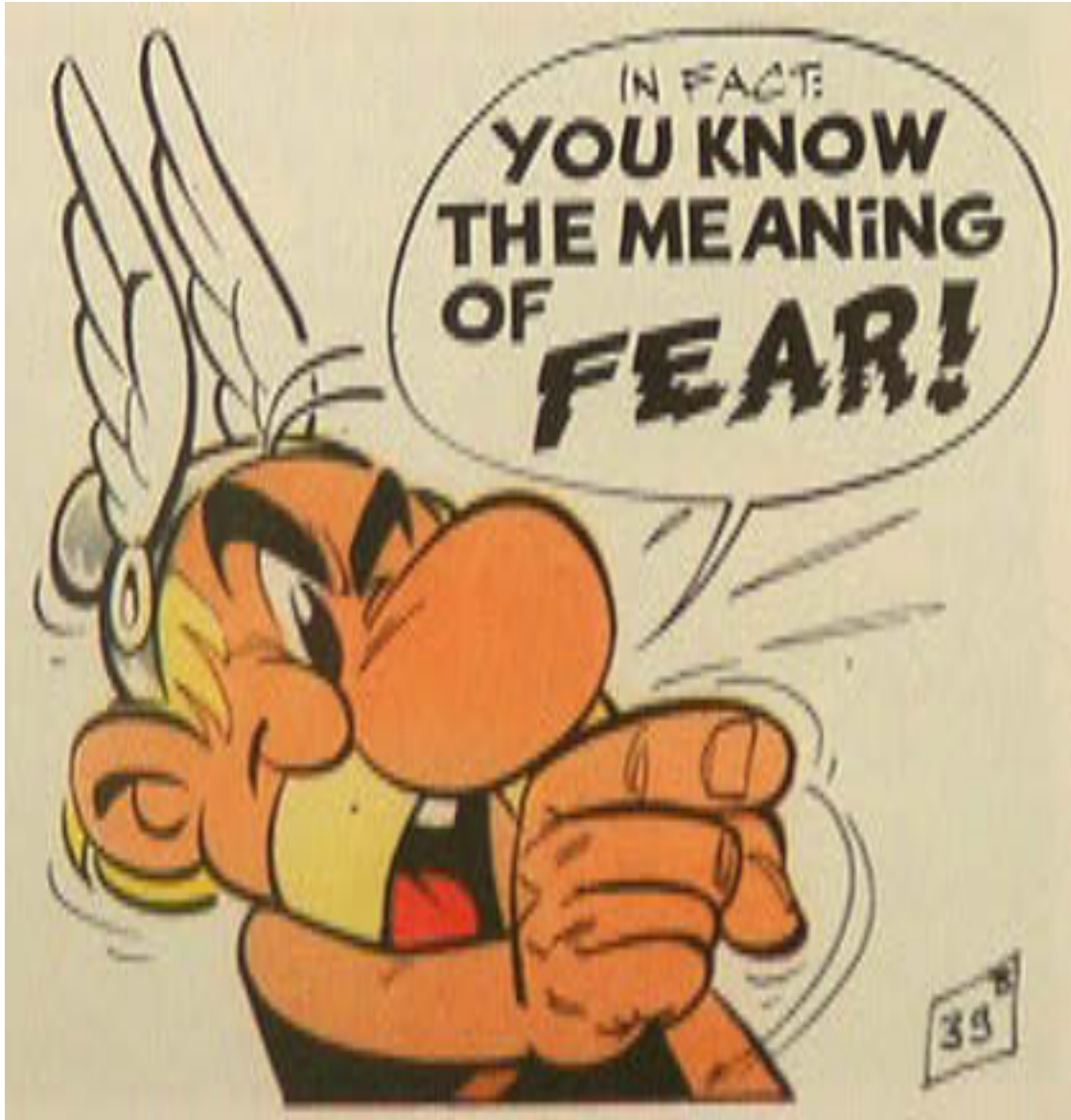


URGLOSSARY



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glos·sa·ry

Pronunciation: primarystressglässchwaremacron, -ri also primarystressglodots-

Function: noun

Inflected Form(s): -es

Etymology: Medieval Latin *glossarium*, from Latin *glossa* difficult word requiring explanation + *-arium* -ary

: a collection of textual glosses <an edition of Shakespeare with a good glossary> or of terms limited to a special area of knowledge <a glossary of technical terms> or usage <a glossary of dialectal words> Merriam Webster

Unabridged

tangent, adj. and n.

[ad. L. *tangens*, *tangent-em*, pr. pple. of *tangēre* to touch; used by Th. Fincke, 1583, as n. in sense = L. *līnea tangens* tangent or touching line. In F. *tangent*, *-e* adj., *tangente* n. (Geom.), Ger. *tangente* n.]

c. In general use, chiefly fig. from b, esp. in phrases (off) at, in, upon a tangent, ie off or away with sudden divergence, from the course or direction previously followed; abruptly from one course of action, subject, thought, etc, to another. (<http://dictionary.oed.com>) As in off on a tangent.

“Practice, repetition, and repetition of the repeated with ever increasing intensity are...the way.” Zen in the Art of Archery by Eugen Herrigel.

For many terms, this glossary contains definitions from multiple sources, each with their own nuance, each authors variation emphasized. Reading the repeated definitions, with their slight variations, helps create a fuller, more overall understanding of the meaning of these terms. The etymology of the entries reinforces and may repeat the repetitions.

Wax on, wax off. Sand da floor.

For sometime, when I encounter a term I don't understand (and there are very many), I have been looking them up in the oed and copying the definition into a Word document. And as I have found glossaries, I have incorporated their data int this list. The following is a combination (conglomeration) of numerous glossaries plus odd definitions from carpology, ecology, genetics, geology, geomorphology, pedology, nursery trade, zoology, yada yada, &c. It also contains terms from the other UP UR C manuscripts that I do not understand. If you find a term in the manuscripts or within a definition in this glossary that is not explained in this glossary, please email dalubbs@yahoo.com and I will attempt to add the term. Several sources are British and Australian. In a direct quote, British spelling will be preserved. The rest is being Americanised.

Summer 2013, this doc is going more printer green. Small changes are being made so that if someone prints this list, slightly less ink, toner, or paper is used. Plural is abbreviated pl no period, as is *confer* cf, with etc, eg, ie, and OED to oed MFN to mfn S&K08 to sk08 &. Saving the world one sheet of paper & one printer cartridge at a time.

