

A DICTIONARY  
OF  
BOTANICAL TERMS

BY  
A. A. CROZIER  
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## PREFACE.

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It is now nearly twenty years since an English dictionary of botanical terms was published, and the development of botany during that time has brought into use many new terms and led to the abandonment of some of those which were formerly employed. The present work, though larger than any of its predecessors, is therefore wanting in certain terms which are found in the earlier botanical dictionaries. A few obsolete terms, however, which occur in standard botanical literature are retained and marked as such. The scope of this dictionary is nearly the same as that of its predecessors, except that it is broader on the side of agriculture and horticulture, as it aims to include all technical terms applied to plants both by botanists and others. Very many of the newer terms are from the German botanists, to whom we owe by far the greater part of modern structural and physiological botany. These terms, particularly, include an unfortunately large number of synonyms, which seem to be a necessary result of active research by independent workers in the same fields. With few exceptions, no definition is repeated, all approved synonyms being brought together under one term. Where a choice existed this has permitted the preferable term alone to be defined. No obsolete or wholly undesirable synonyms, however, accompany the definitions, and such of these as occur in alphabetical order have usually been admitted only to refer

## PREFACE.

the reader to the proper term. The cross-references freely given to terms of similar and opposite meanings will be found useful in broadening the scope of the definitions.

I desire here to express my gratitude to various botanical friends for their contributions to this work, particularly to Dr. W. J. Beal, of the Michigan Agricultural College, who has revised the entire manuscript and improved many of the definitions; to Professor V. M. Spalding, of the University of Michigan, who has revised and corrected the terms relating to fungi; to Mr. F. C. Newcombe for aid upon the terms applied in karyokinesis; and to Professor L. H. Bailey, of Cornell University, for advance proof-sheets of his glossary of horticultural terms.

The marking of the pronunciation was begun by Mr. B. Pickman Mann, of Washington, D. C., and completed by Mr. F. P. Jordan, of the University of Michigan. In their work Webster's dictionary was mainly followed as authority.

ANN ARBOR, MICH., January, 1892.

## SIGNS AND ABBREVIATIONS.

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- ①...annual.
- ②...biennial.
- ℥...perennial.
- ♂...staminate.
- ♀...pistillate.
- ♀...perfect.
- ∞...numerous; more than twenty when applied to stamens.
- ?...doubt.
- l....certainty. Indicates that the author has seen the specimen in question.
- n. sp. new species. Used only with the first printed description.
- Eu...the Greek word "well," sometimes written after a species to indicate that it is certainly a well-defined species, not a variety.

### MEASUREMENT.

- °.....foot.
- '.....inch.
- ".....line ( $\frac{1}{16}$  inch).
- c.m...centimeter.
- c.c...cubic centimeter.
- m.m. millimeter.
- $\mu$ ...*mu* (the Greek letter *m*), micromillimeter,  $\frac{1}{1000}$  of a millimeter, the unit of microscopic measurement. It is about .000039 of an inch.
- ×....used to express magnification. Thus,  $\times 150$  indicates a magnification of 150 diameters. The improper fraction  $\frac{150}{1}$  indicates the same, but this form is little used.



# A DICTIONARY

OF

## BOTANICAL TERMS.

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**A**, prefixed to words of Greek origin often signifies absence, as *apét'áloús*, without petals. Before a vowel it is changed to **AN**, as *ánán'theroús*, without anthers.

**ĀBĀX'ĪAL**, out of the axis. See **EXCENTRIC**.

**ĀBBRĒVIĀTED**, shorter than an adjoining organ, or one with which it is compared.

**ĀBBĒ'RĀNT**, differing widely from the usual form or structure; as: the *Fumariacæ* have been regarded as an *aberrant* group of *Papaveracæ*.

**ĀBYŪGĒN'ĒSĪS**, see **SPONTANEOUS GENERATION**.

**ĀBJĒC'TION**, throwing off with force, as spores or seeds.

**ĀBJŌINT'**, to separate at a joint.

**ĀBJŪNC'TION**, the separation of one part from another; delimitation. Compare **ABSTRIC-TION**.

**ĀBNŌR'MĀL**, differing from the usual structure or condition.

**ĀBŌRĪG'ĪNAL**, see **INDIGENOUS**.

**ĀBŌR'TION**, the non-formation or imperfect formation of an organ, so that it does not per-

form its usual function. Compare **SUPPRESSION**, **DEGENERATION**, **ATROPHY**.

**ĀBŌR'TĪVE**, imperfect, or wanting. See **OBSOLETE**.

**ĀBBŪPT'**, terminating suddenly, as a leaf which ends without a tapering extremity, a compound leaf without a terminal leaflet, or a stem which is sharply bent.

**ĀBBŪPT'LŪ ĀCŪ'MĪNĀTE**, having a broad extremity from which a point arises.

**ĀBBŪPT'LŪ PĪN'NĀTE**, pinnate without a terminal leaflet, and usually with an even number of leaflets. There may be a terminal point or tendril; even pinnate; equally pinnate. Compare **IMPARIPINNATE**.

**ĀBSĪS'SION**, cutting off sharply, as the separation of the frustules of diatoms. Compare **ABSTRIC-TION**.

**ĀBSĪSS LĀY'ER**, a layer of cells formed by renewed cell-division in the base of the leaf-stalk in autumn, the formation of which permits the fall of the leaf.

**ABSORPTION**, the method by which fluids enter the plant. See OSMOSE and IMBIBITION.

**ABSTRIC'TION**, the separation of one part from another by constriction and the formation of a septum. Applied especially to the separation of spores from their hyphæ. Compare ABSCISSON and ABJUNCTION.

**ACAL'YCINE**, without calyx; acalycinous.

**ACALY'CINOÛS**, see ACALYCINE.

**ACÂN'THĀ** (pl. *Ācân'thā*), a thorn, spine, or prickle.

**ACĀNTHĀ'CEOÛS**, having thorns, spines, or prickles.

**ACĀNTHOCĀR'POÛS**, having the fruit furnished with spines or prickles.

**ACĀNTHOC'LĀDOÛS**, having spiny branches.

**ACĀNTHOPH'OROÛS**, bearing prickles, spines, or thorns.

**ACĀNTHOP'ODOÛS**, having the petiole or pedicel furnished with spines or prickles.

**ACĀR'POÛS**, not producing fruit.

**ACAULÉS'ÇENCE**, an abnormal suppression of the stem.

**ACAULÉS'ÇENT**, having only a very short aerial leaf-bearing stem, apparently none, as in the dandelion; acauline; acaulose; acaulous.

**ACAUL'LINE**, see ACAULESCENT.

**ACAUL'NIS**, see ACAULESCENT.

**ACAUL'LOSE**, see ACAULESCENT.

**ACAUL'LOÛS**, see ACAULESCENT.

**ACÇES'SORY**, additional to the usual number, or accompanying something else; supernumerary. Said of the additional buds when more than one occur in an axil; applied to the border of the apothecium in lichens when of a different

substance or color from the disk.

**ACÇES'SORY BUDS**, also called secondary buds and supernumerary buds; the additional buds when more than one occur in or near the axil, as in the butternut.

**ACÇES'SORY CELL**, the sister-cell of a guard-cell; subsidiary cell.

**ACÇES'SORY FRUIT**, one in which some additional part or parts is associated with the matured ovary, as in the wintergreen, *Gaultheria procumbens*; anthocarpous fruit. The term is not applied to fruits with an adherent calyx-tube, as the apple and currant. Compare AGGREGATE FRUIT and COLLECTIVE FRUIT.

**ACÇES'SORY GONID'IA**, gonidial formations in some species of Mucorini in addition to the typical kind.

**ACÇIDEN'TAL**, see ADVENTITIOUS.

**ACCÓMMODÁ'TION**, see ADAPTATION.

**ACCRES'ÇENT**, increasing in size after flowering;—applied to parts accessory to the fruit, as the calyx of *Physalis*.

**ACCRETE**, grown together in any manner.

**ACCRE'TION**, the growing of one thing to another; growth by addition of particles to the outside.

**ACCUM'BENT**, lying upon or against another body, as the edge of the cotyledons against the caulicle in some Cruciferae. Compare INCUMBENT.

**ACÉPH'ALOÛS**, headless; said of an ovary when the style is attached to some other part than the summit.

**ACERÓSE**, narrow, stiff, and





- other female organs. Compare ANACROGYNOUS.
- ACRÓP'ÉTAL**, produced in succession toward the apex; in the direction of the summit; basifugal; centripetal (when applied to the order of inflorescence only). Compare BASIP'ETAL.
- ACRÓSCÓP'IC**, facing the apex. Compare BASISCÓPIC.
- AC'RÓSPÍRE**, an old name for the plumule of a grain in germination.
- AC'RÓSPÓRE**, a spore borne at the summit of a filament.
- ACTINÓMÓR'PHIC**, regular and polysymmetrical, as the flowers of radish, i.e., capable of bisection in two or more planes into similar halves. Compare ZYGOMORPHIC.
- ACTINÓMÓR'PHOÛS**, see ACTINOMORPHIC.
- ACT'IVE**, in a growing condition; opposed to Dormant.
- ACŪ'LEÁTE**, having prickles; prickle-pointed; aculeated.
- ACŪ'LEÓLÁTE**, having small or few prickles.
- ACŪ'LEÛS** (pl. *Acū'leī*), see PRICKLE.
- ACŪ'MINÁTE**, ending in a prolonged tapering point.
- ACŪ'MINÓSE**, having a sharp or tapering point; somewhat acuminate. (Rare.)
- ACŪ'MIN'ŪLÁTE**, having a small acuminate point.
- ACŪTE'**, ending in a distinct angle, but not prolonged.
- ACŪCY'LIC**, having all the organs of a flower in a continuous spiral. Compare HEMICYCLIC and CYCLIC.
- ADÁPT'ATION**, the modification of a plant to better fit it for surrounding conditions, or of an organ for a particular function; accommodation. Compare METAMORPHOSIS.
- ADĒL'PHĪA**, (pl. *Adēl'phīæ*), a collection of stamens united by their filaments. Compare PHALANX.
- ADĒL'PHOÛS**, having the stamens united by their filaments in an adelphia or bundle.
- ADĒN'IFÓRM**, gland-shaped; adenoid.
- ADĒN'ÓPHÓRE**, a stalk supporting a gland.
- ADENÓPH'ÓROÛS**, gland-bearing.
- ADENÓPHŪL'LOÛS**, having on the leaves glands, or gland-like spots or tubercles.
- ADENÓP'ÓDOÛS**, having glands or gland-like tubercles on the petioles.
- ADENÓSE'**, gland-like, or bearing glands; adenoid; adenous.
- AD'ENOÛS**, see ADENOSE.
- AD'ESMŪ**, the separation of parts usually joined. Compare CHORISIS, DIALYSIS, FISSION.
- ADGLŪ'TINÁTE**, see AGGLUTINATE.
- ADHĒ'RENT**, attached or growing to an organ or body of a different nature, as the calyx to the ovary. The parts may or may not have grown together from the first. Compare COHĒ'RENT and ADNATE.
- ADHĒ'SION**, the sticking or growing together of organs of a different nature, as a leaf to the stem. It implies a union of parts which in most other plants or in a younger state of the same plant are separate.
- ADNÁS'CENT**, growing to or upon something else; as, "moss is an *adnascent* plant."
- AD'NÁTE**, said of parts of a dif-

- ferent nature which are grown together from the first, or over their whole surface or length. (Compare **CONNATE**.) Applied to an anther, it indicates that it is attached throughout its length to the upper or lower surface of the filament. Compare **INNATE**. See **ADHERENT**.
- ADNĀTION**, the same as adhesion, but implying an earlier or more complete union.
- ADPRESSĒD**, see **APPRESSED**.
- ADSCĒNDĒNT**, see **ASCENDING**.
- ADSŪRGĒNT**, see **ASCENDING**.
- ADŪNCŌUS**, crooked, twisted, or hooked. (Rare.)
- ADVENTĪTIŪS**, out of the usual place, as buds on a leaf or at a distance from a node; growing spontaneously out of its native locality, but not fully established; adventive.
- ADVENTĪVE**, see **ADVENTITIŪS**.
- ADVĒRSE**, (1) opposite (rare); (2) directed toward or facing the main axis or other object. Compare **ĀVERSE**.
- ADVĒRSĪFŌLIĀTE**, see **ADVERSIFOLIŪS**.
- ADVĒRSĪFŌLIŪS**, having opposite leaves; adversifoliate.
- ÆCIDĪOSPŌRE**, a spore produced in an æcidium.
- ÆCIDĪŪM** (pl. *Æcid'ia*), the cup-shaped spore-case with its contents in certain Uredineæ, in which the spores are produced serially from below; æcidium fruit.
- ÆRĒNCHĪMĀ**, tissue homologous with cork, with thin cell-walls and large intercellular spaces, found in the stems of some marsh-plants, as *Lythrum salicaria*. It is supposed by Schenk, the author of the term, to serve for aeration, but by others it is regarded as floating tissue.
- ÆRĪĀL**, growing in the air, not attached to the soil, as a parasite or epiphyte upon the top of some other plant.
- ÆRĪĀL ROOTS**, those appearing above ground, whether they afterwards enter the ground or not, as the clinging roots of the ivy and the brace-roots of Indian corn.
- ÆRŌBIĀ** (sing. *Ærō'bium*), organisms which thrive only in the presence of air or free oxygen. Applied in bacteria. Compare **ANAEROBIA**.
- ÆRĪŌBIŌTĪC**, thriving only in the presence of air.
- ÆRŌCYST**, an old name for air-bladder.
- ÆRŌPHŪTE**, see **AIR-PLANT**.
- ÆRŌTRŌPIC**, seeking the air, as certain roots.
- ÆRŪGĪNOSE**, clear light bluish green; verdigris-green.
- ÆRŪGĪNOŪS**, see **ÆRUGINOSE**.
- ÆSTĪVĀL**, see **ESTIVAL**.
- ÆSTĪVĀTION**, the arrangement of the floral organs in the bud; præffloration.
- ÆTHĀLIŪM**, a compound sporiferous body in Myxomycetes, formed from a large combination of plasmodia.
- ÆFFĪNĪTŪ**, true or near relationship. Compare **ANALOGY** and **HOMOLOGŪ**.
- ÆGĀMĪC**, destitute of sex. Formerly applied to all cryptogams.
- ÆGĀMŌGĒNESĪS**, asexual reproduction of any kind. See **PARTHENOGĒNSĪS** and **APOGAMY**.
- ÆGĀMŌSPŌRE**, a spore formed without fertilization;— a go-

- nidium or asexually produced spore of any kind. (Rare.)
- ĀG'ĀMOŪS**, see AGAMIC.
- ĀGGLŌM'ERĀTE**, see ACGLOMERATED.
- ĀGGLŌM'ERĀTED**, clustered or crowded together but not cohering, as the staminate flowers of pines.
- ĀGGLŪ'TĪNĀTED**, glued together. Compare ACCRETE.
- ĀG'GREGĀTĒD**, collected together but not cohering. About the same as Agglomerated.
- ĀG'GREGĀTE FLOWERS**, those with several in the same head, as in clover. The term excludes Composite.
- ĀG'GREGĀTE FRUIT**, one in which distinct carpels of a single flower are crowded on the receptacle into one mass, as in the raspberry and magnolia; syncarp. Compare COLLECTIVE FRUIT.
- ĀGGREGĀ'TION**, the condensation of the protoplasm of a living cell, or of some of the contained proteids under stimulation: first observed in the tentacle cells of *Drosera* and subsequently produced in the cells of other plants by means of various basic substances.
- ĀGRĪCŪLT'ŪRAL BOTANY**, that branch of economic botany which treats of weeds and cultivated plants. It includes the systematic study of such plants and their methods of reproduction, the laws of improvement and degeneration in plants, etc., also vegetable pathology in its application to cultivated plants.
- ĀGRŌSTŌG'RĀPHŸ**, see AGROTOLOGY.
- ĀGRŌSTŌL'ŌGŸ**, the part of botany relating to grasses.
- ĀG'ŸNOŪS**, without pistils.
- ĀI'GRET**, any feathery crown or tuft attached to the seed, as the coma of the milkweed or pappus of the thistle; aigrette; egret.
- ĀIGRETTE'**, see AIGRET.
- AIR-BLADDER**, an organ filled with air for the purpose of floating the plant in water, as in the sea-weed *Fucus*; air-sac; air-cell.
- AIR-CHAMBER**, see STOMATIC CHAMBER and AIR-PASSAGE.
- AIR-PASSAGE**, an extended opening between the cells containing air, as in the stems of many water-plants; lacuna; air-chamber.
- AIR-PLANT**, a plant growing in the air detached from the soil, as certain orchids; aërophyte. Generally applied only to epiphytic flowering plants.
- AIR-PORE**, see STOMA.
- ĀKENE'** see ACHENIUM.
- ĀLĀ** (pl. *Ālā*), see WING.
- ĀLĀBĀS'TRŪM**, an old term for flower-bud.
- Ā'LAR**, (1) borne in the forks of a stem; (2) relating to or having wings. See ALATE.
- Ā'LĀTE**, see WINGED.
- Ā'LĀTE-PĪN'NĀTE**, pinnate with a winged petiole.
- ĀLBĒS'ĀENT**, whitish; candidant.
- ĀL'BĪCĀNT**, see ALBESCENT.
- ĀL'BĪNĪSM**, see CHLOROSIS.
- ĀLBĪ'NO**, a plant or variety nearly destitute of chlorophyll, or of which the fruit is abnormally white or colorless.
- ĀLBŪ'MEN**, nutritive material in many seeds surrounding or

- adjoining the embryo, endosperm or perisperm.
- ĀLBŪ'MEN CRÝSTĀLS**, see **CRYSTALLOIDS**.
- ĀLBŪ'MINOID**, an organic substance containing nitrogen in its composition, as protoplasm; proteid.
- ĀLBŪ'MINOŪS**, furnished with albumen.
- ĀLBŪ'NOŪS**, having, consisting of, or pertaining to, albumen.
- ĀLBŪ'NŪM**, sap-wood; a somewhat distinct, usually lighter colored, outer zone of wood in many exogenous trees and shrubs.
- ĀLĒCTŌ'RĪOID**, filiform, like the thallus of the genus *Alectoria* in lichens.
- ĀLEŪ'RONE**, proteine-grains which replace starch in the cotyledons or albumen of certain oily seeds.
- ĀLGŌLŌGŪ**, the part of botany relating to algae.
- ĀLĪ'EROŪS**, having wings.
- ĀLĪ'IFORM**, wing-shaped.
- ĀLĪ'EROŪS**, see **ALIFEROUS**.
- ĀLLĀN'TOID**, sausage-shaped; botuliform; narrowly oblong; cylindrical with somewhat hemispherical terminations.
- ĀLLĀSŌTŌN'IC MOVEMENTS**, a term applied by Vries to the movements of mature organs, as the sleep of plants; movements of variation. Compare **AUXOTONIC MOVEMENTS**.
- ĀLLĪ'ĀEOŪS**, having the odor or other qualities of the genus *Allium*, which includes the onion and garlic.
- ĀLLĪ'ANĀE**, see **COHORT**.
- ĀLLŌG'ĀMOŪS**, habitually cross-fertilized.
- ĀLLŌG'ĀMŪ**, cross-fertilization. Compare **AUTOGAMY**.
- ĀLLŌT'RŌPĪSM**, appearance under an unusual form.
- ĀLPĒS'TRĪNE**, growing on high mountains below the timber-line, or on the tops of inferior mountains; mountainous.
- ĀLPHĪTŌMŌR'PHŌŪS**, resembling barley meal: said of certain fungi (Rare.)
- ĀL'PĪNE**, growing on mountains above the timber-line.
- ĀLTĒR'NĀTE**, applied to leaves, indicates one at a node; applied to parts of the flower, indicates that the members of one whorl are placed opposite the intervals between the members of the next whorl.
- ĀLTĒR'NĀTELŪ - PĪN'NĀTE**, pinnate with the pinnæ or leaflets alternating on opposite sides of the rachis.
- ĀLTERNĀTION OF GENERATIONS**, the growth of reproductive bodies into structures differing from that on which they were produced, to return after one or more generations to the original stage or form. Thus, the spore of ferns produces a small prothallus, and upon this sexual bodies are borne which after fertilization reproduce the original fern-plant. See **METAGENESIS**.
- ĀLŪTĀ'ĀEOŪS**, of a pale brown color; resembling soft tanned skin in color or texture. (Rare.)
- ĀL'VEŌLĀTE**, deeply pitted so as to resemble honey-comb, like the receptacle of many *Compositæ*; faveolate; favose.
- ĀMBĪG'ENŪS**, having the outer surface of the perianth resembling a calyx and the inner surface a corolla.

**AMBIG'UOUS**, indistinct or doubtful, so that it cannot well be referred to any definite condition or place in a system of classification, as a bract which has nearly the appearance of an ordinary leaf, or a species which is doubtfully of higher rank than a variety, or one which it is difficult to determine into which of two genera it should be placed.

**AMBIP'AROUS**, producing two kinds, as a bud which produces directly both flowers and leaves.

**AMENT**, a slender spike of naked and usually separated flowers with imbricated scales or bracts; amentum; julus; catkin. Staminate aments are usually deciduous.

**AMEN'TA**, pl., see **AMENTUM**.

**AMENTA'CEOUS**, resembling, consisting of, pertaining to, or bearing aments; as an *amentaceous* inflorescence or plant.

**AMENT'IFORM**, amentaceous; juliform.

**AMENTUM** (pl. *Amén'ta*), see **AMENT**.

**AM'IDÓPLAST**, see **LEUCOPLAST**.

**AMMÓPH'ILOUS**, growing in sandy places.

**AM'NIÓS**, the contents of the embryo-sac before the formation of the embryo. Seldom used.

**AMC'E'BOID**, assuming various shapes, like the *Amœba*

**AMÓR'PHOUS**, without definite form, structure, or position.

**AMP'HANTHÍUM**, see **CLINANTHÍUM**.

**AM'PHIASTER**, a term for the combined nuclear spindle and cytasters in karyokinesis when the latter are present, which is rare in plants. The term is

also applied to the combined cytasters only.

**AMPHÍB'IOUS**, growing readily either in water or upon dry land.

**AMPHÍB'E'YOUS**, growing by additions over the whole surface.

**AMPHÍCAR'PIC**, producing two kinds of fruit, either as regards form or period of ripening; amphicarpous. Compare **HEROCARPOUS**.

**AMPHÍCAR'POUS**, see **AMPHICARPIC**.

**AMPHÍG'AMOÜS**, see **AGAMIC**.

**AMPHÍGÁSTER**, used by Bennett and Murray for *Amphigastrium*.

**AMPHÍGÁSTRÍÁ** (sing. *Amphigastrium*), peculiar scale-like leaves accompanying those of ordinary form as a third row upon the under side of the stem in certain *Hepaticæ*.

**AMPHÍG'ÉNOUS**, growing on either surface of a leaf. Said chiefly of certain parasitic fungi.

**AMPHÍSÆ'CA**, any indehiscent fruit, hard and dry externally and pulpy within, as a gourd. (Rare.)

**AMPHÍSPÉR'MOÜS**, closely investing the seed so as to have the same form, as the ovary in *Graminææ*.

**AMPHÍT'RÓPAL**, see **AMPHITROPOUS**.

**AMPHÍT'ROPOUS**, having the funiculus attached to the ovule or seed for half the distance between the chalaza and micropyle; semianatropous; half-anatropous; half-inverted; hemitropous; heterotropous; transverse; amphitropal. Applied to the embryo it means curved so that both ends are brought close together.

**AM'PHŌRĀ**, the lower division of a pyxis.

**AM'PLECTANT**, embracing or clasping, as tendrils, or the sheath of grasses.

**AM'PLĒX'ICAUL**, partially surrounding or clasping the stem, as the base of many leaves. Compare SHEATHING and PER-FOLIATE.

**AM'PLIATED**, enlarged, or moderately dilated.

**AMPŪLĀ**, see BLADDER.

**AMPŪLLĀ'CEOUS**, inflated, and swelling out toward the base like a bladder or short flask. Compare LAGENIFORM.

**AM'YG'DĀLINE**, pertaining to or resembling the almond.

**AM'YLĀ'CEOUS**, pertaining to, composed of, or resembling starch.

**AM'YLŌGĒN'ESIS**, starch-formation.

**AM'YLŌGĒN'IC**, starch-forming. Applied to chlorophyll-granules and similar bodies which originate starch.

**AM'YLŌID**, a colloid substance having nearly the properties of boiled starch which is found in many sea-weeds and in the seeds of the bean, the almond, etc.

**AM'YLŌLYT'IC**, pertaining to the transformation of starch into other substances, as *amylolytic* diastase.

**AM'YLŪM**, starch.

**AMYLUM BODIES**, see PYRENOIDS.

**AMYLUM STAR**, see STARCH-STAR.

**AN'ĀBĪX** (pl. *Ānāb'iqēs*), a stem like that of many ferns, etc., which continually dies below and grows above. (Rare.)

**ANĀBŌL'IC**, applied by Geddes

to the series of ascending metabolic changes in protoplasm by which food is assimilated. Compare KATABOLIC. See ASSIMILATION.

**ANĀCĀN'THOŪS**, without spines.

**ANĀCRŌG'YNOŪS**, applied in Jungermanniæ by Leitgeb to forms in which the archegonia do not arise upon or near the apex of the shoot, which therefore usually continues to grow after their formation. Compare ACROGYNOUS.

**ANĀĒRŌ'BĪĀ** (sing. *Anaërobium*), organisms unable to live or thrive in the presence of free oxygen. Applied to certain bacteria. Compare AEROBIA.

**ANĀĒRŌB'IC**, see ANAEROBIOTIC.

**ANĀĒRŌBIŌT'IC**, being unable to live in contact with air or free oxygen, as some bacteria, or capable of living in an atmosphere destitute of oxygen; anaërobious; anaërobic.

**ANĀĒRŌB'IOŪS**, see ANAEROBIOTIC.

**ANĀĒRŌPH'YTE**, a plant which does not need a direct supply of air.

**AN'ĀLŌGUE**, an organ or body resembling or having the function of another with which it is compared.

**ANĀL'ŌGŸ**, resemblance in certain respects, as in general appearance or function. Applied to organs or to classes of plants. Compare AFFINITY, HOMOLOGUE, and MORPHOLOGY.

**ANĀL'YSĪS**, the systematic examination of a plant preliminary to determining its position in the classification. Compare DETERMINATION.

**ANĀMŌRPH'ISM**, see ANAMORPHOSIS.

**ĀNĀMŌR'PHŌSIS**, (1) a gradual change of form (generally ascending) traced in a group of plants the members of which have succeeded each other in point of geological time; (2) a similar gradation of form between the members of a group now existing; (3) a remarkable or profound alteration of form resulting immediately from a change in the conditions of growth.

**ĀNĀN'DROŪS**, without stamens.

**ĀNĀN'THĒROŪS**, without anthers.

**ĀNĀN'THERŪM** (obs.), see **STAMINODIUM**.

**ĀNĀN'THOŪS**, without flowers.

**ĀN'ĀPHASES**, Strasburger's term for the phenomena of karyokinesis following the metaphases (which see) up to the formation of the resting daughter nuclei,

**ĀN'ĀPLĀST**, see **LEUCOPLAST**.

**ĀNĀS'TŌMŌSE**, to communicate or unite with one another, as the veins of leaves.

**ĀNĀSTŌMŌSIS** (pl. *Ānāstomōsēs*), the inoculation or junction of similar parts, often forming a network, as in the veins of leaves.

**ĀNĀT'ŌMŪ, VEGETABLE**, see **VEGETABLE ANATOMY**.

**ĀNĀT'RŌPOŪS**, applied to an ovule or seed which grows so that the funiculus coheres to and forms a raphe along its whole length, bringing the hilum near the foramen and the chalaza at the apparent apex, as in Liliaceæ; anatropal.

**ĀNĀP'ĪTAL**, flattened and two-edged, as the stem of *Panicum anceps*; ancipitous.

**ĀNĀP'ĪTOŪS**, see **ANCIPITAL**.

**ĀNDROCLIN'IUM**, see **CLINANDRIUM**.

**ĀNDRŌDĪC'ĪOŪS**, having perfect flowers on one set of plants and staminate flowers on another set, but no individuals with pistillate flowers. Compare **ANDROMŌŒCIOUS** and **GYNODICĒCIOUS**. See **POLYGAMOUS**.

**ĀNDRĒ'ĪŪM**, the stamens of a flower taken together.

**ĀNDRŌGŌNĪD'IŪM**, see **ANDRO-SPORE**.

**ĀNDRŌG'ŪNAL**, see **ANDROGYNOUS**.

**ĀNDRŌG'ŪNĪSM**, the change from a dicecious to a monœcious condition.

**ĀNDRŌG'ŪNOŪS**, monœcious with the staminate and pistillate flowers in the same inflorescence. Said mainly of the heads of certain Compositæ. Compare **POLYGAMOUS**.

**ĀNDRŌMŌŒC'ĪOŪS**, having staminate and perfect flowers on the same plant, but no pistillate flowers. Compare **ANDRODICECIOUS**. See **POLYGAMOUS**.

**ĀNDRŌPĒT'ĀLOŪS**, said of flowers which have become double by the conversion of petals into stamens. (Rare.)

**ĀN'DRŌPHŌRE**, a column of united filaments, supporting the anthers; stamineal column.

**ĀNDRŌPH'ŌRŪM**, see **ANDROPHORE**.

**ĀNDRŌSPŌRĀN'GIŪM**, a sporangium containing androspores.

**ĀN'DRŌSPORE**, a kind of asexually produced zoogonidium or swarm-pore in *Cedogonia* which develops into small male plants called "dwarf males;" androgonidium.

**ĀN'DROŪS**, pertaining to stamens; male.



**ANEMOPHÍLOÛS**, having the pollen or seeds conveyed by the wind.

**ANFRÁCT'ŪOSE**, bent hither and thither, as the stamens of the melon.

**ANGÍOCÁR'POÛS**, having the fruit invested with a calyx, receptacle, or other covering; having spores enclosed by a receptacle of some kind; angiosporous. Especially, having a closed instead of open apothecium in lichens. Compare GYMNOCARPOUS.

**ANGÍOSPÉRM'OÛS**, having seeds produced in a closed ovary.

**ANGÍOSPÓROÛS**, having spores or asci produced in a closed receptacle, angiocarpous.

**ANGLÉ OF DÉVIÁ'TION**, the angle which a leaf, branch, or root makes with the axis on which it is borne—on the upper side in branches and leaves, on the lower side in root.

**ANGLE OF DÍVĒR'GENÇE**, the angle measured by the part of a cycle between succeeding organs in the same spiral or whorl; divergence.

**ANGŪLAR**, having angles or ridges prismatic. In Pomology, having one side developed more than the other, as in the Newtown Pippin apple. Compare OBLIQUE.

**ANGŪLAR DÍVĒR'GENÇE**, see ANGLE OF DIVERGENCE.

**ANGŪLÁTE**, see ANGULAR.

**ANGŪLŌDĒN'TÁTE**, having angular teeth.

**ANGŪS'TÁTE**, narrow.

**ANGŪS'TÍFŌLIÁTE**, having narrow leaves; angustifolious.

**ANGŪSTÍFŌLIŪS**, see ANGUSTIFOLIATE.

**ANGŪSTÍSĒP'TÁTE**, having a

narrow septum or partition, as the pod of shepherd's-purse.

**ANÍSŌG'YNOÛS**, having fewer carpels than sepals.

**ANÍSŌM'EROÛS**, not having the same number of floral organs in the different whorls. Compare ISOMEROUS and UNSYMMETRICAL.

**ANÍSŌPĒT'ÁLOÛS**, having petals of unequal size. (Rare.)

**ANÍSŌPHÝL'LOÛS**, unequal-leaved, as when the two leaves of a pair are of unequal size.

**ANÍSŌP'TEROÛS**, having wings of unequal size.

**ANÍSŌSTÁM'ÉNOÛS**, see ANISOSTEMONOUS.

**ANÍSŌSTĒM'ÉNOÛS**, having the stamens differing in number from the petals (or parts of the perianth when the sepals are petaloid). Compare ISOSTEMONOUS.

**ANÍSŌTRŌP'ÍC**, having the different parts or organs endowed with different kinds of irritability, or in different degrees, as stems which seek the light and roots which shun it.

**ANNŌT'ÍNÛS**, the ring upon a stem which marks the close of a season's growth. It consists of the scars left by the fallen scales of the bud from which the next year's growth proceeded.

**ANNŌT'INOÛS**, having distinct yearly growths.

**AN'NŪAL**, a plant which usually lives but one year or season.

**ANNUAL RING**, the ring or cylinder of wood produced by exogenous plants during the year. In some cases the annual ring consists of more than one ring of growth, hence the term "growth-ring" is now often used.

**ĀN'NŪLAR**, in the form of a circle or zone.

**ANNULAR DUCTS**, see **VESSELS**.

**ANNULAR VĒSSELS**, vessels marked with thickenings in the form of a ring.

**ĀN'NŪLĀTE**, marked with rings or circular transverse lines; annulated.

**ĀN'NŪLĀTED**, see **ANNULATE**.

**ĀN'NŪLĀTION**, a ring or belt.

**ĀN'NŪLŌSE**, furnished with or composed of rings.

**ĀN'NŪLŪS** (pl. *Ān'nūh*), any body in the form of a ring; the ring or band of thick-walled cells in the sporangium of most ferns which by contraction bursts the sporangium and liberates the spores; the ring of cells upon the inner side of the base of the peristome at the orifice of the theca in many species of mosses which is thrown off to detach the operculum; the ring on the stem of mushrooms; the abortive foliar sheath at the base of the spike in *Equisetum*.

**ĀN'ŌDĀL**, see **ANODIC**.

**ĀNŌD'ĪC**, applied to the edge of a leaf which a leaf-spiral leaves in its upward course. In a right-handed spiral it would be the right edge of the leaf, and *vice versa*. Compare **CATHODIC**.

**ĀNŌM'ĀLOŪS**, unusual in appearance; contrary to rule; abnormal; irregular.

**ĀNŌM'ĀLŪ**, any deviation from the essential or usual character.

**ĀN'SŪLĀTE**, coiled at the apex and the whole coil bent over so as to make a loop projecting above the coil, as the growing extremity of the vine of the musk-melon.

**ĀN'TECHĀMBER**, the upper

(outer) angle or space between the guard-cells of a stoma. Compare **VESTIBULE**.

**ĀNTĒN'NĒ** (sing. *Āntĕn'nā*), two slender horn-like prolongations of the rostellum in the genus *Catasetum* in orchids which, upon being touched by an insect or other object, cause the liberation of the retinaculum at their base and the ejection of the pollinium.

**ĀNTEPŌS'ITION**, see **SUPERPOSITION**.

**ĀNTĒRĪO-POSTĒRĪOR PLANE**, see **MEDIAN PLANE**.

**ĀNTĒRĪŌR**, the side of a flower, leaf, or other organ away from the main stem or axis; inferior; exterior; in front. Compare **DORSAL**.

**ĀNTHĒLĀ**, a paniculate cyme with the lateral axes overtopping the central, as in many species of *Juncus* and *Luzula*.

**ĀN'THEMŪ**, a flower-cluster of any kind. (Obs.)

**ĀN'THER**, the pollen-bearing part of a stamen.

**ĀN'THERĪD'ĪŪM** (pl. *Āntherid'ia*), the male organ in the higher cryptogams within which antherozoids are produced.

**ĀN'THERĪF'EROŪS**, anther-bearing.

**ĀN'THER-LOBES**, the cells or sacs of an anther, usually two in number, containing the pollen.

**ĀN'THERŌĪD**, anther-like.

**ĀN'THERŌSPŌRĀN'GIŪM** (pl. *Āntherōspōrān'giā*). see **MICROSPORANGIUM**.

**ĀN'THERŌZŌĪD**, one of the motile fertilizing bodies produced in an antheridium; spermatozoid.

**ANTHĒ'SIS**, the time or act of flowering; florescence.

**ANTHOCĀR'POŪS FRUIT**, generally used for Collective fruit, but more properly for Accessory fruit.

**ANTHŌCLIN'IŪM**, see CLINANTHIUM.

**ANTHŌ'DIŪM**, the capitulum or head of flowers in Compositæ (popularly called a flower). Compare CLINANTHIUM.

**ANTHOID**, resembling a flower.

**ANTHŌLITE**, a fossil flower.

**ANTHŌL'YSIS**, a retrograde metamorphosis of a flower by which normally united or contiguous parts are separated; solution of a flower. The parts of the altered flower may or may not be changed in character.

**ANTHŌPHŌRE**, a stalk or internode sometimes developed between the calyx and corolla, as in Silene.

**ANTHŌTĀX'IS**, the arrangement of flowers in an inflorescence; anthotaxy.

**ANTHŌTĀX'Y**, see ANTHOTAXIS.

**ANTICLIN'AL**, said of cell-walls or any lines when perpendicular to the outer surface. Compare PERICLINAL.

**ANTYCOŪS**, facing anteriorly.

**ANTIDRŌMAL**, twisted or coiled in an opposite direction to that with which it is compared, as when the leaf-spiral of a branch turns in the opposite direction from that of the stem; antidromous. Compare HOMODROMOUS and HETERODROMOUS.

**ANTIDRŌMOŪS**, see ANTIDROMAL.

**ANTIDRŌM'Y**, having the course

of a spiral reversed from the usual direction.

**ANTIMYCŌT'IC**, see FUNGICIDAL.

**ANTIPATHĒT'IC**, said of plants which do not unite readily when grafted.

**ANTIPEDUN'CULAR**, situated opposite to a peduncle.

**ANTIPĒT'ALOŪS**, situated opposite to a petal, i. e., directly between the petal and the axis; antepetalous.

**ANTIPŌDĀL CELLS**, a group of four cells at the lower end of the embryo-sac, one of which, destitute of a wall, is the lower polar nucleus. Compare EGAPPARATUS.

**ANTISEP'TIC**, preventing putrefaction.

**ANTITRŌPAL**, see ANTITROPOUS.

**ANTITRŌPOŪS**, having the radicle of the embryo directed away from the hilum, as in orthotropous seeds.

**ANTIZYMŌT'IC**, preventing or checking fermentation.

**ANTRŌRSE'**, directed upward or forward. Compare ANTI-COŪS.

**ĀPĒRISPĒR'MIC**, see EXALBUMINOUS.

**ĀPĒT'ALOŪS**, destitute of corolla.

**ĀPEX** (pl. Āpēxes or Āp'ices), the extremity opposite the point of attachment.

**ĀPĒLIOTRŌP'IC**, turning from the sun; negatively heliotropic.

**ĀPHŪL'LOŪS**, without leaves.

**ĀPHŪL'LŪ**, the abnormal suppression of leaves.

**ĀP'ICAL CELL**, the generating cell of a growing point.

**APICAL CONE**, see PUNCTUM VEGETATIONIS.

**APICULATE**, terminated by an abrupt short acute point.

**APICULATED**, see APICULATE.

**APICULUS** (pl. *Apiculi*), a small acute point.

**APLANOSPORE**, applied by Wille to non-motile reproductive cells formed by rejuvenescence in Conjugatae and some other green algae.

**APLASTIC**, not capable of being organized, or converted into animal or vegetable tissue.

**APOCARPOUS**, having the carpels separate or easily separable, as in *Ranunculus*; dialycarpous.

**APOGAMY**, habitual non-sexual reproduction, especially vegetative reproduction where sexual reproduction usually occurs, as in the budding of a prothallus in ferns. Compare PARTHENOGENESIS and VEGETATIVE APOGAMY.

**APOGEOTROPIC**, growing away from the earth, as ordinary stems.

**APOPETALOUS**, having the petals of the corolla unattached to each other; cleutheropetalous; polypetalous.

**APOPHYLLOUS**, sometimes used for aposepalous, especially in flowers having but one perianth whorl.

**APOPHYESIS**, having an apophysis.

**APOPHYSE**, an enlargement of the seta below the theca in certain mosses; a thickening on the scales of the cones of certain pines; any irregular swelling.

**APOSEPALOUS**, having the leaves of the calyx unattached to each other.

**APOTASIS**, a term applied by Engelmann to the separation of organs by an unusual extension of the internodes; solution. Compare DIALYSIS.

**APOTROPHE**, the collection of the protoplasm and chlorophyll grains along the side walls of a cell instead of the outer surface—often caused by cold or excess or deficiency of light. When caused by deficiency of light, as at night, it is called "negative apostrophe"; when caused by too bright a light, "positive apostrophe." Compare EPISTROPHE and SYSTROPHE.

**APOTHECIUM** (pl. *Apothecia*), the ascocarp in lichens. See DISCOCARP, SHIELD, and PERITHECIUM.

**APPENDAGE**, any superadded or subordinate part; as hairs, prickles, leaves, etc., upon a stem.

**APPENDICULATE**, having an unusual appendage or appendages, as a winged petiole, or spurred corolla.

**APPLANATE**, flattened out or horizontally expanded. Compare EXPLANATE and COMPLANATE.

**APPLICATIVE**, see CONDUPPLICATE.

**APPPOSITE**, close together; side by side.

**APPROSESSED**, lying close, as leaves to a stem; adpressed.

**APPROXIMATE**, close together but not united. Compare REMOTE.

**APTEROUS**, having no dilated appendage or wing. Compare ALATE.

**AQUATIC**, growing in water or wet soil. See PALUSTRINE.

- Ā'QUEOŪS**, nearly colorless. See HYALINE.
- ĀRĀCH'NOID**, covered with long and loosely entangled hairs, the hairs fewer and longer than in Tomentose; cobwebby.
- ĀRĀ'NEŪS**, see ARACHNOID.
- ĀR'BŌR**, see TREE.
- ĀRBŌ'REAL**, pertaining to trees or forests.
- ĀRBŌ'REOŪS**, having the nature of a tree; pertaining to trees.
- ĀRBŌRĒS'CENT**, tree-like in size or form.
- ĀRBŌRĒ'TŪM**, a botanical tree garden.
- ĀR'BŪS'CLE**, a low shrub having the form of a tree.
- ĀRĀĊĒS'THĪDĀ** (obs.), see GALBULUS.
- ĀRĀĊĒBĪŌ'SĪS**, the origin of life. See SPONTANEOUS GENERATION.
- ĀRĀĊĒGŌ'NĪŪM** (pl. *ĀrĀĊĒgŏ'niā*), the female organ in the higher cryptogams. Compare OOGONIUM. See ANTHERIDIUM.
- ĀRĀĊĒSPŌ'RĪŪM**, the cell, group, or layer of cells from which the spore-mother-cells, and tapetum if any, are derived in the higher cryptogams and flowering plants.
- ĀRĀĊĒ'TĪPE**, the original type or condition.
- ĀRĀĊĒ'ICĀRP**, the beginning of a fructification; a cell or group of cells fertilized by a sexual act, as an ascogonium or carpogonium.
- ĀR'ĊŪĀTE**, curved like a bow.
- Ā'REĀ**, a rather large space bounded by cracks, lines, veins, or part differing in color or texture. Compare AREOLA.
- ĀRĒNĀ'ĊEOŪS**, growing in sandy places; arenareous; arenose; sabuline; sabulose.
- ĀRĒNĀ'RĪOŪS**, see ARENACEOUS.
- ĀR'ENŌSE**, see ARENACEOUS.
- ĀRĒ'ŌLĀ** (pl. *ĀrĒ'ŏlæ*), diminutive of areā, any small space surrounded by a part differing in structure or color, as the spaces bounded by the veins in reticulate leaves, by the cracks in the surface of the thallus of certain lichens, or by the cell-walls in the leaves of mosses; areolation; areole.
- ĀRĒ'ŌLĀTE**, divided into areolæ.
- ĀRĒ'ŌLĀ'TION**, (1) see AREOLA; (2) the form and arrangement of the areolæ in mosses, etc.
- Ā'REŌLE**, see AREOLA.
- ĀRĒ'GĒN'TEŪS**, white with a tinge of gray; silvery.
- ĀRĒ'GĪLLĀ'ĊEOŪS**, growing in a clayey soil; argillose.
- ĀRĒ'GĪLLŌSE**, see ARGILLACEOUS.
- ĀRĒ'HĪZAL**, without roots.
- ĀRĒ'ĪL**, a false coat which sometimes surrounds the seed, growing from the funiculus, hilum, or placenta, as the mace of nutmeg. Compare STROPHIOLE.
- ĀRĒ'ĪLĀ**, see ARIL.
- ĀRĒ'ĪLLĀTE**, having an aril.
- ĀRĒ'ĪLLĀTED**, see ARILLATE.
- ĀRĒ'ĪLLŌDE**, a false covering to a seed resembling an aril.
- ĀRĒ'ĪLŪS**, see ARIL.
- ĀRĒ'ĪS'TĀ**, see AWN.
- ĀRĒ'ĪS'TĀTE**, having an awn.
- ĀRĒ'ĪS'TŪLĀTE**, having a small awn.
- ĀRĒ'M**, in horticulture, a large branch of a vine trained horizontally.
- ĀRĒ'MED**, having thorns, spines, or prickles.

**ARMILLÆ**, an annulus in the form of a plaited frill suspended from the top of the stipe below the cap in certain mushrooms.

**AROMA**, a pleasant characteristic odor.

**AROMAT'IC**, possessing aroma, especially if spicy.

**ARRĒCT'**, directed upward from an inclined base, as the pods of milkweed. (*Asclepias*.)

**AR'ROW-HEAD'ED**, see **SAGIT-TATE**.

**AR'ROW-SHAP'ED**, see **SAGIT-TATE**.

**AR'THONŌID**, resembling the apothecium of the genus *Arthonia* in lichens.

**AR'THRŌSPŌRE**, used mainly in bacteria for a spore formed by segmentation, as opposed to Endospore.

**AR'THRŌSTERIG'MA** (pl. *Arthrosterig'matā*), a jointed sterigma in many lichens, composed of a row of cells from each of which spores are abstricted.

**ARTIC'ULĀTE**, jointed; articulated.

**ARTIC'ULĀTED**, see **ARTICU-LATE**.

**ARTIC'ULĀTION**, (1) a node, joint, septum, or separable place; (2) one of the segments so marked off or separated.

**ARTIC'ULŪS**, formerly used both for node and internode.

**ARTIFICIĀL SYSTEM**, a system of classification based on one or a few features only, and not intended to show true relationship, as that of Linnaeus.

**ARŪNDINĀ'CEŌŪS**, reed-like.

**ASCĒND'ENT**, see **ASCENDING**.

**ASCĒND'ING**, rising obliquely, or curving upwards from near the base, as the stems of

*Stellaria* or the branches of Norway spruce; ascendent; ascendent; assurgent; adsurgent. Said of ovules which are attached to the middle portion of the placenta or sides of the ovary and are directed upward. Also, directed upward in any manner in contrast to descending, as the *ascending axis*.

**ASCĒND'ING AXIS**, the stem.

**ASCĒND'ING METĀMŌR'PHŌSIS**, see **PROGRESSIVE METAMORPHOSIS**.

**AS'CI**, pl., see **ASCUS**.

**ASCID'IA**, pl., see **ASCIDIUM**.

**ASCID'IFŌRM**, ascidium-shaped.

**ASCID'ĪŪM** (pl. *Ascid'ia*), a hollow pitcher-shaped leaf, like that of *Sarracenia*.

**ASCIF'EROŪS**, see **ASCOPHOUS**.

**ASCIG'EROŪS**, see **ASCOGENOUS**.

**AS'CŌCĀRP**, the sporocarp of *Ascomycetes*. See **APOTHECIUM**, **PERTHECIUM**, and **CLEISTOCARP**.

**ASCŌG'ENOŪS**, producing asci; ascigerous.

**AS'CŌGŌNE**, see **ASCOGONIUM**.

**ASCŌGŌNIŪM**, the carpogonium, or female organ in *Ascomycetes* before fertilization.

**AS'CŌPHŌRE**, the ascus-bearing layer of hyphæ lining an ascocarp.

**ASCŌPH'OROŪS**, ascus-bearing; asciferous. Compare **ASCOGENOUS**.

**AS'CŌSPŌRE**, a spore produced in an ascus. Often inappropriately called sporidium or sporule.

**AS'CŪS** (pl. *As'ci*), one of the characteristic spore-cases of *Ascomycetes* borne in an ascocarp. It consists of an enlarged terminal cell containing free

- spores, most frequently eight in number.
- ASCUS-APPARATUS**, the asci, together with the ascogenous cells. See ENVELOPE-APPARATUS.
- ASCYPHOUS**, without scyphi.
- ASEPTIC**, not liable to putrefaction.
- ASEXUAL**, without sex; destitute of stamens and pistils in flowering plants, or other sexual organs in cryptogams.
- ASEXUAL GENERATION**, the second stage or generation in plants having an alternation of generations. It produces spores asexually, but is itself the result of fertilization. In ferns the prothallus is the sexual, and the leaf-bearing plant the asexual, generation. See SPOROGONIUM.
- ASPERATE**, see SCABROUS.
- ASPERGILLIFORM**, resembling an aspergillus (a round brush used to sprinkle holy water in Roman Catholic churches), as the stigmas of some grasses. Compare MUSCARIFORM.
- ASPERIFOLIATE**, having leaves rough to the touch.
- ASPERIFOLIOUS**, see ASPERFOLIATE.
- ASPERMOUS**, without seeds.
- ASPEROUS**, see SCABROUS.
- ASSIMILATION**, the conversion of foreign material into the substance of the plant; constructive metabolism.
- ASSURGENT**, see ASCENDING.
- ASTER**, see MOTHER-STAR, DY-ASTER, AMPHASTER, and CYTASTER.
- ASTEROID**, having flowers like the Aster. Compare ACTINIFORM.
- ASTICHOUS**, not in rows.
- ASTOMOUS**, without aperture, as mosses which have not a deciduous operculum.
- ASYMMETRICAL**, not symmetrical, which see.
- ATAVISM**, resemblance to a distant ancestor; remote heredity.
- ATTE** (in composition, *atro-*), pure black, as distinguished from Niger.
- ATHALINE**, without thallus.
- ATROPAL**, see ORTHOTROPOUS.
- ATROPHY**, a dwarfed or stunted condition of an organ as compared with others, or with the usual state. Especially applied to parts which seem wasted away from lack of nourishment or other cause. Compare ABORTION and DEGENERATION.
- ATROPOUS**, see ORTHOTROPOUS.
- ATROPURPUREUS**, dark purple.
- ATTENUATE**, tapering gradually to a point or narrow extremity.
- ATTENUATED**, see ATTENUATE.
- AUGMENTATION**, increase beyond the normal number, especially the production of additional floral whorls.
- AULOPHYTE**, a plant which lives within another for shelter only, not as a parasite, as some Protococcaceæ.
- AURANTIACEOUS**, orange-colored. Darker than Aureus.
- AUREUS**, yellow, with a slight admixture of red; golden.
- AURICLE**, any ear-like appendage, as the lobes at the base of the leaves in sorrel.
- AURICLED**, see AURICULATE.
- AURICULA** (pl. *Auric'ulæ*), see AURICLE.
- AURICULATE**, having auricles, or ear-like lobes or appendages.

- AURIC'ULATED**, see AURICULATE.
- AURIFORM**, having the form of the human ear.
- AUSTERE'**, astringent or harsh to the taste.
- AUTOCAR'POUS**, said of ovaries which are not adherent to the calyx; superior.
- AUTOC'CIOUS**, said of a parasitic fungus which inhabits the same host-plant through all its stages of growth. Compare HETEROCIOUS. Applied in mosses when the male and female "flowers" are in separate involucre upon the same plant.
- AUTOG'AMOUS**, self-fertilizing.
- AUTOG'AMÝ**, close-fertilization; the fertilization of a flower by its own pollen. Compare ALLOGAMY.
- AUTOGÉN'ESIS**, see SPONTANEOUS GENERATION.
- AUTOG'ENOUS**, self-originating. Applied to diseases which have their origin or cause within the effected organism. Compare INFECTION, ESOTERIC, and EXOTERIC.
- AUTOG'ENUS** or **MONOG'ENUS**, terms proposed in place of Monotypic, to indicate that a genus contains but a single species.
- AUTÓN'OMOUS**, complete in itself. Applied to forms which continually and directly reproduce themselves, and are not mere stages in the life of a plant.
- AUTÓPHÝLLÓG'ENÝ**, the growth of one leaf upon another.
- AUTÓPLÁST**, see CHLOROPHYLL-BODY.
- AUTOTÉM'NOUS**, capable of spontaneous division, as ordinary growing cells.
- AUXÓSPÓRE**, a large renewal-cell in Diatomaceæ, formed either by rejuvenescence, or developed from a zygospore produced by conjugation.
- AUXÓTÓN'IC MOVEMENTS**, those made by growing organs, as the twining of stems. Compare ALLASSOTONIC MOVEMENTS.
- AVÉRSE'**, turned or facing away from the central axis or other object. Compare ADVERSE.
- AWL'-SHAPED**, see SUBULATE.
- AWN**, a bristle-shaped appendage, like those on the glumes of many grasses; arista; beard.
- AWNED**, having an awn or beard; aristate.
- AX'-FORM**, see DOLABRIFORM.
- AX'IAL**, pertaining to an axis; extending in the direction of an axis; forming an axis. Compare AXILE.
- AXIFEROUS**, having an axis; producing stems but no leaves.
- AX'IL**, the upper angle between leaf and stem; any angle.
- AX'ILE**, occupying or belonging to the axis, as an *axile placenta*.
- AXIL'LÁ** (pl. *Áxil'lā*), see AXIL.
- AX'ILLAR**, see AXILLARY.
- AX'ILLARÝ**, pertaining to or occupying an axil.
- AX'IS**, the central line of any body; an organ around which others are attached, especially a main stem or root.
- AXIS, ASCENDING**, see ASCENDING AXIS.
- AXIS, DESCENDING**, see DESCENDING AXIS.
- AXIS OF INFLORES'CENTCE**, the part of the stem or branch along which flowers are borne. See RECEPTACLE and RACHIS.
- AX'-SHAPED**, see DOLABRIFORM.



**ĀZYG'ŌSPŌRE**, a spore in certain algae and fungi resembling a zygosporium, but produced asexually.

**ĀZ'YGOŪS**, without a fellow or corresponding part, as a leaflet which does not have another leaflet on the opposite side of the rachis.

**BĀC'Ā**, see BERRY.

**BĀC'CĀTE**, berry-like; pulpy.

**BĀC'CĀTED**, covered with berries, or bodies resembling berries.

**BĀCCĪF'EROŪS**, producing berries.

**BĀC'ĪFŌRM**, see BACCATE.

**BĀC'ĪLLĀR**, rod- or club-shaped, like a bacillus; bacilliform.

**BĀCK**, see DORSUM.

**BĀCTĒ'RIŌIDS**, protoplasmic bodies endowed with Brownian movement, and resembling bacteria.

**BĀLD**, destitute of the usual covering, as of hair, foliage, etc.; destitute of beards or awns.

**BĀLŪS'TRĀ**, sometimes applied to fruits like the pomegranate.

**BĀND**, (1) a space between two ridges on the fruit of Umbelliferae; (2) a broad stripe, especially if transverse.

**BĀN'NER**, see VEXILLUM.

**BĀRB**, a sharp reflexed point on an awn or other process; a hair or other process having such reflexed points, or with a reflexed tip.

**BĀR'BĀTE**, see BEARDED.

**BĀR'BĀTED**, see BEARDED.

**BĀRBE**, see BARB.

**BĀR'BELLĀTE** (diminutive of Barbate), having minute barbs; barbellulate.

**BĀRBĒL'LŪLĀTE**, see BARBEL-LATE.

**BĀR'BŪLE**, a small barb.

**BĀRK**, the covering of the stem and roots of exogens, separated from the wood by the cambium.

**BĀRRED**, crossed by parallel horizontal bands or lines.

**BĀR'REN**, unproductive; unfruitful; sterile,—said of a plant or organ. The term "barren" is seldom applied except to a plant as a whole, and even then the term "sterile" is more often used.

**BĀ'SAL**, pertaining to the base.

**BĀSE**, the part of an organ by which it is attached to its support.

**BĀSĪDĪŌGENĒT'ĪC**, borne on a basidium.

**BĀSĪD'ĪŌPHŌRE**, a sporophore bearing a basidium.

**BĀSĪD'ĪŌSPŌRE**, a spore borne on a basidium, as those of mushrooms.

**BĀSĪD'ĪŪM** (pl. Basid'ia), one of the branched cells on the spore-bearing surface of mushrooms, etc., which bear the spores. Compare STERIGMA.

**BĀS'ĪFĪXED**, attached by its base, as an innate anther.

**BĀSĪF'ŪGĀL**, (1) proceeding away from the base; upward; acropetal; centrifugal (centripetal when applied to the order of inflorescence); (2) derived from the base or situated at the base, as *basifugal* growth in the leaves of certain grasses.

**BĀSĪG'YN'ĪŪM**, see GYNOPHORE.

**BĀS'ĪLAR**, relating to or situated at the base.

**BĀ'SIN**, the depression at the

apex of an apple. Compare CAVITY and EYE.

**BĀSĪP'ĒTĀL**, proceeding or produced in succession toward the base; downward; centrifugal (when applied to the order of inflorescence only). Compare ACROPETAL.

**BĀSĪSĀP'ĪC**, on the side toward the base; facing the base.

**BĀSS**, see BAST.

**BĀST**, the liber or inner bark; particularly the long, tapering, thick-walled phloem-cells characteristic of such bark.

**BĀST'ĀRD**, spurious; resembling something else. Used improperly for Hybrid.

**BĀST-ĀLLS**, thick-walled elongated spindle-shaped cells in the phloem portion of fibrovascular bundles. They give strength and flexibility to the tissues; bast-fibres.

**BĀST-FĪBRES**, see BAST-CELLS.

**BĀST-SHĒATH**, see PHLOEM-SHEATH.

**BĀST, SOFT**, see SOFT BAST.

**BĀST-TISSUE**, see PHLOEM

**BĀST-VĒSSEL**, see SIEVE-TUBE.

**BĒAK**, a process like the beak of a bird terminating the fruit of many leguminous and other plants; rostrum.

**BĒAKED**, ending in a prolonged narrow rigid tip like a beak; rostrate.

**BĒARD**, the awns of grasses, singly or collectively; a tuft of hairs, especially if stiff and long; sometimes applied improperly to the lower lip of labiate corollas.

**BĒARD'ĒD**, having a beard; beset with hairs, especially if stiff and long.

**BĒARD'LETED**, having minute beards or awns.

**BĒLL-SHĀPED**, see CAMPANULATE.

**BĒL'LŪING**, swelling out on one side, as the tube of the corolla in many Labiateæ.

**BĒE'RĪED**, see BACCATED.

**BĒE'RŪY**, an indehiscent fruit pulpy or fleshy throughout, as the grape, currant, and tomato.

**BĪĀCŪ'MĪNĀTE**, two-pointed.

**BĪĀN'GŪLĀTE**, having two angles or corners.

**BĪĀRTĪC'ŪLĀTED**, having two joints.

**BĪĀURĪC'ŪLĀTE**, two-eared.

**BĪBRĀC'TEĀTE**, with two bracts.

**BĪBRĀC'TĒOLĀTE**, having two bractlets.

**BĪĀL'CĀRĀTE**, having two spurs.

**BĪĀL'LŌSE**, having two small hard spots or protuberances.

**BĪĀP'SŪLAR**, having two capsules. Sometimes applied to capsules which are divided before dehiscence into two parts.

**BĪĀR'PELLĀRŪY**, see DICARPELLARY.

**BĪĀR'ĪNĀTE**, two-keeled, as the palet of grasses.

**BĪĀPH'ĀLOŪS**, having two heads.

**BĪĀP'ĪTĀL**, divided into two parts.

**BĪĀP'ĪTOŪS**, see BICIPITAL.

**BĪCOLLĀT'ĒRAL BUNDLE**, a fibro-vascular bundle in which a strand of xylem lies between two strands of phloem.

**BĪ'COLŌR**, of two colors.

**BĪ'COLŌRED**, see BICOLOR.

**BĪCŌN'JŪGĀTE**, see BIGEMINATE.

**BĪCŌR'NŪTE**, with two horn-like processes.

**BĪCRĒ'NĀTE**, with two crena-

- tures or rounded teeth. Compare DOUBLY-CRENATE.
- BICRUR'AL**, having two legs or narrow elongations, as the lip of the "man-orchis."
- BICUS'PID**, having two sharp stiff points or cusps; bicuspidate.
- BICUS'PIDATE**, see BICUSPID.
- BIDEN'TATE**, having two teeth. Compare DOUBLY-DENTATE.
- BIDIG'ITATE**, having two finger-like divisions.
- BID'UOUS**, lasting two days only.
- BIEN'NIAL** (adj.), living two years, or requiring two seasons to come to maturity.
- BIEN'NIAL** (n.), a plant which usually matures its fruit the second year and then dies.
- BIFAC'IAL**, applied to leaves which have a distinct upper and lower surface differing in texture. Compare CENTRIC.
- BIFAR'IOUS**, pointing in two directions; two-ranked; distichous.
- BIFER**, a plant which ripens fruit twice a year.
- BIFEROUS**, fruiting twice a year.
- BIFID**, divided about to the middle in two parts; two-cleft.
- BIFIDATE**, see BIFID.
- BIFIS'TULAR**, containing two tubular openings.
- BIFLOR'ATE**, see BIFLOROUS.
- BIFLOR'OUS**, two-flowered.
- BIFOLI'ATE**, having two leaves or leaflets.
- BIFOLIOL'ATE**, having two leaflets.
- BIFOLLIC'ULAR**, with a double follicle.
- BIFOR'ATE**, having two perforations, as the anthers of Rhododendron.
- BIFOR'INE**, a peculiar cell con-
- taining raphides found in arums and certain other plants—so called because when placed in water they become turgid and discharge their contents, often from both ends.
- BIFOR'OUS**, see BIFORATE.
- BYFRONS**, having two faces or aspects; growing on both surfaces of a leaf (amphigenous).
- BIFUR'GATE**, forked; divided into two branches.
- BIFUR'GATED**, see BIFURCATE.
- BIFURCA'TION**, division into two branches.
- BIFUR'COUS**, see BIFURCATE.
- BIGEM'INATE**, twice paired, as a decompound leaf with two pairs of leaflets, i.e., having a forked petiole with a pair of leaflets at the end of each division; biconjugate.
- BIGEN'ER**, see GENUS-HYBRID.
- BIGLAND'ULAR**, having two glands or gland-like bodies.
- BIJUG'ATE**, having two pairs, as a leaf with two pairs of leaflets.
- BIJUG'OUS**, see BIJUGATE.
- BILAB'iate**, see LABIATE.
- BILAM'ELLAR**, see BILAMEL-LATE.
- BILAM'ELLATE**, of two plates or lamellæ.
- BILAM'ELLATED**, see BILAMEL-LATE.
- BILAT'ERAL**, two-sided.
- BILOB'ATE**, two-lobed.
- BILOB'ATED**, see BILOBATE.
- BYLOBED**, see BILOBATE.
- BILÖC'ULAR**, two-celled—applied to ovaries, anthers, etc.
- BIMAC'ULATE**, having two spots.
- BIMAC'ULATED**, see BIMACU-LATE.
- BYNARY**, in twos; double.
- BYNATE**, in twos or pairs; conjugate—said of two bodies of

the same nature springing from the same point. In speaking of pinnate leaves the term *conjugate* is generally used.

**BINE**, a twining or climbing stem. Rare except in composition, as *wood-bine*.

**BINĒRV'ĀTE**, having two nerves or veins, or two which are especially prominent.

**BINŌ'DĀL**, containing two nodes only.

**BINŌ'MĪAL**, of two names, as the generic and specific names which compose a "botanical name."

**BĪ'NOŪS**, see **BINATE**.

**BĪNŪ'CLĒĀR**, see **BINUCLEATE**.

**BĪNŪ'CLĒĀTE**, have two nuclei or central points; binuclear.

**BĪNŪ'CLĒŌLĀTE**, with two nucleoli.

**BĪŌ'ĀLLĀTE**, with two eye-like spots.

**BĪŌGĒ'NĒSĪS**, (1) the origin of life; (2) the production of living beings from other living beings in any manner—the converse of spontaneous generation (abiogenesis).

**BĪŌGĒ'NOŪS**, growing on living plants, either parasitic or not.

**BĪŌGĒ'NŪ**, the genesis or evolution of living forms, or the science which treats of it, including Ontogeny and Phylogeny.

**BĪŌL'ŌGŪ**, zoology and botany.

**BĪŌLŪT'ĪC**, injurious or destructive to life.

**BĪŌN**, an individual morphologically independent.

**BĪŌPH'ĀGOŪS**, feeding on living organisms. Applied chiefly to insectivorous plants.

**BĪŌPLĀSM**, any living fluid; the same as protoplasm.

**BĪPĀL'ĒŌLĀTE**, with two lodicules; biloduculate.

**BĪPĀL'MĀTE**, said of leaves which are palmate upon secondary palmate petioles.

**BĪP'ĀROŪS**, bearing two objects, as a leaf with two leaflets.

**BĪPĀR'TĒD**, see **BIPARTITE**.

**BĪPĀR'TĪBLE**, divisible into two parts.

**BĪPĀR'TĪLE**, see **BIPARTIBLE**.

**BĪPĀR'TĪTE**, two-parted; divided into two parts to the base or nearly so.

**BĪPĀRTĪ'TĪŌN**, the act of dividing into two equal parts. Compare **BISECTION**.

**BĪPĒC'TĪNĀTE**, toothed like a comb on two sides.

**BĪPĒL'TĀTE**, having two shield-shaped parts.

**BĪPĒRĒ'NĪĀL**, said of a part which lives two years, but reproduces itself indefinitely, as the tubers of the potato. (Rare.)

**BĪPĒT'ĀLOŪS**, having two petals.

**BĪPĪN'NĀTE**, said of a pinnate leaf with secondary petioles, each bearing more than one leaflet, as the honey-locust; doubly pinnate; twice pinnate.

**BĪPĪN'NĀTED**, see **BIPINNATE**.

**BĪPĪNNĀT'ĪFĪD**, having the divisions of a pinnatifid leaf pinnatifid; twice pinnately cleft.

**BĪPĪNNĀTĪPĀR'TĪTE**, having the divisions of a pinnatipartite leaf pinnatipartite; twice pinnately parted. It differs from **Bipinnatifid** in having the divisions extend to near the midrib.

**BĪPĪNNĀT'ĪSECT**, having the divisions of a pinnatisect leaf

- pinnatisect; twice pinnately divided. The divisions extend to the midrib, but the segments are sessile.
- BÍPLÝ'CÁTE**, twice or doubly folded.
- BÍPÓ'RÓSE**, having two small openings or pores.
- BÍPÚNC'TÁTE**, having two small spots.
- BÍRÁ'DÍÁTE**, having two rays.
- BÍRÝ'MÓSE**, opening by two slits, as most anthers; having two clefts, slits, or narrow openings.
- BÍSÁ'CÁTE**, having two sacs or pouches.
- BÍSCÚ'TÁTE**, resembling two round bucklers placed side by side.
- BÍSÉCT'**, to divide into two equal parts.
- BÍSÉCT'ION**, the act of cutting or dividing into two equal parts; bipartition.
- BÍSÉP'TÁTE**, having two partitions or septa.
- BÍSÉ'RÍÁL**, in two rows or series.
- BÍSÉ'R'ÁTE**, having the teeth or serratures serrate; doubly serrate. The latter term is preferable, and *Biserrate*, though in more common use in this sense, should be applied in analogy with Bidentate to leaves or margins bearing two serratures.
- BÍSÉ'TÓSE**, having two bristles; bisetous.
- BÍSÉ'TÓUS**, see BÍSETÓSE.
- BÍSÉX'ÚÁL**, containing both sexes, as a flower with both stamens and pistils; hermaphrodite; monoclinous; syncœious.
- BÍSPÝ'NÓSE**, having two spines.
- BÍSPÓRE**, a two-spored tetraspore.
- BÍSTÍP'ÚLED**, having two stipules.
- BÍSÚL'CÁTE**, having two longitudinal grooves or furrows.
- BÍTÉR'NÁTE**, divided into three parts, each of which is divided into three.
- BÍT'TEN**, see EROSE.
- BÍ'VÁLVE** (adj.), having two valves, as some capsules; bivalvular.
- BÍ'VÁLVE** (n.), a capsule of two valves.
- BÍVÁLV'ÚLÁR**, see BÍVÁLVE.
- BÍVÁS'CÚLÁR**, having two vessels.
- BÍVÍT'TÁTE**, having two vittæ.
- BLÁD'DER**, (1) an inflated membranous pericarp; (2) a membranous air-sac in some water-plants which enables them to float. See AIR-BLADDER.
- BLÁD'DERÝ**, thin and inflated like a bladder, as the calyx of *Silene inflata*.
- BLÁDE**, the expanded portion of a leaf; lamina. The term *blade* is more commonly applied in grasses and *lamina* in other plants.
- BLÁNCHED**, whitened by absence of light; etiolated. Compare CHLOROSIS and ALBINISM.
- BLÁND**, fair; beautiful.
- BLÁSTÉ'MÁ**, the embryo aside from the cotyledons; also used for any point of growth or budding part. (Rare.)
- BLÁSTÉ'MÁL**, rudimentary; nascent. (Rare.)
- BLÁSTÓCÁR'POUS**, applied to a fruit when the seed germinates within the pericarp, as sometimes occurs in the mangrove. (Rare.)
- BLÁSTÓCÓL'LÁ**, the gummy substance on many buds, as on the horse-chestnut.

- BLĀSTŌĜĒN'ĒSĪS**, reproduction by buds; gemmation. (Obs.)
- BLĀSTŪS** (obs.), see BUD and PLUMULE.
- BLĪND**, applied to a malformation, chiefly in certain cultivated plants, as cabbage and cauliflower, in which the stem terminates without producing a head or inflorescence. A "blind bud" is one which fails to develop. To "go blind" is to fail to produce flower-buds where expected.
- BLĪS'TERED**, see BULLATE.
- BLOOM**, a coating on the surface of fruits, leaves, etc., often grayish or bluish in color, consisting of minute, waxy particles in the form of filaments, granules, or layers. See GLAU- COUS.
- BLŌSSOM-BUD**, see FLOWER- BUD.
- BLŌTCHED**, having distinct ir- regular spots of color. Com- pare CLOUDED.
- BLŪNT**, obtuse.
- BŌAT-SHĀPED**, see NAVICULAR.
- BŌB**, a popular name for the in- florescence (thyrses) of sumach.
- BŌLE**, the body of a tree.
- BŌLL**, a globular pericarp, as that of cotton.
- BŌLT** (Hort.), to run premature- ly to seed, as carrots when they seed the first year.
- BŌN'Y**, hard, brittle, and close in texture, as the stone of the peach.
- BOOT**, a popular name for the sheath of grains and other grasses.
- BŌR'DĒR**, the expanded portion of a gamopetalous corolla, con- sisting of the united limbs. See also BORDERED PIT.
- BŌR'DĒRED**, having the margin different from the remainder in form, color, or texture.
- BŌR'DĒRED PIT**, a thin spot or opening in a cell-wall covered on each side by a thickened convex body having a central perforation; areolated dot; discoid marking. Bordered pore of Gregory. These mark- ings are characteristic of the wood-cells of Coniferæ. The *border* is the more or less di- lated central portion of the pit or passage between the cells.
- BŌR'DĒRED PŌRE**, see BORDER- ED PIT.
- BŌSS**, a rounded protuberance.
- BŌSSED**, having a boss. Compare UMBONATE.
- BŌS'TRYĀHŌID**, **ĀYME** see HELI- COID CYME.
- BŌS'TRYĀHŌID DĪCHŌT'ŌM'Y**, see HELICOID DICHO TOMY.
- BŌS'TRYĀ**, see HELICOID CYME.
- BŌTĀN'ĪCĀL ĜĒŌG'RĀPH'Y**, see GEOGRAPHICAL BOTANY.
- BŌTĀN'ĪCĀL NĀME**, the generic name followed by the specific name.
- BŌTĀN'ĪCĀL NŌMENCLĀT'ŪRE**, an account of the names of plants, and of the laws for their application.
- BŌTĀN'ĪCĀL TĒRMINŌL'ŌĜ'Y**, an account of the special words used in describing plants.
- BŌTĀN'ĪC ĜĀR'DEN**, a collection of growing plants systemati- cally arranged for the purpose of study.
- BŌT'ĀNĪZE**, to seek for growing plants for the purpose of bo- tanical investigation.
- BŌT'ĀN'Y**, the science of plants; phytology. See STRUCTURAL, PHYSIOLOGICAL, and SYSTEM- ATIC BOTANY, BOTANICAL NO-

MENCLATURE, and BOTANICAL TERMINOLOGY.

**BÓTHRĚN'CHÝMÁ** (obs.), see PITTED TISSUE.

**BÓT'RŪS**, an old term for a cluster like that of the grape.

**BÓT'RŸOID**, having the form of a bunch of grapes; botryoidal; botryose.

**BÓT'RŸOSE**, see BOTRYOID.

**BÓTRYOI'DÁL**, see BOTRYOID.

**BÓT'TLE-SHÁPED**, see LAGENIFORM.

**BÓTŮ'LI-FÓRM**, see ALLANTOID.

**BRÁCH'ÍÁTE**, applied to branches which are decussate and spreading, as in the ash, and sometimes improperly to those which are long and widely spreading, but not decussate.

**BRÁCHÝP'ÓDOŮS**, short-stalked.

**BRÁCT**, a leaf of an inflorescence, generally subtending a flower or flower-branch. Bracts are intermediate in position between foliage leaves and floral leaves, and are usually much smaller than the ordinary leaves, and in other respects more or less modified.

**BRÁCTĚÁ** (pl. BráctĚā), see BRÁCT.

**BRÁCTĚÁL**, of the nature of a bract.

**BRÁCTĚÁTE**, furnished with bracts; subtended by a bract or bracts; bracted.

**BRÁCTĚÓLÁ** (pl. Bracteolæ), see BRÁCTLET.

**BRÁCTĚÓLÁTE**, furnished with bractlets.

**BRÁCTĚÓLE**, see BRÁCTLET.

**BRÁCTĚÓSE**, having many or conspicuous bracts.

**BRÁCT'LĚT**, a small bract, or bract upon a pedicel or secondary branch of an inflorescence.

**BRÁCT'LĚSS**, without bracts.

**BRÁIRD**, to germinate. (Scotch.)

**BRÁNCH** (n.), a division of a stem or other elongated organ; secondary axis.

**BRÁNCH** (v. i.), to produce branches; to ramify.

**BRÁNCH'LĚT**, a little branch or subdivision of a branch; twig.

**BREÁK** (v. i.) (Hort.): (1) to depart widely from the type and suddenly produce a new variety (nearly the same as *sport*); (2) to "bolt" or run prematurely to seed, as a biennial the first year; (3) to put forth new buds or leaves.

**BREAST-WOOD** (Hort.), branches which project outward from a wall or espalier.

**BREÁTH'ING-PÓRE**, see STOMA.

**BREED**, see RACE.

**BRĪ'DLES**, strings of protoplasm which often connect the nucleus with the layer of protoplasm next the cell wall.

**BRĪ'STLE**, a stiff, short hair or hair-like body.

**BRĪ'STLE-POINTĚD**, ending in a bristle; terminating gradually in a fine sharp point, as the leaves of many mosses.

**BRĪ'STLÝ**, beset with bristles.

**BROOD'-BUD**, a deciduous leaf-bud capable of growing into a new plant, such as the bulbils of the tiger-lily and the deciduous buds of certain lycopodiums; also applied to the soredium of lichens.

**BROOD'-CELL**, any reproductive unicellular body produced asexually which separates from the parent plant, as the gonidia of fungi.

