinate groups have the same floral formula (Riley); homomor'phic, adj. of Homomorph'y; Homoplas'ia (πλαστός, formed), abnormal tissue formed by increase of the normal elements (Harshberger); adj. homoplast'ic; homothal'lic (θαλός, young twig), monococious; Homo-thal'lism, monoecism; Homoty'py (τύπος, mark), development of a structure or organ in the place where another normally originates; Homozygos'ity, plants derived from the same group; adj. homozygot'ic, (1) plants originally from the same strain, (2) of pure line (Turesson).

Hor'mocysts (ὁρμός, a chain; κούτσις, a cavity), short hornogonia enclosed in thick sheaths (Borzi);

Hor'mon, used by A. H. Church for "anchored somata" in the sea, without absorptive roots;

Hor'mones, enzymes serving as digestive agents; hormoph'orous (φορέω, I bear), necklaced (Balfour); Hormoph'orus, anchorage (Church).

Huk'win, a white ring in the corolla of Ipomoea hederacea Jacq., in Japan (Miyazawa).

Hull, the outer shell of grain;

hulled [monosyll.], deprived of husks; hull'less, without husks; Hull'lessness, of Avena nuda Linn. (Love).

Humusnec'ron (νεκρός, dead), decayed vegetable matter, as leaves (Sernander).

hunched, old word for gibbous.

Hybridog'amy (γάμος, marriage), fertilization between various species.

Hy'drarch (ἄρχων, beginning), a succession arising in a moist area (Cooper); Hydrosere (Clements);
Hydri'on (+ Ion), hydrogen-ion concentration (Herklots); Hydro-cleistog'amy, cleistogamous flowers pollinated by submersion; Hydro-crypt'o-phytes, pl. vegetative parts permanently in water (Gams).

Hydrochare'tum, an association of Hydrocharis Linn. (Gadeceau).

Hy'droid (εἶδος, resemblance), used by Clements for watery; ~ Ar'eas, of algae clades in pre-Devonian times (id.); Hy'dromorph'o-sis, add, (2) change due to watery situation (Massart).

Hydrone'rum, an association of Nardus stricta Linn.

Hydroperme'able (permeabilis, that may be passed through), parts of roots specialized for water absorption (S. Baker); Hy'drose, the internal moisture of tissues (Devaux); Hy'drosere (+ Sere), succession in a wet habitat to a climax (Clements); hydrospher'ic (αφαιρα, a globe), the agency of water in migration (Adams); Hydrospor'ae, pl. (σπορά, a seed), plants whose seeds are distributed by water (Clements); hydrortrop'ic (τροπή, a turn), changing to a greater water-content of a succession (id.); hydrostatic'ic (στάσις, a standing), a succession less prone to change towards greater moisture (id.); Hydroxyl'ions (ωτύς, sharp, + Ion) water-ions negatively charged with electricity; OH-; opposed to hydrogen-ions.

Hygro'dry'mum (δρυμώς, a wood), rain-forest (Diels); Hygrophor'bium (φορβη, pasture), moist pasture or fen-lands (id.); Hygropo'i'um (πόια, grass), evergreen meadows (id.); Hygrophag'niurn, high moor, cf. Sphagniopratum.

Hyli'on, originally Hyli'um, forest climax (Clements); hyloc'o'la, forest dwelling; Hy'lophyte (φυτόν, a plant), a dry woodland plant; cf. Hylodophy'te.

Hymenomyce'te, fructification resembling that of Hymenomycetes (Rayner).

Hyperchro'masy (χρώμα, colour), an increase of the nuclear substance relatively to the cytoplasm (Minchin); Hyperplas'ia (πλαστός, formed), an abortive quantitative increase produced by cell-division (Virchow); hyper-ton'ic (τόνος, strain), having a greater osmotic concentration than the cell-sap (Stiles); Hyper'trophy (τρόφη, food), abnormal growth with voluminous callus (Harshberger).

Hy'poderm, add, (2) Kraus’s term for the outer cortex immediately below the epidermis, as in Begonia Linn. and fossil plants; hypos'gonous, add, (2) when the antheridia are below the oogonia, as in Phytophthora De Bary (Murphy); Hy'ponym (ονομα, a name), a generic name not supported by a type-specimen.

Hyphopha'eus (ὑπόφαιος, somewhat grey), grey in tint.

Hy'popod'iium, Bower’s term for the basal part of the leaf.

Hy'postase, add, (2) tissue containing chromatic substance in the chalazal region (Ishikawo); hypostat'ic, Bateson’s equivalent for recessive; lower, of Hurst; cf. epistatic.

Hy'pom'ostal = hypostomatous.

Hypoton'ic, having a lower osmotic concentration than the cell-sap (Stiles); hypotrip'loid (+ triploid), having fewer chromosomes than the triploid number (De Mol).

I, Symbol for parent of self-fertile plant, amidst incompatibles (Herrgolikt, Nilsson); his $I_2 = F_1$, $I_3 = F_2$, etc.

Idiobiol'ogy, proposed in place of AUTOBIOLOGY (Gams); pertaining to individual organism (Turesson);

Idiochor'o-logy, for AUTOCHOROLOGY, applied to self-distribution of plants as distinct and separate units (Gams); Idiochrom'at (chromatin), chromatin temporarily dormant (Minchin); Idiochrom'id'ia, pl., chromidia of a generative character; Idiochro'mosomes pl. (+
CHROMOSOME), used by Church for a pair of \( x \) and \( y \) chromosomes; cf. HYBRIDIZATION; IDIOECIETY (Schroeter), cf. AUTOECOLOGY; Idiophor (φορος, I hear), Siemens's term for GENE.

-ies, proposed to denote CONSOCIES, as "Scirpies" (Clemets).

-ile, locative suffix for SOCIETAS (id.).

immune (immunis, exempt), power of an organism to resist invasion by a microscopic parasite (Conn).

Impotence (impotentia, inability), sterile, including floral abortion and arrested development (Stout).

Impu'es (Lat. immature), not mature.

Incept, add, oogonical \( \sim \), an early stage of the oogonium (Pethybridge); cf. MANOCYST.

Inchoate (inchoatus, unfinished), not complete.

Incipient Nut'leus, formerly termed "Central Body," "an achromatic ground substance occupying the alveoli of a reticulum in which are located minute granules" (West).

Incompatible, Stout's term for sterile; Incompatibility, the condition mentioned; anatomical \( \sim \), due to structural differences, as herco-gamy; cross \( \sim \), hybridism barred; physiological \( \sim \), due to some functional disability; self \( \sim \), self-sterile.

Indic'ator (Lat. one that points out), (1) a colour-test for pH or hydrogen-ion test; (2) Clements's term for climax and successional communities as showing "factors, processes and practice"; cf. PLANT INDICATORS; (3) plants which show no condition of the soil (Tansley and Chipp).

Indument'um, add, (2) bi'strate \( \sim \), of two layers, the outer layer, caducous; un'nstrate \( \sim \), of one layer, persistent (I. B. Balfour).

Inhibi'tor (inhibitus, curbed), cf. LOEB Effect.

Initia'tion (initiatio, admission to rites), the early stages of staminal growth, succeeded by the later Extension (Thompson).

In'ner, add, (2) the morphologic upper surface of a Sphagnum leaf (Horrell).

Ino'culum (inoculo, I graft), spores employed for infection.

Inor'dinate (inordinatus, irregular), when spores in an ascus show no regular arrangement.

Inte'ralary, add, ~ Bands, in diatoms; ~ Plates, either anterior or posterior in Peridinaceae; ~ Valves, in diatoms those with bands having longitudinal septa (West); interchromoso'mal (+ CHROMOSOME), between the chromosomes (De Vries); Interphase (φασις, an appearance) = INTERKINESIS (Wilson); interplast'idic, between the plastids and uniting them (Janet); Interpo'lation Theory, suggested in place of ANTITHETIC; Intersex'es, individuals which display more of a male or female type than is normal; also styled SUPERSEXES and POLYGAMOUS; Intersex'ualism, in plants showing alternative development of either sex-organs (Stout); Interspec'ific Hy'brids, between two given species in characters; intra'clo'nal (+ CLONE), within the limits of bud-variation; in'tra-fer'tile, two species fertile between themselves; in'tra-ster'ile, two species barren between themselves.

In'tus (Lat. within), the modern term EXTUS is based on this.

Intyba'ceous, akin to or part of Cichorium Intyba'ceum Linn.

Inva'sion, add, Clements defines eight variations of this.

Inviable (± VIABLE), short-lived (H. J. Müller).

-I'on, add, (2) the lower group to one of the principal associations.

-Is, suffix for ASSOCIES.

Isochi'menal (xeïma, winter weather), applied to lines of winter temperatures; isothermal, is the more generally used term; Isoc'ies, synusia showing resemblances, but of various affinities (Gams); habitat-groups (Pound and Clements);
Isocoen{oo}sium, pl. -ia, an association composed of Isocies; Isoc'truna (κρυμος, frost), winter isotherm (Setchell); Isoselect'ric Point (ηλεκτρον, amber), the point of absolute neutrality as regards hydrogen-ion concentration; Iso'hys'tum (υστος, heavy rain), term for rainfall in climactic observation on plants; lines of equal rainfall; Isocho'totype (+ Holotype), specimens taken in after years from the type bush or tree (Wilmott); is'okont (κοντς, a pole), both flagella equal (Church); Isolater'al'ity (+ Lateral'ity), having both sides exposed to light; Isolect'o-type (+ Lectotype), specimens taken from a chosen type long after publication (Wilmott); Isomast'igote (μαστιγος, a whip), having two or four flagella of equal length; isomeris'tic (μερος, a part), agreeing in number of parts; Isom'ery is the state; Isophene' (φαινω, I show), applied to districts of equivalent phenologic date with their area; Isopore, add, (2) a swarm spore or gamete; isosmo'tic (+ Osmotic), having the same osmotic pressure (Stiles); isost'i'chous (στιχος, a row), when the rows in the stem-cortex of Chara are equal; isost'y'led (στυλος, a column), equal styled (Errera); isoton'ic, having the same osmotic concentration as the cell-sap (Stiles).

-ite, -ites (-ιτης, belonging to), suffixes denoting like or nature of, used in forming names of fossil plants and animals.

it'erative (iteratio, a repeating), repeating when applied to crosses (B. M. Davies); -itis, inflammation.

Jacket-cells, cells surrounding the nucellus in Thuya Linn. (Land).

Jor'danon (Jordan, δορα, things existing), "a form which breeds true to type but may not be termed a species" (Lotisy); Alexis Jordan (1814–97) published many micro-species; cf. Linnean'on.

Junce'tum, an association of Juncus, Linn.

Junipere'tum, a similar group of Junipers.

Kalalah'i Re'gion, in South Africa between the Orange River and Bechuanaland (Bews).

kar'roid, Karroo-like (Schönland);

Kar'roo, a region in South Africa, dry and continental in character (Bews).

Karyomer'ites, cf. Caryomer'ites.

Kat'ion, cf. Cathion.

Khor, a waste of stony desert.

Kin'ase, a complex organic body which incites to enzymic energy.

Knobs, add, (2) the tubers of terrestrial orchids (J. E. Smith).

Label'ium-pel'ory, when an orchid-flower becomes symmetrical (Worsdell).

Lag Phase, the initial phase in the growth of the yeast plant.

Lamel'iae, add, (2) layers of membrane in the oospore of Charads.

lancea'te, somewhat lanceolate, but wider at the base than at the middle.

Larice'tum, an association of Larix, Tourn.

La'tent Per'iod, the time between the incidence of stimulus and the beginning of the responsive movement (Bose).

Lat'eral Ar'e'a, a smooth place in a diatom valve, sometimes parallel to the axis, but nearer the margin (West).

Lat'erites (later, a brick), tropical argillaceous soils, under a heavy rainfall of at least 50 inches annually (Tansley and Chipp).

Lat'tices, abortive and lateral sieve-plates in Angiosperms (Jeffrey).

Laurifrutice'ta, thickets with predominance of evergreens (Rübel).

Lay'er Societies, growths in layers, as of standards with bushes lower down, and herbs beneath all; ~ Trans'ect, cf. Bi'sect; Lay'er-ing, add, (2) R. C. Rose's term for
sowing on a large scale(!); this is opposed to the accepted meaning of the word.

leached [monosyll.], soil washed of its plant-nutritment.

Leaf, Branch, of Sphagnum, cf. Branch-leaf; ~ Gaps, cf. Foliar Gaps; Upper ~, Bower's equivalent for Eichler's "Oberblatt."

Leaf-skin Theory; the superficial layers of the shoot formed by downward growth of leaf rudiments (Saunders).

Lec'ithin, see under Lipins.

lemic'olous (λειμών, a meadow), inhabiting moist grass-land.

leirotrop'ic (λειτος, smooth; τροπή, turning), the direction of spiral cleavages.

Lemne'tum, an association of Lemna Linn.

lean'diger (lens, lentis, a nit), applied to such inflorescences as of Gas-tridium lendigerum Gaud.

lenit'ic (lenis, smooth), used of "still-water societies" (Needham and Lloyd).

lepidoden'drid, Jeffrey's variant for Lepidodendroid fossils.

Lep'idophyte (λεπίς, λεπίδος, a scale; φυτόν, a plant), occasionally used to denote a petrified fossil plant.

Lep'idotes (λεπίς, a scale), scale-like structures on the shoots of Tillandsia Linn.; Lepid'iunm, employed by Parlatore for the ovuliferous lamina in Coniferae.

leptocle'ma (κλήμα, a twig), slender branched; Lept'ophyll (φυλλον, a leaf), Raunkiaer's term for his smallest leaf catalogue.

Leptomia'sis, a flagellate disease chiefly attacking Euphorbiaceae.

Lep'to-zygone'ma (+ Zygomena), the transition of the meiotic nucleus between the leptone and zygote stages by parallel fusion of thin threads.

Lep'to-zygo'tene (+ Zygotene), applied to a nucleus containing a Zygomena.

le'thal, add, (2) Fac'tor, applied to a mutation ending fatally; ~ Gam'ete, ~ Zy'gote, each being fatal to a normal blend.

Leuco'derm'is, a "variegated periclinal chimaera," with white markings through the green epidermis of Arabis Linn., and Aubrietia Adans. (Correns); Leuc'osin, a substance in algae of unknown composition, the result of photosynthesis (Fritch).

Lico'p oli Glands = Chalk-glands.

Life-forms, living forms of the present day (Clements).

Lig'ule, add to (6), sealing growth in cones between the angles of the primary scales in Dammara Lam. (Church).

Lime-cell, a hard shell round the oospore, due to a secretion of lime in the spirals of the oogonium in Charads.

limnic'olous (λιμνη, a pool), lake-dwelling; Lim'naen, submersed plants forming associations (Rübel).

Limi'nium, submersed wet meadows (Diels).

Li'mosphere (λιμόσ, famine; σφαίρα, a globe), a hollow sphere enclosing a vacuole in the spermatid enclosing a bryophyte (Farmer).

Limosequise'tum, an association of Equisetum limosum Linn.

lind'sayoid, like Lind'seya Dryand. (Bower).

Link'age, a later term for Coupling; linked' characters are found in cross-breeding; the tendency of factors to stay together, opposed to crossing over (Lotsy).

Linne'on (Linne; διντα, things existing), "the group of individuals which resemble one another more than they do any others" (Lotsy); a Linnean, or superspecies.

lip'al'ian (λειπα, left; ἄσ, the sea), an era of marine deposit, when pelagic life was adapted to littoral conditions, and the appearance of the species of the Lower Cambrian formation (Walcott).

Lip'ins, fatty acids in combination, divisible into (a) Creb'rosides, with nitrogen and sugar, and (b) Phos'-
Lipins

malaceous

phatides, with phosphorus and nitrogen; Lee’s thin is one of the three known (Priestley).