A

a- prefix (ancient Greek *á-*, variant of *áv-* *an-* occurring before a consonant) ①Prefix meaning without or not; ②-less; ③a sense of privation. Cf ex-.

ab prefix () Prefix meaning away from or departing

abaxial adj. (Latin *ab*, from, away from & *axis*, axle) ①The surface of any structure which is remote or turned away from the axis, such as the lower surface of a leaf; ②located on the side away from the axis; ③said of a surface facing away from the axis of the structure to which it is attached; ④on the side of a lateral organ away from the axis or stem; ⑤of, pertaining to, or designating the surface (usually the underside) of a leaf, etc, which during development initially faces away from the main axis or stem. ⑥On the side of a structure turned away from the main axis. ⑦“Away from the axis; eg the "lower" or dorsal surface of a leaf, the "outer" side of a flower or group of nutlets. Cf adaxial.” (mfn) ⑧ On the side away from the axis, usually refers to the underside of a leaf relative to the stem.

aberrant adj. Departing from the normal or usual.

ablaut n. (German *Ablaut* (1819 in the specific sense with reference to a phenomenon in Indo-European languages: J. Grimm *Deutsche Grammatik* I. 543; from 16th cent. in more general senses in German grammarians), from *ab* (see of prep.), & *Laut* sound (Middle High German *lūt*, Old High German *hlūt*, *lūtī*, *liutī*, *lūtīn*; either from *lūt* loud adj., or from its Germanic base). ①It is difficult to tell whether Grimm (of the Brothers Grimm) was aware of the earlier uses by German grammarians, but the term was certainly popularized by him.

(oed)) The morphological variation of a root vowel in Germanic & other Indo-European languages; occurring esp. in Germanic strong verbs, as English sing, sang, song, & distinguished from variation arising from assimilation to a succeeding vowel sound (oed)

abortifacient n. & adj. (scientific Latin *abortifacient-*, *abortifaciens* (from J. E. Quekett 1841, in Trans. Linn. Soc. 18 471, as specific epithet of an ergot fungus), from classical Latin *abortus* n., -i- connective, & *-faciens* present participle of *facere*, to make) ① “A drug or other agent that causes the premature termination of pregnancy” (oed).

abortive adj. (Latin *abortus*, an untimely birth, or classical Latin *abortivus -a -um*, born prematurely)
① Defective; ② barren, unproductive; ③ not developed or imperfectly developed; defective;

abscise v. To cut off. Hence abscission, abscissive, abscissile.

abscission n. (Latin *abscindere* to tear or cut off, from *ab* off, away, & *scindere* to tear, rend; or post-classical Latin *abscission-*, *abscissio* action of tearing up or uprooting (4th cent.), excommunication (5th cent.; from classical Latin *absciss-*, past participial stem of *abscindere*) ① A clean-cut scar or separating of a leaf from a self-healing; ② the natural separation or detachment of a part of a plant, typically a dead leaf or ripe fruit. ③ Shedding branches, leaves, or flowers at a seam; usually seasonally (ie, leaves abscise in the Fall in New England).

acaulescent adj. (scientific Latin *acaulescent-*, *acaulescens*, from Greek *a*, without, & Latin *caulis*, from Greek *καυλός*, *kaulos*, stem, stalk, especially cabbage-stalk, cabbage) ① Having no stem or seemingly without a stem; ② stemless, or apparently so; lacking a distinct stem. ③ “Apparently stemless; having a very short stem, or a stem concealed in the ground” (oed). ④ With lower leaves reduced to sheaths or scales so that leaves/flowers appear to arise directly from rootstock (wfsne).

acaulous adj Without a stem.

accrescent adj. (accrescent ac*cles"cent, a. [Latin *accrescens*, *-entis*, past participle of *accrescere*, from *ad* & *crescere* to grow.) ① Increasing abnormally in size with age; ② growing larger after flowering. ③ “Continuing to grow; growing larger after flowering; *spec.* designating parts of a flower which normally fall off or wither after fertilization but instead continue growing” (oed).

accrescent fruit n.

accession n. A sample of a plant variety collected from a specific location (gran).

accessory flower parts n. Sepal & petal organs found on flowers. The sepals & petals are not essential for pollination but may aid in attracting insects or other organisms.

acerate, acerose, acerous adj. (Latin *acer* sharp & English *-ate* or *-ose*, *-ous*) Needle-like, having needlelike leaves, usually acerose.

acerose adj. ① Narrow with a sharp, stiff point, with a needle-like tip; ② "needle-pointed".

-aceus Suffix meaning resembling, eg myrtaceous, foliaceous.

achene, achaene, achæmium, achenium, achenia, akene n. (scientific Latin *achena*, from ancient Greek *ἀ-*, *a-*, privation, & *χαίνειν*, *khainein*, to gape or to yawn; compare Hellenistic Greek *ἀχανής*, *akhanes*, not gaping) ① Any small, dry fruit with one seed whose outer covering (pericarp) does not burst when ripe. ② A dry, one-seeded, indehiscent fruit with a relatively thin wall in which the seed coat is not fused to the ovary wall. ③ A hard, one-seeded, indehiscent nutlet with a tight pericarp. ④ A dry, single-seeded fruit that does not open at maturity. ⑤ “An indehiscent, dry, one-seeded fruit originating from a single carpel, such as the ‘seed’ of a sunflower or dandelion” (oed). ⑥ A small indehiscent, usually single-seeded fruit with a dry pericarp that is contiguous to the seed but distinguishable from the seed coat, eg *Helianthus annuus*, *Asteraceae* (sk08). ⑦ “The single seed remains within the ovary wall & so what most of us would call a seed is really a fruit ... although the dry types are often referred to as

achenes & the fleshy types as drupes.” C. Tudge 2000, *Variety of Life* ii. xxv. 597. ⑧ “A dry indehiscent fruit, strictly speaking one derived from a single superior carpel, but broadly used for similar fruits ("nutlets") derived from more than one carpel or (as in *Asteraceae*) from an inferior ovary” (mfn). ⑨ A dry, usually 1-seeded fruit that does not separate or split open at maturity (newfs).

achenetum n. A multiple fruit of indehiscent carpels with the pericarp of each (achene-type) fruitlet contiguous to the seed.

acicula, acicle n. ① A needle-shaped projection. ② Needle-shaped. Hence acicular

acicular adj. (Latin *acicula*, a small needle) ① Slender & pointed; ② needle-like & with a sharp point; ③ shaped like the needle of a pine tree "needle-like".

aciculate adj. ① Finely striated by minute, needle-like bristles

Acid tolerance n. The weathering of soils can result in acidification, limiting the types of plant or microbes that will grow. Repeated fertilization with ammonia can also lead to acidification. To overcome such problems the soil must be limed, or plant species & microbes used that are tolerant of acidity. (rrl)

acorn n. (Middle English *oke-corne*, *akorne*, Old English *æcern*, possibly from Greek ἄκρον, *akron*, top, point peak) ① The specialized fruit of members of the genus *Quercus*, Oaks, that is composed of a nut with a cap of overlapping rows of scales, also called a cup or cupule. ② “The fruit or seed of the oak-tree; an oval nut growing in a shallow woody cup or *cupule*” (oed).