**BROOD'-GĚM'MÁ**, see GEMMA.

**BROWN'IAN MOVEMENT**, a trembling movement common to all minute particles sus-

- pended in a liquid. Called also Brunonian movement, Pedesis, Non-vital motion, and (improperly) Molecular movement. The cause is not known.
- BRŪN'NEŪS**, deep brown, a mixture of dark gray and red.
- BRŪSH'-SHĀPED**, see ASPERGILLIFORM.
- BRŪTĪL'ŌGŪ**, the division of botany relating to mosses; muscology.
- BŪCK'LER-SHĀPED**, see SCUTATE.
- BŪD**, an undeveloped stem or branch, or its extremity, bearing rudimentary leaves which are specially modified for its protection. See LEAF-BUD, FLOWER-BUD, and GEMMA.
- BŪD'DING**, putting forth buds or gemmæ. Also applied to Proliferation, which see.
- BŪD'LĒT**, a little bud attached to a larger one.
- BŪD-BŪ'DIMENT**, the special cells which originate the leaf-bearing axis in the pro-embryo of Characeæ.
- BŪD'-SCĀLE**, one of the modified leaves of a bud; perule.
- BŪD'-SPŌRT**, see BUD-VARIATION.
- BŪD-VĀRIĀTION**, the development of a bud in a manner unusual to the species or variety, and different from the other buds upon the plant. It may be the production of a new variety or a reversion to an earlier form. Bud-variations, or "bud-sports" as they are often called, may usually be propagated by division, but their characters are seldom retained when grown from seed. Compare SEED-VARIATION.
- BŪD-VĀRIĒTŪ**, a variety which originated by bud-variation.
- BŪGLE-SHĀPED**, having the shape of a bugle bead;—a form varying from oblong to obovoid. Used in describing the fruit of certain cranberries.
- BŪLB**, a bud with thickened scales containing nutriment for its development, thus differing from ordinary buds, the scales of which are for protection only. Bulbs are usually subterranean.
- BŪLBĀ'CEŌŪS**, having bulbs; bulbous.
- BŪLBED**, in the form of a bulb; bulbaceous.
- BŪL'BĒL**, see BULBLET.
- BŪLBĪF'EROŪS**, bulb-bearing; bulbous.
- BŪL'BĪL**, see BULBLET.
- BŪLB'LĒT**, a little or secondary bulb, especially one above ground, as in some lilies and ferns; bulbel; bulbil; bulbule. See CLOVE.
- BŪL'BŌSE**, bulb-like in shape or structure.
- BŪL'BŌ-TŪBER**, see CORM.
- BŪL'BOŪS**, producing bulbs, growing from bulbs, or bulb-bose.
- BŪLB-SCĀLE**, one of the thickened scale-like leaves of a bulb.
- BŪLB, TŪ'NICĀTĒD**, see TUNICATED BULB.
- BŪL'BŪLE**, see BULBLET.
- BŪL'BŪS**, the swollen base of the stipe in mushrooms.
- BŪL'LĀTE**, having the surface blistered or puckered, as the leaves of the Savoy cabbage, the spaces between the veins of which are concave on one side and convex on the other.
- BŪL'LĪFŌRM CĒLLS**, see HYGROSCOPIC CĒLLS.



**BÜNCH**, an indefinite cluster or tuft.

**BÜN'DLE-SHEATH**, a layer of closely united thin-walled parenchyma partly or wholly surrounding each fibro-vascular bundle or continuous around the fibro-vascular cylinder; phloem-sheath.

**BÜR**, a seed or head bearing hooked or barbed appendages which serve for its attachment to various animals, thus securing its dissemination.

**BÜRSIC'ULÄTE**, pouch-like or furnished with pouch-like appendages.

**BÜRSIC'ULÄ** (pl. *Bursic'ulæ*), an old term for the stigmatic chamber in orchids.

**BÜRSIC'ULÄTE**, having a bursicula or small pouch.

**BUSH**, a shrub, especially if dense and low. *Shrub* implies the habitual form or limit of growth, but a *bush* may grow into a tree.

**BÜT'TERFLY-SHÄPED**, see PÄPILIONACEOUS.

**BUTTERY**, applied to fruits, especially pears, the flesh of which is soft and yields readily to the pressure of the teeth, as in the White Doyenné and Seckel pears. The texture is in some respects intermediate between Breaking and Melting, which see.

**BÜT'TON** (v. i.) (Hort.), to form small heads prematurely, as cauliflower.

**BIÇY'CLIC**, having two cycles or whorls.

**BÛSSÄ'CEOUS**, resembling or consisting of fine filaments like cobweb, as the mycelium of mushrooms.

**BÛS'SOID**, resembling bissus.

**BÛS'SÛS**, an old name for the

filamentous mycelium of certain fungi.

**CÄDÜ'COÜS**, falling early, as the calyx of the poppy.

**CÆRÜLÉS'CENT**, see CÆRULESCENT.

**CÆRÜ'LEÜS**, see CÆRULEUS.

**CÆ'SIÜS**, pale bluish-gray; lavender-colored.

**CÆSPIT'ËLLÖSE**, diminutive of Cæspitose.

**CÆSP'ITÖSE**, see CESPITOSE.

**CÄLÄTHID'IÜM** (obs.), see CAPITULUM. Formerly applied to the head of flowers in Compositæ, or sometimes to the involucre only.

**CÄLÄTH'IFÖRM**, bowl-shaped, with the margin more or less flaring, like a fruit-dish or flower-basket.

**CÄL'CÄR**, see SPUR.

**CÄL'CÄRÄTE**, having a spur, as the flower of larkspur; spur-shaped.

**CÄLCÄ'REÖÜS**, of a dull chalk-white color; growing in chalky or limestone soils.

**CÄL'ÇEIFÖRM**, see CALCEOLATE.

**CÄL'ÇEÖLÄTE**, slipper-shaped, as the lip of Cypripedium; calceiform; soleæform.

**CÄL'ÇIFÖRM**, powdery, like chalk or lime.

**CÄLÇIV'ÖROÜS**, eating into lime rock, as certain lichens.

**CÄLIC'ULÄR**, cup-shaped. (Rare.)

**CÄLIC'ULÄTE**, see CALYCLATE.

**CÄ'LIX**, see CALYX.

**CÄL'LÏ** (pl.), see CALLUS.

**CÄL'LÖSE**, having hardened spots or protuberances; callused.

**CÄLLÖS'ITÛ**, a hard or thickened spot or protuberance; callus; wart.

**CĀL'LŪS** (pl. **Calluses** or **Calli**), (1) a hard or thickened spot or protuberance; callosity: (2) the new formation upon an injured surface, as seen at the end of a cutting: (3) a thickened deposit of formative material in the pores of the sieve-plates in certain trees in autumn: (4) a term applied to an extension of the flowering glume in grasses below its point of insertion, and which is grown to the axis or rachilla of the spikelet and separated from the free portion by a more or less distinct furrow. It is frequently covered with hairs or bristles (as in *Stipa*) which serve for attachment to other objects to secure the distribution of the seed. The Callus is sometimes present in the empty glumes also.—(Scribner.)

**CĀL'VOŪS**, bald; having a surface on which hairs are usually present destitute of them, as in an achenium without a pappus.

**CĀLYCĀN'THEMOŪS**, having petaloid sepals.

**CĀLYCĀN'THEMĪ**, a partial or entire conversion of sepals into petals.

**CĀLYCĪFLŌ'RĀL**, having the calyx free from the ovary, and the stamens (and therefore the petals also) inserted on the calyx. Compare **THALAMI-FLOREAL** and **COROLLIFLOREAL**.

**CĀLYCĪFŌRM**, having the form or position of a calyx.

**CĀLYCĪNAL**, see **CALYCINE**.

**CĀLYCĪNE**, pertaining to or situated on a calyx; calycinal.

**CĀLYCLE**, a whorl of bracts forming a secondary or accessory calyx outside the true calyx.

**CĀLYCLED**, having a calycle.

**CĀLYCŌID**, resembling a calyx.

**CĀLYCŪLĀTE**, having a calyculus.

**CĀLYCŪLATED**, see **CALYCULATE**.

**CĀLYCŪLŪS**, a set of involucrel bracts resembling a calyx, as in *Dianthus*.

**CĀLYP'TRĀ**, the membranous hood or veil covering the capsule in mosses. It consists of the ruptured archegonium carried up by the growing sporophore. The term is also applied to the root-cap, which see.

**CĀLYP'TRĀTE**, having a calyptra or similar covering.

**CĀLYP'TRĪFŌRM**, shaped like a calyptra or candle-extinguisher, as the calyx of *Eschscholtzia*.

**CĀLYP'TRŌGEN**, a special layer of cells in certain plants from which the root-cap is developed. (Jancewski.)

**CĀLYX**, the outer set of floral leaves between the bracts, if any, and the corolla. When there is but one set external to the stamens, it is usually called calyx or perianth.

**CĀLYX TŪBE**, a tube of united sepals adherent to the ovary or enclosing the other parts of the flower. As the elevated margin of the receptacle sometimes forms a portion of this tube, the term "receptacular tube" is also applied to it.

**CĀM'ĀRĀ** (pl. **Cām'ārĀ**), an indefinite term formerly applied to various fruits having more or less membranous carpels, as the *Ranunculus* and apple. Also applied to a single carpel of such a fruit.

**CAMBIAL**, pertaining to cambium.

**CAMBIFORM**, said of narrow prismatic thin-walled cells, like those characteristic of cambium.

**CAMBIUM**, a layer of meristem belonging to the fibrovascular system, between the xylem and phloem. In exogens it is permanent, and forms the continuous ring or layer of soft growing tissue between the wood and inner bark, from which the new growth of each is derived. It was formerly considered merely a viscid secretion, often called "descending sap," but it is now known to be composed wholly of young, easily broken cells filled with protoplasm or formative matter.

**CAMBIUM LAYER**, see CAMBIUM.

**CAMBIUM RING**, see CAMBIUM.

**CAMPANIFORM**, see CAMPANULATE.

**CAMPANIFORM**, see CAMPANULATE.

**CAMPANULATE**, bell-shaped, as the corolla of the harebell.

**CAMPESTRAL**, growing mainly in uncultivated fields.

**CAMPULITROPOUS** (obs.), see CAMPYLOTROPOUS.

**CAMPYLÓSPERMÓUS**, having the edges of the seed rolled inward to form a longitudinal groove or furrow, as in sweetcicely and some other Umbelliferae.

**CAMPYLÓTRÓPAL**, see CAMPYLOTROPOUS.

**CAMPYLÓTRÓPOUS**, applied to ovules or seeds which are curved upon themselves so that the micropyle is near the

chalaza, as in Cruciferae; campylotropal.

**CANAL-CELLS**, an axial row of cells in the neck of the archegonium the connecting septa of which disappear, forming a canal filled with mucilage for the passage of the antherozoids.

**CANALÍCULATE**, channelled.

**CANALÍCULUS** (pl. *Canaliculi*), a channel.

**CANCELLATE**, having open network; lattice-like.

**CANDICANT**, see ALBESCENT.

**CANDIDUS**, Latin for pure white.

**CANE**, the stem of reeds and other large grasses. Applied in horticulture to the stems of raspberries and blackberries, and one-year-old stems of grape-vines.

**CANESCENT**, hoary (gray or whitish) from a coating of fine hairs; canus; incanus; incanous; incanescent.

**CANUS**, see CANESCENT.

**CAP**, see PILEUS.

**CAPILLACEOUS**, see CAPILLARY.

**CAPIL-LAMENT** (rare), see FILAMENT.

**CAPILLARY**, long and narrow like a hair; said of a filament or channel.

**CAPILIFORM**, see CAPILLARY.

**CAPILLITUM**, sterile filaments, often in the form of network, among the spores of puff-balls and some other fungi.

**CAPITATE**, furnished with a globose head; growing in a head.

**CAPITELATE**, diminutive of capitate; capitular.

**CAPITULAR**, see CAPITELLATE.

**CÁPĪT'ŪLĪFŌRM**, in the form of a small head.

**CÁPĪT'ŪLŪM** (pl. Cápĭt'ŭlā), a dense flower-cluster, as in the clover or sunflower; a head of any kind.

**CÁP'REŪLĀTE**, having tendrils; cirrhose.

**CÁP'REŪLŪS** (pl. Căprē'ŭlī), see TENDRIL.

**CÁP'RĪFĪCĀTION**, (1) the fertilization of the fig, by hand or by means of insects. Sometimes extended to the artificial fertilization of other fruits. (2) The process of accelerating the ripening of figs by placing on the cultivated plant branches of the wild fig (caprificus). A hymenopterous insect found on the wild plant enters the fruit to lay its eggs, causing it to ripen earlier. The same result is obtained by the practice of pricking the green figs with a needle dipped in olive-oil; also by the application of a drop of the oil to the eye of the fig. There seems to be some doubt as to whether the result from caprification by means of the wild fig is due to fertilization, or the punctures of the insect, or to both.

**CÁP'SŌMĀ'NĪĀ**, an unnatural development of pistils. It may consist of excessive multiplication or of any alteration in form which impairs their function.

**CÁP'SŪLAR**, pertaining to a capsule.

**CÁP'SŪLĀTE**, enclosed in a capsule.

**CÁP'SŪLE**, any dry dehiscent fruit, especially one which is superior and polycarpellary. The sporangium of mosses is usually called a capsule.

**CÁP'SŪLĪF'EROŪS**, bearing capsules.

**CĀRBŌNĀ'ÇEOŪS**, appearing as if burnt.

**CĀR'ÇERŪLE**, a dry fruit formed from a polycarpellary ovary, the carpels of which separate when ripe into indehiscent few-seeded cocci, as mallow; carcerulus. Compare SCHIZOCARP.

**CĀRÇER'ŪLŪS**, see CARCERULE.

**CĀRÇĪTH'ĪUM**, an old term for Mycelium.

**CĀRĪCŌL'ŌGŸ**, the study of the genus Carex.

**CĀ'RĪĒS**, an old term for decay.

**CĀRĪNĀ**, see KEEL.

**CĀRĪNĀL**, pertaining to a keel.

**CĀRĪNĀL ĒSTĪVĀTION**, when the carina embraces the other parts of the flower.

**CĀRĪNĀL CĀNĀL'**, a lacuna in the xylem of a fibrovascular bundle, as in Equisetum. Compare VALLECULAR CANALS.

**CĀRĪNĀTE**, keel-shaped, or having a longitudinal ridge like a keel; keeled.

**CĀRĪNĀTED**, see CARINATE.

**CĀRĪŌP'SĪS**, see CARYOPSIS.

**CĀ'RĪŌŪS**, decayed. (Rare.) Compare CRIES.

**CĀR'NEŌŪS**, flesh-colored; pale red. Compare CARNOSE.

**CĀR'NEŪS**, see CARNEOUS.

**CĀR'NĪVŌROŪS**, see INSECTIVOROUS.

**CĀR'NOSE**, fleshy in texture. More firm than succulent or pulpy.

**CĀR'NOŪS**, pertaining to flesh; fleshy.

**CĀRPADE'LIŪM**, see CREMOCARP.

- CĀR'PEL**, a simple pistil or one of the elements (modified leaves) of a compound pistil.
- CĀR'PELLĀRĪ**, pertaining to a carpel.
- CĀRPĒL'LŪM** (pl. *Cārpēl'lā*), see **CARPEL**.
- CĀR'PID**, a ripe carpel, especially if separable.
- CĀRPĪD'IŪM**, a carpid or carpel.
- CĀRPŌGĒN'IC**, fruit-producing. In Floridæ applied to the special cell (or cells) of the procarpium which develops into the carpoponium.
- CĀR'PŌGŌN**, see **CARPOGONIUM**.
- CĀRPŌGŌNIŪM**, the female organ, usually multicellular, of Carposporææ before fertilization. Compare **OOGONIUM**.
- CĀR'PŌLITE**, a petrified fruit; lithocarp; carpolith.
- CĀRPŌL'ŌGĪ**, the part of botany which relates to the structure of fruits. Compare **POMOLOGY**.
- CĀR'PŌPHŌRE**, the stalk of a sporocarp; a stalk elevating the gynecium above the rest of the flower (gynophore); a prolongation of the axis between the carpels, as in Umbelliferæ.
- CĀR'PŌPHŪLL**, see **CARPEL**.
- CĀRPŌPHŪL'LŪM** (pl. *Cārpōphŷl'lā*), see **CARPEL**.
- CĀR'PŌSPŌRE**, a spore produced in a sporocarp. De Bary extends the term to all those produced on a sporophyte, thus including the spores of ferns. This makes it equivalent to the term "spore" as used by Sachs.
- CĀR'PŌSTŌME**, the opening in a sporocarp through which the spores are discharged.
- CĀRTĪLĀG'INOŪS**, firm and tough like cartilage.
- CĀR'UNCLE**, a partial aril growing from the hilum, as in *Polygala*; strophiole.
- CĀRŪN'CŪLĀ**, see **CARUNCLE**.
- CĀRŪN'CŪLĀR**, see **CARUNCULATE**.
- CĀRŪN'CŪLĀTE**, having a caruncle or the form of a caruncle; caruncular; carunculous; carunculated.
- CĀRŪN'CŪLĀTED**, see **CARUNCULATE**.
- CĀRŪN'CŪLOŪS** (rare), see **CARUNCULATE**.
- CĀRYŌŪCINĒ'SIS**, see **KARYOKINESIS**.
- CĀRYŌPHŪLLĀ'CEŌŪS**, pink-like; especially having five petals with long claws, as in the pink family (*Caryophyllaceæ*).
- CĀRYŌPH'YLLŌŪS**, see **CARYOPHYLLACEOUS**.
- CĀRYŌP'SIS**, a dry one-seeded indehiscent fruit, with the pericarp thin and adherent to the seed, as in wheat and most other Gramineæ; cariopsis.
- CĀSQUE**, see **GALEA**.
- CĀSSĪD'EOŪS**, a term applied to an irregular corolla having the upper petal broad and helmet-shaped as in *Aconitum*.
- CĀSTĀ'NEŌŪS**, chestnut-colored.
- CĀS'TRĀTE** (adj.), said of a stamen which contains no anther, or no good pollen.
- CĀS'TRĀTE** (v.), to remove the anthers.
- CĀTĀBŌL'IC**, see **KATABOLIC**.
- CĀTĀCLĒ'SIŪM**, a term sometimes applied to an achenium like *Mirabilis*, being a one-celled, one-seeded fruit within a hardened calyx.
- CĀTĀCŌRŌL'LĀ**, a secondary corolla sometimes found inside or outside the true corolla.

- CĀTĀPĒT'ĀLOŪS**, having the bases of the petals in a polypetalous corolla adherent to the bases of the stamens, as in *Malva*.
- CĀT'ĀPHŪL**, a scale-like leaf, as on buds, rhizomes, etc. Compare **EUPHYLL**.
- CĀTĀPHŪL'LĀRŪ**, scale-like, as the perules of a bud or the rudimentary leaves on a root-stock.
- CĀT'ĒNĀTE**, see **CONCATENATE**.
- CĀT'ĒN'ŪLĀTE**, see **CONCATENATE**.
- CĀT'ĒDĀL**, see **CATHODIC**.
- CĀTHŌD'ĪC**, applied to the edge of a leaf which is entered by an ascending spiral. In a right-handed spiral it would be the left edge and *vice versa*. Also spelled **Kathodic**. Compare **ANODIC**.
- CĀT'KĪN**, see **AMENT**.
- CAŪ'DĀTE**, having a long termination like a tail.
- CAŪ'DĀTED**, see **CAUDATE**.
- CAŪ'DEX** (pl. **Caŭ'dexes** or **Caŭ'dicēs**), the trunk of a palm, a tree-fern, or other arborescent endogen or acrogen; an upright root-stock; the persistent base of various herbaceous perennials (in this sense obsolete). Formerly applied to the trunk of any tree.
- CAŪ'DĪCLE**, a little stalk, as that to which each pollen-mass in orchids is attached.
- CAUDĪC'ŪLĀ**, see **CAUDICLE**.
- CAULĒS'CENT**, having a distinct leaf-bearing stem.
- CAŪ'LĪCLE**, the first internode, or portion of the stem below the cotyledons and above the radicle or beginning of the true root; tigellum; cauliculus, usually called radicle. Seldom applied to the part after the plant has developed.
- CAŪ'LĪCŪLE**, see **CAULICLE**.
- CAŪLĪC'ŪLŪS** (pl. **Caŭlic'ŭlī**), see **CAULICLE**.
- CAŪLĪF'ĒROŪS**, having a stem; caulescent.
- CAŪ'LĪFŌRM**, stem-like.
- CAŪLĪG'ĒROŪS**, borne upon the stem.
- CAŪLINE**, pertaining to the stem; belonging to the stem, or main stem, as *cauline leaves*.
- CAULĪNE BŪN'DLES**, fibrovascular bundles confined exclusively to the stem and not connected with those in the leaves. Compare **COMMON BUNDLES**.
- CAŪ'LĪS**, the stem; especially the main stem in herbaceous plants.
- CAŪLŌCĀR'POŪS**, producing fruit upon a permanent stem, as ordinary trees and shrubs.
- CAŪ'LŌME**, a general term for stems of all kinds, whether having the ordinary form and functions of stems or not. Compare **PHYLLOME**.
- CAŪLŌ'MER**, a name proposed for one of the secondary axes which form a sympodium.
- CAŪLŌTĀX'ĪS**, the arrangement of the branches upon a stem.
- CĀV'ĪTŪ** (Hort.), the depression in the stem end of an apple. Compare **BASIN**.
- CELL**, (1) one of the structural elements of living bodies, by the multiplication of which growth is effected. In plants the cell usually appears as a closed sac surrounded by a firm wall of cellulose and containing the essential element, protoplasm, and usually a nucleus, the active agent in cell-

- division. See CELLULOSE, CELL-WALL, CELL-SAP, PROTOPLASM, NUCLEUS. (2) Any cavity, as that of an anther or ovary.
- CELL-FAMILY**, a group of cells of common origin; used mainly among the lower algæ; colony. See CŒNOBIUM.
- CELL-FIBRE**, see NUCLEAR FIBRIL.
- CELLIFEROUS**, bearing or producing cells.
- CELLNUCLEUS**, see NUCLEUS.
- CELL-PLATE**, the early condition of a cell-wall at the equator of a dividing nucleus, formed by the fusion of a series of thickenings of the spindle-fibres called by Strasburger Dermatomes.
- CELL, PRIMORDIAL**, see PRIMORDIAL CELL.
- CELL SAP**, fluid in living cells which separates from the protoplasm as one or more vacuoles; cytenchyma. Compare VASCULAR SAP and DEUTOPLASM.
- CELL-TISSUE**, tissue composed of cells as distinguished from vessels. See CELLULAR TISSUE.
- CELLULAR**, composed of cells; pertaining to cells as distinguished from vessels; having the cells large and soft; containing cavities of any kind; porous.
- CELLULAR BARK**, see MESOPHLEUM.
- CELLULAR ENVELOPE**, see MESOPHLEUM.
- CELLULAR PLANTS**, those which contain no fibrovascular tissue, as fungi and algæ; thallophytes.
- CELLULAR SPORE**, see COMPOUND SPORE.
- CELLULAR SYSTEM**, the cellular portion of a plant as distinguished from the fibrovascular.
- CELLULAR TISSUE**, tissue in which none of the cells are modified into ducts or vessels. Especially, tissue composed of cells which are large and loose, like the pulp of fruits; parenchyma. Compare VASCULAR TISSUE.
- CELLULE**, a small cell.
- CELLULIFEROUS**, bearing or producing little cells.
- CELLULOSE**, primary cell-wall substance; the material forming most of the dry matter of plants. It is seen nearly pure in cotton-fibre and in the cell-walls of most plants while young. There are many modifications of cellulose, among them Lignin in older wood and Suberin in bark.
- CELL-WALL**, a sac enclosing the living contents of a cell.
- CEMENTATION OF HYPHÆ**, their inseparable union by a cementing substance; concrecence. (DeBary.)
- CEMENT-DISK**, Müller's term for the glandular disk or retinaculum of orchids.
- CENANTHY**, the suppression of stamens and pistils.
- CENOBIUM**, see CŒNOBIUM.
- CENOGENETIC**, secondary.
- CENTRAL CELL**, the cell of an archegonium, from which the oosphere originates. Compare EMBRYO-SAC.
- CENTRAL CORD**, a cord or bundle of elongated thin-walled cells at the centre of the stems, leaves, and fruit-stalks of many mosses which serves for the transfer of water; tissue-cord.

- ÇĒN'TRĀL ÇYLĪNĒR**, the portion of the tissue of roots and stems within the cortex. It includes the medullary and fibrovascular systems,—used mainly in roots. Compare FIBROVASCULAR CYLINDER.
- ÇĒN'TRĪC**, a term applied to such leaves as show no considerable difference between the internal structure of their upper and under sides. Compare BIFACIAL.
- ÇĒNTRĪF'ŪGĀL**, said of an inflorescence in which the terminal flower blossoms first; definite; determinate. Applied to a radicle which is turned toward the side of the fruit, or to anything else which points outward.
- ÇĒNTRĪP'ĒTĀL**, said of an inflorescence in which the lower or outer flowers blossom first; indefinite; indeterminate. Applied to radicles or seeds which point toward the axis of the fruit. Now little used in the latter sense.
- ÇĒN'TŪRĪ**, a hundred things, as a package of plants containing a hundred specimens.
- ÇĒPHĀLĀN'THĪŪM**, see ANTHODIUM.
- ÇĒPHĀLŌ'DĪĀ** (sing. ÇĒphĀlŌ'dĪŭm), outgrowths of a lichen thallus in which algal cells are situated.
- ÇĒPH'ĀLŌĪD**, capitate or head-shaped.
- ÇĒRĀ'ÇĒŌŪS**, wax-like.
- ÇĒRĀMĪDĪŪM** (pl. ÇĒrĀmidĪĀ), the ovate or urn-shaped capsule containing the spores in the red algæ (Floridæ).
- ÇĒRĪF'ĒRŌŪS**, producing wax.
- ÇĒR'NŌŪS**, nodding, curved over near the top, as the flower of narcissus upon its stem; nutant. Compare DROOPING.
- ÇĒR'NŌŪŪS**, see CERNOUS.
- ÇĒR'NŪŪS**, see CERNOUS.
- ÇĒ'SĪŌŪS**, see CÆSĪŌŪS.
- ÇĒS'PĪTŌSE**, in tufts or dense bunches; cæspitose; tufted.
- ÇĒS'PĪTŌŪS**, see CÆSPITOSE.
- ÇĒSPĪT'ŪLŌSE**, in small tufts or bunches.
- ÇĒĒ'TĀ**, Greek for bristle.
- ÇĒĀFF**, the glumes and palets of grains and other grasses; the bracts which subtend each flower in the head of Compositæ, etc.
- ÇĒĀIN-ÇĒM'MĀ**, a kind of gemma found in Mucorini having the form of a septate conservoid filament, the segments of which are capable of germination; sprouting gemma. (DeBary.)
- ÇĒĀLĀ'ZĀ**, the base of the ovule or place where its coats unite with each other and with the nucleus. In orthotropous seeds it corresponds with the hilum.
- ÇĒĀP'LĒT**, a series of objects arranged like beads on a string, as the spores of Cystopus.
- ÇĒĀR'ĀCTĒR**, whatever distinguishes a plant or group of plants from others; a description composed of the distinctive features of a species or other group. See SPECIFIC CHARACTER, GENERIC CHARACTER, etc.
- ÇĒĀRTĀ'ÇĒŌŪS**, of the texture of parchment or writing-paper.
- ÇĒĀSMŌG'ĀMŪ**, the opening of the perianth at flowering time. (Rare.)
- ÇĒĪNK'Ū** (Tuckerman), see RĪMOSE.



**CHLAMYDOSPÖRE**, a kind of thick-walled spore formed asexually in Mucorini by free-cell formation within the hyphæ. The term is also applied to certain thick-walled spores in protophytes, and occasionally elsewhere.

**CHLORANTHÛ**, the conversion of the parts of a flower into green leaves.

**CHLOROLEUCITE**, see CHLOROPLAST.

**CHLOROPHYLL**, see CHLOROPHYLL.

**CHLOROPHYLL**, the green coloring matter of plants.

**CHLOROPHYLL-BÖDÛ**, a proteid body (plastid) in the cells of plants containing the chlorophyll; chlorophyll-granule; chlorophyll-corpuscle; chloroplast; autoplast; chloroleucite. See PLASTID and CHROMATOPHORE.

**CHLOROPHYLL - CÖRPÜSCLE**, see CHLOROPHYLL-BODY.

**CHLOROPHYLL-GRÄIN**, see CHLOROPHYLL-BODY.

**CHLOROPHYLL GRÄNÜLE**, see CHLOROPHYLL-BODY.

**CHLOROPHYLL-VËSICLES**, see PYRENOIDS.

**CHLOROPLAST**, see CHLOROPHYLL-BODY.

**CHLORÖSIS**, an abnormal absence or diminution of the green coloring matter of plants; albinism. Compare ETIOLATION.

**CHÖRDÄ PISTILLÄRIS**, a fibrovascular bundle in the style. (Obs.)

**CHÖRIPËTÄLOÜS**, see POLYPETALOUS.

**CHÖRISËPÄLOÜS**, see POLYSEPALOUS.

**CHÖRISIS**, the production of two

or more organs in the position of one. It is considered in most cases to be a branching of very early origin. The condition may be normal or abnormal. See COLLATERAL and TRANSVERSE CHORISIS. Compare UNLINING.

**CHÖRISTÖPHÛLLOÜS**, separate-leaved. (Rare.)

**CHÖMÄTÛC**, capable of being colored by staining agents; pertaining to color.

**CHÖMÄTIN**, that part of the protoplasm of the cell, mainly in the nucleus, which is readily and deeply colored by staining agents. It forms the chief portion of the granular fibrils called "nuclein" or "nucleoplasm."

**CHÖMÄTÖPHÖRE**, the protoplasmic body (plastid) in which chlorophyll or other coloring matter is produced; color-granule; chromoplast; chromoleucite. The term is also extended by some to all plastids. See CHLOROPHYLL-BODY.

**CHÖMIDÛM**, a term sometimes applied to the gonidium or algal host of lichens.

**CHÖMÖLEUCITE**, see CHROMATOPHORE.

**CHÖMÖPLAST**, see CHROMATOPHORE.

**CHÖMÖPLÄSTID**, see CHROMATOPHORE.

**CHÖMÖSÖME**, one of the segments of the nuclear filament in karyokinesis.

**CHÖMÜLE**, a term applied to all coloring pigments found in living plants.

**CHÖNÛZÖÖSPÖRE**, one of the microzoogonidia produced in vast numbers in Hydrodictyon—so called, because they rest for several weeks or more be-

- fore germinating; chronisporic; chronizoospore.
- ÇIC'ATRICE**, see **CICATRIX**.
- ÇICA'TRIX** (pl. Çicâtri'çes), a scar left by a falling leaf or other organ.
- ÇIEN'GHÏMÁ**, a system of intercellular spaces. (Kæhler.)
- ÇIL'IA** (sing. Çil'ium), hairs or bristles forming a row or fringe; the tail-like appendages of zoospores; single, fine, soft, hair-like terminal appendages of any kind. Compare **FLAGELLA**.
- ÇIL'IÁTE**, having cilia.
- ÇIL'IÁTE-DËN'TÁTE**, having teeth fringed with hairs.
- ÇIL'IIFORM**, resembling cilia.
- ÇIL'IÓGRÁDE**, moving by means of cilia, as zoospores.
- ÇIL'IÓLÁ** (sing. Çil'iólum), secondary or minute cilia.
- ÇIL'IUM** (sing.), see **CILIA**.
- ÇIN'ÇINNÁL ÇÏME**, see **SCORPIOID CYME**.
- ÇIN'ÇINNÁL DICHÓT'ÓMÏ**, see **SCORPIOID DICHO TOMY**.
- ÇIN'ÇINNÛS**, see **SCORPIOID CYME**.
- ÇINÉRÁ'ÇEOÛS**, a little paler than Cinereous.
- ÇINÉR'ÉOÛS**, ash-gray.
- ÇINÉRÈS'ÇËNT**, becoming ash-gray; cineraceous.
- ÇINÉR'I'TIOÛS**, see **CINEREOUS**.
- ÇI'ÓN**, see **SCION**.
- ÇIR'ÇINÁL**, see **CIRCINATE**.
- ÇIR'ÇINÁTE**, rolled forward from the end, as the young leaves of many ferns.
- ÇIR'CÛMÇIŞED'**, divided in a transverse circular manner.
- ÇIR'CÛMNÛTÁ'TIÓN**, the act of bending around successively through different points of the compass, as is done by the ends of twining vines, and in a less degree by other growing points; revolving nutation. See **NUTATION**.
- ÇIR'CÛMÇIŞ'SILE**, debiscing or dividing by a transverse circular line, as the fruit of purslane.
- ÇIR'CÛMŞRIP'TIÓN**, an outline or boundary.
- ÇIRRHIF'ÉROÛS**, having tendrils. See **CIRRHOSE**.
- ÇIR'RHIFORM**, tendril-shaped; cirriform.
- ÇIR'RHÓSE**, having tendrils; cirrhiferous; cirrhous; cirrose; capreolate. Also, resembling a tendril or coiling like a tendril; tipped with a wavy filiform appendage; slenderly flagellate.
- ÇIR'RHÓSELÏ PIN'NÁTE**, pinnate with a terminal leaflet replaced by a tendril, as in the pea.
- ÇIR'RHÓUS**, see **CIRRHOSE**.
- ÇIR'RHÛS** (pl. Çir'rhî), a tendril; capreolus.
- ÇIRRHIF'ÉROÛS**, see **CIRRHIFEROUS**.
- ÇIR'RIFORM**, see **CIRRIFORM**.
- ÇIRRHIG'ÉROÛS**, producing tendrils. See **CIRRHOSE**.
- ÇIR'ROSE**, see **CIRRHOSE**.
- ÇIR'ROÛS**, see **CIRRHOSE**.
- ÇIR'RÛS** (pl. Çir'ri), see **CIRRHUS**.
- ÇIŞTÓ'MÁ**, see **CISTOME**.
- ÇIŞTÓ'MË'**, a term sometimes given to a stomatic chamber when it exists as a kind of sac lined by a special layer of cells.
- CLÁDOCÁR'POÛS**, having the fruit in mosses on short lateral branches; pleurocarpous. Compare **ACROCARPOUS**.
- CLÁD'ÓDE**, see **PHYLLOCLADIUM**.
- CLÁD'ÓDIÛM** (pl. Cládód'iá), see **PHYLLOCLADIUM**.
- CLÁD'ÓPHÏLL**, see **PHYLLOCLADIUM**.

**CLAMP-CELL**, see CLAMP-CONNECTION.

**CLAMP-CÖNNÉCTION**, a semi-circular process connecting two adjoining cells of a hypha. In some cases it may communicate with but one of the cells, that from which it originated, in others its extremity becomes applied to the wall of the adjoining cell, at which point both walls are absorbed, leaving a passage around the septum between the cells of the filament. The process may become cut off from the originating cell by a septum when it is called a "clamp-cell." It is found mainly in Basidiomycetes.

**CLASS**, a group of related orders.

**CLASSÍFICÁTION**, the systematic distribution of individuals into groups.

**CLÁTH'RÁTE**, latticed; furnished with openings like lattice-work; cancellate.

**CLÁTH'RÁTE CELL**, see SIEVE-TUBE.

**CLÁ'VÁTE**, club-shaped; gradually thickened upward or away from the extremity of attachment.

**CLÁ'VÉFORM**, see CLAVATE.

**CLÁV'ÉLLÁTE**, diminutive of Clavate.

**CLÁV'ÍCLE**, see TENDRIL.

**CLÁVÍC'ŪLÁ** (pl. Clávic'ŭlæ), a term formerly used for tendril, especially a tendril formed by a petiole.

**CLÁVÍC'ŪLÁTE**, having a tendril. (Rare.)

**CLÁV'ÍFORM**, see CLAVATE.

**CLÁV'ŪLE**, the club-shaped conjugating process in Mucorini. (DeBary.)

**CLAW**, the stem or narrow base

of a petal, as those of the pink; unguis.

**CLÉFT**, having narrow sinuses reaching about half way to the base. Compare PARTED and DIVIDED.

**CLEÍ'STÓCÁRP**, an ascocarp which is entirely closed, and from which the spores escape by its final rupture, as that of the Erysipheæ.

**CLEÍSTÓG'ÁMOŪS**, having closed fertilization: a term applied to certain more or less depauperate flowers, sometimes underground, which never open, but are self-fertilized, as in some violets; clandestine. Cleistogamous flowers sometimes accompany flowers of the usual form on the same plant.

**CLEÍSTÓG'ÁMŪ**, self-fertilization without the flowers opening; closed-fertilization.

**CLEÍ'STÓGENE**, a plant which bears cleistogamous flowers. See above. It may bear flowers of the ordinary form also.

**CLÉST'ÍNE**, see RAPHIDIAN CELL.

**CLÍMB'ÍNG**, rising by laying hold of other objects in any way except by twining; scandent.

**CLÍNÁN'DRÍŪM**, the part of the column of orchids containing the anther.

**CLÍNÁN'THÍŪM**, the receptacle of the flowers in Compositæ; phoranthium; clinium; anthoclinium. Compare ANTHODIUM.

**CLÍNG'STÓNE**, applied to varieties of the peach and other drupaceous fruits, in which the flesh when ripe is not readily separable from the pit. Compare FREESTONE.

**CLÍNÍD'ÍŪM**, the stalk or filament

- supporting a stylospore. (Tuckerman.)
- CLIN'IUM**, see CLINANTHIUM.
- CLINOSPÓRAN'GIUM**, see Pycnidium.
- CLINOSPÓRE**, see STYLOSPORE.
- CLÍSTO-**, see CLEISTO-.
- CLOSED**, applied to fibro-vascular bundles in which all the cambium cells become permanent tissue, as in monocotyledons. Compare OPEN.
- CLOSED-FERTILIZÁTION**, see CLEISTOGAMY.
- CLOSE-FERTILIZÁTION**, the fertilization of pistils by pollen from the same flower; self-fertilization.
- CLOS'ING-MEM'BRÁNE**, the original unthickened cell-wall at the centre of a bordered pit.
- CLOUD'ED**, having a pale ground with ill-defined patches of a darker tint gradually shading into it.
- CLÓVE**, one of the small bulbs developed in the axils of the scales of a larger bulb, as in garlic.
- CLŪB**, one of the elements composing the pulp in the seed-cavities of the lemon and orange. It consists of a more or less oval body about one fourth of an inch long filled with juice and attached by a stalk to the inner side of the cavity or cell. Morphologically, it is a pluricellular hair.
- CLŪBBED** (Hort.), applied to the stem of an apple when its base is enlarged and fleshy. Compare CLAVATE.
- CLŪB-SHÁPED**, see CLAVATE.
- CLŪS'TÉR**, an indefinite popular term, applied mainly to small-fruits in which several fruits grow together in an inflorescence, as in the raceme of the currant. About the same as Bunch, but applied more often perhaps to loose collections.
- CLŪS'TÉR-CŪP**, see ÆCIDIUM.
- CLŪS'TERED**, collected into or growing in a bunch, as the conglomerate flowers of dodder.
- CLŪP'ÉÁTE**, see SCUTATE.
- CLŪ'PEÍFÓRM**, see SCUTATE.
- COÁÇÉR'VÁTE**, see ACERVATE.
- COÁD'ŪNÁTE**, united at the base or farther; connate.
- COÁETÁ'NEOŪS**, existing or appearing at the same time; contemporaneous.
- COÁLES'ÇENCE**, the complete union of similar things. The same as Cohesion when applied to organs. Compare CONJUGATION.
- COÁLES'ÇENCE OF CĒLLS**, the partial or entire absorption of the partition-walls of adjoining cells, as when the cavities of long rows of cells in a tissue become connected in the formation of ducts or vessels.
- COÁRC'TÁTE**, crowded together; compact. Opposed to effuse.
- COÁT'ED**, composed of layers, or having a rind.
- COÁTĒD BŪLB**, see TUNICATED BULB.
- CŌB'WĒBBŪ**, having fine slender filaments or hairs like cobweb; arachnoid.
- CŌC'CID'IUM** (pl. CŌc'cid'ia), a sporocarp like that of Delesseria (one of the algæ), being a closed case with the spores borne on a central placenta.
- CŌC'ÇIF'ÉROŪS**, producing berries; bacciferous.
- CŌC'ÇIN'ÉŪS**, scarlet.
- CŌC'CŪS** (pl. CŌc'cŷi). (1) One of the separable one-seeded carpels of certain dry fruits, as Euphor-

- bia. Compare REGMA. (2) A spherical or spheroidal cell among bacteria, especially of the genus *Micrococcus*.
- CŌCH'LEĀ**, see STROMBUS.
- CŌCH'LEĀR**, a form of aestivation in which one piece being larger covers all the others, as in *Aconitum*. Compare VEXILLARY.
- CŌCHLEĀR'IFŌRM**, shaped like the bowl of a spoon.
- CŌCH'LEĀTE**, shaped like a snail-shell; spirally turbinate. Practically the same as Strombuliform.
- CŌCKS'COMBED**, fasciated. Applied mainly in horticulture to strawberries which are irregular in shape from being flattened at the sides or fasciated.
- ÇEL'ŌSPĒRM**, a cœlospermous seed.
- ÇELŌSPĒR'MŌUS**, applied to the seeds (cremocarpis) of coriander and some other Umbelliferæ, which have the inner surface hollowed by the curving in of the top and bottom.
- ÇENĀN'THIŪM**, see CLINANTHIUM. Also sometimes applied to receptacles like the fig, or to any fleshy receptacle in which the flowers are more or less embedded.
- ÇĒNŌ'BIŪM** (1) a community of a definite number of unicellular individuals united in one body of definite form, as in *Volvox*: cenobium. Compare CELL-FAMILY. (2) A name of the fruit peculiar to the Boraginacæ and Labiateæ, consisting of four distinct nutlets around a common style.
- ÇĒRULĒS'ÇĒNT**, bluish, lighter than cœruleus.
- ÇĒRULĒUS**, light blue; sky-blue.
- CŌĒTĀ'NEŌUS**, appearing or existing at the same time; of the same age.
- CŌHE'RENT**, having similar parts more or less united, as the petals in a gamopetalous corolla. Compare ADHERENT.
- CŌHE'SION**, the union of members of the same whorl or kind. Compare ADHESION.
- CŌ'HŌRT**, a natural group of orders within a class; alliance.
- CŌLEŌPHŪL'LŪM**, a membranous or fleshy sheath investing the plumule in Monocotyledons.
- CŌLEŌP'TILE**, see COLEOPHYLLUM.
- CŌLEŌRHĪ'ZĀ**, the covering through which the radicle of most Monocotyledons bursts in germination; root-sheath. The term has also been applied to the vascular-bundle sheath in roots.
- CŌL'LAR**, the line of junction between the stem and root; collum; neck. Also applied to the annulus of a mushroom.
- CŌLLĀTĒRAL**, side by side.
- CŌLLĀTĒRAL BŪN'DLE**, a fibrovascular bundle having a single strand of phloem in continuous contact with a single strand of xylem. Compare BICOLLATERAL BUNDLE, RADIAL BUNDLE, and CONCENTRIC BUNDLE.
- CŌLLĀTĒRAL CHŌ'RISIS**, when the parts originating by chorisis stand side by side; parallel chorisis. Compare TRANSVERSE CHORISIS.
- CŌLLĒCT'ING HĀIRS**, hairs upon the style in certain Compositæ which serve to collect the pollen as it is discharged from the anther.
- CŌLLĒCTĪVE FRŪIT**, a fruit-

- like body originating from more than one flower, as the mulberry; multiple fruit; pseudo-syncarp. Compare ANTHOCARPOUS FRUIT, ACCESSORY FRUIT, and AGGREGATE FRUIT.
- CŌLLĒCT'ORS**, see COLLECTING HAIRS.
- CŌLLĒN'GHĪMĀ**, tissue composed of cells having cartilaginous thickenings at the angles. Common beneath the epidermis of stems, and in other places where strength is required.
- CŌL'LĒT**, an old term for collar.
- CŌLLĒ'TĒRS**, glandular hairs which secrete a gummy matter (blastocolla) upon buds.
- CŌL'LOĪD**, n., any substance in the colloidal state.
- CŌL'LOĪD**, adj., resembling jelly; the molecular condition of a class of substances, such as gums, usually produced by the disorganization of organized matter, which mix with water in all proportions and pass from the solid to the fluid state through all stages of softening, thus differing from Crystalloids, which see.
- CŌLLOĪD'AL**, see COLLOID.
- CŌL'LŪM**, the neck or tapering base of the capsule in mosses; the line of junction between root and stem; collar.
- CŌL'MAR SHĀPED**, pear-shaped with a rather slender neck and large body. (J. J. Thomas.)
- CŌL'ŌNŪ**, see CELL-FAMILY.
- CŌL'ŌRED**, of any other color than green.
- CŌLPĒN'GHĪMĀ**, epidermal tissue composed of cells with sinuous margins. Not in general use.
- CŌLŪMĒL'ĪĀ**, the axis or central column of a pod or spore-case. Usually a placenta.
- CŌLŪMĒL'LĪFŌRM**, shaped like a little column or columella.
- CŌL'ŪMN**, the united filaments and styles in a gynandrous flower, as an orchid.
- CŌLŪM'NAR**, shaped like a column or pillar: round or nearly so, tapering slightly or none, and not so long as to be called slender. Often applied to styles. Compare TERETE.
- CŌ'MĀ**, a tuft of hairs on a seed; a terminal cluster of empty bracts; any tuft.
- CŌ'MĀTE**, see COMOSE.
- CŌMBĪNĒD' HŪ'BĪD**, a derivative hybrid in which three or more species or varieties are united, as when a hybrid unites with a new parent form or another hybrid.
- CŌMB-SHĀPED**, see PECTINATE.
- CŌMMĒN'SALĪŪM**, see SYMBIOSIS.
- CŌM'MĪSSŪRE**, a line of junction of two parts. In the Marattiaceae a longitudinal partition connecting the two stipules and forming an anterior and a posterior chamber. Compare SUTURE.
- CŌM'MŌN**, general, primary, or universal, as opposed to partial or secondary.
- CŌM'MŌN BŪD**, one containing both leaves and flowers, or one from which more than one flower is produced.
- CŌM'MŌN BŪNDLE**, a fibrovascular bundle a part or the whole of which passes from the stem into a leaf.
- CŌM'MŌN ĪN'VŌLŪCRE**, one subtending an inflorescence; general or universal involucre.
- CŌM'MŌN NĀME**, any name, except the "botanical name," by which a plant is known.

Common Peduncle OF BOTANICAL TERMS. Compound Sporophore

**CÔM'MÔN PEDŪN'GLE**, one supporting several pedicels.

**CÔM'MÔN PĒR'ĪANTH**, applied to certain common involucre, as that surrounding the head of flowers in Compositæ.

**CÔM'MÔN REĒĀPTACLE**, one supporting more than one flower or other organ.

**CÔM'MÔN ŪM'BĒL**, see COMPOUND UMBEL and UNIVERSAL UMBEL.

**CÔM'MÔSE**, bearing a coma or tuft, or growing in tufts; comate.

**CÔMPACT'**, solid; close.

**CÔM'PLĀNĀTE**, flattened vertically to a level surface above and below. Applied also to several organs which are flattened or arranged so as to lie in one plane, and to such as lie flat upon or against each other, as when leaves lie flat upon the stem. Compare EXPLANATE and COMPRESSED.

**CÔM'PLĒTE'**, having calyx, corolla, stamens, and pistils. Compare PERFECT.

**CÔM'PLĒX**, an assemblage of interwoven fibres, or any group of complicated parts.

**CÔM'PLICĀTE**, folded together forward. Compare REPLICATE and CONDUPPLICATE.

**CÔM'POUND**, consisting of a number of similar subordinate parts forming a complete whole, as the leaf of the walnut.

**CÔM'POUND CÔR'ÛMB**, one with more than one flower on each ray or branch.

**CÔM'POUND DIGHĀ'SIŪM**, one in which the primary axis terminates in a flower, beneath which arise several secondary axes, each of which terminates in like manner, as in valerian.

**CÔM'POUND FLOW'ĒB**, an old term for the flower-head in Compositæ.

**CÔM'POUND FRŪIT**, see AGGREGATE FRUIT.

**CÔM'POUND IN'FLÔRĒS'ĀNCĒ**, one in which the ultimate branches each bear more than one flower, thus forming a compound spike, corymb, etc.

**CÔM'POUND LĒAF**, one having two or more distinct blades, or leaflets, as in the ash.

**CÔM'POUND Ô'VĀRY**, one having more than one carpel.

**CÔM'POUND PĪS'TĪL**, one composed of more than one carpel.

**CÔM'POUND RĀĀĒME'**, see PANICLE.

**CÔM'POUND SPIKE**, one having more than one flower or spikelet on each short branch, as wheat. Applied especially when the secondary spikes are well developed, or when, as in *Panicum sanguinale*, the inflorescence consists of several spikes of nearly equal size arising from the apex of the peduncle.

**CÔM'POUND SPÔRE**, a spore consisting of more than one cell, each of which is frequently capable of germination. It differs from Gemma by its more definite form and specialized method of production. The synonyms are spore-group, semen-multiplex, compound spore, cellular spore, multicellular spore, pluricellular spore, septate spore, polyspore, sporidesm, etc. See MERISPORE.

**CÔM'POUND SPÔRÔPHÔRE**, one formed by the cohesion of separate hyphal branches. Compare SIMPLE SPOROPHORE.

- CÔM'POUND STĒM**, a branched stem.
- CÔM'POUND ÛM'BĒL**, one in which each primary ray bears a smaller umbel instead of a single flower. Formerly known as Common, General, or Universal Umbel.
- CÔMPRĒSSĒD'**, flattened, especially lengthwise laterally, the horizontal diameter much less than the vertical. Compare DEPRESSED, OBCOMPRESSED, and COMPLANATE.
- CÔNCÁT'ĒNÂTE**, joined in a continuous series like a chain; catenate; catenulate.
- CÔNCÁT'ĒNÂTĒD**, see CONCATENATE.
- CÔNCAULĒS'ÇENÇE**, the coalescence of the pedicel of a flower with the stem for some distance above the subtending bract.
- CÔNÇĒN'TRĪC**, having a common centre.
- CÔNÇĒN'TRĪC BÛN'DLE**, a fibrovascular bundle in which a strand of one element is wholly surrounded by the other, as in some ferns in which the xylem is wholly surrounded by phloem.
- CÔNÇĒP'TÂCLE**, a name applied to sac-like receptacles of various kinds, as perithecium, cystocarp, follicle.
- CÔNÇĒPTÂC'ÛLÛM**, see CONCEPTACLE.
- CÔNÇĒ'IFÔRM**, like half a clam-shell.
- CÔN'COLÔR**, of the same color as another part or plant. Also applied to several objects which are all of the same color. Compare UNICOLOR.
- CÔN'COLÔRED**, see CONCOLOR.
- CÔN'COLÔROÛS**, see CONCOLOR.
- CÔNCÔM'ITANT**, applied by De Bary to fibrovascular bundles which run continuously side by side without becoming separated by other bundles.
- CÔNCRĒS'ÇENÇE**, see CEMENTATION.
- CÔN'CRĒTE**, grown together.
- CÔNDÛCT'ING ÇĒLLS**, narrow elongated cells associated with sieve tubes, and similar to them, but without perforated walls.
- CÔNDÛCT'ING TĪS'SÛE**, tissue composed of conducting cells. Compare CONDUCTIVE TISSUE.
- CÔNDÛCT'IVE TĪS'SÛE**, that through which the pollen tube passes on its way to the ovary. It is often loose in texture and moist with nutritive fluid for the growth of the pollen tube.
- CÔNDÛ'PLICÂTE**, folded together forward and lengthwise in any manner; complicate. Compare REPLICATE and INFLEXED.
- CÔNE**, the fruit of Coniferæ; strobile; also applied in other plants to a fruit or inflorescence resembling the cone of the fir or pine. See GALBULUS.
- CÔNFĒRRÛ'MINÂTE**, closely united, as the cotyledons of the horse-chestnut.
- CÔNFĒR'TĒD**, crowded or clustered; opposed to distinct. Compare CONGESTED.
- CÔNFĒR'VOID**, loose and filamentose, like conferva among algae.
- CÔN'FLÛENT**, running together or blended into one; coherent.
- CÔN'FLÛENT FRÛIT**, an old term for collective fruit.
- CÔN'FORMĒD'**, (1) closely resembling; (2) closely fitted to, as the skin to a seed.



**CÓN'GÉNĒR**, a plant of the same genus as another.

**CÓNGĒNĒR'IC**, said of two species or individuals which belong to the same genus.

**CÓNGĒ'RĪĒS**, a collection of parts or organs. (Rare.)

**CÓNGĒST'ĒD**, packed closely together.

**CÓNGLÓ'BÁTE**, clustered into a ball.

**CÓNGLÓM'ÉRÁTE**, clustered together; opposed to Diffuse.

**CÓNGLŪ'TINÁTE**, glued together in a mass.

**CÓN'ICAL**, in the form of a geometric cone. Said of a root when it tapers downward, or of any other part when it tapers upward or outward. Compare **OBCONICAL**.

**CÓNID'IA**, pl., see **CONIDIUM**.

**CÓNIDIF'ÉROŪS**, bearing conidia.

**CÓNID'ÍOPHĒRE**, a branch of mycelium bearing one or more conidia.

**CÓNID'ÍOSPĒRE**, see **CONIDIUM**.

**CÓNID'ÍŪM** (pl. **Cónid'ía**), an asexual spore (gonidium) abstricted singly or otherwise from the apex of a filament, as in *Peronospora*. Applied chiefly where the spores form a dusty or powdery coat, but not used in *Hymenomycetes*, and in less use elsewhere than formerly, the general term *Gonidium* being now usually employed instead.

**CÓNIF'ÉROŪS**, cone-bearing.

**CÓN'IFÓRM**, see **CONICAL**.

**CÓN'ÍOČYST**, a term applied by Harvey to the oogonium of *Vaucheria*.

**CÓN'JŪGÁTE**, joined or arranged in pairs, as the leaflets of many

compound leaves; paired. See **BINATE**.

**CÓNJŪGÁ'TION**, the simplest method of fertilization, in which the male and female cells are alike or nearly so, as in the order *Conjugatae*; zygosis. The uniting cells are called gametes and the product a zygote. The conjugation of naked protoplasmic bodies, as zoospores, is sometimes called **Coalescence**.

**CÓNJŪGÁ'TION-ĈĒLL**, see **GAMETE**.

**CÓNJŪNC'TĪVE THREÁDS**, Fol's term for spindle-fibres, which see.

**CÓNNÁS'ĈENT**, produced at the same time.

**CÓN'NÁTE**, said of organs of the same nature which are grown together from the first or united at the base. Compare **ADNATE**.

**CÓN'NÁTE-PĒRFÓLIÁTE**, said of a pair of opposite leaves when their bases are united around the stem.

**CÓNNĈÉCT'ING ĈĒLL**, Harvey's term for *Heterocyst*, which see.

**CÓNNĈÉCT'IVE**, the part of the anther (being a continuation of the filament) which connects its two lobes.

**CÓNNĈÉCT'ÍVŪM**, see **CONNECTIVE**.

**CÓNNĈ'IVĒNT**, converging.

**CÓNNŪ'BIŪM**, a term applied by Pringsheim to that stage in the conjugation of *Conjugatae* in which the protoplasm of the conjugating cells has coalesced.

**CÓ'NOID**, cone-like; conical.

**CÓNOID'AL**, somewhat conoid.

**CÓNSÓL'IDÁTĒD**, (1) grown to-

gether, said either of like or unlike parts; (2) having a small surface in proportion to bulk, as many cacti.

**CŌN'SŌRTĪSM**, see SYMBIOSIS.

**CŌN'STANT**, always present, or always in the same condition; uniform.

**CŌNSTRĪCT'ĒD**, narrowed in certain places.

**CŌNSTRŪCTĪVE MĒTĀB'ŌLIŠM**, see ASSIMILATION.

**CŌNTĀBĒS'ĒNCĒ**, the condition of being wasted away or aborted; said of anthers which contain little or no fertile pollen.

**CŌNTĀ'GIŌŪS**, said of diseases which are communicable from one plant or animal to another by contact only, or by the direct transfer of the disease-producing organism. Strict contagion implies parasitism, the organism being unable to grow outside the supporting body. Compare INFECTIOUS.

**CŌNTĒR'MĪNOŪS**, of equal extent.

**CŌNTĪG'ŪŌŪS**, near, or in contact.

**CŌNTĪN'ŪŌŪS**, uniform in structure or outline; uninterrupted. Said of hyphæ which are without septa, or of objects which are in all parts of the same size, or whose diameter increases or diminishes regularly.

**CŌNTŌRT'ĒD**, in æstivation, when the margins of the floral leaves successively overlap each other (obliquely or otherwise) in one direction; twisted. Compare CONVOLUTE.

**CŌNTŌRT'ĒD ÆSTĪVĀ'TION**, see above.

**CŌNTŌR'TION**, an abnormal twisting of branches or other organs.

**CŌNTŌRTŪ'PLICĀTE**, twisted and folded.

**CŌNTRĀCT'ĒD**, narrowed, or the successive parts shortened. Compare CONSTRICTED.

**CŌNTRĀCTĪLE VĀCŪŌLES**, small cavities containing a watery fluid which make their appearance in the protoplasm of many zoospores and other motile organisms and then suddenly disappear; pulsating vacuoles. Their function is not known.

**CŌNTRĀCTĪLĪTĪ**, a property of protoplasm by which it is enabled to change its form spontaneously, or by virtue of forces within itself. Compare IRRITABILITY.

**CŌNTRĀRĪ**, extending in an opposite direction to something with which it is compared; as, the pod of shepherd's purse is flattened *contrary* to the partition.

**CŌNŪS**, see CONE.

**CŌN'VŌLŪTE**, rolled together lengthwise from one edge, as the leaves of the plum in the bud. The term Contorted (used mainly in æstivation) refers more especially to the relation of the organs to each other and to the axis, while Convolute (used mainly in veneration) refers more to the manner of folding of the organ itself. A *contorted* corolla may or may not have its parts *convoluted*.

**CŌN'VŌLŪTĒD**, see CONVOLUTE.

**CŌP'RŌPHŪTE**, see SAPROPHYTE.

**CŌR'ĀCŌID**, shaped like a crow's beak.

**CŌR'ĀLLĪNE**, resembling coral; coralliform; coralloid.

**CŌR'CLE**, see CORCULUM.

**CŌR'CŪLŪM**, an old term for

plumule, or plumule and radicle together.

**CÔR'DÂTE**, heart-shaped, as usually pictured, with the point of attachment at the broad end. Applied mainly to leaves.

**CÔR'DÂTÈD**, see **CORDATE**.

**CÔR'DÂTE-HÂS'TÂTE**, intermediate in form between cordate and hastate, approaching more nearly to hastate.

**CÔR'DÂTE-Ô'VÂTE**, between cordate and ovate, approaching more nearly to ovate.

**CÔR'DÂTE-SÂG'ÎTTÂTE**, between cordate and sagittate, approaching more nearly to sagittate.

**CÔR'DIFÔRM**, sometimes applied to solid bodies shaped like the human heart. Compare **CORDATE**.

**CÔRE**, the bony endocarp of a pome containing the seeds.

**CÔRÎÂÇEOÛS**, leathery in texture.

**CÔRK**, tissue composed of firm elastic cells, generally soon filled with air, which are produced in the bark and upon injured surfaces. It is composed of a modification of cellulose called Suberin, and is designed for protection.

**CÔRK-CÂMBIÛM**, see **PHELLOGEN**.

**CÔRK-MÈR'ÎSTÈM**, see **PHELLOGEN**.

**CÔRK'Ï ÈN'VÈLÔPE**, see **CORKY LAYER**.

**CÔRKY LÂY'ÈR**, the layer of bark immediately below the epidermis which produces the cork; epiphloeum. Compare **MESOPHLEÛM**.

**CÔRM**, the enlarged base of an herbaceous stem, consisting of one or a few short internodes, and serving for the storage of

starch or other reserve food-materials; pseudo-bulb; solid bulb; bulbo-tuber. It differs from a Tuber mainly in being upright, or more nearly so, and in seldom being produced upon an elongated subterranean stem. The Indian turnip and crocus are examples. Compare **PLATEAU**.

**CÔR'MÛS**, see **CORM**.

**CÔR'MÔPHYTE**, a plant having a true stem. Compare **THALLOPHYTE**.

**CÔR'NÈOÛS**, having the texture of horn.

**CÔRNIC'ÛLÂTE**, having a process or appendage like a little spur or horn. Compare **CORNUTE**.

**CÔR'NIFÔRM**, horn-shaped.

**CÔR'NÛ** (pl. **Côr'nûâ**), see **HORN**.

**CÔR'NÛTE**, horn-shaped, as the nectary of columbine, or bearing a horn-shaped process; corniform. Compare **CORNICULATE**.

**CÔR'ÔL** (obs.), see **COROLLA**.

**CÔRÔL'LÂ**, the conspicuous part of most flowers, being the inner set of floral envelopes when there is more than one, commonly distinguished by its fine texture and by having some other color than green. See **PETAL**, **CALYX**, and **PERIANTH**.

**CÔRÔLLÂÇEOÛS**, like a corolla in appearance or texture; petaloid. Petaloid is the term usually employed, especially when referring to individual organs.

**CÔR ÔLLÂTE**, having a corolla.

**CÔR ÔLLÂTÈD**, see **COROLLATE**.

**CÔR ÔLLÈT**, see **FLORET**.

**CÔRÔLLÎFÔ'RÂL**, having calyx, petals, and ovary inserted separately on the receptacle and

- the stamens inserted upon the corolla. Compare CALYCIFLORAL and THALAMIFLORAL.
- CÔR'OLLINE**, see COROLLACEOUS.
- CÔR'OLLÛLE**, see FLORET.
- CÔR'ONĀ** (pl. Cōr'ōnās), see CROWN.
- CÔR'ONĀTE**, having a corona or crown.
- CÔR'ON'IFORM**, having the form of a corona or crown.
- CÔR'ONŪLĀ** (pl. Cōr'ōnūlā), see CORONULE.
- CÔR'ONÛLE**, a diminutive corona or crown.
- CÔR'PÛSCLE**, (1) any very small body; (2) see CORPUSCULUM (in the first sense).
- CÔR'PÛS'CŪLĀ**, pl., see CORPUSCULUM.
- CÔR'PÛS'CŪLE**, see CORPUSCULUM.
- CÔR'PÛS'CŪLAR**, pertaining to or composed of corpuscles or small particles.
- CÔR'PÛS'CŪLUM** (pl. Cōrpūs'cūlā), (1) an old term for the central cell in the archegonium of Gymnosperms: sometimes applied to the whole archegonium; (2) the connecting body between the arms (retinacula) which bear the pollinia of milkweeds (*Asclepias*).
- CÔR'RUGĀTĒD**, in folds or wrinkles.
- CÔR'TĒX**, that portion of the fundamental tissue lying outside the fibrovascular bundles. In trees it is the "outer bark."
- CÔR'TICAL**, pertaining to the bark or cortex.
- CÔR'TICAL SHEATH**, the ring of primary bast (phloem) bundles. Compare MEDULLARY SHEATH.
- CÔR'TICĀTE**, having a rind or cortex.
- CÔRTIC'IFĒROÛS**, producing bark or cortex.
- CÔRTIC'IFORM**, like bark.
- CÔRTIC'OLOÛS**, growing upon the bark of trees, as many mosses and lichens.
- CÔR'TICŒSE**, having or resembling bark; corticous.
- CÔR'TICOÛS**, see CORTICOSE.
- CÔRTI'NĀ**, the remnant of the veil sometimes found at the border of the pileus or cap in mushrooms.
- CÔR'YMB**, a convex or flat-topped indefinite or centripetal inflorescence, like a raceme with the lower pedicels elongated. Compare CYME.
- CÔR'YMBĀTE**, having corymbs, or growing in corymbs.
- CÔR'YMBIFĒROÛS**, producing corymbs.
- CÔR'YMBŒSE**, growing in or resembling corymbs; corymbous.
- CÔR'YMBŒUS**, see CORYMBOSE.
- CÔR'YMBŪLOSE**, arranged in small corymbs.
- CÔR'YMBÛS**, see CORYMB.
- CÔSMŒP'ŒLĪTE**, a plant widely extended in the world, as *Pteris aquilina*.
- CÔS'TĀ** (pl. Cōs'tā), see RIB.
- CÔS'TAL**, pertaining to a rib.
- CÔS'TAL-NĒRVĒD**, a term sometimes applied to parallel-veined leaves when the veins arise from a midrib and run toward the margins, as in the banana.
- CÔS'TĀTE**, having one or more prominent veins or ribs.
- CÔSTĒL'LĀTE**, having small ribs.
- CÔTYLE'DŒN**, the first leaf or leaves of a plant; seminal-leaf; seed-lobe; seed-leaf. In exogens they are usually different in form from the leaves produced afterward, and are stored with nutritive matter for the young plant.

**COTYLEDŌNOŪS**, having cotyledons.

**COTYL'IFŌRM**, like a cotyle, the articulating cavity of a bone; a little shallower than acetabuliform.

**COWLED**, see CUCULATE.

**CRÁM'PŌN**, see HOLD-FAST.

**CRÁTĒR'IFŌRM**, goblet-shaped; narrower than Calathiform and less flaring than Cyathiform.

**CREEP'ING**, running upon or under ground and rooting; reptent.

**CRĒM'ŌCÁRP**, the fruit of Umbelliferae. Also applied to other fruits of somewhat similar structure, as that of maple. See MERICARP and SCHIZOCARP.

**CRĒ'NÁ**, see CRENATURE.

**CRĒ'NÁTE**, having the margin furnished with rounded teeth, which usually point toward the apex of the object bearing them: crenated; crenelated; crenelled. See DOUBLY, ACUTELY, and OBTUSELY CRENATE.

**CRĒ'NÁTĒD**, see CRENATE.

**CRĒ'NÁTŪRE**, a tooth of a crenate margin; crenel; crena.

**CRĒ'NĒL'**, see CRENATURE.

**CRĒ'NĒLÁTĒD**, see CRENATE.

**CRĒ'NĒLED'**, see CRENATE.

**CRĒ'NĒLLED'**, see CRENATE.

**CRĒ'NŪLÁTE**, diminutive of crenate; having the margin furnished with fine rounded teeth.

**CRĒ'NŪLÁTĒD**, see CRENULATE.

**CRĒST**, (1) a partial aril in the form of a ridge along the raphe of some seeds, as Sanguinaria and Dicentra. Compare ARIL, STROPHIOLE, and CARUNCLE. (2) An elevated ridge or appendage terminating

any organ: a stamen is crested when the filament (connective) projects beyond the anther.

**CRĒST'ĒD**, having a ridge or terminal appendage; cristate.

**CRĒTÁ'ĀCĒOŪS**, (1) of the color of chalk; (2) growing on chalky land.

**CRĒB'RÁTE**, see CRIBROSE.

**CRĒB'RĪFŌRM**, see CRIBROSE.

**CRĒB'RĪFŌRM ÇĒLLS**, see SIEVE-TUBES.

**CRĒB'RŌSE**, pierced with small holes like a sieve; cribriform; cribrate.

**CRĒB'RŌSE ÇĒLLS**, see SIEVE-TUBES.

**CRĒ'NĪTE**, having a tuft or fringe of long weak hairs.

**CRĒ'NŌID**, resembling a lily.

**CRĒSP**, having the surface, especially near the margin, strongly and finely undulate, as the leaves of Savoy cabbage or the cultivated endive; curled; crispate; crisped.

**CRĒSP'PÁTE**, see CRISP.

**CRĒSPED**, see CRISP.

**CRĒST'TÁTE**, see CRESTED.

**CRĒST'TÁTĒD**, see CRESTED.

**CRĒT'ĪCAL**, difficult to characterize or classify.

**CRŌSS**, a union of two varieties of the same species. Applied in a narrower sense to the offspring of any two flowers which have been cross-fertilized. Compare HYBRID.

**CRŌSS-ÁRMED**, see BRACHIATE.

**CRŌSS-BREED**, see CROSS.

**CRŌSS-FĒRTĪLĪZÁ'TION**, the fertilization of a flower by pollen from another flower, especially from one of another variety of the same species; allogamy. Compare CLOSE-FERTILIZATION.

**CRÖSS-PÖLLINÄ'TION**, the conveyance of pollen to the stigma of another flower.

**CROWN**, (1) an appendage in the throat of the corolla in some flowers, as *Silene* and *Narcissus*; corona; paracorolla. In some cases it represents a circle of metamorphosed stamens. (2) A ring of cells at the apex of the nucule in *Characæ*. (3) Any circle of organs in the form of a crown, as the scales at the apex of an achene.

**CROWN'ING**, borne at the apex.

**CRÖ'ZIER**, anything with a coiled end, as the young leaves of most ferns.

**CRU'CIÄTE**, in the form of a Maltese cross, as the petals of *Cruciferae*; cruciform; cross-shaped.

**CRU'CIF'EROÜS**, (1) belonging to the *Cruciferae* or mustard family; (2) resembling plants of the mustard family, especially in the form of the flower.

**CRU'CIFÖRM**, see *CRUCIATE*.

**CRÜMPLED ÄSTIVÄ'TION**, when the petals are irregularly folded in the bud, as in the poppy.

**CRU'RAL**, somewhat leg-shaped. Used mainly in composition.

**CRÜSTÄ'CEOÜS**, said of the thallus of a lichen when it forms an adherent crust which cannot be removed from the substratum without injury.

**CRÿPTÖGÄM**, a plant belonging to the lowest of the two chief divisions of the vegetable kingdom, including ferns, mosses, fungi, etc. Cryptogams produce no true seeds or flowers, but in most groups there is a process of fertilization essentially the same as in the higher plants.

**CRÿPTÖG'ÄMOÜS**, pertaining to cryptogams, or plants having no true flowers or seeds.

**CRÿP'TÖPHÿTE**, see *CRYPTOGAM*.

**CRÿS'TÄLLOIDS**, protein bodies in the form of crystals; albumen crystals. Applied also in opposition to *Colloids* to indicate all substances susceptible of crystallization and of diffusion through a membrane. (Graham.)

**CÛ'CÜLLÄTE**, conical, with the side cleft, and often inrolled like a cornet of paper, as the spathe of *arum* and the calyptra of some mosses; cuculiform; hooded; hood-shaped; cowlid.

**CÛCÛL'LIFÖRM**, see *CUCULLATE*.

**CÛCÛL'LÛS** (pl. *Cücül'li*), a term sometimes given to various hood-shaped organs, especially a concave and arched sepal or petal, as the large upper sepal (galea) of *Aconitum*.

**CÛCÛ'MIFÖRM**, having the form of a cucumber.

**CÛCÛRBITÄ'CEOÜS**, belonging to or resembling plants of the *Cucurbitaceæ* or melon family.

**CÛL-DE-SÄC**, a tubular or bag-shaped cavity closed at one end.

**CÛLM**, the stem of grasses; sometimes applied to that of sedges also.

**CÛLMIC'ÖLOÜS**, growing upon the stems of grasses, as certain fungi.

**CÛLMIF'EROÜS**, producing culms.

**CÛL'TRÄTE**, shaped like a pruning-knife; broad, thin, pointed, with the end curved edge-wise; cultriform.

**CÛL'TRÄTËD**, see *CULTRATE*.

**CŪL TRĪFŌRM**, see **CULTRATE**.

**CŪNEĀL**, see **CUNEATE**.

**CŪNEĀTE**, wedge-shaped in outline. Said of leaves which are broad above and narrowed to the base in straight lines. The same as Obdeltoid but usually narrower; cuneiform.

**CŪNEĪFŌRM**, see **CUNEATE**.

**CŪNICŪLĀTE**, pierced with a long narrow passage or passages.

**CŪP**, (1) a concave involucre enclosing a nut, as in the acorn; cupule; (2) a discocarp (apothecium) in Ascomycetes.

**CŪP-SHĀPED**, a rather indefinite term, usually applied to cavities from one half to twice as deep as broad, with concave bottom and nearly vertical sides

**CŪPŪLĀ**, see **CUP**.

**CŪPŪLĀTE**, furnished with a cup or cupule.

**CŪPŪLE**, see **CUP**.

**CŪPŪLĪFĒROŪS**, bearing or furnished with a cupule or cupules.

**CŪPŪLĪFŌRM**, see **CUP-SHAPED**.

**CŪRD**, applied in horticulture to the material composing the head in cauliflower. Sometimes the heads individually are called "curds."

**CŪRLED**, see **CRISP**.

**CŪRVĪCAŪDĀTE**, having a curved tail.

**CŪRVĪCŌS'TĀTE**, having curved ribs or large veins.

**CŪRVĪDĒN'TĀTE**, having curved teeth.

**CŪR'VĪFŌRM**, curved.

**CŪR'VINĒRVED**, having curved nerves. Applied to the veins (so-called nerves) of endogens.

**CŪRVĪSĒ'RĪĀL**, in curved ranks. Compare **RECTISERIAL**.

**CUSH'ION**, a thickened medial portion of the prothallus in ferns; any pulvius.

**CŪSP**, a sharp rigid point.

**CŪSPED**, see **CUSPIDATE**.

**CŪS'PIDĀTE**, furnished with a cusp.

**CŪS'PĪS**, see **CUSP**.

**CŪT**, acutely cleft or parted; having acute incisions deeper than Dentate. Compare **CLEFT**, **INCISED**, and **LACINIATE**.

**CŪ'TICLE**, the outer cell-wall of the epidermis when thickened or otherwise modified.

**CŪTĪCŪLĀRĪZĀ'TION**, the formation of cuticle.

**CŪ'TĪN**, see **SUBERIN**.

**CŪ'TĪS**, see **CUTICLE**.

**CŪTĪNĪZĀ'TION**, the formation of cuticle. Compare **SUBERIZATION**.

**CŪT-TŌOTHED**, deeply and sharply toothed.

**ÇŪĀ'NĒŪS**, pure blue. Compare **CÆRULEUS**.

**ÇŪĀ'NĪC FLOWĒRS**, those whose color contains more or less blue. Compare **XANTHIC FLOWERS**.

**ÇŪĀ'NŌPHŪLL**, see **PHYLLOCYANIN**.

**ÇŪĀTHĪFŌRM**, wine-glass shaped. Compare **COTYLIFORM** and **ACETABULIFORM**.

**ÇŪĀTHĪŪM**, a corolla-like involucre, as in Euphorbia.

**ÇŪĀTHŌID**, see **CYATHIFORM**.

**ÇŪ'CYCLE**, a complete turn in a spire or circle.

**ÇŪ'CYCLIC**, having the floral organs in distinct whorls. Compare **HEMICYCLIC** and **ACYCLIC**.

**ÇŪ'CYCLICAL**, coiled into a full circle.

**ÇŪCLŌ'SĪS**, see **ROTATION**.

- ÇYCLOSPÉR'MOÛS**, having the embryo coiled around the central albumen, as in the Caryophyllaceæ.
- ÇYLINDRÁ'ÇEOÛS**, nearly cylindrical.
- ÇYLÍN'DRICAL**, circular in transverse outline and tapering but little if at all, as most stems.
- ÇY'MÁ**, see CYME.
- ÇYMBÉFÓRM**, see NAVICULAR.
- ÇYMBÍFÓRM**, see NAVICULAR.
- ÇYME**, a somewhat flat-topped determinate inflorescence resembling a corymb.
- ÇYME'LÉT**, see CYMULE.
- ÇYMIFÉROÛS**, producing cymes.
- ÇYMO-BÓT'RÛS**, a mixed inflorescence in which the primary inflorescence is botryose while the secondary is cymose, as in the horse-chestnut.
- ÇY'MOÏD**, having the form of a cyme.
- ÇY'MÓSE**, growing in cymes; cymous; or cymoid.
- ÇY'MÓSE ÍNFLÓRÉS'ÇENÇE**, a cyme or other determinate inflorescence.
- ÇY'MÓSE ÛM'BÈL**, one having the inflorescence centrifugal; a cyme resembling an umbel. Umbels are usually botryose (centripetal) in inflorescence.
- ÇY'MOÛS**, see CYMOSE.
- ÇY'MÛLÁ**, see CYMULE.
- ÇY'MÛLE**, a little cyme, or division of a compound cyme. Sometimes applied to the verticillasters of Labiatae.
- ÇYNÁRRHÓ'DIÛM**, a fruit-like body, like the hip of roses, consisting of several achenia enclosed in a fleshy receptacle.
- ÇYNÁR'RHÓDÓN**, see CYNARRHODIUM.
- ÇYPÉRÁ'ÇEOÛS**, resembling or pertaining to plants of the family Cyperaceæ.
- ÇYPHÈL'LÁ** (pl. *Cyphèl'læ*), a kind of pit in the under-surface of the thallus of some lichens. *Cyphellæ* sometimes appear as spots or as elevations. Their nature is unknown.
- ÇYPHÈL'LÁTE**, having *Cyphellæ*.
- ÇYPSÈLÁ**, an achenium with an adherent calyx-tube, as in Compositæ. (Obs.)
- ÇYST**, a closed sac, especially one abnormally produced, or whose nature is not understood.
- ÇYSTÍD** (pl. *Çystíds* or *Çys'tídes*), a large sterile club-shaped cell common among the basidia in some agarics.
- ÇYSTÍD'IÛM** (pl. *Çystíd'íá*), see CYSTID.
- ÇYS'TÓBLÁST** (obs.), see NUCLEUS.
- ÇYS'TÓCÁRP**, an old term for the Sporocarp of Floridææ.
- ÇYS'TÓLÍTH**, a cluster of crystals of calcium carbonate in a cell upon a stalk of cellulose. Common in the leaves of the nettle family (Urticaceæ).
- ÇYTÁS'TÈR**, a series of achromatic rays extending from each pole of the nucleus in karyokinesis into the cytoplasm. Rarely seen as yet in plants.
- ÇYTÈN'ÇHÝMÁ**, see CELL-SAP.
- ÇYTÍÓDÈRM**, the cell-wall in Diatomaceæ.
- ÇYTÓBLÁST** (Schleiden), see NUCLEUS.
- ÇYTÓDIÈR'ESÍS**, cell-division, involving division of the nucleus with the formation of a nu-



clear-spindle and asters. (Carnoy.) Compare STENOSIS.