Liriog’amae (λειριόν, the white lily; γάμος, marriage), monocotyledons with a perianth never glumaceous.

Lith’arch (ἀρχή, beginning), a succession or adsere on hard rock (Clements); Lith’ophyte (φυτόν, a plant), plants growing on rock or stones; adj. lithophy’tic; Lith’osere (+ Sere), a rocky Adsere (Clements); beginning on bare rock (Tansley and Chipp); litho-spher’ic (σφάερα, a globe), earth or rock agency in migration (C. C. Adams).

Littorelle’tum, an association of Littorella Berg.

Local’ity, add, (2) the ground occupied by an individual association (Waterman).

Loc’ule for Loc’ulus, Loc’uli spu’rri are certain cavities in the seeds of Bertholletia Humb. et Bonpl., the brazil-nut of commerce.

“Lo’cus” Change, restricted to one of a pair of chromosomes, without affecting its allelomorphic mate; the change first appears in the heterozygous condition.

Loeb Effect’, the action of an inhibitor, probably a single active substance in early bud, before the later growth.

Logarith’mic Phase, the second stage in the growth of the yeast plant.

Loiseleurie’tum, an association of Loiseleuria procumbens Desv.

Long shoot = Leader; long-styled, when the styles exceed the stamens in length; cf. short-styled.

lopped’ [monosyll.], old term for truncate.

lorantha’ceous, akin to or resembling Loranthaceae.

lot’ic (lotus, washed), used of associations in rapidly flowing streams (Needham and Lloyd).

low’er, suggested by Hurst to supercede Bateson’s “hypostatic,” as a substitute for “recessive.”

Luzule’tum, an association of Luzula DC.

Lychnet’tum, abbreviation for Lychni-de’tum, an association of Lychnis Linn.

lycopodin’eous, relating to Lycopodium Linn. (Jeffrey).

Mac’chia (Ital.), shrubby growth, mainly evergreen, in Mediterranean regions.

macran’drous, add, (2) used of antheridia developed in male filaments of Oedogonitum Link, nearly as large as the filaments themselves (West); macrobioste’monous, -ic, (βίος, life; στήμα, a thread), having persistent stamens (Delphino); macrocle’ma (κλήμα, a twig), with long branchlets; macro-dac’tylous, the ultimate rays of Nitella Ag., long; Macro’gamy (γάμος, marriage) = HOLOGAMY; Macro’nucleus (+ NUCLEUS), in diatoms the nucleus as commonly received (West); Macrophan’ero-phyles (+ PHANEROPHYTES), trees; Macro’phyll (φύλλον, a leaf), Raunkiaer’s term for a long leaf, but less than a megaphyll; Macro’phytoplank’ton, floating Angio-sperms, large algae, etc.; mac’ropt’ilus (πτελόν, a feather), longi-bracteate; Macro’pycnid’ia (+ PyCnidiA), large conidiospores in pycnidia; Macro’pyc’nospores, pl., long spores of certain fungi; Macro’scope (ακοπέω, I see), a hand micro-scope, magnifying about 10 diameters, for field-work.

Mamgaph’iæ, pl. (φιλέω, I love), algae which prefer warm and well-lit waters, forming a coloured mixture (Ivanoff).

Mag’nigrade (gradus, a step), applied to a large variation, as ~ Tran-sil’ient, or ~ Salta’tion; ~ Evolution = discontinuous; cf. Parvi’grade; Magnocarici’tum, an association of large species of Carex Linn.

mala’ceous (μαλακός, delicate), used
by Thurston when referring to Rosaceae, etc.

man'itest (manifestus, palpable), anthers visible at the mouth of the corolla-tube, but neither inserted nor exserted.

Man'ocyst (μανός, rare; κύστις, pouch), the receptive papilla protruding from the oogonium of Phytophthora De Bary (Murphy); manoxylic (φυλλον, wood), the cycad-type of wood (Seward); cf. Pycnoxlic.

Mantle, Trache'ary, of Stephanosperrnum Brongn. in the wall of the nucellus ending in the pollen-chamber (Jeffrey).

Maqui' (Fr.), cf. Macchia.

mastigoclad'ous (κλάδος, a branch), flagellate, having runners (Russow).

Mates, synap'tic, leptotene-threads (Hurst).

matroclin'ic, -ous (κλίνη, a bed), in hybrids, a quality derived from the ovular or female parent; cf. Patroclinic; Mat'rocliny is the condition.

Mat'tae, pl. (Mod. Lat.), mats or plants which form matted growths (Clement).

matteuc'oid, like the fern genus Matteuccia Todaro (Bower).

me'dian, add, ~ anter'iór, in phyllotaxis, the first sepal; ~ poster'iór, the second sepal in the quincuncial calyx (Church).

Med'ul'lary Fis'tula, cf. Fis'tula, Medullary.

Megalophyl'la (φυλλον, a leaf), leaves of extreme size; Megalophyl'ly, bipinnation of fern frond (Church); Meg'aephyll (1) Raunkiaer's term for his largest leaves; (2) Benson's Meiophyll and Meriphyll taken together; adj. megaphyl'ious; Megaplank'ton (+ Plankton); cf. Pleur'ston; Meg'aephytes (φωτόν, a plant), spermophytes; Mega'soro'ma (φωτεύμα, a heap), the sporangial apparatus of the vascular plant, with its receptacle or stalk (Benson); Megasp'o'phyll (+ Sporophyll), the female cone of cycads; Megastrob'il'lus (+ Strobilus), the female flower and cone of Cycas Linn. and its allies; Meg'a'therms (θερμη, heat), plants which need high temperature for active growth; Megazo'id (ζων, an animal), a female gamete of algae (Sauvagean).

Meiocyc'lic (κυκλος, a circle), "an isostemonous bicarpellate construction, tetracyclic or more conveniently mesocyclic" (Church) = a smaller circle; Meiophyll (φυλλον, a leaf), a simply elaborated leaf, as in Pseudobornia Nath. (Benson); Mei'ospore [or Me'ospore] (+ Spore), the product of a Meio'sporate; arising through an ontogenetic reduction (Janet).

Me'matea, a misprint for Nematea.

Men'del, fifty units distance of gene from chromosome, a measure of length equivalent to fifty per cent. of crossing over (D. F. Jones), name derived from Grigor Mendel.

Menyanthes'tum, an association of Menyanthes Linn.

Mer'id (μερ'ης, μερίδος, a part), an assemblage of plastids formed by successive divisions from one original; it may be solitary or colonial (Janet); Mer'iphyll (φυλλον, a leaf), "the complex meriphytic leaf of the ferns, leading to Angiosperms" (Benson); meriphytic, divided, as many plants are; Mer'ism, a primordial assemblage of cells (Janet).

merog'on'ically (μερο-, a part; γονο-, race), monopolizing the sexual portion; Merog'ony, the condition itself.

Mesench'y'm (μεγεχ'εω, I pour in), tissue which separates xylem and phloem elements in root-bundles (Clements); Mes'esore (+ Sere), a mesophytic ecosere; it corresponds to the Eocene Period of geology; also termed Gymnesore (id.); Mes'eostrate (+ Strate), a mesophytic ecosere (id.); Mes'oecline, a moist, cool, slope (id.); Mesomito'sis (+ Mitosis), mitosis within the nuclear membrane, without co-operation
of cytoplasmic elements (Chatton); Mesophor'biurn, pl. -ia, evergreen meadows (Diels); Mesophyl'tum, add, (3) Raunkiaer's term for a medium-sized leaf; mesophy'tic, add, (2) relating to the vegetation era of the Mesozoic Age (Clements); Mesopod'iunm (πούς, ποδός, a foot), the petiole of a leaf (Bower); Mesop'oium (πόa, grass), Diels's term for steppe; Mesotham'nium, partly Laurifruticeta and partly Duri-fruticeta (Diels); Mes'o'therms (θερμός, heat), plants which need temperate conditions of heat for active growth; mesotrop'ic (τροπή, a turning), a medium succession changed from xerotropic to hydrotropic (Clements); mesostat'ic, a medium succession due to water-content (id.); mesotroph'ic, used of a swamp moderately provided with nutrients (id.).

Metabi'ont (+ Bi'ont), a polyplastid, a many-celled individual (Janet); metachromat'ic (+ CHROMATIC) gran'u'les, bodies in bacteria which take a deep stain (Conn); metachromat'inic (Minchin) is a synonym; Metachro'my, changing or losing colour in the same flower, usually from age; metacli'nic, a reversed cross in hybridizing; Metacli'ny is the state; meta-genet'ic (+ GENETIC), truly alternate in generations (McNab); Metagy'mnosper'mae, pl., Coniferae fertilized by means of pollen-tubes (Jeffrey); Metamito'sis, mitosis of an advanced type in which both cytoplasmic and nuclear elements take part (Minchin); Met'a'nym (ἀνωμα, a name), an older, valid name, based on another member of the same group; Met'a'phyte (φυτόν, a plant), a many-celled—polyplastid—individual (Janet); Met'aplast, -ia, tissue which has taken on a changed appearance due to upward or downward metabolism; metaphl'astic is an adjectival form; Metasyn'desis (+ SYNEDESIS), reduction in which chromosomes are united end to end (Agar).

-me'ter, "suffix for instrument" (Clements).

Methodol'o'gy (μέθοδος, system; λόγος, discourse), the science of arrangement.

Microclad'ous (κλάδος, a branch), having small branches; micro-cle'ma (κλήμα, a twig), with small branchlets; Mi'crocy'st (κύστις, a cavity), an encysted form of a Myxoflagellate; Mi'crocyte (κύτος, a hollow vessel), a detached chromosome (Belling and Blakeslee); Mi'croform, add, (2) used by I. B. Balfour, for an elementary or Jordanian species; Microg'amy (γάμος, marriage), cf. Merogamy; Mi'crogene (+ Gene), a form of micro-species or variety; Mi'cro'morph (μορφή, a form), also employed to describe a species of low grade; Micronu'cleus (+ Nu'cleus), the centrosome of diatoms (Lauterborn); Mi'crophyll (φύλλον, a leaf), a small leaf, as defined by Raunkiaer; micropt'ilus, brevi-bracteate; Micropyc'nid'ia (+ Pycnidia), receptacles containing small conidiospores; Micropyc'nospo'res, the spores borne on micro-pycnidia; Microsoro'ma (+ So'roma), the pollen-bearing apparatus (Benson); Microstro'b'illus (+ Strobilus), a small cone in cycads; in all genera aggregated into cones which resemble those producing seed; Mi'crotherms (θερμός, heat), plants capable of growth at low temperatures; Microzo'id (ζώον, an animal), a male gamete in algae (Sauvageau); Microzy'ma (ζώμη, leaven), small bodies considered by Galippe the living part of protoplasm; Microzy'me, a substance found in tissues strongly antagonistic to, and destructive of, bacteria (A. Fleming).

Mi'grar (migratio, migration; arcus, a bow), Clement's term for migration circle; Mi'grules, units of migration (id.).
mimosaceous, resembling or akin to Mimosa Linn.

Min'imal Ar'eas, the tendency for an organism to be compressed into the least bulk (Berthold).

Mitochond'rium, a chondriosome; now reserved for smaller structures which do not form plastids; Mitoplast', a band appressed to the nuclear membrane of Selaginella Spring, which divides just before cell-division; successive divisions of this band give rise to several chloroplasts (Dangeard).

Mixochro'mosome (+ Chromosome), a hypothetical complete fusion of synaptic mates to form a new chromosome; mixotrophic, fed by holophytic and saprophytic nutrition (Minchin).

Mode Spores, due to Mod'al Varia'tion, variation in size and shape due to the substratum on which the fungus is growing (Brierley).

Molinie'tum, an association of Molinia Schrank.

monar'hotact'ous (αρθρος, a joint, + DACTYL), with the ultimate branches of a single cell in Nitella Ag.; monochromoso'mic (+ Chromosome), an idiomere having only one chromosome (Chodat); monoclin'ic (κλινω, a bed), having one oblique intersection, applied to crystals; monoclo'nal (κλών, a little branch), succession derived asexually from a common ancestor, a single Clone (Agar); monofa'cial (+ FACIAL), a leaf equitant as that of Iris (Archer); Monogen'esis, add, (2) origin of a new form at a single place or time (Clements); Monocytode'ny, the state of possessing a single cotedylen (Jeffrey); Monokar'yon, a nucleus with a single centriole, a centrosome (Minchin); mon'okont (κοντός, a pole), having a single flagellum (Church); Monole'sis, add, maternal or paternal; monomas'tigate = monokont; Monophyle'sis (φυλή, a clan), origin from a single ancestral type (Clements); mon'o-

some = haploid; monomer'ic, cf. monomeric; monosp'o'rous, having only one spore; monosterigm'atic, with a single sterigma, applied to fungi (Buller); monotrich'ic, cf. monotrichous; Monotype, a genus having but one species; monoozy'gous (μοιός, a yoke), used by Frost for linked.

Mon'te Forma'tion, bush-land of thorny growth (Lorentz).

morchel'loid, resembling Morechella Linn., as regards the hymenium.

Mor'ea (μόρεα, the black mulberry), a hypothetical and non-existent stage of Volvox, as a Mor'ula (Janet).

Mor'es, pl. of Mos (Lat. custom), groups of organisms agreeing in habit, reproduction and reaction; Consocies are groups of Mores (Shelford).

Mor'gan, unit of distance in a chromosome; cf. Centimorgan, name derived from T. H. Morgan.

morphocytolog'ical, evidence drawn from systematic and genetic sources (Jeffrey).

Mosa'ic, add, (3) used by Church as a pattern characteristic of each species, e.g. leaf-mosaic; (4) Variabil'ity, due to conditions within the habitat (Vestal).

Mother-of-Coal, charred wood found in coal (Jeffrey).

Mu'ci'lage, add, ~ Ducts, cf. Mucilage-canal; ~ Glands, secreting organs at the back of the leaf-sheaths and axils in Plumbaginaceae (Wilson and de Fraine); ~ Hairs, "trichome growths" in certain Phaephyceaean algae (Church); Mu'cous, add, (2) used for the gelatinous envelope of the nucule in Characeae.

Mul'tiple Fac'tors, a series of similar factors which produce F, as 3:1, 15:1, 63:1 (1, 5, 21) (Nilsson-Ehle); Mul'tiplets, cf. Multiplex (Worsdell); mul'tiploid, occurring in even multiples; applied to genera differing in number of chromosomes; cf. Dysploid, Perissoploid (Jeffrey).
mun'dus (Lat.) neat, elegant.

Muant, add, (2) a total suppression of all lateral buds, giving rise to an unbranched stem, the "dis-budded ~." (Church); Mu'ants, may be aequichromoso'mal ~, with an exchange of chromosomes, or plurichromoso'mal ~, ~-ic, when one of the chromosome complexes takes one or more chromosomes of the other in the reduction divisions (Lotsy); Mu'tation, add, (1) a simultaneous and probably gradual change, in a majority or the whole of a species (Waagan); (2) used by De Vries = SALTATION, TRANSILIENT; (3), used by Bateson = BLASTOGEN, i.e. BLASTOGENIC VARIATIONS.

Mycocele'na (खαίνα, a cloak), the fungus-mantle in mycorrhiza (Peyronel); Mycoc'rine (क्रिन, I separate), humus reduction by fungi (Falck); mycophy'tic (φυτόν, a plant), belonging to the My'cophytes, or fungi.

My'onomyes (μύς, muscle; νημα, a thread), contractile mechanism of ectoplasm of flagellates (Minchin).

Myricarie'tum, an association of Myricaria germanica Desv.

Myrice'tum, a similar group of Myrica Linn.

Myr'iomere (μέρος, a part), a transition from mitosis to amitosis (Della Valle); cf. PSEUDOMITOSIS.

Myriophylle'tum, an association of Myriophyllum Ponted.

Myrmecophy'tism, the condition of being ant-plants.