acid adj.

acro- Prefix meaning of or towards the tip. Cf basi-.

acropetal adj. (Greek *akros*, summit & Latin *petere*, to seek) ① Developing upward from the base toward the apex; ② produced in succession towards the apex. ③ In the direction of the tip or apex (news). Cf basipetal, centripetal, centrifugal.

acrophyll n. An upper leaf or frond, especially of high-climbing ferns. Cf bathyphyll.

acroscopic adj. ① The side of the organ directed towards the apex of the axis on which it is borne. ② In the direction of the tip or apex (news). Cf basisopic.

acrostichoid adj. ① Acrostichum-like, of exindusiate sori densely covering the lower surface of the frond, or large areas of it; the lamina may be contracted or not.

actino- Prefix meaning radial or star-shaped.

actinomorphic adj. (Greek *aktis*, ray & *morphe*, form) ① Descriptive of a flower or set of flower parts which can be cut through the center into equal & similar parts along two or more planes; ② having radial symmetry or radially symmetrical; ③ capable of being bisected into two or more similar planes. ④ Radially symmetrical; a shape that can be divided by 2 or more planes into roughly equal halves, usually refers to the perianth of a flower (news). Same as regular. Cf zygomorphic.

actinorhizal symbioses The N₂-fixing partnerships between actinomycete bacteria in the genus *Frankia* & a wide range of mostly woody angiosperms.

active growth period n. The period of time that a particular plant has its most active growth or the main time of growth for a plant (gran).

aculeate adj. (from Latin *aculeātus*, *-a -um*, furnished with a sting or prickle, from *aculeus*, diminutive of *acus*, needle, & *-ate*, suffix.) ① Prickly, spiny, set with prickles.

aculeus pl *aculei* n. (Latin *aculeus*, prickle) A prickle growing from bark.

acumen n. (Latin *acumen*, a point, a sting) The point of an acuminate leaf.

acuminate adj. ① Tapering & drawn out to a slender tip; ② with a long point; ③ tapering, gradually tapering to a sharp point; point is drawn out; ④ drawn out into a long tapering point. ⑤ Tapering to a narrow tip or concave point, the sides generally concavely narrowing, "long-pointed". ⑥ "Prolonged into a very acute point (& often slightly concave below the point)." (mfn) ⑦ Tapering to a narrow point, more tapering than acute, less than attenuate (news). Cf acute, mucronate.

acute adj. (Latin *acutus -a -um*, sharpened) ① Sharp at the end; ② ending in a sharp point; ③ sharply pointed, but less tapering than acuminate; ④ angle 90° or less; ⑤ evenly narrowed into a point at an angle of less than 90 degrees. ⑥ Gradually tapering to a point, the sides straight (ie, not convex). ⑦ "Acute. With the sides or margins converging at less than a 90° angle." (mfn) ⑧ Condition of an apex with more or less straight sides that meet to form an angle of less than 90°, more pointed than obtuse, but less pointed than acuminate (news). Cf acuminate, obtuse.

acute bullous dermatitis

Adansonian adj. (after Michel Adanson, 1727-1806, French naturalist) Adanson's naming style gave rise to the term an 'Adansonian name', or a name that has little basis or an unknown basis relative to the plant described. Perhaps in a Rafinesque fashion?

adaxial adj. (Latin *ad*, to, & *axis*, axle) ① Located on the side nearest the axis; ② said of a surface facing toward the axis of the structure to which it is attached; ③ on the side of a lateral organ towards the axis or stem; pertaining to the side of an organ toward the axis, such as the upper surface of a leaf. ④ On the side of a structure, turned toward the main axis. ⑤ "Toward the axis; eg, the "upper" or ventral surface of a leaf, the "inner" side of a flower part or group of nutlets." (mfn) ⑥ On the side toward the axis, usually refers to the top side of a leaf relative to the stem (news). Cf abaxial.

adhere v. To stick to.

adherent adj. ① Sticking or clinging; ② joined to a dissimilar plant part; ③ of two dissimilar organs or parts touching each other, +/- adhesively but easily separated & not fused or grown together. ④ "Sticking (but not fused) to parts of a different kind" (mfn). Cf adnate, adherent, & coherent.

adnate adj. (Latin *adnatus -a -um*, to be born, to grow to) ① Of dissimilar organs united or fused together; ② fusion of unlike parts or structures; ③ same as adherent (eg, fusion of palea to the caryopsis in *Bromus*). ④ Fusion or attachment of unlike parts (eg, the calyx & corolla). ⑤ "United (fused) to parts of a different kind; eg, stamens to petals, stipule to blade. ⑥ An organ that is fused with a structure different from itself, as when stamens are attached to petals (news). Cf connate." (mfn)

adpressed adj. ① Lying close & flat against a surface; = appressed. ② Lying close & flat & pointing toward the apex of the plant or structure, usually referring to leaves growing up against the stem (= "appressed") (news).

adventitious adj. (Latin *adventitious -a -um*, extraneous) ① Plant structures or tissue occurring in an abnormal position; ② arising in an irregular or unusual position, such as roots along a stem; ③ sprouting or growing from unusual or abnormal places, such as roots originating from a stem, or buds appearing about wounds. ④ Development of structures in unusual locations, in the case of roots, generally refers to the development of roots from the stem or leaf. ⑤ A structure such as a bud or root that is produced on an unusual part of the plant (ie, roots that come from stems) (news).

adventitious roots n. Roots developing from basal culms, nodes, or some structure other than the seed.

adventive adj. (Latin *advenire*, to arrive) ①A plant that is not native to the environment; ②a term used to denote an exotic species that has become established from chance or accidental seeding; ③introduced recently, in particular since colonization by man. ④ “Spreading beyond its native range, but not [yet] well established” (mf). ⑤ A sp not intentionally introduced; growing here & there (news). Cf exotic, introduced, indigenous.

aerenchyma n. (Greek *aer*, air, & *enchyma*, an infusion) ①Parenchyma tissue with large & abundant intercellular air spaces; ②air-storing tissue; ③resembles the tissue of cork; ④a tissue of thin-walled cells with many air spaces, especially common in aquatic plants. ⑤Plant tissue that is filled with large air spaces, usually in the stem or rhizome/root (news).

aerial adj. Said of structures originating above ground.

aerial leaves n. On aquatic plants, the leaves that are produced above the water's surface (news).

aerial roots n. Roots growing in the air.

aerial seed bank n. See serotiny.

aero- Prefix to do with air. Hence aeration, etc.