**CYTÓGEN'ESIS**, cell-formation.

**CYTÓL'ÓGÝ**, the science of cells.

**CYTÓPLÁSM**, the protoplasm in a cell outside the nucleus. It excludes granules of protein, starch, etc. Compare NUCLEOPLASM.

**DÁRWÍN'IAN CÚR'VÁTURE**, the curvature of the growing apex of a root away from any source of irritation placed upon one side near the tip. It is the irritability which causes this, curvature that enables growing roots to pass around obstacles in the soil.

**DAUGH'TÉR-CELL**, any cell when mentioned in relation to the one from which it was derived. Compare MOTHER-CELL.

**DAUGH'TÉR-SPÓRE**, a spore produced directly from another, or upon a promycelium.

**DAUGH'TÉR-STÁR**, one of the groups of chromatic filaments at the poles of a dividing nucleus. The two polar figures together with the connecting spindle-fibres are called a Dyaster.

**DÉAL'BÁTE**, appearing as if whitewashed; covered with a very white bloom or powder.

**DÉCÁGÝN'IAN**, see DECAGYNOUS.

**DÉCÁGÝNOÛS**, having ten pistils or styles; decagynian.

**DÉCÁM'ÉROÛS**, having the parts in tens, as ten floral organs in a whorl. Also written 10-merous.

**DÉCÁND'RÍAN**, see DECAN-DROUS.

**DÉCÁND'ROÛS**, having ten stamens; decandrian.

**DÉCÁPÉT'ALOÛS**, having ten petals.

**DÉCÁPHÝL'LOÛS**, having ten leaves, as a *decaphyllous* perianth.

**DÉÇÉMDÈN'TÁTE**, having ten teeth or tooth-like processes.

**DÉÇÉM'FÍD**, ten-cleft.

**DÉÇÉMLÓC'ÚLAR**, having ten loculi or cells in an ovary.

**DÉÇÍD'ÚOÛS**, falling at the usual time, or at the close of the season. Applied to leaves which fall in autumn after one season's growth, and to plants which bear such leaves. Also applied to petals which fall immediately after blossoming. Compare CADUCOUS, MARCESCENT, PERSISTENT, and EVERGREEN.

**DÉCLÍNÁTE**, bent or curved downward; declining; declined. Applied to stamens it means curved to one side, neither outward nor inward nor erect. Compare RECURVED, REFLEXED, RECLINATE.

**DÉCLÍNED'**, see DECLINATE.

**DÉCLÍNOÛS**, see DECLINATE.

**DÉCÓMPOUND'**, twice compound, as a compound leaf whose parts are compound. See SUPRADECOMPOUND.

**DÉCRÉÁS'INGLÝ - PÍN'NÁTE**, having the leaflets of a pinnate leaf gradually smaller in size from base to apex.

**DÉCÚMBENT**, erect at the base, then prostrate, with the end rising.

**DÉCÚR'BENT**, prolonged and attached below the main point of insertion, as the leaves of thistles; decursive. The stems in such cases are often called Winged. Compare SURCURRENT.

**DÉCÚR'SÍVE**, see DECURRENT.

- DĒCŪR'SĪVELĪ-PĪN'NĀTE**, apparently pinnate, but having the segments decurrent along the rachis.
- DĒCŪS'SĀTE**, said of leaves which grow in pairs successively at right angles to each other. Compare BRACHIATE.
- DĒCŪS'SĀTĒD**, see DECUSSATE.
- DEDOUBLEMENT** [*Day-doo-bl-i-mān*], see CHORISIS.
- DĒDŪPLĪCĀ'TĪON**, see CHORISIS.
- DĒFĒRENT**, carrying anything downwards.
- DĒFĪNĪTE**, (1) having a constant, fixed, or limited, number; in stamens not exceeding twenty; (2) the same as DETERMINATE, which see.
- DĒFĪNĪTE GRŌWTH**, see DETERMINATE GROWTH.
- DĒFĪNĪTE INFĒLŌRĒS'ĀNĀ**, see DETERMINATE INFLORESCENCE.
- DĒFLĒCTĒD**, see DEFLEXED.
- DĒFLĒXĒD'**, bent abruptly to one side or outward at an angle of forty-five degrees or less; deflected. Compare REFRACTED and RECURVED.
- DĒFLŌ'RĀTE**, past the flowering state, as an anther after it has shed its pollen, or a plant or flower after the petals have fallen.
- DĒFŌ'LĪATE**, having cast its leaves.
- DĒFŌLĪĀ'TĪON**, the fall of leaves.
- DĒFŌRMĀ'TĪON**, an alteration in the usual form of an organ. by accident or otherwise; malformation.
- DĒGĒNĒRĀ'TĪON**, deficiency in size or quality, or appearing in a less developed or lower state, as when scales take the place of leaves, or petals the place of stamens; degradation.
- DĒGRĀDĀ'TĪON**, see DEGENERATION.
- DĒHĪS'ĀNĀ**, to open for the escape of seeds, spores, etc.
- DĒHĪS'ĀNĀ**, the opening in a regular manner of certain fruits to discharge their seeds, and of anthers and spore cases to discharge their contents.
- DĒHĪS'ĀNĀ**, opening in a regular manner to discharge the contents, as most pods to liberate the seeds. Compare INDEHISCENT.
- DĒLĪMĪTĀ'TĪON**, see ABJUNCTION.
- DĒLĪQUĒS'ĀNĀ**, dissolving. Said of a tree which branches repeatedly, so that the main stem is lost. Compare EXCURRENT. Also applied to fungi which dissolve at maturity by the absorption of moisture from the air, as some mushrooms.
- DĒL'TŌID**, nearly in the shape of an equilateral triangle, or the Greek letter delta. When applied to leaves it implies that the attachment is at the broad end, otherwise the term Obdeltoid is used.
- DĒMĒRSĒD'**, growing constantly or naturally under water; immersed; submersed.
- DĒN'DRĪFŌRM**, tree-shaped.
- DĒN'DRĪTĪC**, branched like a tree; dendriform.
- DĒN'DRŌID**, tree-shaped; dendriform; dendritic; arborescent; applied to small plants, such as mosses, which branch like a tree or shrub.
- DĒN'DRŌL'ŌGĪ**, the natural history of trees.
- DĒN'ĪGRĀTE**, dark dusky brown.
- DĒNSE**, crowded together.
- DĒN'TĀTE**, having broad acute

marginal teeth which are usually directed outward. Compare **SERRATE** and **CRENATE**.

**DĒN'TĀTĒD**, see **DENTATE**.

**DĒN'TĀTE-ĀIL'ĪĀTE**, having the margin dentate and fringed.

**DĒN'TĀTE-ĀRĒNĀTE**, (1) having part of the margin dentate and the remainder crenate; (2) intermediate between dentate and crenate, i. e., having somewhat rounded teeth.

**DĒN'TĀTE-LĀĀĀIN'ĪĀTE**, having the teeth extended into long lax points.

**DĒN'TĀTE-SĒR'RĀTE**, (1) intermediate between dentate and serrate; having the teeth directed but slightly forward; (2) having part of the margin dentate and the remainder serrate.

**DĒN'TĀTE-SĪN'ŪĀTE**, having broad shallow sinuses between the teeth of a dentate margin.

**DĒN'TĀTŌ-SĒR'RĀTE**, see **DENTATE-SERRATE**.

**DĒN'TĀTŌ-SĪN'ŪĀTE**, see **DENTATE-SINUATE**.

**DĒN'TĪCLE**, a small tooth or projecting point.

**DĒN'TĪCŪLĀTE**, having small teeth or notches; finely dentate.

**DĒN'TĪCŪLĀ'TION**, (1) the state of being denticulate; toothed; (2) one of the teeth of a denticulate leaf.

**DĒN'TĪFŌRM**, see **DENTOID**.

**DĒN'TŌID**, tooth-shaped.

**DĒNŪDĀTE**, deprived of the usual covering, especially of a coating of down or hair. The term has been applied with little reason to plants whose flowers appear before their leaves.

**DĒŌPĒR'ĀLĀTE**, applied to

moss capsules in which the lid does not separate spontaneously to liberate the spores. Compare **DISOPERCULATE**.

**DĒPĀU'PĒRĀTE**, said of a plant or part of a plant which is reduced in size from lack of nutriment, or apparently so; starved; stunted; undeveloped.

**DĒPĒND'**, to hang directly downward.

**DĒP'LĀNĀTE**, flattened vertically and expanded. Both sides may be flattened (**Complanate**) or only the upper. (Rare.) See **EXPLANATE**, **DEPRESSED**, and **COMPLANATE**.

**DĒPĒSĒSD'**, more or less flattened vertically or endwise; oblate. Also applied to any part having a lower position than usual, as a leaf whose disk is lower than the margin, as in some water lilies.

**DĒPĒSĒSD'-GLŌ'BŌSE**, globular with the poles slightly flattened; oblately spheroidal.

**DĒRĪVĀTĪVE-HĪBRĪD**, a hybrid of which one or both the parents is a hybrid; secondary hybrid.

**DĒRMĀT'ŌGEN**, the primordial epidermis, i. e., the epidermis in an organ when first formed and still capable of cell-division.

**DĒRMĀT'ŌPHĪTE**, any fungus parasitic upon the skin of man or other animals, as *Trichophyton tonsurans*, the fungus which causes ringworm.

**DĒSĀEND'ĪNG**, directed downward in any degree.

**DĒSĀEND'ĪNG ĀZ'ĪS**, root.

**DĒSĀEND'ĪNG MĒTĀMŌR'PHŌSĪS**, see **RETROGRESSIVE METAMORPHOSIS**.

**DĒSĀEND'ĪNG SĀP**, a term formerly applied to cambium

- when in a soft mucilaginous condition, from the supposition that the sap passed in a current upward in the wood to the leaves, then downward between the wood and bark. See PROPER JUICE.
- DESCRIPTIVE BÓT'ANŸ**, see PHYTOGRAPHY.
- DĒSTRŪCTĪVE MĒTĀB'OLĪSM**, the chemical changes which take place during the waste of tissues. Compare ASSIMILATION.
- DĒSTRŪCTĪVE PĀR'ĀSITE**, one which causes the death of the tissues of the host upon which it feeds.
- DĒTĒR'MĪNĀTE GRŌWTH**, when the season's growth ends in a well-formed bud.
- DĒTĒR'MĪNĀTE ĪNFLŌRĒS-ÇĒNÇE**, one in which the flowering begins with a terminal bud so that it puts a limit to the elongation of the stem; centrifugal or definite inflorescence.
- DĒTĒR'MĪNĀ'TĪON**, the discovery of the botanical name of a plant, or of its position in a system if unnamed; identification. It implies some knowledge of its characters acquired by a more or less complete analysis, and is frequently completed by the aid of a systematic key.
- DEŪ'TŌPLĀSM**, the portion of the cell contents aside from the protoplasm proper, consisting of cell-sap in which may be granules or other substances; paraplast. Compare METAPLĀSM.
- DĒX'TRŌRSE**, twining upward from left to right, with the sun or hands of a watch, as the hop. Used in the opposite sense, however, by most English and American botanists. Compare SINISTROSE.
- DIĀCHE'NIŪM**, see MERICARP.
- DIĀCH'YMĀ** (obs.), see MESOPHYLLUM.
- DIĀDEL'PHĪAN**, see DIADELPHOUS.
- DIĀDEL'PHŌŪS**, having filaments united by their edges in two sets (one of which may be only a single stamen), as in the pea.
- DIĀGEŌT'RŌPĪSM**, a kind of geotropic irritability in certain organs, as rootstocks, which causes them to assume a horizontal position; transverse geotropism.
- DIĀGNŌ'SĪS** (pl. Diāgnō'sēs), a brief characteristic description of a plant or species.
- DIĀGNŌS'TĪC ÇHĀR'ĀCTĒR**, see ESSENTIAL CHARACTER.
- DIĀG'ŌNAL PLĀNES**, the two planes which bisect the right angles between the median and lateral planes. See MEDIAN PLANE and LATERAL PLANE.
- DIĀG'ŌNAL PŌSĪ'TĪON**, a position intermediate between the median and the lateral plane and bisected by the diagonal plane.
- DIĀGRĀM, FLŌ'RAL**, see FLORAL DIAGRAM.
- DIĀHĒLIŌT'RŌPĪSM**, the tendency of organs to place their surfaces at right angles to the sun's rays, as most leaves; transverse heliotropism.
- DIĀLYÇĀR'POŪS**, see APOCARPOUS.
- DIĀLYPĒT'ALOŪS**, see POLYPETALOUS.
- DIĀLYPHŪL'LOŪS**, see POLYSEPALOUS.
- DIĀLYSĒP'ALOŪS**, see POLYSEPALOUS.
- DIĀL'YSĪS**, the separation of organs usually joined; adesmy.

When applied to parts of a flower it refers to the separation of organs of the same whorl from each other, as when a normally gamopetalous corolla has its petals distinct. Compare SOLUTION.

**DIAMESOG'AMOÛS**, fertilized by the aid of some external agent, as wind, water, or insects.

**DIÂN'DRIÂN**, see DIANDROUS.

**DIÂN'DROÛS**, having two stamens.

**DIAPH'ANOÛS**, transparent, or nearly so.

**DI'APHRĀGM**, any dividing membrane or partition; septum. The term is usually applied to the septum at the node of a hollow-stemmed grass.

**DIAPH'HSÏS**, an old term for the proliferation of a flower.

**DI'ASTĀSE**, a ferment generated in germinating seeds, etc., which assists in the transformation of starch into sugar.

**DIĀS'TĒR**, see DYASTER.

**DIĀT'ŌMÏNE**, see PHYCOXANTHINE.

**DICĀR'PELLĀRĚ**, of two carpels; digynous.

**DICHĀ'SÏUM** (pl. *Dichā'siá*), a false dichotomy in which two lateral shoots of nearly equal strength arise beneath the apex which bears a flower; biparous, dichotomous, or forked cyme. Compare COMPOUND DICHASIAM.

**DICHĀS'TIC**, spontaneously dividing.

**DICHLĀMŪD'EŌÛS**, having both calyx and corolla.

**DICHŌG'AMOÛS**, having flowers in which the stamens and pistils mature at different times; either protandrous or protogynous. Compare SYNACMIC.

**DICHŌT'ŌMAL FLOWER**, one seated in the fork of a dichasium.

**DICHŌT'ŌMIZE**, to fork.

**DICHŌT'ŌMOÛS**, forked; furcate; bifurcate.

**DICHŌT'ŌMŪ**, forking into two branches of the same nature and usually of about the same size. True dichotomy is caused by the cessation of the previous increase in length of a member at the apex, and its continuance in two diverging directions from two newly constituted apices. Compare HELICOID and SCORPIOID DICHOTOMY.

**DICLĒ'SÏÛM**, a name formerly applied to an achenium having an adherent calyx, as in *Mirabilis*.

**DIC'LÏNŌÛS**, having the stamens and pistils in separate blossoms—either monœcious or diœcious; separated; digamous; unisexual.

**DICŌC'COÛS**, having an ovary consisting of two closed carpels or cocci with one seed in each, as in the Umbelliferæ.

**DICŌE'LOÛS**, having two cavities.

**DICŌTŪLĒD'ŌNOÛS**, having two cotyledons.

**DID'ŪMOÛS**, in pairs.

**DIDŪNĀ'MÏAN**, see DIDYNAMOUS.

**DIDŪN'AMOÛS**, having two long and two short stamens. Compare TETRADYNAMOUS.

**DIE'ŌIOÛS**, see DIœCIOUS.

**DIF'FLŪENT**, readily dissolving. Compare DELIQUESCENT.

**DIF'FORMED'**, of unusual shape.

**DIFFRĀCT'**, said of a lichen thallus which is broken into areolæ separated by clefts or chinks.

**DIFFUSE'**, spreading widely, loosely, and irregularly. Compare **EFFUSE**.

**DIFFUSION**, the spontaneous mixture of one liquid with another, or of any dissolved or finely divided substance or any liquid through a liquid or solid. Compare **OSMOSE**.

**DIG'AMOÛS**, see **DICLINOUS**.

**DIG'ENOÛS**, containing both sexes or produced sexually. (Rare.)

**DIG'ITATE**, having several parts radiating from one point, or nearly so, somewhat like the fingers on one's hand. Applied in grasses where several spikes radiate from nearly the same point, as in crab-grass (*Sanguinaria*). In leaves it is the same as **Palmately-compound**. Compare **PEDATE**.

**DIG'ITATE PIN'NATE**, having a digitate leaf with pinnate leaflets.

**DIG'ITATE-VEINED**, see **PALMATELY-VEINED**.

**DIG'ITIFORM**, see **DIGITATE**.

**DIG'ITINÉRVED**, see **PALMATELY-VEINED**.

**DIG'ONOÛS**, two-angled, as the stems of some cacti.

**DIGYN'IAN**, see **DIGYNOUS**.

**DIG'YNOÛS**, having two pistils, styles, or stigmas in a flower. Generally the same as **Dicarpellary**.

**DILAMINÁ'TION**, see **CHORISIS**.

**DILÁT'ÉD**, expanded or widened.

**DIM'ÉROÛS**, having the parts in twos, as two sepals, two petals, two stamens, and two pistils in a flower.

**DIMID'IÁTE**, halved, or appearing as if one side or one half were wanting, as a leaf which

is developed on one side of the midrib only. Compare **OB-LIQUE**. Applied also to the calyptra of mosses when divided along one side. The term is also applied to bodies which are actually halved or divided into two parts, and to those in which one side differs from the other in function.

**DIMÔR'PHOÛS**, existing under two forms, as two forms of leaves, sterile and fertile, on one plant in ferns. Applied especially to heterogonous plants having two forms of flowers on separate individuals, one with long stamens and short styles and another with short stamens and long styles. Compare **TRIMORPHOÛS**.

**DIMÔR'ÇIAN**, see **DICÆIOUS**.

**DIC'ÆIOUS**, having stamens and pistils in separate flowers upon different individuals.

**DIC'ÆIOUSLY PÔLY'AMOÛS**, when some of the flowers in dicæious plants are perfect. Each set of plants may have perfect as well as unisexual flowers, or one set may have all perfect flowers and the other all staminate or all pistillate; polygamo-dicæious.

**DÎ'ÔSMÔSE**, see **OSMOSE**.

**DÎPÉT'ALOÛS**, having two petals in a flower.

**DÎPHÛL'LOÛS**, two-leaved. Having two leaves, leaflets, or leaf-like parts. Sometimes used for **Disepalous**.

**DÎPLÁN'ÉTÎSM**, the property of being twice active with an intervening period of rest. It occurs in the zoöspores of certain genera of *Saprolegniæ* in which the zoöspores escape without cilia from the sporangium and come to rest in a

- cluster each forming a cell-wall. After some hours of rest the protoplasm of each spore escapes from its cell-wall, acquires cilia, and enters upon a period of active movement.
- DĪP'LŌĒ**, see **MESOPHYLL**.
- DĪP'LŌĒN'ĒSĪS**, the duplication of parts normally single.
- DĪP'LŌPĒRĪS'TŌMŌŪS**, said of the capsule in mosses when the peristome consists of a double row of teeth. Compare **APLOPERISTOMOUS**.
- DĪP'LŌSTĒM'ŌNOŪS**, having the stamens in two whorls, those of each whorl equal in number to the petals, which are in one whorl. Compare **ISOSTEMOUS**.
- DĪP'LŌTĒ'ĠĪŪM** (pl. **DĪplŏtĕ'ġiā**), an inferior capsule, as in *Campanula*.
- DĪP'TĒROŪS**, two-winged.
- DĪRĒCTION-ĈĒLLS**, see **POLAR CELLS**.
- DĪRĒCTION-CŌR'PŪSĈLES**, see **POLAR CELLS**.
- DĪRĒCT' MĒTĀMŌR'PHŌSĪS**, see **PROGRESSIVE METAMORPHOSIS**.
- DĪRĒCT' SŪPĒRPŌSĪ'TION**, the situation of accessory buds in an axil above the leading bud or one first formed, as is usually the case in superposition. Compare **INVERTED SUPERPOSITION**.
- DĪRĒMP'TION**, see **DISPLACEMENT**.
- DĪSĀRTĪC'ŪLĀTE**, to separate at an articulation or joint, as most leaves in autumn.
- DĪSC**, see **DISK**.
- DĪS'ĈĪFŌRM**, disk-shaped; flat and circular.
- DĪS'ĈĪĒROŪS**, disk-bearing, as the woody tissue of conifers.
- DĪS'CŌCĀRP**, an ascocarp in which the hymenium lies exposed while the asci are maturing, as in *Peziza*. The term has also been applied to fruits like the rose and fig, in which the receptacle is expanded and forms the main part of the fruit, enclosing the seeds or achenia.
- DĪSCŌID**, disk-shaped; flat and circular; belonging to the disk, as the central florets in a head of *Compositæ*.
- DĪS'CŌID FLOWĒR**, a head of flowers in *Compositæ* in which each flower is tubular.
- DĪS'CŌID MĀRK'ING**, see **BORDERED PIT**.
- DĪSCŌL'ŌR**, of more than one color; variegated; especially having the two surfaces of a leaf differing in color, as in the *begonias*. Compare **UNICOLOR** and **CONCOLOR**.
- DĪS'COŪS**, disk-shaped.
- DĪSCRĒTE'**, distinct; separate. Compare **CONCRETE**.
- DĪS'CŪS**, see **DISK**.
- DĪSĒP'ALOŪS**, of two sepals.
- DĪSK**, any flat, circular area: the central part of such an area or of any flat body as opposed to the border; disc. Especially (1) the central part of a head of flowers in *Compositæ*, generally bearing tubular florets only; (2) the portion of the receptacle of a flower between the stamens and pistil, often more or less dilated and serving as a nectary; (3) a circular bordered pit, as in *Coniferæ*; (4) the circular adhesive base (*retinaculum*) of a pollinium.
- DĪSK FLŌ'RĒT**, see **TUBULAR FLORET**.
- DĪSK' FLOWĒR**, see **TUBULAR FLORET**.

**DISK-SHAPED**, flat and more or less circular; discoid.

**DISLOCÁTION**, see **DISPLACEMENT**.

**DISÓPERCULATE**, having lost the operculum or lid. Compare **DEOPERCULATE**.

**DISPLÁCEMENT**, the situation of an organ out of its normal position; dislocation; diremption.

**DISSÉCTÉD**, cut deeply into many lobes or divisions. Compare **LACINIATE** and **DIVIDED**.

**DISSÉMINÁTION**, the natural dispersion of seeds.

**DISSÉPIMENT**, one of the double walls separating the cells of a syncarpous ovary; septum. Compare **FALSE DISSEPIMENT**.

**DISSÍLIENT**, debiscing with elastic violence, as the pod of *Impatiens*.

**DISSÓCIÁTION**, separation.

**DISTAL**, pertaining to the apex or outer extremity. Compare **PROXIMAL**.

**DISTANT**, having larger intervening spaces than usual. Opposed to **Dense** or **Approximate**.

**DÍSTICHÓUS**, two-ranked, as the leaves of grasses. Applied also to leaves arranged like those of the fir, which are turned in two directions, though not inserted oppositely in the same plane. In this latter sense **Bifarious** is somewhat the better term.

**DÍSTINCT**, when parts of the same kind are unconnected; opposed to **Coherent**. Compare **FREE**.

**DISTRÁCTÍLE**, widely separated. Applied mainly to anthers in which the connective is developed so as to keep the lobes wide apart, as in *Salvia*.

**DÍTRICHÓTÓMOUS**, dividing into two or three branches.

**DIURNAL**, said of flowers which open in the day and close at night.

**DIURNAL SLEEP**, see **PARAHYLIOTROPISM**.

**DIVARÍCATE**, diverging at a wide angle.

**DIVERGENCE**, see **ANGLE OF DIVERGENCE**.

**DIVERSIFLÓROUS**, having flowers of two or more forms.

**DIVIDÉD**, having incisions extending to the midrib. Compare **CLEFT** and **PARTED**.

**DODÉCÁGÝNOUS**, having twelve pistils.

**DODÉCÁMÉROUS**, having the floral organs in twelves; 12-merous.

**DODÉCÁNDROUS**, having twelve stamens.

**DODÉCÁPÉTÁLOUS**, having twelve petals.

**DOLÁBRIFÓRM**, having the form of an axe or hatchet, as the leaves of *Mesembryanthemum dolabriforme*.

**DŌMÉSTICÁTÉD**, introduced and found to thrive and reproduce itself under cultivation. It does not necessarily imply any change of character.

**DŌRMANT BŪD**, one which is poorly developed and which under ordinary circumstances will not grow into a branch. Often the first-formed buds on a season's growth are of this character; latent bud.

**DŌRMANT STÁTE**, the condition of a living plant during winter, or other definite period of cessation from active growth; latent period.

**DŌRSAL**, pertaining to the back, or situated upon the back. The dorsal surface of a leaf or other foliar organ is the anterior,



- outer, or normally lower surface. Some botanists, however, apply the term dorsal to the upper surface. Compare VENTRAL.
- DORSAL SUTURE**, one situated at the midrib of the carpellary leaf.
- DORSICUMBENT**, see SUPINE.
- DORSIFEROUS**, bearing the fruit upon the back, as the spores of many ferns; dorsiparous.
- DORSIFEROUS**, see DORSIFEROUS.
- DORSIVENTRAL**, having a distinct front and back, as leaves.
- DORSUM**, the back of any organ: the outer or lower surface of leaves or parts of a flower. See also DORSAL.
- DORTY**, (Hort.), delicate; difficult to cultivate. (Rare.)
- DOTTED**, see PUNCTATE.
- DOTTED DUCT**, see PITTED VESSEL.
- DOUBLE**, having more than one whorl of petals. A flower is completely double when all the essential organs are replaced by petals.
- DOUBLY-COMPOUND**, twice compound, as bipinnate or bipalmate.
- DOUBLY-CRENATE**, having the crenatures or teeth of a crenate leaf again crenate.
- DOUBLY-DENTATE**, having the teeth of a dentate leaf dentate. Compare BIDENTATE.
- DOUBLY-PINNATE**, see BIPINNATE.
- DOUBLY-SERRATE**, having small serratures upon the large ones, as in the elm. Compare BISERRATE.
- DOUBLY-TERNATE**, see BITERNATE.
- DOUBLY-TOOTHED**, having the teeth themselves toothed, as in Doubly-dentate.
- DOWN**, soft short pubescence.
- DOWNY**, having a dense covering of short weak hairs.
- DRAWN**, elongated by absence of light, as plants which are crowded together.
- DREPANIFORM**, see FALCATE.
- DROOPING**, inclining downward more than cernous and less than pendent or pendulous.
- DRUPACEOUS**, like, or pertaining to, a drupe; producing drupes, as *drupaceous* trees.
- DRUPE**, a stone-fruit, as the peach, almond, and cherry. It consists of one carpel, with usually a single seed surrounded by a thickened bony endocarp called the pit or stone.
- DRUPEL**, a very small drupe, as the so-called seeds of the blackberry.
- DRUPELET**, see DRUPEL.
- DUBIOUS**, doubtful.
- DUCT**, see VESSEL.
- DULCIS**, devoid of acidity; sweet.
- DUMOSE**, having the form of a bush or low compact shrub.
- DUMOS**, see BUSH.
- DUPPLICATE**, doubled or folded.
- DUPPLICATE-CRENATE**, see DOUBLY-CRENATE.
- DUPPLICATE-DENTATE**, see DOUBLY-DENTATE.
- DUPPLICATE-SERRATE**, see DOUBLY-SERRATE.
- DURAMEN**, heart-wood; the central portion of the trunk of most exogens, consisting of wood of darker color and denser texture than the outer newer layers, and possessing

the characteristic color of the species.

**DWARF**, habitually attaining much less than the ordinary size of related species or varieties; nanus. Compare **HUMILIS** and **DEPAUPERATE**.

**DWARF MALES**, very small individuals in *Edogoniæ*, originating from special swarm-spores called androspores, and producing only antherozoids.

**DYASTÈR**, a stage of karyokinesis succeeding the monaster or mother-star stage and ending with the formation of the daughter-skeins. During this stage the chromatic filaments are grouped about the poles, the two groups (asters) being more or less united by the spindle-fibres or conjunctive threads. See **DAUGHTER-STAR**.

**È-** or **ÈX-**, a prefix meaning destitute of, outside of, or away from.

**EAB**, a prominent lobe, as those at the base of the leaf in sorrel (*Rumex acetocella*).

**EABED**, see **AURICULATE**.

**EBÈ'NEOUS**, black like ebony.

**ÈBRÀC'TÈATE**, without bracts.

**ÈBÜR'NEOUS**, ivory-white.

**ÈGÀL'CÀRÀTE**, without a spur.

**ÈCAU'DÀTE**, without a tail or tail-like appendage.

**ÈCBLÀSTÈ'SIS**, the production of buds within a flower in consequence of lateral proliferation.

**ÈCCÈN'TRIC**, out of the centre or axis; not having the same centre; when the centre or axis of growth does not coincide with that of the mass, as in most starch-grains, or in trees which develop more rapidly on one side than on the other.

**ÈCH'INÀTE**, spiny or prickly.

**ÈCHIN'ULÀTE**, diminutive of *Echinata*; having small prickles.

**ÈCID'IUM**, see **ÆCIDIUM**.

**ÈCÓNÒM'IC BÒT'ANÝ**, the classification of useful and injurious plants, and the study of all botanical questions having a practical bearing. See **AGRICULTURAL BOTANY**.

**ÈCÒS'TÀTE**, without a rib.

**ÈCTÒGÈ'NIC**, capable of living outside of an animal body. Said of certain disease-producing organisms, as the bacillus of anthrax.

**ÈC'TÒPLÀSM**, a hyaline layer of protoplasm free from granules next to the cell-wall; hyaloplasm.

**ÈC'TÒSPÒRE**, see **BASIDIOSPORE**.

**ÈCTÒSPÓ'ROUS**, see **EXOSPOROUS**.

**ÈCTÒTHÈ'CAL**, gymnocarpous, as applied to *Ascomycetes*. (Rare.)

**ÈDÈN'TÀTE**, without teeth, as an entire leaf.

**ÈDGED**, see **MARGINATE**.

**ÈFFÈTE'**, exhausted; no longer productive or fruitful; past the bearing age.

**ÈFFLÒRÈS'ÇENÇE**, the time or act of flowering.

**ÈFFÙSE'**, spreading loosely, especially on one side, as the panicle of *Juncus effusus*. Compare **DIFFUSE** and **SECUND**.

**ÈGG-ÀPPÀRÀ'TÙS**, a group of three nucleated bodies at the upper end of the embryo-sac, which together with the upper polar nucleus correspond with the antipodal cells. The central deeper cell of the egg-apparatus becomes the oösphere, the others form the elongated

- synergidæ; germinal apparatus.
- EGG-CELL**, see OÖSPHERE.
- EFŪL'CRĀTE**, said of buds from below which the leaf has fallen. (Rare.)
- EGLĀN'DŪLOSE**, without glands.
- E'GRĒT**, see AIGRET.
- EIS'ODAL**, anterior. Applied to the outer or anterior part of the opening of a stoma. Compare OPISTHODAL.
- EJĒC'TION**, throwing out with force, as spores from a sporangium or seeds from a pod. Compare ABJECTION.
- ELĀBORĀTION**, a term applied to the changes which take place in plant-food after it is absorbed, to prepare it for the use of the plant. Compare ASSIMILATION and METASTASIS.
- ĒLĀTĒR**, a term for various elastic, usually spiral, bodies which serve for the dispersion of spores, as those in the capsules of mosses and liverworts and those attached to the spores of Equisetum.
- ĒLĀTĒ'RĪŪM**, a term sometimes applied to fruits which discharge their seeds by means of elastic carpels, as in certain Euphorbias; regma.
- ĒLEŪTHĒRŌPĒT'ĀLOŪS**, see APOPETALOUS.
- ĒLEŪTHĒRŌPHŪL'LOŪS**, see APOPHYLOUS.
- ĒLEŪTHĒRŌSĒP'ĀLOŪS**, see APOSEPALOUS.
- ĒLLĪPSŌID'ĀL**, nearly elliptical in outline.
- ĒLLĪP'TĪCAL**, oblong, and rounded at the ends; longer than oval.
- ĒLLĪP'TĪC-LĀN'ĀEŌLĀTE**, intermediate between elliptical and lanceolate, but approaching the latter.
- ĒLŌC'ŪLAR**, see UNILOCULAR.
- ĒLŌN'GĀTĒD**, exceeding the usual or average length.
- ĒLYT'RĪFŌRM**, resembling the wing-cover of a beetle; ely-troid.
- ĒMĀR'ĀID**, flaccid; wilted. (Obs.)
- ĒMĀR'ĀINĀTE**, notched at the end. Sometimes applied to organs which are notched at other places, as to the gills of mushrooms when notched or cut out before reaching the stem.
- ĒMBŌSSED'**, see UMBONATE.
- ĒMBRĀC'ING**, clasping by a broad surface. Compare AMPLECTANT and SHEATHING.
- ĒM'BRYŌ**, the rudimentary plant within the seed.
- ĒM'BRYŌ-BŪD**, a rudimentary bud, especially if adventitious.
- ĒM'BRYŌ-ĀĒLL**, see OÖSPHERE.
- ĒMBRYŌGĒN'ĪC**, pertaining to the development of an embryo.
- ĒMBRYŌG'ĒNŪ**, embryo-formation.
- ĒMBRYŌL'ŌGŪ**, the study of the embryo and its development.
- ĒM'BRYŌNAL ĀĒLL**, see OÖSPHERE.
- ĒM'BRYŌNAL VĒS'ĪCLE**, see OÖSPHERE.
- ĒM'BRYŌNĀTE**, having an embryo.
- ĒMBRYŌN'ĪC**, in an early undeveloped condition; rudimentary.
- ĒM'BRYŌ NŌD'ŪLE**, a term applied to small knots, frequently about the size of a pea, found beneath the bark in certain trees, and sometimes containing one or more rudimentary buds.

**ĔMBRYŌN'ĪC SĀC**, see EMBRYO-SAC.

**ĔMBRYŌN'ĪC VĔSĪCLE**, see OŪSPHERE.

**ĔMBRYŌ-SĀC**, a large cell in the nucleus of the ovule within which the germinal vesicles or oŪspheres (one or more) are produced, and which finally contains the embryo. Compare CENTRAL CELL.

**ĔMBRYŌTĔ'ĜĪĀ** (pl.), see EMBRYOTEĜĪUM.

**ĔMBRYŌTĔ'ĜĪŪM** (pl. Ĕmbryŏ-tŏ'ĝĪĀ), a small cap covering the micropyle in certain seeds, as asparagus, and detached by the radicle in germination.

**ĔMĔR'ĜĔNCĪEŖ**, a term applied to outgrowths of various kinds derived from the fundamental tissue below the epidermis, and covered by the latter, as the prickles of the rose.

**ĔMĔR'ĜĔNT**, protruding through or elevated above surrounding parts.

**ĔMĔRSED'**, raised out of water.

**ĔMPĀLE'MĔNT**, an old term for calyx.

**ĔMP'TŪ GLŪMEŖ**, one, two, or more bracts or scales subtending a spikelet in grasses, and enclosing one or more flowers; outer glumes. Formerly called merely glumes. Compare FLOWERING GLUME.

**ĔNĀNTĪŌBLĀS'TĪC**, a term sometimes applied to the embryo of orthotropous seeds. Compare HOMOBlastic.

**ĔNĀ'TĪON**, having outgrowths or excrescences the result of excessive development, as scales upon petals. Compare CHORISIS.

**ĔNCHŪLE'MĀ**, the unorganized proteids in living cells, as aleurone grains. (Hanstein.)

**ĔNCŪS'TĔD**, enclosed in a cyst or sac. Applied, for example, to a stage of growth in Proto-coccaceæ in which the individual exists as a free cell with a cell-wall, but destitute of cilia.

**ĔNĔCĀĜ'ŪNOŪS**, having eleven pistils or styles.

**ĔNĔCĀN'DROŪS**, having eleven stamens.

**ĔNĔCĀPHŪL'LOŪS**, said of a leaf containing eleven leaflets.

**ĔNDĔM'ĪC**, occurring in the one limited locality or region only. Compare SPORADIC.

**ĔNDŌBASĪD'ĪŪM**, an enclosed basidium, as in Gasteromy-cetes.

**ĔN'DŌCĀRP**, the inner layer of a pericarp, particularly if developed in a special manner; as the pit of a peach or core of an apple.

**ĔN'DŌCHRŌME**, coloring matter in cells, or colored cell-contents aside from chlorophyll—used mainly in algæ. Often applied to the entire cell-contents of algæ, and sometimes to colored cell-contents in other plants, but less used now than formerly.

**ĔNDŌDĔR'MĪS**, a layer, of one or more cells in thickness, which forms the inner boundary of the cortex and surrounds the fibrovascular cylinder.

**ĔNDŌĜ'ĔNOŪS**, produced within another body. Applied also to the stems of monocotyledons and their manner of growth, which was formerly supposed to take place chiefly at or near the centre.

**ĔNDŌĜ'ĔNOŪS ĆĔLL-FŌRMA'TĪON**, see FREE CELL-FORMATION.

- ĚNDŎGŎNĪD'ĪŪM**, a gonidium formed within a receptacle, as in the sporangium of *Mucorini*.
- ĚNDŎPĚRID'ĪŪM**, the inner peridium when there are more than one, as in *Geaster*.
- ĚNDŎPHLĚŪM**, inner bark; liber. See **BAST**.
- ĚNDŎPHŪL'LOŪS**, enclosed in a leaf or sheath, as the young leaves of monocotyledons.
- ĚNDŎPHŪTAL**, growing within other plants; entophytal.
- ĚNDŎPHŪTE**, a plant which grows within another, either parasitic upon it or not; entophyte.
- ĚNDŎPLĀSM**, the internal granular portion of the protoplasm; when distinguished from an outer layer free from granules called *Ěctoplasm*.
- ĚNDŎPLEŪ'RĀ**, see **TEGMEN**.
- ĚNDŎP'TĪLE**, an old term applied to the plumule of endogens.
- ĚNDŎRHĪZĀ** (pl. *Ěndŏrhĭ'zĕ*), an old term for endogen.
- ĚNDŎRHĪZAL**, said of an embryo in which the radicle is sheathed by the cotyledons wrapped around it. Applied also to the method of germination in endogens.
- ĚNDŎRHĪZOŪS**, see **ENDORHIZAL**.
- ĚNDŎSMŎSE**, an inward current established between fluids of different densities when separated by an animal or vegetable membrane; endosmosis. The absorption of moisture by roots is due to endosmose. See **OSMOSE**.
- ĚNDŎSMŎSĪS**, see **ENDOSMOSE**.
- ĚNDŎSPĚRM**, the albumen of the seed, especially when formed in the embryo-sac. Compare **PERISPERM**.
- ĚN'DŎSPŎRE**, the inner coat of a spore.
- ĚN'DŎSTŎME**, the orifice of the inner coat of the ovule, i.e., the inner portion of the foramen. Compare **EXOSTOME**.
- ĚNDŎTHE'ĀĪŪM**, the lining (tapetum) of an anther cell, consisting of one or more layers within the exothecium.
- ĚNDŎZŎ'ĪC**, living inside an animal; entozoic.
- ĚNNEĀG'ŪNOŪS**, having nine pistils or styles.
- ĚNNEĀN'DRIĀN**, see **ENNEANDROUS**.
- ĚNNEĀN'DROŪS**, having nine stamens.
- ĚNNEĀPĚT'ALOŪS**, having nine petals.
- ĚNNEĀSĚP'ALOŪS**, having nine sepals.
- ĚNNEĀSPĚR'MOŪS**, nine-seeded.
- ĚNŎDAL**, without nodes.
- ĚN'SĀTE**, see **ENSIFORM**.
- ĚN'SĪFŎRM**, sword-shaped; straight, or nearly so, two-edged, and tapering very gradually from base to apex, as the leaves of iris; gladiate.
- ĚNTĪRE'**, having margins destitute of teeth or notches.
- ĚNTŎMŎG'ĚNOŪS**, growing upon insects, as certain fungi; entomophytous.
- ĚNTŎMŎPH'ĪLOŪS**, adapted to pollination by insects.
- ĚNTŎMŎPH'ŪTOŪS**, see **ENTOMOGENOUS**.
- ĚNTŎPĀR'ĀSITE**, a parasite living entirely within its host.
- ĚN'TŎPHŪTAL**, see **ENDOPHYTAL**.
- ĚN'TŎPHŪTE**, see **ENDOPHYTE**.
- ĚNTŎZŎ'ĪC**, see **ENDOZOIC**.

**ĒNVĒLOPE-ĀPPĀRĀTŪS**, all of the ascocarp except the ascus-apparatus.

**ĒPĀN'ODŪ**, a general term for reversion from an irregular to a regular condition. In flowers it is termed "regular perloria."

**ĒPĀN'THOŪS**, growing upon flowers, as certain fungi.

**ĒPĒN**, see EPENCHYMA.

**ĒPĒN'CHŪMĀ**, cambium, and all tissue arising from it. (Nägeli.) Compare PROTENCHYMA.

**ĒPHĒM'ĒRAL**, lasting but a day or a very short time, as the corolla of purslane.

**ĒP'IBLAST**, a term applied to a small scale-like appendage in front of the embryo and opposite the scutellum in the seeds of rice and many other grasses. (F. L. Scribner.)

**ĒP'IBLE'MĀ**, a collective name for the epidermal cells of a young organ, especially a root, including the root-hairs. (Obs.) See EPIDERMIS and DERMATOGEN.

**ĒP'ICĀ'LYX**, an involucre resembling an exterior calyx, as in mallow.

**ĒP'ICĀRP**, the outer layer of a pericarp.

**ĒP'ICHĪL**, see EPICHLIUM.

**ĒP'ICHĪLE**, see EPICHLIUM.

**ĒP'ICHĪL'ĪŪM**, the upper or distal portion of the labellum of an orchid, when especially different from the lower or basal portion. Compare HYPOCHILIUM.

**ĒP'ICL'NAL**, seated upon the receptacle.

**ĒP'ICŌR'MIC**, applied to side branches which develop on the body of a forest tree from

which surrounding trees have been removed.

**ĒP'ICŌRŌL'LINE**, upon the corolla.

**ĒP'ICŌT'YL**, the portion of a young stem between the cotyledons and the lowest true leaves. Compare CAULICLE.

**ĒP'IDĒRM**, see EPIDERMIS.

**ĒP'IDĒR'MAL**, pertaining to the epidermis.

**ĒP'IDĒR'MIS**, the external layer of cells in a plant. Compare CUTICLE and DERMATOGEN.

**ĒP'IDĒRMOI'DAL LĀY'ĒR**, a term sometimes applied to an outer layer of cortical cells bordering on the epidermis.

**ĒP'IGĒ'AN**, upon or above ground; growing on land in distinction from water; growing close to the earth, as some leaves; rising above ground instead of remaining beneath, as the cotyledons of beans; epigeous.

**ĒP'IGĒ'AL**, see EPIGÆAN.

**ĒP'IGĒN'ĒSIS**, (1) originating upon another body; (2) the theory that the embryo is the joint product of both sexes, as distinguished either from the doctrine that the male parent furnishes the germ and the female simply the *nidus* or resting-place in which it is nourished, or from the theory that the female furnishes the germ which is merely quickened by the influence of the male. Seldom used in botany.

**ĒP'IGĒNOŪS**, growing upon the surface or on the upper surface, as a fungus on its host. Compare HYPOGENOUS and EDOGENOUS.

**ĒP'IGĒ'ŌŪS**, see EPIGÆAN.

**ĒP'IGŌNE**, see EPIGONIUM.

**ĒPIGŌ'NIŪM**, the archegonium in mosses after the capsule has developed. It is frequently ruptured, a part being carried up to form the calyptra, and a part remaining at the base of the sporangium or its stalk, as the vaginule. Also an homologous sac enclosing the young sporangium in Hepaticæ.

**ĒPIG'YNOŪS**, growing upon the ovary.

**ĒPINĀSTĪC**, denoting curvature resulting from growth on the upper side of an organ making it curve downward. Compare **HYPONASTIC**.

**ĒPINĀSTŪ**, that state of a growing dorsi-ventral organ in which the upper surface grows more rapidly than the lower.

**ĒPIPET'ALOŪS**, upon the corolla.

**ĒPIPHLĒ'ODAL**, upon the epidermis or outer surface. Compare **HYPOPHLĒODAL**.

**ĒPIPHLĒ'ŪM**, see **CORKY LAYER**.

**ĒPIPHRĀGM**, a membrane closing the mouth of the capsule in mosses; also a delicate membrane closing the cup-like sporophore in Nidularia.

**ĒPIPHYL'LOŪS**, growing or inserted upon a leaf, or upon the upper side. Compare **HYPOPHYLLOUS**.

**ĒPIPHYTAL**, see **EPIPHYTIC**.

**ĒPIPHYTE**, a plant growing upon another but not nourished by it; air-plant. Compare **PARASITE**.

**ĒPIPHYT'IC**, growing upon another plant but not nourished by it; epiphytal; pseudo-parasitic.

**ĒPIPHYTŌT'IC**, a term applied by Erwin F. Smith to any wide-spreading disease among plants, corresponding to an

epidemic among men or an epizootic among animals.

**ĒPIPLĀSM**, protoplasm which remains in an ascus or other unicellular sporangium after the formation of the spores.

**ĒPIPTĒROŪS**, winged at the apex.

**ĒPIRRHĒOL'OGŪ**, the portion of physiological botany which treats of the effects of external agents on living plants. (Rare.)

**ĒPIRRH'ZOŪS**, growing upon roots.

**ĒPISPĒRM**, the seed-coat, especially the outer coat or testa.

**ĒPISPORĀN'GIŪM**, an old term for indusium.

**ĒPISPŌRE**, the outer coat of a spore; exospore.

**ĒPISTRŌPHĒ**, said of chlorophyl-bodies when they take their position along the outer wall of the cell, usually when the light is of medium intensity. Compare **APOSTROPHE** and **SYSTROPHE**.

**ĒPITHĀL'LINE**, growing upon the thallus.

**ĒPITHE'LIŪM**, any distinct layer of one or more cells in thickness bounding an internal cavity. Formerly applied also to delicate epidermis of rootlets and other external parts.

**ĒPIX'YLOŪS**, growing upon wood, as many fungi.

**ĒPIZŌ'IC**, growing upon living animals, either parasitic or not.

**ĒQUAL**, symmetrical; regular; of the same number; like another in all respects, or in length.

**ĒQUALLY - PIN'NATE**, see **ABRUPTLY-PINNATE**.

**ĒQUĀTŌ'RĪAL PLĀNE**, the plane which passes through the equa-

- torial plate (mother-star) of the cell-nucleus, or between the parts when the plate has divided, and which occupies the position of the future cell-wall. It is the plane of cell-division.
- EQUATÓ'RIAL PLÁTE**, see MOTHER-STAR.
- EQUILÁT'ÉRAL**, equal-sided; opposed to Oblique.
- EQUÍNÓCTIAL**, said of flowers which open and close at particular hours of the day.
- EQUÍTANT**, having the leaves so arranged that the base of each is enclosed within the opposite base of that which is next below it, as in the iris. Compare HALF-EQUITANT.
- EQUÍVAL'VŪLAR**, having the valves of a capsule all of the same size.
- EQUÍVÓCAL GĒNĒRÁ'TION**, see SPONTANEOUS GENERATION.
- ÉRÁDÍC'ŪLÓSE**, without rootlets or rhizoids.
- ÉRĒCT'**, perpendicular, or nearly so, to the surface to which it is attached; standing without support, not weak or lax. Compare STRICT. Applied to ovules or seeds it means growing vertically from the base of the ovary. Compare ASCENDING and INVERTED.
- ÉRĒCTÓPÁT'ENT**, intermediate between erect and spreading.
- ÉRĒ'MÓBLÁST**, a unicellular plant. (Sachs.)
- ÉRÍÁN'THOŪS**, woolly-flowered.
- ÉRÍCÁ'CEOŪS**, heath-like.
- ÉR'ÍCOÍD**, ericaceous. Said of a subulate form of leaves often found upon the juniper.
- ÉRÍÓPHÝL'LOŪS**, woolly-leaved.
- ÉRÓ'DĒD**, see EROSE.
- ÉRÓSE'**, having irregular sinuses as if bitten out; eroded.
- ÉRÓS'TRÁTE**, without a beak.
- ÉRŪM'PENT**, breaking out, as the spore clusters of some fungi through the epidermis of their host.
- ÉRÝTH'RÓPHÝL**, red coloring matter in plants.
- ÉS'CŪLENT**, used for food by man.
- ÉSĒP'TÁTE**, without septa.
- ÉSÓTÉR'IC**, originating within the organism. Compare EXOTERIC.
- ÉSSEN'TIAL CHĀR'ÁCTĒR**, a feature which distinguishes a plant or group of plants from all others; diagnostic character.
- ÉSSEN'TIAL ÓR'GANS**, stamens and pistils.
- ÉSTÍVAL**, pertaining to summer; æstival.
- ÉSTÍVÁTE**, to pass the summer in a dormant condition. Compare HIBERNATE.
- ÉSTÍVÁ'TION**, (1) the arrangement of the floral organs in the bud—usually written Æstivation; (2) passing the summer in a dormant condition.
- ÉTĒ'RÍÓ**, a term sometimes applied to such fruits as the raspberry and blackberry.
- É'TÍÓLÁTĒD**, blanched by exclusion of light. Compare CHLOROSIS.
- EŪCÝC'LÍC**, applied by Braun to flowers having the members in each whorl equal in number and alternating with those in an adjoining whorl.
- EŪ'PHÝLL**, an ordinary foliage-leaf. See PHYLLOME.
- EŪTRÓP'IC**, twining or turning with the sun; dextrorse.
- ÉVÁL'VŪLAR**, without valves.



**ĒVĀNĒS'ĈĒNT**, (1) soon passing away; (2) applied to veins which disappear before reaching the margin of the leaf.

**ĒVEN-PĪN'NĀTE**, see **ABRUPTLY-PINNATE**.

**ĒV'ĒRGREEN**, having green leaves throughout the year, as most *Coniferæ*.

**ĒVĒRLĀST'ING FLOWĒRS**, see **IMMORTELLES**.

**ĒVĒR'NĪĒFŌRM**, resembling the thallus of the lichen *Evernia*.

**ĒVĒR'SĪON**, the protrusion of a part which is generally produced in a cavity.

**ĒVĒRT'ĒD**, turned inside out.

**ĒV'ĪDĒNT**, distinctly visible.

**ĒVĪT'TĀTE**, without vittæ, which see.

**ĒVŌLŪ'TĪON**, the act of unfolding or unrolling; hence growth or development, especially the supposed development through successive generations of the higher from lower or simpler forms of life, both in animals and plants.

**ĒXĀLBŪ'MĪNOŪS**, having the nutriment in the seed all stored in the cotyledons.

**ĒXĀN'NŪLĀTE**, without an annulus.

**ĒXĀR'ĪLLĀTE**, without an aril.

**ĒXĀS'PĒRĀTE**, covered with short hard points; muricate.

**ĒXCĒN'TRĪC**, out of the centre; abaxial. An embryo is *excentric* when it lies within the albumen, but not in the centre of it, as in asparagus; the trunk of a tree is *excentric* when developed more on one side of the heart than on the other.

**ĒX'ĈĪPLE**, see **EXCIPULUM**.

**ĒX'ĈĪPŪLE**, see **EXCIPULUM**.

**ĒXĈĪP'ŪLŪM**, the portion of the thallus supporting or surround-

ing the apothecium in lichens. In some cases the excipulum is an outer rim of the perithecium itself, and is then termed a "proper" excipulum.

**ĒXĈĪTABĪLĪTĪ**, the general faculty, characteristic of living bodies, of being influenced by external stimuli. Compare **IRRITABILITY**.

**ĒXĈRĒS'ĈĒNT**, growing out in a morbid or unnatural manner, as a wart or tumor; superfluous.

**ĒXĈRĒ'TĪON**, the separation of unassimilable matter from an organism. Compare **SECRETION**.

**ĒXĈŪR'BĒNT**, projecting beyond the usual limit, or to the extreme summit or apex.

**ĒXFŌLĪĀTE**, to cast off layers or plates, as the bark of sycamore.

**ĒXHĀLĀ'TĪON**, see **TRANSPIRATION**.

**ĒXĪG'TOŪS**, small or slender. See **GRACILE**.

**ĒX'ĪNE**, see **EXTINE**.

**ĒXĪN'TĪNE**, a term applied by Fritsche to a third coat observed by him in the covering of certain pollen-grains between the intine and a second coat called by him the intexine. The terms Intexine and Exintine are not in ordinary use and do not represent any constant recognized structures.

**ĒX'ŌCĀRP**, the outer layer of a pericarp.

**ĒXŌG'ĒNOŪS**, growing by addition to the outside, or springing from the exterior tissues. Applied also to the manner of growth of the stem in ordinary trees (dicotyledons and gymnosperms).

**ĒXŌG'ŪNOŪS**, having the style exerted beyond the corolla.

**ĒXŌPĒRID'ĪŪM**, the outer peridium when there are more than one, as in Geaster.

**ĒXŌRHĪ'ZĀ** (pl. Ēxōrhī'sæ), an old term for exogen. Compare ENDORHIZA.

**ĒXŌRHĪ'ZAL**, the manner in which the radicle of dicotyledons is developed in germination. (Rare.)

**ĒXŌSMŌSE**, the passage of gases or liquids through a closed membrane from within outward, or from the denser to the rarer fluid in the process of osmose.

**ĒXŌSPŌRE**, see EPISPORE.

**ĒXŌSPŌRIŪM**, see EPISPORE.

**ĒXŌSTŌME**, the orifice in the outer coat of an ovule or seed, which with the endostome forms the foramen.

**ĒXŌSTŌSĪS**, any indurated protuberance.

**ĒXŌTĒR'ĪC**, having its cause or origin outside the organism. Compare ESOTERIC.

**ĒXŌTHĒ'CIŪM**, the outer coat or epidermis of an anther. Compare ENDOTHECIUM.

**ĒXŌT'ĪC**, introduced from a foreign country.

**ĒX'PLĀNĀTE**, spread or flattened out. Applied to a part usually rolled or folded. Compare COMPLANATE.

**ĒXSĒRT'ĒD**, protruding beyond the margin of a receptacle, as stamens beyond the corolla, or a panicle of a grass above the leaf-sheath.

**ĒXSĪCCĀ'TĀ** (pl. Ēxsiiccā'tæ), a dried herbarium specimen; exsiccate.

**ĒX'SĪCCĀTE**, see EXSICCATA.

**ĒX'SĪCCĀTĒD**, dried; especially, collected and dried for preservation as a botanical specimen.

**ĒXSTĪP'ŪLĀTE**, without stipules.

**ĒXSŪC'COŪS**, destitute of juice.

**ĒXTĒ'RĪOR**, when applied to the parts of a flower, means the same as Anterior, i.e., the side away from the axis; lower; outer.

**ĒXTĪNE**, the outer coat of a pollen-grain. (Exine of Schacht.) Compare INTINE.

**ĒX'TRĀ-ĀX'ĪLLĀRĪ**, situated out of the axil.

**ĒX'TRĀ-ĀEL'LŪLAR**, outside of a cell.

**ĒX'TRĀ-FŌLIĀ'ĀEŪS**, not situated upon or near the leaves, as *extra-foliaceous* prickles.

**ĒXTRĀVĀG'ĪNAL**, applied to branches in grasses which in growth burst through the base of the subtending sheath. Compare INTRAVAGINAL.

**ĒXTRŌRSE'**, applied to anthers the lobes of which are situated on the outside of the filament or connective, i.e., on the side farthest removed from the pistil. Such anthers generally dehisce on the outside also.

**ĒXŪNGŪIC'ŪLĀTE**, without an unguis or claw, as most petals.

**ĒXŪ'VĪĒ**, anything excreted or cast off. (Rare.)

**EYE** (Hort.), a bud on a tuber; the cavity enclosed by the calyx in the apple; the ostiolum or opening in the apex of a fig; any conspicuous central spot in a flower or petal, including the disk in Compositæ.

**FĀĀE**, the upper, inner, or free surface of an organ as opposed to the back.

**FĀ'ĀĪES**, the general aspect of a plant. (Obs.) Compare HABIT.

**FÁCULTATÍVE**, occasional; incidental. Compare OBLIGATE.

**FÁCULTATÍVE PÁR'ÁSÍTE**, a plant (usually a saporophytic fungus) capable of passing through at least certain stages of its development as a parasite, but which does not always or necessarily do so.

**FÁCULTATÍVE SÁP'RÓPHÍTE**, a plant (usually applied to parasitic fungi) which is capable of living as a saprophyte during the whole or a part of its life.

**FĚCŮLÁ**, see FECULA.

**FÁL'CÁTE**, scythe-shaped, or sickle-shaped. Compare UNCI-NATE.

**FÁL'ČÍFÓRM**, see FALCATE.

**FALSE**, similar in appearance, but different in structure or origin; spurious. The same as the Greek pseudo-.

**FALSE DÍCHÓT'OMÝ**, any dichotomous appearance which does not arise from a terminal division of the main axis, as a dichasium.

**FALSE DÍSSĚP'ÍMENT**, one of the additional partitions in certain fruits which is not formed by the edges of carpels. False dissepiments frequently proceed from the dorsal suture.

**FALSE ÍNDŮŠÍŮM**, a recurved margin of the frond in ferns covering the sporangia, as in the genus *Pteris*.

**FALSE RÁCĚME'**, see HELICOID CYME.

**FALSE PÁRĚN'CHÝMA**, see PSEUDOPARENCHYMA.

**FÁM'ÍLÝ**, the same as ORDER, which see, and in more familiar use. The term is also employed, especially among cryptogams, to indicate groups lower than the order. In hor-

ticulture it is sometimes used to indicate groups of related varieties, as the Duchess family among apples.

**FÁN'-SHÁPED**, like a fan in outline, especially if also plaited; flabelliform; flabellate.

**FÁN'-VEINED**, see PALMATELY-VEINED.

**FÁRC'TÁTE**, without vacuities; stuffed; obstructed; infarctate; infarcted; opposed especially to fistulose. Seldom used, the word solid or turgid being nearly always preferable. See STUFFED.

**FÁR'ÍNÁ**, starch. Formerly applied also to pollen.

**FÁR'ÍNÁ'ČEOŮŠ**, containing starch, or of the texture of meal or flour.

**FÁR'ÍNŮŠE**, covered with a white mealy powder.

**FÁR'ÍNŮŠE**, n., a supposititious cellulose substance in starch-grains, which is not colored blue by iodine. Compare GRANULOSE.

**FÁS'ČÍÁ** [*fásh-ĭ-á*] (pl. *Fás'číā*), a cross-band, especially of color. (Rare.)

**FÁS'ČÍÁTĚD**, (1) having broad parallel bands or stripes; (2) exhibiting fasciation, which see.

**FÁSČÍÁ'TÍON**, a monstrous flattened expansion of the stem, as in the garden cockscomb (*Celosia*).

**FÁS'ČÍCLE**, a bundle, as the clustered leaves on the dormant branches or spurs of the larch; a bundle of tuberous roots, as in the dahlia; a fibrovascular bundle, especially if rudimentary; a close cyme, as in sweet-william; a bundle of herbarium specimens.

**FĀS'CICLED**, growing in tufts or clusters; fascicular; fasciculated.

**FĀS'CIC'ŪLAR**, see FASCICLED.

**FĀS'CIC'ŪLAR SŪS'TĒM**, see FIBROVASCULAR SYSTEM.

**FĀS'CIC'ŪLAR TĪS'SŪE**, see FIBROVASCULAR TISSUE.

**FĀS'CIC'ŪLĀTE**, see FASCICLED.

**FĀS'CIC'ŪLĀTĒD**, see FASCICLED.

**FĀS'CIC'ŪLŪS** (pl. *Fāscic'ūli*), a dense cymose inflorescence, as in sweet-william; fascicle.

**FĀS'TĪG'IĀTE**, having the branches close, parallel, and upright, as in Lombardy poplar. Sometimes erroneously used for flat-topped.

**FĀUX** (pl. *Fāu'cēp*), the throat or orifice of a gamopetalous or gamosepalous flower.

**FĀVĒ'LĀ** (pl. *Fāvē'læ*), a form of sporocarp in Florideae, consisting of an irregular mass of spores embedded in more or less gelatinous material and without a distinct conceptacle. It may be seated upon the frond or more or less embedded in it, and is derived from one or from several contiguous cells. In the latter case, and also when embedded in the frond, it was formerly called a favellidium.

**FĀVĒ'ŌLĀTE**, see ALVEOLATE.

**FĀVŌSE**, see ALVEOLATE.

**FĒATH'ĒR-VEINED**, see PINNATELY-VEINED.

**FĒATH'ĒRŪ**, see PLUMOSE.

**FĒC'ŪLĀ**, any powdery farinaceous matter.

**FĒC'ŪLENT**, muddy; thick with sediment.

**FĒCŪNDĀ'TION**, see FERTILIZATION.

**FĒCŪN'DĪTŪ**, fertility; fruitfulness.

**FĒED'ĒR**, an outgrowth of the hypocotyl in the embryo of some genera of Gnetaceae which serves for the absorption of the endosperm.

**FĒLT'ĒD-TĪS'SŪE**, hyphal tissue in which the filamentous cells are not regularly united, as in phenogams, but cross one another irregularly, and are often more or less grown together; tela contexta; spurious tissue. In its more consolidated forms it is known as pseudo-parenchyma.

**FĒ'MĀLE FLOWĒR**, one having pistils only; pistillate flower.

**FĒNĒSTRĀTE**, having rather large openings like windows.

**FĒ'RAL**, see WILD.

**FĒRRŪ'GĪNOŪS**, resembling iron-rust; brownish-red. For synonyms see RUBIGINOSE.

**FĒR'TĪLE**, producing fruit, or reproductive bodies of any kind; having pistillate or perfect flowers.

**FĒRTĪLĪZĀ'TION**, the process by which the pollen causes the ovule to develop as a seed. It is the essential feature of sexual reproduction of every kind, being the union of the male and female reproductive bodies. In some cases, and perhaps always, it consists in the coalescence of the nuclei of two cells of different nature and origin; fecundation; impregnation. See CONJUGATION.

**FĒŪ'ILLEMŌRT**, of the color of a faded leaf; filemot. (Rare.)

**FĪBER**, see FIBRE.

**FĪBRĒ**, any slender thread-like body of considerable strength; especially: (1) the slender fusiform cells of the inner bark, known as bast; (2) small slen-

der roots like those of grasses. Also applied to bodies of similar form which have no special strength, as the threads or filaments in a nucleus during cell-division.

**FĪBRĪL**, diminutive of Fibre; a small or secondary fibre.

**FĪBRĪL/LĀ** (pl. Fibril'læ), see FIBRIL.

**FĪBRĪLLŌSE**, diminutive of Fibrous; bearing fibrils or composed of small fibres.

**FĪBRĪLLŌSE MYĀE'LĪŪM**, see FIBROUS MYCELIUM.

**FĪBROŪS**, composed wholly, or in large part, of fibres; separable into fibres.

**FĪBROŪS MYĀE'LĪŪM**, mycelium in which the hyphæ form by their union elongated branching strands; fibrillose mycelium; mycelial strand.

**FĪBRŌ-VĀ'SAL BŪN'DLE**, see FIBROVASCULAR BUNDLE.

**FĪBRŌ-VĀ'SAL STRĪNG**, see FIBROVASCULAR BUNDLE.

**FĪBRŌVĀS'CŪLAR BŪN'DLE**, one of the characteristic elements in the stem of all flowering plants and the higher cryptogams. Isolated fibrovascular bundles form the "fibres" in the so-called pith of a corn-stalk, and the veins in leaves. Each bundle usually consists of two parts, xylem and phloem (which see), the whole often surrounded by a special layer of cells called the bundle-sheath.

**FĪBRŌVĀS'CŪLAR CŌRD**, a term applied by Strasburger to a fibrovascular bundle in monocotyledons, but not generally adopted.

**FĪBRŌVĀS'CŪLAR ĀYL'ĪNĀER**, a name given to the peculiar

fibrovascular system in the stem of Lycopodiaceæ. Sometimes used in exogens, especially in roots, where it is generally called "central cylinder."

**FĪBRŌVĀS'CŪLAR SĪS'TĒM**, the fibrovascular tissues of a plant taken together. In exogenous trees it includes the veins of the leaves, and all the material of the stem and branches, except the pith, medullary rays, and outer bark.

**FĪD'DLE-SHĀPED**, see PANDURIFORM.

**FĪL'ĀMENT**, the stalk of a stamen supporting the anther.

**FĪLĀMĒN'TŌŪS**, slender and thread-like, or composed of filaments.

**FĪLĀMĒN'TŌŪS MYĀE'LĪŪM**, one composed of free hyphæ, which are at most loosely interwoven with one another, but without forming bodies of definite shape and outline; floccose mycelium.

**FĪLĀMĒN'TŌŪS SPŌR'ŌPHŌRE**, see SIMPLE SPOROPHORE.

**FĪL'ĀRĪŌŪS**, see FILAMENTOUS.

**FĪL'ĒMŌT**, see FEUILLEMORT.

**FĪL'ĪCŌID**, fern-like.

**FĪL'ĪFŌRM**, thread-shaped; slender, round, and of equal thickness throughout. Compare CAPILLARY.

**FĪL'ĪFŌRM ĀPPĀRĀ'TŪS**, a homogeneous, strongly refractive, cellulose cap often found at the apex of each synergida, especially in monocotyledons.

**FĪLĪPĒN'DŪLOŪS**, hanging by a thread.

**FĪLŌSE**, terminating in a thread-like process.

**FĪM'BRIĀ**, a fringe.

- FIMBRIATE**, fringed; bordered by lax, slender processes, generally larger than hairs.
- FIMBRICATE**, see FIMBRIATE.
- FIMBRILLATE**, diminutive of Fimbriate; having a very small or fine fringe; fimbriiferous.
- FIMBRILLIFEROUS**, see FIMBRILLATE.
- FINGÉRED**, see DIGITATE.
- FIS'SILE**, capable of being split or divided.
- FIS'SION**, the division of an organ which is usually entire; that mode of cell-division in which the cell separates into two nearly equal portions.
- FISSIP'AROUS**, reproducing by spontaneous division into two parts.
- FIS'TULAR**, see FISTULOSE.
- FIS'TULIFORM**, tubular.
- FIS'TULOSE**, hollow and cylindrical, or nearly so, as the stems of many grasses; fistular; fistulous. Used especially when the hollow is of considerable size, as in reeds.
- FIS'TULOUS**, see FISTULOSE.
- FLABEL'LATE**, see FAN-SHAPED.
- FLABEL'LIFORM**, see FAN-SHAPED.
- FLAC'CID**, unable to support its own weight. Compare LAX.
- FLAGÉL'LÁ**, pl., see FLAGELLUM.
- FLAG'ELLARY**, pertaining to or caused by flagella, as the *flagellary* movements of certain zoöspores.
- FLAG'ELLATE**, (1) bearing flagella; (2) flagelliform.
- FLAGÉL'LIFORM**, long and supple like a whip-lash; flagellate.
- FLAGÉL'LŪM** (pl. *Flägél'lá*), any slender flexible process or organ, as (1) a solitary long swinging process of protoplasm on certain zoöspores (a large cilium); (2) a similar appendage to the cells of many bacteria; (3) a young flexible shoot, especially a long trailing branch of a vine (sarment).
- FLĀT** (Hort.), in describing fruits, means flattened endwise (depressed).
- FLĀVÉS'CENT**, yellowish.
- FLĀ'VOUS**, see FLAVUS.
- FLĀ'VŪS**, pure pale yellow; lemon-yellow. Compare LUTEUS.
- FLĚSH'Y**, enlarged and somewhat soft, as a tuber. Compare SUCCULENT.
- FLĚX'UOSE**, zigzag; wavy; winding; flexuous.
- FLĚX'UOUS**, see FLEXUOSE.
- FLĚAT'ING**, see NATANT.
- FLĚC'ĀI**, pl., see FLOCCUS.
- FLĚCCŌSE'**, covered with matted woolly hairs, especially if they fall away in tufts. Said of the perithecia of Erysiphe when the appendages are of equal diameter throughout, more or less tortuous, and end abruptly, or in a straight point (thus distinguished from "hooked" and "dichotomous)."
- FLĚCCŌSE' MYCÉ'LĪŪM**, see FILAMENTOUS MYCELIUM.
- FLĚC'CULENT**, see FLOCCOSE.
- FLĚC'CŪS** (pl. *FlĚc'cī*), any woolly hair or thread, or a tuft of such filaments.
- FLĚRÁ**, the aggregate of the species of plants of a country or region, or a book which describes them.
- FLĚR'AL**, pertaining to a flower.

**FLÓRAL DI'ÁGRÁM**, a drawing showing the relative position of the parts of a flower.

**FLÓRAL ÈN VÈLÓPES**, in ordinary plants the calyx and corolla, sometimes including bracts when developed in a special manner so as to surround a flower; in grasses the flowering glume and palet.

**FLÓRAL GLÓME**, used by Dr. W. J. Beal instead of flowering glume or lower palet.

**FLÓRAL LÈAF**, see BRACT.

**FLÓRÈS'ÇENÇE**, the opening of flowers; blossoming; anthesis.

**FLÓRÈT**, an individual flower of a head or cluster, especially in Compositæ; floscule; flosculus; floweret.

**FLÓRÍF'ÈROÛS**, flower-bearing.

**FLÓRÍP'AROÛS**, floriferous; sometimes used when a proliferous branch or flower bears additional flowers instead of stems and leaves.

**FLÓS'CÛLAR**, see FLOSCULOUS.

**FLÓS'CÛLE**, see FLORET.

**FLÓS'CÛLÓSE**, see FLOSCULOUS.

**FLÓS'CÛLOÛS**, composed of or bearing florets; applied mainly to heads of flowers in Compositæ when composed of tubular florets only. Compare SEMIFLOSCULOUS.

**FLOW'ÈR**, the part of a plant immediately concerned in the production of seed. A complete flower in ordinary plants consists of pistils, stamens, corolla, and calyx, of which the two former are essential to the production of seed. The parts of a flower are modified leaves.

**FLOW'ÈR-BÛD**, an unopened flower or cluster of flowers.

**FLOW'ÈRÈT**, see FLORET.

**FLOW'ÈR-HÈAD**, see HEAD.

**FLOW'ÈRING GLÓME**, the organ in grasses formerly called the lower palet. It may subtend one flower or more. Dr. W. J. Beal proposes the more appropriate term Floral Glume.

**FLÛ'ÍTANT**, floating in or upon water. Compare NATANT.

**FLÛ'VÍAL**, see FLUVIATIC.

**FLÛVIÁT'IC**, belonging to flowing water; fluvial; fluviate.

**FLÛ'VIÁTILE**, see FLUVIATIC.

**FÓLD'ÈD**, (1) said of leaves in veneration when the two halves are simply brought together forward; (2) (Hort.) when a narrow projection of the flesh of an apple extends into the cavity. (Warder.) Compare LIPPED.

**FÓLIÁ'ÇEOÛS**, leaf-like; having leaves intermixed with the flowers, as a *foliaceous* spike; consisting of thin laminæ or layers; foliose.

**FÓLIÁ'ÇEOÛS THÁL'LÛS**, the thallus in lichens when flat and leaf-like and attached by one or few points; frondose thallus. Compare CRUSTACEOUS THALLUS.

**FÓLIÁGE LÈAVEŞ**, ordinary green leaves, in distinction from those which are transformed into petals, scales, etc.

**FÓLIÁR-TRÁÇE**, see LEAF-TRACE.

**FÓLIÁT'ION**, the act of leafing out; frondescence. Sometimes used erroneously for prefoliation.

**FÓLÍF'ÈROÛS**, bearing or producing leaves; foliiferous; foliiparous.

**FÓLÍF'ÈROÛS**, see FOLIFEROUS.

**FÓLÍFÓRM**, leaf-shaped.

- FÖLÍP'ÁROÛS**, producing leaves or leaves only.
- FÖLÍOLÁTE**, pertaining to leaflets, as *trifoliolate*—having three leaflets.
- FÖLÍOLE**, a little leaf or leaflet. (Rare.)
- FÖLÍÓLÚM** (pl. *Föli'ólá*), see FOLIOLE.
- FÖLÍÓSE**, (1) abounding in leaves; foliaceous; leafy; (2) having the nature or appearance of a leaf.
- FÖLÍÓÛS**, see FOLIOSE.
- FÖLÍÚM** (pl. *Föli'á*), a leaf.
- FÖL'LÍCILE**, a simple pod opening by the ventral suture only, as in the milkweed (*Asclepias*).
- FÖLLÍC'ÚLÁTE**, having follicles.
- FÖLLÍC'ÚLÚS**, see FOLLICLE.
- FOOT**, a basal protrusion of the fern-plant which maintains its connection with the prothallus. Also a similar base to the seta in mosses.
- FOOT-STALK**, the stem of a leaf, flower, or other organ. See PETIOLE, PEDUNCLE, PEDICEL, STIPE.
- FÖRÁ'MÉN** (pl. *Förám'iná*), any small aperture, especially that in the integuments of the ovule, at which fertilization is effected. Compare MICROPYLE.
- FÖRÁ'M'INÁTĒD**, having small holes or perforations. Compare LACUNOSE.
- FÖRÁ'M'IN'ÚLÓSE**, pierced with very small holes; diminutive of Foraminated.
- FÖR'ÇÍPÁTE**, like a pair of pincers.
- FÖRKED**, having two or more main branches arising from nearly the same point; furcate. Compare BIFURCATED.
- FÖRM**, (1) nearly the same as Variation, which see; (2) one of the conditions or states when several regularly appear among plants of the same parentage, as the short-styled *form* in heterostyled species.
- FÖRM'ÁTIVE**, concerned with or serving for growth, as *formative material* (starch, albuminoids, etc.), *formative tissue* (meristem).
- FÖRM-GÉ'NÛS**, a so-called genus constituted by similar form-species, as *Botrytis* in fungi; pseudo-genus.
- FÖRM-SPE'ÇIÉS**, a particular phase in the development of a protean organism, as the rusts; so called because the different stages have often been mistaken for distinct species. Used also by E. L. Sturtevant synonymously with Race.
- FÖRM-SPÖRE**, a body which is morphologically or physiologically a spore, but which either does not become detached as an ordinary spore for dispersion, or which has not the power of germination.
- FÖR'NICATE**, see VAULTED.
- FÖR'NÍX** (pl. *För'nicæ*), arched scales in the throat of a corolla, as in comfrey.
- FÖS'SÍL BÖT'ÁNÝ**, the science of fossil plants, including their order of succession on the earth; paleobotany; paleo-phytology; geological botany; phytolithology.
- FÖS'TÉR-PLÁNT**, see HOST.
- FOUR-FÖLD PÖL'LÉN-GRÁIN**, see POLLEN-TETRAD.
- FÖ'VĒÁ** (pl. *Fö'vĒæ*), a pit or depression, as that in the leaf of *Isoetes*, containing the sporangium.
- FÖ'VEÁTE**, marked with deep or rather large pits or depressions. Compare ALVEOLATE.



**FÖVE'ÖLÄ** (pl. Fövä'ölæ), a little pit or depression; diminutive of Fovea.

**FÖVE'ÖLÄTE**, marked with little pits or depressions.

**FÖVIL'LÄ** (pl. Fövil'læ), the contents of a pollen-grain; generally used in the singular for the entire contents, but sometimes applied to the individual granules in the fluid protoplasm.

**FREE**, not united with any dissimilar part; opposed to Adherent. Compare **DISTINCT**.

**FREE ÇÉLL-FÖRMÄ'TION**, the production of new cells within another, generally free from the cell-wall of the original or mother cell. Usually applied to cases in which several nuclei appear within the cell, each of which becomes surrounded by an independent cell-wall, as in the production of pollen; internal or endogenous cell-formation.

**FREE GRÖWING**, thrifty or vigorous, as opposed to dwarf or feeble.

**FREE-STÖCK**, a seedling tree of the same species used for grafting, as opposed to a stock of a different species, the latter being generally used for dwarfing.

**FREE-STÖNE**, applied to drupes in which the flesh separates readily from the pit when ripe. Compare **CLINGSTONE**.

**FRILL**, see **ARMILLA**.

**FRINGED**, see **FIMBRIATE**.

**FRÖND**, the leaf in ferns, especially the foliage portion of it; the expanded leaf-like portion of the thallus of liverworts; the stem and leaves taken together in plants where the distinction between leaf and stem

is not obvious, or where, as in Equisetum, the leaves are unimportant; the whole expanded leaf-like or branching thallus of many marine algae.

**FRÖNDÉS'ÇENÇE**, see **FOLIATION** and **PHYLLODY**.

**FRÖN'DIFÖRM**, frond-like or frond-shaped, especially like the leaves of ordinary ferns.

**FRÖN'DÖSE**, frond-like, or producing fronds instead of ordinary foliage; leafy or leaf-like. (Rare.) Compare **THALLOID**.