Myrtille'tum, an association of Vaccinium Myrtillus Linn. (Warming).

Myxamoe'bae (μυα, change), uninucleate organisms passing into Myxoflag'elates, having developed flagella.

Myxophy'cin, a form of carotin occurring in Myxophyceae (Chodat); Myxochimae'ra (+Chimaera), the plasma of Micor Mich., when parasitized by Chaetocladium Fres. (Burgeff); Myxochromoso'mes (+ CHROMOSOMES), paired chromo-

Mundu's (Lat.) neat, elegant.

Mutant, add, (2) a total suppression of all lateral buds, giving rise to an unbranched stem, the "dis-budded ~." (Church); Mutants, may be aequichromosomal ~, with an exchange of chromosomes, or plurichromosomal ~, ~-ic, when one of the chromosome complexes takes one or more chromosomes of the other in the reduction divisions (Lotsy); Mutation, add, (1) a simultaneous and probably gradual change, in a majority or the whole of a species (Waagan); (2) used by De Vries = SALTATION, TRANSILIENT; (3), used by Bateson = BLASTOGEN, i.e. BLASTOGENIC VARIATIONS.

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n generation has the nucleus with haploid number of chromosomes; 2n generation has diploid number.

N and P 'ions, nitrogen and phosphorus in plankton (Church).

nannan'drous, add, (2) used of anthéridia from small male plants attached to the female filaments near the oogonia of Oedogonium Link (West); Nanan'drium = NANNANDER; Nannoplank'onts (+ PLANKTON, oöta, things existing), items comprising the nannoplankton; Nan'ophyll, Raunkiaer's term for a small leaf, 9 x 25 sq. millim.

Narde'tum, an association of Nardus Linn.

Necrid'ia (νεκρός, dead), dead cells in algae (West); Nec'ron, dead plants, not yet turned into humus; adj. necroni'sed (Sernander); Nec'ton, cf. NECRON.

Nectar'ia, pl. (+ NECTARIUM), used to denote peloria with every petal or sepal spurred; Nectarose'ma (σήμα, a mark), Errera's term for NECTAROSTIGMA.

Ne'matea (νημα, νηματος, a thread), a flagellate consisting of a linear series of plastids (Janet); nemathe'cioid (έλος, form), resembling a nemathecium; Nemathecium, add, (2) ort'tical ~, occurring in cortical cells; medul'lar ~, consisting of loosely packed thread in the interior of an algal thallus (Phillips).

Nec'rosis, precocious syngamy in early stage of gametocyte (Minchin); Ne'o-Mendelism, modern developments of Mendelian doctrine; neo-phytic (φυτόν, a plant), applied to fossil Tertiary plants (Clements); neotrop'ic, pertaining to the tropics of America (Campbell); cf. Palaeto-tropic.

Nephro'dioid, resembling or akin to Nephro'dium Rich.

Nereid'ion, an association of water-plants (Moss).
Net, loose tissue of pseudoparenchyma; cf. HARTIE net.

Nean'ston (νευστάς, swimming), floating vegetation (Sernander).

New Place effect, seed from a distant locality producing changed results (Collins).

Nipetum, association of Nipa Thumb.

Nitell'etum, a similar one of Nitella Ag.

Nitrogen Fixation, non-symbiotic by anaerobic bacteria, symbiotic by means of bacteroids (Conn); nitrophilous, add, nitrogen-loving, applied to lichens (Sernander).

Nomophyllous (φύλλον, a leaf), leaves normal for genus or other group (Radlkofcr).

Non'tuple, nine sets of chromosomes affected; Blakeslee has it as non'tuple.

Nucleolar Body, at the periphery of the nucleolus of Lathyris Tourn. is a darkly staining thread; Nucleoli, Erikson’s term for fungus-protoplasm which separates itself from that of the host into “special corpuscles”; Nucleostatoliths (+Statolith), nuclei more or less united to starch grains or starch-containing chloroplasts to form a gravitational unit (Prankerd); Nucleus, Incipient, of myxophycean cell, formerly termed “Central Body” (West); ~ of diatoms, (a) Macronucleus, the nucleus; (b) Micronucleus, the centromere (West).

Nudation (νυδατίον, nakedness), the occurrence of bare areas due to various causes, termed by Clements “Denudation” (Gams).

Nul'iplex, no dominant genes, but one dominant factor (Blakeslee).

Nupharetum, association of Nuphar Sibth. et Sm.

Nymphaeetum, the like of Nymphaea Linn.

Oc'tad, with eight nuclei; oc'tosome, with eight sets of chromosomes (Blakeslee); octosterigmatic, having eight sterigmata (Blakeslee); octotkont (κοντός, a pole), possessing eight equal flagella (Church); oc'tuple, eight sets of chromosomes affected (Blakeslee); oc'toploid, with somatic chromosomes 56 in number, i.e. eight times the normal seven in Rosa Linn.

Oecolog'ic, cf. ECOLOGIC

Oec'type, cf. ECTOTYPE.

OH, cf. H-IONS.

Oid'ial, add, adj. of Oidium Link; Oid'iospores (+Spore), arise from hyphae in a chain in close order.

Old Wood, also termed “Cryptogamia” or “Primary” wood (Jeffrey); cf. Wood.

Oligorhi'zous (ῥίζα, a root), used of marsh plants forming few roots (Clements); oligotrophic (τροφή, nourishment), applied to swamps poor in plant nutrients (Clements).

Ologen'esis, cf. HOLOGENESIS.

Ombrocleistog'amy (ομβροσ, rain, + cleistogamy), flowers self-fertile whilst unexpanded, due to rainy weather (Kerner).

Omnio'lious (ομνις, all; colo, I inhabit), used of lichens indifferent to their substrata.

Ontogen'esis (οντεύειν, beginning), cf. ONTOGENY; Ontopleas'tids (οντόθεν, moulded), cells in process of division; cf. PROPLASTID.

Ooapog'amous (όοεν, an egg, + apogamous), producing parthenogenetically (Juel); O'oecarp (οφρός, fruit) = Oospore; O'ocyté (κύτος, a cavity), a gametocyte or spermatocyte (Minchin); Oogo'niial In'ceot, the early stage of the oogonium of certain fungi; O'oophyte (φυτόν, a plant) = GAMETOPHYTE.

Oper'cle, the persistent base of a style, forming a prominent point to an ovary in an epigynous flower (Herbert).

Optimal Ar'ea, the most favourable quarters for the development of a species or variety (Warming).

Orculiform (ορκολή, a little cask), polarilocular, as a spore.

Or'gadád (ὀργάδα, ὀργάδος, a well-wooded meadow), an open woodland plant (Clements).
Or’ganel, cf. Plasmorgan.
Or‘gans, Conser‘vative, the root, stem, leaf and sporangion (Jeffrey).
ornithocoprophi{lous (kó’tropos, dung; φίλεω, I love), applied to lichens, which benefit by the excreta of birds (Sernander).
oroban’cha‘eous, akin to Orobanche Linn.
orogen’ic (γένος, race), “mountain-making” (Clements); Orthyli‘on (+ Hylion), an alpine forest of Picea Link and Abies Linn. (id.)
Orthid‘ium (ὁρθός, straight; ἰδιος, personal), a supposed fructification in lichens, but actually a parasitic lichen (A. L. Smith); Orthobi‘ont (ὀθρα, things existing), a being of direct succession from one zygote to a new one (Janet); adj. orthobi‘ont‘ic; orthocle‘ma (κλήμα, a twig), straight branched or leaved; orthogeneti‘c, cf. Orthogenesis; Orthog’ammy (γάμος, marriage), the normal relations of male and female; orthoploid (probably an error for octoploid); Orthophyte (φύτον, a plant), a plant from egg to egg; sporophyte + gametophyte (Janet).
osmund‘a‘eous, akin to Osmunda Linn.
Ostruth‘ie’tum, an association of Peucedanum Ostruthium Koch.
out‘er, add, (2) morphologically the lower surface of the leaf of Sphagnum Dill. (Horrell).
Ox‘arch (ἀρχή, beginning), the character of an Oxysere (Clements); oxygy‘rus, sharply twisted; oxylol’phi{lus (Clements) = oxylol’phi{lus (Warming); Oxylyphy’ta (Clements) = oxylol’phy’ta; Oxy’on, a heath climax (id.); Oxy’phytes, plants which show a want of oxygen in the soil, with low chresard (id.); Oxysere (+ Sere), a hydroseres with acid land contents (id.).

P i’ons, = phosphorus ions; cf. pH, hydrogen-ion concentration of soil to plant distribution; neutrality is pH7.
P1, pure line.
pachyce’ma (κλήμα, a twig), with stout branches; pachygy’rus, coiled in thick whors.
Pach‘yte (παχύτης, thickness), the secondary region of the stem, composed of secondary phloem and xylem with liber (Van Tieghem); cf. Endome, Exome.
palaeotrop’ic, cf. PALEOTROPIC.
Pal’ecology (Seward), cf. PALEOEcology (Clements); pale‘ic, past or fossil; Paleobot‘any (+ BOTANY), fossil plants as a study; Paleoe’cology (+ Ecology), the ecology of geological periods; paleophy’tic (φυτόν, a plant), relating to the vegetation of Paleozoic times characterized by pteridophytes (Clements); Pal’eosere (+ Sere) or Pter’osere, the Eosere or plant succession in the Paleozoic Age (id.); Pale’ostrate (+ Strate), a definite paleophytic Eostrate (id.); paleotrop’ic, belonging to the tropics of the Old World, Asia, Africa and N. Australia, cf. Neotrop’ic (Campbell); Paleozo‘ic (ζω’ον, an animal), a geological term used to specify formations in which the oldest fossils occur.
Paludoph’i{ae (φιλεώ, I love), algae with thin filaments, or unicellular green algae (Ivanoff).
Panascier‘ing, an enzyme-produced variation of leaf-coloration marking (Küsten).
panmict‘ic, adj. from PANMIXIA.
Pap’il‘a, Receptive, of Phytophthora De Bary, cf. MANOCYST.
Paracyclada‘les, Wieland’s term for proangiosperms.
parag’ynous (γυνή, a woman), applied to such antheridia or male organs as grow up the side of the oogonium of a fungus and pierce it there (Murphy).
Par’alysers (παράλυσις, palsy), enzymes which inhibit action; cf. Activators.
Paramas’tigote (μάστιγος, a whip), a flagellate having one principal flagellum and one short and accessory; Paramylum (+
AMYLUm), special starch in flagellates, not reacting to iodine (Minchin); PARASYNAP'TIST (+ SYNAPSID); one who regards the parallel threads of the heterotype prophase as the pairing of entire chromosomes; cf. TELOSYNAP'TIST; PARASYN'DESIS (+ SYNDEIS); reduction by chromosomes are paired in parallel positions (Häcker); PARICH'NI, plural of PARICHINOS.

PARMELI'TUM, an association of Parmelia Ach.

PARTHENOCARP'Y, add, aitieonom/ic ~, stimulative (Fitting); aitieonom/ic ~, vegetative (id.); parthenogen/ic ~, preferably parthenogenetic.

PARVIGRADE (gradus, a step), applied to a small variation or transient; ~ EVOLUTION is continuous (Poulton); cf. MAGNIGRADE.

PAS'SIVE PROTOPLASM, in a female gamete = GYNOPLASM.

Patroclin/ic, (κλωνη, a bed), in hybrids where the influence of the male or pollen parent is manifest; PATROC'LI'my is the condition; cf. M astroclinic; PATROGEN'ESIS (γενεσις, beginning), development from male nucleus only breeding true, the female nucleus being dispossessed (Collins).

PEDOL'GY (πεδον, land; λόγος, discourse), soil-science, the quality and ability of the various soils.

PELOPHYTES (πηλός, mud; φυτον, a plant), plants growing in clayey or marshy places (Gadeceau).

PEL'ORY, Worsdell's adaptation of Peloria.

PENT'APLOID, five times as many chromosomes as in the haploid condition; PENT'ASOME is a synonym; PENTAPLOID'Y is the state; PENTASTERGIC'TIC, with basidia 'having five steligmata (Buller).

PENTASOME = pentaploid.

PENT'OSAN, referring to PENTOSES.

PERENOSOMES (περνοσ, dusky; σώμα, a body), small granules in androcytes of bryophytes (Wilson).

PERENN'IATE, variation of PERENNATE; PERENNIA'TION = PERENNATION.

Perfora'tion, an actual aperture in the wall of a vessel (Jeffrey).

PERIG'UNY, being PERIGNIOUS.

PERINUCLEAR, surrounding the nucleus; PERIPATET'IC (πατέω, I walk), applied to field botany; cf. ANAFORETIC.

PERIPHER'AL (φερω, I bear), centrifugal or outward growth (Jeffrey); PERIPHIALOP'OROUS, round the PHIALOPORE (Janet); PERIPLAST'IC, cf. PERIPLAST; PERITRICH'IC-ON'OUS (βριχ, τριχος, hair), flagella completely surrounding an organism, as Bacillus Cohn (Conn); PERIVA'SAL (vasa, Lat. pl. vessels) = VASICENTRIC.

PERIODIC'ITY, the seasonal duration of a species (Pavillard).

PERIS'SPOLOID (περισσοσ, odd), uneven multiples (Jeffrey); cf. ARTIOPLOID.

PER'OID (περος, maimed; ελβος, like), defective in fruiting, as Polyppori, annual or perennial (Harshberger).

PER'ULE, cf. PERULA.

PETALOD'IC, having a tendency to double flowers; cf. PETALODY.

PETIOLAT'ED (+ PECTIOLE), having leaf-stalks (Salisbury).

PET'RAN (πετρα, a rock), applied to Rocky Mountain vegetation (Clements).

PETRI Dish'es, two shallow circular glass dishes, one slightly smaller than the other, for cultures free from dust.

PEUCE'DANUM ostru'thiuM Koch.

PH, introduced by Sörenson (also occurs as Ph, pH) to show the negative logarithm of the hydrogen-ion concentration in soil; cf. CH, and H+.

PHAE'NO-ECOLOGY, diagram displaying the range of the species enumerated (Gams); PHAENO'TYPE (τύπος, a type), a type resulting from hybridizing, inclusive of the different genophenes of a genotype, then becomes the phaenotype (Johannsen); PHAENOTYPICALLY, in the manner noted.

PHAGOCYTO'SIS (φαγεϊν, to eat; κύτος, a hollow), intercellular digestion
Phagocytosis

(PHAGOCYTES, the cells in question; PHAGOPHAGOID, autotrophic algae (Gams); an individual member has been named PHAGONT (id.).

Phanerophyta (phyton, a plant, + ion), a main Isocies of phanerogyman plants (Moss); PHANEROCTYLEDO'NEAE = DICOTYLEDONS.

Phe'nhybrid (+ HYBRID), an obvious hybrid (Jeffrey); PHENOSPER'MY (σπέρμα, a seed), used to denote an abortive seed-condition (Goodspeed); PHENOTYPE, cf. PHENOTYPE; adv. PHENOTYPIC, "reaction type," Turesson.

Phiale'a (φιάλη, a bowl), a hollow sphere as Volvox (Janet); PHI'ALOCLEELE (κοιλή, a hollow), the young internal buds of Volvox; adj. PHIALOCE'LIAN (Janet); PHI'ALODERM (δέρμα, skin), the coat of the young buds of Volvox (id.); PHIALOPORE (πόρος, a passage), an outlet from the cenobial Volvox (id.); cf. PHYTOBLASTEA; adj. PHIALOPORIC; PHIALULA, stage of sixteen plastids formed by successive bipartition into a hollow sphere (id.).

-Philous (φιλέω, I love), attractive (Clements).

Phlocoter'ma (φλοιός, bark; τέρμα, boundary), Strasburger's term for ENDODERMIS.