aerophores n. An outgrowth of tissue concerned with gas exchange, often at the base of pinnae in ferns. Cf pneumathodes.

agamospermy n. ()

aggregate adj. (Latin *ad*, to, & *gregare*, to collect into a flock) ①Clustered or forming a group with objects in close proximity; ②crowded together; ③crowded into a cluster; ④a number of separate fruits from a single flower aggregated together; ⑤an aggregate flower is formed by a cluster of carpels.

aggregate fruit n. A fruit such as a raspberry that is composed of multiple, separate ovaries that coalesce after flowering to become a single fruit (news). See multiple fruit.

aggressive invader n. A highly competitive species that can take over if the environmental conditions are right (gran).

agronomic adj. Of or related to the science of soil management & the production of crops (gran).

ala n. ①A wing; ②winged or with wing-like appendages. Hence alate.

albino adj., n. “Lacking normal color; ie, white — usually in reference to flowers, at least the corolla, for which another color is usual.” (mf) ②A plant lacking normal color, usually in the flower.

albumen n. (from Latin *albūmen* (*albumin-*) white of an egg, from *albus* white) ① “Bot. The substance interposed between the skin & embryo of many seeds, of which it usually constitutes the eatable part. It varies greatly in consistency & amount, & is sometimes entirely wanting.” (oed)

albuminous adj. (from Latin *albūmen* (*albumin-*) white of an egg, from *albus* white, & classical Latin *-ōsus -a, -um*, forming adjectives) “Botany Containing a store of albumen in the seed” (oed).

alfisol n. A soil order in the US system of soil classification; a mineral soil, generally forested, that has a light-colored surface horizon & clay-enriched subsurface horizon that is not highly depleted in plant nutrients.

alkaline soil Any soil with a pH above 7 on a scale of 1 to 14; the higher the number, the more alkaline the soil.

alkaline/alkali tolerant adj. The ability to withstand alkaline soils (gran).

alkalinity n. The condition of having a pH greater than 7 on a scale of 1 to 14; the higher the number, the greater the alkalinity (gran).

allele n. (German *allel*, abbrev. of allelomorph, Greek ἀλλήλ-, *allel-*, *allelon*, one another) ①One of a pair or more of alternative hereditary characters; ②a gene, which can occupy the same locus as another gene in a particular chromosome. ③“One of several alternative forms of the same gene, occupying the same relative positions in homologous chromosomes” (oed).

allelochemicals n. Compounds that have an allelopathic effect.

allelopathy n. (Greek *allelon*, one another, & *pathos*, suffering) The influence or effect of one living plant (or organism) upon another; refers to biochemical interaction between all types of plants (organisms) & its effect depends on a chemical compound being added to the environment.

allo- prefix (combining form of Greek ἄλλος, *allos*, other, different) Prefix used to distinguish or indicate a difference; see n (mfn).

allopatric adj. (combining form of Greek ἄλλος, *allos*, other, different, & πατρία, *patra*, fatherland) ①Of two or more species with geographic ranges that do not overlap; ②existing in different areas; ③occupying different, though sometimes adjacent, regions; ④populations or species occupying mutually exclusive geographic areas, opposite of sympatric, also refers to population or taxa whose ranges do not overlap. ⑤“Applied to organisms that occupy different geographical areas” (oed). ⑥Sp that do not occur in the same geographic ranges (news). Cf sympatric.

allopoloid n. A hybrid individual or cell having two or more sets of chromosomes derived from two different species.

allotopic adj.

alluvial slopes Rock, soil & other sediments deposited from erosion that creates a slope.

alluvium n. Gravel, sands, silts, *et cetera* deposited by gradually moving water.

alpine adj. Pertaining to or occurring on very high & cold mountains.

alterative n. (post-classical Latin *alterativum* health-giving medicine (13th cent.) (oed)) An alterative medicine or remedy. Now *historical*. Of a medicine or remedy: held to act by altering processes within the body, esp. as opposed to causing excretion or evacuation; designating such action.” (oed)

alternate adj. (Latin *alteratus -a -um*, one after another) ①One after the other along an axis; ②not opposite; ③of leaves, born singly at each node on opposite sides of the stem, located singly at each node; ④individually inserted at different positions along the axis. ⑤An arrangement of parts, eg leaves, placed at different heights along an axis; ⑥said of leaves occurring one at a node; said also of members of adjacent whorls in the flower when any member of one whorl is in front of or behind the junction of two adjacent members of the succeeding whorl. ⑦Any arrangement of leaves or other parts not opposite or whorled; ⑧arranged singly at different heights on the stem. ⑨“Arranged singly at the nodes, as leaves on a stem or branches in an inflorescence neither opposite nor whorled” (mfn). ⑩A node bears only 1 similar organ, such as a leaf or flower (news). Cf opposite, decussate, whorled, basal.

alternation of generations n. The occurrence in one life history of two or more different forms differently produced, usually an alternation of a sexual with an asexual form.

Aluminum toxicity n. High levels of aluminum or manganese are common in acid soils & can be toxic to both the plant & rhizobia. (rrl)

alvar n. (uncertain, perhaps related to *alveus*, *alvei* m., Latin noun, bed of a river, channel, trench) ①“Flat limestone rock ("pavement") with thin (if any) soil & usually graminoid vegetation with trees few & often dwarfed” (mfn). The term is not in the oed.

alveola, alveolus pl alveoli n. (Latin *alveolus*, small cavity) ①A pit on the surface of an organ, a cavity, pore or pit. ②“Botany On the surface of the receptacle of a composite flower: a shallow, walled compartment resembling a cell of a honeycomb, containing an individual floret. Cf alveolate.” (oed) ③Depressions or cavities in a surface (news). Hence alveolate.

alveolate adj. (Latin *alveolatus -a -um*, divided like a honeycomb, pitted) ①Deeply pitted so as to resemble a honeycomb, as are the surfaces of some seeds or achenes. ②“Honeycombed; pitted with little cavities” (oed). ③With many angular cavities, like a honeycomb (news).