**FRÖN'DÖSE THÄL'LÛS**, see **FOLIACEOUS THALLUS**.

**FRÖTH'Ý**, see **WARTY**.

**FRÜÇTÉS'ÇENÇE**, the time at which a fruit arrives at maturity.

**FRÜÇTIFICÄ'TION**, the fruit and attendant parts; an inflorescence at any stage of growth; the process of development of a fruit and its attendant parts.

**FRÜÇTIFICÄ'TION, ÖR GÄNS'ÖF**, stamens and pistils.

**FRUIT**, the mature ovary and its contents, together with any closely adhering part; specialized reproductive bodies of any kind, as the spores of cryptogams, including any modified portion of the plant in which they are produced. The term is also extended to many consolidated forms of inflorescence, as the cone of the pine.

**FRUIT-BÜD**, generally the same as Flower-bud, which see.

**FRUIT-DÖT**, see **SORUS**.

**FRUIT-SPÖR**, a short stout branch, bearing one or more flower-buds, as in the apple.

**FRÜMENTÄ'ÇEÖÜS**, producing or pertaining to edible grain.

**FRÜS'TÖLE**, the individual in Diatomaceæ (often joined together in colonies).

**FRŪS TŪLŌSE**, consisting of similar separable parts, like the frustules of diatoms.

**FRŪTĒS CĒNT**, somewhat shrubby,—woody at the base and herbaceous above, like the garden sage; subfrutescent; suffrutescent.

**FRŪTĒX**, a shrub, which see.

**FRŪTĪCŌSE**, shrubby; pertaining to shrubs; shrub-like. Compare **FRUTESCENS**.

**FRŪTĪCŌSE THĀL'LŪS**, a thallus in lichens which is attached to the substratum by one point only, or by a narrow base, and grows upward as a simple, or more usually branched, shrub-like body.

**FRŪTĪCŪLŌSE**, like a small shrub; diminutive of Fruticose.

**FRŪTĪCŪLŪS**, a little shrub.

**FŪ'COID**, pertaining to, or resembling, *Fucus*, a genus of marine algæ.

**FŪGĀ'CIŪS**, disappearing in a very short time; ephemeral. Compare **CADUCOUS**.

**FŪ'GITĪVE**, quickly disappearing; easily blown away or absorbed; volatile; evanescent; fugacious.

**FŪL'CRĀTE**, furnished with fulcra, which see.

**FŪL'CRŪM** (pl. *FŪl'crā*), a general term for various appendages to the plant which serve for support or defence, as tendrils, spines, prickles, hairs, etc. Now little used.

**FŪLĪG'INŌSE**, see **FULIGINOUS**.

**FŪLĪG'INOŪS**, dark brown; sooty or smoky.

**FULL**, applied to double flowers in which all the stamens and pistils are transformed into petals; completely double.

**FŪL'VID**, see **FULVOUS**.

**FŪL'VOŪS**, yellow, mixed with gray and brown; tawny.

**FŪL'VŪS**, see **FULVOUS**.

**FŪ'MŌSE**, smoke-colored; brownish gray.

**FŪ'MOŪS**, see **FUMOSE**.

**FŪNDĀMĒNTAL ŌR'GANS**, root, stem, and leaf.

**FŪNDĀMĒNTAL SŪSTĒM**, all that portion of the substance of the higher plants which is not included in the fibrovascular and epidermal systems. Compare **CELLULAR SYSTEM**.

**FŪNDĀMĒNTAL TĪS'SŪE**, pith, cortex, and medullary rays; ground-tissue.

**FŪNGĪCĪ'DAL**, destructive to fungi; antimycotic.

**FŪNGĪCIDE**, anything destructive to the life of a fungus.

**FŪNGĪFŌRM**, mushroom-shaped.

**FŪNGĪL'LĪFŌRM**, diminutive of Fungiform.

**FŪNGŌID**, fungus-like.

**FŪNGŌL'ŌGŪ**, see **MYCOLOGY**.

**FŪNGŌSE**, spongy in texture, like many fungi.

**FŪNGŌS**, produced by a fungus; pertaining to a fungus or to fungi, as a *fungous* disease. The substantive form "*Fungus*" is also used as an adjective.

**FŪNGŪSED**, injured by a fungus. (Rare.)

**FŪNĪCLE**, see **FUNICULUS**.

**FŪNĪCLAR CŌRD**, see **FUNICULUS**.

**FŪNĪCŪLŪS**, the stalk of an ovule or seed by which it is attached to the placenta; funicular cord; umbilical cord; podosperm. In *Nidulariæ* a hyphal cord attaching the peridium to the inner surface of the wall of the peridium.

**FUNILÍFÓRM**, like a rope or cord, as the roots of many endogens.

**FÜN'NĒL-FÓRM**, tubular, and gradually enlarging upward to a spreading border; infundibuliform. Compare ROTATE and CYATHIFORM.

**FÜR'CATĒ**, see FORKED.

**FÜR'CATĒD**, see FORKED.

**FÜR'CÁTION**, division into two (rarely said of more) main branches. See BIFURCATION.

**FÜRFÜBÁ'CEOŪS**, covered with soft scales easily displaced; scurfy.

**FÜR'ROWED**, see SULCATE.

**FÜSCĒS'CENT**, slightly fuscous.

**FÜS'COŪS**, grayish brown.

**FÜSÍFÓRM**, spindle-shaped; enlarged, terete, and tapering toward each end, as the roots of some radishes.

**FÜ'SOĪD**, somewhat fusiform.

**GÁL'BŪLŪS**, a closed fleshy cone, resembling a berry, as that of juniper.

**GÁ'LEÁ**, an arched sepal or petal resembling a helmet; helmet; hood; cucullus. Also applied to the upper lip of some Scrophulariaceæ, though not so arched.

**GÁ'LEÁTE**, helmet-shaped, as the flower of Aconitum.

**GÁLVÁNŌT'RŌPÍSM**, the curvature of growing organs under the influence of a current of electricity.

**GÁM'ĒTE**, any sexual protoplasmic body, naked or invested with a membrane, motile or non-motile, as an oosphere or antherozoid; conjugation-cell; generative cell. Used mainly in Conjugatæ.

**GÁMĒTŌGĒN'ESĪS**, the production of gametes (male or female).

**GÁM'ĒTŌPHŪTE**, the prothallus or sexual generation in ferns, etc. Compare SPOROPHYTE.

**GÁMŌGĒN'ESĪS**, sexual reproduction.

**GÁMŌPĒT'ALOŪS**, having the petals more or less united; sympetalous. Also called erroneously Monopetalous. Compare POLYPETALOUS and UNIPETALOUS.

**GÁMŌPHŪL'LOŪS**, a term including Gamopetalous and Gamosepalous, but applied mainly to sepals.

**GÁMŌSĒP'ALOŪS**, having sepals more or less united; monosepalous.

**GÁN'GLÍŌN** (pl. Gán'gliá), a term applied to various enlargements on the mycelium of certain fungi, some of which at least are rudimentary fructifications.

**GEĪTŌNŌG'ÁMŪ**, the fertilization of a pistil by pollen from another flower of the same plant—the closest kind of cross-fertilization.

**GĒM**, see GEMMA.

**GĒM'INÁTE**, in pairs or twius; binate.

**GĒM'MÁ** (pl. Gēm'mā), an old term for leaf-bud, now usually confined to various asexual reproductive bud-like processes in cryptogams. They may be distinguished from gonidia by not having as uniform methods of production, by greater variation in size, and by usually containing many cells. See GONIDIUM.

**GĒMMA'CEOŪS**, having the nature of gemmæ; bearing gemmæ; gemmiferous.

- GEMMATION**, reproduction by means of gemmæ.
- GEMMIFEROUS**, bearing gemmæ.
- GEMMIPAROUS**, producing gemmæ.
- GEMMULE**, diminutive of Gemma—an old term for leaf-bud and plumule. Now applied to certain primary formative granules in the protoplasm. (Nägeli.)
- GENEAGENESIS**, see PARTHENOGENESIS.
- GENÉRÀ**, pl., see GENUS.
- GEN'ERAL**, see COMMON.
- GEN'ERAL INVOLUCRE**, see COMMON INVOLUCRE.
- GEN'ERATING TISSUE**, see MERISTEM.
- GEN'ERATIVE CELL**, a sexual reproductive cell of any kind. See GAMETE. Also applied to the cell in a pollen-grain which develops into the pollen-tube. Compare VEGETATIVE CELL.
- GEN'ERATIVE NUCLEUS**, the nucleus in the pollen-tube which is directly concerned in fertilization.
- GEN'ERIC**, pertaining to a genus.
- GEN'ETIC**, pertaining to generation or origin; e.g., things are *genetically* related which have the same origin.
- GEN'ETIC SPIRAL**, a spiral line passing through the point of insertion of all equivalent lateral members on an axis from older to younger; generating spiral; fundamental spiral.
- GEN'ICULATE**, bent abruptly at an angle, like the knee, as the stems of decumbent grasses.
- GEN'ICULUM**, a term occasionally applied to a node, especially when the stem is bent at that point, as is frequent in grasses.
- GENUFLÉCTION**, the formation of a knee-like bend in a conjugating filament, as in Sirogonium.
- GEN'US** (pl. *Gen'era*), a group of species within a family or order.
- GEN'US-HYBRID**, a hybrid between plants of distinct genera; bigener.
- GE'OBLAST**, a plumule which in germination leaves the cotyledons under ground, as in the pea.
- GEOGRAPHICAL BOT'ANY**, the study of plants in respect to their geographical distribution; botanical geography.
- GEOLOGICAL BOT'ANY**, see FOSSIL BOTANY.
- GEOTROPISM**, the tendency to grow downward or toward the centre of the earth. Compare APOGEOTROPISM.
- GERM**, a bud or growing point; the embryo in a seed; a rudimentary ovary or young fruit; a female reproductive cell—germ-cell, oosphere; a spore or seed; especially a spore or reproductive individual in bacteria.
- GERM-CELL**, any female reproductive cell. Compare SPERM-CELL. See OOSPHERE. Applied also by Brefeld to spores of the simplest character (Sporeidia) borne on a promycelium.
- GER'MEN**, an old name for ovary.
- GER'MINAL APPARATUS**, see EGG-APPARATUS.
- GER'MINAL CORPUSCLE**, see OOSPHERE.
- GER'MINAL VESICLE**, see OOSPHERE.
- GERMINATION**, the early stage of growth of a seed or spore into a new plant; sprouting.

**GĒRMINĀTĪVE NŪCLEŪS**, see GENERATIVE NUCLEUS.

**GĒRM-NŪCLEŪS**, the nucleus resulting from the union of the pronuclei of two gametes in conjugation or fertilization.

**GĒRM-PŌRE**, a pit in the coat of a spore through which the germ-tube issues in germination.

**GĒRM-TŪBE**, the first growth from a spore or sclerotium upon germination.

**GĪB'BOŪS**, convex, as though swollen; protuberant, especially upon one side, or some distinct part of the surface.

**GĪLLS**, the spore-bearing plates upon the lower side of the cap in mushrooms; lamellæ.

**GIR'DLE**, the overlapping edge of one of the two valves in diatoms.

**GLĀBRĀTE**, nearly glabrous.

**GLĀBRĒS'ĀENT**, slightly glabrous.

**GLĀBRĪŪS'ĀLŪS**, almost but not quite glabrous.

**GLĀ'BROŪS**, smooth; free from roughness or hairs—the surface may be uneven. Compare SCABROŪS and LĀVIS.

**GLĀD'IĀTE**, see ENSIFORM.

**GLĀND**, any secreting apparatus. A gland is generally a group of cells having a peculiar form and character to adapt them to their special function. They sometimes form wart-like projections upon the surface, or depressions within it. The hairs of many plants also serve as glands (see GLANDULAR HAIR). In deeply-seated glands of certain kinds, as those of the pine, the internal cell-walls of the gland are more or less absorbed to form reservoirs for the secreted sub-

stance. The term gland is also applied to certain wart-like swellings which are not secretory, as the abortive teeth at the base of the leaf in the peach and cherry.

**GLĀNDĪFŌRM**, gland-shaped or gland-like; adenoid.

**GLAND OF THE TORUS**, see LEPAL.

**GLĀNDŪLAR**, gland-like or bearing glands; glanduliferous.

**GLĀNDŪLAR DĪSK**, see RETINACULUM.

**GLĀNDŪLAR HĀIR**, an epidermal appendage of one or more cells, the apex of which is usually enlarged and contains the peculiar secretion.

**GLĀNDŪLAR WOOD'Y TĪS'SŪE**, a term formerly applied to the woody tissue of Coniferæ from the appearance of its circular bordered pits.

**GLĀNDŪLĀ'TION**, the position and arrangement of the glands upon a plant.

**GLĀNDŪLĪF'ĒROŪS**, bearing glands.

**GLĀNDŪLŌSE**, see GLANDULAR.

**GLĀNDŪLŌSE-SĒR'RĀTE**, having serratures tipped by so-called glands, as the leaves of *Prunus glandulosa*.

**GLĀNS**, a nut like that of the oak and chestnut, and sometimes extended to all large nuts. A term of little use.

**GLĀR'EŌSE**, growing in gravelly places.

**GLĀŪĀS'ĀENT**, slightly glaucous.

**GLĀŪ'COŪS**, covered with a whitish bloom, as the leaves of cabbage; more accurately, light bluish green; sea-green. Compare PRUINOSE, HOARY, and CANESCENT.

**GLĒ'BĀ** (pl. Glē'baē), chambered sporogenous tissue within a sporophore, as in puff-balls.

**GLŌ'BĀTE**, globular.

**GLŌ'BOIDS**, granules of calcium-magnesium phosphate found in grains of aleurone.

**GLŌ'BOSE**, see GLOBULAR.

**GLŌB'ŪLAR**, spherical or nearly so; globose.

**GLŌB'ŪLE**, the antheridium or male organ of Characeæ.

**GLŌCHID'ĪATE**, barbed like an arrow or fish-hook.

**GLŌ'CHĪS**, a barbed hair or bristle.

**GLŌM'ĒRĀTE**, collected into a close round head.

**GLŌM'ĒRŪLE**, a capitate cyme.

**GLŪ'MĀ**, see GLUME.

**GLŪMĀ'CEOUS**, bearing or resembling glumes.

**GLŪME**, one of the outer floral envelopes in grasses. The term as now used includes the bracts which subtend a spikelet (empty glumes) and the lower of the two bracts subtending the individual flower (flowering glume).

**GLŪMĒL'LĀ**, an obsolete term which has been applied both to the palea and lodicule in grasses.

**GLŪMĒL'LŪLĀ**, see LODICULE.

**GNĀUB**, a knot. (Obs.)

**GNŌMŌN'ICAL**, bent at right angles. (Obs.) See GENICULATE.

**GŌB'LĒT-SHĀPED**, see CRATERIFORM.

**GŌNĪD'ĪOPHŌRE**, a stalk bearing a gonidium.

**GŌNĪD'ĪŪM** (pl. Gōnid'īā), a general term for nearly all asexual reproductive bodies in cryptogams. Also applied to the

algal host of lichens. Compare SPORE and CARPOSPORE.

**GŌNĪM'ĪĀ** (sing. Gōnim'īām), a term of little importance originated by Nylander and used by Tuckerman and others for pale bluish green gonidia in lichens.

**GŌNĪM'ĪC LĀYĒR**, the gonidial layer in certain lichens. "Gonidial layer" is preferable.

**GŌN'IMOŪS**, gonidial as applied to the algal host of lichens; gonimic. (Rare.)

**GŌN'ŌPHŌRE**, a stalk elevating the stamens and pistils only.

**GŌN'ŌPH'ŌRŪM**, see GONOPHORE.

**GŌN'ŌPLĀSM**, in Peronosporæ, the portion of the protoplasm of the antheridium which passes through the fertilizing tube and coalesces with the oosphere. (De Bary.)

**GŌRGE**, see THROAT.

**GŌS'SŪPĪNE**, cottony.

**GRĀÇ'ĪLE**, slender.

**GRĀFT-HŪ'BRĪD**, a plant, or portion of a plant, which is supposed to have been essentially modified through the influence of a graft.

**GRĀIN**, the seed or fruit of Gramineæ; any small seed.

**GRĀINED**, having grain-like tubercles or processes, as those on the flowers of dock (Rumex).

**GRĀMĪNĀ'CEOUS**, pertaining to grasses; gramineous.

**GRĀMĪN'ĒAL**, see GRAMINACEOUS.

**GRĀMĪN'ĒOUS**, see GRAMINACEOUS.

**GRĀMĪNŌL'ŌGŸ**, see AGROSTOLOGŸ.

**GRĀN'ŪLĀ - GŌNĪM'ĪĀ**, an old term for the gonidia of lichens.

**GRĀN'ŪLAR**, composed of grains or granules; covered with small tubercles.

**GRĀN'ŪLĀTE**, see GRANULAR.

**GRĀN'ŪLE**, any small grain-like body.

**GRĀNŪLIF'ĒROŪS**, see GRANULAR.

**GRĀVĒ'ŌLENT**, having a strong unpleasant odor.

**GRĒEN-LĀYĒR**, see MESOPHLEŪM.

**GRĒGĀ'RĪŌŪS**, the same as Social; also applied to the fruiting spots or sori of a parasitic fungus when they appear in groups upon the host. Compare CĒSPITOSE.

**GRĒSSĪFĪCĀ'TION**, the swelling of the ovary after fertilization.

**GROUND-TĪSSŪE**, see FUNDAMENTAL TISSUE.

**GRŌW'ING POINT**, see PUNCTUM VEGETATIONIS.

**GRŌWTH-FŌRM**, a vegetable structure marked by some easily recognized feature of growth, characterizing stages in the lives of plants which are not necessarily closely related, as a filamentous fungus.

**GRŌWTH-RĪNG**, see ANNUAL RING.

**GRŪMŌSE'**, see GRUMOUS.

**GRŪ'MŌŪS**, consisting of clustered grains or tubercles; grumose.

**GUĀRD-ĈĒLLS**, special epidermal cells, usually two in number, enclosing the opening of a stoma, and which have the power of altering their shape so as to increase or diminish the size of the opening.

**GUĀRD'ĪAN-ĈĒLLS**, see GUARD-CELLS.

**GŪ'LAB**, pertaining to the throat.

**GŪM**, a name applied to various viscid (not oily) secretions of amorphous character which either dissolve in water or merely swell in it, as cerasin, the characteristic element of cherry gum.

**GŪM-PĀSSĀGE**, a glandular intercellular passage containing gum.

**GŪS'SĒT**, an intercellular space, either filled or hollow, at an angle where more than two cells meet.

**GŪT'TĀTE**, covered with small dots, as though sprinkled with some colored fluid.

**GŪT'TĪFĒR**, a plant which produces gum or resin.

**GŪTTĪF'ĒROŪS**, yielding gum or resin.

**GŪT'TŪLĀTE**, resembling small drops of oil or resin.

**GŪMNĀX'ŌNŪ**, a monstrous condition in which the placenta protrudes from the ovary.

**GŪMNŌBLĀSTŪS**, having the ovary superior. (Obs.)

**GŪMNŌCĀR'POŪS**, naked-fruited; having the fruit destitute of hairs (rare), or free from the perianth or other covering; in fungi, having the hymenium exposed when the spores are maturing. Compare ANGI-CARPOUS.

**GŪMNŌSPĒR'MŌŪS**, having the seeds naked (not enclosed in a pericarp), as in Coniferæ.

**GŪMNŌS'TŌMOŪS**, said of the mouth of the sporangium in mosses, when destitute of a peristome.

**GŪM'NŌSPŌRE**, a naked spore—one not produced in a receptacle.

**GŪNĒĈĪŪM**, see GYNÆCIUM.

**GYNAN'DĒR**, a plant having the stamens inserted on the pistil. (Rare.)

**GYNAND'RĪAN**, see GYNANDROUS.

**GYNAND'RŌPHŌRE**, a stalk supporting the stamens and pistils above the insertion of the corolla; gonophore.

**GYNANDRŌS'PŌROŪS**, bearing both male and female spores; applied in *Edogoniæ* to certain female plants which produce androspores.

**GYNANDROŪS**, having stamens and pistils united.

**GYNAN'THĒROŪS**, having stamens converted into pistils.

**GYNĒCĪŪM**, see GYNŒCIUM.

**GYNŌBĀSE**, an elevated portion of the receptacle supporting the ovary, as in geranium. Compare GYNOPHORE.

**GYNŌBĀ'SIC**, having a gynobase. Also applied to styles which are attached to the base instead of the summit of the ovary.

**GYNŌDIĒ'CIŌŪS**, having only pistillate flowers on one set of plants and perfect flowers upon another set. Compare GYNOMŒCIOUS and ANDRODIĒCIOUS.

**GYNĒ'CIŪM** (pl. *Gynē'ciā*), the pistils of a flower taken together.

**GYNŌMŌNĒ'CIŌŪS**, having perfect and pistillate flowers on the same plant but no staminate flowers. Compare GYNODIĒCIOUS and ANDROMŒCIOUS.

**GYNŌPHŌRE**, the stalk of a pistil elevating it above the receptacle; carpophore; basigynium; podogynium; thecaphore. (Obs.) Compare GYNŌBASE.

**GYNŌSTĒ'GIŪM** (pl. *Gynōstē'giā*), a sheath or covering of the gynœcium, as the monadelphous filaments of *Asclepias*.

**GYNŌSTĒ'MĪŪM**, a term formerly used for the united stamens and style (column) in orchids.

**GŪRĀTE**, coiled, circinate, or taking a circular course. Compare GYROSE.

**GŪRŌ'MĀ**, an old term for the annulus of ferns.

**GŪRŌSE'**, curved alternately backward and forward; nearly the same as Anfractuose. Sometimes used in the sense of Gyrate.

**HĀB'IT**, the general appearance or manner of growth, as loose or compact, dwarf or otherwise, climbing, creeping, or upright. Also the character with regard to fruitfulness, hardness, etc.

**HĀB'ITĀT**, the kind of situation in which a plant is naturally found, as marsh, woods, mountains, etc. Compare HABITATION.

**HĀBĪTĀ'TION**, the entire locality or geographical range within which a species is found. Compare HABITAT and STATION.

**HĀD'RŌME**, see XYLEM. Applied by Ptonie to the phloëm-like portion of the fibrovascular bundle in vascular cryptogams.

**HĀIR**, any feeble outgrowth from the epidermis; trichome. Hairs may be of any shape, and may consist of one cell or more. They are usually derived from a single epidermal cell.

**HĀIR-PŌINTED**, terminating in a very fine weak point.

**HĀIR'Ū**, covered with longer and



- coarser hairs than "pubescent."
- HAL'BERD-SHAPED**, see **HASTATE**.
- HAL'BÉRT-SHAPED**, see **HASTATE**.
- HÁLF-ÁNÁT'RÓPOŪS**, see **AMPHITROPOUS**.
- HÁLF-BRĒED**, applied in stock-breeding to a cross between a well-established breed and common or "scrub" stock, but seldom used in botany. (Used by Burbidge in the sense of Cross.)
- HÁLF-ĒQŪITANT**, said of opposite leaves whose margins are folded forward and enclose the stem and one edge of the opposite leaf, leaving one margin of each leaf outside. Compare **EQUITANT**.
- HÁLF-ĪNFĒ'RĪOR**, said of an ovary when the stamens are perigynous.
- HÁLF STĒM-CLÁSP'ING**, see **SEMIAMPLEXICAUL**.
- HÁLF-SŪPĒ'RĪOR**, see **PERIGYNOUS**.
- HÁLŌPH'ĪLOŪS**, salt-loving.
- HÁL'ŌPHŪTE**, a plant containing a large quantity of common salt in its composition, and which thrives best in salty places, as *Salsola Kali*.
- HÁLVED**, see **DIMIDIATE**.
- HĀMĀTE**, hooked.
- HĀMŌSE**, see **HAMATE**.
- HĀMOŪS**, see **HAMATE**.
- HĀMŪLĀTE**, diminutive of Hamate.
- HĀMŪLŌSE**, diminutive of Hamose; bearing small hooks.
- HĀMŪLŪS**, a small hook.
- HĀPLŌGŌNĪD'ĪŪM**, an algal gonidium in lichens resembling *Protococcus*. (Rare.)
- HĀPLŌPĒRĪS'TŌMOŪS**, having a peristome in mosses with but a single row of teeth.
- HĀPLŌSTĒM'ŌNOŪS**, having the stamens in one whorl.
- HĀRD**, said of fruits, chiefly pears, which require cooking to soften them for eating.
- HĀRD'Ū**, said of plants capable of passing the winter uninjured by cold. Hardiness also implies the ability to withstand any injurious climatic influence, but its limited use referring to cold is most common.
- HĀS'TĀTE**, like the head of a halberd—applied to leaves which have a spreading lobe on each side of the base. Compare **SAGITTATE**.
- HĀS'TĪFŌRM**, see **HASTATE**.
- HĀS'TĪLE**, see **HASTATE**.
- HĀTCH-ĒT-SHĀPED**, see **DOLABRIFORM**.
- HĀULM**, the dead stems of any herbaceous plant.
- HĀUSTŌRĪŪM** (pl. *Hāustōriā*), the special organ of certain parasites by means of which they obtain food from their host.
- HĒAD**, any compact somewhat rounded body upon a stem. The term is also applied to a cluster of nearly sessile flowers, as in the clovers and *Compositæ*, also to other more or less compact inflorescences, as the spike, corymb, and panicle. See **CAPITULUM**.
- HĒART**, the organic centre of anything, as the central portion of a tree-trunk, or a growing point surrounded by leaves.
- HĒART-SHĀPED**, see **CORDATE**.
- HĒART-WŪOD**, see **DURAMEN**.
- HĒBĒCĀR'POŪS**, having pubescent fruit. (Obs.)

- HĒB'ĒTĀTE**, having an obtuse point; blunted.
- HĒDĒRĀ'ĀEOŪS**, pertaining to or resembling ivy.
- HĒD'ĒRAL**, see **HEDERACEOUS**.
- HĒLIĀ'ĪFŌRM**, see **HELICOID**.
- HĒL'ĪCOĪD**, (1) coiled into the form of a helix or snail-shell; spiral; (2) in inflorescence contrasted with **SCORPIOID**, which see. See **HELICOID CYME** and **HELICOID DICHOTOMY**.
- HĒL'ĪCOĪD ĀYME**, one in which each successive flower is situated upon the same side of a pseudaxis, which may or may not be coiled, as the primary branches of the inflorescence of *Hemerocallis fulva*; bostrychoid cyme; bostryx; false raceme. Compare **SCORPIOID CYME**.
- HĒL'ĪCOĪD DĪCHŌTŌMŪ**, a dichotomy in which a branch on the same side in each successive bifurcation continues to develop while the other does not; bostrychoid dichotomy. Compare **SCORPIOID DICHOTOMY**.
- HĒLIŌĀ'YRĀTE**, having a circular line carried obliquely around an object, as the annulus on the spore-case of *Trichomanes*.
- HĒLIŌT'RŌPIŠM**, having the power of movement under the influence of light.
- HĒL'MĒT**, see **GALEA**.
- HĒL'MĒT-SHĀPED**, see **GALEATE**.
- HĒLŌ'BIŌŪS**, see **PALUSTRINE**.
- HĒMĪ-ĀNĀT'RŌPOŪS**, see **AMPHITROPOUS**.
- HĒM'ĪĀRP**, one of the ripened separable carpels of a dicarpellary fruit, as in Umbelliferae; diachnium. See **MERICARP**.
- HĒM'ĪCYCLE**, half of a coil or circle.
- HĒMĪCYCLĪC**, having part of the floral organs arranged in whorls and the remainder in a spiral. Compare **CYCLIC** and **ACYCLIC**.
- HĒMĪT'RŌPAL**, see **AMPHITROPOUS**.
- HĒMĪT'RŌPOŪS**, see **AMPHITROPOUS**.
- HĒPTĀĀ'YNOŪS**, having seven pistils or styles.
- HĒPTĀM'ĒROŪS**, having seven parts.
- HĒPTĀN'DROŪS**, having seven stamens.
- HĒPTĀPĒT'ALOŪS**, having seven petals.
- HĒRB**, a plant of which the stem contains but little wood and dies to the ground at the close of the season. It may be an annual, a biennial, or a perennial.
- HĒRBĀ'ĀEOŪS**, like an herb; succulent. Also green, as opposed to colored like an ordinary corolla, as a petal with an *herbaceous* (green) tip.
- HĒRBĀ'ĀEOŪS PĒRĒN'NĪAL**, see **PERENNIAL HERB**.
- HĒRB'AL**, see **HERBARIUM**.
- HĒRBĀ'RĪŪM** (pl. *HĒrbā'riūm* or *HĒrbā'riā*), a classified collection of dried specimens of plants; herbal; hortus-siccus.
- HĒRBĒS'ĀENT**, herbaceous or somewhat so.
- HĒRBŌRĪZĀ'TION**, see **BOTANIZING**.
- HĒRCŌG'AMOŪS**, said of an hermaphrodite flower when some structural obstacle prevents self-fertilization, as in many orchids.
- HĒRMĀPH'RŌDĪTE**, see **PERFECT**.

**HĒSPĒRĪDĪŪM**, a fruit like the orange, being succulent within and covered with an indehiscent leathery rind.

**HĒTĒRĪŌ**, a collection of distinct indehiscent carpels belonging to a single flower. They may be either dry upon a fleshy receptacle, as in the strawberry, or dry upon a dry receptacle, as in *Ranunculus*, or fleshy upon a dry receptacle, as in the raspberry. Usually but improperly spelled Eterio.

**HĒTĒRAUXĒSĪS**, any irregular or unsymmetrical growth, either normal or abnormal.

**HĒTĒRŌCĀR'POŪS**, bearing fruit of two or more kinds or forms, as in the genus *Amphicarpea*. Compare **HOMOCARPOUS**.

**HĒTĒRŌĀPH'ALOŪS**, bearing heads of more than one kind. For example, having flower-heads some of which contain only staminate flowers and some only pistillate.

**HĒTĒRŌCHRŌMOŪS**, having different members unlike in color; also applied to a flower-head in *Compositæ* when the florets of the centre or disk differ in color from those of the circumference or ray.

**HĒTĒRŌCLĪ'NOŪS**, having male and female flowers in separate heads or receptacles.

**HĒTĒRŌĀYST**, one of the intercalated cells of special character in the filaments of *Nostochineæ*; limiting-cell. They are usually large, rounded, brownish, and glassy in appearance.

**HĒTĒRŌD'RŌMOŪS**, turning or coiling in opposite directions, as a tendril which coils first one way and then the other, or a plant on which the leaf-spiral of a branch runs in the oppo-

site direction from that of the main axis. Compare **HOMODROMOUS** and **ANTIDROMOUS**.

**HĒTĒRĒ'ĀIOŪS**, parasitic on different plants at different stages of growth; metæcious; metoxenous; heteroxenous.

**HĒTĒRĒ'ĀIS'MAL**, see **HETERĒ-ĀIOUS**.

**HĒTĒRĒ'ĀĀYST**, see **HETĒRO-ĀYST**.

**HĒTĒRŌG'AMOŪS**, said of the heads of flowers in *Compositæ* when the florets are not all alike in sex.

**HĒTĒRŌGĒ'NEŌŪS**, not of uniform substance or character.

**HĒTĒRŌGĒN'ĒSĪS**, see **SPONTANEOUS GENERATION**.

**HĒTĒRŌG'ŌNOŪS**, having two or more kinds of flowers differing in the relative lengths of the stamens and styles; heterostyled. See **DIMORPHOUS** and **TRIMORPHOUS**.

**HĒTĒRŌM'ALOŪS**, spreading in all directions. Compare **HOMOMALOUS**.

**HĒTĒRŌM'ĒROŪS**, having a different number of parts in the different whorls of a flower. Compare **ISOMEROUS**. Applied also to a lichen thallus when a layer of the algal cells divides it into an outer cortical and an inner medullary portion. Compare **HOMOMEROUS**.

**HĒTĒRŌMŌR'PHŌŪS**, of two or more forms, as the flowers of *Buchloë dactyloides*.

**HĒTĒRŌPHŪL'LOŪS**, having two or more distinct sorts of foliage-leaves on the same plant, as in junipers; also applied to species whose leaves differ widely from those of related species. The term is not usually applied to plants in which the leaves merely assume different forms at

- successive elevations on the stem.
- HĚTĚRŔRHĪZAL**, having roots which seem to proceed from no fixed point, as those of acrogens; said also of spores which germinate indifferently from any portion of the surface. Little used.
- HĚTĚRŔS'PŔROŪS**, bearing asexually produced spores of more than one kind, as in the Uredinæ; having macrospores and microspores, as in Selaginella. Compare **HOMO-SPOROUS** and **ISOSPOROUS**.
- HĚTĚRŔSTĪLED**, see **HETEROG-ONOUS**.
- HĚTĚRŔTĀXŪ**, the deviation of organs from their normal position.
- HĚTĚRŔT'ŔŔPAL**, see **AMPHIT-ROPOUS**.
- HĚTĚRŔT'ŔŔPOŪS**, see **AMPHIT-ROPOUS**. Also applied to any part which is turned in an unusual direction.
- HĚTĚRŔX'ĚNOŪS**, see **HETERŔ-CEOUS**.
- HĚX-**, a prefix derived from the Greek, meaning six. See **SEX-**.
- HĚXĀG'ŪNOŪS**, having six pistils or styles.
- HĚXĀM'ĚROŪS**, having the parts in sixes. Applied mainly to the parts of a flower, and meaning six organs in each whorl. Also written 6-merous.
- HĚXĀN'DROŪS**, having six stamens; hexastemonous.
- HĚXĀPĚT'ALOŪS**, having six petals.
- HĚXĀPHŪL'LOŪS**, having six leaves or leaflets.
- HĚXĀSTĚM'ŔNOŪS**, see **HEXAN-DROUS**.
- HĪBĚR'NĀCLE**, see **HIBERNACU-LUM**.
- HĪBĚRNĀC'ŪLŪM**, a protection for a growing part through the winter, as a bud or bulb.
- HĪBĚR'NAL**, pertaining to winter; blooming or vegetating in winter; hiemal; hyemal.
- HĪBĚRNĀ'TION**, passing the winter in a dormant condition.
- HIDDEN-VEINED**, having the veins of a leaf buried in the tissue so as not to be easily visible.
- HIDE-BOUND**, see **BARK-BOUND**.
- HĪ'ĚMAL**, see **HIBERNAL**.
- HĪ'LAR**, pertaining to the hilum.
- HĪLE**, see **HILUM**.
- HĪ'LŪM** (pl. **HĪ'lā**, or preferably **HĪ'lūm**), the scar, or point of attachment of a seed. The term is also applied to the nucleus of a starch-grain.
- HIP**, the fruit of the rose; a cynarrhodium.
- HĪPPŔCĚP'ĪFORM**, horseshoe-shaped.
- HĪRSŪTE**, clothed with rather numerous long coarse hairs, harsher than pubescent and less harsh than hispid.
- HĪR'TŪS**, indefinite in meaning, but nearly the same as **Hirsute**, which see.
- HĪRTĚL'LOŪS**, slightly hirsute; stiffly pubescent.
- HĪS'PID**, clothed with erect stiff hairs, as **Borage**.
- HĪSPĪD'ŪLOŪS**, minutely hispid.
- HĪSTĪŔL'ŔGŪ**, see **HISTOLOGY**.
- HĪSTŔDĪL'ŪSĪS**, the separation of the cells of a tissue from each other.
- HĪSTŔGĚNĚT'ĪC**, tissue-forming; pertaining to histogeny.
- HĪSTŔGĚN'ĪC**, see **HISTOGE-NETIC**.
- HĪSTŔG'ĚNŪ**, the origin or formation of tissue.

**HĪSTŌL'ŌGŸ**, the science of the structure of tissues. Compare MORPHOLOGY.

**HŌARY**, grayish white; canescent.

**HŌLD'-FAST**, any root or root-like organ whose chief function is to retain the plant in place, as the aerial roots of ivy, or the suckers or rhizoids of many sea-weeds; crampon.

**HŌLĒRA'ĀEOŪS**, see OLERACEOUS.

**HŌLŌCĀR'POŪS**, having the pericarp entire. (Rare.)

**HŌLŌSĀP'RŌPHŪTE**, a complete saprophyte: one which lives entirely on dead organic matter.

**HŌLŌSERĪĀEOŪS**, covered with very short silky hairs hardly visible to the eye. Compare VELUTINOUS.

**HŌMŌBLĀS'TIC**, said of the embryo when in its usual position with the radicle directed toward the micropyle and the cotyledons in the opposite direction. Compare ENANTIOLASTIC.

**HŌMŌCĀR'POŪS**, bearing fruit all of one kind. Compare HETEROCARPOUS.

**HŌMŌĀEN'TRIC**, see CONCENTRIC.

**HŌMŌĀHRŌ'MŌŪS**, of uniform color.

**HŌMŌD'RŌMAL**, see HOMODROMOUS.

**HŌMŌD'RŌMŌŪS**, turning continuously in the same direction. Compare HETERODROMOUS.

**HŌMŌDŸ'NĀMŌŪS**, of equal strength, size, or vigor.

**HŌMŌĀ'ĀMŌŪS**, having all the florets of a head in Compositæ alike in sex. Compare HETE-

ROGAMOUS. Also used for Synacmic, which see.

**HŌMŌĀĒ'NEŌŪS**, having the same nature or structure throughout.

**HŌMŌĀ'ŌNOŪS**, having the stamens and pistils alike in character in all flowers of the species; homostyled. Compare HETEROGONOUS.

**HŌMŌIŌM'ĒROŪS**, applied to a lichen thallus in which the gonidia and hyphæ are mingled together and not distinctly stratified. Compare HETEROMEROUS.

**HŌMŌL'ŌGOŪS**, of the same morphological nature, as leaves, bracts, sepals, petals, stamens, and pistils are all *homologous*, or forms of the same fundamental organ.

**HŌM'ŌLŌGUE**, a part homologous with another, as a stamen with a leaf; homotype. Compare ANALOGUE. A nectary, for example, is in some cases the homologue of a stamen and in others of a petal, but it is always the analogue of any other nectary.

**HŌMŌL'ŌGŸ**, correspondence in structure or morphological nature. Compare ANALOGY. See HOMOLOGOUS and HOMOLOGUE.

**HŌMŌM'ĀLOŪS**, applied to leaves or other organs which originate on the different sides of a stem, but are all turned toward one side. Compare SECUND.

**HŌMŌMŌR'PHŌŪS**, of the same shape or character, as when the disk-flowers as well as the ray-flowers of a head in Compositæ are ligulate.

**HŌMŌPĒT'ĀLOŪS** (obs.), see REGULAR.

**HŌMŌS'PŌROŪS**, having asexually produced spores of only

- one kind; isosporous. Compare HETEROSPOROUS.
- HÓMÓSTÝLED**, see HOMOGONOUS.
- HÓMÓT'RÓPAL**, see HOMOTROPOUS.
- HÓMÓT'RÓPOŮS**, said of an embryo in a curved seed when it is curved in the same manner as the seed.
- HÓMÓTYPE**, see HOMOLOGUE.
- HÓN'EY**, see NECTAR.
- HÓN'EY-CÓMBED**, see ALVEOLATE.
- HÓN'EY-DEW**, a sweet substance found on the leaves of plants, usually a secretion from plant-lice.
- HÓN'EY-GUIDE**, see NECTAR-GUIDE.
- HÓN'EY-PÓRE**, the supposed pore in flowers which secretes honey. (Obs.)
- HÓN'EY-SPÓT**, see NECTAR-GUIDE.
- HÓOD**, see CUCULLUS.
- HÓOD'ED**, see CUCULLATE.
- HÓOD-SHÁPED**, see CUCULLATE.
- HÓOP**, the connecting band between the valves in Diatomaceæ.
- HÓRÍZÓN'TAL SÝSTĚM**, the cellular as distinguished from the fibrovascular system. Little used.
- HÓR'MÓGÓN**, see HORMOGONIUM.
- HÓRMÓGÓNÍŮM** (pl. *Hórmógóniá*), a reproductive body in certain algae, as the Oscillatoricæ, consisting of a short chain of cells, one of the natural fragments of a filament.
- HÓRN**, any horn-shaped appendage, as the spur of a flower.
- HÓRN'LĚT**, a little horn.
- HÓRNY**, of the texture of a horn, as the pericarp of witch-hazel, *Hamamelis Virginica*.
- HÓRÓLÓG'ICAL**, said of flowers which open and close at definite hours of the day.
- HÓRTĚN'SÍS**, pertaining to a garden.
- HÓR'TŮS-SÍC'ŮS**, see HERBARIUM.
- HÓŠE-IN-HÓŠE**, when the calyx in a gamopetalous flower takes the form of the corolla, or when the corolla itself in such a flower is in two parts or whorls.
- HÓŠT**, a plant which supports a parasite.
- HÓŠT'-PLÁNT**, see Host.
- HŮ'MÍFŮSE**, spreading upon the ground.
- HŮ'MÍLÍs**, low, or less in stature than related species, but not necessarily dwarf; pumilus.
- HŮ'MŮS PLANT**, see SAPROPHYTE.
- HŮSK**, any large, dry, thin envelope covering the fruit or inflorescence, as one of the bracts surrounding an ear of corn.
- HŮÁLĚSČĚNT**, somewhat hyaline.
- HŮ'ÁLÍNE**, clear and colorless like glass or water; translucent or transparent.
- HŮ'ÁLÓPLÁŠM**, the clear portion of the protoplasm free from granules. Often restricted to such a layer next to the cell-wall, then called by some Ectoplasm.
- HŮBĚR'NÁCLE**, see HIBERNACULUM.
- HŮBĚRNÁTING**, see HIBERNATING.
- HŮBŘÍD**, the offspring of two species of the same genus. Compare CROSS. The term

Hybrid is often erroneously used to designate the result of cross-fertilization between any different species or varieties. As true hybrids are often sterile, the term "mule" has been applied to them. Burbidge proposes to retain the term "mule" for sterile hybrids only. See GENUS-HYBRID.

**HÝBRÍDÍZÁ'TION**, the fertilization of a flower by pollen from a plant of another species. Often erroneously used for cross-fertilization in general.

**HÝDRÓID**, see TRACHEID.

**HÝDRÓPH'ÍLOŮS**, having the pollen conveyed to the stigma by means of water.

**HÝDRÓPHÝTE**, an aquatic plant of any kind.

**HÝDRÓT'ROPÍSM**, power in a growing organ of turning in a definite manner or direction through the influence of moisture, i.e. of taking a definite position with respect to the source of moisture. See POSITIVE and NEGATIVE HYDROTROPISM. Compare HYGROSCOPIC.

**HÝE'MAL**, see HIBERNAL.

**HÝGRÓMÉT'RÍC**, moving in a definite manner as a result of a change in the degree of moisture; hygroscopic.

**HÝGRÓPH'ANOŮS**, having a watery appearance.

**HÝGRÓPLÁSM**, the fluid portion of the protoplasm. Compare STEREOPLASM.

**HÝGRÓSCÓP'IC**, (1) absorbing moisture with avidity; (2) showing an increase or diminution of moisture by motion; hygrometric. Compare HYDROTROPISM.

**HÝGRÓSCÓP'IC CÉLLS**, certain cells in the leaves of grasses

which have the power of altering their form under the influence of moisture and causing the leaves to "curl" in dry weather. From their bladder-like appearance they are also called Bulliform Cells.

**HÝMÉ'NIŮM** (pl. *Hýmē'niá*), a spore-bearing surface in fungi, especially in mushrooms and their allies.

**HÝMÉN'ÓPHÓRE**, the portion of a sporophore immediately beneath a hymenium; hymenophorum.

**HÝMÉNÓPH'ÓRŮM**, see HYMENOPHORE.

**HÝPÁN'THÍŮM**, an expanded, usually fleshy, receptacle, more or less enclosing the flowers, as in the fig, rose, *Dorstenia* and *Ambora*; *hypanthodium*. See HIP and SYCONUS. Compare CLINANTHIUM and RECEPTACULAR TUBE.

**HÝPÁNTHÓ'DÍŮM**, see HYPANTHIUM.

**HÝPÉRBÓ'REAN**, growing in the extreme north.

**HÝPÉR'TRÓPHÝ**, excessive development. Compare ATROPHY.

**HÝPHÁ** (pl. *Hy'phæ*), a filament of mycelium.

**HÝPHÁS'MÁ**, an old term for mycelium, still occasionally used when particularly delicate and web-like.

**HÝP'NÓSPĚRM**, an asexually produced resting-spore in algae; hypnospora.

**HÝP'NÓSPĚRÁN'GIŮM**, a sporangium containing resting-spores.

**HÝP'NÓSPĚRE**, any resting-spore, especially one produced asexually. Compare HYPNOSPERM. See RESTING-SPORE.

- HYPO-**, in Greek derivatives, under.
- HÝPÓCÁRPÓGĒ'AN**, producing fruit beneath the surface of the ground, as the peanut.
- HÝPÓCHĪL**, see **HYPOCHILIUM**.
- HÝPÓCHĪL'ĪŪM**, the lower or basal part of the divided labelum in certain orchids; hypochil. Compare **EPICHILIUM**.
- HÝPÓCŌTÝL**, the caulicle. Compare **EPICOTYL**.
- HÝPÓCŌTÝLĒ'DŌNÁRÝ**, situated below the cotyledons.
- HÝPÓCRÁTĒR'ĪFŌRM**, having a long tube with an abruptly spreading border, as in phlox; salver-form.
- HÝP'ŌDĒRM**, see **HYPODERMA**.
- HÝPŌDĒR'MÁ**, cells or layers of cells next beneath the epidermal system which are developed in a special manner, usually as collenchyma or other strengthening tissue.
- HÝPŌDĒR'MAL**, situated beneath the epidermis; hypodermous.
- HÝPŌDĒR'MŌŪS**, see **HYPODERMAL**.
- HÝPŌGĒ'AN**, see **HYPOGEAN**.
- HÝPŌGĒ'ŌŪS**, see **HYPOGEAN**.
- HÝPŌGĒ'AL**, see **HYPOGEAN**.
- HÝPŌGĒ'AN**, subterranean: applied to parts which grow beneath the surface of the ground, and to plants which ripen their fruit beneath the surface; hypogæan; hypogæous; hypogæal; hypogeous.
- HÝPŌGĒ'ENŌŪS**, growing upon the lower surface of anything.
- HÝPŌGĒ'ŌŪS**, see **HYPOGEAN**.
- HÝPŌGĒ'YNOŪS**, growing beneath the pistil, and free.
- HÝPŌNÁS'TÍC**, denoting curvature from growth on the lower side of an organ, causing it to bend upward. Compare **EPINASTIC**.
- HÝPŌNÁSTÝ**, having more rapid growth upon the lower than upon the upper surface. Compare **EPINASTY**.
- HÝPŌPHLĒ'ŌDAL**, beneath the bark.
- HÝPŌPH'ÝLLOŪS**, situated upon the lower side of a leaf.
- HÝPŌPHÝL'LŪM**, an abortive or scale-like leaf subtending anything. (Rare.)
- HÝPŌPH'ÝSIS**, an appropriate but seldom used term for the Apophysis in mosses.
- HÝPŌTHÁL'LŪS**, a lower or interior stratum in a thallus.
- HÝPŌTHE'CIŪM**, a portion of the thallus beneath or around the apothecium in lichens.
- HÝP'SŌPHÝLL**, see **BRACT**.
- HÝSTĒRÁN'THOŪS**, said of plants which have the flowers expand after the leaves have appeared. The leaves therefore in a hysteranthous plant are proteranthous.
- HÝSTĒRŌGĒN'ÍC**, formed late; applied to intercellular spaces formed in older tissues. Compare **PROTOGENIC**.
- ICŌS**, in Greek compounds, twenty.
- ICŌSÁN'DROŪS**, having twenty or more perigynous stamens. Compare **POLYANDROUS**.
- IDĒNTĪFĪCÁ'TION**, see **DETERMINATION**.
- ID'ÍŌBLÁST**, a single cell in a tissue which differs greatly from its neighbors in form, size, nature of cell-wall, or cell-contents.
- ID'ÍŌPLÁSM**, a term applied by Nägeli to the active organizing part of the protoplasm.



**IG'NEÛS**, fiery-red, a lively scarlet.

**IMBÈR'BIS**, without a beard or other hairs. See GLABROUS.

**IMBIBI'TION**, the addition of moisture to organized bodies in a manner which causes them to swell up. Compare ABSORPTION.

**IM'BRICÂTE**, overlapping like tiles or shingles on a roof, as the scales of buds. In aestivation at least one piece is wholly external and one wholly internal.

**IM'BRICÂTÈD**, see IMBRICATE.

**IM'BRICÂTIVE**, see IMBRICATE.

**IMMÂR'GINATE**, without a distinct rim or border.

**IMMÈRSED'**, (1) growing wholly under water; demersed; submerged. (2) When one part or organ is completely embedded in another; innate. Compare EMERSED.

**IMMÔRTÈLLES'**, a term applied to various plants, the flower-heads of which retain their original shape and an attractive appearance when dried, as Guaphalium and some other Composite; everlasting flowers.

**IMPÂRIPIN'NATE**, pinnate with a terminal leaflet, thus usually making an odd number; oddly pinnate.

**IMPÈR'FÈCT**, said of a flower which lacks either stamens or pistils.

**IMPÈR'FORÂTE**, closed; without an opening.

**IMPREGNÂTION**, see FERTILIZATION.

**IN-AND-IN**, breeding for successive generations from closely related individuals. Growing a "stock" or "strain" of corn on the same farm for many

years would be called in-and-in breeding.

**INANE'**, empty.

**INÂN'THÈRATE**, bearing no anther; said of certain sterile filaments or abortive stamens.

**INÂRCH'ING**, the natural union of stems or roots which grow in contact; natural grafting. Also applied in horticulture to a form of grafting in which both stock and scion remain at first attached to their own roots.

**INÂRTIC'ÛLATE**, not jointed; continuous.

**INCÂNÈS'CENT**, see CANESCENT. Strictly, somewhat or slightly canescent.

**INCÂ'NOÛS**, see CANESCENT.

**INCISED'**, irregularly and deeply cut into rather large lobes.

**INCLINED'**, gradually bent out of a perpendicular at less than a right angle, as the branches of most deciduous trees.

**INCLÛD'ÈD**, contained in a cavity and not projecting beyond it; enclosed. Compare EXsertED.

**INCÔMPLE'TE'**, destitute of some part which is usually present; said especially of flowers which lack one or more of the four sets of primary organs, sepals, stamens, and pistils.

**INCÔNSPIC'UÛS**, small in size; not readily observed.

**INCRÂS'SÂTE**, thickened; especially, gradually thickened or enlarged upward from the base.

**INCRÈS'CENT**, growing.

**INCÛBÂTION**, the period from the time of infection or the sowing of the spores until a bacterium or fungus becomes externally or visibly manifest. Applied mainly to pathogenic bacteria affecting animals to indicate the period from the

- time the organism enters the body until the disease appears.
- INCUBOUS**, having the tip of one leaf overlap the base of the one above it, as in the *Jungermaniaceæ*. Compare **SUCCUBOUS**.
- INCUMBENT**, leaning or lying upon; applied to cotyledons when the radicle is folded against the back of one of them (the radicle in such case being dorsal). Compare **ACCUMBENT**. An anther is *incumbent* when lying on the inside of the filament to which it is attached. Compare **VERSATILE**.
- INCURVATE**, see **INCURVED**.
- INCURVED**, bent or curved inward; incurvate.
- INDECIDUOUS**, either evergreen or persistent.
- INDEFINITE**, either uncertain or not uniform in number, or too many to be readily counted; numerous; over twenty when applied to stamens. Also applied to objects which have no well-defined boundary or outline.
- INDEFINITE GROWTH**, see **INDETERMINATE**.
- INDEFINITE INFLORESCENCE**, see **INDETERMINATE**.
- INDEHISCENT**, not opening in a definite manner at maturity to discharge the contents. The fruits of the pea and lily are dehiscent, those of the tomato and apple *indehiscent*.
- INDETERMINATE**, a mode of centripetal inflorescence in which the flowers all arise from axillary buds. Applied also to all stems which do not produce a well-developed terminal bud at the close of the season, as the grape. Compare **DETERMINATE**.
- INDIFFERENT**, undifferentiated; not specialized; as *indifferent* cells or tissues.
- INDIGENOUS**, strictly native; aboriginal. Compare **NATURALIZED**.
- INDIVIDUAL FERTILIZATION**, a term applied by L. H. Bailey to cross-fertilization between different flowers upon the same plant.
- INDUMENTUM**, any hairy covering upon plants.
- INDUPLICATE**, having the margins folded inward. Compare **INVOLUTE**.
- INDURASCENT**, becoming hard.
- INDURATED**, hardened.
- INDUSIATED**, furnished with an indusium.
- INDUSIUM**, an outgrowth of the epidermis covering the sorus in many kinds of ferns; shield. Also applied to a ring of "collecting hairs" below the stigma, as in *Lobeliaceæ*.
- INDUSIUM, FALSE**, see **FALSE INDUSIUM**.
- INDUVIÆ**, any parts of the flower which persist and cover the fruit at maturity; also dead and withered leaves which remain persistent on the stem. Compare **RELIQUIÆ**.
- INEQUALATERAL**, unequal sided.
- INERMOUS**, unarmed; destitute of spines, prickles, etc.
- INFARCTATE**, see **FARCTATE**.
- INFECTIOUS**. In ordinary use this term has the same sense as **Contagious**, being applied to all diseases which are communicable from one plant or animal to another by direct contact or otherwise. In a broad sense **infectious** includes **Contagious**, as defined under that

- term, and applies also to diseases originating from germs which are able to vegetate for a time at least outside of the affected plant or animal. In a strict sense Infectious applies only to diseases produced by organisms which have their natural home outside of the infected body.
- INFÉRIOR**, lower, as an ovary to which the other floral organs are adnate so that they arise from its summit. If the other organs are free from the ovary *they* are inferior and the ovary superior, though the term is seldom applied to them. The *inferior* side of a leaf or flower is the lower or anterior side which faces away from the supporting axis or stem.
- INFLÁTĒD**, puffed up; bladderly.
- INFLECTĒD**, see INFLEXED.
- INFLEXĒD**, abruptly bent inward or downward; inflected.
- INFLORES'CENCE**, (1) the arrangement of the flowers or flower-clusters on a plant; anthotaxy. Compare PHYLLO-TAXY. (2) The portion of the plant which bears the flowers and fruit, i.e., a flower-cluster of any kind.
- INFRA-AX'ILLARĪ**, situated below the axil.
- INFRÁCTĒD**, see INFLEXED.
- INFRACTES'CENCE**, an inflorescence in fruit; the fruiting portion of a plant, together with its fruit. Little used, and applied mainly to collective fruits.
- INFUNDIB'ULAR**, see INFUNDIB-ULIFORM.
- INFUNDIB'ULIFÓRM**, funnel-shaped; having a tube which gradually enlarges upward and bears a moderately spreading border, as *Datura*. Compare HYPOCRATERIFORM.
- INITIAL CELLS**, the first formed cells of a tissue.
- INJECTION**, filling of inter-cellular spaces by water, an occurrence which rarely happens.
- INNÁTE'**, (1) said of anthers attached by their base to the apex of the filament; such anthers are sometimes called Vertical; (2) said of an organ or object which grows within the substratum, as "mycelium or perithecia *innate*," i.e., growing within the tissue of the host.
- INNER LÁMINÁ**, the layer of a lignified cell-wall adjoining the inside of the cell. Compare MIDDLE LAMINA.
- INNOVÁTION**, a new or additional growth or shoot, as the supplementary extensions of the stem in mosses. Applied also to an entire group of off-growths of the same morphological value if some of the forms are true innovations in their manner of growth; thus Dr. William Trelease applies this term in *Epilobium* to forms which vary in different species from sessile buds to dense rosettes, running leafy shoots, scaly rhizomes, and filiform bulbiferous stolons.
- INOSCULÁTING**, opening into each other; anastomosing.
- INSERTĒD**, attached to or growing out of, as stamens *inserted* on the corolla.
- INSÉRTION**, the place or mode of attachment.
- INSPÍSÁTĒD**, thickened by drying.
- INSTÍPULATE**, see EXSTIPULATE.

**INTEGRIFÓLIÓUS**, having entire leaves.

**INTÉGUMENT**, any covering layer or membrane.

**IN'TÉR**, in composition, between. Compare INTRA-

**INTÉRÁX'ILLÁRY**, between the axils.

**INTÉR'CALÁTĒD**, inserted between or in the midst of.

**INTÉRCÁR'PÉLLÁRY**, between the carpels.

**INTÉRCĒL'LŪLAR PASS'AGE**, a continuous opening between the cells.

**INTÉRCĒL'LŪLAR SPACE**, any cavity within the plant. Usually applied to smaller openings than intercellular passages.

**INTÉRCĒL'LŪLAR SUBSTANCE**, material extruded from the cells within the plant.

**INTÉRCĒL'LŪLAR SÝSTĒM**, the intercellular spaces and material of a plant taken together.

**INTÉRCÓSTAL**, situated between the ribs of a leaf.

**INTÉRFÁSCÍC'ŪLAR**, between the bundles: said of a layer of cambium which extends from one fibrovascular bundle to another.

**INTÉRFÍLAR**, between the filaments, as the resting-spore in the conjugation-tube of Mesocarpus, or the fluid portion of the protoplasm in the hypothetical fibrillar network. Compare INTRAFILAR.

**INTÉRFÓLIÁ'CEÓUS**, attached to the stem between the bases or petioles of opposite leaves; interpetiolar. Compare INTRAFOLIACEOUS.

**INTÉRMÉ'DIÁTE TÍSSŪE**, all the fundamental tissue in exogens, except that which is immediately associated with the

epidermis and the fibrovascular bundles. It includes the pith, medullary rays, and most of the cortex. The term is of little use.

**INTÉRMÉ'DIÁTE ZÓNE**, the zone in endogens between the pith and epidermis containing the fibrovascular bundles.

**INTÉRNAL GLAND**, a secreting cell, or usually a cluster of secreting cells, within the plant, as those containing essential oil which form the translucent dots in the leaves of the orange.

**INTÉRNÓDE**, the portion of a stem between two nodes.

**INTÉRPĒT'YÓLAR**, see INTERFOLIACEOUS.

**INTÉRRŪPTĒD**, said of any surface or series the continuity of which is broken, as a pinnate leaf in which leaflets much larger or smaller than usual are interposed among the others, or a slender stem or root which is contracted at intervals.

**INTÉRRŪPTĒDLY - PÍN'NÁTE**, pinnate with small (or sometimes large) leaflets interposed between those of the usual size.

**INTÉRS'TÍAL**, applied to that method or theory of growth which consists in the interposition of new particles between the older ones instead of additions to the surface.

**INTÉX'ÍNE**, see INTÉXTINE.

**INTÉX'TÍNE**, a term applied by Fritzsche to the inner part of the extine when, as in *Cenothera*, it separates as a distinct membrane. Compare EXINTINE.

**IN'TÍNE**, the inner coat of a pollen-grain.

**INTOR'TION**, turning to one side from the vertical or any straight line. (Rare.)

**IN'TRÁ**-, in composition, within. Compare INTER-.

**INTRACÁR'PELLÁBÝ**, produced inside a carpel.

**INTRACĚL'LŪLAR**, within a cell.

**INTRAFÁSCÍC'ŪLAR**, within the bundle, as an *intrafascicular* lacuna in *Equisetum*.

**INTRAFÍ'LAR**, within the filament. Compare INTERFÍLAR.

**INTRAFÓLIÁ'CEŪS**, within a leaf; between the leaf and stem, as the stipules of *Polygonum*; intrapetiolar. Compare INTERFOLIACEOUS.

**INTRÁLÁM'ĚLLAR**, within special layers or lamellæ, as the trama of *Hymenomycetes*.

**INTRÁMÁR'GINAL**, situated within but near the margin.

**INTRÁMÁT'RICAL**, in a matrix or nidus.

**INTRÁPĚT'ÍOLAR**, (1) inside or beneath the petiole, as the buds of sumach and sycamore (subpetiolar); (2) between the petiole and the stem, as the stipules of sycamore and most buds; intrafoliaceous.

**INTRÁVÁG'INAL**, within the sheath: applied to branches in grasses which in their growth do not break through the base of the sheath of the subtending leaf, but push upward between the sheath and the stem. Compare EXTRÁVAGINAL.

**INTRÓDŪCED'**, applied to plants brought from another country, and growing spontaneously unless otherwise noted. Compare NATURALIZED.

**INTRÓFLĚXED'**, bent strongly inward. Between Incurved and Infracted.

**INTRŌRSE'**, facing or turning inward. Applied to anthers which open on the side next the pistil.

**INTRŪD'ĚD**, appearing as if pushed inward or indented; intruse.

**INTŪSSŪCĚP'TION**, the intercalation or formation of other particles among those already present.

**IN'ŪLIN**, a material isomeric with (resembling) starch which replaces that substance in many *Compositæ*.

**INVÁG'INÁTĚD**, inclosed in a sheath.

**INVĚRSE'**, see INVERTED.

**INVĚRT'ĚD**, having a position or mode of attachment the reverse of that which is usual; inverse. A seed or ovule is *inverted* when attached to the top of the ovary. It is then, however, more properly called "suspended." Compare ERECT and ASCENDING.

**INVĚRT'ĚD SŪPĚRŌSÍ'TION**, the situation of accessory buds below the principal bud or one first formed. Compare DIRECT SUPERPOSITION.

**INVŌL'ŪCĚL**, a partial or secondary involucre, as one subtending a partial umbel.

**INVŌLŪCĚL'LŪM**, see INVOLUCEL.

**INVŌL'ŪCRAL**, pertaining to an involucre.

**INVŌL'ŪCRÁTE**, having an involucre; involucred.

**INVŌLŪCRE**, a set of bracts immediately subtending a flower or inflorescence; involucrum.

**INVŌLŪCRED**, see INVOLUCRATE.

**INVŌLŪCRĚT**, see INVOLUCEL.

**INVŌLŪCRŪM**, see INVOLUCRE.

**IN'VÔLÛTE**, rolled inward from both sides. Compare CONVOLUTE.

**INVÔLÛTION-FÔRM**, a swollen bladder-like form in Schizomycetes, supposed to be a diseased condition of the form with which it is found associated. (De Bary.)

**INVÔLÛTION-PÊ'RÎÔD**, see RESTING-PERIOD.

**INVÔLÛTION-STÂGE**, see RESTING-STAGE.

**IRRÊG'ÛLAR**, denoting flowers in which one or more of the organs of a set are different in size or form from the others. Irregularity occurs most frequently in the petals. The pea is an example of an irregular flower, the tulip of a regular. Compare SYMMETRICAL.

**IRRÊG'ÛLAR PELÔ'RÎA**, a teratological condition in which an irregular flower becomes regular by the formation of the irregular parts in increased number. Compare REGULAR PELORIA.

**IRRÊTÂBÎLÎTÛ**, having the power of movement in a definite manner under the influence of external stimuli, as in the coiling of tendrils, twining of stems, or "sleep" of leaves; sensitiveness. Compare EXCITABILITY and CONTRACTILITY.

**ISÂDEL'PHOÛS**, having an equal number of stamens in each adelphia.

**ISÔBÎLÂT'ÊRAL**, having two sides alike in form and structure, as the leaves in the iris.

**ISÔB'RÎOÛS**, applied to the embryo of dicotyledons because both are equally developed; isodynamous. Little used.

**ISÔCHRÔÛS**, uniform in color throughout; unicolor. Compare CONCOLOR.

**ISÔDÛ'NÂMOÛS**, equally developed.

**ISÔG'ÂMÛ**, the conjugation of gametes of similar form. Compare OÛGAMY.

**ISÔG'ÛNOÛS**, having the pistils of a flower all alike. Compare HETEROGYNOUS.

**ISÔMÊR'IC**, see ISOMEROUS.

**ISÔM'ÊROÛS**, having the same number of organs in each floral whorl; isomeric. There may be more than one whorl of any of the kinds of organs. Compare HETEROMEROUS.

**ISÔPH'ÔROÛS**, transformable into something else, as "Actinia is an *isophorous* form of *Dendrobium*."

**ISÔSPÔRE**, said of a spore when all are alike, as in ferns. (Rare.) Compare MACROSPORE and MICROSPORE.

**ISÔS'PÔROÛS**, not having macrospores and microspores; homosporous. Compare HETEROSPOROUS.

**ISÔSTÊM'ÔNOÛS**, having the stamens equal in number to the petals. More properly, having the stamens and petals each in one whorl and of equal number. Compare ANISOSTEMONOUS, MEIOSTEMONOUS, DIPLOSTEMONOUS, and OBDIPLOSTEMONOUS.

**ISÔS'TÔMOÛS**, having calyx and corolla of equal size. (Rare.)

**ISTH'MÛS**, the constricted portion between the two half-cells in most desmids.

**JOINT**, a node; the septum between two cells in a filament; articulation.

**JŪ'BĀ**, a loose panicle. (Obs.)

**JŪ'GŪM** (pl. Jū'gā), (1) one of the ridges on an umbelliferous fruit; (2) a pair of leaflets in a pinnate leaf.

**JŪLĀ'ÇEOŪS**, see **AMENTACEOUS**.

**JŪ'LĪFŌRM**, resembling an ament or catkin.

**JŪ'LŪS**, see **AMENT**.

**JŪVENĒS'ÇENCE**, see **REJUVENESCENCE**.

**KĀRYŌKĪNĒ'SĪS** (also spelled Caryocinesis), Schleicher's term, which has been generally adopted, for the transformations of the nucleus during cell-division; indirect division of Fleming.

**KĀRYŌL'ŪSĪS**, the dissolution of the nucleus or some part of it.

**KĀRYŌMITŌ'SĪS**, see under **MITOSIS**.

**KĀR'YŌPLĀSM**, see **NUCLEOPLASM**.

**KĀRYŌSŌ'MĀ** (pl. Kāryōsōm'ātā), a consolidated mass of microsomata in a nucleus.

**KĀTĀBŌL'ĪC**, a term applied by Geddes to disruptive, destructive, or descending metabolism, accompanying the waste of tissues, resulting in the formation of simpler products of simpler composition; catabolic. Compare **ANABOLIC**.

**KĀTHŌD'ĪC**, see **CATHODIC**.

**KEEL**, a ridge somewhat resembling the keel of a boat; particularly the two inferior petals of a papilionaceous flower which are more or less united into a keel-shaped body; carina.

**KEELED**, having a keel or longitudinal ridge; carinated.

**KĒRAMĪD'ĪŪM**, see **CERAMIDIUM**.

**KEY**, see **SAMARA**.

**KEY-FRUIT**, see **SAMARA**.

**KID'NĒY-FŌRM**, see **RENIFORM**.

**KID'NEY-SHAPED**, see **RENIFORM**.

**KNEE**, a kind of knot which projects upward into the air from the roots of the bald cypress (*Taxodium distichum*) and some other trees. Produced mainly in wet soil, and formerly supposed to serve for aëration, but now believed to be an organ of strength. See **PNEUMATODE**. The term *knee* is also applied to any abruptly bent or knee-shaped organ.

**KNEE-JOINTED**, see **GENICULATE**.

**KNEEPAN-SHAPED**, see **PATELLIFORM**.

**KNOT**, a node or swollen joint; a protuberance on the surface of a tree, as where a branch has been removed and the cut or broken surface is more or less overgrown; a place in the wood where the tissues are displaced by an injury or by the passage of a branch.

**KNOTTED**, cylindrical, and swollen at intervals, somewhat like a knotted cord.

**LĀBĒL'LŪM**, the large lower petal of an orchid; lip.

**LĀ'BIĀTE**, gamopetalous, with two divisions, anterior and posterior; two-lipped; bilabiate. The two lips of a labiate flower are usually unequal and the flower irregular, as in snap-dragon.

**LĀ'BIŌSE**, having the petals of a polypetalous corolla arranged so as to imitate the labiate form. (Rare.)

**LĀ'BIŪM**, the lower lip of a labiate flower.

- LĀĀĒRĀTE**, having the margin deeply cut into irregular segments as if torn. Compare **EROSE**, **INCISED**, **LACINIATE**.
- LĀĀĒRĀTED**, see **LACERATE**.
- LĀĀĀRĀYĀMĒFĒRM**, see **TEAR-SHAPED**.
- LĀĀĀNĀĀ** (pl. *Lācīn'īā*), a segment of a laciniate leaf.
- LĀĀĀNĀĀTE**, deeply cut into narrow incisions, more irregular and larger than **Fimbriate**; slashed.
- LĀĀĀNĀĀFĒRM**, fringe-like.
- LĀĀĀNĀĀLĀTE**, finely laciniate. Compare **LACINULOSE**.
- LĀĀĀNĀĀLĒSE**, lacinate or bearing little fringes.
- LĀĀĒSĀĀENT**, resembling or producing milk or latex.
- LĀĀĀĀFĒRĒRĒUS**, producing or conveying latex; laticiferous.
- LĀĀĀĀFĒRĒRĒUS VĒSĒSĒLĒS**, see **LATICIFEROUS VESSELS**.
- LĀĀĀNĀ** (pl. *Lācū'nā*), a large deep depression on the surface, or open space between the cells.
- LĀĀĀNĀR**, having, resembling, or pertaining to lacunæ.
- LĀĀĀNĒSE**, (1) perforated with rather large holes. Compare **FORAMINATED**. (2) Having depressions in the surface larger, more irregular, or more irregularly placed than in **Alveolate**.
- LĀĀĀNĒSE - RĀĀĀĒSE**, marked with deep broad irregular wrinkles, as the shell of the walnut or pit of the peach. Compare **RUMINATED**.
- LĀĀĀSTRĀNE**, growing in or on the margins of lakes.
- LĀĀĀĀRĀ-CELLS**, see **SCALARI-FORM VESSELS**.
- LĀĀĀĀĀTE**, smoothed, as if polished; lævis.
- LĀĀĀVĀS**, smooth; having an even surface devoid of hair or roughness of any kind; opposed especially to asperate, striate, sulcate, or any unevenness. Compare **NITID** and **GLABROUS**.
- LĀĀĒNĀĀFĒRM**, shaped like a Florence flask (the ordinary bulbous flask of chemists). The term bottle-shaped means the same, or nearly the same.
- LĀĀĀEL**, see **LAMELLA**.
- LĀĀĀĒLĀ** (pl. *Lāmēl'īā*), diminutive of **Lamina**; a thin plate, as one of the "gills" beneath the cap of a mushroom.
- LĀĀĀĒLLĀTE**, composed of thin plates or scales; lamellose.
- LĀĀĀĒLĀĀFĒRM**, in the form of a plate or scale.
- LĀĀĀĒLLĒSE**, see **LAMELLATE**.
- LĀĀĀĀNĀ** (pl. *Lām'inā*), the blade of a leaf or limb of a petal or sepal.
- LĀĀĀĀNĀTED**, consisting of plates, scales, or layers; plated.
- LĀĀĀĀNĀTED BĀLB**, see **TUNICATED BULB**.
- LĀĀĀNĀTE**, covered with long curled hairs like wool; lanose; lanuginous; woolly.
- LĀĀĀĒĒLĀTE**, tapering abruptly toward the base and gradually toward the apex, like the head of a lance.
- LĀĀĀNĒ-ĒVĀTE**, between lanceolate and ovate, but approaching nearer the latter.
- LĀĀĀNĒSE**, see **LANATE**.
- LĀĀĀNĒĀĀĀĀUS**, see **LANATE**.
- LĀĀĀĀĀĒSE**, growing in stony places.
- LĀĀĀĀĀĒĒUS**, bur-like.
- LĀĀĀĀĀĀ STATE**, resting state, as the sphaecelium of ergot. (W. G. Smith.) Seldom used.



**LASIÓCARPOÛS**, having pubescent fruit.

**LÁ'TENT**, remaining dormant beyond the usual time, or until called into growth by some particular stimulus.

**LÁ'TENT BÛD**, see DORMANT BUD and ADVENTITIOUS BUD.

**LÁ'TENT PÉ'RIÓD**, see DORMANT STATE and RESTING PERIOD.

**LÁ'TÉRAL**, attached to the side of an organ.

**LÁ'TÉRAL**, n., a side branch or root.

**LÁ'TÉRAL BÛD**, one situated on the side of a branch, usually in the axil of a leaf. Compare TERMINAL BUD.

**LÁ'TÉRAL DÉHIS'CENCE**, when the opening of an anther takes place upon one or both sides, instead of on the surface facing or opposite to the pistil.

**LÁ'TÉRAL NÛCLÉ'ÓLÛS**, see PARANUCLEOLUS.

**LÁ'TÉRAL NÛCLÉÛS**, see PARANUCLEUS.

**LÁ'TÉRAL PLÁNE**, of a flower or other lateral structure, a plane passing from side to side at right angles to the median plane. The lateral plane of a leaf, for example, would pass between its upper and lower surfaces.

**LÁ'TÉX**, a viscid milky fluid found in certain plants, as the lettuce. See LATICIFEROUS VESSELS.

**LÁ'TÉX TUBES**, see LATICIFEROUS VESSELS.

**LÁ'TÍCÍFÉROÛS VÈS'SÈLS**, special anastomosing tubes containing the latex in such plants as have milky juice; latex tubes.

**LÁ'TÍFÓLIÁTE**, having broad leaves. Compare STENOPHYLLOUS and ANGUSTIFOLIATE.

**LÁ'TÍFÓLIÓÛS**, see LATIFOLIATE.

**LÁ'TÍSÈP'TÁTE**, having a broad septum or partition;—applied to pericarps. Compare ANGUSTISEPTATE.

**LÁ'T'TÍÇED**, see CLATHRATE.

**LÁ'T'TÍÇED CELL**, see SIEVE-TUBE.

**LÁX**, loose; the opposite of close or crowded. An inflorescence may be *lax* because its pedicels are flaccid or slender.

**LÉAD'ÈB**, the upper portion of the primary stem of a tree, or a central upright branch which extends beyond the rest of the head.

**LÉAF**, an appendage to the stem, definite in position, and usually expanded to receive air and light. Besides leaves of the usual forms which serve as foliage there are other forms for additional purposes, including those which form the various parts of a flower. See PHYLLOME.

**LÉAF-ÁRRÁNGE'MENT**, see PHYLLOTAXIS.

**LÉAF-BLÁDE**, the expanded portion of ordinary leaves; lamina.

**LÉAF-BÛD**, a bud which immediately upon expansion produces leaves only. Compare FLOWER-BUD.

**LÉAF-CYCLE**, the course of a spiral from the insertion of a leaf through that of intermediate ones to the insertion of the next leaf directly above or below the place of starting.