- Phy'tic, pertaining to light (Clements);

PHOTO-CLEISTOG'AMY (+ CLEISTOGRAMY), flowers remain closed in consequence of deficient light (Hansgirg);

PHOTOLYSIS, add, (2) breaking up by the action of light; PHOTOMET'RER (μετρέω, I measure), an instrument to record the intensity of light; photoperiodic, reaction due to relative length of day; photosynthetic, cf. PHOTOSYNTHESIS.

Phrag'mosphere (σφαιρα, a globe), spindle-fibres and associated cytoplasm becoming transformed into a large hollow sphere.

Phre'tad (φρεατία, a tank), a tank plant (Clements);

PHREATHOPHYTES (φυτόν, a plant), "well-plants," i.e., desert plants which can send roots down to the water-table, 8–50 feet down (Meinzer).

Phyco'l'chenes (+ LICHEN), lichens with blue-green gonidia; PHYCOMY'CE'TES, fungi resembling algae; PHYCOMYCETE, a form of fungus attack characterized in the host by vesicles and arbuscules, the latter changing into sporangioles (Peyronel); PHYCOSCOPE (σκοπέω, I see), tube to view sea weeds in situ under water (Tansley and Chipp).

Phyle'sis, the assumed succession of development (Bower); adv. phyletically; PHYL, Chauveaud's term for primitive leaf; PHYLOCARP'IC, -ous, carpotropic movements of the peduncle by which the young fruit is hidden under the leaves: phyillo'dic, cf. PHYLLODINEOUS;

PHYLL'OMORPH (μορφή, shape), "dorsiventral frondose systems resembling compound leaves and deciduous by cladoptosis in three or four years" (Church); adj. PHYLL'OMORPHIC;

PHYLLONECROSIS (+ NECROSIS), decay or death in leaves or leaflike organs; PHYLL'ORTIS, add, (2) Chauveaud's term for the fundamental plant-unit, the entire primitive plant; PHYLL'OSPERMS (σπέρμα, a seed), leaf-borne seeds as in Cycadales and Pteridosperms (Pilger); cf. STACHYS PERMS.

Phylogen'esis (γενεώς, origin) = PHYLOGENY; adj. phylogenetic, referring to the history of floras; successional (Rübel).

-phyte, suffix for "plant" (Clements);

PHYTENT'OSCOPE (ἐντός, inside; ἀκοπέω, I see), an instrument to ascertain how far light rays penetrate into plant-tissues (Wager);

PHYT'TUM (φυτεύω, place covered with plants), combining term for FORMATION (Clements); PHYTO-BLAST'EA (βλαστός, former) a spherical coenogenetic alga, as Volvox (Janet); PHYTOCOENO'SIUM, vegetation of a unitary habitat (Schoeter); an association (Clements); PHYTOCHEMISTRY, cf. PHYTOCHEMY; PHYTODICHO'AMY, cf.
Phytodichogamy

Dichogamy; Phytoecology (+ Ecology), the relation of a plant to its environment; Phytoflagellata (+ Flagellata), the initial plant; a unicellular ciliate alga (Jameson); Phytoflagellida, Delage's name for flagellates; Phytogeographical Formation, Grisebach's early term, changed to Vegetative Formation by Warming; Phytoid, the individual unit in a plant-colony (Child); Phytometer, plants counted as single or in groups (Clements); adj. phytometric; Phytometry, the process in question; Phytomonadina (Minchin) = Phytoflagellata; Phytophymology, the science of plant-form and structure (Ball); Phytopathologist (πάθος, suffering; λόγος, discourse), a student of plant diseases; Phytopathology is the study; Phytophysiology, cf. Physiology; Phytoproteran dry (+ Proterandry), the stamens ripe before the styles are receptive; Phytoproterogyne, the styles mature before the stamens have ripe pollen; Phyto-sociological (socius, a companion), plant-sociology, a branch of ecology devoted to consideration of vegetation rather than the habitat factors, this being Geobotany; Phytosociology, the condition under review may be divided into (a) Autecology, the relation between the individual and its habitat; (b) Autochorology, local botany; (c) Autogenetics, the change of floras; further, (d) Synecology, the relations between the plant association and the habitat; (e) Synecchorology, the distribution of plant associations, and (f) Syngenetics, change of plant associations (Rübel); Phytosterol (στέα, fat), derived from plants, resembling cholesterol, which is formed by animals; Phytosteronomy (τάκτις, order), systematic of plants, described in terms of arrangement; Phytothallea (θαλλος, a young twig), the origin of the vegetable phylum (Janet); phytotomic, adj. of Phytotomy; Phytozoa, add, (2) = Flagellata; Phytozo'o-flagellate, the initial organism (Janet).

Pigment-spot, in the motile algae, a red spot, commonly called the "Eye-spot."

Pilar, an old term for Stipe (2).

Pine'tum, an association of Pinus Linn.; ~ cladinosum, with the soil covered with Cladonia Hill; ~ herbidum, grasses clothing the soil; ~ hylcomio'sum, with masses of mosses Hylocomium Bruch et Schimp. and Dicranum Hedw. (Warming).

Pin'na-bar, cf. Pinna Trace Bar.

Pinoid (εἶδος, form), a conifer with characteristic dry cones and wind-dispersed seeds (Church).

Pioneer Stage, towards a climax, "the extreme condition of a primary area," as lichens for rock seres and submerged plants for water seres (Clements).

Pionno'tal, a continuous spore layer, as in the fungal genus Pionnotes Fr.

Pistie'tum, an association of Pistia Linn.

Pis'tillode, Pistillo'dium (+ Pistil), a rudimentary pistil in the male flowers of such genera as Elatostema Forst.; cf. Staminode.

Pitting, the presence of pits in the tracheids of conifers, further characterized as alternating ~; opposite ~; ra'dial ~, or tangent'ial ~; Pits, locally thin parts in cell-walls, corresponding with similar places in neighbouring cells; Air ~, have no counterpart on the side of the air space (Jeffrey).

Placo'diormorph (μορφή, shape), used of a polarilocular spore, as in the lichen Placodium DC.

Plac'ula (πλακώδος, a flat cake), a stage of Volvox with four plastids in a plane; adj. plac'ular (Janet).

Plagiot'ropy, cf. Plagirop'tism.

Plak'ea (πλάκε, flat), a tabular colony of phytoflagellates in a single layer (Janet).
Planation, employed by Clements to denote stream-erosion.

Plane'tous, plane'tus (πλανητός, wandering), applied by I. B. Balfour to a migratory species.

Plank-butt'rasses, the flat roots given off from the base of certain trees, as Bombax Linn.

Plank'tont, a constituent of plankton.

Plano'gon, wandering plankton; Plant'ont, a wandering organism.

Plan'o-plast'id, a flagellate cell; cf. Aplano-plastid.


Plasmo-g'any (γάμος, marriage), the fusion of cytoplasm, not of nuclei (Minchin); Plasmogen'esis (γένεσις, origin), the origin of protoplasm (Herrera); plasmomet'ric (μέτρων, a measure), measurement of the osmotic pressure of individual cells (Höpler); Plasmone'ma (νῆμα, a thread), the conducting threads of protoplasm, communicating with plastids (Janet); Plasmoptyse (πτύσος, spitting), mycorrhiza infection of Asclepiads and Apocynaceae in the exodermis of the root (Demeter); Plasmor'gan (+ Organ), a rudimentary organ (Janet); Plasmo'tomy (τόμος, a cut), cleavage of a plasmodium into two or more nucleated parts (Minchin).

Plast'id Primor'dia, large microchondria-like structures which produce leucoplastids (Mottier).

Plastids, add, (2) granules which take a deeper stain than the cytoplasmic matrix in which they are imbedded (Collins); Plast'idome (δόμος, a house, or chamber), the sum-total of plastid contents in a cell (Wilson).

Plates, the exterior parts of Peridinaeace, enumerated by West, as a'pical  ~; ant'apical  ~; intercal'ary  ~; postcin'gular  ~, precin'gular  ~, and ventral  ~.

Platypun'tia, any Opuntia or succulent plant with flattened stems (MacDouglas).

Play'a (Span.), sea-coast or beach.

Pla'tenchym'atous (πλεκτός, woven), hyphae matted in growth; cf. Plechtenchyma, Pseudoparenchyma, Pseudo-pycnidial: Plectomyces, a group of fungi in which the richly septate types are never reached and detached spermatia are unknown, as Erysiphaceae (Gwynne-Vaughan).

Plei'omere (μέρος, a part), when mitoses have a higher number of chromosomes, and therefore smaller in size (Della Valle); Ple'ion, a cycle of abundant corn-crops with excess of temperature (Arctowski); pleiozygous (πλειός, a 'yoke'), Frost's term for unlinked.

Pleist'omere (πλειόστος, most; μέρος, a part), when the chromatin is divided only by granules (Della Valle).

Pleog'amy (γάμος, marriage), having flowers of various degrees of maturity, as Andropleogamy, Eripleogamy and Gynopleogamy.

Plesias'my (πλησιασμός, an approach), abnormal shortening of the stem, so that the leaves arise from nearly the same point (Fermond).

Ple'theo (πλήθος, a crowd), Janet's term for Merism, of a sporadic swarm with its later transformations, adj. ple'thean; Ple'theo-blas'teas, alternations of plethea and blastea resulting in the formation of plano-spores (Janet).

Pleuran'thous (ἄνθος, a flower), when in a symposium the inflorescences are borne on lateral axes, the main axis not ending in an inflorescence, but simply stopping in growth; Pleurocystid'ia (+ cystidia), the cystidia being lateral (Buller); pleurog'enous (γένος, offspring), borne laterally on hyphal cells (A. L. Smith).

Plo'tophytes (πλωτός, floating; φυτόν, a plant), floating plants, their functional stomata on the upper surface of their leaves (Clements).

Plurichromoso'mal, when one chromosome complex takes one or more chromosomes of the other in the reduction division (Lotsy); plur'i-
ploid, having multiple chromosomes (Němec); plurisporangiate, with many sporangia; plurivorous, applied to parasitic fungi not confined to one species (Thurston); the condition is Plurivory.

Pneumatocyst (κύστις, a pouch), an air-cavity for flotation, as in Fucus vesiculosus Linn. (Church).

Podocarpineous, resembling or allied to Podocarpus L'Hérit. (Jeffrey).

Podosyncarpous, when a double moss capsule has one half fully developed, the other abortive (Worsdell).

Podsol, soils of a few inches of light powder below the humus layer (M. Vahl).

Poëtum, an association of Poa Linn. Poù, hydroxyl-ion concentration; alkalinity obtained by subtracting pH value.

Poïon, or Poïum, a meadow association (Clements).

Polaribiocular, applied to two-celled spores with thick median wall traversed by a connecting tube; polaribiocular is a shortened form.

Poles, of embryo; the anterior ~, in vascular plants the apex of the axis; the posterior ~, in bryophytes the base of the sporogonium, in vascular bryophytes, the tip of the suspensor (Bower).

Pol'laplasy (πλάσω, I form), division of a normally simple organ into several of the like shape (Fermond).

Pol'len, add, Fur'chen ~ (Furrow-pollen); Pollina'tion; Self ~, (a) in the strictly botanical sense, from the same flower; (b) in the cultivator's sense, where it may be effected by any flower of the same variety in its vicinity; ~ Pre'senta'tion, the sensitive action of the styles in Compositae during pollination (Small).

Poloiço'ous (πολύς, many; οἶκος, a house), having both fertile and barren flowers on the same and on different plants (Lindberg); polyarthrodactylous (ἄρθρον, a joint; δάκτυλος, a finger), with ultimate rays or dactyli each of more than two cells, as in some species of Nitella Ag.; Polycaron (κάρων, a nut), when a nucleus has many centricoles or centrosomes; polychromosomes (Chodat); Polychromatism; polyclo'nal (+ CLONE), used of a population of many clones, each descended from an original ancestor not asexually associated with the original ancestors of the others (Agar); polyclyad'ous, employed for "descended from two male clones," as Sphaerocarpus Bull.; Pol'ycots, an abbreviation of Polycotyledones; polycot'yous, with many cotyledons, actual or apparent; Polyd'me'ics (δύμοι, belonging to the people), Clements's term for sun and shade form of the same species.

Polygone'tum, an association of Polygonum Linn.

Pol'ykont (κοντός, a pole), a flagellate with many flagella (Church).

Polylepide'tum, an association in which Polylepis Ruiz et Pav. is predominant (Herzog).

Polymast'igote (μάστιγα, a whip), having a tuft of flagella (Minchin); Polym'ery (μέρος, a part), the production of a given character by the action of two or more independent factors or genes, each of which when separate is able to produce the same character (Lang); it may be, cu'mulative ~, when the action of several genes accumulates, or, non-cu'mulative ~, one single gene can produce as much as the many, Homomery (Lang); Polyphylla'dea (φυλλόν, a leaf), a polymeric individual, with each component merid having produced a leaf (Janet); polyploid, when consisting of more than double the number of chromosomes in the haploid generation; Pol'yploidy is the condition.

Polypodioid, like the fern Polypodium Linn.
Polysaccharid (σάκχαρο, sugar) = Callus (Church); polysoma (σώμα, a body) = Polypliod; polysaprobiotic (σαπρός, rotten), putrid material abundant (Lauterborn); Polystele = Polystely; Polythall‘ea (+Thallus), a thallus of several merids (Janet); polythallocmic, a misprint for polythalamic; Polytropism, the condition of being polytrophic, of multiple origin; Polygenesis is a synonym (Clements).

Pomolog‘ic, relating to Pomology; Pomologist, a student of fruit culture.

Pontederie‘tum, an association of Pontederia Linn.

Ponchohalic‘oulous (άλς, ἀλός, the sea), inhabiting a salt-marsh.

Por‘al, relating to a Pore; ~ Ax‘is, the long axis; ~ Ring, four to six epidermal cells surrounding the pore in fossil species of Sequoia Endl. (Bandulska); Pore, add, (6) minute canals in certain diatom-valves, which pass through the cell-wall (West); ~ Flagell‘ar, cf. Flagellar Pore; ~ Or‘gans, part of cell-wall in desmids, each pore being surrounded by a cylindrical tube-like structure, but not of cellulose (West); Sphagnum ~; cf. Sphagnum Pores; Pore‘cork [dissyll.], strips of a few layers of compact brownish cells in lenticels; Por‘oids, minute circular dots in diatoms, more than 0.6μ in diameter, tiny cavities resembling pores, but not actual perforations (O. Muller).

Precising‘ular (+ Cingulum), plates in the hypovalve of Peridiniaceae, behind the girdle, fewer, and sometimes larger, than the Precingular plates (West); Precilimax (+ Climax), when change of climate increases the water-content, and vegetation alters thereby; the passing of a climax; cf. Preclimax (Clements); Precilisere (+ Cisere), proceeds from lower to higher climaxes, succeeding a cisere (id.); postsynaptic (+ Synapsis), after synapsis; Postsynezis, following that stage (Gates); post-synize‘tic, after synizesis.

Potamic‘ous, river-dwelling.

Potentiometer (potentia power + Meter), an instrument to determine the hydrogen-ion concentration in soils.

Prair‘ies, grass-steppes in North America.

Precising‘ular (+ Cingulum), applied to a plate in the epivalve of Peridiniaceae, behind the apical plates and usually larger (West).

Preclimax (+ Climax), the vegetation preceding the full development of a climax (Clements); Precilisere (+ Cisere), one which proceeds from higher to lower climaxes, preceding a cisere (id.); Pregametospore, an early stage of Volvox (Janet).


Presynaptic (+ Synapsis), previous to synapsis; pre-synize‘tic, preceding synizesis.

Primitive Spin‘dle, an embryo with polarity (Bower).

Primordial, add, analogous to Mendelian unit characters (MacLeod); Prisere (+ Sere), primary sere (Clements).