American Seed Trade Association A trade organization that focuses on the development of better seed through regulation, technology, & communication. Membership in this organization includes companies that are involved in seed production & distribution, plant breeding, & related industries in North America.

ament n. ①A dry, usually elongate often drooping, scaly spike bearing imperfect flowers; ②A catkin, a frequent feature of woody plants. ③A pendulous spikelike inflorescence with apetalous, unisexual flowers. ④“A spike or spike-like inflorescence consisting of reduced (usually apetalous & unisexual) flowers & deciduous as a unit; also called a "catkin"” (mfn). ⑤Catkin: a slender, usually pendulous inflorescence, with crowded male or female flowers (news).

ammonia volatilization When ammonium (NH₄⁺) is converted from an organic to a gaseous form.

amphi- prefix (from Greek) meaning both.

amphiberingian -- ①Occurring on both sides of the Bering Strait; ②a phylogeographic element resulting from past migration across the Bering Land Bridge.

amphibious adj. ①Capable of growing both in water & on land. ②Growing with part of the plant in the water or mud & part in the air. ③Plants adapted to living in water or on land (news). Cf rheophyte, aquatic, terrestrial, marine.

amphidiploid “A taxon of hybrid origin including chromosomes from both parents & fertile as a result of their doubling. Cf also n.” (mfn)

amphiphloic siphonostele (= solenostele) n. A cylindrical stele with a parenchymatous centre with phloem on both the inside & the outside. Cf ectophloic siphonostele, medullated protostele.

amphiploid n. “An autopolyploid; a taxon of hybrid origin with double (or more) sets of chromosomes” (mfn).

amphisarcum n. from Greek *amphi*, on both sides, & *sarx*, flesh) A simple indehiscent fruit characterized by a pericarp differentiated externally into a dry crust & internally into one or more fleshy layers, eg *Boabab*, *Adansonia*, *Malvaceae*.

amphistomic adj. With stomata on both leaf surfaces (news).

amplexicaul adj. Stem-clasping

ampliate adj. Expanding or enlarged (news).

anadromic, anadromous adj. (Greek *ἀνάδρομος*, *anadromos*, running up (a river), from *ἀνά*, *ana*, up, & *δρόμος*, *dromos*, running) With the first subbranch of a lateral branch produced on the acroscopic margin, mostly of venation in bipinnate ferns. Cf catadromic, catadromous. “Botany. (See quot.) 1881 J. G. Baker in Nature 24 Mar. 480/2 Milde's classification of ferns into a catadromous & anadromous series, according as to whether their

lowest secondary branches originate on the posterior or anterior side of the pinnæ. *Zool.* Of fishes: Ascending rivers to spawn.” (oed)

anastomose v. ①To interconnect, such as the veins of a leaf; ②to join together, principally of veins. ③“To connect so as to form a network (as veins in a leaf blade)” (mf). Cf *reticulum*.

anastomosing adj. ①Connecting & intersecting, forming a network; ②union of one vein (or other linear structure) with another.

anastomosis n. (Modern Latin, from Greek ἀναστόμωσις, *anastomōsis*, noun, of action from ἀναστομον, *anastomon*, to furnish with a mouth or outlet, or Greek *ana*, up to, & *stoma*, mouth) ①Interconnection formed by cross-veins & forming a network.

anaerobiosis n. (Latin/Greek *an*, without, *aer*, air, & *biosis*, manner of life) ①Life in the absence of air or free oxygen; ②anaerobic respiration, respiration occurring in the absence of oxygen.

anatomy n. (Late Latin *anatomia*, dissection) ①The branch of morphology that deals with the structure of plants, esp. the internal structure as revealed by the microscope.

ancipital adj. ①Flattened, as in 2-angled stems.

androecium n. (Greek *andros*, man, & ancient Greek οἰκία, *oikia*, house) ①Male reproductive organs of a plant; ②a collective term applied to all structures of the stamen whorl or whorls; ③the staminate portions of the flower. ④A collective term referring to male floral parts, that is, the stamens. ⑤The collective term for the male organs (stamens) of the flower (news). Compare with gynoecium.

androgynal adj. (Greek *andros*, man, & *gonos*, woman) ①Bearing staminate & pistillate flowers on the same parent stem.

androgynous adj. ①With staminate flowers situated above the pistillate ones in the same inflorescence. ②A spike bearing staminate (male) & pistillate (female) flowers where the staminate flowers are positioned above the pistillate flowers, closer to the apex of the inflorescence. ③ With both male & female flowers in the same inflorescence, in which the male flowers appear at the top or scattered throughout the inflorescence (news).

androphore n. (Greek *aner*, man, & *phoros*, carrying) ①A support or column, formed by fusion of filaments, on which the stamens are borne.

anemoballism n. (from Greek *anemos*, wind, & *balliates*, from *ballien*, to throw) A form of indirect wind dispersal, ie the wind does not transport the diaspore directly but exerts its influence on the fruit. The fruit (mostly a capsule) is usually exposed on a long flexible stalk that swings in the wind, thereby flinging out the diaspores, eg poppy, *Papaver*, *Papaveraceae*.

anemoballist n. A plant dispersing its diaspores by anemoballism.

anemochorous adj. Wind dispersed.

anemochory n. (from Greek *anemos*, wind, & χωρεῖν, *khōrein*, to go, to be spread abroad, to disperse) Dispersal of diaspores by wind.

anemophily, anemophilous n. adj. (Greek *anemos*, wind, & *philein*, to love) Pollination by wind.

angiosperm, pl angiosperms; *Angiospermae* n. (Greek *anggeion* (*angeion*), vessel, small container, & Greek σπέρμα, *sperma*, seed) ①A major division of the plant kingdom, commonly called flowering plants as their reproductive organs are in flowers, having seeds which develop in a closed ovary made of carpels, a very reduced gametophyte, & endosperm develop from a triple fusion nucleus. ②A flowering plant producing seeds enclosed in a structure derived from the ovary; flowering plant, plants with ovules enclosed in ovary.

③A division of the seed plants (spermatophytes) that bear ovules & seeds in closed megaspores (carpels) in contrast to gymnosperms, which have exposed ovules & seeds, born “naked” on the megasporophylls. Angiosperms are distinguished by a unique process of sexual reproduction called “double fertilization”. According to the number of leaves (cotyledons) present in the embryo, two major groups are distinguished, the Monocotyledons & the Dicotyledons. Angiosperms are commonly referred to as “flowering plants: even though the reproductive organs of some gymnosperms are also borne in structures that fulfill the definition of a flower. ④Flowering plants that bear seeds that are enclosed in an ovary (news). Cf gymnosperm.

angular n. With edges where two planes meet (come together at an angle). Opposite: "rounded." (news).

angulated adj. Having angles.

anion n. Negatively charged ion.

anisophyllous adj. ①Of leaves, usually a pair, of differing size & shape. ②With two opposite leaves of very different sizes at the same node (news).

annual n., adj. (Latin *annualis -is -e*, yearly, from *annus*, year) ①A plant which completes its life history within a year; ②a plant which completes its life cycle from seed to maturity to death in one year or less; ③completing the life-cycle within one year. ④ “Living for one year; ie, germinating, flowering, & setting seed in a single growing season (lacking perennial roots, rhizomes, or other such parts). A winter annual begins its year in the fall & completes its cycle after winter.” (mfn) ⑤A plant that that completes its entire life cycle from seed through blooming & the development of seed in one year. ⑥A plant that lives for only one year (news). Cf perennial.