**LÉAF-GREEN**, see CHLOROPHYLL.

**LÉAF'LÈT**, one of the divisions or blades of a compound leaf. Leaflets are often articulated

- to the common petiole, and in order to be distinguished from segments they must themselves have distinct petioles, however short.
- LĒAF-SCĀB**, the place on a stem from which a leaf has fallen.
- LĒAF-SHĒATH**, see SHEATH.
- LĒAF-STALK**, see PETIOLE.
- LĒAF-TĒN'DRĪL**, a tendril which is a transformed leaf or part of a leaf.
- LĒAF-TRĀCE**, a fibrovascular bundle, or collection of bundles, while on its passage from the fibrovascular system of the stem to the leaf.
- LĒATH'ĒRĪ**, see CORIACEOUS.
- LĒFT**. The left margin of a leaf, petal, or other foliar organ is the one upon the left hand as its stem is held downward or toward the observer and the organ is viewed upon the upper or inner surface. The left side of a lateral flower is the side upon the left hand as the observer stands in front with the stem erect and the flower between him and the main axis. See remarks under Dextrorse.
- LĒGĪT'ĪMĀTE FĒRTĪLĪZĀ'TION**, fertilization in the usual or natural manner, either close or cross fertilization, whichever in the particular case occurs in nature.
- LĒG'ŪME**, the fruit of the Leguminosæ. It is monocarpellary, with the seeds attached to the ventral side, and usually monoculular and dehiscent into two valves by ventral and dorsal sutures. The pea and bean are examples. Compare LOMENT.
- LĒGŪ'MĪNOŪS**, bearing legumes, or relating to plants of the order Leguminosæ.
- LEIO-**, a prefix from the Greek, meaning smooth.
- LĒNTĪĈĒLS**, small developments of cork at particular points on the surface of many kinds of stems. They appear during the first season's growth, and in some cases, at least, originate beneath the stomata. They probably aid in the transfer of gases and aqueous vapor.
- LĒNTĪĈĒLLE'**, see LENTICEL.
- LĒNTĪĈ'ŪLĀ** (pl. LĒntic'ulā), see LENTICEL.
- LĒNTĪĈ'ŪLAR**, in the form of a double convex lens; lentiform.
- LĒNTĪĈ'ŪRM**, see LENTICULAR.
- LĒNTĪG'ĪNŌSE**, see LENTIGINOUS.
- LĒNTĪG'ĪNOŪS**, covered with small dots, like dust, scurf, or freckles; lentiginose.
- LĒP'AL**, a rudimentary sterile stamen, or organ supposed to be such, usually in the form of a nectar-gland or petaloid scale; gland of the torus. See STAMINODIUM.
- LĒPĀN'THIŪM**, an old term for a petal which contains a nectary.
- LĒP'ĪDĒS**, epidermal scales of various kinds, especially when attached at the centre. Compare RAMENTA.
- LĒP'ĪDŌTE**, scaly; scurfy; leprous; leprose.
- LĒP'ROSE**, see LEPIDOTE.
- LĒP'ROŪS**, see LEPIDOTE.
- LĒPTĀ-**, or **LĒPTŌ-**, a prefix from the Greek, meaning small, thin, or slender.
- LĒPTŌME**, see PHLOËM. Applied by Potonié to the phloëm-like portion of the fibrovascular bundle in vas-

- cular cryptogams. Compare HADROME.
- LÉPTOPHLŌĒM**, a term applied by Vaizey to a portion of the central fascicle or strand in the seta of Polytrichaceæ (in mosses) which he considers to be rudimentary phloem.
- LÉPTOPHYLLOŪS**, having scale-like leaves.
- LÉPTŌSPŌRĀNGIŪM**, a sporangium derived from a single epidermal cell, as in the true ferns, in distinction from one derived from a group of epidermal cells (eusporangium), as in the Ophioglossaceæ and Marattiaceæ.
- LÉPTŌXYLEM**, so-called rudimentary xylem in the seta of Polytrichaceæ. (Vaizey.)
- LEU-**, or **LEUCO-**, a prefix from the Greek, meaning white.
- LEŪCĀNTHŌŪS**, white-flowered.
- LEŪÇITE**, see LEUCOPLAST.
- LEŪÇOPLĀST**, a colorless protoplasmic granule (plastid) such as those in which starch originates; starch-builder; leucoplastid; amidoplast; anoplast; leucite proper. See PLASTID.
- LĒVĪGĀTE**, see LĒVIGATE.
- LĒVĪS**, see LĒVIS.
- LĪĀNE**, a woody climbing or twining plant of considerable size; applied only to those which abound in some tropical forests.
- LĪBĒR**, the inner layer of bark, consisting chiefly of the phloem of the fibrovascular system and therefore containing the bast-tissue; bast.
- LĪBĒIFŌRM CELL**, a narrow thick-walled cell of woody tissue resembling bast; wood-fibre.
- LID**, see OPERCULUM.
- LID-CELLS**, terminal cells of the neck of some Sphægonia which for a time close the canal; stigmatic cells.
- LIFE-CYCLE**, the course of development from any given stage, as the spore or seed, back to the same stage again.
- LĪG'NEŌŪS**, woody, or pertaining to wood.
- LĪGNĪFĪCĀTION**, the process of becoming converted into wood; sclerosis.
- LĪG'NINE**, a secondary deposit, forming the greater part of the bulk of ordinary wood. It contains less oxygen than cellulose, and according to Payen has the formula  $C_{10}H_{12}O_{20}$ . It is also written Lignin, and is the same as Sclerogen.
- LĪG'NŪM**, see WOOD.
- LĪG'ŪLĀ** (pl. *Lig'ulæ*), see LIGULE.
- LĪG'ŪLĀTE**, (1) having a ligule; (2) strap-shaped, i.e., linear and about four to six times as long as broad.
- LĪG'ŪLĀTE FLŌRĒT**, one of the marginal flowers of a head in Compositæ, bearing a ligulate or strap-shaped corolla; ray-floret. Compare TUBULAR FLORET.
- LĪG'ŪLE**, (1) a strap-shaped corolla in Compositæ, such as those on the outer margin of the head in most sun-flowers; (2) a membranous appendage on the inner side of the leaf in many grasses and some other endogens at the top of the sheath.
- LĪGŪLĪFLŌROŪS**, said of a head of flowers in Compositæ which contains ligulate flowers only, as in Chicory.

**LIMB**, the expanded portion of a petal or sepal. Compare **BLADE** and **BORDER**.

**LIMBATE**, see **BORDERED**.

**LIMBUS**, border, blade, or limb. (Obs.)

**LIMITING CELL**, see **HETERO-CYST**.

**LINE**, one twelfth of an inch.

**LINÉAR**, very narrow, with the margins parallel or nearly so.

**LINÉATE**, marked with fine parallel lines, especially of color. Compare **STRIATE** and **ACICULATED**.

**LINÉOLATE**, diminutive of **Linéate**.

**LINGUÉFORM**, see **TONGUE-SHAPED**.

**LINGULIFORM**, see **TONGUE-SHAPED**.

**LINGULATE**, see **TONGUE-SHAPED**.

**LÍNINE**, a term proposed by Schwarz and adopted by Strasburger (1888) for the substance of the hyaloplasmic filaments of the nucleus in a state of repose.

**LINNÉAN SYSTEM**, the system of classification devised by Linnæus, founded upon the number and arrangement of the stamens and pistils; sexual system.

**LIP**, (1) one of the divisions (especially the lower) of a labiate calyx or corolla; (2) the labellum in orchids.

**LIPÓXENOÛS**, said of a parasite which leaves its host and completes its development independently at the expense of the reserve material appropriated from the host. (De Bary.) Compare **METÆCIOUS**.

**LIPPED**, see **LABIATE**. Applied in pomology to the cavity of

an apple when a broad projection of the flesh protrudes against the stem. Compare **FOLDED**.

**LIRÉL/LÁ** (pl. **Lirél/læ**), a linear sessile apothecium in lichens.

**LITHÓPHÍLOÛS**, see **SAXICOLOUS**.

**LITHÓCÁRP**, see **CARPOLITE**.

**LITHÓCYST**, a cell containing a cystolith.

**LITHÓSPÉRMOÛS**, having very hard seeds.

**LIT'TÓRAL**, growing upon shores, especially upon the sea-shore between tide-marks. Compare **MARINE**.

**LÍV'ID**, lead-color; bluish brown or gray.

**LÓBÁTE**, lobed; said of a leaf the margin of which is divided about to the middle into rounded parts with broad sinuses.

**LÓBE**, a rounded portion of a leaf or petal; any division of a leaf larger than a tooth which is not a leaflet.

**LÓBED**, see **LOBATE**.

**LÓB'ULÁTE**, having small lobes.

**LÓB'ÚLE**, a small lobe.

**LÓCÉL/LÁTE**, having small or secondary cavities (locelli).

**LÓCÉL'LÛS** (pl. **Lóçél'li**), diminutive of **Loculus**; a little cavity. Used by some in the sense of **Loculus** for a compartment in an ovary or anther.

**LÓC'ULÁMENT**, see **LOCULUS**.

**LÓC'ÚLAR**, having a cavity or cavities; loculose.

**LÓC'ÚLICÍ'DAL**, dehiscant throughout the middle of the back of each cell at a dorsal suture. Compare **SEPTICIDAL**.

**LÓC'ÚLÓSE**, locular; cellular; especially, having numerous cav-

- ities, as the pith of poke, *Phytolacca decandra*.
- LŌC'ŪLOŪS**, see **LOCULAR**.
- LŌC'ŪLŪS** (pl. *LŌc'ūlī*), the cell of an ovary, anther, or similar cavity.
- LŌCŪS'TĀ**, see **SPIKELET**.
- LŌDĪC'ŪLĀ** (pl. *LŌdīc'ūlā*), see **LODICULE**.
- LŌD'ICŪLE**, one of the small scales at the base of the grain between the stamens and palet of many grasses.
- LŌMENT**, a jointed or plurilocular legume formed by spurious transverse dissepiments, as in *Desmodium*. Some lomenta are articulated and separable at the septa or pseudo-septa between the seeds.
- LŌMĒNTĀ'CEŪS**, bearing or resembling a loment.
- LŌMĒNTŪM**, see **LOMENT**.
- LŌNGĪTŪ'DĪNAL SŪSTĒM**, an obsolete term for fibrovascular system.
- LŌ'RĀTE**, having the form of a thong or strap; ligulate; linear. Compare **FLABELLIFORM**.
- LŌ'BRĪCOŪS**, slippery.
- LŪ'ÇĪD**, clear. Often used in the sense of **NITID**.
- LŪM'BRĪCAL**, about the shape of an earth-worm. Compare **VERMICULAR**.
- LŪ'MĒN** (pl. *Lū'mīnā*), the cavity of a cell or filament, or any part or spot which seems to emit light.
- LŪ'NAR**, (1) pertaining to the moon; (2) in the form of a half-moon or crescent, as a *lunar* spot upon a leaf; semilunar; semilunate. Compare **LUNATE**.
- LŪ'NĀTE**, said of an organ having the form of a half-moon or crescent, or which is marked with one or more spots of that form, as a *lunate* leaf. Compare **LUNAR**.
- LŪ'NĀTĒD**, having lunar markings; lunate.
- LŪ'NĪFŌRM**, half-moon or crescent shaped; lunate.
- LŪ'NŪLĀTE**, diminutive of **Lunate**.
- LŪ'PŪLĪNE**, a yellow waxy powder resembling pollen, upon the scales of the hop, containing the active principle, which is bitter, aromatic, and tonic.
- LŪ'PŪL'NOŪS**, resembling a head or cone of hops.
- LŪ'RĪD**, dingy brown.
- LŪ'TĒSÇĒNT**, yellowish.
- LŪ'TĒŪS**, bright orange yellow. Compare **FLAVUS**.
- LŪCŌT'RŌPAL**, see **LYCOTROPOUS**.
- LŪCŌT'RŌPOŪS**, said of an otherwise orthotropous ovule which is curved like a horseshoe.
- LŪMPHĀT'IC**, clear, like water; not clouded: said, for example, of ordinary plant-hairs containing clear cell-fluid in distinction from those which are glandular, in which the cell-contents are usually granular and turbid.
- LŪ'RĀTE**, pinnatifid, with the lobes decreasing in size toward the base.
- LŪ'RĀTELŪ PIN'NĀTE**, pinnate, with the pinnæ decreasing in size toward the base of the leaf.
- LŪ'RE-SHAPED**, see **LYRATE**.
- LŪSĪGENĒT'IC**, see **LYSIGENIC**.
- LŪSĪGĒN'IC**, formed by the disorganization of cells; applied to the formation of certain intercellular spaces which originate by the breaking down of contiguous cells; lysigenetic;

lysigenous. Compare SCHIZOGENIC.

**LÝSIG'ENOÛS**, see LYSIGENIC.

**MÁC'RÁN'DROÛS**, having large or elongated male plants in algæ.

**MACRO-**, large or long.

**MÁC'RÔÇEPH'ALOÛS**, a term sometimes applied to embryos which have the cotyledons very large and consolidated, as in horse-chestnut. Compare MACROPODOUS.

**MÁC'RÔGÔNID'IÛM** (pl. Mác'rôgônid'íá), see MACROSPORE.

**MÁC'RÔPH'ÝLLOÛS**, having long or large leaves.

**MÁC'RÔP'ODOÛS**, a term of little importance applied to a leaf having a long petiole, or to an embryo, chiefly in monocotyledons, having a large radicle.

**MÁC'RÔSPÓRÁN'GIÛM**, a sporangium containing macrospores; megasporangium; oösporangium.

**MÁC'RÔSPÔRE**, a female or archegonium-bearing spore in some vascular cryptogams. The macrospores are larger than the male or microspores.

**MÁC'RÔSPÓ'RÔPHÝL**, the leaf bearing the macrosporangium in the heterosporous Pteridophyta. It is the homologue of the carpel in flowering plants.

**MÁC'RÔSTÝ'LOÛS**, applied to heterostylous flowers with long styles and short filaments. See remark under Microstylous.

**MÁC'ÛLÁTE**, spotted or blotched; maculose.

**MÁC'ÛLÁTION**, the pattern or arrangement of the spots upon a plant.

**MÁC'ÛLÔSE**, see MACULATE.

**MAIDEN** (Hort.), a term sometimes applied to a tree or other plant of one year's growth from

the bud or graft. Also applied to any plant which has not fruited, and in forestry to a seedling in distinction from a tree which has sprung from an old root or stub.

**MÁL'ACOID**, mucilaginous.

**MALE**, bearing stamens only; staminate; bearing only male organs of whatever kind, or pertaining to individuals which bear them.

**MALE FLOWER**, staminate flower.

**MÁL'PIGHÍÁ'ÇEOÛS HAIRS**, stellate hairs attached by their middle, as in the order Malpighiaceæ.

**MÁL'PIGHÍAN CÉLLS**, palisade-like cells in which one or more light lines are present, found in the seed-coats of Leguminosæ, Malvaceæ, etc.

**MÁM'MÍFÓRM**, breast-shaped.

**MÁM'MÍL'LÁ** (pl. Mám'míl'læ), a small nipple or teat-like prominence, as on some pollen-grains. More short and obtuse than Papilla. The term is sometimes applied to the apex of the nucleus of an ovule.

**MÁM'MÍLLÁTE**, nipple-shaped, or bearing mammillæ. Compare PAPILLATE.

**MÁM'MÍLLÁTĒD**, bearing mammillæ.

**MÁM'MÔSE**, breast-shaped, or bearing breast-shaped prominences.

**MÁN'ÍCÁTE**, having a coating of entangled hairs which may be removed entire. Compare FLOCCOSE and PANNOSE.

**MÁNÛ'BRIÛM** (pl. Mánū'bríá), a cylindrical cell which projects inward from the centre of each of the eight shields composing the wall of the globule in Characeæ. The manu-

- bria support the apparatus which contains the antherozoids.
- MAR'BLE**D, covered with faint irregular wide stripes, or traversed by vein-like markings like those which occur in certain kinds of marble; marmorate.
- MARÇÈS'ÇENT**, withering but not falling off, as the corolla of lobelia.
- MAR'GINAL VEIL**, in Hymenomyces (mushrooms, etc.), a membrane stretching from the margin of the pileus to the surface of the stipe in the young sporophore and covering the hymenium; velum partiale.
- MAR'GINATE**, having a margin differing in texture, form, or color from the remainder of the surface; margined; edged.
- MAR'GINED**, see MARGINATE.
- MARINE'**, growing in the sea or upon the immediate sea-shore. Compare LITTORAL and MARITIME.
- MAR'ITIME**, growing upon or near the sea-shore.
- MAR'MORATE**, see MARBLED.
- MASKED**, see PERSONATE.
- MĀS'SŪLĀ** (pl. Mās'sūlā), one of the lumps of mucilage derived from the disorganized tapetum of the microsporangium of Azolla and enclosing a number of spores. Also applied to an adherent group of pollen-grains derived from a single mother-cell, as the ultimate groups in a pollen-mass in orchids, each containing four grains.
- MĀST**, a popular name for the fruit of the oak, chestnut, beech, and some other forest trees.
- MĀS'TOID**, large teat-shaped. (Rare.)
- MĀ'TRĪX**, the place or body upon or within which anything grows.
- MĀTTŪL'LA**, the fibrous material at the base of the petioles of palms; reticulum.
- MĀTŪRÈS'ÇENT**, approaching maturity.
- MĀTŪT'NAL**, pertaining to the morning; expanding in the morning, as the flowers of morning-glory.
- MĒAL'Ÿ**, see FARINACEOUS.
- MĒ'DĪAL**, pertaining to the middle; median.
- MĒ'DĪAN**, see MEDIAL.
- MĒ'DĪAN LINE**, a line along the centre or axis of a bilateral organ, as along the midrib of a leaf.
- MĒ'DĪAN PLANE** of a flower or other lateral structure, the same as antero-posterior plane, i.e., a vertical plane which bisects an organ into right and left halves. The median plane of a leaf would pass through the midrib above and below. Compare LATERAL PLANE.
- MĒDŪL'LA**, pith; also central tissue of some other kinds, as of the thallus in lichens.
- MĒDŪLLĀRŸ**, pertaining to medulla or pith.
- MĒDŪLLĀRŸ RAYS**, vertical plates of cellular tissue in the fibrovascular system of exogens connecting the pith and the cortex. They form the glistening spots called "silver grain" which are seen on the surface of wood which is split radially. Only the rays formed the first season extend entirely to the pith. See XYLEM RAY and PHLOËM RAY.

- MĒD'ŪLLĀRĪ SHEATH**, the ring of primary xylem bundles which project into the pith. Compare CORTICAL SHEATH.
- MĒD'ŪLLĀRĪ SYSTĒM**, a term sometimes applied to the whole fundamental system, but usually, and more properly, employed to include only the pith and medullary rays, or fundamental tissue within the cortex.
- MĒD'ŪLLŌSE**, pith-like.
- MĒGĀLŌGŌNĪD'ĪŪM**, see MACROSPORE.
- MĒGARHĪ'ZŌŪS**, large-rooted.
- MĒGĀSPŌRĀN'GIŪM**, see MACROSPORANGIUM.
- MĒG'ĀSPŌRE**, see MACROSPORE.
- MĒI'ŌPHYLLĪ**, the suppression of one or more leaves or foliar organs in a whorl; miophylly. It differs from Abortion in the fact that the suppressed organs have never started to grow.
- MĒIŌSTĒM'ŌNOŪS**, having fewer stamens than petals. This is its usual meaning. Compare ISOSTEMONOUS.
- MĒI'ŌTĀXĪ**, the complete suppression of a whole set of organs, as all of the corolla or all of the stamens.
- MĒLĀNŌSPĒRM'ŌŪS**, having dark-colored seeds or spores.
- MĒLLĪFĒROŪS**, honey-bearing.
- MĒL'ŌN-SHĀPED**, oval, with depressed lines running from end to end, as in most muskmelons.
- MĒLTĪNG**, easily dissolving in the mouth, or under slight pressure. A descriptive character in certain varieties of pears.
- MĒM'BĒR**, a term employed to designate any part of a plant when treated with reference to its position and fundamental structure, but not with refer-
- ence to function. Thus, all leaves are one and the same *member*, though they may be developed in different ways to form different organs. Compare ORGAN.
- MĒMBRĀNĀ'ÇEOŪS**, see MEMBRANOUS.
- MĒM'BĒRĀNE**, a very thin expanded tissue, serving the purpose of separation or protection.
- MĒMBRĀ'NEŌŪS**, see MEMBRANOUS.
- MĒM'BĒRĀNOŪS**, thin, soft, and usually translucent, like a membrane. Compare SCARIOUS.
- MĒNĪS'COĪD**, shaped like a meniscus or concavo-convex lens.
- MĒN'TŪM**, a forward projection of the foot of the column in some orchids.
- MĒR'ĪCĀRP**, one of the carpids or ripened carpels of a schizocarp, especially one of the halves of the cremocarp in Umbelliferæ; diachænum; hemicarp.
- MĒR'ĪDISK**, a name proposed by Clos for any process upon the receptacle, aside from the floral organs, whether glandular or not. See LEPAL.
- MĒRĪSMĀT'IC**, dividing into parts by the formation of septa.
- MĒR'ĪSPŌRE**, one of the cells of a compound spore.
- MĒR'ĪSTĒM**, tissue in an early condition or nascent state while the cells are still undergoing cell-division, as in cambium; formative tissue; generating tissue.
- MĒR'ĪSTĒM, PRIMARY**, see PRIMARY MERISTEM.
- MĒR'ĪSTĒM, SECONDARY**, see SECONDARY MERISTEM.



**MÉRISTĚMÁTĪC**, consisting of meristem.

**MĚR'ĪTHĀLL**, see INTERNODE.

**MĚRĪTHĀL'LŪS** (obs.), see INTERNODE.

**MĚRŌBLĀS'TĪC**, applied to the formation of the embryo from a part only of the oosphere, as in some Gymnosperms.

**MĚS'ŌBLĀST** (obs.), see NUCLEUS.

**MĚS'ŌCĀRP**, the middle layer of a pericarp when distinguishable into three layers. This layer is sometimes developed as a sarcocarp. Applied mainly to stone-fruits.

**MĚS'ŌCHĪL**, the central part of the labellum in such orchids as have that organ separated into three distinct portions.

**MĚS'ŌPHLĚ'ŪM**, the middle or green layer of the bark, between the liber and the outer (usually dry) epiphloeum or corky layer; cellular-envelope.

**MĚS'ŌPHŪLL**, all the fundamental tissue of a leaf within the epidermis.

**MĚS'ŌPHŪL'LŪM**, see MESOPHYLL.

**MĚS'ŌPH'ŪTŪM** (obs.), see COLLAR. Also applied by Lindley to the line of demarcation between internode and petiole.

**MĚS'ŌSPĚRM**, see SECUNDINE.

**MĚS'ŌSPŌRE**, the middle coat of a spore when there are three.

**MĚS'ŌSTŪ'LOŪS**, having styles of intermediate length in heterostyled plants.

**MĚS'ŌTHE'ČĪŪM**, the central of the three layers of cells in the coat of an immature anther; fibrous layer. The cells of this layer have annular thickenings. In the mature anther the proper endothecium has

often disappeared, leaving the mesothecium as the inner layer, which is then usually called endothecium.

**MĚS'TŌME**, a term applied by Schwendener to fibrovascular tissue on functional grounds, in distinction from cortical tissue, which (serving for support chiefly) he termed stereome. Strictly, however, the term mestome refers only to the essential or conductive portion of a bundle, the bundle-sheath being strengthening tissue and therefore stereome.

**MĚTĀB'ŌLIŪM**, the chemical changes which take place in a plant in the process of growth; metastasis; transmutation. It includes both Anabolism and Catabolism.

**MĚTĀGĚN'ĚSĪS**, the production of sexual individuals by non-sexual means, either directly or through intervening sexless generations; alternation of generations; polymorphism.

**MĚTĀKĪNĚ'SĪS**, that part of the metaphases in karyokinesis which includes only the separation of the threads.

**MĚT'ĀMĚR**, applied by Sachs to a Phytton (which see), or one of any number of similar parts connected in a series.

**MĚTĀMŌR'PHŌSĪS**, the varied development of members of the same morphological value, resulting from their adaptation to different functions. Compare TRANSFORMATION.

**MĚT'ĀPHĀŪĚĚ**, a term applied by Strasburger to those portions of karyokinesis which include the longitudinal splitting of the threads, the formation of the mother-star, and the subsequent separation of

the segments to form the daughter-stars.

**MĒT'APLĀSM**, a name given by Hanstein to that part of the protoplasm which holds the formative material. Used by some synonymously with Deutoplasm.

**MĒTĀSPĒR'MOŪS**, see ANGIOSPERMOUS.

**MĒTĀS'TĀSĪS**, see METABOLISM.

**MĒTĒŌR'ĪC**, applied to flowers whose opening or closing is influenced by the weather.

**MĒTĒ'CIŌŪS**, see HETERŌCIOUS.

**MĒTĒ'ĀĪSM**, see HETERŌCISM.

**MĒTŌX'ĒNOŪS**, see HETERŌCIOUS.

**MĪĀSMĀT'ĪC**, pertaining to infectious organisms floating in the atmosphere. See INFECTIO.

**MĪĀĒL'LĀ** (pl. MīĀl'lā), a term proposed by Nägeli for certain structural particles which serve for the building up of all plant and animal tissues. They are considered to be aggregations of molecules which, like crystals, are able to increase or diminish in size without chemical change.

**MĪCRĀN'DRĒ**, see DWARF-MALE.

**MĪCRŌBE**, a micro-organism, animal or vegetable. In use restricted chiefly to plants, especially the Schizomycetes, or bacteria and their allies. See MICROPHYTE.

**MĪCRŌĀYST**, a resting state of certain swarm-cells in Myxomycetes.

**MĪCRŌGŌNĪD'ĪŪM** (pl. Mīcrōgōnid'ia), applied to gonidia of smaller size than others produced by the same species;—they are usually male gonidia, as the so-called androspores of

Cedogonium. In pteridophytes and their allies they are usually called microspores. See MICROSPORE.

**MĪCRŌG'RĀPHŪ**, the description or study of microscopic objects; micrology.

**MĪCRŌPHŪL'LOŪS**, having small leaves.

**MĪCRŌPHŪTE**, any plant, such as the bacteria and smaller species of fungi, which can be clearly seen only by means of a microscope.

**MĪCRŌPŪLE**, the nearly closed foramen as it exists in the ripened seed.

**MĪCRŌSŌMĀ** (pl. Mīcrōsō'matā), a name proposed by Strasburger for a class of granules in the protoplasm which have a high degree of refringency and are deeply stained by hæmatoxylin.

**MĪCRŌSPŌRĀN'ĀĪŪM** (pl. Mīcrōspōrān'gīā), a sporangium containing microspores.

**MĪCRŌSPŌRE**, a small male spore, as in Rhizocarpæ, Selaginellæ, and Isoetæ. See MICROGONIDIUM. Compare MACROSPORE.

**MĪCRŌSTŌME**, a small mouth or orifice.

**MĪCRŌSTŪ'LOŪS**, applied to that form in heterostyled plants in which the flowers have short styles and long filaments. The expressions "long-styled," "medium- or mid-styled," and "short-styled" are preferable to Macrostylous, Mesostylous, and Microstylous, and are more frequently used.

**MĪCRŌZŌGŌNĪD'ĪŪM**, a motile microgonidium, as in Ulothrix, differing from a macrozoogonidium in size and in having the power of conjugation.

**MICROZYME**, a microscopic organism capable of producing fermentation.

**MIDDLE LAMELLA**, the portion of a lignified cell-wall which occupies the place of the primary membrane. It usually appears as a fine dividing line between adjoining cells. Compare MIDDLE LAMINA.

**MIDDLE LAMINA**, the portion of a lignified cell-wall between the middle lamella and the inner lamina.

**MIDRIB**, the large central vein of a leaf, which usually exists as a ridge continuous with the petiole.

**MILK**, see LATEX.

**MILK-SAC**, a form of laticiferous vessel existing in some species of maple.

**MILK-SAP**, see LATEX.

**MILK-VESSEL**, see LATICIFEROUS VESSEL.

**MIMETIC**, pertaining to mimicry.

**MIMICRY**, special resemblance to another object, serving usually for protection, as when plants bear a marked resemblance in color to the soil in dry regions, thus being less liable to be seen and eaten by animals.

**MINIATE**, vermilion-colored.

**MIOPHYLLY**, see MEIOPHYLLY.

**MEIOTEMNOUS**, see MEIOTEMNOUS.

**MITOSIC**, pertaining to, characterized by, or exhibiting mitosis; mitotic.

**MITOSIS**, (1) the splitting of the chromatin of the nucleus (karyomitosis) or the subdivision of any minute granular body found in protoplasm; (2) a figure occurring during mitosis as a result of that process.

**MITOTIC**, see MITOSIC.

**MITRE-SHAPED**, see MITRIFORM.

**MITRIFORM**, conical and slightly narrowed toward the mouth like a pope's mitre. Also the same as Cucullate, but not slit upon one side; mitre-shaped.

**MIXED INFLORESCENCE**, one in which each partial inflorescence develops in a reverse order from that of the general inflorescence, as in Composite where the general inflorescence is usually centrifugal, the terminal "flower" opening first, while each head is centripetal, the marginal florets being first developed.

**MIXED VESSELS**, those having thickenings in their walls of more than one kind, as both spiral and annular thickenings.

**MOBILE**, movable.

**MOLLIS**, soft.

**MONADELPHOUS**, having the filaments free, and united in a ring around the pistil, as in most Malvaceæ.

**MONANDROUS**, having but a single stamen.

**MONANTHOUS**, having but one flower upon a plant or peduncle.

**MONASTER**, see MOTHER-STAR.

**MONECIOUS**, see MONÆCIOUS.

**MONGREL**, properly, a cross. Usually applied in the United States to inferior mixed breeds resulting from unknown or heterogeneous crossing.

**MONILIFORM**, necklace-shaped; cylindrical, and contracted at regular intervals so as to resemble a string of beads. Compare NODOSE.

**MONO-**, a Greek prefix, meaning one or single.

**MŌN'ŌCĀRP**, an annual or other plant that fruits but once.

**MŌNŌCĀR'PĒLLĀRŸ**, of one carpel; monogynous.

**MŌNŌCĀR'PIĀN**, see **MONOCARPIC**.

**MŌNŌCĀR'PIC**, bearing fruit but once. Compare **POLYCARPIC**.

**MŌNŌCĀR'POŪS**, said of a flower in which the gynœcium forms but one ovary, whether simple or compound. Compare **POLYCARPOUS**.

**MŌNŌCĒL'LŪLAR**, see **UNICELLULAR**.

**MŌNŌCĒPH'ALOŪS**, in single heads, or having one head. Applied to an ovary with but one style, or to flowers disposed in single umbels or other clusters.

**MŌNŌCHĀ'SIAL**, in single dichasia. See **DICHASIMUM** and **COMPOUND DICHASIMUM**.

**MŌNŌCHĀ'SIŪM**, a uniparous cyme. Compare **DICHASIMUM**.

**MŌNŌCHLĀMŸD'EOŪS**, having but one floral envelope or perianth-whorl. As this is usually clearly a calyx, and as in doubtful cases it is considered so, the term is often equivalent to **Apetalous**. Compare **ACHLAMYDEOUS**.

**MŌNŌCHRŌ'MIC**, see **UNICOLOR**.

**MŌNŌC'LINOŪS**, see **HERMAPHRODITE**. Compare **DICLINOUS**.

**MŌNŌCŌTŸLĒD'ONOŪS**, having but one cotyledon or seed-leaf. A term applied to endogens.

**MŌNŌCŸC'LIC**, of a single whorl.

**MŌNŌC'IOŪS**, having stamens and pistils in separate flowers on the same plant.

**MŌNŌC'IOŪSLŸ PŌLŸG'AMOŪS**, having perfect and separated flowers on the same plant.

Compare **DICECIOUSLY POLYGAMOUS**.

**MŌNŌG'AMOŪS**, see **HOMOGAMOUS**.

**MŌNŌG'ŸNOŪS**, having but one pistil or style. There may be several carpels.

**MŌNŌI'COŪS** (obs.), see **MONECIOUS**.

**MŌNŌLŌC'ŪLAR**, see **UNILOCULAR**.

**MŌNŌM'ĒROŪS**, of one part, as a flower having but one organ of each kind, one pistil, one stamen, etc.; applied also to tubers having but one internode.

**MŌNŌPĒT'ALOŪS**, see **GAMOPETALOUS**.

**MŌNŌPHŸL'LOŪS**, see **GAMOPHYLLOUS**.

**MŌNŌPŌDE**, see **MONOPODIUM**.

**MŌNŌPŌD'IĀL**, having a single main axis, as ordinary plants. Compare **SYMPODIAL** and **DICHOTOMOUS**.

**MŌNŌPŌ'DIŪM**, an axis of growth which continues to elongate at the apex, while lateral structures of like kind are produced beneath it in acropetal succession. Compare **SYMPODIUM** and **DICHOTOMY**.

**MŌNŌP'TĒROŪS**, one-winged.

**MŌNŌSĒP'ALOŪS**, see **GAMOSEPETALOUS**.

**MŌNŌSĪ'PHĒNOŪS**, said of a frond in *Florideæ* when it consists of but a single row of cells.

**MŌNŌSPĒR'MOŪS**, one-seeded. Compare **POLYSPERMOUS**.

**MŌNŌS'TICHOŪS**, in one vertical rank.

**MŌNŌSTŸ'LOŪS**, having but one style.

**MŌNŌSŸMMĒT'RICAL**, capable of division in but one direction into similar halves, as the

- flower of the pea; zygomorphous. Compare SYMMETRICAL and POLYSYMMETRICAL.
- MÓNŌTHÁL'AMOŪS**, unilocular; applied to galls and rarely (Tuckerman) to the apothecia of lichens.
- MÓNŌTHÁL'MĪC**, derived from a single flower, as ordinary fruits. Compare POLYTHALMIC.
- MÓNŌTÝP'ĪC**, said of a genus which contains but one species, or of the species itself in such a case.
- MÓN'STĒR**, a plant or animal having any marked abnormal development in form; monstrosity. See SPORT and TERATOLOGY.
- MŌNSTRŌS'ĪTŪ**, see MONSTER.
- MŌN'STROŪS**, developed in a remarkably abnormal manner. The term has no reference to size.
- MŌP'HĒAD'ĒD**, said of a tree without a leader and with an unusually large number of small branches.
- MŌRPHŌGĒN'ĒSĪS**, the production of morphological characters.
- MŌRPHŌL'ŌGŪ**, the science of the homologies and metamorphoses of members. It treats, for example, of the different forms which leaves assume in different plants, and in the same plant to serve different purposes.
- MŌS'CHĀTE**, having an odor like that of musk.
- MOTHER-CELL**, one from which another is derived.
- MOTHER-STĀR**, a stage of karyokinesis in which the nuclear threads lie in the equator of the nucleus, usually in the form of loops, with their free ends pointing away from the centre; monaster; nuclear disk; nuclear plate; equatorial plate.
- MŌT'TLED**, covered with partially confluent dots, or with blotches of varying intensity. Applied mainly to fruits.
- MOUN'TAINŌŪS**, see ALPES-TRINE.
- MOVEMENTS OF VĀRIĀ'TĪŌN** (Peffer), see ALLASSOTONIC MOVEMENTS.
- MŪÇĒD'INOŪS**, mould-like.
- MŪ'CĪLĀGE**, dissolved vegetable jelly; any slimy vegetable product.
- MŪCĪLĀG'INOŪS**, slimy, or yielding mucilage; mucous.
- MŪ'COŪS**, see MUCILAGINOUS.
- MŪ'CRŌ**, a short sharp point.
- MŪ'CRŌNĀTE**, terminating abruptly in a short stiff point.
- MŪCRŌN'ŪLĀTE**, diminutive of Mucronate; ending abruptly in a minute stiff point.
- MŪLE**, see HYBRID. The term Mule is by some restricted to genus-hybrids and by others to sterile hybrids of any origin. The term is now useless in botany.
- MŪLTĀN'GŪLAR**, having more than four angles; polygonal.
- MŪLTĪ**, a Latin prefix denoting many.
- MŪLTĪCĪP'ĪTĀL**, many-headed; applied to a root or root-stock from which several stems arise.
- MŪLTĪCŌS'TĀTE**, having many ribs proceeding from the base of the leaf.
- MŪLTĪCŪS'PĪDĀTE**, having many cusps or points.
- MŪLTĪDĒN'TĀTE**, having many teeth.
- MŪLTĪFĀ'RIŌŪS**, (1) diversified, or composed of many diverse parts; (2) arranged in many ranks or rows.

**MÚLTIFĚROUS**, producing fruit several times in a season.

**MÚL'TIFĚD**, cut about half way to the midrib into many segments; many-cleft.

**MÚLTIFĚROUS**, many-flowered.

**MÚLTIFĚLIĀTE**, having numerous leaflets.

**MÚLTĚJŪGĀTE**, having many pairs of leaflets.

**MÚLTĚLĀTĚRAL**, many-sided.

**MÚLTĚLŪCŪLAR**, many-celled: applied mainly to ovaries or pericarps.

**MÚLTĚLŪCŪLAR SPŪRE**, see COMPOUND SPORE.

**MÚLTĚNŪCLEĀTE**, having more than one nucleus in a cell.

**MÚLTĚPĀRTĚTE**, divided into many parts.

**MÚLTĚPLE**, compound.

**MÚLTĚPLE CŪRŪLLĀ**, one having more than one whorl of petals, as in "double" flowers.

**MÚLTĚPLE FRŪIT**, see COLLECTIVE FRUIT.

**MÚLTĚPLE - PRĚMĀRY ROOT**, one having several main divisions from the crown, as the fascicled root of dahlia.

**MÚLTĚPLICĀTE FĚOWER**, see DOUBLE FĚOWER.

**MÚLTĚRĀDIĀTE**, having many rays.

**MÚLTĚRĀMŪSE'**, having many branches.

**MÚLTĚSĚPTĀTE**, having numerous septa.

**MÚLTĚSĚRIĀL**, in several horizontal rows. Compare MULTĚSTĚCHOUS.

**MÚLTĚSTĚCHOUS**, in several or many vertical rows.

**MŪBAL**, growing upon walls.

**MŪBĚCĀTE**, covered with short, sharp points. Compare SCABROUS.

**MŪBĚCŪLĀTE**, slightly muricate.

**MŪBĚFŪRM**, arranged like courses of bricks or stones in a wall, as the cells in medullary rays.

**MŪSCĀRĚFŪRM**, having long hairs toward the end like an ancient fly-flap, as the styles of some Compositæ. Compare ASPERGILLIFORM.

**MŪSĚĚFORM**, moss-like.

**MŪSĚŪLŪGĚ**, see BRYOLOGY.

**MŪTĚCOUS**, pointless; blunt. Mainly in distinction from Awned or Mucronate.

**MŪTŪĀĚISM**, see SYMBIOSIS.

**MŪTŪĀĚ PARĀSĚTĚSM**, see SYMBIOSIS.

**MŪĚLIĀL STRĀND**, see FIBROUS MYCELIUM.

**MŪĚLIŪM**, the vegetative portion of a fungus, consisting of one or more hyphæ.

**MŪĚTŪGENĚTĚC**, produced by fungi.

**MŪĚTŪGENĚTĚC MĚTĀMŪRPHŪSĚS**, deformation due to a parasitic fungus.

**MŪĚTŪLŪGĚ**, see MYCOLOGY.

**MŪĚLŪGĚ**, the botany of fungi.

**MŪĚPRŪTĚIN**, a term sometimes applied to the peculiar protoplasm of which the putrefactive bacteria are composed.

**MŪĚRRĚĚĚĀ**, a term applied by Frank to a symbiotic relation supposed to exist between the roots of many plants and the mycelium of certain fungi in soils containing a large amount of humus.

**MŪĚSĚSĚS**, the presence of parasitic fungi in a plant or animal,

together with the morbid effects of their presence.

**MŪCŌPRŌTĒIN**, a term sometimes applied to the peculiar protoplasm of which the putrefactive bacteria are composed.

**MŪCRŌPŪLE**, see MICROPYLE.

**MŪXĀMCE'BĒ**, zoöspores in Myxomycetes having an amoeboid or creeping motion.

**MŪXŌSPŌRE**, a spore produced in the midst of a gelatinous mass without distinct ascus or basidium.

**NĀKĒD**, destitute of the usual covering, as a cell without a wall, a stem without leaves, a flower without floral envelopes.

**NĀKĒD-SEDED**, see GYMNASPERMOUS.

**NĀNĀNDROŪS**, having short or dwarf male plants. Applied to certain algæ.

**NĀNĪSM**, a dwarf condition.

**NĀNŪS**, dwarf. Compare HUMILIS.

**NĀPĪFORM**, turnip-shaped; i. e., depressed-globose and tapering below, like most varieties of turnip.

**NĀSĀCENT**, in the earliest rudimentary condition.

**NĀSĀCENT TĪSŪE**, see MERISTEM.

**NĀTANT**, floating unattached in or upon water. Compare FLUTANT.

**NĀTŪRAL GRĀFTĪNG**, see INARCHING.

**NĀTŪRALIZED**, introduced from another country, but fully established, growing and reproducing itself spontaneously. Compare ADVENTITIOUS.

**NĀTŪRAL ŌRDĒR**, see ORDER.

**NĀTŪRAL SŪSTĒM**, the system of classification introduced by

A. L. de Jussieu and now in general use, which takes into account all parts of the plant, and seeks to place each species or other group nearest to those which in all respects it most resembles. Compare ARTIFICIAL SYSTEM.

**NAUTIFORM**, see NAVICULAR.

**NAVĪĪLAR**, boat-shaped, or like the hull of a ship, as the glumes of many grasses; naviculoid; nautiform; cymbæform; cymbiform; scaphoid.

**NAVĪĪLOID**, see NAVICULAR.

**NĒBŪLOSE**, clouded.

**NĒCK**, the line of junction between root and stem (collar); the upper tapering end of a bulb; the narrow part of a pear, toward the base; the upper end of the sheathing petiole in grasses; the upper part of the tube of a gamopetalous corolla (throat); the prolonged apex of a pyrenocarp; the outer portion of an archegonium containing the canal, etc.

**NĒCKLĀCE-SHĀPED**, see MONILIFORM.

**NĒCRŌGĒNOŪS**, hastening or producing death. A term formerly applied to certain parasitic fungi.

**NĒCTAR**, a sweet secretion by some part of a flower.

**NĒCTAR-GŪIDE**, a term applied to various color-marks on flowers which seem designed to indicate to insects the locality of the nectar; nectar-spot; nectar-mark; honey-guide; honey-spot; pathfinder.

**NĒCTARĪFĒROŪS**, secreting nectar, or having a nectary.

**NĒCTĀRIŪM**, see NECTARY.

**NĒCTAR-MĀRK**, see NECTAR-GUIDE.

- NĒCTARŌTHĒ'CĀ**, a spur or other receptacle containing a nectary. (Obs.)
- NĒCTAR-SPŌT**, see NECTAR-GUIDE.
- NĒCTĀRY**, the part of a flower which secretes nectar. Applied especially to spur-shaped appendages to the petals containing nectar, as in the columbine, and sometimes used for similar organs which contain no nectar.
- NĒDLE-SHĀPED**, see ACEROSE and ACICULAR.
- NĒG'ĀTĪVE ĠĒŌTRŌPĪSM**, see APOGEOTROPISM.
- NĒG'ĀTĪVE HĒLIŌTRŌPĪSM**, see APHELIOTROPISM.
- NĒG'ĀTĪVELY HĒLIŌTRŌP'ĪC**, see APHELIOTROPIC.
- NĒG'ĀTĪVELY RHĒŌTRŌP'ĪC**, said of an organ (usually a root) when it tends to grow in a direction opposite to that of a current of water in which it is placed, as the roots of maize. (Jönsson.)
- NĒMĀTHĒ'ĊĪŪM** (pl. Nēmāthē'ciā), a wart-like group or mass of tetraspores in Floridææ.
- NĒM'ĀTOID**, thread-like; filamentous.
- NĒMĒŌŪS**, composed of threads or filaments; filamentose. (Obs.)
- NĒM'ŌRŌSE**, growing in groves.
- NEPH'ROID**, see RENIFORM.
- NĒRVĀTE**, see NERVED.
- NĒRVĀ'TĪON**, the manner in which the nerves of a leaf are arranged; venation.
- NĒRVE**, a term formerly in general use for the veins of monocotyledons, now mainly used for the veins (when moderately developed) on the floral envelope of grasses. Compare VEIN and RIB.
- NĒRVED**, having nerves instead of veins; nervate.
- NĒRVŌSE'**, abounding in nerves.
- NEST LING**, see NIDULANT.
- NĒT'TĒD**, see RETICULATED.
- NEŪRĀ'TĪON**, see NERVATION.
- NEŪ'TĒR**, having neither stamens nor pistils; neutral. Said of a plant or flower.
- NEŪ'TRAL**, see NEUTER.
- NEW SPĒ'ĊĪĒS**. A species is considered new when its name and description are published for the first time. The botanical name is then followed by the words "new species," or their abbreviation ("n. s." or "n. sp." in English, "sp. nov." in Latin), without the name of the author, the writer of the description being understood to be the author of the name. When the name is republished in any manner the species is no longer considered new, and the name of its author is then appended.
- NĪD'ŪLĀNT**, embedded in pulp or other loose material, or partly enclosed in a receptacle; nestling.
- NĪDŪS**, a suitable place for a spore or seed to germinate.
- NĪĠĒR**, black and either glistening or slightly tinged with gray. Compare ATER.
- NĪGRĒS'ĊĒNT**, becoming black or blackish; nigricant.
- NĪĠ'RĪCĀNT**, see NIGRESCENT.
- NĪT'ĪD**, smooth and shining; bright; lustrous. Compare LUCID and LĒVIGĀTE.
- NĪT'ĪDŪS**, see NITID.
- NĪV'ĒŌŪS**, snow-white; pure white. A clearer and purer white than Candidus.



**NŌCTŪ'NAL**, lasting through a night, or occurring at night.

**NŌD'DING**, see CERNŌUS.

**NŌDE**, the place on a stem where one, two, or more leaves are attached; any knot or swelling; a point of intersection, as of threads in reticulated protoplasm.

**NŌDIF'ĒROŪS**, bearing nodes.

**NŌDŌSE**, knotted; with swollen joints; swollen at intervals. Compare MONILIFORM.

**NŌD'ŪLE**, a small knot or rounded body.

**NŌD'ŪLOSE**, diminutive of Nodose.

**NŌR'MAL**, according to rule; usual; of the ordinary type or structure.

**NŌSŌLŌGŪ, VEGETABLE**, see VEGETABLE NOSOLOGY.

**NŌTĀTE**, marked by colored spots or lines.

**NŌTŌRHĪ'ZAL**, see INCUMBENT.

**NŌTŌTRIBE**, said of an irregular flower when arranged so that the pollen from the stamens strikes the back of a visiting insect. Compare STERNOTRIBE and PLEUOTRIBE.

**NŪCĀMĒNĀ'CEŌS**, nut-like, or pertaining to nuts.

**NŪCĀMĒN'TŪM** (obs.), see AMENT.

**NŪCĒL'LŪS**, the nucleus of an ovule.

**NŪCĪF'ĒROŪS**, nut-bearing.

**NŪCĪFŌRM**, nut-shaped; nucamentaceous.

**NŪ'CLEĀR**, pertaining to a nucleus.

**NŪ'CLEĀR BĀR'RĒL**, a stage in karyokinesis, immediately preceding the nuclear spindle.

**NŪ'CLEĀR DĪSK**, see MOTHER-STAR.

**NŪ'CLEĀR FĪBRĪLS**, see SPINDLE-FIBRES.

**NŪ'CLEĀR FĪLĀMENT**, a general term for the chromatin of a nucleus, which in karyokinesis appears as segments of a filament, and in the resting state as a filamentous network; chromatic filament. See CHROMOSOME.

**NŪ'CLEĀR PLĀTE**, see MOTHER-STAR.

**NŪ'CLEĀR SPĪN'DLE**, a spindle-shaped achromatic figure in the nucleus during cell-division, consisting of slender filaments which cross the equator or extend toward it from the poles. It begins to appear in the skein stage, and is completed in the mother-star stage.

**NŪ'CLEĀR STĀR**, see ASTER.

**NŪ'CLEĀR THRĒADS**, see SPINDLE-FIBRES.

**NŪ'CLEĀTĒD**, having a nucleus.

**NŪ'CLEĪN**, usually employed in the sense of chromatin. By some authors there is believed to be a distinct chemical substance, a form of protoplasm, which is termed nuclein.

**NŪ'CLEŌLĀTĒD**, having a nucleolus.

**NŪ'CLEŌLE**, see NUCLEOLUS.

**NŪ'CLĒ'ŌLŪS** (pl. Nūclē'ōlī), any distinct body of considerable size within a nucleus—not a definite and constant organic structure. There may be more than one.

**NŪ'CLĒŌPLĀSM**, the more fluid protoplasm of the nucleus between the nuclear threads; karyoplasm.

**NŪ'CLĒŪS**, (1) an organized structure within the living cell by means of which cell-division takes place. It is usually spherical in form, richer in

- protoplasm, and of higher refractive power than the remaining cell-contents; (2) the part of the ovule containing the embryo-sac (nucellus); (3) any organic centre, as the hilum of a starch-grain.
- NŪCLEŪS OF THE EMBRYO-SAC**, see **SECONDARY NUCLEUS**.
- NŪCŪLĀNIŪM**, a term sometimes applied to fruits like the medlar which contain several nut-like seeds or carpels.
- NŪCŪLE**, (1) the female organ in Chara; (2) any small nut-like seed or pericarp.
- NŪDE**, see **NAKED**.
- NŪDĪCAŪLOŪS**, having no leaves on the stem.
- NŪMĒROŪS**, too many to be readily counted; indefinite.
- NŪRSE** (Hort.), a shrub or tree which serves for the temporary protection of a younger tree or plant.
- NŪT**, the fruit of certain trees and shrubs, consisting of a hard shell enclosing the seed; —also applied to other small nut-like fruits, as those of *Carex*, *Rumex*, and *Lithospermum*. These latter are more properly called nutlets. See **GLANS**.
- NŪTANT**, see **CERNOUS**.
- NŪTĀTION**, the motion of a flower, leaf, or growing stem in following the apparent movement of the sun from east to west during the day; simple nutation. Compare **CIRCUMNUTATION**.
- NŪTĻĒT**, a small nut, or nut-like seed or fruit, as many achenia.
- NŪTRĪTION** includes the absorption, elaboration, distribution, and final assimilation of plant-food resulting in growth.
- NŪZ**, see **NUT**.
- NŪCTŌTRŌPĪC**, applied to the movements of organs which occur at night, or upon the approach of night, producing what is called the "sleep" of plants.
- NŪCTŌTRŌPISM**, the so-called "sleep" of plants.
- OB-**, inversely.
- ŌBCLĀVĀTE**, clavate in shape, but attached by the large end.
- ŌBCŌMPRESSĒD**, flattened in the reverse of the usual direction, as when a legume is flattened so that the dorsal and ventral sutures approach each other. Compare **DEPRESSED**.
- ŌBCŌNIC**, conical, but attached at the apex instead of the base; inversely conical. Also applied improperly in pomology to a fruit which has the form of a very short or flattened cone.
- ŌBCŌNICĀL**, see **OBCONIC**.
- ŌBCŌRDĀTE**, inversely heart-shaped, i.e., with the attachment at the small end.
- ŌBDĪPLŌSTĒMŌNOŪS**, diplostemonous, with the stamens of the outer whorl opposite to the petals.
- ŌBĪMBRĪCĀTE**, (1) having overlapping scales directed downward or backward; (2) having the outer scales in an involucre progressively longer than the interior ones.
- ŌBLĀNCEŌLĀTE**, lanceolate in form, but tapering toward the base instead of toward the apex.
- ŌBLĀTE**, flattened or depressed at the ends or poles. Compare **PROLĀTE**.

- ÖB'LIGÄTE**, necessary; essential. Compare **FACULTATIVE**.
- ÖB'LIGÄTE-PÄR'ÄSITE**, an organism to which a parasitic life is indispensable for the attainment of its development. Compare **FACULTATIVE PARASITE**.
- ÖBLIQUÉ'**, (1) occupying a position between horizontal and erect; (2) having one side extending farther forward than the other; (3) having one side more developed than the other, as many leaves and some fruits; unsymmetrical. In pomology, *Oblique* is used in the second sense only, the third being called *Angular*.
- ÖBLITÄRÄ'TION**, see **SUPPRESSION**.
- ÖB'LÖNG**, longer than wide, with nearly parallel sides. Compare **OVAL**.
- ÖBÖ'VAL**, sometimes used improperly for *Obovate*.
- ÖBÖ'VÄTE**, ovate with the attachment at the narrow end.
- ÖBÖ'VÖID**, ovoid, and attached by the small end. Sometimes used incorrectly for somewhat *obovate*.
- ÖB'SÖLÄTE**, suppressed, or very rudimentary; scarcely apparent. See **ABORTIVE**.
- ÖBTÖSE'**, having a rounded end or apex; blunt. Compare **ACUTE**.
- ÖBVÄLLÄTE**, appearing as though surrounded by a wall.
- ÖBVÄRSE'**, inverse; reverse;—as a leaf which is narrowest at the base.
- ÖB'VÖLÜTE**, a modification of *Convolute* in which the entire halves of adjoining organs successively overlap or enfold each other. *Half-equitant* is one form of this condition.
- ÖÇÄL'LÄTE**, see **OCELLATED**.
- ÖÇÄL'LÄTÄD**, having a circular patch of color with a spot of another color within it like an eye; *ocellate*; *oculate*.
- ÖÇÄL'LÜS**, a circular spot, resembling an eye.
- ÖCHRÄ'ÇEOÜS**, brownish yellow; yellowish.
- Ö'CHRÄÄ** (pl. *Ö'chräë*), see **OCREA**.
- Ö'CHRÄÄTE**, see **OCREATE**.
- ÖCHRÖLEÜ'COÜS**, yellowish white; whiter than *Ochraceous*.
- Ö'CRÄÄ** (pl. *Ö'cräë*), a sheath formed by a stipule or pair of stipules united around the stem, as in *sycamore*.
- Ö'CHRÄÄTE**, having *ocreae*.
- ÖCTÄG'YNOÜS**, see **OCTOGYNOUS**.
- ÖCTÄM'ËROÜS**, having the parts in eights, as a flower with eight petals, eight stamens, etc.
- ÖCTÄN'DROÜS**, having eight stamens.
- ÖCTO-** (or **OCTA-**), (from the Greek,) eight.
- ÖCTÖG'YNOÜS**, having eight pistils or styles; *octagynous*.
- ÖCTÖLÖC'ÜLAR**, having eight cells or compartments in a fruit or pericarp.
- ÖCTÖPÄT'ALOÜS**, having eight petals.
- ÖCTÖRÄ'DIÄTE**, having eight rays, as some *ligulate* flowers.
- ÖCTÖSPÄR'MOÜS**, eight-seeded.
- ÖC'TÖSPÖRE**, an eight-fold tetraspore. Formerly applied to the oögonium of *Fucus vesiculosus*, which contains eight oöspores.
- ÖC'TÖSPÖROÜS**, containing eight spores, as most *asci*.
- ÖC'ÜLÄTE**, see **OCELLATED**.
- ÖDD'LÝ PIN'NÄTE**, see **IMPARI-PINNATE**.

- OFFICIAL**, used in medicine or the arts.
- OFFSET**, a short lateral branch or stolon proceeding from the base of the plant, which serves or may serve for propagation. It usually takes root of itself. Lateral bulbs are also called offsets.
- OFFSHOOT**, an offset, or lateral branch.
- OIL-TUBE**, see **VITTA**.
- OLEAGINOUS**, oily.
- OLERACEOUS**, esculent; used for food; usually takes root of itself. Lateral bulbs are also called offsets.
- OLIGANDROUS**, having few stamens; oligostemonous.
- OLIGARCH**, applied to a fibrovascular cylinder having few rays, i.e., containing or representing few fibrovascular bundles.
- OLIGOPHYLLOUS**, having few, or comparatively few, leaves.
- OLIGOSPERMOUS**, few-seeded.
- OLIGOSTEMONOUS**, see **OLIGANDROUS**.
- OLIVACEOUS**, dusky green.
- OMNIVOROUS**, applied to a parasitic fungus which attacks many kinds of plants.
- OMPHALODE**, see **OMPHALODIUM**.
- OMPHALODIUM** (pl. *ōmphalōdiā*), the central part of the hilum, containing the vessels which enter the raphe or chazaza.
- ONE-SIDED**, see **SECUND**, **UNILATERAL**, and **HOMOMALOUS**.
- ONTOGENY**, the study of the development of an individual through all its stages. Compare **PHYLOGENY**.
- OÖGYST**, a female organ or oögonium of doubtful nature.
- OÖGAMY**, the conjugation of gametes which are dissimilar in form. Compare **ISOGAMY**.
- OÖGONIUM** (pl. *ōōgōniā*), the female sexual organ in Oösporeæ before fertilization, containing one or more oöospheres, as in *Peronospora*.
- OÖNUCLEUS**, the nucleus of an oöosphere. Compare **SPERMNUCLEUS**.
- OÖPHORE**, the first or sexual stage or generation in plants having an alternation of generations, as ferns; oöphyte. Compare **SPOROPHORE**.
- OÖPHORIDIUM** (pl. *ōōphōridiā*) (obs.), see **MACROSPORANGIUM**.
- OÖPHYTE**, see **OÖPHORE**.
- OÖSPERM**, see **OÖSPORE**.
- OÖSPHERE**, the oöspore previous to fertilization; i.e., the cell or protoplasmic mass which after fertilization becomes the oöspore.
- OÖSPORANGE**, see **OÖSPORANGIUM**.
- OÖSPORANGIUM** (pl. *ōōsporāngiā*), an old term for oögonium.
- OÖSPORE**, a fertilized oöosphere; oöperm. As a result of fertilization the oöosphere, thus changed to an oöspore, takes on a firm cell-wall and acquires the power of germination.
- OPAQUE**, having a dull surface; neither transparent nor shining.
- OPEN**, applied to fibrovascular bundles which always contain cambium capable of further growth, as in exogens. Compare **CLOSED**.
- OPERCULAR**, like an operculum; operculate.
- OPERCULATE**, having an operculum. Compare **DEOPERCULATE**.

**ŌPĒR'ĀLŪM**, (1) a transversely dehiscent lid or cap, like that covering the capsule of many mosses; (2) the lid of a pitcher-shaped leaf.

**ŌPĪS'THŌDAL**, posterior; applied to the inner or posterior opening of a stoma. Compare **EISODAL**.

**ŌP'PŌSITE**, opposed in position. Said, for example, of leaves when situated over against each other in pairs at the same height upon the stem. One floral organ, however, is *opposite* another when it is superposed to it, i. e., when it stands between it and the axis. Compare **ALTERNATE**.

**ŌPPŌSĪTĪFLŌROŪS**, having opposite peduncles.

**ŌPPŌSĪTĪFŌLĪŌUS**, (1) having opposite leaves; adersifolious; (2) situated opposite a leaf, as the tendrils in the grape.

**ŌP'PŌSITEĪĻ-PĪN'NĀTE**, having leaflets in pairs.

**ŌRBĪC'ŪLAR**, circular in outline, or nearly so; orbiculate.

**ŌRBĪC'ŪLĀTE**, see **ORBICULAR**.

**ŌR'DĒR**, a division of a class containing one or more genera; family.

**ŌR'DĪNAL**, pertaining to an order.

**ŌR'GAN**, any part having a special function, as a leaf or stamen. Compare **MEMBER**.

**ŌRGĀNĪC ĀEN'TRE**, a point or axis around which growth takes place. It may not remain the mathematical centre.

**ŌRGĀNŌG'ĒNĪ**, the origin and development of organs; organogenesis.

**ŌRGĀNŌG'RĀPHĪ**, the study of organs.

**ŌRGĀNŌPLĀS'TĪC**, having the

power of producing organs, as *organoplastic* tissue.

**ŌR'GANŪ OF RĒPRŌDŪCTION**, those whose chief function is to serve directly or indirectly in the production of seeds or spores. In the higher plants the stamens and pistils are usually indicated by the term.

**ŌR'GANŪ OF VĒGĒTĀTION**, those which minister to the growth of the whole plant: roots, stem, and leaves.

**ŌRĪĒNTĀTION**, strictly, facing the east. Used in horticulture for the setting of transplanted trees facing the same way as they stood originally. Used in botany for assuming any definite direction with respect to the points of the compass or to the axis of the plant or organ.

**ŌR'MŌGŌN**, see **HORMOGONIUM**.

**ŌRTHŌPLŌ'ĀEOŪS**, having conuplicate cotyledons. (Obs.)

**ŌRTHŌS'TĪCHĪ**, a vertical row of organs. Compare **PARASTICHY**.

**ŌRTHŌS'TŌMOŪS**, having a straight opening.

**ŌRTHŌT'RŌPAL**, see **ORTHOTROPOUS**.

**ŌRTHŌTRŌP'ĪC**, growing erect, as stems in contrast with leaves, etc. Compare **PLAGIOTROPIC**.

**ŌRTHŌT'RŌPOŪS**, (1) applied to an ovule or seed in which the hilum coincides with the chalaza and the micropyle occupies the apex opposite. Compare **ANATROPOUS**. (2) Applied to the embryo it means the opposite of **antitropous**, i. e., having the radicle next the hilum, as in **anatropous** seeds.

**ŌS'ĀĪLLĀTING**, see **VERSATILE**.

- OSMOSE**, the mutual diffusion of liquids of different densities through a membrane. It is the peculiar property of osmose that the denser fluid absorbs from the other through the membrane more than it gives in exchange. The imbibition of fluids by roots is due partially to osmose (endosmose), the fluid within the plant being denser than that in the soil. The outward diffusion of fluid from the plant into the soil, which takes place in a feeble degree, is termed Exosmose.
- OSMŌSĪS**, see OSMOSE.
- OS'SEŌŪS**, bony in texture.
- OS'SĪFIĒD**, become like bone, as a peach-stone.
- OS'TĪŌLE**, a small orifice, as that in a perithecium for the discharge of spores.
- ŌST'ŌLŪM**, see OSTIOLE.
- OUT'ĒR GLŪMEŠ**, see EMPTY GLUMES.
- Ō'VAL**, about twice as long as broad, with regular curved outlines; broadly elliptical.
- ŌVĀ'RĪŪM** (pl. Ōvā'riā), see OVARY.
- Ō'VĀRĪ**, the part of a pistil containing the ovules or seeds.
- Ō'VĀTE**, like a longitudinal section of an ordinary hen's egg, with the attachment, if any, at the broad end. Compare OVOID.
- Ō'VĪFŌRM**, see OVOID.
- Ō'VOID**, of the shape of a hen's egg, and attached, if at all, at the large end. Compare OVATE.
- Ō'VŪLE**, the seed previous to fertilization.
- ŌVŪLĪF'ĒROŪS**, bearing ovules.
- Ō'VŪM** (pl. Ō'vā), see OÖSPHERE.
- PĀCHŪPHŪL'LOŪS**, thick-leaved.
- PĀD**, a popular name for the leaf of a water-lily.
- PĀG'ĪNĀ** (pl. Pāg'īnā), the surface of an organ, especially the upper or lower surface of a leaf.
- PĀINT'ĒD**, having colors disposed in streaks of unequal intensity. (Rare.)
- PĀĪRED**, see CONJUGATE.
- PĀLĒĀ'ĀŌŪS**, see PALEACEOUS.
- PĀL'ĀTE**, the convex base of the lower lip of a personate corolla, as in snap-dragon.
- PĀLE**, see PALET.
- PĀ'LEĀ** (pl. Pā'lēā), (1) the inner bract of a flower in grasses (palet); (2) one of the bracts or scales upon the receptacle in Compositæ. Also used by some for Ramentum.
- PĀLEĀ'ĀŌŪS**, chaff-like; bearing chaff or chaffy scales; consisting of chaff.
- PĀLEŌBŌT'ĀNŪ**, see FOSSIL BOTANY.
- PĀLE'ŌLĀ** (pl. Pāle'olā), see LODICULE.
- PĀLEŌPHŪTŌL'ŌGŪ**, see FOSSIL BOTANY.
- PĀL'ĒT**, the inner bract or chaff of a flower in grasses; formerly known as the upper palet; palea. Compare GLUME.
- PĀLĪSĀDE'ĀĒLLŠ**, elongated cells perpendicular to the epidermis in the upper side of most leaves.
- PĀLLĒS'ĀENT**, somewhat pale.
- PĀL'LĪD**, pale; wan; deficient in color.
- PĀLM**, three inches.
- PĀL'MĀTE**, lobed or divided so that the sinuses all point toward the apex of the petiole, either moderately as in the maple-leaf, or more deeply,

when it is sometimes improperly called *pedate*, or so as to make the leaf compound when it is *digitate*.

**PÁL'MÁTĚD**, see PALMATE.

**PÁL'MÁTĚLÝ CLĚFT**, having the sinuses in a palmate leaf reaching about half way to the base; palmatifid.

**PÁL'MÁTĚLÝ CŮM'POUND**, having the leaflets all attached to the apex of the petiole; digitate.

**PÁL'MÁTĚLÝ DĪVĪDĚD**, cleft to the base in a palmate manner, but not compound; palmatisect.

**PÁL'MÁTĚLÝ LŮBED**, having the lobes directed toward the apex of the petiole.

**PÁL'MÁTĚLÝ NĚRVED**, sometimes applied to palmately veined leaves in endogens; palm-nerved; palminerved.

**PÁL'MÁTĚLÝ PĀRTĚD**, cleft nearly to the base in a palmate manner.

**PÁL'MÁTĚLÝ VEINED**, having the principal veins proceeding from the apex of the petiole, as in palmate leaves; palm-veined; palmiveined; radiate-veined.

**PĀLMĀT'ĪFĪD**, see PALMATELY CLEFT.

**PĀLMĀT'ĪLŮBED**, see PALMATELY LOBED.

**PĀLMĀTĪPĀR'TĪTE**, see PALMATELY PARTED.

**PĀLMĀT'ĪSĚCT**, see PALMATELY DIVIDED. Sometimes improperly used for Palmately Parted.

**PĀL'MĪNĚRVED**, see PALMATELY NERVED.

**PĀLM-NĚRVED**, see PALMATELY NERVED.

**PĀLM-VEINED**, see PALMATELY VEINED.

**PĀL'ŪDĪNE**, see PALUSTRINE.

**PĀL'ŪDĪNOŮS**, see PALUSTRINE.

**PĀL'ŪDŌSE**, see PALUSTRINE.

**PĀLŮS'TRINE**, growing in marshes or swamps; paludine; paludinous; paludose; uliginose; uliginous.

**PĀNCHE**, have pale faint stripes.

**PĀN'DŪRĀTE**, see PANDURIFORM.

**PĀNDŪ'RĪFŌRM**, obovate, with one or two large sinuses or concavities in each side, like the body of a violin; fiddle-shaped.

**PĀNGĚN'ĚSĪS**, a theory proposed by Charles Darwin to account for the reproduction of every part of an organism. It is, that each separate part of the individual throws off minute reproductive gemmules, which are capable of multiplication, and may be transmitted from generation to generation. Spores and seeds are abundantly supplied with these gemmules from all parts of the organism, and therefore specially fitted for reproduction. If other parts can serve for propagation, it is because gemmules from the remaining parts are present;—if a cutting "strikes root," for example, it is because it contains root gemmules. Atavism is caused by dormant gemmules from a previous generation. A modification of this theory proposed by De Vries is that each cell contains all the essential elements for the reproduction of the plant, the protoplasm containing a vast number of self-reproductive particles (pangens) which transmit the characters of the individual.

**PĀN'ĪCLE**, a branched raceme, as in oats. Panicles are either determinate or indeterminate

in their mode of inflorescence. If the former they are called "cymose;" if the latter, "botryose." They have a variety of shapes, the typical form being loose and spreading, with repeatedly branched peduncles, as in many grasses. Panicles of certain forms have received special names. A compact panicle like that of lilac is called a thyrus; a spike-shaped panicle like that of wheat is usually called a spike, or compound spike; a corymb might be called a level-topped centripetal panicle, and a cyme a similar centrifugal panicle.

**PAN'ICLED**, see PANICULATE.

**PANIC'ULĀTE**, resembling a panicle; furnished with panicles; arranged in panicles; panicked.

**PANIC'ULĀTĒD**, see PANICULATE.

**PANIC'ULĪFŌRM**, panicle-shaped.

**PAN'NĀRY**, pertaining to bread; suitable for making bread.

**PAN'NĪFŌRM**, thick and spongy, like coarse cloth.

**PAN'NŌSE**, (1) having a felted coat of hairs. Compare FLOCCOSE and MANICATE. (2) Having the texture of coarse cloth; panniform.

**PĀNSPĒRMĪĀ**, the theory that seeds and spores are everywhere present, ready to be developed upon favorable opportunity.

**PĀPĒRY**, see CHARTACEOUS.

**PĀPĪLŌNĀ'ĀEOŪS**, having flowers, as in the Papilionaceæ, a tribe of the Leguminosæ or pea family; i. e., with a large upper or posterior petal called the vexillum, two lateral petals called wings, and two small

inferior petals more or less united into a carina or keel.

**PĀPĪL'Ā** (pl. Pāpīl'æ), a small soft, elongated teat-shaped protuberance. Compare MAMILLA and WART.

**PĀPĪLLĀRY**, having or resembling papillæ. Compare VERUCOSE.

**PĀPĪLLĀTE**, having papillæ; papilliferous. Compare MAMILLATE.

**PĀPĪLLĪFĒROŪS**, see PAPILLATE.

**PĀPĪL'LĪFŌRM**, in the form of a papilla.

**PĀPĪLLŌSE**, papillate or papillary; especially, covered with papillæ.

**PĀPPIFĒROŪS**, bearing a pappus, as the seeds of thistle.

**PĀP'PĪFŌRM**, like a pappus.

**PĀPPŌSE'**, pappiferous or pappiform.

**PĀP'PŪS**, the calyx in Compositæ, especially when developed in a hairy or feathery manner to effect the dispersion of the seed. Compare COMA.

**PĀP'ŪĀ** (pl. Pāp'ūlæ), see PAPILLA.

**PĀP'ŪLOŪS**, see PAPILLOSE.

**PĀPŪRĀ'ĀEOŪS**, papery; chartaceous.

**PĀRĀCŌRŌL'Ā**, see CROWN.

**PĀR'ĀĀYST**, a term proposed by Tulasne, but not generally adopted, for De Bary's term Pollinodium.

**PĀRĀHELĪŌT'RŌPĪSM**, the power which certain leaves have when placed in bright sunlight of placing their surfaces parallel to the rays of light; diurnal sleep. Compare DIAHELĪOTROPISM.



**PĀR'ALLĒL NERVED**, see PAR-  
ALLEL VEINED.

**PĀR'ALLĒL VEINED**, having the veins or the principal ones parallel, or merely diverging: opposed to Reticulate veined and characteristic of the veins (or nerves) of endogens. In some exogens, however, as the beech, the principal lateral veins are parallel, but in exogens the term *parallel veined* is not applied, the condition being expressed in examples like this by the special term *pinnately veined*.

**PĀRĀM'TŌM**, a name given by Flemming to the more fluid portion of the cell-substance which is contained in the meshes of the *mitom* or network of threads. It is the *paraplasma* of Kupffer.

**PĀRĀNĒ'MĀTĀ** (sing. Pārānē'mā), paraphyses among the spores of *Fucus* and other algæ. (Obs.) See PARAPH-  
YSES.

**PĀRĀNŪCLĒ'ŌLŪS** (pl. Pārānū-clē'ōli), one of the additional or secondary nucleoli in a nucleus, when there are more than one.

**PĀRĀNŪCLĒŪS** (pl. Pārānū'clēi), an object resembling an additional nucleus—generally adjoining the true nucleus and in some cases budded off from it; lateral nucleus.

**PĀRĀPĒT'ALOŪS**, standing by the side of a petal, as stamens in some Rosaceæ.

**PĀRĀPHYL'LŪM** (pl. Pārāphyl'lā), a foliaceous expansion which is not a true leaf, as the large stipules of the pea. Especially one of the leaf-like scaly hairs among the true leaves in mosses.

**PĀRĀPH'YSES** (sing. Pārāph'ysis), sterile filaments among reproductive bodies of various kinds, as those among the archegonia and antheridia in certain mosses, among the asci in Ascomycetes, and among the basidia in Basidiomycetes.

**PĀR'ASITE**, a plant which grows upon or within another living body, from which it derives a part or the whole of its nourishment. Compare SAPRO-  
PHYTE.

**PĀR'ASITE - SĀP'RŌPHŪTE**, a parasite which kills its host, then continues to feed upon it.

**PĀRĀSIT'IC CĀSTRĀTION**, sterility of a reproductive organ caused by a parasite.

**PĀR'ASITISED**, affected by a parasite; having a parasite growing upon or within it.

**PĀR'ASITISM**, the condition of being a parasite.

**PĀRĀSTĀ'MĒN**, see STAMINO-  
DIUM.

**PĀRĀSTĒ'MŌN**, see STAMINO-  
DIUM.

**PĀRĀS'TICHŪ**, a whorl, or spiral row of organs. Compare OR-  
THOSTICHY.

**PĀR'ASTYLE**, an abortive style.

**PĀRĀTŌN'IC**, depressing or retarding: opposed to stimulating. Applied mainly to certain spontaneous movements of plants, such as the "sleep" of leaves, induced by the withdrawal of the usual stimulus, in distinction from movements caused by mechanical or artificial irritation. Sometimes applied to all movements of organs which are produced by the presence or absence of external stimuli. The term is also applied to the condition of plants when un-

- sually insensitive to stimuli of any kind. Compare PHOTO-TONIC.
- PARENCHYMA**, all tissue composed of cells which do not have tapering extremities. Especially soft cellular tissue like that of pith and the pulp of leaves. Compare PROSENCHYMA and SCLERENCHYMA.
- PARENCHYMATOUS**, pertaining to, containing, or resembling parenchyma; spongy; porous.
- PARIËS** (pl. *Pariëtēs*), the wall of any enclosing body.
- PARIËTAL**, belonging to or situated upon the wall, as ovules or seeds upon the wall of the pericarp.
- PARIPINNATE**, see ABRUPTLY PINNATE.
- PARECIOUS**, having male and female "flowers" in mosses placed close together. (Lesquereux and James.)
- PART'ED**, divided nearly to the base.
- PARTHENOGENESIS**, the occasional production of true spores or seeds without fertilization. Compare APOGAMY.
- PARTHENOSPORE**, a spore in certain algæ resembling a zygospore, but produced without conjugation.
- PARTIAL**, secondary or subordinate.
- PARTIAL INVOLUCRE**, one which subtends a subordinate part of an inflorescence, as a partial or secondary umbel.
- PARTIAL PEDUNCLE**, a branch of an inflorescence (pedicel) bearing more than one flower.
- PARTIAL PETIOLE**, a division of a petiole bearing one or more leaflets; petiolule.
- PARTIAL UMBEL**, one of the parts or secondary umbels of a compound umbel; umbel-lule; umbellet.
- PART'IBLE**, capable of being readily divided, but not dividing spontaneously.
- PARTITE**, see PARTED.
- PARTITION**, see SEPTUM.
- PARVUS**, relatively small.
- PASTEURISM**, a term applied by some writers to the protective or prophylactic inoculation of the attenuated virus of certain diseases, especially of hydrophobia, as devised by Louis Pasteur. The older term Vaccination, however, is being very properly extended to all operations involving this principle. Compare PASTEURIZATION.
- PASTEURIZATION**, the preservation of wines or other fermented liquids by destroying the fungi and their spores that would produce further and deleterious changes. This is effected by prolonged heating to a moderate degree (about 140° F.) for the purpose of inducing the germination and subsequent destruction of the spores which are present.
- PATÉLLA** (pl. *Patél'læ*), a form of sessile apothecium in lichens. (Obs.)
- PATÉLLIFORM**, kneepan-shaped; in the form of a watch-crystal or shallow saucer, especially if thickened like a kneepan.
- PAT'ENT**, spreading nearly at right angles.
- PATHFINDER**, see NECTAR-GUIDE.
- PATHOGENIC**, disease-producing; pathogenetic.
- PATHOLOGŶ**, see VEGETABLE PATHOLOGY.
- PAT'ULOUS**, slightly spreading.

**PAUCI-**, a Latin prefix: few.  
**PAUCIFLÓROUS**, few-flowered.  
**PEAR-FÓRM**, see PEAR-SHAPED.  
**PEAR-SHAPED**, ovoid or obovoid, and contracted at the sides like the Bartlett pear. Compare TEAR-SHAPED.  
**PÉCTINÁTE**, having close narrow divisions like the teeth of a comb. Applied also by De Bary to two series of fibrovascular bundles when the members of each alternate with those of the other, like the teeth of two combs.  
**PÉDÁTE**, palmately parted or divided into somewhat linear lobes, with two strong lateral lobes from each of which somewhat linear divisions arise, as in the maidenhair fern and *Viola pedata*. Compare PALMATE.  
**PÉDÁTELÝ CLÉFT**, see PEDATE-IFID.  
**PÉDÁTELÝ VEINED**, having no mid-vein, but with two strong lateral veins, from each of which others originate which extend toward the apex; pedatinerved. Compare PALMATELY VEINED.  
**PÉDÁTÍFID**, divided in a pedate manner about half-way to the base; pedately cleft.  
**PÉDÁTÍNÉRVED**, see PEDATELY VEINED.  
**PÉDÁTÍPÁR'TITE**, pedately veined and lobed with the sinuses reaching nearly to the principal veins.  
**PÉDÍÇEL**, a branch of an inflorescence, supporting one or more flowers. Also applied to a little stalk or support of any kind. In orchids it is a portion of the pollinium in some genera which is derived from the rostellum and con-

nects the caudicles with the retinaculum. Compare FOOT-STALK and PEDUNCLE.  
**PÉDÍÇELLÁTE**, having a pedicel; pedicelled.  
**PÉDÍÇELLED**, see PEDICELLATE.  
**PÉDÍÇÚLÁTE**, see PEDICELLATE.  
**PÉDÚN'GLE**, the stalk of an inflorescence, whether of one flower or more. Compare PEDICEL and PARTIAL PEDUNCLE.  
**PÉDÚN'GLED**, see PEDUNCULATE.  
**PÉDÚN'GULAR**, pertaining to or serving as a peduncle; growing upon or attached to the side of a peduncle, as a *peduncular* tendril.  
**PÉDÚN'GULÁTE**, having a peduncle, as a *pedunculate* flower or inflorescence; peduncled.  
**PÉG**, a lip or projection at the lower end of the hypocotyl in Cucurbitaceæ which serves in germination to hold the seed-coats down while the cotyledons are withdrawn.  
**PÉLAGÍAN**, see PELAGIC.  
**PÉLAG'IC**, pertaining to the deep sea; widely dispersed through the ocean; pelagian.  
**PÉL'LÍCLE**, a distinct, firm, and in some cases separable, outer layer of the cortex in lichens and some other fleshy fungi.  
**PÉLLŪ'ÇID**, translucent.  
**PÉLÓRÍÁ**, a regular condition in flowers which are usually irregular. See REGULAR and IRREGULAR PELORIA.  
**PÉL'TÁ** (pl. *Pél'tæ*), an obsolete term for certain target-shaped apothecia in lichens.  
**PÉL'TÁTE**, shield- or target-shaped; circular, and fixed by the lower surface, especially the centre of it.