Proangiosperms, fossil plants in structure approaching the present Angiosperms (Saporta); Prochoondriomes (+ Chondriome), chromatic granules more or less globular, probably derived from the nucleolus; Prochro‘matin, add, (2) chromatic substance in diffused and modified condition (Latter); Proconmorph‘ta (+ Cormophyta), the flora of the Devonian period (Arber).

Profile (Ital. profilo, shape), diagrammatic records of the vertical relation of the local vegetation (Tansley and Chipp).

Progen‘ies (Lat. descent), special progeny for genetic investigation.

Prognathous (proádos, the jaw), when anthers project forward at the base.
proli'fic, Cells, applied to disjointed cells of the thallus of Pithophora Witt., serving for vegetative propagation (Wittrock); Pro mer istem (+ Meristem), in seedlings, the apex of the stem of undifferentiated parenchymatous cells in active division in all directions (Randolph); adj. pro mer istemat'ic; Pro mer o'sis (+ Merosis), a simple form of nuclear division, seen in nuclei of the protokaryon type (Nägler).

Propag'ule (propago, a slip or shoot), a bud, gemmule or bulb capable of continuing its kind.

propha'sic, adj. of Prophasia.

Pro phylax'is (προφύλαξις, precautionary), prevention of disease, adj. prophylac'tic.

Proplast'id (πλαστός, formed), (1) Janet’s term for mother-cell of Ontoplastid; (2) a minute granule in cytoplasm, definitely concerned with the formation of chloroplasts (Randolph); Propteridophy'ta, pl. (+ Pteridophyta), Arber’s term for Pro CORMOPHYTA.

Pro'sosplasy (πρόσωπος, in addition; πλάσω, I mould), new histological characteristics and functional activities associated with hyperplasia; adj. prososplastic; Pro'sosplasm, the state in question.

Prosor'ous (+ Sorus), body developed from a zoospore in a cell of Syn chitrium De Bary, into nucleus, cytoplasm and outer membrane (K. M. Curtis); adj. prosor'al.

Prosper'ity, the extent a species completes its cycle of development in a given population.

Pro'tase, hypothetical first enzyme of archebiotic process (Troland).

proteochemotrop'ic (cf. Chemotrop'ism), applied to pollen-tubes attracted by protease, cf. Saccharo chemotrop'ic; Pro'teoser'e (+ Ser'e), cf. Thalloser'e; Protobasidiomy'cetes (+ Basidiomy'cetes), with septate basidia, four basidiospores on each, such as Uredinales and Tremellaes; Protoben'thon (+ Bthon), not defined by the author, but probably the earliest bottom vegetation (Church); Proto bi'ont (+ Biont), a primitive being; a protophyte (Janet); Protobota'nist (+ Botanist), Greene’s term for Theophrastus Eresios (B.C. 372?—287).

protococ'ceous, belonging to Protococcus Ag.

Protodoc'hae (δοξή, reception), cf. Priseres; Protokar'yon (κάρυον, a nut), a simple nucleus of chromatin, suspended in the nuclear sap (Mincchin); proto clada'ous (κλάδος, a branch), disposed to a rudimentary branch division (Janet); Protoderma'-a-state, a culture state of Protococcus Ag, resembling Protodermia Kütz.; protomorph'ic (μορφή, shape), Masters’s term for primordial leaves; Proton'ta (δοντα, things existing), ultra-microscopic organisms, differing fundamentally from bacteria (Gates); Pro'toplas'm, add, ac'tive ~, as in male gametes, androplasm; pas'sive ~, as in female gametes, gynoplasm (N. Jones); Protoste'ly, cf. Protoste'le; proto syn'thet'ic (σύνθετος, compound), early or simply-formed (Church); protozo'al (ζωον, an animal), related to the simplest animals (K. M. Smith).

Prune'tum, scrub formed of various shrubby forms of Prunus spin'osa Linn.

Psam'march (ἀρχη, beginning), the condition of an adsere starting on sand (Clements).

Psam'me'tum, an association of Psamma Beav. = Ammophila Host; on high dunes (Warming);

Psam'mophiles (φιλέω, I love), plants preferring sandy soil for their growth (Druce); Psam'mosere (+ Ser'e), a loose, sandy adsere (Clements).

Pseudamito'sis (+ Amitosis), having been forced to the simpler method of nuclear division, by outward circumstances (Tischler); pseudo con'choid (κόγχη, concha, a shell),
a curve in phyllotaxis enunciated by Schoute; Pseudocormophytes (+ Cormophytes), Trelease's term for mosses; Pseudocotyledo'neae pl. (+ COTYLEDON), Agardh's expression for vascular cryptogams; Pseudocyphel'lae, pl. (+ CYPHELLA), pulverulent, sparingly sorediate, excavated points in the under surface of lichens (A. L. Smith); Pseudodichot'omy (+ DICHOTOMY), "monopodial production of lateral axes from the segments of a dominant 3-sided apical cell" (Church); Pseudofertil'ity, in self-sterile plants "a mere environmental fluctuation having nothing to do with heredity" (East); Pseudog'amy (γάμος, marriage), the fusion of two hyphal cells of different thalli (Bensaud); Pseudogym'nosperms (+ GYMNOSPERMS), cycadeoid plants (Wieland); Pseudoid'ia (+ Oidia), disarticulated hyphal cells which may germinate (Bensaud); Pseudoi'on (+ Ion), acid combined with colloid dissociating into the named substance (Lloyd); Pseu'do-lam'ina (+ Lamina), the leaf-blade of the monocotyledons, as a palm-leaf regarded as a petiolar phylloe (Arber); Pseudoleuco'der'mis, a periclinal chimaera in Arabis Linn., and Glechoma Linn.; the seedling inherits a white sub-epidermal layer; Pseudolo'bes, segments of palm-leaves, from having been torn in development (Arber); Pseudomac'chia, xerophilous evergreen scrub-juniper and evergreen oak predominating; cf. Lauri-fruticeta; Pseu'do-Ma'qui, xerophytic evergreen bush, as the foregoing; Pseu'do-mito'sis (+ Mitosis), the action of a pair of bivalent chromosomes (Tischler); pseudo-monocarp'ous, adj. of Pseudomonocar'py (+ Monocarp), in cycads the occurrence of mature cones imbedded in the trunk, the seeds not being shed until the death of the tree, conserved as in the leaf-bases until set free (Wieland); Pseudomycorrh'i'za (+ Mycorrhiza), false-mycorrhiza in which the fungus is a one-sided parasite (Melin); Pseu'do-nemath'ecia, pl. (+ NEMATHECIA), parasitic algae assuming the guise of nemathecia; Pseudonuc'leus (+ NUCLEUS), a nucleus containing blue corpuscles (Auerbach); Pseudoparenchyma'tous, to be shortened to parenchyma'tous; add, (2) the pycnidial wall of certain fungi, of more or less hexagonal cells (W. B. Grove); Pseudop'é'tal, one of the numerous petal-like constituents of the corolla in Mesembryanthemum Dill.; Pseu'do-phyll (φύλλον, a leaf), the sheathing bracts of certain bamboos which fall off when the leaves develop; pseu'do-phyllo'dic, the peculiar semi-equinant leaf of Phormium Forst.; Pseudopla'smodi'um (+ Plasmodium), constituent amoebulae remaining distinct and not fusing into a true plasmodium (Minchin); Pseudopod'i'um, pl. -ia (+ Podium), portions of moving protoplasm in Myxogastres, myxopodia; Pseudopod'iospore (+ Spore), = Amoebula (Minchin); pseudopycnc'idial (cf. Pycnid), Potebnia's term for plectenchymatous hyphae; Pseudovac'cuoles (+ Vacuole), dark-reddish granules in the cytoplasm of certain Cyanophyceae, "sensory bodies" of Molisch (West); Pseudo-valve, a semi-solid carpel splitting at maturity between the two vascular bundles of the midrib (Saunders).

psilic'olous (ψιλός, bare), prairie-dwelling.

Pter'éosere (+ Sere), characterised by fossil pteridophytes, a paleophytic cosere; = Paleose'ere (Clements); pter'ìd, allied to Pteris Linn. (Bower); På'teride'tum, an association of ferns.

Pul'vinoid (ελθός, form), a petiole acting in a degree as the pulvinus (Bose).

Pusillaejunc'tum (pusillus, petty),

Pusillaejunec'tum

Pseudomycorrhiza (+ Mycorrhiza), false-mycorrhiza in which the fungus is a one-sided parasite (Melin).
Regeneration

an association of small species of Carex Linn.

Pu'sule, add, ~ appara'tus, peculiar vacuoles in the protoplast of certain Peridiniae (Schütt); collect'ing ~, a small specimen with a duct leading to the flagellar pore (id.); ~ Sack, a large bilobed example in P. Steinii Jörg. (West).

pycnoxyl'ic (ψυχων, wood), the coniferous type of wood (Seward); cf. MANOXYLIC.

pyr'omenyce'te, relating to PYRENO-MYCETES.

Py'rophen (πυρ, πυρός, fire), a plant liable to destruction in forest fires, and incapable of being replaced under the altered condition (Gates); Py'rophyte (φυτων, a plant), a tree having a thick, fire-resisting bark, thus escaping permanent damage from forest fires (id.).

Quad'rifid Or'gan, in the bladders of Utricularia Linn., four long, terminal cells arising from a collar-cell at the apex of a pear-shaped cell; believed to be absorptive (Clarke and Gurney); quadri-cili'ated (+ CILIATE), having four cilia (West); quad'ruple, four sets of chromosomes affected (Blakeslee); Quad'ruple Hy'brids, hybrids which in the first generation split into four types (Atkinson).

Qua'si-circle (Lat. as though, + CIRCLE), Church's term thus defined, the "ovoid curve in a Log-spiral quasi-square mesh" in phyllotaxis.

Querci'ion, an association of Quercus Ilex Linn.

quint'uple, five sets of chromosomes affected (Blakeslee).

R1, R2, etc., Chauveau's signs for successive root-like organs.

Ra'ches, suggested in place of Rhachi'des, as plural of Rhachis (Sahni); Ra'chitism, hypertrophy of floral envelopes, especially in grasses and sedges (Touchy).

Rachil'la-flaps, cf. Rhachilla.

Rad'ical, add, (2) Vanilov's term in place of Lotsy's LINNEON, or super-species.

Rama'lia, pl. (Lat. sticks), "Ramuli to carry out the greater part of metabolic activity" (Church); cor'tical ~, near the cortex.

Ramell'ius (Mod. Lat.), side branch in algae (Agardh).

Rana'lian, resembling or akin to Ranales, a group including Ranunculacese (Jeffrey).

ranuncula'ceous, having affinity with Ranunculus Linn.; Ranuncule'tum, an association of aquatic species of Ranunculus, i.e. § Batrachium, DC.

Ray, add, diffuse' or diver'ging ~, scattered in the woody tissue; medul'lar ~; (2), limb of a branchlet in Nitella Ag.; ul'timate ~, = DACTYL.

Reac'tion, add, ~ Lev'el, bisected by the surface, a few inches above or below (Clements); ~ Type (Johannsen) = PHENOTYPE.

Recept', an abbreviation for RECEP'TACLE, as in Euphorbiaceae; Recep'tive Papil'la, cf. MANOCYST.

reces'sive (recessus, a going back), a character which tends to disappear in hybrids; the opposite to DOMI-NANT.

Recip'rocal Hy'brids, add, they are divided into Blend ~, Dou'ble ~, Ite ra'tive ~, Quad'ruple ~, Selec'tive ~, Ses'qui- ~.

Rectigrada'tion (recte, straight; gradatio, gradation), adaptive evolutionary tendency from the beginning (Osborn); reci'ser'ial, add, (2) the orthostichy spiral when the axis is conical or circular (Church).

Reduplica'tion, add, (2) used for former expressions COUPLING and REPULSION, i.e. LINKAGE (Punnett).

Reg, alluvial desert in Algeria.

Rege'nera'tion, add, (2) of woodland or forest, its renewal; of grassland, growth after burning (Tansley and Chipp).
Saltation

Region, add, (2) that occupied by a formation complex (Waterman).
Rejuvenescence, add, (2) also a synonym of Regeneration.
Relic, add, (2) what is left of former, but now suppressed, vegetation (Warming).
Resurrection (re = back; liquefacio, I melt), the resumption of its normal state by protoplasm, after temporary hardening (Szűcs).
Restitution (restitutio, restoring), stimulated to renewal of lost parts or organs (Harshberger).
Retention, a double sheet of thin paper containing a specimen through the drying process (Tansley and Chipp).
Retarded Phase, the third in the growth of yeast.
Reversion, to recall ancestral features of organization as an effect of injury (Jeffrey); adj. reversionary.
Rhachilla-flaps, upward outgrowths from internodes of the spikelet axis of grasses (Arber).
Rhacomitrium, an association of Rhacomitrium lanuginosum Brid. (Moss).
Rhoeilla (φόεω, I love), algae in running water (Ivanoff).
Rhize (monosyll.), Chauvcaud’s term for the root element in succession, R₁, R₂, etc.; as primary, secondary, etc.; Rhinozoid, add, (2) the end-cell of a shoot of Cladophora Kütz., which adapts itself to neighbouring structures and interlocks into Aegagropilae; Rhizolithophytes (+ Lithophytes), lichens (Wetter); rhizomastigoid (μισταγ, a whip; elídos, form), whip-like flagellum or pseudopodium (Church); Rhizomatìcae, pl. root-stalk plants.
Rhizophore, an association of mangroves, Rhizophora Linn.
Rhizopodial, resembling rhizopods in habit (Fritch); Rhizothamnion, Michè’s term for tubercles on roots of Casuarina Linn.
Rhizum (ἐντω, existing things), of a rooting type (Gams).

Rhodoreum, an association of Rhododendron Rhodora J. F. Gmel.
Rhyncosporum, an association of Ryncospora alba Vahl.
ring-porous, when the vessels in the spring growth of wood are larger than those of later growth (Jeffrey).
Roestelia-stage, a form in rust-fungi in which the peridium is elongated and fimbriate, recalling the genus Roestelia Rehent.
Root-knobs, Syme’s term for orchid tubers; Roots, “double,” lateral roots in monocotyledons in the interval between two protoxylem clusters (Jeffrey).
rose-form [dissyll.], the shape of the rose when in flower (Greene);
rosula’ceous, pertaining to a Ros’sule, a rose-like tuft of leaves, having the form of an umbel (Herbert).
rudimentary, add, (2) (a) vestig’ial, (b) formerly applied to an organ disappearing in evolution.
Rugula, a longitudinal groove in the upper lip of the flower, which encloses the style of Justicia Houst. (Lindau).

Saccharochromotropic (+ Chemo-tropism), applied to pollen-tubes attracted to sugar (Tokugawa); cf. Proteochromotropic; Saccharomyces, fermenting fungi such as beer-yeast, Saccharomyces cerevisiae Meyen.
Sac’cospores (+ Spore), plants having sack-like envelopes as dissemi- nules (Clements).
Sachs’s Rule, “a cell-wall always tends to set itself at right angles to another cell-wall” (Thompson).
Sadd, or Sudd, floating and matted vegetation on the upper Nile, blocking navigation.
Salicinase, an enzyme from almonds, which decomposes Salicin.
Salicornieum, cf. Salicornietum.
Sal’irates, salt-steppes of Argentina.
Salt’ant (saltus, a leap), a variable form or mutant from the normal; salta’ted, varied; Salta’tion, a mutation or large transient (Poulton).
Sa'nio, Trabec'ulae of, ligneous processes crossing the cavity of the tracheid, possibly due to parasitic fungi (Jeffrey).

Sap'rope1 (πηδός, clay), sedimental remains of plants in water (Sernander); saprope'llic, applied to algae in colonies on decaying vegetation at the bottom of ponds or lakes (Lauterborn); Saprobe'o-phyes (+ Geophytes), saprophytic flowering plants, as Epipogum S. G. Gmel., and many fungal mycelia (Gams); Saproplank'ton (+ Plankton) consists of auto-trophic flagellates (Gams).