annual growth constrictions n. In Lycophytes, areas of the stem with smaller leaves that are produced at the colder beginning & end of the growing season (news).

annular adj. ①In the form of a ring (n. sing. **annulus**) ②Like a ring, or with organs arranged in a ring (news).

annulus n. ①Tissue forming a ring or arranged in a circle; ②the arrangement of thick-walled cells involved in opening the sporangium in ferns. ③Ring of specialized cells; in ferns, the cells encircling a sporangium (news).

anomalous adj. Irregular; abnormal.

anoxia n. (Latin *an*, not, & oxygen) Lack of oxygen or not enough oxygen.

antepenultimate adj. () The one before the next to the last one; used in determining the accents in long Latin words. Cf penultimate, ultimate.

antepetalous adj. When the stamens are positioned opposite the petals in a flower (news).

anterior adj. ①On the side away from the main stem; ②abaxial; forward, towards the front; ③the side away from the main axis. Cf posterior.

anterior adj. Positioned in front of (news).

antesepalous adj. When the stamens are positioned opposite the sepals in a flower (news).

anthecium n. (Greek *άνθος*, *anthos*, flower, ancient Greek *οικία*, *oikia*, house, & *osus -a -um*) ①A compound fruit of the *Poaceae* consisting of fused parts of branches, leaves, or glumes that form a burr or involucre around the florets, eg *Cenchrus spinifex*.

anther n. (Medieval Latin, *anthera*, pollen, from Greek *antheros*, flowery, from *anthein*, to bloom, or from *άνθος*, *anthos*, flower) ①The top of the stamen, usually elevated by means of a filament, which contains the pollen; the pollen-bearing portion of the stamen. ② “The pollen-bearing part of a stamen” (mfn). ③The pollen-bearing part of a microsporophyll (stamen) of the Angiosperms. An anther consists of two fertile halves called thecae, each bearing two pollen sacs, or microsporangia, which usually dehisce with longitudinal slits, valves, or pores. The two *thecae*

are connected by a sterile part called the connective, which is also the point where the anther is fixed to the filament. ④The pollen producing sac of the stamen. ⑤ The pollen-bearing structure in a flower, usually borne at the end of a stalk called a filament (news).

antheridium n. The structure on the pteridophyte prothallus (viz) that produces the mobile male gametes (pl archegonia). Cf archegonium.

antherode n. A sterile, modified anther (news).

anthesis n. (Greek *anthesis*, bloom, from *anthein*, to bloom) ①Stage or period during which the flower bud is fully open; ②flowering; ③time of the year during which the anthers are dehiscing & the stigmas are receptive to pollen, in a looser sense, the time of flowering. ④The period of time when a flower is fully open, "flowering time". ⑤"The time at which a flower is fully expanded & functional" (mf).

anthocarp n. (modern Latin *anthocarpi*, from Greek *ἄνθος*, *anthos*, flower, & *-καρπος*, *karpos*, combining adjectival form of *καρπός*, *karpos*, fruit) "Of or pertaining to the fruits called by Lindley *Anthocarpi*, composed of flowers & fruit proper blended into a solid mass, as in the pine-apple" (oed).

anthocarpous fruit n. (modern Latin *anthocarp-i*, from Greek *ἄνθος*, *anthos*, flower, & *-καρπ-ος* combining adjectival form of *καρπός*, *karpos*, fruit, & *-ous* suffix) ①A fruit in which not only the gynoecium but also the other floral parts have undergone a marked development during post-fertilization to aid in the dissemination of the seed. ②"Of or pertaining to the fruits called by Lindley *Anthocarpi*, composed of flowers & fruit proper blended into a solid mass, as in the pine-apple" (oed).

anthocyanic adj. () ①Of the character of anthocyanins, water-soluble pigments ranging in colour from blue or violet through purple to crimson. ②With anthocyanins, protective pigments that make structures appear tinged or colored with pink, red, or purple (news).

anthocyanin n. A purplish-red, usually protective pigment (news).

anthropogenic Human-caused or associated.

anthophyta/anthophytes n. (Greek *ἄνθος*, *anthos*, flower, & *phyton*, plant) ①Literally flowering plants, a term used synonymously with angiosperms. However, anthophytes also include some gymnosperms, the extinct cycad-like *Bennettitale*, the closely related *Pentoxylon*, & the present-day *Gnetales* order, comprising the genera *Ephedra*, *Gnetum*, & *Welwitschia*.

antiscorbutic

antiseptic

antispasmodic adj. ()

antrorse adj. (Latin *ante*, before, & *vertere*, to turn; alternately modern Latin *antrorsus*, from Latin **antero-* stem of assumed Latin **anterus*, positive of *anterior*, fore, former, & *versus*, turned, in imitation of *extrorsus*, etc) ①Forward or upward; directed upward or forward toward the apex. ②"Directed toward the apex or "upward;" eg, barbs on a bristle or awn. Cf retrorse." (mf) ③ "Bent forward or upward" (oed). ④Pointing upward or forward toward the distal end (news). The opposite of retrorse, which see.

AOSCA Acronym for the Association of Official Seed Certifying Agencies.

aparinaceous adj. Scratchy, clingy.

aperient adj. & n. (Latin *aperientem*, present participle of *aperire* (originally *āperire*) to open, from *ā= ab* off, away, & *par(i)-ēre* to get) Opening the bowels; laxative (oed).

apetalous adj. (Greek *a*, without, & *petalon*, leaf) ① Having flowers without petals; ② having no corolla; ③ having no petals. ④

aperture n. In pollen grains a preformed opening in the pollen wall through which the pollen tube penetrates.

apex pl apices n. (Latin *apex* peak, tip, the small rod at the top of the flamen's cap, perhaps from *ap-* to fit to (compare *vertex*, from *vertĕre* to turn); whence, the tip of anything) ① The tip or summit; ② end; point; ③ the uppermost tip of a structure. ④ "An early name for the anther n. or summit of the stamen (obs.). The tip of a young plant-shoot, the growing point." (oed) ⑤ Tip or top (plural: apices) (news).

aphyllopodic adj. () ① Having lower leaves that are bladeless or reduced to scales (eg, *Carex* spp). ② With basal leaves much reduced or absent (news).

aphyllous adj. Leafless

apical adj. (Latin *apex*, the tip or top of a thing) ① At the tip or summit; ② located at the tip; ③ pertaining to the apex; at or towards the tip of an organ or axis.

apices n. Plural of apex.

apiculate adj. ① Ending in a short, flexible point; ② abruptly short-pointed. ③ "Abruptly sharp-pointed". ④ With an abrupt, short, projected tip (news).