**PĚL'TĀTELĚ VEINED**, having veins radiating in all directions from the summit of the petiole, as in a peltate leaf.

**PĚL'VÍFŮRM**, shaped like the cavity of the pelvis; basin-shaped. (Rare.) See **ACETABULIFORM** and **COTYLIFORM**.

**PĚN'ČILED**, marked with fine distinct lines as if with a pencil.

**PĚN'ČILLED**, see **PENCILED**.

**PĚN'DENT**, hanging directly downward. Compare **CERNOUS** and **DROOPING**.

**PĚN'DŮLOŮS**, hanging downward more than cernous, nearly vertically.

**PĚN'ČIL'LĀTE**, bordered or tipped with fine hairs like those of a camel's-hair pencil. Compare **PENCILED**.

**PĚN'ČIL'LÍFŮRM**, like a camel's-hair pencil.

**PĚN'NĀTE**, see **PINNATE**.

**PĚN'NÍFŮRM**, in the form of a feather or plume.

**PĚN'NÍNĚRVED**, see **PINNATELY VEINED**.

**PĚNTA-**, a Greek prefix: five.

**PĚNTĀČĀR'PELLĀŘÝ**, having an ovary with five carpels.

**PĚNTĀCŮC'COŮS**, of five cocci.

**PĚNTĀČÝC'LÍC**, in five whorls.

**PĚNTĀČ'YNOŮS**, of five pistils or styles.

**PĚNTĀM'ĚROŮS**, of five parts: said of a flower having five organs in each whorl. Sometimes written 5-merous.

**PĚNTĀN'DROŮS**, having five stamens.

**PĚNTĀPĚT'ALOŮS**, of five petals.

**PĚNTĀPHÝL'LOŮS**, five-leaved; applied mainly to the parts of the calyx; pentasepalous.

**PĚNTĀP'TĚROŮS**, five-winged.

**PĚNTĀSĚP'ALOŮS**, of five sepals; pentaphyllous.

**PĚNTĀSPĚR'MOŮS**, five-seeded.

**PĚNTĀS'TIČHOŮS**, in five vertical ranks.

**PĚPŮ**, a cucurbitaceous fruit, as a melon or gourd. It is indurated, fleshy, inferior, polycarpellary, and has a thick, more or less hardened, rind.

**PĚRAPHÝL'LŮM**, an accrescent foliaceous calyx, as in quince. (Obs.)

**PĚRCŮB'RENT**, running throughout, as a midrib through the entire length of a leaf to the extreme apex.

**PĚRĚN'NĀL**, adj., living more than two years.

**PĚRĚN'NĀL**, n., a plant which lives more than two years.

**PĚRĚN'NĀL HĚRB**, a plant that lives from year to year, but dies to the ground or nearly so at the close of each season.

**PĚR'FĚCT**, containing both stamens and pistils; hermaphrodite; bisexual. Compare **COMPLETE**.

**PĚRFŮLIĀTE**, said of a leaf which is united around the stem at its base. Compare **CONNATE**.

**PĚR'FŮRĀTE**, pierced with small round holes. Compare **PERFUSE** and **PUNCTATE**.

**PĚRGĀMĚ'NEOŮS**, see **PERGAMENTACEOUS**.

**PĚRGĀMĚNTĀ'ČEOŮS**, like parchment. (Rare.) See **CHARTACEOUS**.

**PĚR'ĀNTH**, the calyx and corolla taken together, or calyx alone when there is no corolla. Used mainly where calyx and corolla are much alike, as in lilies. Formerly applied to the

calyx only, or to calyx and involucre.

**PĒRIÁN'THIŪM**, see PERIANTH.

**PĒRIÁNTHŌMÁ'NĪÁ**, an unnatural multiplication of sepals, bracts, etc.

**PĒR'ĪBLĒM**, the primordial cortex, i.e., the layer of nascent cortex beneath the dermatogen.

**PĒRĪCÁM'BĪŪM**, see PHLOĒM-SHEATH.

**PĒR'ĪCÁRĒP**, the wall of a ripened ovary or seed-vessel. Sometimes improperly applied to husks or other protective coverings surrounding the fruit.

**PĒR'ĪCHĒTH**, the involucre of leaves around the base of the seta (or sessile capsule) in mosses; also around the archegonia in Marchantia, etc.; perichæcium.

**PĒRĪCHĒ'TĪÁL**, belonging or pertaining to the perichæth.

**PĒRĪCHĒ'TĪŪM**, see PERICHÆTH.

**PĒRĪCLÁ'DĪŪM**, a sheathing petiole in exogens, as in many Umbelliferæ. (Rare.)

**PĒRĪCLĪ'NÁL**, said of cell-walls or any lines when parallel with the outer surface of the plant or organ. Compare ANTICLINAL. The annual rings of a trunk, for example, extend in a *periclinal* direction, and the medullary rays in an *anticlinal*.

**PĒRĪCLĪ'NĪŪM**, a name for the involucre in Compositæ.

**PĒR'ĪCYCLE**, the outer portion of the central or fibrovascular cylinder.

**PĒR'ĪDĒRM**, see EPIPHLĒUM. Also applied to the cell-wall or any other enclosing membrane.

**PĒRĪD'ŪLŪM** (pl. PĒrĪd'Ūlá), di-

minutive of Peridium: a secondary or interior peridium containing a hymenium, as in Crucibulum.

**PĒRĪD'ĪŪM** (pl. PĒrĪd'Īá), the covering of almost any closed spore-case, or fungus-fruit, as of a puff-ball.

**PĒR'ĪGŌNE**, see PERIANTH.

**PĒRĪGŌ'NĪŪM** (pl. PĒrĪgŏ'niá), see PERIANTH. Sometimes used for Perichæth.

**PĒRĪGŪN'ĪŪM** (pl. PĒrĪgŭn'Īá), a term applied to various appendages of unusual or doubtful character surrounding the pistil, as the sac-like envelope (utriculus) surrounding the ovary in Carex. Also used for Perichæth in Hepaticæ and mosses.

**PĒRĪG'ŪNOŪS**, adherent to the calyx and free from the ovary: said of stamens.

**PĒRĪPĒT'ALOŪS**, around the petals.

**PĒRĪPHĒR'ĪC**, situated around the outside or periphery.

**PĒRĪPHLŌ'ĒM**, see PHLOĒM-SHEATH.

**PĒRĪPHŌRÁN'THIŪM**, see PERICLINIUM.

**PĒRĪPHŪL'LŪM** (pl. PĒrĪphŭl'lá), see LODICULE.

**PĒR'ĪPLÁSM**, a hyaline peripheral layer of protoplasm; ectoplasm. Especially, in Peronosporæ, a part of the protoplasm in the oogonium and antheridium which does not take part in fertilization. Compare GONOPLASM.

**PĒRĪP'TĒROŪS**, surrounded by a wing-like expansion.

**PĒR'ĪSPĒRM**, the albumen of a seed, especially that formed outside the embryo-sac. Sometimes applied also to the seed-

- coat and to the pericarp. Compare **ENDOSPERM**.
- PĚRISPĚR'MĪC**, furnished with perisperm.
- PĚRISPĚRĀN'GIŪM**, see **INDUSIUM**.
- PĚR'ISPĚRE**, a covering of one or more spores, as the cell or sac in which tetraspores are formed.
- PĚR'ISTĚME**, the fringe of teeth around the mouth of the capsule in mosses.
- PĚRĪTHĚ'CIŪM** (pl. *PĚrĭthĕ'ciĭ*), the receptacle containing the asci in Ascomycetes. Commonly applied in a general way to the whole ascocarp.
- PĚRĪTRĚPĀL**, see **PERITROPOUS**.
- PĚRĪTRĚPOŪS**, having the axis of the seed perpendicular to that of the pericarp. (Rare.)
- PĚRĪZŚNIŪM**, a thin non-silicicous membrane of a young auxospore in Diatomaceæ.
- PĚRPĚNDĪCŪLAR SĪSTĚM**, see **FIBROVASCULAR SYSTEM**.
- PĚRSĪSTĚNT**, remaining longer than usual, as parts of the flower which remain (either living or dead) until the fruit is ripe, or leaves which die but remain upon the tree during winter.
- PĚR'SONĀTE**, labiate, with the throat nearly closed by a projection in the lower lip called the palate; masked. Compare **RINGENT**.
- PĚRSPĪRĀTION**, see **TRANSPIRATION**.
- PĚRTŪS'ĀTE**, see **PERTUSE**.
- PĚRTŪSĚ'**, having slits or holes; perforate.
- PĚRTŪSĚD'**, see **PERTUSE**.
- PĚR'ŪLĀ** (pl. *PĚr'ŭlĕ*), see **PERULE**.
- PĚR'ŪLĀTE**, having perules.
- PĚR'ŪLE**, see **BUD-SCALE**.
- PĚTĀL**, a leaf of a corolla; flower-leaf.
- PĚTĀLED**, having petals; petalous: opposed to **Apetalous**. Used mainly in compounds, as *five-petaled*.
- PĚTĀLĪFĚROŪS**, bearing petals.
- PĚTĀLĪFĚRM**, shaped like a petal.
- PĚTĀLINE**, see **PETALOID**.
- PĚTĀLODE**, an organ resembling a petal; a false petal.
- PĚTĀLŚDŪ**, the conversion of other floral organs into petals.
- PĚTĀLOĪD**, petal-like in texture, color, and form; petaline. Compare **CORALLACEOUS**.
- PĚTĀLOMĀNĪĀ**, any unusual development of the petals. Not usually applied to ordinary doubling, but to some remarkable development in size or form.
- PĚTĀLOŪS**, see **PETALED**.
- PĚTĪĚLAR**, pertaining to or having a petiole; borne on a petiole, as a *petiolar* gland or tendril.
- PĚTĪĚLĀRŪ**, pertaining to a petiole.
- PĚTĪĚLĀTE**, having a petiole; petioled.
- PĚTĪĚLE**, the stem or foot-stalk of a leaf. Compare **STIPE** and **PEDUNCLE**.
- PĚTĪĚLED**, see **PETIOLATE**.
- PĚTĪĚL'ŪLAR**, pertaining to the petiole of a leaflet.
- PĚTĪĚLŪLE**, see **PARTIAL PETIOLE**.
- PĚZĪZĚID**, in the shape of *Peziza*; cyathiform, or nearly so.
- PHĚNŚCĀR'POŪS**, having the fruit free from the perianth. (Rare.)

**PHĒNŌG'AMOŪS**, see PHENO-  
GAMOUS.

**PHĒNŌLŌG'ICĀL**, see PHENO-  
LOGICAL.

**PHĒ'ŌCŪST**, an old term for  
Nucleus.

**PHĀ'LĀNĀ** (pl. Phālān'gā), a  
bundle of more or less cohe-  
rent stamens with broad fila-  
ments, as in some Malvaceæ.  
Compare ADELPHIA.

**PHĀN'ĒRŌGĀM**, see PHENOGAM.

**PHĀNĒRŌGĀ'MĪAN**, see PHENOG-  
GAMOUS.

**PHĀNĒRŌGĀM'IC**, see PHENOG-  
GAMOUS.

**PHĀNĒRŌG'AMOŪS**, see PHENOG-  
GAMOUS.

**PHĒL'LĒM**, cork.

**PHĒL'LŌDĒRM**, green cells be-  
neath the cork formed from  
the inner layers of the phel-  
logen; cork-cortex.

**PHĒL'LŌGĒN**, the inner active  
growing layers of cork-tissue;  
cork-cambium; cork-meristem.

**PHĒ'NŌGĀM**, a flowering plant,  
i. e., one which produces true  
seeds; phanerogam. Compare  
CRYPTOGAM.

**PHĒNŌGĀ'MĪAN**, see PHENOG-  
GAMOUS.

**PHĒNŌGĀM'IC**, see PHENOG-  
GAMOUS.

**PHĒNŌG'AMOŪS**, producing true  
flowers and seeds. Compare  
CRYPTOGAMOUS.

**PHĒNŌLŌG'ICĀL**, applied to the  
blossoming of plants, and other  
periodical phenomena of plants  
and animals; phænological.

**PHLŌ'ĒM**, that portion of a fibro-  
vascular bundle which contains  
the bast and sieve tissue; lep-  
tome. In exogens it is always  
sharply defined from the re-  
maining portion (xylem) by a  
layer of cambium. The inner

bark is derived from the phloem,  
and the wood from the xylem.

**PHLŌ'ĒM-RĀY**, a ray or plate of  
phloem between two medullary  
rays. It is an outward con-  
tinuation of a xylem-ray.

**PHLŌ'ĒM-SHĒATH**, a layer of  
thin-walled cells surrounding  
the fibrovascular cylinder next  
within the cortex—usually  
better defined in roots than  
in stems; bast-sheath; peri-  
phloem; pericambium; vascu-  
lar bundle-sheath.

**PHŌRĀN'THĪŪM**, see ANTHO-  
DIUM.

**PHŌTŌ-ĒP'INĀSTŪ**, downward  
curvature due to the presence  
of light. Compare PHOTO-  
HYPONASTY.

**PHŌTŌ-HŪ'PŌNĀSTŪ**, upward  
curvature due to increased il-  
lumination. Photo-epinasty  
and photo-hyponasty should  
be distinguished from helio-  
tropism, as the curvatures are  
in the directions stated, from  
whatever direction the light  
comes.

**PHŌTŌTĀX'IS**, taking a definite  
position with reference to the  
incident rays of light, as cer-  
tain desmids and the leaves of  
the compass-plant, *Silphium*  
*laciniatum*.

**PHŌTŌTŌN'IC**, a term applied to  
the stimulating influence of  
light upon plants, inducing or  
increasing irritability and ex-  
citability. Thus, when growth  
which has been arrested by  
prolonged darkness is restored  
upon admission of light, the  
effect is termed the *phototonic*  
influence of the light; with  
most organs, however, growth  
is more rapid in darkness.  
This effect of light in retard-  
ing growth is called its *para-*

- tonic* influence. See PARATONIC.
- PHRÁG'MÁ** (pl. Phrág'mátá), a horizontal false dissepiment in a pericarp, as in some species of *Cassia*. Formerly any false dissepiment, or any dissepiment.
- PHYCOCY'ÁNINE**, a bluish pigment, found in certain marine algæ.
- PHYCÓERÝTH RÍNE**, the reddish pigment in *Floridææ*.
- PHYCÓL'ÓGÝ**, see ALGOLOGY.
- PHYCÓ'MÁ**, the whole plant in algæ, including thallus and reproductive organs. (Obs.)
- PHYCÓMÁ'TÉR**, gelatine containing spores in algæ. (Obs.)
- PHYCÓPHRÉ'INE**, the brown pigment of *Fucacææ* and some other algæ.
- PHYCÓXÁN'THINE**, a buff-colored pigment in diatoms and certain other algæ; diatomine.
- PHÝ'LA**, pl., see PHYLUM.
- PHÝLLÁ'RÍES**, an old term for the bracts forming the involucre of the flower-head in *Compositææ*.
- PHÝLLÓCLÁDE**, see PHYLLOCLADIUM.
- PHÝLLÓCLÁ'DIŪM** (pl. Phýllóclá'diá), a flattened branch which somewhat resembles a leaf, as in *Ruscus* and *Psilotum*; cladode; cladodium; cladophyll; phylloclade. Compare PHYLLODIUM.
- PHÝLLÓCY'ÁNIN**, a bluish pigment which with phylloxanthine forms the green coloring matter of chlorophyll; cyanophyll.
- PHÝLLÓDE**, see PHYLLODIUM.
- PHÝLLÓ'DIŪM** (pl. Phýlló'diá), a dilated petiole taking the place of a blade.
- PHÝLLÓDÝ**, the reversion of bracts or floral organs to leaves; frondescence; phyllo-morphy.
- PHÝLLÓGËN**, see PHYLLOPHORE.
- PHÝLLÓGËNĚT'ÍC**, leaf-producing.
- PHÝLLÓG'ENOŪS**, growing upon leaves.
- PHÝLLÓID**, leaf-like.
- PHÝLLÓMÁ'NÍÁ**, an abnormally abundant growth of leaves, or their production in unusual places. Compare PLEIO-PHYLLY.
- PHÝLLÓME**, a general term for all organs which are morphologically leaves, as bracts, scales, petals, etc.
- PHÝLLÓM'ÍC**, pertaining to a leaf or phyllome.
- PHÝLLÓMÓRPHÝ**, see PHYLLODY.
- PHÝLLÓPHÓRE**, any leaf-bearing organ, especially the leaf-bearing portion of the stem in palms.
- PHÝLLÓPÓ'DIŪM**, the branched or unbranched axis of a leaf, as the stipe and rachis of a frond, an ordinary petiole, or any arrangement which serves as an axis or support for the expanded portion or portions of a leaf.
- PHÝLLÓTÁX'ÍS**, the order of arrangement of leaves upon stems; phyllotaxy.
- PHÝLLÓTÁXÝ**, see PHYLLO-TAXIS.
- PHÝLLÓXÁN'THÍN**, a yellow pigment associated with phyllocyanin in the production of chlorophyll; xanthophyll.
- PHÝLLÓ'ENÝ**, the comparative study of the development of animals or plants. It seeks to



trace the origin of species, varieties, etc., and their various organs from preëxisting forms. It deals with the history of a species or other group, in distinction from Ontogeny, which deals with the history of an individual. See EVOLUTION.

**PHŮLŮM** (pl. PhŮlã), a scale, group, or system of organisms arranged in the manner in which its individuals or subordinate groups have succeeded each other in point of time.

**PHŮSIOLÓGICAL BÓT'ANŮ**, the science which treats of how plants live, grow, and perform their various functions; vegetable physiology.

**PHŮTÓGEN'ESIS**, plant reproduction, germination, and development, or the science which treats of these processes; phytogeny.

**PHŮTÓGENŮ**, see PHYTOGENESIS.

**PHŮTÓGEOG'RAPHŮ**, see GEOGRAPHICAL BOTANY.

**PHŮTÓG'RAPHŮ**, descriptive botany, including both the describing and naming of plants. See VEGETABLE TAXONOMY.

**PHŮTÓID**, plant-like.

**PHŮTÓLITE**, see PHYTOLITH.

**PHŮTÓLITH**, a fossil petrified plant; phytolite.

**PHŮTÓLITHÓL'OGŮ**, see FOSSIL BOTANY.

**PHŮTÓL'OGŮ**, see BOTANY.

**PHŮTÓL'YSIS**, the change in position undergone by the chlorophyll of a cell in consequence of the alternation of day and night or of the intensity of the sunlight. See APOSTROPHE, EPISTROPHE, and SYSTROPHE.

**PHŮTÓMÉR**, see PHYTON.

**PHŮTÓN**, an internode with a node at its upper extremity which bears one or more leaves, in the axil of each of which may appear one or more buds; phytomer. The name was given by Gaudichaud, who regarded plants as compound individuals made up of successive *phytons*. See METAMER.

**PHŮTÓN'OMŮ**, see PHYSIOLOGICAL BOTANY.

**PHŮTÓN'ŮMŮ**, see PHYSIOLOGICAL BOTANY.

**PHŮTÓPÁTHÓL'OGŮ**, see VEGETABLE PATHOLOGY.

**PHŮTÓT'OMŮ**, (1) the science of vegetable anatomy; (2) the art or act of plant-dissection. Compare STRUCTURAL BOTANY.

**PHŮTÓZÓÓN** (pl. Phytózó'ã) (obs.), see ANTHEROZOID.

**PÍLEATE**, like a pileus; having a cap or pileus; pileiform.

**PÍLEÍFÓRM**, shaped like the pileus or cap of a mushroom.

**PÍLEÓLŮS** (pl. Píle'ólŮ), a little pileus, especially where there are several from the same stem.

**PÍLEÓRHŮZÁ**, see ROOT-CAP.

**PÍLOŮS**, see PILOSE.

**PÍLEŮS** (pl. Pí'leŮ), the cap of mushrooms. Extended to other similar objects, as the stalked stroma of Claviceps.

**PÍLÍ'ÉROŮS**, bearing hairs.

**PÍLÍFÓRM**, hair-like.

**PÍLÍG'ÉROŮS**, producing hairs.

**PÍLOSE**, (1) covered with long, soft, nearly erect and somewhat distant hairs; (2) having the nature of hair.

**PÍLŮS** (pl. Pí'lí), a hair.



**PIS'TILLŌDŪ**, the transformation of other organs into pistils.

**PIT**, (1) a small depression, or a thin spot in a cell-wall; (2) the endocarp of a drupe containing the kernel or seed; stone. See **BORDERED PIT** and **BORDERED PORE**.

**PIT-CHĀM'BĒR**, the cavity of a bordered pit upon one side of the closing membrane.

**PITCH'ĒR**, see **ASCIDIUM**.

**PITCH'ĒR-SHĀPED**, when applied to a corolla means tubular with a contracted throat, as in *Vaccinium*; urceolate. Applied to other organs it means shaped more or less like an ordinary pitcher with a lip or spout at the top, as the leaf in the various "pitcher-plants."

**PITH**, the column or cord of soft cellular tissue at the centre of an exogenous stem; medulla.

**PIT'TĒD**, marked with small depressions.

**PIT'TĒD VĒS'SĒLS**, vessels having thickenings in the form of a network with polygonal meshes, leaving thin spots or pits; dotted ducts. Compare **BORDERED PIT**.

**PITŪ'ITŌUS**, pertaining to pitch or mucus.

**PLĀCĒN'TĀ**, the part of the ovary to which the ovules are attached; the tissue from which the sporangia arise in ferns. Compare **HYMENIUM**.

**PLĀCĒN'TĀTION**, the arrangement of the seeds in the pericarp; the arrangement of the placenta itself.

**PLĀCĒN'TIFŌRM**, in the form of a double concave lens; i.e., like a circular thickened disk depressed in the centre upon both sides.

**PLĀGIŌTRŌP'IC**, growing at an angle from the vertical or from the axis either upward or downward. Compare **ORTHO-TROPIC**.

**PLĀIN**, said of a margin which is not undulate in any degree, though it may be sinuate. (E.S. Goff.)

**PLĀIT'ĒD**, see **PLICATE**.

**PLĀNE**, flat.

**PLĀNE OF INSĒRTION**, a plane which passes through the point of insertion of a lateral member, as a leaf, and coincides with the main axis and the axis of the lateral member.

**PLĀNE OF SYM'MĒTRY**, any plane which divides an object into symmetrical halves.

**PLĀN'ŌGĀMĒTE**, a ciliated or otherwise motile coalescing (sexual) cell; zoögamete.

**PLĀNT-CĀNE**, a sugar-cane produced directly from seed, in distinction from Ratoon, which see.

**PLĀNT'LĒT**, a small or young plant.

**PLĀNT PĀTHŌL'ŌGŪ**, see **VEGETABLE PATHOLOGY**.

**PLĀSM** (or *Plāsmā*), see **PROTOPLASM**. Also used for nutritive cell-fluids of all kinds.

**PLĀS'MĀSŌME**, a protoplasmic corpuscle.

**PLĀSMĀT'IC**, serving for growth; plastic. (Rare.)

**PLĀSMŌ'DIŪM** (pl. *Plāsmō diā*), a mass of naked multinucleated protoplasm exhibiting amoeboid movement; the vegetative body in *Myxomycetes*.

**PLĀSMŌL'YSIS**, the contraction of protoplasm under the influence of reagents.

**PLĀSMŌLŪT'IC**, pertaining to plasmolysis.

- PLÁSTĪC**, serving the purpose of growth; plasmic; formative.
- PLÁSTĪD**, one of a class of clearly defined protoplasmic granules in the protoplasm of active cells which forms the basis of the chlorophyll and other color-granules, and is also the centre at which starch-grains are produced. For the synonymy of the colorless plastids, see **LEUCOPLAST**; and for that of the color-plastids, see **CHROMATOPHORE**.
- PLÁSTĪN**, see **ACHROMATIN**.
- PLÁSTOĪD**, see **RHABDOID**.
- PLÁTE**, see **NUCLEAR PLATE** and **SIEVE-PLATE**.
- PLÁTEAU**, the very short stem which bears the scales in a bulb. Formerly called **Corm** or **Cormus**. See **CORM**.
- PLÁTŸĀR'POŸS**, broad-fruited.
- PLÁTŸLO'BÁTE**, broad-lobed.
- PLÁTŸPHŸL'LOŸS**, broad-leaved.
- PLEIO-**, a Greek prefix meaning full of, or many.
- PLEĪOMŌR'PHĪSM**, (1) a change of form due to excessive growth of an organ; (2) sometimes used in fungi for Polymorphism.
- PLEĪOPH'ŸLLOŸS**, having leaves without apparent buds or branches in their axils. (Rare.) See **PLEIOPHYLLY**.
- PLEĪŌPHŸLLŸ**, a state in which there is an abnormal number of leaves from the same point, or an unusually large number of leaflets in a compound leaf. Compare **POLYPHYLLY**.
- PLEĪŌSPĒR'MOŸS**, containing an abnormally large number of seeds. Formerly the same as **Polyspermous**.
- PLEĪŌTÁXŸ**, a state in which there are an abnormally large number of whorls.
- PLE'NŸS**, full, applied to "double" flowers.
- PLEŌMŌR'PHĪSM**, see **PLEIOMORPHISM**.
- PLE'ŌN**, a term proposed by Nägeli for those aggregates of molecules which cannot be increased or diminished without changing their chemical nature.
- PLE'ŌNÁSM**, having any part abnormally numerous. (Rare.)
- PLE'RŌME**, nascent fibrovascular tissue.
- PLE'RŌME-SHĒÁTE**, the phloem-sheath in its nascent state.
- PLEĪŌMŌR'PHŌŸS**, nearly of the same form.
- PLEŸRĒN'CHŸMÁ**, fibrous woody tissue. (Rare.)
- PLEŸRŌCÁR'POŸS**, see **CLADOCARPOUS**.
- PLEŸRŌDĪS'COŸS**, growing upon the sides of the disk, as the ray-flowers in *Compositæ*.
- PLEŸRŌGŸ'RÁTE**, having the annulus in ferns placed laterally, as in the genus *Trichomanes*.
- PLEŸRŌRHĪ'ZAL**, see **ACCUMBENT**.
- PLEŸRŌTRĪBE**, said of zygomorphic flowers which have the stamens so placed that an insect entering will receive the pollen upon its side, as in the pea. Compare **NOTOTRIBE** and **STERNOTRIBE**.
- PLĒX'ŸS**, any network.
- PLĪ'CÁ**, see **POLYCLADY**.
- PLĪ'CÁTE**, folded like a fan.
- PLĪCÁT'ŸLÁTE**, diminutive of **Plicate**.
- PLŸMŌSE'**, like a feather, as the slender branches of the pappus

in thistles, which have a row of fine hairs on each side.

**PLŪMŪLĀ**, see PLUMULE.

**PLŪMŪLE**, the rudimentary stem and leaves between the cotyledons.

**PLURI**-, a Latin prefix: more than one.

**PLŪRĪFŌLIŌŪS**, several-flowered.

**PLŪRĪFŌLIĀTE**, having several leaves.

**PLŪRĪFŌLIŌLĀTE**, having several or many leaflets.

**PLŪRĪLŌCŪLAR**, having more than one cell in an ovary; multilocular. Compare UNILOCULAR.

**PLŪRĪPĒTALOŪS**, see POLYPETALOUS.

**PLŪRĪSĒPTĀTE**, having more than one septum.

**PNEŪMĀTŌDES**, upward growths from the roots of palms and some other plants which assist in aëration. The "knees" of the bald cypress were formerly supposed to be of this character.

**PŌCŪLĪFŌRM**, deep cup-shaped, with hemispherical base and nearly upright sides. Compare ALVEOLATE and CAMPANULATE.

**PŌD**, any dry dehiscent fruit; capsule. The term pod is the more popular, and is usually restricted in its use, among botanists as well as others, to capsules of considerable size, especially when somewhat rounded or inflated, as in the milkweed (*Asclepias*).

**PŌDĒTĪFŌRM**, resembling a podetium.

**PŌDĒTĪŪM** (pl. *PŌdĕ'tiā*), a stalk of an apothecium in lichens.

Also applied to the fruit-stalk in Marchantia.

**PŌDĪŪM**, a support for some other part. The stem, for example, is a *podium* for the branches. Used mainly in composition. See MONOPODIUM and SYMPODIUM.

**PŌDŌCĀRPOŪS**, having a gynophore.

**PŌDŌCĒPH'ALOŪS**, said of a head of flowers when supported on a distinct peduncle or pedicel.

**PŌDŌGŪNĪŪM**, see GYNOPHORE.

**PŌDŌP'TEROŪS**, having winged peduncles.

**PŌDŌSPĒRM**, see FUNICULUS.

**PŌINT'AL**, an old term for Pistil.

**PŌINT'LESS**, see MUTICOUS.

**PŌINT'LETĒD**, see APICULATE.

**PŌLAR BŌD'Ū**, see POLAR CELL.

**POLAR CELL**, a portion of a gamete budded off prior to fertilization; apoblast; directive corpuscle; polar body; polar globule. Rare in plants.

**PŌLAR CŌR'PŪSÇLE**, a central mass in each aster of a dividing nucleus.

**PŌLAR GLŌB'ŪLE**, see POLAR CELL.

**PŌLAR NŪ'CLEŪS**, a fourth nucleus in each end of the embryo-sac previous to fertilization. The two polar nuclei unite to form the nucleus of the embryo-sac or "secondary nucleus."

**PŌLARĪTŪ**, the state of having distinct poles; the tendency to assume a direction parallel to the poles of the earth, as the leaves of the compass-plant, *Silphium laciniatum*.

**PŌL'LĒN**, the fertilizing powder, usually yellow, produced in the anthers of flowers. It consists of unicellular grains

- of definite form, varying according to species, which begin the process of fertilization when placed upon the stigma by an act of germination.
- PÖL'LĒNĀTE**, see POLLINATE.
- PÖL'LĒNĀTION**, see POLLINATION.
- PÖL'LĒN-ĀLL**, sometimes applied to the cells or chambers of the anther which contain the pollen; pollen-sac.
- PÖL'LĒN-ĀM'BĒR**, in gymnosperms, a cavity at the apex of the ovule in which the pollen-grains lie during fertilization; pollinic chamber.
- PÖL'LĒN-ĀRĀIN**, the usual term for an individual spore, cell, or particle of pollen.
- PÖL'LĒNĪZE**, see POLLINATE.
- PÖL'LĒNĪZĀTION**, see POLLINATION.
- PÖL'LĒNŌID**, used by Bennett & Murray for Antherozoid.
- PÖL'LĒN-MĀSS**, see POLLINIUM.
- PÖL'LĒN-SĀC**, the cavity of an anther containing the pollen; pollen-cell.
- PÖL'LĒN-SPŌRE**, see POLLEN-GRAIN.
- PÖL'LĒN-TĒTRĀHĒDRŌN** (pl. TĒtrĀh's'drĀ), see POLLEN-TETRAD.
- PÖL'LĒN-TĒTRĀD**, a pollen-mass consisting of four pollen-grains united, either permanently or before fully developed; fourfold pollen-grain; pollen-tetrahedron.
- PÖL'LĒN-TŪBE**, a thin slender tube which issues from the pollen-grain on its contact with the stigma, which it penetrates until it reaches the ovule where fertilization takes place.
- PÖL'LĒX**, an inch. (Obs.)
- PÖLLĪNĀRĪŪM** (pl. Pöllinā'riā), see ANTHERIDIUM.
- PÖL'LĪNĀTE**, to place pollen upon the stigma; pollenate; pollenize.
- PÖLLĪNĀTIŌN**, the placing of pollen upon the stigma—the first stage of fertilization; pollenization.
- PÖLLĪNĪĀ**, pl., see POLLINIUM.
- PÖLLĪNĪC ĀM'BĒR**, see POLLEN-CHAMBER.
- PÖLLĪNĪFĒRŌŪS**, pollen-bearing.
- PÖLLĪNĪŪM** (pl. Pöllin'Īā), a coherent mass of pollen-grains in certain plants, as orchids and milk-weeds, so arranged as to be conveyed by insects; pollen-mass. For the terminology of the parts supporting a pollinium, see RETINACULUM, CORPUSCULUM, CAUDICLE, and PEDICEL.
- PÖLLĪNĪZĀTIŌN**, see POLLINATION.
- PÖLLĪNŌDĪŪM**, the antherium or male sexual organ in Pyrenomycetes which, either directly or by means of an outgrowth, conjugates with the female organ in fertilization.
- PÖLY-**, a prefix derived from the Greek, meaning many.
- PÖLYĀDEL'PHĪAN**, see POLYADELPHOUS.
- PÖLYĀDEL'PHŌŪS**, having the stamens united by their filaments into three or more sets. See ADELPHOUS, MONADELPHOUS, and DIADELPHOUS.
- PÖLYĀD'ENOŪS**, bearing many glands.
- PÖLYĀN'DRĪAN**, see POLYANDROUS.
- PÖLYĀN'DROŪS**, having twenty or more hypogynous stamens. Compare ICOSANDROUS.

**PÓLYÁN'THOÛS**, having many flowers, especially if in one head. A polyanthous involucre, for example, is one investing many flowers.

**PÓLYCĀE'PELLĀRÝ**, said of a pistil consisting of more than one leaf or carpel.

**PÓLYCĀE'PIC**, fruiting successively; synchronicarpous. Compare **MONOCARPIC**. Sometimes improperly used for **Apocarpous**.

**PÓLYCĀE'POÛS**, used both for Polycarpic and Apocarpous. Compare **MONOCARPIC** and **MONOCARPOUS**.

**PÓLYĀEPH'ĀLOÛS**, bearing many heads.

**PÓLYCLĀ'DIĀ**, see **POLYCLADY**.

**PÓLYCLĀ'DOÛS**, having abnormally numerous branches.

**PÓL'YCLĀDÝ**, an excessive development of twigs or branches; plica. Due either to disease or teratology.

**PÓL'YCLŌNÝ**, an old term for Polyclady.

**PÓLYCŌC'COÛS**, of several cocci.

**PÓLYCŌTYLĒD'ŌNOÛS**, having more than two seed-leaves.

**PÓLYCŌTYLĒD'ŌNÝ**, an abnormal increase in the number of cotyledons.

**PÓLYDĒL'PHOÛS**, see **POLYADELPHOUS**.

**PÓLYĒM'BRYŌNĀTE**, having more than one embryo in a seed.

**PÓLYĒM'BRYŌNÝ**, the production, either abnormally or regularly, of more than one embryo in a seed. The term has been restricted to cases where the additional embryos arise without fertilization outside the embryo-sac, but there seems to be no good reason for the restriction.

**PÓLYFLŌ'ROÛS**, see **MULTIFLO-ROUS**.

**PÓLYGĀ'MIAN**, see **POLYGAMOUS**.

**PÓLYGĀMŌ-DICE'CIŌÛS**, see **DICE-CIOUSLY POLYGAMOUS**.

**PÓLYG'ĀMOÛS**, producing male and hermaphrodite, or female and hermaphrodite, or male, female, and hermaphrodite flowers on the same or on different individuals; i.e., having both perfect flowers and those of one sex.

**PÓLYG'ŌNOÛS**, having many angles, knots, or nodes.

**PÓLYGÝNĀ'CIĀL**, containing the gynœcia of several flowers, as a collective fruit.

**PÓLYGÝNOÛS**, having many styles or pistils.

**PÓLYHĒ'DRŌN** (pl. *Polyh's'drā*), in *Hydrodictyon*, a special angular cell with horn-like processes, formed by the swarm-cells produced in the zygospore, and within which a new cœnobium is developed.

**PÓLYM'ĒROÛS**, having many parts, or more than one: said of a flower with more than one organ in each whorl, or of a whorl containing more than one organ. Compare **MONOMEROUS**.

**PÓLYMŌR'PHIC**, see **POLYMORPHOUS**.

**PÓLYMŌR'PHISM**, (1) a condition in which different individuals of the same species have different forms, as in many diceious plants; (2) the state of passing different stages of existence under distinct forms which might be mistaken for different species, as is the case with heterœcious and some other fungi; pleiomorphism. See **METAGENESIS**, **ALTERATION**

- OF GENERATIONS, and HETEROECISM.
- PÓLYMÓR'PHOÛS**, existing under different forms. See above. Also having numerous more or less definite sub-types under a given type.
- PÓLYPÉT'ALOÛS**, having distinct petals (opposed to Gamopetalous); apopetalous; dialypetalous; eleutheropetalous; choripetalous.
- PÓLYPHÓRE**, a common receptacle for many distinct carpels, as that of the strawberry.
- PÓLYPH'YLOÛS**, see POLYSEP-ALOUS.
- PÓLYPHÉLLÛ**, an increase in the usual number of floral organs in a whorl. Compare PLEIOPHYLLY.
- PÓLYRHÍZAL**, many-rooted.
- PÓLYSÉP'ALOÛS**, of two or more distinct sepals; aposepalous; apophyllous. Compare POLYPETALOUS.
- PÓLYS'PHÓNOÛS**, said of the thallus in Floridæ when it consists of several parallel rows or filaments of cells.
- PÓLYSPÉR'MOÛS**, containing many seeds. Compare PLEIOSPERMOUS.
- PÓLYSPÉRMÛ**, the fertilization of a female cell by more than one male cell.
- PÓLYSPORE**, see COMPOUND SPORE.
- PÓLYSPÓROÛS**, containing many spores.
- PÓLYS'TACHOÛS**, having many spikes.
- PÓLYSTÉM'ONOÛS**, having many more stamens than petals. Compare ISOSTEMONOUS and POLYANDROUS.
- PÓLYSYMMÉT'RICAL**, capable of division into two symmetrical
- or equal halves in more than one direction; actinomorphic.
- PÓLYTHÁL'MIC**, derived from more than one flower, as a collective fruit. Compare MONOTHALMIC.
- PÓLYT'OMOÛS**, having the blade of a leaf distinctly divided into many subordinate parts, but not compound; having the stem forked or divided into many coordinate parts.
- PÓLYT'RICHÓÛS**, bearing numerous hairs.
- PÓLYZYGÓ'SIS**, the conjugation of more than two cells (gametes).
- PÓMA'CEOÛS**, having the appearance or nature of an apple.
- PÓME**, an indehiscent fruit of more than one carpel, with the seeds enclosed in horny or parchment-like endocarps, and an adnate fleshy calyx, as in the apple.
- PÓMIF'ÉROÛS**, pome-bearing.
- PÓM'ÍFORM**, apple-shaped.
- PÓMÓL'OGÛ**, the department of horticulture which relates to fruits. See FRUIT. Compare CARPOLOGY.
- PÓRE**, a small circular opening.
- PÓRE-CÁNÁL'**, the passage through a bordered or other pit between adjoining cells.
- PÓRE-CÁP'SÛLE**, one from which the seeds or spores escape by a pore or pores.
- PÓRÈN'CHÛMA** (obs.), see PITTED TISSUE.
- PÓ'RÓSE**, pierced with many small circular openings.
- PÓRÉCT'**, directed outward or forward; outstretched. Compare ARRECT.
- PÓRÉT'**, see SCALLION.
- PÓS'ITIVE GEÓT'RÓPISM**, growing toward the centre of the earth—usually called simply



- Geotropism. Compare NEGATIVE GEOTROPISM.
- POSITIVE HELIOTROPISM**, the same as Heliotropism. Compare NEGATIVE HELIOTROPISM.
- POSITIVELY RHEOTROPIC**, having the direction of growth in a rheotropic organ coincide with that of the stream in which it is placed, i.e., point down-stream. (Jönsson.) Compare NEGATIVELY RHEOTROPIC.
- POSTERIOR**, the side of a flower, etc., adjoining the axis or main stem. Compare ANTERIOR and DORSAL.
- POTICOUS**, see EXTRORSE.
- POUCH**, see SILICLE.
- POUCH-SHAPED**, like a short bag, as the pod of shepherd's-purse.
- PRECOCX**, see PRECOCIOUS.
- PREFLORATION**, see ÆSTIVATION.
- PRÆFOLIATION**, see VERNATION.
- PREMORSE**, see PREMORSE.
- PRATENSIS**, growing in meadows.
- PRECOCIOUS**, appearing or ripening before the proper or usual time: said of flowers which expand before the leaves, and of plants which flower or fruit much younger than usual, etc.
- PREFLORATION**, see ÆSTIVATION.
- PRÆFOLIATION**, see VERNATION.
- PREMORSE**, abrupt, and irregularly notched at the end as if bitten off. Compare TRUNCATE.
- PRICKLE**, a small, sharp, stiff outgrowth from the epidermis. Compare SPINE and THORN.
- PRIMARY**, chief or first formed. For examples see PRIMARY AXIS, PRIMARY CORTEX, etc.
- PRIMARY AXIS**, the main stem.
- PRIMARY CÔRTEX**, the true cortex or fundamental tissue of the bark. Compare SECONDARY CORTEX. See PERIBLEM.
- PRIMARY LEAVES**, see PRIMORDIAL LEAVES.
- PRIMARY MERISTEM**, the growing tissue of a young organ. Compare SECONDARY MERISTEM.
- PRIMARY PÉTIOLE**, the midrib of a compound leaf.
- PRIMARY ROOT**, the central or main root, being a direct continuation of the stem; tap-root.
- PRIMARY STRUCTURE**, the early structure of a plant or organ after all its distinctive tissues are formed and before any further growth or modification takes place.
- PRIMARY TISSUE**, (1) tissue in the condition when first formed; (2) that which is formed during the first stage or season of growth.
- PRIMARY WOOD**, that contained in the fibrovascular bundles of exogens when first developed, before the formation of the cambium ring. Compare SECONDARY WOOD.
- PRIMINE**, the outer coat of the ovule, called testa in the seed. Mirbel applied the term primine to the *inner* coat of the ovule, because first formed, and some other German writers have used it in the same sense.
- PRIMITIVE**, original: applied, for example, to the original species from which cultivated plants have been derived.

**PRIMÓR'DIAL**, original, or first formed.

**PRIMÓR'DIAL CÉLL**, a cell without a cell-wall; naked cell.

**PRIMÓR'DIAL ÉPIDÉR'MIS**, the epidermis as it exists when first formed.

**PRIMÓR'DIAL LEAVES**, the first leaves to succeed the cotyledons. Applied especially to lower leaves which differ considerably from those on the upper portion of the stem. Compare PROTOPHYLL.

**PRIMÓR'DIAL ÚTRICLE**, the outer layer of protoplasm adjoining the cell-wall. The term has with some about the same significance as Ectoplasm, though it usually refers more particularly to the immediate surface of the protoplasm (considered as a membrane, though not really one) rather than to a definite outer layer. The term was first used by Mohl and applied to the layer of protoplasm adjoining the cell-wall in cells which are nearly filled with sap. Upon the application of certain reagents the protoplasm contracts from the wall as a sac, the "primordial utricle."

**PRIMÓR'DIUM** (pl. *Primórdiá*), any member or organ in its earliest condition.

**PRISMÁT'IC**, in the form of a prism—with flat, longitudinal faces separated by angles. Applied to stems. Compare TERETE.

**PRÓCAM'BÍUM**, the first formed fibrovascular tissue of an organ before it becomes differentiated into xylem and phloëm. Compare CAMBIUM.

**PRÓCARP**, see PROCARPIMUM.

**PRÓCARPE** (Borner & Thuret), see PROCARPIMUM.

**PRÓCAR'PIUM** (pl. *Prócár'piá*), in Floridæ, the female organ (archicarp) before fertilization. It consists of a carpogonium, together with the trichogyne and any other accessory part. Compare CYSTOCARP.

**PRÓCESS**, any projection from a surface.

**PRÓCUM'BENT**, see PROSTRATE.

**PRÓDUCED**, prolonged; extended; projected.

**PRÓEMBRYŎ**, (1) the Suspensor, which see; (2) formerly applied to a prothallus, or to the first result of the germination of any spore; now restricted to special cases, as the rudimentary first stage of the sporophore arising from the oöspore in Characæ. Compare PROMYCELIUM, PROTONEMA, and PROTHALLUS.

**PRÓEMBRYŎN'IC BRANCHES**, short branches sometimes found on the nodes of *Chara fragilis* which resemble the proembryos in structure and serve for reproduction.

**PRÓAMOÛS**, preceding fertilization: applied to the cell of the pollen-grain which forms the pollen-tube, in distinction from vegetative cells which are also sometimes found.

**PRÓGRESS'IVE MÉTAMÓR'PHÓSIS**, the appearance in place of organs of the usual character of those belonging to a higher or succeeding set, as when petals are replaced by or "converted into" stamens; ascending metamorphosis. Compare RETROGRESSIVE METAMORPHOSIS.

**PRÓLATE**, elongated in a polar direction. Compare OBLATE.

**PRŎLE**, a useless term applied both to Form and Race.

**PRŌLĒP'SIS**, accelerated, anticipated, or hurried development, as in the disease known as "peach-yellows," where axillary buds develop into branches the first year.

**PRŌLIFĒR'ATION**, development in a prolific manner.

**PRŌLIFĒROÛS**, developing buds, branches, flowers, etc., from unusual places. Applied, for example, to a flower from which another flower or a branch proceeds, to a leaf from which other leaves or branches arise, to a bulbous plant which abnormally produces bulbs upon the stem above ground, or to any plant which forms young plants in unusual number about its base.

**PRŌLIFĪC**, fruitful. Sometimes used in the sense of Proliferous.

**PRŌLIFĪC'ATION**, development in a prolific or proliferous manner; proliferation.

**PRŌLIGĒROÛS**, bearing reproductive bodies of any kind.

**PRŌMĪNENT**, standing out more than usual, or beyond adjoining parts.

**PRŌMŪCĒ'LĪŪM**, in Uredineæ and Ustilagineæ, a short and short-lived mycelial growth proceeding from a resting-spore and upon which sporidia are borne.

**PRŌNĀTE**, inclined to grow prostrate; somewhat prone or prostrate.

**PRŌNE**, lying flat, especially with the face downward; ventricumbent. See PROSTRATE and SUPINE.

**PRŌNŪ'CLEÛS**, the nucleus of a gamete. Compare GERM-NUCLEUS.

**PRŌP**, see FULCRUM.

**PRŌPĀC'ULŪM**, see PROPAGULUM.

**PRŌPĀC'ŪLĀ**, pl., see PROPAGULUM.

**PRŌPĀC'ŪLE**, see PROPAGULUM.

**PRŌPĀC'ŪLŪM** (pl. *PrŏpĀg'ŭlĀ*), a term applied to runners, offsets, and stolons—especially to a slender runner or stolon terminating in a new plant.

**PRŌPĒND'ENT**, hanging forward and downward.

**PRŌPĒR**, true or individual. A *proper* calyx, for example, would be the true calyx of an individual flower as opposed to the general calyx (involucre) of a head.

**PRŌPĒR JŪICE**, a term formerly used for any characteristic fluid of a plant (especially if thickened) in distinction from the ordinary sap, as the "milk" of milk-weeds. Applied also to the cambium or so-called "descending sap" when in a growing mucilaginous condition.

**PRŌPH'ASES**, a term proposed by Strasburger for all the phenomena of karyokinesis up to the longitudinal splitting of the threads. Compare METAPHASES and ANAPHASES.

**PRŌPHLŌ'EM**, the first-formed elements of phloem in a fibrovascular bundle; protophloem. Applied also to the cylinder of elongated cells with thickened walls containing granular protoplasm found in the seta of certain mosses surrounding the proxylem.

**PRŌSCŌL'LĀ**, an old term for the retinaculum in orchids.

**PRŌSĒN'CHŪMĀ**, tissue composed of elongated cells with tapering extremities in the wood and liber. Compare PARENCHYMA.

**PROSTRATE**, lying flat upon the ground, but not rooting; pro-cumbent. Compare CREEPING.

**PRŌTĀN'DROŪS**, having stamens which ripen their pollen before the pistils of the same flower are ready for fertilization. Compare PROTOGYNOUS.

**PRŌTĒID**, see ALBUMINOID.

**PRŌTĒIN**, see ALBUMINOID. Formerly considered a distinct substance.

**PRŌTĒIN CRŪS'TAL**, see CRYSTALLOID.

**PRŌTĒIN GRĀIN**, see ALEURONE.

**PRŌTĒN**, see PROTENCHYMA.

**PRŌTĒN'CHŪMĀ**, a term used by Nägeli for all tissue not of the fibrovascular system; proten. Compare EPENCHYMA. These terms are little used.

**PRŌTĒRĀN'DROŪS**, see PROTANDROUS.

**PRŌTĒRĀN'THOŪS**, having flowers which appear before the leaves, as in the red maple. Sometimes improperly used in the opposite sense. Compare HYSYTERANTHOUS and SYNANTHOUS.

**PRŌTĒRŌG'YNOŪS**, see PROTOGYNOUS.

**PRŌTHĀL'LĪĀ**, pl., see PROTHALLIUM.

**PRŌTHĀL'LĪŪM** (pl. Prŏthāl'liā), see PROTHALLUS.

**PRŌTHĀL'LŪS**, the thalloid structure resulting from the germination of the spore in ferns and other pteridophytes, upon which the antheridia and archegonia are borne; prothallium. Extended also to the sexual generation of other plants which have an alternation of generations.

**PRŌTŌGĒN'ĒSĪS**, a term proposed by Rocison for reproduction by budding after the manner of protophytes.

**PRŌTŌGĒN'ĪC**, formed in the beginning: said of intercellular spaces which are formed at the time the tissues are beginning to differentiate. Compare HYSTEROGENIC.

**PRŌTŌG'YNOŪS**, having pistils which are ready for fertilization before the pollen of the same flower is ripe. Compare PROTANDROUS.

**PRŌTŌ-MĒR'ĪSTĒM**, see PRIMARY MERISTEM.

**PRŌTŌNĒ'MĀ** (pl. Prŏtŏnĕ'mātā), the proembryo, or confervoid (often branched) filament first formed from the spore in mosses, and upon which the conspicuous moss-plant is developed by budding.

**PRŌTŌPHLŌ'ĒM**, see PROPHLOEM.

**PRŌTŌPHŪL**, a cotyledon or other first-formed leaf of a plant; protophyllum. Used mainly in vascular cryptogams. Compare PRIMORDIAL LEAVES.

**PRŌTŌPHŪL'LŪM** (pl. Prŏtŏphŭl'lā), see PROTOPHYLL.

**PRŌTŌPHŪTŌL'ŌGŪY**, (1) the study of protophytes; (2) fossil botany.

**PRŌTŌPLĀSM**, the nitrogenous fluid of variable composition found in living cells. It is the vital substance into which all food is assimilated and from which all parts of the plant are formed.

**PRŌTŌPLĀST** (Hanstein), the smallest body of protoplasm capable of individual action, either with or without a cell-

wall, and either associated in a tissue or independent. It is generally at least a nucleus, together with the protoplasm associated with it. Essentially a cell.

**PRŌTŌSPŌRE**, any spore which develops a promycelium. Applied by Cook to æcediospores. An unnecessary term. Compare **SPORIDIUM**.

**PRŌTŌTHAL'LŪS**, see **PROTHAL-LUS**.

**PRŌTŌXY'LĒM**, see **PROXYLEM**.

**PRŌTŌZŌPH'ĪLOŪS**, applied to certain water-plants which have the pollen conveyed by minute animals called protozoa.

**PRŌTRŪD'ING**, see **EXSERTED**.

**PRŌX'IMAL**, pertaining to the base, or extremity of attachment. Compare **DISTAL**.

**PRŌXY'LĒM**, the first-formed xylem in a bundle; protoxylem. The term has also been applied to the layer of water-conducting cells destitute of protoplasm around the central strand in the seta of certain mosses. Compare **PROPHLOĒM**.

**PRŪ'INĀTE**, see **PRUINOSE**.

**PRŪ'INŌSE**, covered with a powdery bloom, like the fruit of most plums; pruinose. Compare **GLAUCOUS**, **HOARY**, and **CANESCENT**.

**PRŪ'INOŪS**, see **PRUINOSE**.

**PRŪ'NĪFORM**, plum-shaped.

**PRŪ'RĪENT**, stinging, as the hairs of nettle.

**PSEŪDĀX'ĪS**, see **SYMPIDIUM**.

**PSEUDO**, a prefix derived from the Greek signifying false or spurious.

**PSEŪ'DŌ-BŪLB**, see **CORM**. Especially the corm or fleshy base

of the stem in many epiphytic orchids.

**PSEŪ'DŌ-BŪLBĪL**, an outgrowth which sometimes replaces the ordinary sporangia in ferns and bears antheridia and archegonia.

**PSEŪ'DŌCĀRP**, any fruit which is not derived exclusively from a single ovary without accessory parts. The fruits of the apple, rose, mulberry, and juniper are pseudocarps.

**PSEŪDŌCŌS'TĀTE**, said of a leaf in which the veins unite to form an outer vein parallel to the margin, as in *Eucalyptus*.

**PSEŪDŌ-GĒ'NŪS**, see **FORM-GENUS**.

**PSEŪDŌGŪ'RĀTE**, sometimes applied to the annulus in ferns when it crowns the sporangium, as in the *Schizæaceæ*. Compare **PLEUROGYRATE**.

**PSEŪDŌMŌNŌCŌTŪLĒD'ŌNOŪS**, having two or more consolidated cotyledons. (Obs.)

**PSEŪDŌ-PĀR'ĀSITE**, see **EPHYPHYTE** and **SAPROPHYTE**.

**PSEŪDŌ-PĀRĒN'GHŪMĀ**, a term applied by De Bary to tissue in fungi which is formed by interlacing and united hyphæ.

**PSEŪDŌPĒRĪTHĒ'ÇĪŪM**, a false perithecium.

**PSEŪDŌ-PĪN'NĀTE**, having leaflets (or rather segments) which are not articulated or petioled at their base; pinnatisect.

**PSEŪDŌPŌ'DĪŪM** (pl. *Pseŭdŏpŏ-diā*), (1) a stipe or stem of unusual origin, as the leafless upper portion of the stem which supports the capsule in *Sphagnum* (instead of the true seta which remains undeveloped); (2) one of the tem-

- porary changeable branches of a plasmodium, or one of the retractile appendages of the zoöspores (myxamœbæ) of Myxomycetes.
- PSEUDORÁM'ŪLŪS**, a false or spurious branch found in certain Nostochacææ, consisting of a younger filament agglutinated for a portion of its length to an older one.
- PSEŪ'DOSPĒRM**, an Achene or Caryopsis.
- PSEŪDOSPĒR'MÍC**, having a single seed so closely invested by the pericarp that the whole appears like a seed, as in grasses and Compositæ; pseudospermous.
- PSEŪDOSPĒR'MOŪS**, see PSEUDOSPERMIC.
- PSEŪDOSŪN'CÁRP**, see COLLECTIVE FRUIT. Compare SYN-CÁRP.
- PTĒRÍD'ĪŪM**, see SAMARA.
- PTĒRŌCÁR'POŪS**, wing-fruited.
- PTĒRŌCÁŪ'LOŪS**, having a winged stem.
- PTĒRŌID**, wing-like.
- PTĒRŌP'ŌDOŪS**, having a winged petiole.
- PTĒRŌSPĒR'MOŪS**, having the seeds winged.
- PTĒRŪGŌ'NOŪS**, having winged expansions on the angles of the stem.
- PTŌ'MÁINE**, any alkaloid formed by the activity of bacteria.
- PŪ'BĒRTŪ**, the period when a plant first begins to blossom.
- PŪBĒR'ŪLENT**, minutely pubescent; covered with short, soft, rather distant hairs. Compare HOLOSERICĒUS.
- PŪBĒS'ĈENĈE**, soft and rather short hairs; also extended to hairs of all kinds.
- PŪBĒS'ĈENT**, covered with fine, soft, rather short hairs.
- PŪGIŌN'ĪFŌRM**, dagger-shaped. (Obs.)
- PŪL'LEŪ-SHÁPED**, see TROCHLEAR.
- PŪL'LŪLÁTING**, budding; sprouting;—now used only for the budding or sprouting of a cell, a special form of cell-multiplication as seen in yeast, in which a new cell gradually swells out from an older one.
- PŪLP**, the soft, more or less juicy portion of a fruit, or other plant-substance of similar structure.
- PŪLVĒRÁ'ĈEOŪS**, dusty or powdery on the surface. Compare PULVERULENT.
- PŪLVĒR'ŪLENT**, (1) powdery or crumbly; (2) pulveraceous.
- PŪL'VINÁTE**, shaped like a cushion or pillow; having a pulvinus.
- PŪL'VINÁTED**, having a pulvinus.
- PŪLVÍN'ŪLŪS** (pl. PŪlvín'Ūlī), diminutive of Pulvinus. Applied to various excrescences, and also formerly to the soredia of lichens.
- PŪLVÍNŪS** (pl. PŪlvín'Ūnī), a term applied to various cushion-shaped or wart-like protuberances and swellings, as (1) the projection left by the fall of a leaf in many plants; (2) the enlargement at the base of the petiole in certain Leguminosæ which has the power of contraction, producing the "sleep" of leaves; (3) an enlargement formed by the thickening of the bark at the base of certain twigs, as in arbor-vitæ; (4) a thickened, usually median, portion of

- the prothallus in ferns bearing the archegonia and antheridia.
- PŪMĪLŪS**, see HUMILIS.
- PŪNC'TĀTE**, dotted as if by punctures. The dots may be colored or colorless, superficial or internal, in the latter case sometimes caused by minute oil-glands. Compare PERFORATE.
- PŪNC'TĪFŌRM**, in the form of either a dot or point.
- PŪNC'TŪM VĒGĒTĀTIŌNĪS**, the extremity of a stem, or other central point where the cells are in the process of division and growth; growing point; apical cone.
- PŪN'GĒNT**, terminating in a hard sharp point. Compare MUCRONATE.
- PŪR'PŌSE**, see ADAPTATION.
- PŪS'TŪLĀTE**, bearing pustules or low, blister-like elevations; pustular; pustulose.
- PŪS'TŪLE**, a slight elevation like a pimple or little blister. Compare PAPILLA.
- PŪTĀ'MĒN**, the stone of a drupe, or shell of a nut.
- PŪC'NĪDE**, see PYCNIDIUM.
- PŪC'NĪD'IŪM** (pl. Pŷonid'ia), a receptacle in Ascomycetes containing stylospores; clinosporangium.
- PŪC'NŌCĒPH'ĀLOŪS**, having the flowers densely crowded in the inflorescence.
- PŪC'NŌCŌNĪD'IŪM**, see STYLO-SPORE.
- PŪC'NŌGŌNĪD'IŪM**, see STYLO-SPORE.
- PŪC'NŌSPŌRE**, see STYLO-SPORE.
- PŪC'NŌS'TĀCHOŪS**, in compact spikes.
- PŪŌGĒNĒT'ĪC**, pus-forming, as certain bacteria.
- PŪRĀM'ĪDAL**, either angular and tapering upward, or conical.
- PŪRĒ'NĀ** (pl. PŷrĒ'nĕ), a nutlet, or the stone of a small drupe.
- PŪRĒ'NE**, see PYRENA.
- PŪRĒ'NŌCĀRP**, (1) the perithecium in Pyrenomycetes; (2) a drupe.
- PŪRĒ'NŌĪDS**, minute rounded colorless granules, one or more of which are embedded in the chromatophores of many algæ; amyllum bodies; chlorophyll vesicles.
- PŪR'ĪFŌRM**, see PEAR-SHAPED.
- PŪX'ĪDĀTE**, resembling a pyxidium or bearing pyxidia.
- PŪXĪD'IŪM** (pl. Pŷxid'ia), a capsule which dehisces by a circular transverse line; pyxis. Now restricted to seed-capsules, but formerly applied also to certain spore-capsules, as those of mosses.
- PŪX'ĪS** (pl. Pŷx'ia), see PYXIDIUM.
- QUAD**-, or **QUADRI**-, a prefix from the Latin meaning four.
- QUADRĀN'GŪLAR**, four-angled.
- QUADRĪCRŪ'BAL**, having four stems or supports.
- QUADRĪDĒN'TĀTE**, four-toothed.
- QUADRĪDĪG'ĪTĀTE**, digitate in four divisions.
- QUADRĪFĀ'RĪŌŪS**, in four vertical ranks.
- QUADRĪFĪD**, cleft into four segments half-way to the base or midrib.
- QUADRĪFŌIL**, see QUADRIFOLIATE.
- QUADRĪFŌ'LĪĀTE**, strictly, four-leaved, but used for having four leaflets arising from the

apex of the petiole; quadrifoliolate; quadriphyllous; quadrifoil.

**QUADRIFŌLIŌLĀTE**, the same as Quadrifoliolate, and more precise; i.e., having four leaflets arising from the apex of the petiole.

**QUADRIFŪRCĀTE**, dividing into four branches.

**QUADRIGĒMĪNĀTE**, growing in fours

**QUADRĪJŪGĀTE**, having four pairs of leaflets; quadrijugous.

**QUADRĪJŪGŪS**, see **QUADRĪJUGATE**.

**QUADRĪLŌBĀTE**, having four lobes, as a leaf.

**QUADRĪLŌCŪLAR**, having four cells in an ovary.

**QUADRĪNĀTE**, see **QUATERNATE**.

**QUADRĪPĀRTĪTE**, divided to the base or midrib in four parts; four-parted.

**QUADRĪPHŪLLOŪS**, see **QUADRIFOLIATE**.

**QUADRĪVĀLVŪLAR**, of four valves—said of pericarps.

**QUĀQUĀVĒRSAL**, directed every way.

**QUĀTĒRĪNG**, applied by florists to petals which have an external angle or vacancy between them.

**QUĀRTĪNE**, a fourth integument in an ovule (if present) counting from the outside. It is really a layer or fold of the secundine or of the nucleus.

**QUĀTĒRNĀRY**, of four parts. Compare **TETRAMEROUS**.

**QUĀTĒRNĀTE**, growing in fours.

**QUĪLLED** (Hort.), applied to double flowers in *Compositæ* when the corollas of the florets, instead of being ligulate,

are more or less tubular in form like a cornet of paper, as is often seen in the dahlia.

**QUIN-**, a prefix from the Latin meaning five.

**QUĪNĀRY**, in fives or multiples of five.

**QUĪNĀTE**, growing together in fives, as five leaflets from the apex of a petiole.

**QUĪNCŪNCĪĀL**, applied in æstivation to a whorl of five parts, two of which are external, two internal, and one half external and half internal (the typical method of imbricative æstivation when the parts are five). Formerly used also in the sense of five-ranked. In general use the term is applied to objects arranged in squares with one at the centre. In horticulture this arrangement is sometimes termed "false quincuncial," the true quincuncial arrangement being the disposition of objects so that the intervening spaces are all hexagons.

**QUĪNCŪNX**, a set of five objects arranged in a quincuncial manner.

**QUĪNQUĀNGŪLAR**, five-angled.

**QUĪNQUĒCŌSĀTE**, five-ribbed.

**QUĪNQUĒDĒNTĀTE**, five-toothed.

**QUĪNQUĒFĀRĪŪS**, five-ranked.

**QUĪNQUĒFĪD**, in five segments reaching about half-way to the base or margin; five-cleft.

**QUĪNQUĒFŌLĪĀTE**, having five leaflets; strictly, five-leaved.

**QUĪNQUĒFŌLĪŌLĀTE**, the same as **Quinquefoliate**; i.e., having five leaflets.

**QUĪNQUĒJŪGĀTE**, in five pairs.

**QUĪNQUĒLŌBĀTE**, having five lobes.





**RADI'IFORM**, root-like.  
**RAD'ICLE**, the portion of an embryo below the cotyledons, including the caulicle and nascent root; by some now restricted to the extreme point of the caulicle from which the root develops.  
**RAD'ICŌSE**, having roots unusually large or otherwise remarkable.  
**RAD'ICŪLA** (obs.), see RADICLE.  
**RAD'ICULE** (obs.), see ROOTLET.  
**RAD'ICŪLOSE**, bearing rootlets or rhizoids, especially if numerous.  
**RĀ'DĪŪS** (pl. Rā'dīi), see RAY.  
**RĀ'DĪX** (pl. Rād'icē), see ROOT.  
**RĀG** (Hort.), the placenta and dissepiments (core and membranes) in the orange and other citrus fruits.  
**RĀ'MĀL**, see RAMEAL.  
**RĀ'MĒAL**, growing on or pertaining to branches; ramal; rameous.  
**RĀM'ENT**, sing., see RAMENTA.  
**RĀMĒN'TĀ** (sing. Rāmēn'tūm), scale-like hairs of various forms, especially when attached at an end or side like those on the petioles of ferns; raments. Also applied to other scales. Compare LEPIDES.  
**RĀMĒN'TĀ'CEŌŪS**, bearing ramenta.  
**RĀMĒN'TŪM**, sing., see RAMENTA.  
**RĀ'MĒŌŪS**, see RAMEAL.  
**RĀ'MĪ**, pl., see RAMUS.  
**RĀMĪF'ĒROŪS**, see RAMOSE.  
**RĀMĪFĪCĀ'TION**, (1) the act or process of branching; (2) a branch, division, or offshoot; (3) the general arrangement of a system of branches. Applied to either stems or roots. Compare RADICATION.

**RĀMĪFLŌ'ROŪS**, producing flowers along the larger branches.  
**RĀM'IFORM**, branch-like.  
**RĀMĪP'ĀROŪS**, producing branches.  
**RĀMŌSE'**, bearing branches; divided into branches; especially, divided into many branches; ramous.  
**RĀ'MŌŪS**, see RAMOSE.  
**RĀM'ŪLĪ**, pl., see RAMULUS.  
**RĀM'ŪLOSE**, full of small branches.  
**RĀM'ŪLOŪS**, see RAMULOSE.  
**RĀM'ŪLŪS** (pl. Rām'ūli), a small branch or twig.  
**RĀ'MŪS** (pl. Rā'mī), a branch.  
**RĀNK**, a row, especially a vertical row of leaves or other organs upon a stem.  
**RĀ'PHĒ**, the adherent funiculus connecting the hilum and chalaza in anatropous or amphitropous seeds. Also applied to a median line on the frustules of many diatoms, and formerly to the suture between the two halves of the fruit in Umbelliferae; raphé.  
**RĀPH'ĪDES**, needle-shaped crystals; raphides. Sometimes improperly applied to plant-crystals of other forms. They are usually composed of oxalate of lime, and occur in large numbers in certain plants.  
**RĀPHĪD'ĪAN**, pertaining to raphides. A *raphidian cell* is a cell containing raphides.  
**RĀRE**, sparse or few. Seldom used in this sense.  
**RĀRE'-RĪPE**, see RATH-RĪPE.  
**RĀTH'-RĪPE** (rare), ripening or maturing early in the season; rare-ripe.  
**RĀTOŌN'**, a sprout from the root or base of a plant which has been cut off (applied mainly

to sugar-cane). Compare  
SUCKER and PLANT-CANE.

**RAÛMPĀR'SĪT**, see AULOPHYTE.

**RĀY**, a branch of an umbel or other somewhat radiating inflorescence; the ligulate corolla of an outer floret in a head of Compositæ; the margin of any circular surface, as distinguished from the central portion or disk.

**RĀY-FĻŌRĒT**, see LIGULATE FLORET.

**RĀY-FĻŌWĒR**, one of the marginal florets of a head in Compositæ; ray-floret; ligulate floret. Also, a marginal flower in other flat-topped flower-clusters, especially when different from those of the centre or disk, as in hydrangea.

**RĒĀPTĀCLE**, the place upon or within which anything is borne, as the summit of a flower-stalk upon which the floral organs are arranged, or upon which the flowers of a head are situated.

**RĒĀPTĀĀLAR**, pertaining to or growing upon a receptacle.

**RĒĀPTĀĀLAR TĪBE**, see CALYX-TUBE. Compare HY-PANTHIUM.

**RĒĀPTĪVE SPŌT**, the place in an oosphere at which the male gamete enters; i.e., at which fertilization takes place.

**RĒĀSS**, see SINUS.

**RĒĀLINĀTE**, bent over so that the apex is lower than the base, or until it rests on some support; reclined; reclining. Said of stems or branches when erect or ascending at the base, then turning toward the ground; of leaves in the bud when the blade is bent down upon the petiole, etc. When applied to a vine grow-

ing upon the ground it has about the same meaning as Recumbent and Decumbent.

**RĒĀLINĒD**, see RECLINATE.

**RĒĀLINĒNG**, see RECLINATE.

**RĒĀRĀDESĀNĀ** (obs.), see REJUVENESCENCE.

**RĒĀTĒNERVED**, parallel-veined.

**RĒĀTĒPĒĀĀĪTY**, the tendency of growing organs to grow in a straight line. (Vochting.)

**RĒĀTĒSĒRĀĀL**, in straight rows.

**RĒĀRĀVĀTE**, see RECURVED.

**RĒĀRĀVED**, curved outward or backward to a moderate extent, between forty-five and ninety degrees. Compare REFLEXED.

**RĒĀRĀĀĀTE**, applied to parts of a flower in aestivation when they are valvate and have the margins reflexed.

**RĒĀRĀĀĀTION**, an increase in the number of parts in a flower according to the plan upon which it is founded, i.e., by the addition of similar whorls; regular multiplication.

**RĒĀĀĀĒD**, see REFLEXED.

**RĒĀĀĀĒD**, turned backward or outward more than Recurved, or to about the same extent but abruptly; reflected. Compare RECURVED and DEFLECTED.

**RĒĀĀĀĀNĀ**, blossoming anew.

**RĒĀĀĀĀĒD**, bent abruptly outward or backward, at an angle of more than forty-five degrees. Compare DEFLEXED and RECURVED.

**RĒĀĀĀĀĀTION**, see REJUVENESCENCE.

**RĒĀĀĀĀ**, an extent of country enclosing particular species, which are distributed through it in the stations adapted to their growth, and which, owing

- to natural conditions, are not generally found elsewhere, as the Arctic and Mediterranean regions.
- RĚG'MĀ**, a fruit with elastically dehiscing cocci, as in Euphorbia.
- RĚG'MĀCĀRP**, see **REGMA**.
- RĚGRĚSSION**, see **RETROGRESSIVE METAMORPHOSIS**.
- RĚG'ŪLAR**, said of a flower which has all the parts of each whorl alike in size and form; actinomorphic.
- RĚG'ŪLAR PELŌ'RĪĀ**, when a flower, usually regular, becomes irregular by the non-development of some part. Compare **PELORIA**, **IRREGULAR PELORIA**, and **EPANODY**.
- RĚJŪVENĚS'ĀNCĚ**, (1) the formation of a single new cell from the entire contents of a cell already formed ("renewal of cells"); especially, where the new cell escapes from the old cell-wall and develops a new plant, as in **Cedogonium** and some other algae; (2) the renewal of growth and vigor as the result of conjugation or other form of fertilization (rare); (3) any renewed growth, or manifestation of increased vigor, as the annual growth of new canes in the raspberry or the formation of vigorous shoots from near the ground in other shrubs; renewal; regeneration.
- RĚLIQ'ŪIĚ**, see **INDUVIĚ**.
- RĚMŌTE**, separated by greater intervals than usual.
- RĚNEWAL OF CĚLLĚ**, see **REJUVENESCENCE**.
- RĚN'ĪFORM**, kidney-shaped; heart-shaped, but broader than long and very deeply lobed at the base.
- RĚPĀND'**, having a slightly undulating or sinuous margin. Compare **SINUATE**.
- RĚ'PĚNT**, see **CREEPING**.
- RĚPLĪCĀTE**, folded backward at the sides or end. Compare **REVOLUTE**.
- RĚ'PLŪM**, a frame-like placenta in Cruciferae and certain other plants across which the septum stretches, and from which the two valves fall away in dehiscence.
- RĚPRŌDŪCTĪVE ŐRGĀNĚ**, in flowering plants, the stamens and pistils.
- RĚP'TANT**, see **CREEPING**.
- RĚSĚRVE MĀTĚRĪĀL**, assimilated plant-food which is capable of again becoming food to serve in the growth of the plant, as starch.
- RĚS'ĪN-CĚLL**, a cell which has the office of secreting resin.
- RĚS'ĪN-DŪCT**, see **RESIN-PASSAGE**.
- RĚS'ĪN-GLĀND**, a cell or group of cells which secrete resin.
- RĚSĪNĪFĚROŪS**, producing resin.
- RĚS'ĪN-PĀS'SĀGE**, an intercellular space or continuous gland in or into which resin is secreted; resin-duct; resin-tube.
- RĚS'ĪN-TŪBE**, see **RESIN-PASSAGE**.
- RĚSPĪRĀ'TION**, in a broad sense, includes all transfers of gases and vapors between the plant and the air. As usually employed it refers to the absorption of carbon dioxide from the air, and its decomposition in the plant, with the assimilation of the carbon and the liberation of the oxygen. In a strict sense it applies to the same process as respiration in animals, though existing in

- plants to a feebler degree, namely, the reception of oxygen, the oxidation of oxidizable matter, and the release of the products of oxidation. See **TRANSPIRATION**.
- RĚSPĚRÁTORŮ ČÁVĚTÝ**, see **STOMATIC CHAMBER**.
- RĚSPĚRÁTORŮ CHÁMBĚR**, see **STOMATIC CHAMBER**.
- RĚSTANT**, see **PERSISTENT**.
- RĚSTĚNG ČĚLL**, see **RESTING-SPORE**.
- RĚSTĚNG-NŮCLEŮS**, a nucleus when not in the act of karyokinesis. The nuclear filament then exists in the form of granules, or as a network, often with one or more nucleoli.
- RĚSTĚNG PĚRIŮD**, the period during which a plant, seed, or spore remains dormant. Applied mainly to the dormant period of a resting-spore, then also called by some "involution-period."
- RĚSTĚNG-SPŮRÁNĚGIŮM**, a term applied by Pringsheim to certain dormant gonidia of Saprolegnia and related fungi which eventually produce swarm-spores.
- RĚSTĚNG-SPŮRE**, a spore furnished with thick walls and able to retain its vitality for a considerable time, and generally requiring the lapse of time, often over winter, before it will germinate; winter-spore; hypnospor; statospore.
- RĚSTĚNG-STÁĚE**, the stage or condition of a plant, bulb, seed, or spore during its dormant or resting period.
- RĚSŮPĚNÁTE**, upside-down; inverted; retroverted; reversed. Compare **SUPINE**.
- RĚTĚČŮLÁTE**, in the form of network, as the veins in the leaves of most plants.
- RĚTĚČŮLÁTĚD**, see **RETICULATE**.
- RĚTĚČŮLÁTĚD VĚSĚL**, one having thickenings in the form of network.
- RĚTĚČŮLÁTION**, any network; reticulum.
- RĚTĚČŮLŮM**, a fibrous membrane at the base of the petioles in palms (*mattulla*); the network which pervades the substance of the cell and nucleus enclosing the softer portions of the protoplasm; any system of filaments or fibres in the form of network.
- RĚTĚČŮRŮM**, see **RETICULATE**.
- RĚTĚNÁČŮLŮM** (pl. *RĚtĚnácŮlā*), (1) the viscid glandular disk derived from the rostellum at the base of the caudicle of a pollinium in orchids by which it is attached to a visiting insect (cement-disk of Müller); (2) one of the arms connecting the pollinia of milk-weeds with the corpusculum; (3) the persistent indurated hook-like funiculus of the seeds in most *Acanthaceae*.
- RĚTĚNĚRVED**, see **RETICULATE-VEINED**.
- RĚTRŮFLĚXĚD**, see **REFLEXED**.
- RĚTRŮFRÁCTĚD**, see **REFRACTED**.
- RĚTRŮGRĚSĚSION**, see **RETROGRESSIVE METAMORPHOSIS**.
- RĚTRŮGRĚSĚSĚVE MĚTÁMŮRPHŮSĚS**, the occurrence in the place of organs of the usual character of those belonging to a lower condition or position, as when pistils become converted into stamens, petals, or leaves; descending metamorphosis; retrogression; re-

- gression. Compare PROGRESSIVE METAMORPHOSIS.
- RÉTRORSE'**, turned backward in any manner.
- RÉTRORSE'LY ACU'LEATE**, having prickles directed backward or downward, as on the stem of *Galium asprellum*.
- RÉTRÓVERTÉD**, see RESUPINATE.
- RÉTUSE'**, slightly notched at a rounded apex. Compare EMARGINATE.
- RÉVÉRSÉD'**, upside-down; resupinate; directed backward toward the base; extending in an opposite to the usual direction.
- RÉVÉRS'ION**, appearance in an earlier, lower, or simpler form than usual. See RETROGRESSIVE METAMORPHOSIS and ATAVISM.
- RÉVÓLUTE**, rolled outward, backward, or downward. Compare INVOLUTE and CIRCINATE.
- RÉVÓLV'ING NŪTÁ'TION**, see CIRCUMNUTATION.
- RHÁB'DOID**, an acicular or spindle-shaped protoplasmic body found in the stalk-cells of the tentacles of *Drosera* and in the mesophyll cells of *Dionæa*; plastoid. It tends to become spherical when the part is stimulated, but its full significance is unknown.
- RHÁ'CHIS**, see RACHIS.
- RHÁ'PHĒ**, see RAPHE.
- RHÁPH'IDĒS**, see RAPHIDES.
- RHĒÓT'RÓPISM**, having the direction of growth determined (not mechanically) by a current of water. (Jönsson.) See POSITIVELY and NEGATIVELY RHEOTROPIC. Compare HELIOTROPISM.
- RHIZÁMÔR'PHOID**, see RHIZOMORPHOUS.
- RHIZÁN'THOÛS**, parasitic upon the roots of another plant, and producing flowers with little or no green foliage of its own, as *Rafflesia* and *Monotropa*. A term of little importance, seldom used. Compare RADICIFLOUS.
- RHIZ'INÁ** (pl. *Rhiz'ínæ*), see RHIZOID.
- RHIZ'INE**, see RHIZOID.
- RHIZÓCÁR'POÛS**, having a perennial root and herbaceous stem; rhizocarpic. (Rare.)
- RHIZ'OGĒN**, (1) a plant which is parasitic upon the roots of another; (2) any part or organ which emits roots or rhizoids.
- RHIZÓGENĒT'IC**, root-producing, as *rhizogenetic* tissue; rhizogenic.
- RHIZÓGEN'IC**, see RHIZOGENETIC.
- RHIZ'ZOID**, adj., see RHIZOMORPHOUS.
- RHIZ'ZOID**, n., a root-like organ in many cryptogams; rhizina; rhizine. Compare Root.
- RHIZÓ'MÁ** (pl. *Rhizó'mátá*), see RHIZOME.
- RHIZÓMÁT'IC**, having the appearance or character of a rhizome.
- RHIZÓME**, a subterranean stem, especially if uniformly thickened for the storage of starch, etc.; rhizoma; root-stock. Compare STOLON and TUBER.
- RHIZÓMÔR'PHS**, root-like organs in Agarics and some other fungi composed of many united hyphal strands.
- RHIZÓMÔR'PHOÛS**, root-like; rhizomorphoid; rhizoid.
- RHIZÓPHÔRE**, a structure in certain species of *Selaginella* which resembles a root and from which true roots are developed.