Scapa'ceous, Herbert's expression for "having a scape."

Scenedesme'tum, an association of Scenedesmus Meyen.

Schine'tum, a similar group in which Schinus Linn. is predominant.

Schinopsis'de'tum, a like group of Schinopsis Engl.

Schizae'o'id, like the fern Schizaea Sm.; schizae'o'us is a synonym (Jeffrey).

Schizocot'ily (cf. Cotyledon), the forking and multiplying of cotyledons (Worsdell); Schizog'ony (γόνος, offspring), splitting off without a sexual process (Minchin); Schi'zosomes (σῶμα, a body), reduced chromosomes (Chodat).

Schizotrich'e'tum, an association of Schizotrichia Kütz.

Scim'itar, used of leaves presenting an edge to incident light, as Eucalyptus L'Hérit. (Church).

Sciphy'ta, add, Sci'ophytes.

Sclerophel'loid (σκληρός, hard; φέλλος, cork; ἔλδος, form), used for lens-shaped groups of compact cells in lenticels (Neger); Sclerophyl'lous For'est, ~Scrub, cf. Durifruticeta.

Screet'ing, weeding or thinning a forest (A. S. Watt).

Scrub, stunted or densely packed bushes.

Scu'tum, add, (3) pl. Scu'ta, name applied to the eight shield-like plates which unite to form the outside of the antheridium of Chara Linn.

Se'bak', a depression holding salt water in the rainy season, dry in summer.

Se'tio'al Chima'era, bud variation resulting in mixed tissue in branch of tree or shrub (Harshberger).

Secun'difol'ius (folium, a leaf), the leaves all turned towards one side (Herbert).

Se'de'tum, an association of Sedum Tourn.

Seed-stage, in Gymnosperms, the formation of cones (Church).

Seep, to ooze; Seep'age, oozing; slow flow from ill-drained land.

Seismonast'ic, add, (2) Blackman's term for the movements of Mimosa pudica Linn.

Sejunc'tus (Lat.), separated.

Selec'tive Hy'brid, certain factors selected from the parents which are fully developed later (Atkinson).

Self-comp'atible, self-fertile (Stout); ~incompat'ible, infertile by its own pollen.

Sem'i-apog'amy (+ Apogamy), a reduced form of fertilization, as in Phragmidium Link (Blackman); sem'i-ectotroph'ic (+ Ectotrophic), an intermediate type of mycorrhiza infection in certain conifers (Laing).

Sem pervire'tum, an association of Carex sempervirens Vill.

Sencione'tum, a like group of Senecio Cineraria DC.

Separa'tion Discs in Myxophyceae, of a substance secreted by two adjoining cells, appearing like a ring (West).

Sep'et, applied to the sets of chromosomes in Rosa Tourn., in sevens or a multiple of seven (Hurst); sep'tuple, seven sets of chromosomes affected (Blakelee).

Se'ral (+ Sere) U'nilts; thus Assoc'ies, Colony, Consocies, Family, Socies (Clements); Sere (sere, I put in a row), the unit of succession in Clement's scheme; a concrete developmental series which can be traced (Tansley and Chipp); adj. se'ral, opposed to climax.
Se’ries, add, (3) applied to a group of sister-plants from the same parent, or same cross, in any one season (Stout); (4) used by Vavilov for the phenomena of variation; cycles, one or more.

serological (sero, I sow; λόγος, discourse), concerning raising seedlings of Leguminosae and grasses (Zade) [Note.—not to be confounded with the medical usage of this word.]

Sesleric’tum, an association of Sesleria Scop.

Sex Int’ergrades = polygamous (Yampolsky); ~ Integra’dation, polygamy; ~ lim’ited, inheritance restricted; ~ linked, needful for inheritance of certain factors.

sex’tuple, six sets of chromosomes involved (Blakeslee).

Shift, segregation of one factor causing variation (Engledow); shift’ed, varied in form.

Shoot, add, (3) long = LEADER; short ~ = spur (3).

Short-shoot, (1) spur; dwarfed, fertile branch; (2) in conifers, special leaf-spurs (Jeffrey); ~ styled, flowers with styles shorter than the anthers.

Sib’ijak, bush-land; a transition from grass-steppe to forest, of light and warmth-loving shrubs (Adamović).

Sib’ship (sib, old term for related), relationship.

Si’derophiles (σιδερίτης, a magnet; φιλέω, I love), iron-loving plants; Si’derophobes (φόβος, fear), iron-hating plants; Si’deroplasts (πλαστός, formed), plants taking their shape from the iron in the soil (Nau- mann).

sier’ran (Sierra, Span.), applied to the vegetation of the Pacific coast and Rocky Mountains.

sikyot’ic (σικύς, a cupping-glass), parasitic, as by fusion of plasma in fungi, as Chaetocladium Fres. on Mucor Mich. (Burgeff).

Si’lage, corn or hay preserved in a Si’lo, a tall, airtight compartment, for fermentation of its contents.

sileic’icole, cf. Silicolous; Silici’on, sand-flinty soils (Moss).

Silks, stigmas of maize, in United States of America.

Simp’lices, homosporous ferns, whose sporangia are produced simultane-ously, especially those occurring in primary rocks, as the Maratti-aceae (Bower).

Sing’ular-becoming, Dryesh; explained by Worsdell as mechanical causality.

sinist’ral, add, (2) applied to respective daughter-cells resulting from spiral cleavage (Treadwell).

Sipho’nea (σίφων, a tube), a stage in Volvox when the blastopore is drawn out and the archenteron has become tubular (Janet).

skin’ny, W. Wilson’s term for SCARIOSE.

smila’ceous, like Smilax Tourn. or Ruscus Tourn. (Drude).

snipt, old term for INCISED.

Sociabil’ity, the disposition of individ-uals in the interior of an associa-tion; so’cial exclu’sive, with no other species; ~ inclu’sive, admitting other species; Sociol’ogy, Plant: economic botany.

Sol, abbreviated from Solu’tion; stiffens into GeL.

sola’nceous, akin to Solanum Tourn.

Somat’ogen, somatogenic variation (Poulton).

sonor’an, the vegetation of Sonora in the Gulf of California, a very dry region.

Sora’lium, a group of soredia sur-rounded by a definite margin (A. L. Smith).

Sori, add, (4) antheridia so arranged on male fronds of Rhodymenia palmata Grev.

So’roma (σόρωμα, a heap), pl. Soro’- mata, the sporangial apparatus of the vascular plant, with its receptacle or stalk (Benson).

So’rosphere (σφαιρα, a ball), a hollow sphere of cells, each cell becoming a spore, as in Sorosphaera Schroet. (Minchin).
Sorus, add, (2) used for grouped antheridia in male fronds of marine algae; (3) a cluster of spores in certain Gasteromycetes (Minchin).

Sparganium, akin to Sparganium Tourn.; Sparganium, an association of the same genus.

Sparganium (σπάργανος, swaddling band), founded by Unger as a genus, and now regarded as a type of cortex of parenchymatous tissue with vertical groups of thick-walled fibres (Seward).

Sporation, (1) a specific quality (Hurst); (2) evolution of species (U.S.); Sporology (λόγος, discourse), a discourse on species (Turesson).

Spermatial, adj. of Spermatium.

Spermatocyte (κύτος, hollow vessel) = Androcyte (Allen); Gametocyte (Minchin); Spermocarp, add, (2) a body arising in Coleochaete Bréb., after fertilization remaining dormant through the winter (West).

Sphaecia, apical cell mechanism (Church); sphaecilate, add, (2) applied to the colour of the interior of coniferous scales, as though charred (Henry).

Sphaerome, composed of microsomes, alone or in chains, not enclosed in a vacuole (Dangeard); Sphaeroplast = Bioblast; Cytomicrosome; Sphaerositian, the usual state of a male Volvox (Janet).


Sphe rule, in Padina Pavonia Lamour., a small chromiphilous body persisting until the formation of chromosomes (J. L. Williams).

Spike-stalk, an old name for Rhachis.

Spin'dle, primitive, Bower’s term for an embryo with polarity; cf. Endoscopic, exoscopic.

Spiral Cells, five cylindrical cells which clasp the egg-cell in Characeae.

Spirogyra'tum, an association of species of Spirogyra Link.

Spiralphase, a stage in synapsis (Hogben).

Splint-wood, add, (2) soft-wooded.

Spokes, old term for pedicels of Umbelliferae, cf. Radius (2).

Sporangiospore, add, (2) a non-motile spore in Thraustotheca Humph. (Weston).

-Spore, “migration contrivance” suffix (Clements); Spore-balls, cf. Bulbil (c); Spore'tia, pl., cf. Chromidia, Idiochromidia; Spor'oblast (βλαστός, a shoot), a spore mother-cell; Sporob'ola (βολή, a throw), the trajectory of a spore shot out horizontally (Buller);

Spore'cyst (κύστις, a bag), a tough, resistant envelope, enclosing a spore; a spore mother-cell (Minchin); Sporodoch'ial, adj. of Sporodochium; Spor'ont, cf. Gamont, giving rise to Gametes; Sporophore, add, (2) plasmodium growing out into anther-like processes in Myxomycetes; Spor'ogy'ny (γάμος, marriage), the production of spores after gametic fusion.

Spur-pel'ory, when a flower is symmetrical by all the sepals or petals becoming spurred (Worsdell).

Stabilization (stabilis, stable), equilibrium in plant growth, the final adult stage of development (Clements).

Stach+yosperm (στάχυς, ear of corn; σπέρμα, seed), plants which bear seeds on their stems, as Cordaites Unger, Ginkgoales and Coniferales (Pilger).

Stad'dies, old term for standards in coppice.

Stade (stadium, a racecourse), used by Janet for Phase.

Stagnoplankton (stagnum, a still pool + Plankton), floating vegetation of stagnant water (Ivanoff).

Sta'l'ing, the state in cultures when growth is hindered by the condition of the medium (Pratt).

Stalk-cell, add, the cell between the antheridial mother-cell and the vegetative cell (Yamanoouchi);

Stalk-nu'clens, delimited from male prothallus of Pinus Linn. (Church).

Sta'men-lodic'ules, organs partaking of the characters of both stamen and lodicule (Arber).
Start'ers, cultures used to start ripening or fermentation (Conn).

Stase, fossil deposit when in stagnant water (Clements); Sta'sis, an arrest of growth; at a standstill (id.); Stato'nch'yma, tissue formed of Stato'cysts.

Stauroso'mes = TETRADS (3) (Chodat).

Stearinolip'oids (στεαρ, tallow; λιπός, grease), fatty compounds occurring in plants (Czapek).

stenocoe'nose (κοινός, common), restricted in distribution (Gams);
Sten'ocysts (κύατος, a cavity), auxiliary cells in the leaves of certain mosses (Morin); Steno'morph (μορφή, shape), a diminutive form due to a cramped habitat (Bartsch); steno'ther'mal (θέρμη, heat), applied to species restricted to limited areas and temperatures (Setchell); Steno'ther'my is the condition; stenosyn'u'sic (+ SYN'USIA), groups of plants restricted in distribution (Gams); cf. EURYSYNUSIC; stenotrop'ic (τρόπος, a turn), with narrow limits of adaptation to varied conditions (Solms).

Stigmatomyco'sis (+ MYCOSIS), fruits apparently sound, but unsound within, due to punctures by plant-feeding bugs.

Stipe'tum, an association of Stipa tenacissima Linn.

Stokes's Law, the fall of spherical particles in a medium varies directly as the square of their radius (Buller).

sto'mal, Clements’s expression for STOMATAL; Stomat'o'graph (γράφω, I write), a self-recording instrument of the stomatal apertures of a leaf (Balls).

Stone-cork, "of units with thick, sclerosed and pitted walls," in Conifers (Church).

Strands, add, (3) very fine strands of linin in mitoses (Digby).

Strat'a pl., add, (2) groups of Con'socies (Shelford); Strates, scattered fossil deposits, opposed to Stases (Clements).

Stream'way, the bed of a watercourse or dry channel.

Stri'ae, pl., add, (2) the spiral ridges of the oosporule in Charads (Groves).

Stricte'tum, an association of Carex stricta Good.

Strig ("origin obscure," Oxf. Dict.), applied to petiole, peduncle or pedicel.

-stro'te, "means of migration" (Clements).

sty'led, in dimorphic flowers, long or short.

Suaede'tum, an association of Suaeda Forsk.

Subassocia'tion (+ ASSOCIATION), a minor association; Sub-bact'er'ia, filter-passing bacteria or ultra-microscopical germs (Cheshire);
Sub-clim'ax, an edaphic minor climax (Tansley and Chipp); sub-co'pious, few (Clements); sub-dom'inant (+ DOMINANT), applied to a prominent character which falls short of dominant.

Su'berin, add, recently defined as a substance present in median lamella of periderm cells, between the middle lamella outside and the cellulose layer within (Priestley); suberogen'ic (γενός, offspring), forming suberin.

subgregar'ious, somewhat gregarious (Clements); sublit'toral, near the sea-shore; Subpalisa'de (+ PALISADE), tissue lying below the palisade tissue; Sub'sere (+ SÈRE), partial development of a climax of vegetation (Clements); a secondary sere (Tansley and Chipp);
Subsuccess'sion, used for seres beginning on rock surfaces or crevices and ending in mat-growth (Clements); subxero'philous (+ XEROPHILOUS), growing on fairly dry soil.

Subsucces'sion, add, defined by Clements as abrupt' ~, contin'uous ~, imper'fect ~, intermit'tent ~, inter-pol'ated ~; by Cowles as biot'ic ~, phytogenous'ic ~, re'gional ~, topo'graph'ic ~; by Gams as catastro'ph'ic ~, lo'cal ~, and sec'ular ~, with yet finer distinctions.
**Sulci, add**, (3) = **Fossulae**.

**Sulphure'tum**, a natural, ecological community of sulphur bacteria.

**Sum'mit**, an old term for **Stigma**.

**Sun'scald**, injury due to too brilliant sunlight; **Sun'scorch**, the burning of foliage when the soil is parched.

**Su'persex**, ratio of chromosomes, 
\[ 2x:2 = \text{female} \]
\[ 2x:3, \text{an intermediate, the inter-} \]
\[ \text{sex or supersex (Bridges).} \]

**suprava'sal** (+ **Vasal**), when situated opposite the xylem-groups in the wood (Solereider).

**Suspen'sory Bod'ies** (Molisch) = **Pseudovacuoles**.

**Symbas'is**, add, free intercrossing lines of descent (O. F. Cook).

**Sym'biophiles**, pl. (*φυλέω, I love*), free mycorrhiza of hymenomycetous fungi, neither parasites nor saprophytes (Rayner).

**Symbio'sis**, **add**, defined by Mcdougal as I. **conjunctive ~**; and II. **disjunctive ~**, with further divisions of each, as **nutritive ~**, with **antagonis'tic ~** and **recip'rocal ~** as forms; **Sym'pode**, **Sympod'i-**

*ium, add, it may be **acranthous ~** or **pleuranthous**.

**Symptomatologi'gy** (*συμπτωμα, mischance; λόγος, discourse*), the science of the signs of disease;

**Symphys'iology** (+ **Physiology**), the science of correlation (Gams).

**Synandrod'ium**, applied to the imperfect flower of the aroid *Man-**

*gonia Schott.

**Synanth'ody**, side-growth of two flower-heads on the same stalk, or on two long-drawn-out stalks (Penzig).

**Synap'sis**, **add**, by recent observers used for the entire period from the contraction of the nucleus until the spireme segments into chromo-

*some** (Gates); **Synaptosper'my** (*σπέρμα, a seed*), plants with seeds germinating close at home, instead of being dispersed at maturity (Murbeck); **Synchorol'ogy** (*χωρέω, I spread abroad; λόγος, discourse*), distribution of plant associations

(Rübel); adj. synchorolog'ic, as ~ **Geobot'any**, or ecology in a wide sense; **Synchronol'ogy** (*χρόνος = time*), plant distribution in time, that is, fossil species and their duration during geological periods (Gams); **Synco'tyl'es** = **Synco-**

*tyledons**.