apiculus n. (modern Latin diminutive of *apex* peak, tip) ① An abruptly short beak or point. ② A minute point or tip; a short sharp point in which an organ may end. ③ "A very small sharp beak-like tip" (mf). ④ A short projected tip (news). Hence apiculate. Cf cuspidate.

aplexicaulous adj. Clasping, as with a leaf with two bases that wrap around the stem (news).

appendage n. A secondary part or a projecting part.

apocarpous adj. (Greek *apo*, away, & *καρπός*, *karpos*, fruit) Having separate carpels.

apocarpous gynoecium n. (Greek *apo*, being apart from, & *καρπός*, *karpos*, fruit; Latin *gynæcĕum*, *-ĭum*, from Greek *γυναικειον*, *gynaikeion*, from *γυναικ-*, *gynaik-*, from *γυνή*, *gyne*, woman *gyne*, & ancient Greek *οικία*, *oikia*, house; alternately Greek *gynaikeie*, woman's part of a house) A gynoecium consisting of two or more carpels, each carpel forming an individual pistil.

apogamous adj. (from Greek *ἀπό*, *apo-*, off, from, away & *γάμος*, *gamos*, marriage) ① Absence of sexual reproduction; ② asexual reproduction, agamogenesis; ③ specifically in ferns & other cryptogams, production of the perfect plant directly from a bud on the prothallus instead of by the usual sexual process.

apogamy n. The development of the sporophyte from the prothallus without fertilisation

apomictic adj. () Capable of reproducing asexually.

apomixis n. (modern Latin (H Winkler 1908, in *Progressus Rei Bot* II 303), from Greek *ἀπο-*, *apo-*, off, from, away; quite, & *μίξις*, *mixis*, mingling) ① In general, reproducing without sexual reproduction, often used to denote seed production without a sexual process having been involved. ② Any of several types of asexual reproduction. ③ "Reproduction of organisms without fertilization. Apomixis may be defined (following Winkler 1908) as a system of reproduction having the external character of sexual reproduction but omitting one or both of its essential internal processes (CD Darlington, 1932, *Rec Adv in Cytol* xv 416). Opp amphimixis." (oed) ④ "As used here, reproduction by seed without fertilization—a form of asexual reproduction" (oed). Cf pseudomixis.

apophysis n. The outer part of a cone scale that is exposed even when the cone is closed (news).

apospory n. The development of prothalli from direct outgrowths the fern frond, without the production of spores.

appendage n. ①An attachment developed on & projecting beyond the surface of an organ. ② A secondary projection, ear, or other piece of tissue attached to a main structure (news).

applanate adj. Flattened out & horizontally expanded. Cf explanate.

apposite adj. (Latin *apposit-us*, past participle of *app-*, *adpōnēre*, from *ad*, to & *-pōnēre* to place, put (oed).) ①Side by side; ②in juxtaposition or apposition.

appressed adj. (Latin *ad*, to, & *pressare*, to press) ①Lying flat or close against something; ②closely applied to the supporting organ or axis for the entire length (also addressed). Often used for hairs. ③Lying against an organ in the direction of the apex, lying flat against a surface. ④Oriented in a parallel or nearly parallel manner to the surface or axis to which attached (mf). ④Lying close & flat & pointing toward the apex of the plant or structure, usually referring to leaves growing up against the stem (= "addressed") (news).

approximate adj. Close together. Cf remote.

aquatic adj. Living in water.

aquatic adj. A plant which carries out its life cycle in water; growing in water. Cf marine, amphibious, rheophyte, terrestrial.

aquatic plants n. Plants that must grow in water whether rooted in the mud or floating without anchorage; ②plants that must complete part or all of their life cycle in or near the water.

aquatic vascular plants n. Aquatic plants containing the conductive vascular tissue, phloem, & xylem.

arachnoid adj. (Greek *arachne*, spider, cobweb, & *eidos*) ①Like a cobweb or cobweb-like; ②covered with or consisting of soft fibers or hairs so entangled as to give a cobwebby appearance; ③formed of tangled hairs or fibres. ④Covered with long, delicate, tangled hairs; resembling a cobweb.

arborescent adj. Tree-like in size & habit. Cf dendroid.

archegonium pl *archegonia*, rarely archegon n. (modern Latin, diminutive of Greek ἀρχηγόνος, *arkhegonos*, founder of a race, from ἀρχε-, *arkhe-* = ἀρχι-, *arkhi-*, chief, principal, first in authority or order, & γόνος, *gonos*, race.) ①Often flask-shaped, multi-cellular female sexual organ of a female or bisexual gametophyte producing & containing the female egg cell(s); the structure on the pteridophyte prothallus (viz) that produces the sessile female gametes (pl *archegonia*). *Archegonia* are fully developed in mosses, ferns, fern allies in the broadest sense, but only rudimentary in gymnosperms. In angiosperms, true *archegonia* are absent with the three-celled egg apparatus as the homolog. (sk08) ②The female organ in Cryptogams, corresponding to the pistil in flowering plants (oed). Cf antheridium.

arctic zone The region north of the Arctic Circle.

arcuate adj. (Latin *arcuatus*, pp. of *arcuare*, to arch, bend like a bow, from *arcus*, a bow) ①Arching, bent or curved in the form of a bow; ②curved or arched, fairly strongly. ③Arching, as in curving veins in a leaf blade (news). Cf falcate.

areola pl *areolae*; areole n. ①A small space on or near the surface of some vegetative organ, usually formed by anastomosing veins; ②an enclosed space in a reticulum (viz.), a portion of the lamina enclosed by veins; ③The spaces between the veins of a leaf or some similar structure. Hence areolate. Cf reticulate.

areoles n. ①Small, clearly marked, round areas appearing on the leaves of *Opuntia*. ② A bounded space, as with leaves with net-like venation (news).

argillic horizon n. A subsurface mineral soil horizon characterized by the illuvial accumulation of clays; a subsurface horizon of clay enrichment by the downward movement of clays.

aridisol n. A soil order of the US system of soil classification; a mineral soil that formed in a desertic climate & that has some development of soil horizons, often a calcic or duripan horizon.

aril, arillus n. (French *arrile*, Spanish *arillos*, medieval Latin *arilli*, dried grapes, from *aridus*, dry; alternately Latin *arillus*, grape seed) ①An additional covering that forms on some seeds after fertilization, & developing from the stalk of the ovule; ②an appendage growing out from a seed. ③Edible seed appendages of various origin in gymnosperms & angiosperms. Arils usually developed as a reward for animal dispersers. ④“The true *arillus* is an accessory seed-covering, more or less incomplete, formed between the time of fertilization & the ripening of the seed, by a growth from the apex of the funiculus, at or just below the hilum” (A Gray) ⑤As in the fruit of *Taxus*, or the aril on nutmeg seed is the source of the spice mace. ⑥An appendage arising from or near the scar (hilum) on a seed marking its point of attachment; an aril may be quite small or may enclose the seed (mfn). ⑦An appendage or outer covering of a seed, growing out from the hilum or funiculus; sometimes it appears as a pulpy covering. ⑧An appendage of a seed, usually brightly colored, fleshy, &/or sweet, that attracts animals to eat it & coincidentally disperse the seed (news).