**RHIZOPHYLLŌŪS**, emitting roots from the leaves. (Rare.)

**RHIZŌTAX'IS**, the position or order of arrangement of the roots upon a plant; radication. Compare PHYLLOTAXIS and CAULOTAXIS.

**RHĪ'ZŌTAXĪ**, see RHIZOTAXIS.

**RHŌDŌL'ŌGŪ**, the part of botany which treats of roses.

**RHŌDŌPHŪYL**, the compound pigment which is the coloring matter of red algæ, the Floridææ.

**RHŌDŌSPĒR'MIN**, crystalloids of proteid found in the Floridææ containing the rhodophyl or red coloring matter.

**RĪB**, a large prominent vein.

**RĪBBED**, (1) having more than one prominent longitudinal vein; (2) applied to an apple or other fruit with large longitudinal ridges.

**RĪCTŪS**, an old term for the throat of a personate flower.

**RĪGĒS'ĈENT**, approaching a rigid or stiff consistence. (M. C. Cooke.)

**RĪGHT**, see remarks under DEXTROSE and LEFT.

**RĪMĀ** (pl. RĪmā), a chink or cleft.

**RĪMŌSE'**, abounding with chinks, clefts, or cracks, as the bark of many trees and the thallus of certain lichens; rimous.

**RĪM'ŌŪS**, see RIMOSE.

**RĪM'ŪLŌSE**, diminutive of Rimose.

**RĪND**, see CORTEX.

**RĪNG**, see ANNULUS.

**RĪNGED**, see ANNULATED.

**RĪN'ĜENT**, bilabiate, with the lips widely separated and the throat open, as in Lamium. Compare PERSONATE.

**RĪPĀ'RĪAN**, see RIPARIOUS.

**RĪPĀ'RĪŌŪS**, growing along rivers or other water-courses; riparian.

**RĪVŌSE'**, having sinuate channels. Compare SULCATE.

**RĪV'ŪLŌSE**, having small sinuate channels. Compare STRIATE.

**RŌD - FRŪCTĪFĪCĀ'TION**, unbranched gonidiophores in Basidiomycetes.

**RŌGUE** (Hort.), an inferior sport or variation, i.e., a plant which deviates in an undesirable manner from the type of the species or variety.

**RŌOT**, the descending axis;—differing in character from the stem chiefly in being destitute of leaves. Compare RHIZOID and RHIZOME. Sachs extends the term Root to the root-like organs (rhizoids) of cellular plants.

**RŌOT-CĀP**, a protective covering to the growing extremity of roots; calyptra; pileorhiza.

**RŌOT-HĀIRS**, slender hairs upon the younger roots, which serve to absorb food from the soil.

**RŌOT-LĒAF**, a leaf springing from the base of the stem.

**RŌOT-PRĒS'SŪRE**, see SAP-PRESSURE.

**RŌOT'LĒT**, a small root; root-fibre.

**RŌOT-SHĒATH**, see COLEORHIZA.

**RŌOT'STŌCK**, see RHIZOME.

**RŌ'RĪDŪS**, covered with transparent elevations resembling drops of dew. (Obs.)

**RŌSĀ'ĈEOŪS**, rose-like, or belonging to the family Rosaceæ.

**RŌSĒL'LĀ** (obs.), see ROSETTE.

**RŌSĒTTE'**, a cluster of leaves or other organs arranged somewhat like the petals of a

- double rose, as the leaves of the dandelion or those upon the short spurs of the larch.
- RÓS'TĚL**, see **ROSTELLUM**.
- RÓS'TĚLLĀTE**, diminutive of Rostrate, having a small beak.
- RÓSTĚL'LĪFŌRM**, beak-shaped, especially when the process is small; rostriform.
- RÓSTĚL'LŪM** (pl. Róstěllá), a little beak; especially, the process upon the column in orchids containing the disk (retinaculum) of the pollinia. It is one of the three united styles which has become modified for this purpose.
- RÓSTĚRĀTE**, see **BEAKED**.
- RÓSTĚRĪFŌRM**, beak-shaped.
- RÓSTĚRŪM**, see **BEAK**.
- RŌŠŪLĀ** (obs.), see **ROSETTE**.
- RŌŠŪLĀR** (obs.), see **ROSULATE**.
- RŌŠŪLĀTE**, arranged or shaped like a rosette; having the leaves in little tufts like the petals of a double rose, as those of the dandelion.
- RŌ'TĀTE**, wheel-shaped. In flowers, applied to a gamopetalous corolla with a very short tube and nearly flat spreading border.
- RŌ'TĀTE-PLĀNE**, gamopetalous, with a flat border and no tube.
- RŌTĀ'TĪON**, a flowing movement of the protoplasmic cell-fluid; cyclosis; streaming. In some active or growing cells the movement is readily visible as distinct currents having a rotary or back-and-forth direction. The term Cyclosis is now well established, and is perhaps preferable to Rotation as a general term, the latter word being applied especially to circulation next the cell-wall, to a rotation of the whole mass within the cell, or to a peculiar spiral movement of the cell-fluid in certain plants, as in Chara.
- RŌ'TĪFŌRM** (obs.), see **ROTATE**.
- RŌTŪND'**, rounded; somewhat orbicular.
- ROŪGH**, see **SCABROUS**.
- ROŪGH LEĀVES**, a gardener's term for the true leaves which succeed the cotyledons.
- RUBĚS'ČENT**, reddish or rosy; rubicund.
- RŮ'BĪCŪND**, see **RUBESCENT**.
- RUBĪG'ĪNŌSE**, of the color of iron-rust; brownish red; rubiginous; rufous; rusty; ferruginous.
- RUBĪG'ĪNOŪS**, see **RUBIGINOSE**.
- RŮ'DĚRĀL**, growing in rubbish or waste places.
- RŮ'DĪMENT**, an imperfectly developed, vestigial, or aborted part.
- RŮDĪMĚN'TĀL**, see **RUDIMENTARY**.
- RŮDĪMĚN'TĀRŪ**, imperfectly developed, or in an early stage of development; rudimental.
- RUFĚS'ČENT**, somewhat rufous.
- RŮF'FLĚD**, sometimes applied to a margin when very strongly waved.
- RŮ'FOŪS**, see **RUBIGINOSE**.
- RŮ'GĀ**, a wrinkle.
- RŮ'GĚD** (obs.), see **SCABROUS**.
- RŮGŌSE**, wrinkled, as the leaves of sage. Compare **BULLATE** and **CRISP**.
- RŮ'GŪLŌSE**, slightly rugose.
- RŮ'MĪNĀTĚD**, said of the albumen or cotyledons of a seed which has holes or channels into which the inner seed-coat penetrates, as in the papaw and nutmeg.



**RŪN'GINATE**, having large sharp teeth or lobes projecting backward, as the leaves of dandelion.

**RŪN'NĒR**, a stolon which roots and forms new plants at intervals, as the strawberry; the prostrate stem of a vine, as in melons.

**RŪN'NING**, prostrate upon or beneath the surface, but not rooting. Often used improperly in the sense of Creeping, which see.

**RUPĒSTRINE**, growing upon rocks or in rocky places; lapidose; saxatile; saxicole; saxicoline; saxicolous; rupicoline; rupicolous. The distinctions between these terms are mainly slight and inconstant. Lapidose may, however, be defined as growing upon land abounding in loose stones or coarse gravel (compare GLAREOSE), while the other terms usually refer to fixed or massive rock. There is a tendency, also, to restrict the terms Rupicolous and Saxicolous to growth directly upon the rocks, as with many lichens, mosses, and some ferns.

**RUPICŌLOŪS**, see RUPESTRINE.

**RŪP'TILE**, dehiscing in an irregular or accidental manner.

**RŪST'Y**, see RUBIGINOSE.

**SĀB'ŪLINE**, see ARENACEOUS.

**SĀB'ŪLOSE**, see ARENACEOUS.

**SĀC**, a deep or closed receptacle. Also written Sack.

**SĀC'CĀTE**, in the form of a bag or pouch; sacciform.

**SĀC OF THE ĀM'NIŌS** (obs.), see EMBRYO-SAC.

**SĀC OF THE ĒM'BRYŌ**, see EMBRYO-SAC.

**SĀCK**, see SAC.

**SĀC'ITTĀTE**, arrow-shaped. Differs from Cordate in having the lobes as well as apex acute.

**SĀ'LIENT**, projecting outward.

**SĀ'LINE**, growing upon the seashore or other places impregnated with salt; salsuginous.

**SĀLSŪ'GINŌŪS**, see SALINE.

**SĀL'VĒR-FŌRM**, see HYPOCRATERIFORM.

**SĀL'VĒR-SĀPED**, see HYPOCRATERIFORM.

**SĀMĀ'RĀ**, a winged fruit, like that of the ash, elm, or maple; pteridium; key.

**SĀM'ĀROĪD**, winged like a samara.

**SĀP**, in general, any vegetable fluid, especially limpid fluid, such as abounds in many trees in spring. See CELL-SAP.

**SĀP-CĀV'ITĪ**, see VACUOLE.

**SĀP'ID**, having a pleasant taste.

**SĀP'LING**, a tall seedling tree having a stem from two to six inches in diameter.

**SĀP-PRĒS'SŪRE**, the force exerted by the soil-fluid in entering the plant, and by the sap in passing upward within it; root-pressure. See OSMOSE.

**SĀPRŌG'ĒNOŪS**, causing putrefaction.

**SĀP'RŌPHŪTE**, a plant which lives upon dead animal or vegetable matter: humus-plant. Compare PARASITE.

**SĀP'RŌPHŪT'IC**, living upon dead organic matter. Compare PARASITIC.

**SĀP-VĒS'SĒL**, see VESSEL.

**SĀP'WOOD**, see ALBURNUM.

**SĀRCŌB'ĀSIS**, see CARCERULE.

**SĀR'CŌCĀRP**, the succulent fleshy portion of a fruit, especially of a drupe. Used by

- M. T. Masters synonymously with Berry.
- SĀR'CŌDĒRM**, a fleshy layer in certain seed-coats; sarcoderma.
- SĀR'MĒNT**, a long slender runner, stolon, or twig; sarmentum; flagellum.
- SĀRMĒNĀ'ČEOŪS**, see SARMEN TOSE.
- SĀRMĒNĪFĒROŪS**, bearing sarments.
- SĀRMĒNŌSE'**, bearing or resembling sarments; sarmentaceous; sarmentous.
- SĀRMĒNTOŪS**, see SARMEN TOSE.
- SĀRMĒNTŪM** (pl. Sārmēn'tā), see SARMENT.
- SAŪ'SĀGE-SHAPED**, see ALLANTOID.
- SAW-TOOTHED**, see SERRATE.
- SĀX'ĀTILE**, see RUPESTRINE.
- SĀX'ICŌLE**, see RUPESTRINE.
- SĀX'ICŌLINE**, see RUPESTRINE.
- SĀX'ICŌLOŪS**, growing upon rocks, as many mosses and lichens; rupicolous. Compare RUPESTRINE.
- SCĀ'BRĀTE**, see SCABROUS.
- SCĀ'BRĪD**, slightly scabrous.
- SCĀ'BRĪDOŪS**, somewhat scabrid or scabrous.
- SCĀBRĪD'ŪLOŪS**, slightly scabrid or scabrous; scabridous.
- SCĀ'BRŌŪS**, rough with short stiff hairs or points; scabrate; asperate.
- SCĀLĀR'ĪFŌRM**, having transverse bars like a ladder: applied mainly to thickenings of this form characteristic of scalariform vessels.
- SCĀLĀR'ĪFŌRM VĒSSEL**, see SCALARIFORM VESSEL.
- SCĀLĀR'ĪFŌRM MĀRK'ING**, an elongated pit of a scalariform vessel.
- SCĀLĀR'ĪFŌRM VĒSSEL**, a vessel marked with elongated transverse bordered pits, as in many ferns.
- SCALE**, any thin, scale-like appendage, usually a degenerated and metamorphosed leaf, as those of buds and buds. See RAMENTUM and LEPIDE.
- SCĀL'LION**, a small or imperfect onion, particularly the shallot, *Allium Ascalonicum*. Compare SCULLION.
- SCĀL'LOPED**, see CRENATE.
- SCĀL'Ÿ**, consisting of scales; furnished or covered with scales; scale-like in texture.
- SCĀL'Ÿ BŪLB**, one with narrow and somewhat separate scales, as in the lily. Compare TUNICATED BULB.
- SCĀN'DENT**, see CLIMBING.
- SCĀPE**, a peduncle rising from the ground, as in blood-root, *Sanguinaria Canadensis*; i.e., a stalk from the root or collar which bears one or more flowers but no foliage-leaves.
- SCĀPH'OID**, see NAVICULAR.
- SCĀPĪFLŌ'ROŪS**, having the flowers on scapes.
- SCĀ'PĪFŌRM**, scape-like; scapoid.
- SCĀPĪG'ĒROŪS**, bearing scapes.
- SCĀ'POID**, see SCAPIFORM.
- SCĀ'PŪS**, see SCAPE.
- SCĀR**, the mark left by the natural separation of a leaf or other organ; cicatrix. See LEAF-SCAR and HILUM.
- SCĀ'RĪOSE**, see SCARIOUS.
- SCĀ'RĪOŪS**, dry and membranous; scariose.
- SCĀT'TĒRED**, either sparse, or without apparent regularity

- of arrangement. See **ALTERNATE**.
- SCHIZOCARP**, a fruit of which the carpels separate when mature and retain the seeds in cocci or mericarps.
- SCHIZOGENÉTIC**, see **SCHIZOGENIC**.
- SCHIZOGEN'IC**, formed by the separation of parts, as some intercellular spaces; schizogenetic; schizogenous. Compare **LYSIGENIC**.
- SCHIZOGENOÛS**, see **SCHIZOGENIC**.
- SÇIM ETAB-SHAPED**, see **ACINACIFORM**.
- SÇION**, formerly used for any shoot or twig; now applied only to one intended for grafting. Improperly written *Cion*. A scion is considered by most nurserymen to be a part of a twig or shoot long enough to make one graft, usually four to six inches.
- SÇÛROID**, in the shape of a squirrel's tail.
- SCLERÈN'CHÛMA**, lignified tissue of any kind, especially such as composes the shell of a nut. It is not usually applied to ordinary woody tissue, but is used by many botanists for thick-walled fibres of the bast and hypoderma.
- SCLER'OGÈN**, see **LIGNINE**.
- SCLER'OID**, woody or bony in texture.
- SCLERÒ'SIS**, see **LIGNIFICATION**.
- SCLERÒTE**, see **SCLEROTIUM**.
- SCLERÒT'IC**, resembling or consisting of sclerenchyma.
- SCLERÒTIÛM** (pl. *Sclerò'tiá*), a consolidated and hardened mass of hyphæ in a resting condition, as in *Claviceps* (ergot) and some other Ascomycetes. Also a temporary condition assumed by the plasmodium of Myxomycetes, chiefly due to dryness, in which it appears in dry, compact, wax-like, gritty nodules.
- SCLERÒT'OID**, consisting of or resembling a sclerotium.
- SCÒBIC'ULAR**, see **SCOBIFORM**.
- SCÒB'IFÒRM**, resembling sawdust; scobicular.
- SCÒB'INÀ**, an old term for the zigzag rachis of certain grasses.
- SCÒL'ÈCITE**, Tulasne's later term for the "vermiform body" of Woronin. It is the ascogonium or archicarp in certain Ascomycetes, as *Ascobolus pulcherrimus*.
- SCÒR'PIOID**, commonly used in the sense of **Helicoid**, but properly restricted now to alternately progressive or zigzag development. See **SCORPIOID CYME** and **SCORPIOID DICHOTOMY**.
- SCÒR'PIOID CÛME**, one in which the successive flowers are situated on alternate sides of the pseudaxis; cicinal cyme; cincinnus or cincinnus. The term **Scorpioid Cyme** was given by A. P. de Candolle to a unilateral cyme, the undeveloped portion of which is usually rolled up like the tail of a scorpion, as in *Boraginaceæ*, and this is the meaning still attached to the term by most botanists of England. Compare **HELICOID CÛME**.
- SCÒR'PIOID DÛCHÒT'ÒMÛ**, one in which alternate branches develop in the successive bifurcations; cicinal dichotomy. Compare **HELICOID DICHOTOMY**.
- SCRÒBIC'ULÀTE**, pitted.

**SCRO'TIFORM**, see POUCH-SHAPED.

**SCUL'LION**, a term applied by gardeners in America to onions which fail to "bottom" properly, but remain soft and become thick-necked. Probably derived from Scallion, which see.

**SCULPTURED**, a horticultural term applied to the seeds of certain gourds, etc., which have peculiar markings.

**SCURF**, small bran-like epidermal scales.

**SCUTATE**, shield-shaped, especially like a round shield; scutiform; clypeate. Compare PELTATE.

**SCUTĒL**, see SCUTELLUM.

**SCUTĒL'LĀFORM**, see SCUTELLIFORM.

**SCUTĒLLĀTE**, diminutive of Scutate; somewhat scutate, like a platter; especially, covered with small plate- or shield-like surfaces; scutellated. See SCUTELLIFORM.

**SCUTĒLLĀTĒD**, see SCUTELLATE.

**SCUTĒL'LĪFORM**, shaped like a saucer or small platter; scutellate; scutellæform. Compare PATELLIFORM.

**SCUTĒL'LŪM** (pl. *Scūtāl'lā*), (1) a sessile apothecium or "shield" in lichens; (2) in Gramineæ a usually shield-like expansion of the hypocotyl which acts as an organ of suction through which the embryo absorbs nutriment from the endosperm. It is regarded as the cotyledon. It appears exteriorly as a large flat space upon the surface of the seed surrounding the embryo (plumule and radicle) to which it is attached. It forms the chief part of what is known

as the "chit" in a kernel of corn. Compare SCUTUM.

**SCŪ'TIFORM**, see SCUTATE.

**SCŪ'TIFORM LEAF**, the first-formed leaf (protophyl) in *Salvinia*, differing in form from the succeeding leaves.

**SCŪ'TŪM**, a large circular disk-like part or organ, as the dilated stigma (*stylostegium*) of *Stapelia*; shield. Compare SCUTELLUM.

**SCŪM'ĪTAR-SHĀPED**, see ACINACIFORM.

**SCŪPHIFORM**, like a scyphus; goblet-shaped.

**SCŪPHŪS** (pl. *ScŪphī*), an apothecium in lichens elevated on a podetium. Compare SCUTELLUM.

**SĒBĀ'GEŪS**, wax-like, or producing wax.

**SĒBĪF'EROŪS**, producing wax.

**SĒC'ONDĀRŪ**, opposed to Primary; often includes Tertiary, etc.

**SĒC'ONDĀRŪ BŪDĒ**, see ACCESSORY BUDS.

**SĒC'ONDĀRŪ CŌR'TĒX**, a collective term for the successive formations of liber or bast within the cortical sheath and primary cortex. It is not applied to secondary cork formations.

**SĒC'ONDĀRŪ FŪN'GŪS**, a saprophytic or parasitic fungus which attacks a plant after it has been killed or injured by another fungus. Compare SUPERPARASITE.

**SĒC'ONDĀRŪ HŪBRĪD**, see DERIVATIVE HYBRID.

**SĒC'ONDĀRŪ MĒD'ŪLLĀRŪ RAYS**, those intermediate between the rays first formed, and which do not extend to the pith.

**SĚC'ONDĀRÝ MĚR'ISTĚM**, meristem in an organ or part after its first development is completed and by means of which further growth is effected, as cambium. Compare PRIMARY MERISTEM.

**SĚC'ONDĀRÝ NŮ'CLEŮS**, the "nucleus of the embryo-sac," resulting from the union of the two polar nuclei.

**SĚC'ONDĀRÝ PĚDŮN'CLE**, the stalk of a branch of an inflorescence bearing more than one flower; partial peduncle. Compare PEDICEL.

**SĚC'ONDĀRÝ PĚT'ÍOLE**, the stalk of a leaflet; partial petiole petiolule.

**SĚC'ONDĀRÝ RŮ'OT**, a lateral root, especially one growing from the stem. Compare PRIMARY ROOT and AĚR'IAL ROOT.

**SĚC'ONDĀRÝ SPŮ'RE**, a spore borne on a promycelium (sporidium), or one derived immediately from another spore.

**SĚC'ONDĀRÝ STRŮ'CTŮRE**, the structure or condition of a plant or organ after its first year, or after it has grown beyond its first-formed state. Compare PRIMARY STRUC-TURE.

**SĚC'ONDĀRÝ WŮ'OD**, the portion of the wood or xylem which is formed after the primary xylem, or after the formation of the cambium ring. Compare PRIMARY WOOD.

**SĚC'ONDINE** (obs.), see SEC-UNDINE.

**SĚC'TILE**, divided into separable parts.

**SĚCŮND**, either unilateral (one-ranked) or homolateral (one-sided), i.e., having lateral organs upon one side only, or all turned to one side.

**SĚCŮNDINE**, the secondary or inner coat of an ovule, called tegmen in the seed. By some authors this inner coat, since it is first formed, is called the Primine and the outer coat the Secundine.

**SEED**, a fertilized ovule: a structure enclosing when mature a rudimentary plant (the embryo) which is protected while in a dormant condition, and furnished with nutriment, either in its cotyledons or around them, with which to begin the process of growth.

**SEED-ĀGE**, a term proposed by L. H. Bailey for the process, state, or condition of being propagated by seed.

**SEED-BŮD**, an old term used both for ovule and ovary.

**SEED-CŮAT**, the covering of a seed. See TEGMEN and TESTA.

**SEED-LĚAF**, see COTYLEDON.

**SEED-LING**, (1) a plant produced from seed, in distinction from one produced in any other manner, either naturally or artificially; (2) a young plant produced from seed, in distinction from one of considerable age or size.

**SEED-LŮBE**, see COTYLEDON.

**SEED-SPŮRT**, a sport which originated from seed; seminal sport. Compare BUD-SPORT.

**SEED-VĀR'ĀTION**, a variation derived from seed instead of buds. Compare BUD-VARIATION.

**SEED-VĀR'ĚTÝ**, any variety which originated from seed, either suddenly (seed-variation or seed-sport) or gradually in the ordinary way, and is propagated in any manner. Compare BUD-VARIETY.

**SEED-VĚS'SĚL**, see PERICARP.



**SĒMĪVĀLVĀTE**, applied to a pericarp in which the valves are only partially dehiscent.

**SĒMĪVĒRTIČĪLLĀTE**, see SUBVERTICILLATE.

**SĒMPĒRVĪRENT**, see EVERGREEN.

**SĒNSĪTĪVENĒSS**, see IRRITABILITY.

**SĒPAL**, a leaf or lobe of a calyx.

**SĒPALĪNE**, pertaining to or resembling a sepal.

**SĒPĀLŌDŪ**, the reversion of petals to sepals.

**SĒPALŌID**, sepal-like.

**SĒPALŌŪS**, having or relating to sepals; sepaline.

**SĒPĀRĀTE**, see FREE and DISTINCT.

**SĒPĀRĀTĒD FLOWĒRŠ**, those having stamens or pistils but not both.

**SĒPĀRĀTIŅ LĀYĒR**, see ABSCISS LAYER.

**SĒPTĀ**, pl., see SEPTUM.

**SĒPTĀMĒROŪS**, having the parts in sevens.

**SĒPTĀTE**, having one or more partitions (sepals). Compare SEPTIFEROUS.

**SĒPTĀTE SPŌRE**, see COMPOUND SPORE.

**SĒPTĒNĀTE**, having seven parts, or the parts in sevens; septamorous.

**SĒPTIČĪDAL**, a mode of dehiscence in which the separation takes place through the partitions, i. e., along the line of junction of the carpels. Compare SEPTIFRAGAL and LOCULICIDAL.

**SĒPTĪFĒROŪS**, bearing one or more partitions or septa—said of the valves of certain capsules after dehiscence. Compare SEPTATE.

**SĒPTĪFŌRM**, resembling a septum.

**SĒPTĪFRĀGAL**, a mode of dehiscence in which the valves break away from the septa or partitions. Compare SEPTICIDAL and LOCULICIDAL.

**SĒPTŪLĀTE**, imperfectly or rarely septate, or having false or supernumerary septa.

**SĒPTŪLŪM** (pl. *SĒptŭlā*), diminutive of Septum: a little septum or partition. Also a spurious or supernumerary septum.

**SĒPTŪM** (pl. *SĒptā*), a partition of any kind, as between two cells in a tissue, or between cavities in an ovary. See DISSEPIMENT.

**SĒRIĀL**, in rows or regular succession.

**SĒRIĀTE**, see SERIAL.

**SĒRIČEOŪS**, silky; covered with fine, straight, soft, smooth, glossy, appressed hairs.

**SĒRIĒŠ**, (1) a row or rank; (2) a term applied to various subordinate groups of different values, and also used by Asa Gray as equivalent to Subkingdom, which see.

**SĒRŌTĪNOŪS**, occurring late, or comparatively late, in the season.

**SĒRBĀTE**, having sharp marginal teeth projecting toward the apex.

**SĒRBĀTE-ČĪLĪĀTE**, having the teeth of a serrate margin tipped with fine slender hairs.

**SĒRBĀTĒD**, see SERRATE.

**SĒRBĀTŪRE**, one of the teeth of a serrate margin. Compare SERRULATION.

**SĒRBĪED**, close together in rows, like the kernels in the rows upon an ear of Indian corn.

**SĒRĒULĀTE**, diminutive of Ser-

- rate; serrate with small teeth. Compare SUBSERRATE.
- SERRULATED**, see SERRULATE.
- SERRULATION**, (1) the state or condition of being serrulate; (2) a tooth of a serrulate margin. Compare SERRATURE.
- SESQUI-AL'TER**, half as many more: applied to stamens when half as many more than the petals; also to a fertile floret in grasses when accompanied by a small abortive one.
- SÉS'SILE**, (1) having no stalk, as a leaf which has no petiole but is seated directly upon the stem; (2) quiescent, not moving about --applied to bacteria and zoöspores at certain times.
- SĒ'TĀ** (pl. *Sĕ'tæ*), a bristle or slender bristle-like body; the stalk of the capsule in most mosses above the true stem.
- SĒTĀ'CEOUS**, (1) bristle-shaped; setiform; (2) setigerous.
- SĒTIFĒROUS**, see SETIGEROUS.
- SĒTIFŌRM**, see SETACEOUS.
- SĒTIGĒROUS**, bristle-bearing; setiferous. See SETOSE.
- SĒTŌSE**, bearing or abounding with bristles; bristly; setaceous; setous; setiferous; setigerous.
- SĒ'TOUS**, see SETOSE.
- SĒTŪLĀ** (pl. *Sĕt'ulæ*), diminutive of Seta.
- SĒTŪLOSE**, bearing minute bristles.
- SEX**, Latin for six. See HEX.
- SĒX**, one of the attributes of nearly all living bodies, which manifests itself in a certain method of reproduction, the first stage of which is the blending of the contents of two cells which are usually of distinct character and different origin, one of which is called male, the other female.
- SĒXĀNGŪLAR**, having six angles; hexagonal.
- SĒXFĀ'RIOUS**, six-rowed.
- SĒX'IFID**, six-cleft.
- SĒXLŌCŪLAR**, having six cells in an ovary.
- SĒX'PARTITE**, six-parted.
- SĒXŪAL GĒNĒRĀ'TION**, the generation or stage which bears the sexual organs in plants which have an alternation of generations. In ferns it is the prothallus. Compare ASEXUAL GENERATION.
- SĒX ŪAL SŪS'TĒM**, see LINNÆAN SYSTEM.
- SHĀG'GŪ**, either villose or hirsute.
- SHĒATH**, the petiole or base of the leaf in grasses which surrounds the stem; any tubular part surrounding another; vagina.
- SHĒATHED**, surrounded by a sheath; invaginated; vaginate.
- SHĒATH'ING**, surrounding a stem or other body in a convolute or tubular manner, as the petioles of grasses; vaginant. Compare AMPLEXICAUL.
- SHĒLL**, the bony covering of a nut.
- SHĒILD**, see APOTHECIUM and INDUSIUM. In Chara one of the eight flat cells forming the wall of the globule.
- SHĒILD - SHĀPED**, scutate or peltate.
- SHŌOT**, a young growing branch or twig, or an unusually vigorous stem or branch, generally from the ground or near it. Also used by botanists as a general term for the stem or leaf-bearing part of a plant in distinction from the root.
- SHRŪB**, a woody plant which seldom exceeds twenty feet in



- height; especially one having several stems. Compare BUSH, UNDERSHRUB, and TREE.
- SIC'CŪS**, dry.
- SIEVE-CELL**, see SIEVE-TUBE.
- SIEVE-DISK**, the perforated septum between the ends of adjoining sieve-tubes; sieve-plate.
- SIEVE-PLATE**, see SIEVE-DISK.
- SIEVE-PŌRES**, the perforations in a sieve-disk.
- SIEVE-TŪBE**, a form of vessel characteristic of the phloem portion of fibrovascular bundles. Sieve-tubes consist of elongated, thin-walled cells, united end to end in rows, with the transverse septa (sieve-disks) perforated in a sieve-like manner so that the protoplasm is continuous from one vessel to another; sieve-cell; clathrate-cell; bast-vesSEL.
- SIG'ILLATE**, appearing as if marked with impressions of a seal, as the rootstock of Solomon's seal.
- SIG'MŌID**, curved in two directions, like the Greek sigma or letter S.
- SIL'ICLE**, a short silique, as that of shepherd's-purse.
- SILIC'ŪLA** (pl. *Silic'ŭlæ*), see SILICLE.
- SIL'ICŪLE**, see SILICLE.
- SILIC'ŪLOSE**, having silicles, or resembling a silicle.
- SIL'IQŪA** (pl. *Sil'iquæ*), see SILIQUE.
- SILIQUE** [pro. *sil-lĕk'*], the fruit in Cruciferae—a pod of two carpels, which separate in dehiscence from a frame-like placenta called a replum; siliqua.
- SIL'IQŪOSE**, resembling or bearing siliques.
- SILK**, the style of Indian corn.
- SILK'Y**, see SERICEOUS.
- SIL'VA**, see SYLVA.
- SIL'VĒR GRĀIN**, plates of medullary rays which appear as glimmering spots upon the surface of wood when split radially. See MEDULLARY RAY.
- SIL'VĒRY**, white, tinged with bluish gray, and having a metallic lustre.
- SIM'PLE**, without subdivisions; entire; unbranched. Compare COMPOUND.
- SIM'PLE FRUIT**, one derived from a single flower containing a single pistil. Compare COLLECTIVE FRUIT and COMPOUND FRUIT.
- SIM'PLE LEAF**, any leaf which does not have distinct subordinate leaflets, though it may be lobed. Compare COMPOUND LEAF.
- SIM'PLE NŪTATION**, see NUTATION. Compare CIRCUMNUTATION.
- SIM'PLE PISTĪL**, one consisting of a single carpel.
- SIM'PLE PIT**, one having no more than a slight enlargement at the centre where the pits of adjoining cells meet (simple pore of Gregory). Compare BORDERED PIT.
- SIM'PLE PŌRE** (Gregory), see SIMPLE PIT.
- SIM'PLE PRIMĀRY RŌOT**, a taproot.
- SIM'PLE SPŌRŌPHŌRE**, a sporophore consisting of a single hypha or hyphal branch; filamentous sporophore. Compare COMPOUND SPOROPHORE.
- SIM'PLE STĒM**, an unbranched stem.
- SIMŪLTĀ'NĒOUS WHŌEL**, one whose members originate si-

- multaneously. (Sachs.) Compare **SUCCESSIVE WHORL**.
- SINGLE**, said of a flower which has but one set or whorl of petals. Compare **DOUBLE**, **SEMIDOUBLE**, and **FULL**.
- SINISTRORSE**, turning or twining to the left; said of a twining stem which turns in the opposite direction to the sun or hands of a watch. See remarks under **DEXTRORSE**.
- SINUATE**, strongly wavy on the margin, with large alternate convexities and concavities. Compare **REFAND** and **UNDULATE**.
- SINOÛS**, flexuose; curving back and forth.
- SINUS**, a cavity or recess, either rounded or angular, in the margin of a leaf or other organ.
- SIPHON**, a large tubular cell in Chara and various algæ.
- SISTER-CELL**, a cell of the same origin as another: thus, if several cells arise simultaneously by free cell-formation within another, as in the development of pollen, they are called sister-cells with reference to each other, and the same term is applied to the relation existing between two or more cells which arise by the division of a single cell in ordinary growth. Compare **MOTHER-CELL** and **DAUGHTER-CELL**.
- SKEIN**, a condition of the chromatin of the nucleus in the first and last stages of karyokinesis when the nuclear filament is emerging from or passing into its reticulated condition in the resting nucleus; mother-coil; tangle.
- SKIN**, any soft, thin covering, especially if easily removable; cuticle; epidermis. Compare **RIND**.
- SLASHED**, see **LACINIATE**.
- SLEEP**, a condition assumed by certain plants, usually upon the withdrawal of light, as at night, in which the flowers temporarily close, and the leaves or leaflets droop or fold together.
- SMALL FRUITS**, a horticultural term for certain low-growing, perennial, fruit-bearing plants and their product, including the strawberry, raspberry, blackberry, gooseberry, currant, huckleberry, and cranberry. The term includes grapes, but excludes cherries.
- SMOOTH**, see **GLABROUS**.
- SÔBÔLE**, an old and useless term, usually meaning stolon, but sometimes and more properly a sucker or slender shoot from the ground or base of the stem; soboles.
- SÔBÔLES** (n., sing.), see **SOBOLE**.
- SÔCIAL**, growing naturally together, so as to occupy a considerable extent of ground with individuals of the same species; gregarious. Compare **CESPI-TOSE**.
- SÔFT BAST**, the sieve-tubes, together with any other unligified portion of the phloem.
- SÔLÉEFÔRM**, see **CALCEOLATE**.
- SÔL'ID**, without either cavities or separable articulations; continuous.
- SÔL'ID BÛLE**, see **CORM**.
- SÔL'ITĂRY**, single, not closely associated with other objects of the same kind, as flowers which grow one upon a stem, or plants which do not grow in groups or masses. Compare **SOCIAL**.
- SÔLÛTE**, free; not adhering; opposed to **Adnate**, as a *solute* stipule.

**SOLUTION**, the isolation or separation of whorls (apostasis), or of organs or parts which are usually close together or adherent. Compare DIALYSIS.

**SÓ'MÁ** (pl. *Só'mátá*), a small body or granule of any kind. Compare MICROSOMA.

**SÓMÁT'IC CELLS**, cells forming a part of the body of the individual, not modified for any particular purpose; especially the growth-cells of an organism, in distinction from reproductive cells of any kind.

**SÓMÁTÓT'ÓPÍSM**, an influence which the substratum exerts on the direction of growth of certain plants and organs. Thus the hypocotyl of the mistletoe is directed toward the branch (positive somatotropism) and the stem at first away from it (negative somatotropism) upon whatever side of the branch the seed is situated.

**SÓR'DÍD**, of a dirty white or muddy color.

**SÓR'E'DÍÁ**, pl., see SOREDIUM.

**SÓR'E'DÍÁL BRANCH**, a branch produced by the development of a soredium into a new thallus while still on the mother-thallus.

**SÓR'E'DÍÁTE**, see SOREDIFEROUS.

**SÓR'E'DÍF'ÉROÜS**, bearing soredia; sorediate.

**SÓR'E'DÍÜM** (pl. *Sórs'edíá*), a single gonidial cell or group of gonidia in lichens, surrounded by a web of hyphæ, which is thrust out of the thallus and grows directly into a new lichen; brood-bud.

**SÓ'RÍ**, pl., see SORUS.

**SÓRÍF'ÉROÜS**, bearing sori.

**SÓ'RÓSE**, (1) heaped or clustered together; (2) bearing a sorosis, or in the form of a sorosis.

**SÓLÓ'SÍS** (pl. *Sórs'ésé*), a collective fruit, consisting of a consolidated fleshy spike, as the mulberry and pineapple.

**SÓR'RÓWFÜL FLOW'ÉRŞ**, those which exhale their odors only at certain hours of the day, as *Pelargonium triste*. (Rare.)

**SÓ RÜS** (pl. *Só'ri*), a heap or collection of spores or other objects, as a "fruit-dot" or group of sporangia in ferns.

**SPÁDÍ'ÇEOÜS**, resembling or bearing a spadix.

**SPÁ'DÍCÓSE**, resembling a spadix.

**SPÁ'DÍX**, a spike, usually fleshy, enclosed within a spathe.

**SPÁN**, the space between the tip of the thumb and that of the little finger, separated as widely as possible: nine inches.

**SPÁRSE**, few and scattered.

**SPÁ'THÁ**, see SPATHE.

**SPÁTHÁ'ÇEOÜS**, bearing or resembling a spathe; spathose.

**SPÁ'THAL**, furnished with a spathe. (Rare.)

**SPÁTHE**, a large bract, usually colored, enclosing or subtending an inflorescence, which is generally a spike (spadix).

**SPÁTHÉL'LÁ** (pl. *Spáthél'læ*) (rare), (1) a glume in grasses; (2) a spathilla.

**SPÁTHÍL'LA** (pl. *Spáthíl'læ*), a diminutive or secondary spathe, as in palms.

**SPÁTH'ÓSE**, see SPATHACEOUS.

**SPÁTH'ÜLÁTE**, see SPATULATE.

**SPÁT'ÜLÁTE**, flat, with a linear base and gradually rounded summit, like a druggist's spatula; spatulate.

**SPÁWN**, the mycelium of mushrooms; occasionally applied to that of some other fungi

**SPÉ'ÇIEŞ**, the lowest well-defined natural group of plants, the

- individuals of which differ but slightly among themselves and are sharply distinguished from those of other groups. They reproduce themselves from seed for successive generations with little or no variation. Compare GENUS and VARIETY.
- SPĚČIES-HYBRID**, see HYBRID.
- SPĚČIF'IC**, relating to species.
- SPĚČIF'IC CHĀR'ĀKTĚRS**, the features which distinguish the plants of one species from those of all others.
- SPĚČIF'IC NĀME**, the name of the species, forming a part of the botanical name; trivial name.
- SPĚČ'IMEN**, a plant or portion of a plant prepared and preserved for study.
- SPĚR'MĀGŌNE**, see SPERMOGONIUM.
- SPĚR'MĀGŌNIŪM**, see SPERMOGONIUM.
- SPĚR'MĀPHŌRE**, see SPERMOPHORE.
- SPĚRMĀTIFĚROŪS**, bearing spermatia.
- SPĚRMĀTIŪM** (pl. *SpĚrmā'tiā*), a non-motile male gamete (spermatozoid) in the red algæ. Also applied to certain minute non-germinating spore-like bodies in fungi, some of which have been regarded as functionless male gametes. Many of these are now known to be *stylospores* capable of germination.
- SPĚR'MĀTŌČYST**, the mother-cell of a spermatozoid.
- SPĚRMĀTŌZŌ'ID**, see ANTHEROZOID and SPERMATIUM.
- SPĚRMĀTŌZŌ'ŌN** (pl. *SpĚrmātŏzŏ'ā*), see ANTHEROZOID.
- SPĚRM - ČĚLL**, a male reproductive cell (gamete). Compare GERM-CELL.
- SPĚRM'IC**, pertaining to seed.
- SPĚRMĪD'IŪM** (pl. *SpĚrmīd'iā*), an old term for achenium.
- SPĚRM-NŪ'CLEŪS**, the nucleus of a male gamete (male pronucleus) which coalesces with the nucleus of a female gamete (female pronucleus) to form a germ-nucleus; spermo-nucleus. In the pollen-tube it is called the generative nucleus, which see.
- SPĚR'MŌDĚRM**, the covering of a seed, consisting of the several coats taken together; seed-coat.
- SPĚRMŌGŌNIŪM** (pl. *SpĚrmŏgŏ'niā*), a cell or receptacle in which spermatia are produced.
- SPĚRMŌ-NŪ'CLEŪS**, see SPERM-NUCLEUS.
- SPĚR'MŌPHŌRE**, an old term, applied both to funiculus and placenta. See TROPHOSPERM.
- SPĚR'MŌPHYTE**, a plant which produces true seeds instead of spores; a flowering plant.
- SPĚRMŌTHE'CA**, an old term for pericarp.
- SPĚR'MŌŪS**, see SPERMIC.
- SPĚĀČ'ĚLĀTE**, dark and withered as though dying or dead; like a sphacelium.
- SPĚĀČ'ĚLIĀ**, a former genus of fungi, now known to be the first or conidia-bearing stage of Claviceps when it appears as the spur or ergot.
- SPĚĀČ'ĚLIŪM**, see SPHACELIA.
- SPĚĀRĀPH'ĪDĚS**, sphere-crystals, especially if composed of needle-shaped parts.
- SPĚĀRE - CRYS'TALS**, spherical aggregations of crystals, either irregularly united or having a radiating structure. Compare

**CYSTOLITH** and **SPHÆRAPHIDES**.

**SPHÆRŌ-CRY'STAL**, see **SPHERE-CRYSTAL**.

**SPICĀTE**, arranged in a spike; spike-like; spicose.

**SPICĪFĒROŪS**, bearing or producing spikes.

**SPICĪFŌRM**, spike-shaped.

**SPICŌSE'**, bearing spikes or arranged in spikes; spicous.

**SPICŪLĀ** (pl. **Spic'ulæ**), see **SPICULE**.

**SPICŪLAR**, resembling a spicule or bearing spicules.

**SPICŪLĀTE**, (1) covered with spicules; (2) bearing or composed of spikellets. (Rare.)

**SPICŪLĀTION**, a term employed by Nylander for an attenuated constriction of the hypha in the formation of spores, leaving the extremity as a spicule after the separation.

**SPICŪLE**, (1) a small pointed appendage somewhat soft or fleshy, like the sterigmata of fungi; (2) a needle-like crystal; (3) a spikelet (obs.); spicula.

**SPIKE**, an inflorescence of sessile or nearly sessile flowers on a single elongated axis. See **SPADIX**, **AMENT**, **SPIKELET**, and **COMPOUND SPIKE**.

**SPIKE'LET**, (1) a secondary spike; (2) in grasses a flower (or ultimate flower-cluster) usually enclosed by one or more (generally two) empty glumes; locusta.

**SPIN'DLE**, (1) a name sometimes given to the tassel of Indian corn; (2) see **NUCLEAR SPIN'DLE**.

**SPIN'DLE-FĪBRES**, the achromatic filaments which form the nuclear spindle; spindle-

threads; nuclear fibrils and cell-fibres of Strasburger; conjunctive threads of Fof (probably).

**SPIN'DLE-SHĀPED**, see **FUSIFORM**.

**SPINE**, any sharp, rigid process of considerable size which is not a transformed branch; especially an organ, such as a leaf, stipule, tooth, etc., of whatever size, which is modified by becoming sharp and rigid for protection. In general, where no other distinction exists, as in the cactus, spines are considered merely as sharp processes intermediate in size and rigidity between thorns and prickles. See **THORN** and **PRICKLE**.

**SPINES'CENT**, somewhat spiny in structure, or bearing few spines. Compare **SPINULESCENT**.

**SPINĪFĒROŪS**, bearing a spine or spines; spinigerous.

**SPINĪFŌRM**, shaped like a spine or thorn.

**SPINĪFĒROŪS**, see **SPINIFEROUS**.

**SPINŌSE'**, bearing spines; covered with spines; spinous; spiny.

**SPĪNOŪS**, spinose or spiny.

**SPĪNŪLE**, a very small spine.

**SPĪNŪLES'CENT**, slightly spiny in structure, or bearing small spines; spinulose. Compare **SPINESCENT**.

**SPĪNŪLĪFĒROŪS**, bearing very small spines.

**SPĪNŪLŌSE**, spinulescent; especially, bearing many small spines.

**SPĪN'Ŷ**, bearing spines; having the nature of a spine; terminating in a spine.

**SPÍRAL DŪCT**, see **SPÍRAL VESSEL**.

**SPÍRAL MÁRK'ING**, the spiral fibrous thickening characteristic of spiral ducts or vessels.

**SPÍRAL VĚS'SĚL**, a duct or vessel having fibrous thickenings upon the wall in the form of a coil or spiral. Formerly called *Trachea*.

**SPÍRE**, (1) a young leaf or shoot of grass; (2) the continuation of the trunk, in excurrent trees like pines, above the insertion of the lowest branches; (3) one turn of a coil or spiral.

**SPÍRÍCĚL**, a minute spiral thread or filament.

**SPÍTH'ÁMÁ** (obs.), see **SPAN**.

**SPLÁSHED** (Hort.), having broken stripes of various sizes. Used mainly in describing the coloring of apples.

**SPLÍT**, the same as *Parted*. (Obs.)

**SPÓN'GIÓLE**, a term formerly applied to the extreme apex of growing roots, which was erroneously supposed to be devoid of epidermis and specially fitted for the absorption of food from the soil. See **ROOT-CAP**.

**SPÓNTÁ'NĚOŮS GĚNĚRÁ'TION**, the development of living organisms from dead or inorganic matter; equivocal generation; heterogenesis; abiogenesis; autogenesis. The theory of spontaneous generation is not now held by scientists.

**SPOÓN'FÓRM**, having the inner surface of a leaf concave or dish-shaped, as the outer leaves of a cabbage-head. (E. S. Goff.)

**SPÓRÁD'ÍC**, scattered; occurring apart from others of the same kind.

**SPÓRÁNGĚ'**, see **SPORANGIUM**.

**SPÓRÁNGÍD'IŮM**, (1) the columella in mosses; (2) a sporangium. (Rare.)

**SPÓRÁN'GIÓLE**, an old term for *Ascus*. Also applied to a small sporangium produced in some genera of *Mucorini* in addition to the large form, the spores being similar in both; *sporangiolum*.

**SPÓRÁNGÍÓLŮM**, see **SPORANGIOLE**.

**SPÓRÁN'GIÓPHÓRE**, the stalk, support, or receptacle of a sporangium, including such supports as the sporophyll in *Equisetaceæ* and the axis or columella from which the sporangia arise in the sori of certain ferns.

**SPÓRÁNGÍÓPH'ÓRŮM**, see **SPORANGIOPHORE**.

**SPÓRÁN'GIŮM** (pl. *Spórán'giá*), any case or capsule immediately enclosing spores. Applied chiefly to certain kinds which have not received special names, such as the spore-cases of ferns and the *Mucorini*, and rarely used for *Ascus*, cluster-cup, and other named forms.

**SPÓRE**, one of the reproductive bodies of cryptogams which take the place of the seeds of flowering plants, but from which they differ in containing no embryo. Spores usually and properly consist of but one cell, which differs materially in character from the other cells of the plant. They may thus be distinguished from *gemmae*, produced by comparatively few plants, which usually contain a number of cells only slightly differing from those of the plant producing them. In a

restricted sense, proposed by Sachs, the term *spore* is applied to reproductive bodies which arise either directly or indirectly as the result of fertilization, in distinction from *gonidium*, which is applied to those produced asexually. Spores in this restricted sense are by De Bary termed *carpospores*. See *ÆCIDIOSPORE*, *MACROSPORE*, *OÖSPORE*, *PROTOSPORE*, *TELEUTOSPORE*, *TETRASPORE*, *UREDOSPORE*, *ZOÖSPORE*, *ZYGOSPORE*, etc.

**SPÓRE-CÁSE**, see *SPORANGIUM*.

**SPÓRE-ÇÉLL**, a spore, or a cell which gives rise to a spore.

**SPÓRE-GRQUP**, see *COMPOUND SPORE*.

**SPÓRÍD**, see *SPORIDIUM*.

**SPÓRÍDÈSM**, see *COMPOUND SPORE*.

**SPÓRÍD'ÍŪM** (pl. *Spórid'íá*), a spore produced upon a promycelium; germ-cell; secondary spore. Formerly applied to any spore, especially if very small, and still improperly used for *Ascospore*.

**SPÓRÍF'ÉROŪS**, spore-bearing.

**SPÓRÓCÁRP**, a group of spores resulting from fertilization, together with enclosing or attendant parts. It is thus the fructification developed from an archicarp or procarp in fungi and *Rhodophyceæ*; also the sporogonium in mosses. The term is also used for the body enclosing the sporangia in heterosporous *Filicineæ*. Compare *SPOROGONIUM*.

**SPÓRÓCÁR'PIŪM**, see *SPOROCARP*.

**SPÓRÓCLÁ'DIŪM**, a spore-bearing branch, as a *stichidium* in *Florideæ*.

**SPÓRÓÇÝST**, the mother-cell of a spore; sporocyte: occasionally also applied to certain sporangia in *algæ*.

**SPÓRÓÇÝTE** (Goebel), see *SPOROCYST*.

**SPÓRÓDÈRM**, the coat or covering of a spore, including exospore and endospore. Compare *SPERMODERM*.

**SPÓRÓDÓ'CHÍŪM** (pl. *Spóródó-chiá*), a spore-bearing or spore-holding apparatus. Applied mainly to the sporiferous mass, including the spores, in the *Tuberculariææ*.

**SPÓRÓGÈN**, a plant which produces spores; cryptogam. Compare *SPERMOPHYTE*.

**SPÓRÓGÓNE**, see *SPOROGONIUM*.

**SPÓRÓGÓ'NÍŪM** (pl. *Spórógó'niá*), the whole product of the sexual act in the higher cryptogams; asexual generation; sporophore; sporophyte; oöphyte. In ferns it is the segment or stage in the life-cycle which we see as the ordinary fern-plant. Compare *PROTHALLUS*.

**SPÓRÓID**, spore-like.

**SPÓRÓPHÓRE**, a stalk supporting one or more spores; any spore-bearing apparatus or receptacle, such as a *goniophore*, *sporangiophore*, or *ascophore*; particularly the second or asexual generation in plants having a distinct alternation of generations, such as ferns and mosses (*sporogonium*). Compare *OÖPHORE*. See *SIMPLE SPOROPHORE*, *COMPOUND SPOROPHORE*, and *BASIDIUM*.

**SPÓRÓPHÝL**, the same as *Sporophyll* or *Sporophyllum* and a spelling now in frequent use.

**SPÓRÓPHÝLL**, see *SPOROPHYLLUM*.

**SPÖRÖPHYL'LŪM** (pl. *Spörö-phyl'lā*), a spore-bearing leaf of any kind; sporophyl. Formerly applied to leaf-like lobes of the thallus in algæ bearing tetraspores.

**SPÖRÖPHYTE**, see SPOROGONIUM.

**SPÖRÖSTĒ'GIŪM** (pl. *Spöröstē-giā*), the oösporangium or fruit (nucule) of the Characæ.

**SPÖRT**, a plant, or portion of a plant, which has suddenly assumed an appearance very different from that characteristic of the variety or species; a seed- or bud-variation, but said mainly of the latter. Its peculiarity is not usually capable of being perpetuated by seed. When a sport is propagated artificially it continues to be called a sport. Monstrosities or extreme malformations are not usually given this name. See VARIATION, SEED-VARIATION, and BUD-VARIATION.

**SPÖRŪLĀ'TION**, the production of spores.

**SPÖR'ŪLE**, a small spore. Often unsuitably applied to ascospores. Compare SPORIDIUM.

**SPÖRŪLĪF'ĒROŪS**, producing sporules.

**SPÖRŪLĪĜ'ĒROŪS**, see SPORULIFEROUS.

**SPÖTTĒD**, covered with large dots: said of fruits.

**SPRĀWLS**, a local or obsolete term for small branches or twigs.

**SPRĒAD'ING**, said of branches which bend outward considerably, but at less than a right angle.

**SPROUT**, any quickly grown part, as a young root or stem from

the seed, or a vigorous branch arising from the root or stem. See WATER-SPROUT.

**SPROUT-CELL**, in fungi, a cell produced by sprouting or pullulation.

**SPROUT-CHĀIN**, a row of united cells in fungi formed by budding (pullulation.)

**SPROUT GĒM'MĀ**, in fungi, a gemma having the form of a septate confervoid filament the segments of which are capable of sprouting. (De Bary.)

**SPROUT - GĒRMĪNĀ'TION**, the manner of germination of a spore in which a small process with a narrow base protrudes at one or more points on the surface of the spore, then assumes an elongated cylindrical form, and is finally detached as a sprout-cell. (De Bary.)

**SPROUT'ING**, see PULLULATING and GERMINATION.

**SPŪMĒS'ĜĒNT**, resembling froth or foam; spumose.

**SPŪMŌSE'**, see SPUMESCENT.

**SPŪR**, (1) a short, stout branch, as those in the larch bearing a tuft of leaves or in the apple bearing the fruit; (2) a tubular appendage of a petal or sepal, usually containing nectar, as in larkspur (*calcar*); (3) the sclerotium of ergot.

**SPŪRIOŪS**, see FALSE.

**SPŪRIOŪS BRĀNCH**, see PSEUDORAMULUS.

**SPŪRIOŪS FRŪIT**, a collective, aggregate, or accessory fruit.

**SPŪRIOŪS TĪS'SŪE**, see FELTED TISSUE.

**SPŪRIOŪS WHŌRL**, one which is formed by displacement and unequal growth of the axis. (Sachs.)



**SPURRED**, bearing a spur; calcarate.

**SQUĀ'MĀ** (pl. Squā'mæ), a scale of any kind, as one of the leaves of a bud.

**SQUĀMĀ'CEOUS**, see **SQUAMOSE**.

**SQUĀ'MĒFORM**, see **SQUAMIFORM**.

**SQUĀ'MĀTE**, see **SQUAMOSE**.

**SQUĀMĒL'LĀ** (pl. Squāmēl'læ), diminutive of Squama: a small scale, as the bracts upon the head in *Compositæ*; squamula.

**SQUĀMĒL'LĀTE**, diminutive of Squamate. See **SQUAMULOSE**.

**SQUĀMĒLLIFĒROUS**, bearing squamellæ.

**SQUĀMĒL'LĪFORM**, like a small scale; squamuliform.

**SQUĀMĪFĒROUS**, scale-bearing; squamigerous; squamose.

**SQUĀMĪFLŌROUS**, having flowers which resemble scales or are borne upon scales.

**SQUĀMĪFORM**, scale-shaped; squamoid.

**SQUĀMĪFĒROUS**, see **SQUAMIFEROUS**.

**SQUĀMOID**, see **SQUAMIFORM**.

**SQUĀMOSE**, scale-like; covered with scales; consisting of scales; squamous; squamate; squamaceous. See **SQUAMIFORM** and **SQUAMIFEROUS**.

**SQUĀMOUS**, pertaining to scales, or squamose.

**SQUĀMOUS BULB**, see **SCALY BULB**.

**SQUĀMŪLĀ**, see **SQUAMELLA**. Formerly applied to the lodicule of grasses.

**SQUĀMŪLĀTE**, see **SQUAMULOSE**.

**SQUĀMŪLĪFORM**, see **SQUAMELLIFORM**.

**SQUĀMŪLŌSE**, diminutive of Squamose; having or resem-

bling small scales; squamelate; squamulate.

**SQUAREŌSE**, having lateral organs, as leaves, extending at about right angles to the axis.

**SQUĀR'ULŌSE**, somewhat squarrose.

**STĀG'HEADED**, a term applied in forestry to a tree which is dying at the top.

**STAINED**, faintly colored—applied to fruits.

**STALKED GLĀND**, see **GLANDULAR HAIR**.

**STĀLK'LET**, a secondary or very small stalk. See **SECONDARY PETIOLE** and **SECONDARY PEDUNCLE**.

**STĀMĒN**, the pollen-bearing organ of a flower, usually consisting of an anther, or part immediately enclosing the pollen, and a filament or stalk.

**STĀM'ĪNAL** (obs.), see **STAMINATE**.

**STĀM'ĪNĀTE**, pertaining to stamens; containing stamens but no pistils—said of a plant or flower. See **STAMINEAL**.

**STĀMĪN'EAL**, formed of stamens; attached to stamens; having marked reference to stamens; stamineous; staminate.

**STĀMĪN'EAL CŌLŪMN**, see **ANDROPHORE**.

**STĀMĪN'EOUS**, see **STAMINEAL**.

**STĀMĪNĪD'ĪUM** (pl. Stāminīd'īā) (obs.), see **ANTHERIDIUM**.

**STĀMĪNĪFĒROUS**, bearing stamens; staminigerous. Said especially of a plant or flower bearing stamens but no pistils.

**STĀMĪNĪG'ĒROUS**, see **STAMINIFEROUS**.

**STĀM'ĪNŌDE**, see **STAMINODIUM**.

**STĀMĪNŌ'DĪUM** (pl. Stāminŏ'dīā), an altered, abortive, and sterile stamen, or body occupying the

- place of a stamen; staminode; parastemon. See LEPAL.
- STĀM'INŌDŮ**, the conversion of other organs of a flower into stamens.
- STĀM'INŌSE**, having the stamens unusually large or numerous. (Rare.)
- STĀND'ARD**, see VEXILLUM. In horticulture (1) a tree or shrub which stands alone without being attached to any wall or support, as distinguished from an *espalier* or *cordon*; (2) a shrub, as a rose, grafted on an upright stem or trained to a single stem in tree form; (3) in the United States, a fruit-tree grafted upon a free-growing as opposed to one upon a dwarf stock.
- STĀRCH-BULD'ĚR**, a plastid, generally a leucoplast, in which a starch-grain originates. See CHROMATOPHORE.
- STĀRCH-GRĀIN**, the grain of starch as it exists in the living plant. It is of definite shape, varying according to species, but always rounded, and formed of successive layers (or apparently so) having a common, and usually eccentric, centre.
- STĀRCH-LĀY'ĚR**, a term sometimes applied to the bundle-sheath, which often serves especially for the storage of starch.
- STĀRCH-STĀR**, a form of bulbil in *Chara stelligera*, consisting of an underground node.
- STĀR'RŮ**, see STELLATE.
- STĀRVED**, see DEPAUPERATE.
- STĀ'SĪMŌRPHŮ**, a changed condition of form or size arising from arrested development.
- STĀ'TION**, a particular limited locality, without regard to character or exposure, in which a species is found. Compare REGION, HABITATION and HABITAT.
- STĀT'ŌSPŌRE**, see RESTING-SPORE.
- STĚGŌCĀR'POŮS**, applied to capsules in mosses which have a distinct lid or operculum.
- STĚL'LĀTE**, star-shaped; radiating.
- STĚL'LĀTE HĀIR**, a hair having several branches arranged in the form of a star, as the hairs of Malpighiaceae.
- STĚL'LŪLAR**, see STELLULATE.
- STĚL'LŪLĀTE**, diminutive of Stellate; resembling a little star; stellular.
- STĚM**, see TRUNK, PEDUNCLE, PEDICEL and PETIOLE.
- STĚM-CLĀSP'ING**, see AMPLEXICAUL.
- STĚM-LĚAF**, a leaf growing from the stem above the ground. Compare RADICAL LEAF.
- STĚM'LĚSS**, see ACAULESCENT.
- STĚM'LĚT**, a little stem; the first internode above the cotyledons.
- STĚM, SŮBTĚRRĀ'NĚAN**, see SUBTERRANEAN STEM.
- STĚM-TĚN'DRĪL**, a tendril which is a transformed stem, as in the grape. Compare LEAF-TENDRIL.
- STĚNŌPĚT'ALOŮS**, having narrow petals.
- STĚNŌPH'YLLŌŮS**, narrow-leaved. Compare LATIFOLIŌUS.
- STĚNŌ'SĪS**, (1) cell-formation in which there is a direct constriction of the walls of the original cell, as in budding. Compare CYTODIERESIS. (2) The pathological narrowing of a passage.

**STĒRĒĪD**, a cell of stereome, which see.

**STĒRĒŌME**, strengthening tissue: a term applied by Schwendener to that part of a fibrovascular bundle to which it chiefly owes its strength; also to the cortex on physiological grounds, it often serving mainly for support. Compare MESTOME.

**STĒRĒŌPLĀSM**, the solid portion of protoplasm. (Nägeli.) Compare HYGROPLASM.

**STERĒŌPLĀŠMĀ**, see STEREOPLASM.

**STĒRĪG'MĀ** (pl. *Stērīg'māta*), (1) the downward prolongation of a decurrent leaf upon the stem; (2) a very narrow support to a spore, as the pointed protuberances upon basidia, or the filaments bearing spermatia and stylospores.

**STĒRĪLE**, (1) unfruitful; barren—as a plant which fails to blossom or fruit, a pericarp which contains no seeds, or a stamen which produces no perfect pollen; (2) devoid of living organisms—used mainly in bacteriology.

**STĒRĪLE FLOWĒR**, one containing no perfect pistils. It may or may not contain stamens.

**STĒRĪLIZE**, to render free from all living bodies, as fluids in which bacteria are to be cultivated.

**STĒR'NŌTRĪBE**, a term applied to zygomorphic flowers which have the stamens so placed that a visiting insect will receive the pollen upon its under surface, as in most Papilionaceæ. Compare NOTOTRIBE and PLEUOTRIBE.

**STĒR'ŌM**, see STEREOOME.

**STĪCHĪD'ĪŪM** (pl. *Stīchīd'īa*), a branch of the thallus in red algæ (Floridææ) containing tetraspores.

**STĪG'MĀ**, the part of the pistil which receives the pollen. It is usually the apex of the style, variously expanded, which is destitute of epidermis and secretes the "stigmatic fluid," which see.

**STĪG'MĀ-DĪSK**, a disk forming the seat of a stigma, as in *Asclepias*.

**STĪGMĀT'ĪC CĒLLS OF THE ĀRCHĒGŌNĪŪM**, see LID-CELLS.

**STĪGMĀT'ĪC CHĀMBĒR**, the part of the rostellum in orchids in which the viscid disk or retinaculum is developed. (Functionless as a stigma.)

**STĪGMĀT'ĪC FLŪĪD**, a viscid fluid secreted by the stigma at maturity which serves to hold the pollen, and in which the pollen-grains germinate as the first stage of fertilization.

**STĪLŌGŌNĪD'ĪŪM**, see STYLO-SPORE.

**STĪM'ŪLŌSE**, covered with stinging hairs.

**STĪM'ŪLŪS** (pl. *Stīm'ūli*), see STINGING-HAIR.

**STĪNG**, see STINGING-HAIR.

**STĪNG'ĪNG-HĀĪR**, a glandular hair which secretes an acrid fluid; sting; stimulus.

**STĪPE**, a term applied to various kinds of stalks or stems, including the petiole of ferns, the stalk of a mushroom, the stem of a pappus above the seed, the stalk of an ovary raising it above the receptacle, etc. Various forms of stipes in flowering plants are distinguished under the terms *thecaphore*, *gynophore*, *antho-*

*phore, gynobase, gonophore, carpophore.*

**STÍPĚL**, the stipule of a leaflet.

**STÍPĚL'LÁTE**, furnished with stipels.

**STÍPĚS**, an uncommon spelling of Stipe.

**STÍPÍFÓRM**, resembling a stipe; stipitiform.

**STÍP'ÍTÁTE**, having a stipe; supported on a stipe.

**STÍP'ITÍFÓRM**, see STIPIFORM.

**STÍP'ŮLÁ** (pl. *stíp'Ůlā*), see STIP-ŮLE.

**STÍPŮLÁ'ČEOŮS**, see STIPULAR.

**STÍP'ŮLAR**, having stipules; formed of stipules; situated near or upon stipules; pertaining to stipules; stipulaceous.

**STÍP'ŮLÁŘÝ**, formed of stipules.

**STÍP'ŮLÁTE**, having stipules; stipulated; stipuled.

**STÍP'ŮLÁTĚD**, see STIPULATE.

**STÍPŮLÁ'TION**, the situation or arrangement of the stipules.

**STÍP'ŮLE**, an organ situated in pairs upon the stem, one on either side of the petiole at its base and often adherent to it. They are usually expanded, scale-like or leaf-like, but sometimes exist in the form of glands, prickles, tendrils, or other organs, and are often wanting altogether. They frequently serve for protection to the bud or growing point, and fall away as the bud expands and the leaves develop.

**STÍP'ŮLED**, see STIPULATE.

**STÍPŮLÍF'ĚROŮS**, bearing stipules.

**STÍP'ŮLÓSE**, having very large stipules. (Rare.)

**STŮCK**, (1) the persistent base of an herbaceous perennial;

(2) any plant or part considered with reference to another part which it supports; (3) in horticulture a tree or other plant which receives a bud or graft; (4) the original or originals (parentage) of a species or variety; (5) a seedsman's term for a quantity of seed grown in a particular locality or from a particular source. It does not imply any peculiarity of character. Compare STRAIN.

**STŮLE**, see STOLON.

**STŮLŮN**, a slender branch, above or below the surface of the ground, which takes root or bears a bulb at the extremity where it forms one or more new plants; stole; sobole. Compare RUNNER, RHIZOME, and OFFSET.

**STŮLŮNÍF'ĚROŮS**, bearing stolons.

**STŮMÁ** (pl. *StŮm'atā*), an opening in the epidermis for the admission of air and liberation of moisture; breathing-pore. See GUARD-CELLS.

**STŮMÁTE**, see STOMA.

**STŮMÁT'IC**, pertaining to a stoma.

**STŮMÁT'IC ČĚLLĚ**, see GUARD-CELLS.

**STŮMÁT'IC CHÁM'BĚR**, the intercellular space beneath a stoma; substomatic chamber; air-chamber; respiratory chamber; respiratory cavity. See CISTOME. Compare ANTE-CHAMBER and VESTIBULE.

**STŮMÁTÍF'ĚROŮS**, bearing stomata; stomatose.

**STŮM'ÁTŮSE**, see STOMATIF-ERŮS.

**STŮNE**, the bony endocarp of a drupe, containing the seed; pit.

**STONE-FRUIT**, see **DRUPE**.

**STOOL**, a plant upon which offshoots of any kind are produced, usually for propagation, as in the raspberry and strawberry; especially, a plant of wheat, oats, rye, or barley which has several stems from one root.

**STOOL**, v. i., to tiller, as grain; to throw out suckers.

**STRAGGLING**, see **DIVARICATE**.

**STRAIN**, (1) the influence of a particular ancestor existing in an individual or variety; (2) a seedsman's term for a stock of seed or subordinate variety which has been bred in a special manner and acquired a slight individual character, as "an excellent *strain* of Fottler's cabbage."

**STRAMINEOUS**, like straw; especially, straw-colored; pale yellow.

**STRAND**, a fibrovascular bundle; a branch of mycelium, or similar vegetable filament; specifically, a branch of fibrous mycelium, which see.

**STRANGULATED**, applied to a root or stem which is contracted at intervals, as though growth had been restricted by cords or bandages wrapped around it. Compare **MONILIFORM**.

**STRAP**, the ligule of a ray-floret in **Compositæ**.

**STRAP-SHAPED**, broad, flat, and linear, like a belt; ligulate.

**STRATIFICATION**, the thickening of a cell-wall by the deposition of successive layers of formed material; also the arrangement of the layers so deposited.

**STRATIFIED THALLUS**, a thallus in lichens in which the

gonidia or algal cells are disposed in one or more layers.

**STRATOSE**, in distinct layers or strata.

**STRAW**, the stems of various edible grains, as wheat and oats, especially after being threshed. Extended also to the haulm of peas, beans, etc.

**STREAK** (Hort.), a long narrow stripe.

**STREAMING OF PROTOPLASM**, see **ROTATION**.

**STRĪĀ** (pl. **Strīā**), a straight and very narrow mark or groove.

**STRĪATE**, marked with parallel striæ. Compare **SULCATE**, **RIVULOSE**, **ACICULATED**, and **LINEATE**.

**STRICT**, straight or upright; having branches close together and erect: opposed to **Lax**. Differs from **Fastigate** in being applied chiefly to herbs and shrubs instead of trees and in not necessarily having a pointed top.

**STRĪGĀ** (pl. **Strīgā**), a sharp-pointed, rigid, appressed bristle or hair-like scale.

**STRĪGLŌSE**, minutely strigose.

**STRĪGŌSE**, covered with strigæ. Formerly regarded as synonymous with **Hispid**.

**STRIKE** (Hort.), to take root, as a cutting.

**STRĪNG**, any fibre; strand.

**STRĪŌLĀTE**, diminutive of **Striate**, having very fine striæ.

**STRĪPED**, having longitudinal lines of color, broader than **Streaked** and narrower than **Banded**; having longitudinal colored marks of any character.

**STRŌBĪLĀŒOUS**, cone-bearing; cone-like; pertaining to cones.

**STRŌBĪLE**, see **CONE**.

**STRŌBĪLĪFĒROUS**, coniferous.

**STRÓBÍLÍFÓRM**, cone-shaped.

**STRÓBÍLŮS**, see CONE.

**STRÓMÁ** (pl. *Strómátá*), a mass in which another object is embedded, as a protein granule which contains a crystal or starch-grain. Especially, a compact mass of mycelium upon or within which spores or sporangia are borne—applied mainly to tissue in which perithecia are embedded. Compare **HYMENIUM**.

**STRÓMÁTÓID**, having the nature or appearance of a stroma.

**STRÓMÁTOŮS**, bearing or producing stromata.

**STRÓMBŮLÍFÉROŮS**, bearing spirally twisted pods (*strombí*).

**STRÓMBŮLÍFÓRM**, twisted in a spiral, like the pods of alfalfa; cochleate.

**STRÓMBŮS** (pl. *Stróm'bī*), a spirally coiled legume, like that of alfalfa, *Medicago sativa*; cochlea.

**STRÓPHĚ**, an old term for leaf-spiral.

**STRÓPHÍOLÁTE**, furnished with a strophiole.

**STRÓPHÍOLE**, see **CARUNCLE**.

**STRŮC'TŮRAL BŮT'ÁNŮ**, the study of the form and arrangement of the parts of plants, including morphology and histology; vegetable anatomy; phytotomy.

**STRŮMÁ**, a one-sided swelling or protuberance of any kind, as the one-sided enlargement (apophysis) at the base of the capsule in some mosses, or the pulvinus of a leaf or leaflet. The term is now seldom used except in mosses.

**STRŮMÍFÓRM**, like a struma in appearance.

**STRŮMÓSE'**, swollen upon one

side like a goitre; bearing a struma.

**STRŮMŮLŮSE**, slightly strumose.

**STŮFFED**, the same as **Solid**, or the old term **Farctate**, but seldom applied except to stems having a fibrous or spongy centre. Used mainly in mushrooms.

**STŮMP'-ROOTĚD**, applied in vegetable gardening to the roots of certain varieties of the radish, carrot, etc., which, instead of tapering gradually from the fleshy edible portion to the slender tap-root, have the transition abrupt. The term is not applied to the roots of turnip beets, flat turnips, etc., but only to such as are more elongated.

**STŮPÁ**, a tuft of matted hairs resembling tow. (Obs.)

**STŮPEŮS**, see **STUPOSE**.

**STŮPŮSE'**, resembling tow; covered with matted hairs resembling tow; stupeous.

**STŮLE**, the slender part of a pistil supporting the stigma.

**STŮLÍFÉROŮS**, style-bearing.

**STŮLÍFÓRM**, style-shaped.

**STŮLŮGŮNÍD'ÍŮM**, see **STYLO-SPORE**.

**STŮLŮPŮD**, see **STYLOPODIUM**.

**STŮLŮPŮD'ÍŮM**, the fleshy disk crowning the ovary in most *Umbelliferae*, formed by the expanded bases of the two styles.

**STŮLŮSE'**, having the styles remarkably long, numerous, or persistent. (Rare.)

**STŮLŮSPŮRE**, a stalked spore, sometimes septate, produced in a pycnidium; *stylogonium*; *pycnogonium*; *pycnospore*; *pycnidiospore*; *clinospore*.

**STYLÖSTĒ'GIŪM** (pl. **Stylöstō'giā**), the peculiar orbicular corona, called scutum or shield, which terminates the style in *Stapelia* and similar *asclepiads*.

**STYLÖSTĒ'MŌN**, an epigynous stamen. (Rare.)

**SUĀVĒ'ŌLENT**, sweet-scented.

**SUB**, a Latin prefix meaning under, beneath, subordinate, or partially.

**SŪBĀCŪTE'**, moderately acute.

**SŪBĀE'RĪAL**, situated just above the ground or substratum, but covered with fallen leaves, etc., as many rhizomes.

**SŪBĀPIC'ŪLĀTE**, having a small or poorly defined apiculus or point.

**SŪBĀRBŌRĒS'CENT**, somewhat tree-like.

**SŪBĀX'ILLĀRĪ**, situated beneath the axil.

**SŪBCAULĒS'CENT**, with the leafy stem so short as to be hardly noticeable, but rather more developed than in *Acaulescent*.

**SŪBCĒS'PĪTŌSE**, somewhat inclined to grow in bunches. See *CESPITOSE*.

**SŪB'CLĀSS**, a group of orders or cohorts next subordinate to a class.

**SŪBCŌNCĀT'ĒNĀTE**, growing somewhat in chains—in short or imperfect rows or chains.

**SŪBCŌN'ICAL**, slightly conical.

**SŪBCŌNTĪN'ŪŌŪS**, rarely or imperfectly septate; seldom or slightly constricted.

**SŪBCŌR'DĀTE**, slightly cordate.

**SŪBCRE'NĀTE**, slightly or obscurely crenate.

**SŪBCŪL'TRĀTE**, slightly cultrate.

**SŪBDĒN'TĀTE**, imperfectly or

obscurely dentate. Compare *DENTICULATE*.

**SŪBDĒNTĪC'ŪLĀTE**, obscurely denticulate: having small, imperfect marginal teeth.

**SŪBĒFFŪSE'**, having slightly spreading branches or filaments.

**SŪBĒNTĪRE'**, only slightly notched or toothed.

**SŪBĒPIDĒR'MAL TĪS'SŪE**, see *HYPODERMA*.

**SŪ'BĒR**, see *CORK*.

**SŪBĒRĒCT'**, nearly erect.

**SŪBĒ'REŌŪS**, see *SUBEROSE*.

**SŪ'BĒRĪN**, cork - substance—nearly or quite the same as *Cutin*. See *CORK*.

**SŪBĒRĪFĪCĀ'TION**, see *SUBERIZATION*.

**SŪBĒRĪZĀ'TION**, conversion into cork; suberisation; suberification.

**SŪBĒRŌSE'**, having somewhat the appearance of being gnawed; slightly *erose*. Compare *EROSE*.

**SŪ'BĒRŌSE**, of the nature of cork; suberous.

**SŪ'BĒRŌŪS**, see *SUBEROSE*.

**SŪBFĀM'ĪLŪ**, a group of genera subordinate to a family.

**SŪBFLĒX'ŪŌSE**, slightly wavy.

**SŪBGĒNĪC'ŪLĀTE**, slightly bent.

**SŪBGĒ'NŪS**, a species, or group of species, having nearly the rank of genus.

**SŪBGLŌBŌSE'**, nearly globose.

**SŪBHŪMĒ'NĪŪM**, a layer of tissue next below the hymenium; hypothecium.

**SŪBĪC'ŪLŪM**, a term applied by M. C. Cooke to the abnormally thickened portion of a leaf or stem bearing the cluster-cups in *Æcidium*.