**Syndin'ial Mito'sis**, in the peridinial genus *Syndin'ium*, taking place without an achromatic spindle being formed, the chromosomes breaking apart (Chatton).

**Synecolo'gy** (+ **Ecology**), (1) the relation between the plant association and its habitat (Rübel); (2) the ecology of communities (Turesson); **dynam'ic or genet'ic ~**, the study of plant communities as the result of biotic factors; **geograph'ic ~**, distribution of plant communities influenced by factors of environment; **morphologi'cal and physiologi'cal ~**, physiognomy, ecological structure and floristic composition of plant communities as related to factors of environment (Waterman); adj. **synecolo'gic**; **Syngam'eons** (**γάμος, marriage**), pairing communities, frequently taken for superspecies, formerly styled **Linne'eons**.

**Syngen'esis** (**συγγενής, of same de-

scend**), (1) formation of the embryo in sexual reproduction of male and female elements; (2) the origin of a species in mass (Stephanos);

**Syngeneti'cs**, change of plant asso-

*ciations* (Rübel); **syngeneti'c Geo-

*bot'any = **Synecolo'gy**, the ecologic investigation of plant communities (Schroeter).

**syn'gynous**, epigynous; **Syn'gyny**, epigyny.

**Synize'sis** **add**, (**αυξίζομαι, collapse**), distinguished by Gates from **Synapsis** for its tightly contracted phase of the nucleus.

**Synkar'yon** (**κάρυν, a nut**), the fusion of pronuclei in the zygote (Minchin).

**Synu'sia**, pl. -**ae**, sometimes printed as **Synu'sium**, pl. -**ia** (**συνούσια, a**
gathering), life-forms associated in growth and habitat, but distinct as to affinity (Gams); further distinguished as (1) composed of the same species; (2) of different species but the same class of life-forms; (3) different life-forms but an ecological unit by fixed correlation, i.e. an association; synusiological = ecologic.

Synzospores (zoo spore), large, solitary zoogonidia in Vaucheria DC. (West).

Systematic, classification by academic systems (Church) = systematic or taxonomic botany.

T, used by Church for terminal; T', second series (?).

Tabular, add, (2) placular (Janet).

Tachygensis (γένσεις, origin), embryonic acceleration.

Taija, Siberian primeval forest (Warming).

Tamaricatum, an association of Tamarix Linn.

Tanniniferous (fero, I bear), yielding tannin.

Tapestry (τάπης, a carpet), applied to forest growth on steep slopes, forming an unbroken arboreous mantle.

Tautonym (ταυτό, the same; ὁνομα, a name), a name in which the specific name merely repeats the generic, as Linaria Linaria Karst. (Sprague).

Taxadinous, related to Taxodium Rich.

Taxoid, resembling or allied to Taxus Tourn.; Taxoids, seeds of conifers, more or less succulent, solitary, and dispersed by birds (Church).

Tectonematum, an association of Tectona Thumb.

tegulicolous (tegula, a tile; colo, I inhabit), used for lichens living upon tiles (A. L. Smith).

Teleplastids (τέλος, an end, + Plastid) reproductive cells (Janet); Teloplasts, products of division forming a merism (id.); Telosorus

thermogenic

(± SORUS), Harshberger’s term for Telutosorus.

telmicolous (colo, I dwell), dwelling in fresh-water marshes.

Telosynopsis (± Synopsis), cf. Telosynapsis; Telosynapsis (± Synapsis), Telosynaptist, one who regards each parallel thread of the heterotype prophase as half of a somatic chromosome which separated in the preceding telophase; cf. Parasympist (Digby); Tela-synopsis (± Synopsis), cf. supra.

Teratoma, an abnormal growth of leaf-tissue in crown-galls, due to bacteria.

terripetal (petere, to seek), Bronn’s term for gravitation shown by plants; Terriprata (pratum, a meadow), the covering of meadows, grasses.

Tetradsporangium (± Sporangium), a tetrad mother-cell (Church); tetrapont (κομός, a pole), having four equal flagella (Church); tetrasomic (σαμα, a body), tetraploid; tetrasporiferous (fero, I bear), producing tetraspores; Tetrasporophyte (± Sporophyte), a plant which bears tetraspores; tetrorasterigmatic (± Sterigma), having four sterigmata to each basidium (Buller); tetravalent (valens, strong), having hypothetically four chromosomes in each apparent single one, in nuclear reduction divisions (Marchal).

Thallea, a mass formed of several layers of plastids, but a single merid (Janet); Thalloseme (+ Sere) = Protoseme (Clements); Thallochlore (χλωρός, pale green), the green colouring matter of lichens (Paulson); Thalloid Climax, in the pre-Devonian period, consisting of bryophytes (Clements).

Telytonic (τέλος, strain), gynecogenic, i.e. parthenogenetic (Janet).

Thermoleistogamy (± Cleistogamy), fertilization of unexpanded flowers, due to want of heat (Knuth); thermogenic (γένσεις, offspring), heat-producing, as in
the case of certain bacteria; thermotactic (τακτικός, apt for tactics), heat perceptive as shown by growth.

thinicolous (colo, I dwell), dwelling on shifting sand dunes (Warming).

Thiobacteri'a (θεiων, sulphur, + Bacteria), sulphur-oxidizing bacteria; thiogenic (γένος, offspring), sulphur-producing; thiorhodaceus, belonging to Thiorhodaceae, a family of bacteria; thioxidan, bacteria oxidizing sulphur compounds to sulphates.

Thlaspie'tum, an association of Thlaspi Dill.

Thread, the longitudinal half of an entire univalent spireme or chromosome (Digby); Thread-ring, spireme halves in karyokinesis ( Balls).

Thymes'tum, an association of Thymus Linn.

Tier, a stage or layer.

tiled [monosyll.], Withering’s term for imbricate overlapping.

Till, the product of glaciation, ground moraine; Till'ite, the same when fossil (Clements).

tiphicolous (colo, I dwell), pond-dwelling.

Tjemoro, an aphyllous forest, formed chiefly of Casvarina Linn., in Java (Warming).

Tolypotrichetum, an association of Tolypothrix Kütz.

Trabe'culae of Sanio, cf. Sanio.

Trans'ect, it may be Belt ~; (denu'ded or per'manent) Lay'er ~, or Li' ne ~ (Clements).

Trans'ilients (transilio, I leap across), Galton's term for MUTATIONS (1).

Tremalith (τρήμα, a hole), having a hole through the structure (Lohmann).

Tri'chome Hy'dathodes (+ Hydathode), hair-like organs secreting moisture in Agaricineae (Knoll).

Trichophore'tum, an association of Trichophorus Desv.

trichromosomal, concerned with three chromosomes (Frost).

Tricot'yli (+ Cotyledon), cf. Tricoty'ledony; adj. tricot'ylous; Triten'ger (genus, kind), the product from three genera (Hurst); Trihy'brid, Church's term for a hypothetical working of three factors at once; Trihy'bridism is the condition; trim' erous, add, (2) seedlings with three cotyledons, and as many primordial leaves; Trim'ery, the possession of trimerous members (Salisbury); trimo'dal, three forms or modes; Trimodal'ity is the state (Engledow); trimonoecious, adj. TRIMO'NECISM; tri'plex, three dominant factors (Blakeslee); tril'oid, add, used loosely for hybrids between forms one of which has twice as many chromosomes as the other; Triplo'i'dy, the state in question; tripl'o'shous (στρίχωσ, a row), three rows of cortical cells to each branchlet or bract-cell in Charads; triso'me, triso'mic (σώμα, a body), triploid (Blakeslee); tristerigmat'ic, having three sterg mata to each basidium (Buller); Tri'syncot'yli, having three cotyledons fused for half their length (Bexon); trizy'gous (ζυγός, a yoke), dependent on three pairs of chromosomes.

Tritic'a'tum, an association of Triticum junceum Linn., and other congeneric species.

trivalent (valens, power), having apparently three chromosomes in each single one, in nuclear reductions.

Trophaochro'matin (+ CHROMATIN), vegetative chromidia (Minchin); Troph'ocytè (κύτως, a hollow vessel), a zygote, or fusion cell (Phillips); Trophone'ma (νύμμα, a thread), a synonym of PLASMONEMA, as conveying nutriment (Janet).

Tu'ba or Tube, add, (3) = STYLE, used by Vaillant, and Haller; Tube'nucleus, named by Church as delimited from the male prothallus of Pinus Linn.

Tu'bercle, add, (5) the bulbil of Charads; Tuberid'ium, pl. -ia, the
pseudo-bulb of an orchid (Reichenbach); tuberiform (forma, shape), tuber-like.

Tu'mor-strands, conveying infection into healthy tissue and inducing the growth of galls.

Tur'gor Pres'sure, the pressure of protoplasm on the cell-wall (Salisbury).

Tur'ie, Tur'ion, add, (2) used by Mrs. Arber for winter-buds, such as those of Hydrocharis Linn.

Turning Cells, three small cells at the base of the oogonium of Nitella, derived from one at the base of the oosphere.

Ty'phaceous, akin to or resembling Typha Tourn.

Ty'ponym (δόμω, a name), an older name than the current one, based on the same type (U.S. rule).

-ule, for Sociës, as Sedule, Silenule, etc. (Clements).

Ulice'tum, an association of Ulex Linn.

ulna'ceous, pertaining to Ulna Linn.

ultra-microscop'ic (σκοπεω, I see), beyond visibility by modern microscopic means.

um'belloid, somewhat umbellate.

undec'uple, eleven sets of chromosomes (Blakeslee).

unifa'cial, reduction to one surface from bifacial; "suppression of adaxial surface" (Adamson); uni-ind'u'siate, having only one indusium, as Cheilanthes Sw. (Bower); unilat'eral, add, (2) ~ Segrega'tion, when confined to one sex (Bateson); unimo'dal, confined to one shape or make (Engledow); Unimodal'ity, the state in question; uni'strate (stratum, a layer), when leaf-indumentum is of one kind and persistent (Balfour).

Urcau'lome (Ur, Germ. = first, + Caulome), the primitive stem (Potonié).

urti'cal, urticaceous.

Vaccine'tum, Vaccinie'tum, an association of Vaccinium Linn.

Vac'uome, composed of metachromatic corpuscles in vacuoles of Selaginella Spring (Dangeard).

Vag'ın, a brown colouring substance in certain ferns, "a form of phlebotannin" (Bäseke); Vag'inule, the withered basal portion of an archegonium enclosing the base of the sporogonium (Worsdell).

Varia'tion, add, anal'o'gous ~ or par'al'lel ~, similar variations in allied species; homol'o'gous ~, in distinct species from a morphological point of view, colour, shape, etc. (Vavilow).

Varie'tum, an association of various species of Festuca Linn.

Vege'ta'tion Forms, usually divided as monocarpic and polycarpic (Warming), or woody plants, perennial and annual herbs.

velam'inous, used of roots possessing velamen (Moss).

Veld (Dutch), used for all native vegetation from rich forest on the south-east coast of South Africa to desert in interior Karroo (Pole Evans).

Ven'tral Plate, cover of the ventral area in Peridinea (Kofoid).

vexil'lar (Worsdell), vexillary.

Vicar'ial Speci'es, applied to elementary or micro-species (Turesson).

Vid'uae, pl. (viduus, bereft), used by Crantz for unisexual plants or flowers.

Vina'cea, pl. (Lat.), grape stones.

vi'olette'form, Greene's expression for violaceous.

Viride'tum, an association of Alnus viridis DC.

Vi'tamines, accessory food-factors in plants, of catalytic nature; also termed food-hormones, sitacoids, vitellites, advitants; A is fat-soluble, in green leaves; B, water-soluble, abundant in legumes; C, anti-scorbutic; the others, D and E, are but little known as yet.

vixregar'ious, Clements's term for sparse vegetation.

volvo'cean, belonging to Volvox (Janet).

Volu'tin, a reserve material in grains for the nucleo-proteids of the
chromatin substance in *Spirillum volutans* Ehrenb. (Minchin).

**Wa**ter-**con**tent, the amount held in tissue or soil;  ~ **Loss**, amount removed by some natural event or artificial operation.

**Wel**witsch**ie**t*um*, an association of *Welwitschia* Hook f.

**Wises**ner’s **Law**, refers to leaf-position with regard to light for maximum illumination.

**work**ing, an expression for “breaking of the meses,” as of *Oscillatoria prolifica* Gomont in a lake in New York Botanic Garden.

*x* chromosome, one which conveys the quality of sex.

**Xen**a**u**t**o**gamy (+ **Auto**gamy), with homogamous flowers, favouring cross-pollination, but self-fertile under adverse conditions (Robertson); **Xe**niophytes (*führt*, a plant), the endosperm of Angiosperms, constituting a third generation hitherto overlooked, now sporophyte, gametophyte and xenophyte (Trelease); **Xenodoch** ae pl. (*δοχη*, success), **Cos**eres and **Clius**eres; anomalous successions (Gams).

**Xer**arch (*ἀρχή*, beginning), succession originating in a dry area (Cooper); **Xere**co**l**o**g**amy (+ **Cleisto**gamy), pollination in closed flowers on account of dryness (Hansgirg); **Xer**'o**c**line (*κλίνω*, to recline), a dry, warm slope (Clements); **Xero**dry**m**ium (*δρυμός*, coppice), dry thicket; cf. *Duri**sil**vae*; **Xeroge**'ophytes (+ **Geo**phyte), plants whose rest period is in dry periods (Marsart); **Xero**oid **Ar**'eas, pre-Devonian algal climax (Clements); **Xeroph**o'bium (*φοβάς*, feeding), tundra, dunes (Diels); **Xeropoi**'um (+ **Poi**rum), steppes. (Diels); in a dry area (Cooper); **Xer**'o**s**ere (+ **Sere**), a succession with reference to the scanty water-content of the bare area; its subsidiary sere are **Lithos**ere and **Psammos**ere (Gams); **xerotrop**ic (*τροπή*, a turning), reaction towards a dry

succession (Clements); **xerotac**ic (*τακτικός*, fit for order), applied to successions not greatly changing (id.); **Xylopo**di**um**  ~, pl. -ia, *add*, (2) more or less stony, hard, tuberous thickening of the roots and underground parts of shrubs in Brazil in the steppe regions (Lindman).

**Zeux**is (ζέυξις, a joining), Frost’s expression for chromosomal heredity.

**Zo**id, applied also to a zoospore or swarm-spor (Church); **zoidogam**ic (*γάμος*, marriage), fertilized by zooids (Wieland); **Zo**idog’am’y (*γάμος*, marriage), fertilization by antherozoids; **Zoid**’ipspore (+ **Spore**), plants whose seeds are dispersed by animals (Clements); **Zona**tion, *add*, (3) separation of the ooplasm from the periplasm in *Phytophthora De Bary* (Murphy); *Zoochlorel’iae*, pl., a symbiotic form of *Chlorella* Beyer., associated with infusoria (West); *zooch’orous* (*κωρέω*, I retire), distributed by animals (Rübel); **Zoogonidang’ium** (+ **Goni**dangium), an organ containing zoogonidia, said to be (a) fun’nel  ~, always terminal; (b) ses’sile  ~, discharging from side or terminal; (c) stalked  ~, from side or end; (d) ter’minal  ~, from its apical cell (Brand); **Zoozan**thel’iae, pl., holophytic flagellates containing a yellow pigment.

**Zyn**nem’*t*um, an association of *Zyn**nema* Ag.

**Zy**gogen’esis (γένεσις, origin), derived from sexual union; **adj. zygogen’ic**;

**Zy**gone’ma (νήμα, a thread), when at the role of a nucleus the leptotene threads fuse in pairs (Agar); **adj. zy’gotene**; **Zygo**-pachyne’ma (+ **Fachynema**), the transitional condition of the meiotic nucleus in which heavy pachytene threads are fusing side by side to form a zygoma.

**zygop’terid**; **zygo**pteride’an, relating to the fossil genus *Zygo**pteri*s Corda.

**Zymo**log’ist, a student of the course of fermentation (Harshberger).
APPENDIX A

SIGNS AND ABBREVIATIONS

annual, usually monocarpic; (also
strictly annual.

perennial; (also = hemicryptophytes).

a tree, or with a woody trunk;
(= chamaephytes).

male; female; hermaphrodite (used when it is exceptional). Also used for antheridia.

indefinite, employed when the number is too great to be easily counted, as stamens or ovules.

hybrid; when placed between the names of species, to be read as "fertilized with pollen from";
also used to denote the magnifying power in figures or plates.

seen by the author: thus Aotus villosa, Sm.!, means that the type specimen, or a specimen ticketed by Smith, has been verified by inspection;
if appended to a collector's number, that is verified, as Burchell 3641!

employed in divers senses, as (1) by Linnaeus, De Candolle and others to indicate that a good description or figure will be found at the place cited;
(2) when between the specific name and a third appended name, denotes a subspecies;
(3) in an index, shows that the genus, species, or variety, was ostensibly first published at the place indexed.

an obscure or doubtful species.

section, the division of a genus.

equals, the sign of a synonym.

more or less.

greater than, less than.

for spores whose nuclei are presumably male; — for spores whose nuclei are presumably female; cf. PLUS, MINUS.

tetrasporangia; o, used by Phillips for cystocarp.

" or " have been used for feet, inches, and lines respectively.

micromillimetre, the one-thousandth of a millimetre.

The positions of the cotyledons of Cruciferae in the seed are denoted thus: o=, accumbent; o||, incumbent; <<o, conduplicate;
o ||, spiraloebous; o || || for those of the Diplecoloae.

Dates of flowering are sometimes shown in floras by the numbers of the months, either in Roman or Arabic numerals, as IV–VI, or 4–6.

A (1) in plan of flower, for Androecium; (2) by H. Mueller, used to denote a flower with free honey;
(3) in Mendelian formulae = dominant.

a = recessive, as in formula 1A:2Aa:1a in a monohybrid cross.

AB for a flower with concealed nectar (H. Mueller).

flower with wholly concealed nectar (H. Mueller).

char. character.

cm. centimetre.

D.V. dorsiventral (Church).

fem. feminea, female.

pure parental type.

first filial generation; second filial generation, etc.
APPENDICES

fl. flos or floret.
fr. fructus or fruit.
G in plan of flower for Gynoecium.
gen. genus.
H hymenopterous flowers (H. Mueller).
H+. see pH, H-ion.
Habitatio, habitat. Herbarium, as Herb. Lugd. Bat., the Herbarium of the Leyden University.
I symbol of self-fertile plant.
I., = F. 1.
I., = F. 2.
Ic. Icon, pl. Icones, figures; Ic. xyl., a woodcut.
ined. ineditus, unpublished; it either remains in manuscript or is about to be published.
l.c. loco citato, in the place mentioned; II. cc. locis citatis, in the places mentioned; to avoid repetition of titles.
J Geophytes.
L.S. longitudinal section.
Lin. a line in measurement, linea, the twelfth of an inch: 2.116665 mm.
m. metre: 39.370113 ins.
masc. masculus, male.
mm. millimetre, the one-thousandth of a metre; .039370 in.
M.R. medullary ray.
M.R.P. med. ray parenchyma.
M.R.T. medullary ray tracheids (Church).
n. numerus, number.
2n. haploid generation.
N ions. phosphorus in plankton (Church).
Nat. Ord. Natural Order, Ordo naturalis.
o. ornithopterous flowers (H. Mueller).
p. pagina, page.
P. original parent generation. P ions. cf. pH.
pH. hydrogen ion concentration in soils.
Po. pollen-flowers (H. Mueller).
p.p. pro parte, partly; on the title-page of a thesis it stands for publice proponit.
ppm. parts per millions.
R1, R2. roots, primary and secondary.
s.s. sensu stricto.
T. terminal (Church).
T'. terminal second series (?)
sp. species; spp., two or more species.
t. or tab. tabula, plate; t. sometimes, but rarely, means tomos, volume.
T.S. transverse section.
U.V. forms assumed by chromosomes during nuclear division.
V.B. vascular bundle.
v.s.c. vidi siccam cultum, I have seen a dried cultivated specimen.
v.s.s. vidi siccam spontaneum, I have seen a dried wild specimen.
v.v.c. vidi vivam cultum, I have seen a living cultivated specimen.
v.v.s. vidi vivam spontaneum, I have seen a living wild specimen.
v. shrub.
x-generation, the gametophyte, as the prothallus of a Fern.
2x-generation, the sporophyte, as a developed Fern.
x and y. chromosomes conveying the quality of sex.
y. trees.
α = female, as a gamete.
β = male, as a gamete.
φ = (1) form; (2) ratio.

Names of authors when long are properly abbreviated by giving the first syllable and the first consonant of the second, as Lam. for Lamarck; when there are more of the same name, an initial or other sign is
APPENDICES

The latest list is to be found in Gray's *Botanical Text-book*, ed. 6, pp. 385–390.

Parentheses are sometimes used to show synonymy in a compact form, as *Myceena tenella* (Fr.) Sacc., which, if expanded, would read *Myceena tenella*, Saccardo; syn. *Agaricus tenellus*, Fries. (Parentheses if misapplied lead to grave error.)

Special signs will be found in many works, but their use is usually explained, as in Eichler's "Blüthendiagramme," or Pfeffer's signs for diatropism, etc. For longer lists refer to Candolle (A. P. de), "Systema Vegetabilum," i. pp. 12, 13; Trattinick (L.), "Synodus," i. pp. 13, 14; Loudon (J. C.), "Hortus Britannicus," "En-cyclopaedia of Plants," and "Arbore-tum"; Lindley (J.), "Introduction to Botany," ed. 1, pp. 422–431.

The meaning of chemical signs, such as CO₂ for carbon dioxide, H₂O, water, and the like, must be obtained from a text-book of chemistry.

Lichenologists employ certain signs when chemically testing Lichens, as CaCl —, no reaction by hypochlorite of lime, or K —, none by hydrate of potash; the latter reagent is noted also by K═, K±, K⁺, etc. Cf. Leighton's "Lichen-flora of Great Britain," ed. 3, 1879, p. xv.


SPECIAL SYMBOLS FOR UREDINOUS FUNGI

\[ O = \text{Spermagones: I. Aecidia; II. Uredospores; III. Teleutospores, with ensuing Basidiospores.} \]

O. I, II, III. a Eu-form:—

Auteu-form, if all four are on one plant.
Heteru-form, if O.I on one plant, and II, III on another.


APPENDIX B

THE PRONUNCIATION OF LATIN AND LATINIZED WORDS

The old or traditional method is as follows:—

<table>
<thead>
<tr>
<th>a short, as in fat.</th>
<th>a long, as in gave.</th>
</tr>
</thead>
<tbody>
<tr>
<td>e &quot; pet.</td>
<td>e &quot; evil.</td>
</tr>
<tr>
<td>i &quot; thin.</td>
<td>i &quot; ice.</td>
</tr>
<tr>
<td>o &quot; not.</td>
<td>o &quot; note.</td>
</tr>
<tr>
<td>u &quot; tub.</td>
<td>u &quot; tube.</td>
</tr>
<tr>
<td>y &quot; cygnet.</td>
<td>y &quot; cypress.</td>
</tr>
</tbody>
</table>

ae, oe, as in feet, ei as in eye, au as in bawl.

and g hard before a, o, u; soft before e, i, y; ch as k.
APPENDICES

The modern or continental method:—

<table>
<thead>
<tr>
<th>Sound</th>
<th>Pronunciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>short, as in apart.</td>
</tr>
<tr>
<td>e</td>
<td>lend.</td>
</tr>
<tr>
<td>i</td>
<td>thin.</td>
</tr>
<tr>
<td>o</td>
<td>not.</td>
</tr>
<tr>
<td>u</td>
<td>full.</td>
</tr>
<tr>
<td>y</td>
<td>short, like German ü, and French u.</td>
</tr>
<tr>
<td>ae, oe, ei</td>
<td>practically as in pain.</td>
</tr>
<tr>
<td>au</td>
<td>as in house.</td>
</tr>
<tr>
<td>c and g</td>
<td>always hard, as in cut and good.</td>
</tr>
<tr>
<td>ch</td>
<td>as in Christian.</td>
</tr>
<tr>
<td>e</td>
<td>long, as in psalm.</td>
</tr>
<tr>
<td>i</td>
<td>seen.</td>
</tr>
<tr>
<td>o</td>
<td>note.</td>
</tr>
<tr>
<td>u</td>
<td>rule.</td>
</tr>
</tbody>
</table>

APPENDIX C

THE USE OF THE TERMS "RIGHT" AND "LEFT"

These terms are but seldom required in botanic descriptions, being only used to denote the direction of a twist or spiral. Unfortunately they have been employed in opposite senses, so that the meaning of one author may be completely perverted by his misuse of the correct method. In zoology, where bilateral symmetry is common, these terms are always applied to the limbs or organs of an animal with regard to its axis, and the majority of botanists have carried out the same idea with regard to plants. A spiral may be considered as turning to the right or the left, that is, two spirals may run in contrary directions, but the same spiral may be differently designated according to the position of the observer. The orthodox way regards the observer as being placed within while noting the direction of the twist, as if he were looking south, and recording the apparent passage of the sun from his left towards his right; this, dextrorse, is the common acceptance of "with the sun" or "like the clock hands"; it is also the motion of driving home a screw, which receives its name of "right-handed" from the motion, and not from the aspect of the pitch of its threads.

A few observers have disregarded these considerations, and have placed their point of view outside the spiral. The result of this is to reverse the terms, for a dextrorse climbing plant then seems to pass from right to left, which they then term sinistrose. If we ascend a spiral staircase constantly bearing to our right, we are describing a right-handed spiral, and the staircase is also dextrorse. Many climbing plants, as the Hop and the Honeysuckle, take this course, others, as the White Convolvulus and Scarlet Runner, take the opposite.

Torsion of the corolla is sometimes highly characteristic, as in some genera of Apocynaeae and Myrsineae. It has been recommended that a few words should be added to define the position of the observer, as e centro visum, or externe visum, as the case may be. For a fuller discussion of these points reference should be made to Alphonse de Candolle, "La Phytographie," pp. 201–208, O. B. Clarke in the Journal of the Linnean Society, xviii. (1881), 468–473, and R. H. Compton, in the Journal of Genetics, ii. (1912), 53–70. Short notices will also be found in Journ. Bot. ix. (1871), 216, 333; Gard. Chron., N.S. vii. (1877), 48, 147, 280, 630; id. Ser. Ill. Ixii. (1917), 125; Beitr. z. Bot. Centralsb., Orig. Arb. xli. (1925), 51–81, Taf. 1–4; Bot. Zeit. lix. (1901), 379–381.
APPENDICES

The botanists who have used DEXTRORSE and SINISTRORSE in the sense defined in this Glossary are A. P. de Candolle and his son Alphonse de Candolle, Alexander Braun, G. W. Bischoff, J. C. Doell, W. P. Hiern, J. S. Henslow, H. von Mohl, C. Naegeli, A. F. Schlotthauer, and L. H. Palm; those in the contrary sense are G. Bentham, Asa Gray, A. W. Eichler, C. R. Darwin, and Sir J. D. Hooker. Linnaeus's definition is confused by examples, most of which contradict his words, while a correction in his "Errata " nullifies the text; see "Philosophia botanica " (1751), 39, 103 note, 310.

APPENDIX D

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The author died of the plague during the printing of the book, and Gesner saw it through the press from Elate onwards. The prefatory matter is addressed to Luke Kyber, the author's father.


RAY (JOHN), latinized RAIUS. Terminorum quorundam et vocum generaliorum interpretatio et explicatio brevis.

Forms pp. 84-99 of Part II. of his anonymous "Catalogus plantarum circa Cantabrigiam nascentium," etc., 1660; reprinted with some alterations in his "Historia plantarum," 1686. He embodies several of Jung's terms from a MS. list, which he acknowledges.

JUNG (JOACHIM), latinized JUNGIUS. Isagoge phytoscopica, ut ab ipso privatis in collegiis solita fuit tradi . . . recensente Jo. Vagetio. Hamburgi [1678]. 4to.

Posthumous; the author died in 1657.


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BERKENHOUT (JOHN). Clavis anglica linguæ botanicae; or a botanical Lexicon in which the terms of botany . . . are applied, derived, explained, contrasted, and exemplified.

London, 1764. Sm. 8vo.—2nd ed. ib. 1789. 8vo.

LEE (JAMES). A glossary; explaining the technical terms in botany: in alphabetical order. (Forms pp. 449-479 of Lee's "Introduction," ed. 2. London, 1765; believed to be drawn up by Samuel Gray, from Berkenhout's "Clavis.")


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LEERS (JOHANN DAVID). Nomenclator Linnaeanus seu explicatio terminorum technicorum in hoc opusculo occurrentium ordine alphabeticó exhibita. Forma pp. i.-lx. of his "Flora herbornensis," Herbornae Nassoviorum, 1775. 8vo.—Ed. altera [a WILLDENOW]. Berolini, 1789. 8vo.; in this edition the "Nomenclator" is paged xxv.—lxxviii.


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Contains: —Book III. Glossology; or, of the Terms used in Botany, pp. 370–432; Index I. Substantives, 563–570. II. Adjectives, 570–580.—Ed. 3, 1839.—Ed. 4, 1848. 2 vols.—The Glossary separate, 1848.


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The Glossary of Technical Terms forms Part II., pp. 1–100; it has been in constant use for the present work, and is cited as "Glossary"; 443 woodcuts; no derivation or key to pronunciation given.


Constantly used for this volume; it was partly issued with Maund's "Botanic Garden," but completed by itself: there are 190 small woodcuts in the text. Derivations and accents marked throughout. Re-issued with new, undated, title-page in 1858, 1875, and 1882.


Contains:—Seconde partie, Livre cinquième.—Dictionnaire raisonné des mots techniques, français et latin, employés dans les ouvrages de botanique.—Ed. 2. Nouveau dictionnaire de botanique, comprenant la description des familles naturelles, etc. Paris, 1870. 8vo.

I am indebted to this excellent work for the plan of denoting a substantive by a capital letter (previously so employed by A. P. de Candolle), and the use of italic type for Latin words.


The Glossary occurs at pp. 393–442, and may be described as the basis of the present work as regards the definition of terms used in descriptive botany.

STORMONTH (REV. JAMES). A Manual of Scientific Terms . . . chiefly comprising terms in botany, etc. Edinburgh, 1879. 8vo.—Ed. 2. ib. 1885. 8vo.

The arrangement in paragraphs and the style of type have been adapted in the present volume from the "Manual."

DU PORT (REV. JAMES MOURANT). On the Colours of the Fungi as indicated by the Latin words used by FRIES. Trans. Woolhope Club, 1883, 113.


Confined chiefly to modern terms, of which about 5600 are given, with the pronunciation marked, but no derivations.
APPENDICES

An enumeration of about the same extent as the last, but including the names of many orders, and medical terms relating to the action of plants, as anti-dysenteric, dysentery, etc.

— A glossary of botanic terms with their derivation and accent. London (Duckworth), 1900. 8vo.—Second edition, revised and enlarged, ib. 1905.—Third edition, again revised and enlarged, ib. 1916.


This and the previous volume are more like encyclopaedias than dictionaries, many articles being given at great length.

A critical redefinition of about thirty terms.


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