- SÜBKĪNG'DOM**, the highest subdivision of a kingdom, as the phenogams and cryptogams among plants; series. Some recent botanists divide the vegetable kingdom into more than two subkingdoms.
- SÜBLĒNTĪC'ŪLAR**, somewhat lens-shaped.
- SÜBMĀR'ĠNAL**, situated near the margin.
- SÜBMĒRGĒD'**, see SUBMERSED.
- SÜBMĒRSED'**, growing under water; submerged; demersed.
- SÜBNĀS'ĠENT**, originating or growing beneath any object.
- SÜBNŪDE'**, nearly destitute of hairs, leaves, or other covering.
- SÜBŌBTŪSE'**, slightly obtuse.
- SÜBŌRBĪC'ŪLAR**, nearly circular; subrotund. Compare SUBGLOBOSE.
- SÜBŌR'DĒR**, a group of genera within an order. Compare TRIBE.
- SÜBŌVATE**, somewhat ovate.
- SÜBPĒDŪN'CŪLĀTE**, having a very short peduncle; subsessile.
- SÜBPĒTĪŪLAR**, situated beneath the petiole, i. e., under (within) the base of the petiole, as the leaf-bud in sycamore. Compare SUBPETIOLATE.
- SÜBPĒTĪŪLĀTE**, having a very short petiole; subsessile. Compare SUBPETIOLAR.
- SÜBRĀ'MŌSE**, having very few branches; subsimple. Compare RAMOSE.
- SÜBRĪĠ'ĪD**, slightly rigid.
- SÜBRŌTŪND'**, see SUBORBICULAR.
- SÜBSĒR'RĀTE**, sparsely or obscurely serrate. Compare SERRULATE.
- SÜBSĒS'SĪLE**, nearly sessile; subpetiolate or subpedunculate.
- SÜBSHRŪB'BY**, see FRUTESCENT.
- SÜBSĪD'ĪĀRY ÇĒLL**, see ACCESSORY CELL.
- SÜBSĪM'PLE**, with very few subdivisions or branches.
- SÜBSPE'ÇĪĒS**, a variety nearly equal in rank to a species; a marked variety.
- SÜB'STĪTŪTE FĪBRE**, a term applied by Sanio to a prosenchymatous cell larger in diameter than a libriform cell and without its attenuated ends. Not in general use.
- SÜBSTŌMĀTĪC ÇĪM'BĒR**, see STOMATIC CHAMBER.
- SÜBSTĒRĀ'TŌSE**, in somewhat indistinct or irregular layers or strata.
- SÜBTĒND'**, to embrace in its axil. A flower is *subtended* by a bract when there is a bract situated beneath it. Nearly all buds are *subtended* by leaves.
- SÜBTĒRETE'**, somewhat terete.
- SÜBTĒRRĀ'NEAN**, beneath the surface of the ground; hypogean.
- SÜBTRĪBE**, a group of genera subordinate to a tribe.
- SÜ'BŪLĀTE**, narrow, and tapering to a sharp rigid point, as the leaves of juniper; awl-shaped.
- SÜBŪLĪF'ĒROŪS**, furnished with awl-shaped spines. (Obs.)
- SÜ'BŪLĪFŌRM** (obs.), see SUBULATE.
- SÜBŪM'BĒLLĀTE**, somewhat umbelliform, as the flower-cluster of the apple.
- SÜBVĀRĪĒTŪ**, a subordinate variety; a variety within a variety.
- SÜBVĒN'TRĪCŌSE**, somewhat ventricose or inflated.



**SUBVERTICILLATE**, slightly verticillate; in imperfect or irregular whorls.

**SÜCCĒDANEÛM**, a substitute.

**SÜCCĒSSIVE WHORL**, a whorl the members of which do not all originate at the same time, but in succession, either in regular order or otherwise. Compare **SIMULTANEOUS WHORL**.

**SÜCCIFĒROÛS**, producing or conveying sap.

**SÜCCISE'**, terminating abruptly, as though cut sharply off. Compare **TRUNCATE** and **PREMORSE**.

**SÜCCÖSE**, see **SUCCULENT**.

**SÜCCÛBOÛS**, having the base or lower edge of each leaf overlapping the apex of the preceding leaf, as in *Jungermannia*. Compare **INCUBOUS**.

**SÜCCÛLENT**, soft, and fleshy or juicy; pulpy.

**SÜCK'ĒR**, (1) a sprout or shoot, especially from the root or lower part of the stem (surgulus); (2) sometimes applied to aerial roots or other holdfasts; (3) a haustorium.

**SÜCK'ĒR**, v. i., to put forth shoots from the lower part of the stem, as *Indian corn*.

**SÜDORIFĪC**, causing perspiration.

**SÜFFRUTĒSCENT**, slightly shrubby.

**SÜFFRUTĒX**, a plant with a woody base and herbaceous stems or branches. Applied mainly to perennials. See **UNDERSHRUB**.

**SÜFFRUTĪCÖSE**, either suffrutescent or like an undershrub.

**SÜFFRUTĪCÛLOSE**, slightly fruticulose, as some lichens.

**SÜL'CĀTE**, having one or more large, straight, longitudinal grooves or channels, as the stem of parsnip. Compare **RIVOSE** and **STRIATE**.

**SÜL'CÛS** (pl. *Sül'cū*), a longitudinal groove or furrow; sulcation. Compare **STRIA**.

**SÜLPHÛREOÛS**, sulphur-yellow—paler than *Luteus*. About the same as *Flavus*.

**SÛM'MĒR-SPÖRE**, any spore or goidium which retains its vitality but a short time, and is intended for the propagation of the plant during the summer, as the uredospores of wheat-rust. Compare **RESTING-SPORE**.

**SUPER-** (or **SUPRA-**), a prefix from the Latin, meaning above in position or degree.

**SÛPERĀX'ILLĀRÝ**, situated above the axil, instead of within it, as the accessory buds sometimes seen in the butternut; supraaxillary; superfoliaceous; suprafoliaceous.

**SÛPERCRĒS'ÇENCE**, a parasite. (Rare.)

**SÛPERCRĒS'ÇENT**, growing above another part or body; especially, growing upon some other growing thing. (Rare.)

**SÛPERDĒCÖMPOUND'**, see **SUPRADECOMPOUND**.

**SÛPERFĒCÛNDĀTION**, the conjugation of more than two gametes. Compare **SUPERFĒTATION**.

**SÛPERFĒTĀTION**, the fertilization of an ovary by two or more kinds of pollen, so that its seeds are not all alike. Compare **SUPERFĒCUNDATION**.

**SÛPERFÖLĪ'ÇEOÛS**, see **SUPERAXILLARY**.

**SÛPĒ'RĪÖR**, said of a radicle when it points towards the

- apex of the fruit (ascending); said of the ovary when the calyx is free from it; said of the calyx when adherent to the ovary and thus, with the other floral organs, situated upon its summit; applied to the upper side of a lateral flower, the side next the axis: the vexillum, for example, is the *superior* petal of a papilionaceous corolla.
- SÛPĒRNĀ'TANT**, floating on the surface.
- SÛPĒRNŪMĒRĀRĪ** BUDS, see ACCESSORY BUDS.
- SÛPĒRPĀRĀSITE**, a parasite of a parasite; hyperparasite.
- SÛPĒR-PLĀNT**, a plant which grows upon another plant, either as an epiphyte or a parasite.
- SÛPĒRPOŪITION**, situation above some other organ; or, when referring to parts of the flower, the non-alteration of the members of contiguous circles, the corresponding parts being opposite instead of alternate; anteposition. See DIRECT and INVERTED SUPER-POSITION.
- SÛPĒRTŪBĒRĀTION**, an abnormal production of secondary tubers directly upon those produced in the ordinary manner.
- SÛPĒRVŌLŪTE**, plaited and the plaits convolute, as the corolla of morning-glory.
- SÛPĪNE**, lying flat, with face upward; dorsicumbent—opposed to Prone. Compare RESUPINATE.
- SÛPPŌRTĪNG PLĀNT**, a plant upon or within which another grows, either as a parasite or an epiphyte. See Host.
- SÛPPRĒSION**, the entire non-development of a part; complete abortion; obliteration.
- SUPRA-**, see SUPER-.
- SÛPRĀĀX'ĪLLĀRĪ**, see SUPER-AXILLARY.
- SÛPRĀDĒCŌM'FOUND**, three or more times compounded, or very much subdivided in any manner. A pinnate leaf, like that of walnut, is *compound*; a bipinnate leaf, like that of honey locust, is *decompound*; a tripinnate leaf, as in many acacias, is *supradecomound*.
- SÛPRĀFŌLIĀ'CEŌUS**, see SUPER-AXILLARY.
- SÛPRĒME**, situated at the highest point.
- SÛRCŪLĪG'ĒROŪS**, see SURCULOSE.
- SÛR'ĀLŌSE**, having suckers (surculi).
- SÛR'ĀLŪS** (pl. Sār'cūli), a sprout or shoot from the ground or base of the stem; sucker.
- SÛRCŪR'RENT**, having winged expansions from the base of the leaf prolonged up the stem. Compare DECURRENT.
- SÛSPĒND'ED**, said of seeds or ovules which are attached to the top or sides of the ovary and hang downward; pendulous; inverted. Compare ERECT and ASCENDING.
- SÛSPĒN'SOR**, (1) a single or multiple row of cells which is the first development of the fertilized oosphere in phenogams, and at the extremity of which the embryo is developed: it appears upon the embryo as a continuation of the radicle; proembryo; (2) the cell which supports the conjugating cell in Mucorini.
- SÛTŪRE**, a line of junction or dehiscence.

**SWARM**, a number of spores or unicellular individuals of common origin which remain near together without being united in any way.

**SWARM-CELL**, see Zoöspore.

**SWARMING**, moving about by means of cilia—said of zoöspores. Chiefly used when many are together. See SWIMMING.

**SWARM-SPORE**, see Zoöspore.

**SWIMMING**, moving unattached within a liquid in any definite manner. Compare NATANT. The swimming of zoöspores when massed, however, is termed Swarming.

**SWORD-SHAPED**, see ENSIFORM.

**SÝNŃCÁR'POŮŠ**, see POLYCARPIC.

**SÝCŃNIŮM**, see SYCONUS.

**SÝCŃNŮŠ**, the fruit (hypanthium) of the fig, consisting of an expanded fleshy receptacle enclosing the flowers.

**SÝL'VÁ** (pl. SÝL'VÁ), the trees of a country or region, or a work describing them.

**SÝL'VAN**, pertaining to woods.

**SÝLVĚSTRINE**, growing in woods.

**SÝMBIŃSIS**, the coexistence in more or less mutual interdependence of two different organisms, as the fungus and alga which constitute a lichen; mutualism; mutual parasitism; commensalism; consortism. With some authors Commensalism implies an association less necessary or mutually helpful than Symbiosis.

**SÝMMĚT'RICAL**, (1) having sepals, petals, and stamens of the same number, or multiples of one another; (2) divisible in one or more directions into halves, which are similar to,

or the reflections of, each other. See MONOSYMMETRICAL and POLYSYMMETRICAL.

**SÝMPĚT'ALOŮŠ**, see GAMOPETALOUS. Also formerly used for a partial union of the petals with monadelphous stamens, as in Malvaceae.

**SÝMPHYÁN'THĚROŮŠ**, see SYNANTHEROUS.

**SÝMPHYCÁR'POŮŠ**, having the fruits confluent, as the disks of the apothecia in certain lichens.

**SÝMPHYL'LOŮŠ**, see GAMOPHYLLOUS.

**SÝMPHYŃGENĚT'IC**, formed of parts which have become grown together or united.

**SÝMPHYŃSTĚM'ŃNOŮŠ**, monadelphous, synantherous, or with the stamens united in any other manner: symphy-stemonous.

**SÝMPHYŠIS**, a union of parts usually distinct; cohesion or adhesion.

**SÝMPHYŠTĚM'ŃNOŮŠ**, see SYMPHYSTEMONOUS.

**SÝM'PŃDE**, see SYMPODIUM.

**SÝMPŃDIAL DICHŃT'ŃMÝ**, where one branch of each successive bifurcation continues to develop and the other remains subordinate. See SCORPIOID and BOSTRYCHOID DICHOTOMY.

**SÝMPŃDIŮM**, a stem which consists of a series of secondary stems or axes which have arisen as branches one from another, as in the tomato; pseudaxis; false axis.

**SÝNÁC'MÝ**, having the stamens and pistils ripen at the same time, neither protandrous nor protogynous; synanthesis: opposed to Heteracmy.

- SYNAN'GIUM**, the peculiar boat-shaped sorus of certain ferns of the order Marattiaceæ.
- SYNAN'THEROÛS**, having the stamens united by their anthers, as in Compositæ; symphyantherous; syngenesious.
- SYNANTHĒ'SIS**, see SYNACMY.
- SYNAN'THOÛS**, (1) having the flowers expand at the same time as the leaves. Compare PROTERANTHOUS and HYSTERANTHOUS. (2) Exhibiting synanthly.
- SYNAN'THY**, the abnormal coalescence of two or more flowers.
- SYN'CARP**, see AGGREGATE FRUIT.
- SYN'CAR'PIUM**, see AGGREGATE FRUIT.
- SYN'CAR'POÛS**, formed of distinct aggregated carpels.
- SYN'COTYLĒD'ONOÛS**, having coherent cotyledons.
- SYN'CŪTIUM**, a collection of nuclei without cell-walls.
- SYNĒ'DRAL**, growing upon the angle of a stem.
- SYNĒ'MĀ**, that part of the column in orchids which represents the united filaments of the stamens.
- SYNĒR'GIDĒ** (sing. *Synēr'gidā*), two cells (or nuclei) in the upper end of the embryo-sac, which together with the oosphere form the egg-apparatus.
- SYNĒRGŪ**, the simultaneous action of several organs.
- SYNĒGENĒ'SIOÛS**, see SYNANTHEROÛS.
- SYNŌCREĀTE**, said of stipules when united around the stem so as to form an ocrea or sheath.
- SYNŌCĒ'CIOÛS**, (1) having male and female flowers in the same head, as in some Compositæ; (2) having antheridia and archegonia in the same receptacle in mosses.
- SYNŌNŪM**, a superseded plant-name.
- SYNŌPH'ŪTŪ**, the cohesion of two or more embryos in a seed. (M. C. Cooke.)
- SYNŌP'SIS** (pl. *Synōp'sēs*), a condensed description of a genus, species, or other group.
- SYNPĒT'ALOÛS**, see GAMOPETALOÛS.
- SYNSEP'ALOÛS**, see GAMOSEPALOÛS.
- SŪNTĀG'MĀ** (pl. *Sŷntāg'mātā*), a name applied by Pfeffer to all bodies composed of tagmata, which see.
- SŪPHŌN**, see SIPHON.
- SŪS'TĒM**, (1) an arrangement of natural objects according to some rule; (2) the sum of the parts of an organism which are of the same morphological nature or perform a similar function, as the fibrovascular or intercellular system.
- SŪS'TĒM, ĀRTIFĪCIAL**, see ARTIFICIAL SYSTEM.
- SŪS'TĒMĀTĪC BŌT'ĀNŪ**, the part of botany which treats of the description, naming, and classification of plants. See VEGETABLE TAXONOMY and PHYTOGRAPHY.
- SŪS'TĒM, NĀTŪRAL**, see NATURAL SYSTEM.
- SŪS'TRŌPHĒ**, the massing of the chlorophyll bodies of a cell under intense light. Compare APOSTROPHE and EPISTROPHE.
- TĀBĒS'CENT**, wasting or shrivelling.
- TĀB'ŪLAR**, flattened horizontally.
- TĀG'MĀ** (pl. *Tāg'mātā*), a name given by Pfeffer to any aggre-

- gate of molecules, including pleon, micella, and micellar aggregate. See these terms.
- TAIL**, any long, flexible, terminal appendage, as the persistent style on the seed of Clematis.
- TAIL-POINTED**, tipped with a long, flexible acumination.
- TAN'GLE**, see SKEIN.
- TANK'ARD-SHAPED**, thickened, about twice as long as broad, gradually enlarged downward, then suddenly contracted or terminated, as the root of some varieties of the turnip and radish. Compare STUMP-ROOTED.
- TAP'ER-POINTED**, see ACUMINATE.
- TAPÉTUM**, (1) a layer of cells, just outside the archesporium, lining the cavity of an anther or a sporangium. It usually becomes disorganized and absorbed before the liberation of the spores or pollen-grains; (2) a similar layer of cells surrounding the embryo-sac.
- TAP'-ROOT**, a main root which runs directly downward.
- TARTÁ'REOUS**, having the surface rough and crumbly, as that of many lichens. (Obs.)
- TÁ'SSEL**, the popular name for the staminate inflorescence or terminal compound spike of Indian corn. Sometimes called Spindle.
- TAW'NÝ**, see FULVOUS.
- TÁXÓL'ÓGY**, see TAXONOMY.
- TÁXÓN'OMÝ**, see VEGETABLE TAXONOMY.
- TÉAR**, a drop of gum or resin as it has issued from the plant.
- TÉAR-SHÁPED**, of the shape of an apple-seed—the same as pear-shaped except that the sides are not contracted.
- TEETH**, see TOOTH.
- TÉG'MÉN**, the innermost seed-coat; endopleura. Called Secundine in the ovule.
- TÉG'MÉN'TUM** (pl. Tégmén'tá), an old term for Bud-scale.
- TÉG'UMENT**, see INTEGUMENT.
- TÉ'LA CÓNTEK'TÁ**, see FELTED TISSUE.
- TÉLÉÚ'TÓSPÓRE**, a thick-walled, usually compound, gonidium produced by the Uredinæ or rust-fungi late in the season and which serves to reproduce the fungus the next year; brand-spore; pseudospore.
- TÉN'DRÍL**, a slender appendage which serves for support by coiling around some other object. It may be morphologically a leaf, leaflet, stipule, or stem.
- TÉN'TÁCLE**, one of the sensitive glandular hairs on the leaf of Drosera.
- TÉNUÍFÓ'LÍOUS**, having thin, narrow leaves.
- TÉP'AL**, one of the parts of a perianth, either sepal or petal. (Rare.)
- TÉRÁTÓL'ÓGY**, the study of abnormal structures; morphology as applied to monstrous growths. Not applied to malformations due to disease.
- TÉR'ÇINE**, a third coat to the ovule, counting from the outside—not a constant and definite structure.
- TÉRETE'**, cylindrical, or somewhat tapering.
- TÉRGEM'INAL**, see TERGEMINATE.
- TÉRGEM'INÁTE**, having three pairs of leaflets or other organs attached, by secondary petioles or otherwise, to the apex of a common support. Compare

- TERNATE**, **TERNATE-PINNATE**, and **TRIJUGATE**.
- TĒRGĪFĒROŪS** (obs.), see **DORSIFEROUS**.
- TĒRGĪSPĒR MOŪS**, bearing reproductive bodies upon the back, as the leaves of ferns. (Obs.)
- TĒR'GŪM** (obs.), see **DORSUM**.
- TĒR'MĪNAL**, attached to or pertaining to the extremity or apex.
- TĒR'MĪNAL BŪD**, a bud at the extremity of a branch or stem. Compare **LATERAL BUD**.
- TĒR'NĀRŪ**, consisting of three. Compare **TERNATE**.
- TĒR'NĀTE**, growing in threes, as the leaflets in clover.
- TĒR'NĀTELŪ TRĪFŌLIŌLĀTE**, having three leaflets attached at one point, as in clover. Compare **TRIFOLIOLATE**.
- TĒR'NĀTE-PĪN'NĀTE**, having three secondary petioles, each bearing pinnate leaflets, attached to the apex of a common petiole. If each secondary petiole bears but a single pair of leaflets the leaf is called **Tergeminate**.
- TĒRPĪN'NĀTE**, see **TRIPINNATE**.
- TĒRRĒS'TRIAL**, growing on land, not aquatic; growing on the ground, not on trees.
- TĒS'SĒLLĀTĒD**, having square spots, arranged like those on a chess-board.
- TĒS'TĀ**, the outer seed-coat, called primine, in the ovule; spermoderm.
- TĒS'TĀ'ČEOŪS**, brownish yellow, like unglazed earthen-ware.
- TĒS'TĪCŪLĀTE**, oval and solid, like the tuberous roots of certain orchids.
- TĒS'TŪLE** (obs.), see **FRUSTULE**.
- TETRA-**, in Greek compounds, four.
- TĒTRĀCĀM'ĀROŪS** (obs.), about the same as **Tetracoccous**. See **CAMARA**.
- TĒTRĀCĀR'PĒLLĀRŪ**, of four carpels.
- TĒTRĀČĒ'NIŪM**, a fruit consisting of four achenium-like carpels, as in *Labiatae*.
- TĒTRĀČĤŌT'ŌMOŪS**, dividing at the end into four branches.
- TĒTRĀCŌC'COŪS**, of four cocci.
- TĒTRĀČŪC'LĪC**, composed of four whorls, as a flower having calyx, corolla, and stamens each of one whorl and a single (simple or compound) pistil.
- TĒT'RĀD**, a group of four pollen-grains.
- TĒTRĀDŪN'ĀMOŪS**, having six stamens, four of which are longer than the other two. Compare **DIDYNAMOUS**.
- TĒTRĀFŌ'LIŌŪS**, having bijugate leaves, i. e., having leaves with two pairs of leaflets.
- TĒTRĀG'ŌNAL**, prismatic and quadrangular; four-angled; tetragonous. Compare **TETRAQUETROUS**.
- TĒTRĀGŌNĪD'IŪM** (pl. **TĒtrāgōnīd iā**), see **TETRASPORE**.
- TĒTRĀG'ŌNOŪS**, see **TETRAGONAL**.
- TĒTRĀG'ŪNOŪS**, having four pistils or styles.
- TĒTRĀM'ĒROŪS**, having four parts or the parts in fours. Applied mainly to flowers which have four members in each set or whorl of organs. Compare **DIMEROUS**, **TRIMEROUS**, etc.
- TĒTRĀN'DROŪS**, having four stamens.

**TĒTRÁPĒT'ALOŪS**, having four petals.

**TĒTRÁPH'YLLŌŪS**, four-leaved. Often used for Tetrasepalous.

**TĒTRÁQ'UĒTROŪS**, having four salient angles. Compare TETRAGONAL.

**TĒ'TRÁRĀGH**, a term applied to a fibrovascular cylinder which represents four fibrovascular bundles.

**TĒTRÁSĒP'ALOŪS**, of four sepals. See TETRAPHYLLOUS.

**TĒTRÁSPĒR'MOŪS**, four-seeded.

**TĒTRÁSPŌRÁN'GIŪM**, a sporangium (unicellular) containing tetraspores.

**TĒ'TRÁSPŌRE**, a gonidium or asexually produced spore in Floridææ. So called from being often produced four together in a mother-cell; tetragonidium.

**TĒTRÁS'TĪCHOŪS**, in four vertical rows upon a stem.

**THÁLÁMIFLŌ'RAL**, having the stamens inserted upon the receptacle. Compare COROLLIFLORAL and CALYCIFLORAL.

**THÁLÁMIFLŌ'ROŪS**, see THALAMIFLORAL.

**THÁL'ÁMŪS** (pl. Thál'amī), the receptacle of a flower.

**THÁLÁS'SŌPHŪTE**, a sea-alga. (Rare.)

**THÁL'LŌGĒN**, see THALLOPHYTE.

**THÁL'LOID**, having the form or nature of a thallus. Compare FOLIOSE and FRONDOSE.

**THÁLLO'DAL**, see THALLOID.

**THÁL'LŌME**, see THALLUS. Compare CAULOME.

**THÁL'LŌPHŪTE**, a plant whose vegetative body is a thallus, as a lichen, fungus, or alga; cellular cryptogam; thallogen. Compare CORMOPHYTE.

**THÁL'LŪS** (pl. Thál'li), a vegeta-

tive body without true leaf or stem, as that of most cryptogams; thallome.

**THÁL'LŪS PLÁCŌ'DĒS** (obs.), see FOLIACEOUS THALLUS.

**THÁL'LŪS THÁMNŌ'DĒS** (obs.), see FRUTICOSE THALLUS.

**THĒ'CA** (pl. Thĕ'cæ), a sporangium or anther-cell. (Rare.) Formerly in general use for ascus, and still used by some writers for the sporangium or capsule of mosses.

**THĒ'CAPHŌRE** (obs.), see GYNOPHORE.

**THĒ'CAPŌRE**, see ASCOSPORE.

**THĒCĪF'ĒROŪS**, bearing asci or other thecæ; thecigerous. (Rare.)

**THĒCĪG'ĒROŪS**, see THECIFEROUS.

**THĒRMŌT'RŌPĪSM**, the property or phenomenon of movement under the influence of heat or cold. Curvature toward a source of heat is called *positive thermotropism*; curvature in the opposite direction, *negative thermotropism*.

**THĪCK'ENĪNG LĀYĒR**, an apparent layer of cellulose deposited upon the *inner* surface of a cell-wall. It appears as a layer only because of its power of absorbing water in a different degree from the remainder of the cell-wall.

**THĪCK'ENĪNG RĪNG**, the cambium-ring, or any other ring or layer of thickening or meristematic tissue.

**THŌRN**, a degenerated, sharp-pointed branch, either simple, as in the thorn-apple, or branched, as in the honeylocust. Sometimes applied to other large, sharp, rigid processes. Compare SPINE and PRICKLE.

**THRĒAD-SHĀPED**, see **FILL-FORM**.

**THREĒ-ĀNGLED**, see **TRIGONOUS**.

**THREĒ-CLĒFT**, see **TRIFID**.

**THREĒ-LĒAVED**, see **TRIFOLIATE**.

**THREĒ-LŌBED**, having three lobes or segments.

**THREĒ-NĒERVED**, having three principal veins proceeding from the base of the leaf in monocotyledons. Applied mainly in the floral envelopes of grasses; trinervate; triple-nerved.

**THREĒ-PĀRTĒD**, divided into three parts, or having the parts in threes: a three-parted leaf has three lobes or leaflets; a three-parted flower has three petals.

**THREĒ-RĀNKED**, in three vertical rows upon a stem; trifarious; tristichous.

**THREĒ-VĀLVED**, having three valves or dehiscent portions of a pericarp; trivalvular.

**THRŌAT**, see **FAUX**.

**THRŪM**, an old term for stamen.

**THRŪM-EYED**, a florist's term for flowers having long, conspicuous stamens and a short style. Compare **PIN-EYED**.

**THŪLL**, see **TYLOSIS**.

**THŪLŌSE**, see **TYLOSIS**.

**THŪRSE**, a compact panicle, like that of the lilac and grape.

**THŪR'SŌID**, thyrse-like.

**THŪR'SŪS** (pl. *Thŷr'si*), see **THYRSE**.

**TIGE** [pro. *tēzh*], stem. (Rare.)

**TIGĒLLE**, see **TIGELLUM**.

**TIGĒL'LŪM** (pl. *Tigēl'lā*), see **CAULICLE**.

**TĪL'LĒR**, n., a sucker or branch

from the base of the stem. (Obs.)

**TĪL'LĒR**, v. i., to put forth new shoots from the root or around the base of the original stalk, as wheat; stool. Applied mainly to the smaller cultivated plants of the grass family. Compare **SUCKER**.

**TĪL'LŌW** (obs.), see **TILLER**.

**TĪM'BĒR-LĪNE**, the upper limit of arborescent vegetation upon high mountains, as determined by cold.

**TĪNCTŌRĪŌUS**, capable of serving as a dye.

**TĪS'SŪE**, a general term for all the material of which plants and animals are formed; particularly, a collection of cells of similar character, as vegetable tissue, epidermal tissue, fibrovascular tissue.

**TĪS'SŪE-CŌRD**, see **CENTRAL CORD**.

**TŌMĒNTŌSE**, covered with matted woolly hairs.

**TŌMĒN'TŌUS**, see **TOMENTOSE**.

**TŌMĒN'TŪLŌSE**, slightly tomentose.

**TŌMĒN'TŪM**, matted woolly hairs.

**TŌMĪP'ĀRŌUS**, producing spores by division. (M. C. Cooke.) See **FISSIPAROUS**.

**TŌNGUE**, see **LIGULE**.

**TŌNGUE-SHĀPED**, long, thickened, nearly flat, and rounded at the end; lingulate; linguiform; linguæform.

**TŌN'ŌPLĀST**, a term sometimes applied to a vacuole-wall. See **VACUOLE**.

**TOOTH**, any small, pointed, marginal lobe, especially of a leaf.

**TOOTHED**, see **DENTATE**.

**TOOTH'LĒT**, a small or secondary tooth; denticulation.



**TÓOTH'LETĒD**, see DENTICULATE.

**TÓP'ICAL**, local; confined to a limited area.

**TÓP'SHAPĒD**, see TURBINATE.

**TÓRN**, with marginal incisions deep and irregular. (Rare.) Compare JAGGED, LACINIATE, and INCISED.

**TÓRÓSE**, cylindrical, and swollen at intervals. See MONILIFORM.

**TÓR'SION**, the state of being twisted spirally.

**TÓR'TÓUŪS**, bending or turning in various directions.

**TÓR'ŪLÓSE**, somewhat torose.

**TÓ'RŪS**, (1) the extremity of the stem, upon which the floral organs are situated, usually termed Receptacle; thalamus; (2) a thickened centre in the closing membrane of a bordered pit.

**TRĀBĒC'ŪLĀ** (pl. TrābĒc'Ūlā), one of the transverse processes upon the inner face of the teeth of the peristome in mosses; a projection from the wall across a cavity, as the bands of tissue crossing the sporangia of Isoetes or the cellular filaments across the space surrounding the fibrovascular bundles in Selaginella; any cross-bar, as one of the connecting threads in a reticulum.

**TRĀBĒC'ŪLAR**, having or pertaining to trabeculæ; trabeculate.

**TRĀBĒC'ŪLAR VĒS'SĒL**, one whose cavity is crossed by ligneous threads or bands.

**TRĀBĒC'ŪLĀTE**, having trabeculæ; trabecular.

**TRĀ'CHĒĀ** (pl. Trā'chĒĀ), see SPIRAL VESSEL.

**TRĀ'CHĒĪD** (pl. Trā'chĒĪds or TrāchĒ'Īds), a woody vessel

composed of a single cell. Applied mainly to those having bordered pits.

**TRĀIL'ING**, elongated, and prostrate upon the ground, but not rooting. The same as Running, except that the plant may be shorter, or may rise at first from a woody or otherwise self-supporting base. Compare CREEPING.

**TRĀJĒC'TĪLE** (obs.), see DISTRACTILE.

**TRĀ'MĀ**, the substance of the same character, as the pileus in the gills of agarics. It supports the subhymeneal layer.

**TRĀNSFŌRMĀ'TION**. This term is used in botany mainly in the same sense as Metamorphosis. A petal, for example, is called a transformed or metamorphosed leaf, not because the particular petal under consideration has ever been a foliage-leaf, but because it is a leaf in a special or unusual condition. The word Transformation is also used for the changes in a particular organ during its development or growth.

**TRĀNSMŪTĀ'TION**, see METABOLISM.

**TRĀNSPĪRĀ'TION**, the normal escape of fluids from within the plant; exhalation. It includes not only the escape of moisture, both in the form of vapor and, as occasionally occurs, in the liquid state, but also the gaseous products of respiration. The transpiration of moisture is sometimes, but unnecessarily, termed Perspiration.

**TRĀNSVĒRSE' CHŌ'RĪSĪS**, when two or more organs in place of one stand one above or within another; vertical choris.

- Compare COLLATERAL CHORISIS.
- TRÁNSVĚRSE' ĚĚŮT'RŮPIŠM**, see DIAGEOTROPISM.
- TRÁNSVĚRSE' HELIŮT'RŮPIŠM**, see DIAHELIOTROPISM.
- TRÁPEZIFŮRM**, unsymmetrically four-sided, like a trapezium; trapezoid.
- TRÁPĚZOID**, see TRAPEZIFORM.
- TRÁPĚZOID**, n., a body having the form of a trapezium. (Rare.)
- TRĚĚ**, a woody plant capable of growing in the given locality at least twenty feet in height, with a single self-supporting stem. If the top is unusually broad the height may be somewhat less. The standard is arbitrary and varies considerably according to circumstances. Compare SHRUB.
- TRĚM'ĚLLOID**, gelatinous, like the Tremellineæ.
- TRI**, three.
- TRIÁĚL'PHŮŠ**, having the filaments in three sets.
- TRIÁN'DRIÁN**, see TRIANDROUS.
- TRIÁN'DROŠ**, having three stamens.
- TRIÁN'ĚŮLAR**, having three sides or angles;—applied either to flat bodies like leaves, or to columnar bodies like stems. Compare TRIGONOUS.
- TRIÁN'THOŠ**, three-flowered.
- TRĪ'ARCH**, a fibrovascular cylinder which has three ligneous rays, and thus represents three fibrovascular bundles.
- TRĪBE**, a group of genera subordinate to an order or suborder. Similar groups are in some cases called families.
- TRĪĀR'PELLÁŘŮ**, having three carpels in a flower or pistil; trigynous.
- TRĪĀR'POŠ**, containing three ovaries or fruits.
- TRĪĚPH'ÁLOŠ**, three-headed.
- TRĪĚH'ŮBLÁŠT**, an internal hair, like those which project into the intercellular spaces of some water-lilies.
- TRĪĚH'ŮĚŮNE**, a slender prolongation of the carpogonium in Floridæ which receives upon its apex the antherozoids in fertilization.
- TRĪĚH'ŮMÁ** (pl. *Trichŏ'mátà*), a term sometimes applied to filaments of conferva and some other algæ, especially to the multicellular filaments in Nostochineæ.
- TRĪĚH'ŮME**, a plant-hair of any kind.
- TRĪĚH'ŮPHŮRE**, the cell or cells immediately supporting a trichogyne.
- TRĪĚHŮSPŮRÁN'ĚŮM**, a sporangium which is morphologically a hair. Formerly also applied to the plurilocular sporangia of Phæosporeæ.
- TRĪĚHŮT'ŮMOŠ**, dividing at the end into three branches; three-forked; trifurcate.
- TRĪĚŮC'COŠ**, of three cocci.
- TRĪ'ĚOLOR**, of three colors.
- TRĪĚŮS'TÁTE**, three-ribbed.
- TRĪĚŠ'PID**, three-pointed; tricuspidate.
- TRĪĚŠ'PIDÁTE**, see TRICUSPID.
- TRĪĚN'TÁTE**, three-toothed.
- TRĪĚN'NIÁL**, a plant which fruits the third year, then dies. Few plants, if any, are strictly of this character. Compare BIENNIAL.
- TRĪFÁ'RĪŮŠ**, in three rows, or pointing in three directions; especially, in three vertical

rows upon a stem; three-ranked; tristichous. Compare TRISERIAL and MULTIFARIOS.

**TRÍFÍD**, three-cleft; divided into three parts about half-way to the base.

**TRÍFLÓROÛS**, three-flowered.

**TRÍFÓLIÁTE**, strictly, three-leaved, but often incorrectly applied to leaves which have three leaflets, as those of clover. Compare TRIPHYLLOUS.

**TRÍFÓLIÓLÁTE**, having three leaflets. Usually but incorrectly called Trifoliolate.

**TRÍFÚRÁTE**, see TRICHOTOMOUS.

**TRÍGÁMOÛS**, having staminate, pistillate, and perfect flowers in the same head in Compositæ, being one of the polygamous conditions.

**TRÍGEMÍNOÛS**, see TERGEMINATE and TRIJUGATE.

**TRÍGÓNAL**, see TRIGONOUS.

**TRÍGÓNÓÛS**, prismatic, and three-angled, as the stems of sedges; trigonal. Compare TRIQUETROUS.

**TRÍGÝNOÛS**, having three pistils or styles; tricarpellary.

**TRÍJÚGÁTE**, having three pairs of leaflets arranged in any manner upon a leaf, especially along a common petiole; trijugous. Compare TERGEMINATE.

**TRÍJÚGÓÛS**, see TRIJUGATE.

**TRÍLÁTERAL**, three-sided. See TRIGONOUS.

**TRÍLOBÁTE**, three-lobed.

**TRÍLÓCÛLAR**, three-celled: applied to pericarps.

**TRÍMÉROÛS**, having the parts in threes: applied to flowers having calyx, petals, and stamens each three or a multiple

of three. Sometimes written 3-merous.

**TRÍMÓRPHÍC**, see TRIMORPHOUS.

**TRÍMÓRPHÓÛS**, having three kinds of flowers in the same species, differing in the relative lengths of their stamens and pistils; heterogonous trimorphous. Compare DIMORPHOUS. See HETEROGONOUS.

**TRÍNĚRVÁTE**, see THREENERVED.

**TRÍNĚRVĚD**, see THREENERVED.

**TRÍNÓD'AL**, having three nodes.

**TRÍĚĚIOÛS**, having a polygamous condition in which there are staminate, pistillate, and perfect flowers, each on different sets of plants.

**TRÍĚIOÛS**, see TRICEIOUS.

**TRÍŮVŮLÁTE**, containing three ovules.

**TRÍPÁRTĚD**, see TRIPARTITE. Compare THREE-PARTED.

**TRÍPÁRTÍTE**, divided into three parts nearly to the base; three-parted.

**TRÍPĚT'ALOÛS**, of three petals.

**TRÍPHÝLLOÛS**, having three leaves or leaf-like bodies in a whorl, or otherwise associated; —applied especially to a three-leaved calyx or perianth.

**TRÍPÍN'NÁTE**, thrice pinnate, as a bipinnate leaf the leaflets of which (or some of them) are themselves pinnate; terpinnate.

**TRÍPÍN'NÁT'ÍFÍD**, thrice pinnatifid; thrice pinnately cleft; —said of a pinnatifid leaf when its segments are pinnatifid and the subdivisions of these are also pinnatifid.

**TRÍPÍN'NÁT'ÍSĚĚT**, the same as Tripinnatifid, with the divi-

- sions extending in each case to the base or midrib.
- TRÍP'LE-NĚRVĚD**, see **THREE-NĚRVĚD**.
- TRÍP'LE-RÍBBED**, having three prominent ribs or veins.
- TRÍP'LÍCÁTE - GĚM'ÍNÁTE**, see **TERGEMINATE**.
- TRÍP'LÍCÁTE - PÍN'NÁTE**, see **TRIPINNATE**.
- TRÍP'LÍCÁTE-TĚR'NÁTE**, see **TRITERNATE**.
- TRÍP'LÍNĚRVĚD**, see **THREE-NĚRVĚD**.
- TRÍP'TĚROŮS**, three-winged.
- TRÍQUĚ'TROŮS**, prismatic, with three acute or salient angles. Compare **TRIGONOUS**.
- TRÍSĚCTĚD**, divided into three parts or segments by incisions extending to the midrib or base: said of leaves.
- TRÍSĚP'ALOŮS**, of three sepals; triphyllous.
- TRÍSĚP'TÁTE**, having three septa.
- TRÍSĚR'RIÁL**, in three rows; triseriate. See **THREE-RANKED**.
- TRÍSĚR'RIÁTE**, see **TRISERIAL**.
- TRÍSPĚR'MOŮS**, three-seeded.
- TRÍS'TÍCHOŮS**, see **THREE-RANKED**.
- TRÍSTÍGMÁT'ÍC**, having three stigmas.
- TRÍS'TÍS**, of some dull or dingy color. (Rare.)
- TRÍSTÝ'LOŮS**, having three styles.
- TRÍSŮL'CÁTE**, three-grooved.
- TRÍTĚR'NÁTE**, thrice ternate, as a compound leaf whose primary petiole divides into three secondary petioles, each of which again divides into three, each division bearing three leaflets.
- TRÍVÁL'VŮLAR**, see **THREE-VALVED**.
- TRÍVÍÁL NÁME**, see **SPECIFIC NAME**.
- TRŮCH'LĚAR**, short-cylindrical, with the sides contracted; pulley-shaped; trochleariform.
- TRŮCHLĚAR'ÍFŮRM**, see **TROCHLEAR**.
- TRŮPH'ŮPLÁST**, a term including all essential granules in protoplasm.
- TRŮPH'ŮSPĚRM**, see **PLACENTA**.
- TRŮMPĚT-SHÁPED**, tubular, long, very gradually expanded toward the summit, and having a comparatively small and usually but slightly spreading limb or border. Compare **HYPOCRATERIFORM**.
- TRŮN'CÁTE**, terminating abruptly, as though cut off or flattened at the end; extremely obtuse. Compare **PREMORSE** and **SUCCISE**.
- TRŮNK**, the stem of a tree.
- TRŮSS**, a popular name for a rather compact, moderate-sized, terminal flower-cluster of any kind, as an umbel, corymb, spike, or raceme.
- TRŮMÁ**, a drupaceous fruit, like the walnut or hickory-nut. It is distinguished from a drupe by being derived from an inferior instead of a superior ovary.
- TŮBE**, the united portion of a gamopetalous corolla, gamosepalous calyx, or monadelphous androecium; any elongated hollow part or organ.
- TŮBE-FŮRM**, see **TUBE-SHAPED**.
- TŮBĚR**, a short, thickened portion of a subterranean branch.
- TŮBĚRCLE**, any small, wart-like excrescence, as those upon the rootlets of various Leguminosæ.

**TUBÉR'CULAR**, in the form of a tubercle or having tubercles.

**TUBÉR'CULATE**, having tubercles; tuberculose; tubercular.

**TUBÉR'CULATED**, see TUBERCULATE.

**TUBÉR'CULE**, a tuberous root, as in the dahlia. (Obs.)

**TUBÉR'CULOSE**, consisting of tubercles; bearing many tubercles; tuberculate.

**TUBÉR'CULOUS**, see TUBERCULOSE.

**TUBÉRIFÉROUS**, bearing tubers.

**TUBÉROSE**, see TUBEROUS.

**TUBÉROUS**, bearing tubers, as a tuberous plant; resembling a tuber, as tuberous roots.

**TUBE'-SHAPED**, tubular and rather long and wide; about the same as Trumpet-shaped, but may be shorter; tubiform; tubæform; tubiform; tubate. See TUBULAR.

**TUBULAR**, in the form of a tube or pipe; fistular; tubulose. Applied in Compositæ to disk-florets, in distinction from the ligulate florets of the ray; also to any gamopetalous or gamosepalous flower, especially if the tube is rather long and wide. See TUBE-SHAPED.

**TUBULAR FLORËT**, a disk-flower in Compositæ, when, as is usual, it differs from those of the ray in having a small and regular corolla; disk-floret; disk-flower. Compare LIGULATE FLORET.

**TUBULI**, pl., see TUBULUS.

**TUBULIFLOROUS**, applied to a head of flowers in Compositæ which bears tubular florets only.

**TUBULOSE**, see TUBULAR.

**TUBULUS** (pl. *Tübäli*), (1) one

of the cells surrounding the central siphon in Chara; (2) applied by some to the neck in Pyrenomycetes.

**TUFT'ED**, see CESPITOSE.

**TUMÉS'CENT**, slightly tumid.

**TUMID**, somewhat turgid or inflated.

**TUNIC**, any integument or investing layer, as a seed-coat, or a peridium; especially, a membranous scale of a bulb, or a dry sheath surrounding one of the lower internodes in certain grasses.

**TUNICATE**, covered with a thin, separable coat or tunic.

**TUNICATED**, see TUNICATE.

**TUNICATED BULB**, a bulb with broad, thin scales which form successive overlapping coats, as in the onion; coated bulb. Compare SCALY BULB.

**TURBINATE**, top-shaped; inversely conical, as the pericarp of water-lilies.

**TURGÉS'CENT**, swelling; slightly turgid.

**TURGID**, (1) thickened as if swollen, like a tuber; (2) distended with liquid, but not with air. Compare INFLATED and TUMID.

**TURIO** (pl. *Türiõ'nēs*), see TURION.

**TURION**, a leafless or scaly shoot from the ground, as a young stem of asparagus; turio.

**TURIONIFÉROUS**, bearing turions.

**TURN'ING IN**, commencing to head: said of cabbages, etc.

**TURNIP-SHAPED**, see NAPIFORM.

**TURPENTINE VESSELS**, see RESIN-PASSAGES.

**TUS'SOCK**, a tuft growing from the ground, as in many grasses.

**TWIN**, see GEMINATE.

**TWIN'ING**, ascending by coiling the stem in a spiral manner around a support; voluble. Compare CLIMBING.

**TWIST'ED**, see CONTORTED.

**TWQ'-CLÉFT**, see BIFID.

**TWQ'-FÓRKED**, see DICHTOMOUS.

**TWQ'-LÍPPED**, see LABIATE.

**TWQ'-PÁRTÉD**, see BIPARTITE.

**TWQ'-RÁNKED**, situated in two vertical rows on opposite sides of the stem, as the leaves of grasses; distichous.

**TWQ'-TOOTHED**, see BIDENTATE.

**TY'LOSE**, see TYLOSIS.

**TY'LÓ'SIS** (pl. Ty'ló'séš), a protrusion from an adjoining cell into the cavity of a vessel, sometimes exhibiting repeated cell-division within the vessel. Sometimes written Thylose and Thyll. A vessel which contains these protrusions is said to exhibit tylosis.

**TYM'PÁNŪM**, a membrane closing the mouth of the capsule in some mosses.

**TYPE**, a perfect specimen or individual, exemplifying the essential characters of the species or other group to which it belongs.

**TYPE-SPEC'IMEN**, the original specimen from which a botanical description was written and upon which the name of the plant or group is based: the actual individual which serves as the type of a species or other group.

**TYP'ICAL**, representing the type or plan.

**ŪLÍG'INÓSE**, see PALUSTRINE.

**ŪLÍG'INOŪS**, see PALUSTRINE.

**ŪM'BĒL**, the inflorescence of the order Umbelliferae, or any flower-cluster in which several primary rays or pedicels arise from the apex of the stem or peduncle. A typical umbel is somewhat flat-topped, and has the rays spreading like the stays of an umbrella. An umbel is *simple* when each ray or pedicel bears but a single flower; it is *compound* when each bears several flowers or secondary rays.

**ŪM'BĒL, ÇY'MÓSE**, see CYMOSE UMBEL.

**ŪM'BĒLLÁTE**, bearing umbels; pertaining to umbels; umbel-like.

**ŪM'BĒLLÁTE ÇY'ME**, see CYMOSE UMBEL.

**ŪM'BĒLLĒT**, a small umbel or a partial umbel; umbellule.

**ŪM'BĒLLÍF'ÉROŪS**, producing umbels.

**ŪM'BĒL'LÍFÓRM**, in the shape of an umbel.

**ŪM'BĒL'LŪLÁTE**, in the form of a small or a partial umbel. Formerly used for Subumbellate, which see.

**ŪM'BĒLLŪLE**, see UMBELLET.

**ŪM'BĒLLŪLÍF'ÉROŪS**, bearing small umbels.

**ŪM'BĒL'ICAL CŌRD**, see FUNICULUS.

**ŪM'BĒL'ÍCÁTE**, having an umbilicus, or central depression like the navel.

**ŪM'BĒL'ÍCŪS**, an old term for Hilum; any depression resembling the navel.

**ŪM'BŌ**, a central elevation, like the boss of an ancient buckler.

**ŪM'BŌNÁTE**, having a low, rounded central projection, as the cap of many mushrooms.

**ŪMBŌN'ŪLĀTE**, slightly umbo-nate; subumbonate; bearing a small, or slightly elevated, umbo.

**ŪMBRĀC'ŪLĪFŌRM**, umbrella-shaped.

**ŪMBRĀC'ŪLŪM**, the fruit-cap of Marchantia, or any such umbrella-shaped appendage.

**ŪNĀRMED'**, destitute of thorns, spines, or prickles.

**ŪN'CĀTE**, see UNCINATE.

**ŪN'ĀIFŌRM**, hook-shaped.

**ŪN'ĀINĀTE**, hooked at the end, or furnished with hooked appendages; uncate; unciform. Compare FALCATE.

**ŪN'ĀTŪŌŪS**, having a greasy appearance.

**ŪN'DĀTE**, see UNDULATE.

**ŪN'DĀTĒD**, see UNDULATE.

**ŪN'DĒRSHRŪB**, (1) a low shrub, less than three feet high, as the wintergreen; (2) a plant with woody base and upper portion herbaceous and yearly dying back, as the garden sage (suffrutex). The term is now generally used in the first sense only.

**ŪN'DŪLĀTE**, applied to leaves which have the surface near the margin alternately concave and convex; undate. Compare CRISP, SINUATE, WAVED, and RUFFLED.

**ŪNĒ'QUAL**, (1) unsymmetrical, as the leaves of begonia; (2) differing in length—applied to stamens, etc.

**ŪNĒ'QUALĪ PĪN'NĀTE**, see IMPARIPINNATE.

**ŪNĒ'QUAL-SĪDĒD**, unsymmetrical.

**ŪNGŪIC'ŪLAR**, see UNGUICULATE.

**ŪNGŪIC'ŪLĀTE**, (1) furnished with a "claw" or unguis, as

the petals of pinks; (2) ending in a curved point resembling a claw.

**ŪN'GUĪFŌRM**, like the claw of a petal.

**ŪN'GUĪS**, see CLAW.

**ŪN'GŪLĀTE**, hoof-shaped.

**UNI-**, a Latin prefix, one.

**ŪNĪĀX'ĪAL**, having an unbranched stem.

**ŪNĪĀP'SŪLAR**, having the carpels of a flower all united into one capsule.

**ŪNĪĀR'ĪNĀTĒD**, one-keeled.

**ŪNĪĀĒL'LŪLAR**, one-celled.

**ŪNĪCŌL'ŌR**, of the same color throughout; whole-colored; unicolorous; isochrous. Compare DISCOLOR and CONCOLOR.

**ŪNĪCŌL'ŌROŪS**, see UNICOLOR.

**ŪNĪFĀ'RĪŌŪS**, one-ranked. Compare SECUND.

**ŪNĪFĀ'ROŪS**, one-flowered.

**ŪNĪFŌ'LIĀTE**, one-leaved. Used also for Unifoliolate, which see.

**ŪNĪFŌ'LIŌLĀTE**, of one leaflet, as the theoretically compound leaf of the orange and lemon.

**ŪNĪJ'ŪGĀTE**, having a single pair of leaflets or other organs.

**ŪNĪLĀ'BIĀTE**, one-lipped;—sometimes applied also to a regular gamopetalous corolla which is open on one side, as the ligulate florets in Compositæ. See LABIATE.

**ŪNĪLĀTĒRAL**, one-sided. See SECUND.

**ŪNĪLŌC'ŪLAR**, one-celled, as applied to anthers and ovaries; elocular.

**ŪNĪNTĒRRŪP'TĒD**, see CONTINUOUS.

**ŪNĪP'ĀROŪS**, bearing or producing but one stem or axis.

- ŪNĪP'ARŪS CŪME**, a cyme with one main axis; monochasium. Compare **DICHASĪUM**.
- ŪNĪPĒT'ALŪS**, having but one petal, as *Amorpha*. Compare **GAMOPETALŪS**.
- ŪNĪSĒP'TĀTE**, having a single septum.
- ŪNĪSĒ'RĪAL**, having one row or whorl; uniseriate. Compare **ONE-RANKED**.
- ŪNĪSĒ'RĪĀTE**, arranged in a single line; uniserial.
- ŪNĪSĒX'ŪAL**, applied to an individual or flower which has one kind of sexual organs only; diclinous.
- ŪNĪVĀL'VŪLAR**, dehiscing along one suture only, so that the pericarp has but one valve, as the pod of the common milkweed, *Asclepias Cornuti*.
- ŪNĪVĒR'SAL**, see **COMMON**.
- ŪNĪVĒR'SAL ĪN'VOLŪCRĒ**, see **COMMON INVOLUCRE**.
- ŪNĪVĒRSAL ŪM'BĒL**, see **COMPOUND UMBEL**.
- ŪNLĪNĪNG**, the separation of parts originally united. Formerly used for **Chorisis**, from the erroneous supposition that the additional organs in **chorisis** were always produced in this manner. See **CHORISIS**.
- ŪNSŪMMĒT'RĪCAL**, not symmetrical, which see.
- ŪR'ÇĒOLĀTE**, pitcher- or urn-shaped: tubular, and contracted at the orifice.
- ŪRĒ'DŌ-FRŪĪT**, a sorus or group of uredospores.
- ŪRĒ'DŌSPŌRE**, a form of unicellular spore or gonidium in the **Uredinæ** or rust-fungi, produced earlier in the season than the teleutospores, and destined for immediate germination.
- ŪRĒ'DŌ-STĀGE**, the early summer stage of the **Uredinæ**, during which only uredospores are produced.
- ŪRN**, the spore-capsule of mosses; also the base of a pyxidium.
- ŪRN-SHĀPED**, see **URCEOLATE**.
- ŪRTĪCĀÇĒOUS**, pertaining to nettles or the family **Urticacæ**.
- Ū'TRĪCLE**, (1) a fruit having a small inflated membranous pericarp, as that of *Chenopodium*; (2) the bladder of various aquatic plants, as *Utricularia*; (3) one of the large hyaline cells in the leaves of *Sphagnum*.
- Ū'TRĪCLE, PRIMŌR'DĪAL**, see **PRIMORDIAL UTRICLE**.
- ŪTRĪC'ŪLAR**, bladder-like or furnished with utricles.
- ŪTRĪC'ŪLĀTE**, inflated like a bladder; utricular.
- ŪTRĪC'ŪLĪFŌRM**, shaped like a bottle or bladder; about the same as **Urceolate**, but a less definite term.
- ŪTRĪC'ŪLŌSE**, bearing utricles.
- ŪTRĪC'ŪLŪS** (pl. **ŪtrĪc'ŪlĪ**), see **UTRICLE**.
- VĀC'ŪOLE**, a sap-cavity in the protoplasm of a cell.
- VĀGĪNĀ**, see **SHEATH**.
- VĀGĪNĀNT**, sheathing.
- VĀGĪNĀTĒD**, sheathed; invaginated.
- VĀGĪNĒRVŌSE**, having the small veins (nerves) in no apparent order.
- VĀGĪN'ŪLĀ**, a small sheath; especially, the apex of the stem which surrounds the base of the seta in mosses; **vaginule**.
- VĀGĪN'ŪLE**, see **VAGINULA**.
- VĀGŪE**, in no definite order or direction; of no definite or



- constant form. Compare AMORPHOUS.
- VAIL**, see VEIL.
- VÁLLÉC'ŪLĀ** (pl. *Válléc'ŭlæ*), a groove or furrow, as those between the ridges on the fruit of Umbelliferae. Compare SULCUS.
- VÁLLÉC'ŪLAR CĀNĀLĀS'**, large intercellular passages, alternating with the fibrovascular bundles in the stem of *Equisetum*. They are situated in the cortex, and lie between the ridges on the surface. Compare CARINAL CANAL.
- VĀLVĀTE**, said of the leaves of a flower in aestivation when they meet at their edges and do not overlap, as the sepals in the rose; valvular. The margins of valvate organs may be rolled or folded inward or outward.
- VĀLVE**, (1) one of the parts of a dehiscent pericarp; (2) the lid of an ascidium or pitcher; (3) one of the halves of a frustule in diatoms.
- VĀLV'ŪLAR**, see VALVATE.
- VĀR'ĪĀBLE**, said of a species or other group which embraces many individuals which depart more or less from the type of the group. The term is applied in a similar way to any organ or character which fails to exhibit uniformity.
- VĀR'ĪĀTION**, a transient variety, consisting of but one or a few individuals, less marked than a Sport, and usually but slightly differing from the type of the species or variety to which it belongs. It is subordinate in importance to a Form, and less frequently produced by some peculiar condition of the soil or climate.
- VĀR'ĪCŪSE**, appearing abnormally enlarged in places;—applied to hairs and other tubular filaments.
- VĀR'ĪEGĀTED**, applied to leaves, etc., which have two or more colors upon the surface, especially to such as are permanently marked with white or yellow. Compare BICOLOR and CHLOROSIS.
- VĀR'ĪĒTŪ**, a group subordinate to a species, founded on characters which in cultivated plants are often temporary, and which in the wild state are regarded as permanent, but which gradually merge into those of the main specific form. Compare SPECIES, RACE, SPORT, and VARIATION.
- VĀR'ĪĒTŪ-HŪBRĪD**, see CROSS.
- VĀR'NĪSH**, see BLASTOCOLLA.
- VĀR'NĪSHED**, see VERNICOSE.
- VĀ'SĀ PRŌ'PRĪĀ**, a term applied by Mohl to the portion of the phloem containing the sieve-tubes and other thin-walled tubular cells. Now seldom used.
- VĀS'CŪLAR**, pertaining to or containing vessels.
- VĀS'CŪLAR BŪN'DLE**, see FIBROVASCULAR BUNDLE.
- VĀS'CŪLAR BŪN'DLE-SHĒATH**, a layer of cells between the phloem and cortex, or surrounding a fibrovascular bundle, or an entire fibrovascular cylinder; phloem-sheath.
- VĀS'CŪLAR ÇŪLĪNĒR**, see FIBROVASCULAR CYLINDER.
- VĀS'CŪLAR SŪS'TĒM**, see FIBROVASCULAR SYSTEM.
- VĀS'CŪLAR TĪS'SŪE**, see VESSEL.
- VĀS'CŪLŪM**, a botanist's collecting-case. Formerly this term was applied to an ascidium or pitcher-shaped leaf.

**VĀSE'SHĀPED**, shaped somewhat like a common flower-pot. (Rare.)

**VĀSĪFŌRM**, having the character of ducts or vessels.

**VĀSĪFŌRM WŪD - ĆĒLLS**, see TRACHEIDS.

**VĀULTĒD**, overarched, as the upper lip of many ringent flowers; fornicate.

**VĒĜĒTABLE**, (1) any plant; (2) in horticulture applied to plants cultivated for some edible part besides the fruit, and also to some, as the melon family, in which the part used is properly a fruit.

**VĒĜĒTABLE ANĀTŌMŪ**, see STRUCTURAL BOTANY.

**VĒĜĒTABLE NŌSŌLŌĜŪ**, the department of vegetable pathology which treats of the diagnosis or classification of the diseases of plants.

**VĒĜĒTABLE PĀTHŌLŌĜŪ**, the science which treats of the diseases of plants. It includes the study of disease-producing parasites and of the means for preventing their injuries. It does not include Teratology.

**VĒĜĒTABLE PHŪSĪŌLŌĜŪ**, see PHYSIOLOGICAL BOTANY.

**VĒĜĒTABLE TĀXŌNŌMŪ**, the part of systematic botany which relates to the classification of plants.

**VĒĜĒTABLE WĀX**, a wax-like substance upon many leaves and fruits, an important function of which is to protect the parts from excessive moisture. See BLOOM.

**VĒĜĒTĀTION**, (1) germination and growth; (2) plants in general.

**VĒĜĒTĀTĪVE APŌĜĀMŪ**, the apogamous production of growing shoots in place of

seeds or spores. See APŌĜĀMŪ.

**VĒĜĒTĀTĪVE ĆĒLL**, a cell in a pollen-grain which does not develop into the pollen-tube. Compare GENERATIVE CELL.

**VĒĜĒTĀTĪVE NŪĆLEŪS**, any nucleus in a pollen-tube which takes no direct part in fertilization. Compare GENERATIVE NUCLEUS.

**VEIL**, (1) a membrane connecting the margin of the cap in mushrooms with the stalk; velum; (2) the calyptra in mosses.

**VEIN**, a small bundle of fibrovascular tissue within a leaf. When large, and occupying a prominent ridge, it is called *rib*; when very small it is sometimes called *nerve*, especially in monocotyledons; but the term Nerve is now little used.

**VEIN'LĒT**, a small, secondary vein; veinule.

**VEIN'ŪLĒT**, a branch of a veinlet. (Rare.)

**VĒLĀMĒN**, an envelope of several layers of cells containing air, surrounding the aerial roots of orchids and Aroideæ.

**VĒLĀTE**, furnished with a veil; veiled.

**VĒLŪM**, the membranous indusium in Isoetes. Formerly applied to the veil of mushrooms.

**VĒLŪM PĀRTĪĀLĒ**, see MARGINAL VEIL.

**VĒLŪM ŪNĪVĒRSĀLĒ**, see VOLVA.

**VĒLŪTĪNOŪS**, covered with a close, silky coat of short, fine, erect hairs of even length; velvety.

**VĒL'VĒTŪ**, see VELUTINOUS.

**VĒNĀ'TION**, the manner in which the veins are arranged in a leaf.

**VĒNŌSE'**, containing numerous veins.

**VĒN'TĒR**, the expanded basal portion of an archegonium, in which the oosphere is formed.

**VĒN'TRAL**, pertaining to the face or front, being the side opposite to the dorsal. See DORSAL.

**VĒN'TRAL CĀNĀL' ÇĒLL**, a small cell below the entrance of the neck of an archegonium, cut off from the mother-cell of the oosphere.

**VĒN'TRAL SŪ'TŪRE**, a line of union between the margins of the carpel or carpels in an ovary. Compare DORSAL SUTURE.

**VĒN'TRÍCŌSE**, swelling out in a rounded manner.

**VĒN'TRÍC'ŪLŌSE**, slightly ventricose.

**VĒN'TRÍCŪM'BENT**, face downward upon the ground; prone.

**VĒN'ŪLŌSE**, abounding in veinlets.

**VĒRMÍC'ŪLAR**, worm-shaped.

**VĒRMÍC'ŪLĀTE**, vermicular, or bearing worm-like processes.

**VĒRMÍFŌRM BŌD'Ÿ**, see SCOLICITE.

**VĒR'NAL**, pertaining to spring; appearing in spring.

**VĒRNĀ'TION**, the manner in which leaves are disposed in the bud; prefoliation. Sometimes improperly used for Foliation, the act or time of leafing.

**VĒR'NICŌSE**, appearing as though varnished, as the buds of many trees.

**VĒRRŪ'ÇĀ** (pl. *VĒrrŷ'çæs*), a wart-like elevation of any kind, in-

cluding the sessile apothecia of some lichens. (Obs.) See WART.

**VĒRRŪ'ÇĒFŌRM**, wart-like.

**VĒR'RŪÇŌSE**, wart-like, or bearing wart-like prominences. Compare PAPILLATE and PUSTULATE.

**VĒRRŪ'ÇŪLŌSE**, slightly verrucose.

**VĒR'SĀTĪLE**, attached at one point, so as to swing freely to and fro, as the anthers of the lily.

**VĒR'SÍCŌLŌR**, changeable in color, or appearing of different colors from different points of view.

**VĒR'SÍFŌRM**, varied or varying in form.

**VĒR'TĒX**, an upper extremity; summit. Compare APEX.

**VĒR'TÍCĀL**, (1) perpendicular to the horizon; (2) perpendicular to the surface or axis of support; (3) in the direction of the axis of growth; lengthwise.

**VĒR'TÍCĀL ĀN'THĒR**, see INNATE.

**VĒR'TÍCĀL ÇHŌ'RÍSÍS**, see TRANSVERSE CHORISIS.

**VĒR'TÍCĀL LĒAVĒS**, applied especially to erect leaves like those of Iris, which have no distinct or obvious dorsal and ventral surfaces.

**VĒR'TÍCĀLLŸ ÇŌMPRĒSSĒD'**, see DEPRESSED.

**VĒR'TÍCĀL SŸS'TĒM**, see FIBROVASCULAR SYSTEM. Compare HORIZONTAL SYSTEM.

**VĒR'TÍCĒL**, see VERTICIL.

**VĒR'TÍCĪL**, see WHORL.

**VĒRTÍCĪLLĀS'TĒR**, a pair of dense cymes in the axils of opposite leaves, forming an

- apparent verticil, as in most Labiate.
- VĒRTICĪLLĀTE**, arranged in a ring or whorl; whorled.
- VĒSĪCLE**, a small bladder-like body or cavity.
- VĒSĪCŪLAR**, bearing or containing numerous vesicles; vesiculate; vesiculose.
- VĒSĪCŪLĀTE**, see VESICULAR.
- VĒSĪCŪLŌSE**, see VESICULAR.
- VĒSPĒRTĪNE**, pertaining to or taking place early in the evening; applied especially to flowers which expand at that time of the day.
- VĒSSEL**, a cell, or row of confluent cells, having markings produced by thickenings in the cell-wall, forming dots, bands, rings, spirals, etc. Formerly only vessels having spiral markings were called vessels, in distinction especially from those having pitted walls, which were known as ducts, but the term Duct is now comparatively little used. The terms Duct and Vessel are partially equivalent, Duct being perhaps more often used for continuous vessels composed of more than one cell. See TRACHEA and TRACHEID.
- VĒSĪBŪLE**, a term applied by Duchartre to an opening or chamber above the stomata in certain plants, as *Cycas revoluta*, formed by the depression of the guard-cells and the outward growth of the adjoining epidermal cells. Compare ANTECHAMBER and STOMATIC CHAMBER.
- VĒSĪTĪGE**, an abortive part which in some ancestral form was fully developed.
- VĒTĒRAN** (Forestry), a very old tree.
- VĒXĪL**, see VEXILLUM.
- VĒXĪLLĀRY ĒSTĪVĀTION**, having a vexillum or other similar large petal which enfolds all the others in the bud. More properly "Cochlear Ēstivation," except in Papilionaceæ.
- VĒXĪLLĀTE**, having a vexillum.
- VĒXĪLLŪM**, the large upper petal of a papilionaceous flower; standard; banner.
- VĪĀBLE**, capable of growing or manifesting life—said mainly of seeds.
- VĪBRĀTĪLE**, having a vibratory or back-and-forth motion.
- VĪBRŌGEN**, a term applied by Penhallow to certain longitudinal bands of active tissue in the cortex of tendrils to which their movements of circumnutation are supposed to be chiefly due.
- VĪCĀRĪŌUS**, performing the function, or occupying the place, of some other organ.
- VĪLLĪ** (sing. VĪLLŪS), velutinous hairs.
- VĪLLĪFŌRM**, resembling villi.
- VĪLLŌSE**, covered with rather thin, soft, straightish hairs, somewhat finer, softer, and thicker than in Pilose; villous. Sometimes used for Velutinous, which see.
- VĪLLŌUS**, see VILLOSE.
- VĪLLŪS**, sing., see VILLI.
- VĪMĒN**, a long, flexible shoot or branch, like the willow branches used for wickerwork. (Obs.)
- VĪMĪNAL**, pertaining to twigs.
- VĪMĪNĒŌUS**, producing or resembling long, flexible twigs or branches.
- VĪNE**, any plant, or its stem, which is incapable of self-

support, and either grows upon the ground or supports itself upon other objects.

**VIRÉSÇENÇE**, having petals abnormally green in color, like leaves.

**VIRÉSÇENT**, greenish, or becoming green.

**VIRGATE**, wand-like; long, straight, and slender.

**VIRGULATE**, diminutive of Virgate; shaped like a little twig or rod.

**VIRIDÉSÇENT**, greenish; virescent.

**VIRÓSE'**, having a nauseous odor.

**VISÇID**, sticky; adhesive; viscidous.

**VISÇID DISK**, the retinaculum of orchids.

**VITÉL'LUS**, the embryo-sac as it appears in the seed.

**VITIC'OLOUS**, growing upon the grape-vine, as certain parasitic fungi.

**VITIC'ULÁ** (pl. *Vitic'ulæ*), a trailing stem, as that of the cucumber; a little vine; a tendril; a stolon; a sarment. (Rare.)

**VITIC'ULOSE**, bearing or resembling viticulæ.

**VIT'REOUS**, transparent like glass. Compare **HYALINE**.

**VIT'TÁ** (pl. *Vit'tæ*), one of the tubular oil-receptacles in the fruit of Umbelliferæ; oil-tube. They appear externally as ridges.

**VIT'TATE**, bearing vittæ, or longitudinal stripes or ridges somewhat resembling the vittæ on the fruit of Umbelliferæ.

**VIVÁÇIOUS**, (1) living over winter, or from year to year; perennial; (2) full of life; difficult to kill.

**VIVIP'AROUS**, producing bulbs or seeds which germinate while still attached to the parent-plant. The term is not applied to the production of ordinary offsets or suckers.

**VOL'UBILE**, see **TWINING**.

**VOL'UBLE**, see **TWINING**.

**VOLÜNTEER'**. A volunteer crop or plant is one which has come from self-sown seed within the boundaries of the field or farm and has grown without care or cultivation. The term implies that the growth is of some value.

**VOLÜTE'**, rolled up in any direction.

**VOL'VÁ**, a covering, membranous, gelatinous, or otherwise, which extends from the margin of the cap to the base of the stipe in mushrooms, and which is ruptured by growth in those species which have an elongated stem; wrapper; velum universale.

**WALL'ING Ö'VEE**, a term employed in forestry for the growth of a callus over a cut or injured surface.

**WART**, a sessile gland, hard excrescence, or other protuberance resembling a wart upon animals. Compare **PUSTULE**.

**WART'Y**, applied by gardeners to a head of cauliflower when it becomes loose and covered with small prominences preparatory to throwing up the seed-stalks; frothy.

**WÁ'TER-CÖRE**, an abnormal condition of a part or the whole of the flesh of the apple, occasionally seen, in which the cells are unusually firm, do not lose their fluid contents upon ripening, and appear as though water-soaked.

- WA'TÉR-GLÁND**, a group of cells beneath the water-pores of certain plants, as in *Saxifraga*, which serve to facilitate or regulate the transpiration of water. The cells composing the gland are rich in protoplasm but destitute of chlorophyll.
- WA'TÉR-PÓRE**, an aperture in the epidermis directly over the extremity of a vein in the leaves of certain plants, as *Caladium esculentum*. It is a stoma whose guard-cells have lost their function and become immovable, and its probable function is to facilitate the transpiration of water.
- WA'TÉR-SPROUT** (Hort.), an unusually long shoot or limb of one year's growth, especially upon the body of a tree where older limbs have been removed.
- WA'TÉR-STÓMÁ**, see WATER-PÓRE.
- WA'TÉR-STÓR'ING TÍS'SŪE**, a form of water-tissue adapted for the storage of water for the supply of surrounding cells in times of drought, as in many plants of dry climates.
- WÁVED**, said of a margin when strongly undulate, but less strongly than Ruffled.
- WÁV'Y**, alternately concave and convex upon the surface or margin. See SINUATE, REPAND, UNDULATE, and CRISP.
- WEÁTH'ÉR-PROUD**, a gardener's term, employed in England, denoting that plants are larger or more thrifty than common for the season of the year.
- WÉDGE'-SHÁPED**, see CUNEATE.
- WEED**, a plant which grows where it is not wanted and which becomes troublesome. Applied chiefly to wild plants.
- WÉEP'ING**, (1) having the smaller branches so lax that many of them hang directly downward, as those of several species of willow; (2) the copious exudation of sap from water-pores or from an injured surface, in the latter case more often called Bleeding.
- WÉFT**, a collection of interlacing hyphæ or other filaments.
- WÉLT**, a broad, raised stripe or ridge upon the surface of a fruit, as is occasionally seen in the orange and lemon.
- WÉLT'ED**, flaccid; drooping. (Obs.)
- WHEEL'-SHÁPED**, see ROTATE.
- WHÍP'-SHÁPED**, see FLAGELLI-FORM.
- WHÍRL**, see WHORL.
- WHÓRL**, a set of organs arranged in a circle around a stem or axis; verticil.
- WHÓRLED**, see VERTICILLATE.
- WILD**, (1) growing spontaneously without care or cultivation, either native or introduced; feral; (2) in a natural condition, not improved by cultivation or artificial selection. When used without qualification Wild means strictly native.
- WILD'ÉR'ING**, see WILDING.
- WILD'ING**, (1) a cultivated plant that has "run wild" or reproduced itself spontaneously; wildering; (2) any wild plant; wildling. In both senses applied to fruit-trees. A fruit-tree, however, which has sprung up spontaneously within cultivated ground is not usually called a Wilding, but merely a "chance seedling."
- WÍNG**, (1) any thin or membranous appendage, especially a flattened appendage to a seed

- which enables it to be more readily conveyed by the wind, as in the ash and maple; (2) one of the side petals of a papilionaceous flower, as of the pea or bean; ala.
- WINGED**, bearing a membranous expansion or wing; alate.
- WIN'TÉR AN'NUAL**, a plant which germinates in the fall, lives over winter, and produces seed and dies the following season.
- WIN'TÉR SPÓRE**, see **RESTING-SPORE**.
- WITH'ÉRING**, see **MARCESCENT**.
- WOOD**, all that portion of the stem in exogens within the bark or cambium layer, except the pith and medullary rays. It consists of the xylem portions of the united fibrovascular bundles. The term is also extended in popular use to all parts of similar texture in plants. See **XYLEM**.
- WOOD-FY'BRE**, an elongated wood-cell with thick wall and narrow cavity. See **BAST-FIBRE**.
- WOOL**, long, dense, curled hairs.
- WOOL'LÝ**, see **LANATE**.
- WÖR'ÖNÍN'S HÝ'PHÁ**, a coiled hypha in various Ascomycetes, believed to be morphologically an archicarp, but in which fertilization is either wanting or unknown.
- WRÁ'PPÉR**, see **VOLVA**.
- XÁN'THIC FLOW'ÉRŠ**, those which have yellow for the typical color, including all colors except those containing blue. Compare **CYANIC FLOWERS**.
- XÁN'THÖPHÝLL**, see **PHYLLOXANTHIN**.
- XÉNÖG'AMÝ**, see **CROSS-FERTILIZATION**.
- XÉRÖPH'ÍLOÜŠ**, growing in dry climates. (Rare.)
- XÍPH'ÍÖID** (rare in botany), see **ENSIFORM**.
- XÍPHÖPH'ÝLLOÜŠ**, having ensiform leaves. (Rare.)
- XÝLĚM**, the portion of a differentiated fibrovascular bundle which contains the larger continuous air-containing vessels, and the walls of whose cells are often thickened and lignified; wood; hadrome. The xylem is separated from another part called Phloëm by the cambium, if there is any, and it usually occupies the side of the bundle toward the centre of the stem. Compare **PHLOĚM**.
- XÝLĚM-PLĀTE**, see **XYLEM-RAY**.
- XÝLĚM-RĀY**, a radial plate of xylem between two medullary rays; xylem-plate. Compare **PHLOĚM-RAY**.
- XÝLÖCĀR'POÜŠ**, having hard, woody fruit. (Obs.)
- XÝLÖ'DÍUM** (obs.), see **ACHENIUM**.
- XÝLÖ'MĀ**, a sclerotoid body which produces spores internally: found in *Polystigma* and some other Ascomycetes.
- ZÖÄ'DÜLĀ** (pl. *Zöäd'ülä*) (obs.), see **ZÖÖSPÖRE**.
- ZÖDÍÖPH'ÍLOÜŠ**, pollinated by the agency of animals, including, for example, Protozophilous and Entomophilous. It is the converse of Anthophilous, said of the insects or other animals which convey the pollen. Compare **ANEMOPHILÖUS** and **HYDROPHILOUS**.

**ZÓN'ÁTE**, marked with circular, colored bands; zoned. Applied to the tetraspores of *Florideæ* when in a single row, in distinction from a cruciate or tripartite arrangement.

**ZÓNE**, a circular band or stripe.

**ZÓNED**, see ZONATE.

**ZÓ'OGÁMĒTE**, see PLANO-GAMETE.

**ZÓ'GLĒ'Á** (pl. *Zóoglē'ā*), a gelatinous colony of bacteria.

**ZÓ'OGÓNÍD'IŪM** (pl. *Zóogóníd'íá*), a motile gonidium, usually called zoospore. Restricted by some to a zoospore which grows into a plant directly, without conjugation. See Zoospore.

**ZÓ'OSPĒRM**, see Zoospore.

**ZÓ'OSPĒRĀN'GÍŪM**, a sporangium enclosing zoospores.

**ZÓ'OSPÓRE**, a spore or gonidium having the power of independent movement, usually by means of one or more vibratile cilia; swarm-spore. See Zoogonidium.

**ZÓ'ŌTHĒ CĀ** (obs.), see Zoosporangium.

**ZÝGÓGŌ'NÍŪM**, the female conjugating cell in *Conjugatæ*, together with the accessory cells, if any. Compare *Ascogonium* and *Carogonium*.

**ZÝGŌMŌR'PHĪC**, applied to flowers which are monosymmetrical, as those of the pea and bean. Compare *ACTINOMORPHIC*. Sachs extends the term to such irregular flowers as are capable of bisection into similar halves in two directions, but in which the halves produced by the two bisections are of different shape, as in *Dicentra*.

**ZÝGŌMŌR'PHŌŪS**, see ZYGOMORPHIC.

**ZÝGŌ'SÍS**, see CONJUGATION.

**ZÝG'ŌSPĒRM**, see ZYGOSPORE.

**ZÝG'ŌSPĒRE**, the female conjugating cell in such zygomorphites as have a distinction in sex. Compare *OöSPHERE*.

**ZÝG'ŌSPŌRE**, a spore resulting from conjugation.

**ZÝGŌTE**, a general term for the product of the union of two gametes.

**ZÝGŌZŌ'ŌSPŌRE**, a motile zygospore.

**ZÝM'ÁSE**, a ferment secreted by certain bacteria; enzyme.

**ZÝMŌ'SÍS**, (1) fermentation of any kind; (2) an infectious or contagious disease.

**ZÝMŌT'ÍC**, (1) pertaining to fermentation, or caused by organisms capable of producing fermentation; (2) pertaining to an infectious or contagious disease.



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