arillocarpium n. (Latin *arillus*, grape seed, here referring to aril, a fleshy outgrowth around the seed, & Greek καρπός, *karpós*, fruit) A fruit of the conifers consisting of a seed covered by a fleshy appendage, or aril, eg *Taxaceae*.

arillate adj. ①Having an aril; ②furnished or covered with an aril.

arista pl *aristae* n. An awn or bristle; bearing or tapering into an awn or bristle. Hence aristate. Diminutive aristulate.

aristate adj. (Latin *arista*, awn) ①Awned, having or with an awn; ②tipped by a stiff bristle; ③provided with a short awn or bristle from the apex, edge or back of an organ. ④Tipped with stiff awns or bristles; "stiff-awned or stiff-bristled". ⑤Tipped with a long, slender bristle (news).

aristulate adj. Diminutive of aristate.

-arium suffix (from Latin *-ārium* thing connected with or employed in, place for, orig. neuter of adjs. in *-ārius*) An ending that in carpological terminology indicates a schizocarpic fruit.

armature n. ① Covering or occurrence of spines, hooks or prickles. ②Protective sharp projections like bristles, barbs, or thorns (news). Hence armed. Cf unarmed.

armed adj. ①Possessing prickles, spines, or thorns. ②Bearing a sharp projection such as a prickle, spine, or thorn (news).

aroid n. (from Latin, from Greek ἄρον, *aron*, (also formerly in English use), & classical & post-classical Latin *-oīdēs* & its etymon ancient Greek *-οειδής*, *-oeides*, from *-o-*, representing either the stem vowel of the preceding element or a connective, & *-ειδής*, *-eides*, having the form or likeness of, like, from εἶδος, *eidos*, form.) “A plant allied to the *Arum* or Wake-robin; an arad. a'roideous *adj.* allied to *Arum*. The family *Araceae* is also called *Aroideae*.” (oed)

aromatic adj. ①Having a fragrant smell, sometimes only if broken or crushed; ②with a resinous, spicy or distinctive smell. ③Having an odor, fragrant or otherwise; ④bearing volatile essential oils.

article n. Section of a legume pod, separated from other sections by a constriction or partition.

articulate(d) adj. (Latin *articulatus*, jointed, pp. of *articulare*, to join) ①Having joints or jointed; ②provided with places where separation may take place; ③having a node for natural separation; ④with one or more joints or points

of apparent separation, usually marked by a swelling, line or abrupt change in color. ④Jointed, separating at a joint, by a clean cut scar, upon maturity. ⑤With a definite point of separation or "joint", jointed (mfn). ⑥Anatomy consisting of sections united by joints; jointed. ⑦One structure joined to another, usually at a point where the two will separate (news).

articulation n. A joint.

artificial selection Human intervention in plant reproduction to ensure that certain desired characteristics are found in successive generations.

ascending adj. (Latin *ascendēre*, to climb) ①Rising or curving upward; ②growing obliquely at first but finally upwards; ③rising or growing upwards. ④Sloping or rising obliquely upward; ⑤growing or directed in an upward direction, or at least tending to. ⑥Directed strongly upward or forward (in relation to the point of attachment), but not fully erect or at right angles (mfn). ⑦Diverging from an axis at an angle of 15–45°, less upward than erect, less outward than spreading (news).

asepalous adj. (Greek *a*, without, & Latin *petalum*, petal[an assumed etymology?]) Without sepals.

asexual adj. ①Without sex, sexless; ②not involving gametes; ③without the involvement of fertilization; ④of propagation by division or the production of bulbils or stolons etc. ⑤Without male or female organs; reproducing vegetatively, without fertilization by another plant (news). Cf sexual, vegetative.

aspera adj. ①Rough to the touch; ②rough or harsh. Hence asperites, asperate. Diminutive asperulous.

Association of Official Seed Analysts An organization comprised of official federal, state & university seed laboratories & whose primary function is to establish uniform rules for seed testing.

Association of Official Seed Certifying Agency An organization dedicated to regulating the production, identification, distribution & promotion of certified classes of seed & other crop propagation materials.

ASTA Acronym for the American Seed Trade Association.

-aster, -astra, -astrum suffix of n. & adj. (from Latin *-aster*, suffix) “Expressing incomplete resemblance, hence generally pejorative” (oed).

asymmetrical adj. ①Not having planes which divide the structure into mirror-image halves; ②unequally developed on either side of a common axis. ③With unequally sized or shaped parts on either side of a central axis (news). Opposite of symmetrical.

atmospheric nitrogen deposition N compounds in the atmosphere that are returned to earth.

atom n. Small, usually resinous, dot or gland.

atomate adj. Having small, usually resinous, dots or glands.

articulated adj. () ??? Haha. The unregulated & unreviewed web strikes again! But find it you will.

atro- Prefix meaning dark.

attenuate adj. (Latin *attenuare*, to thin) ①Gradually narrowed to a long point at apex or base; ②gradually narrowed or tapered; ③gradually tapered to a slender tip; ④gradually narrowing to a pointed apex or base; ⑤sharper than acute. ⑥Gradually tapering to a slender base or tip, "long-pointed". ⑦Drawn out gradually to a slender tapering apex or base (mfn). ⑧Tapering very gradually to a prolonged tip or base (news).

Auct. non Indicates that a species name is used commonly in the literature but is incorrect & is not the name used to refer to the type specimen.

auricle (Latin *auricle*, small ear) ①Any ear-like lobed appendages; ②ear-shaped appendage or lobe; holds the open sheath to the culm. ③An ear shaped projection or appendage, or lobe, often quite small. ④A finger-like(????) appendage or flange of tissue at the junction of the blade & sheath in some grasses. ⑤A lobe or appendage, often small & ear-like, typically projecting at the base or summit of an organ (as on a leaf blade) (mfn). ⑥An earlike lobe or appendage at the junction of leaf sheath & blade. ⑦Ear-like lobe (usually refers to a leaf base or the base of a grass blade where it joins the stem) (news). Hence auriculate.

auriculate adj. ①With an ear-shaped flange or lobe; ②with an auricle or auricles, often used to describe the base of a leaf blade where there is an auricle on either side of the petiole; ③with "earlike lobes";

aut- or auto- prefix (Greek from *autos*) A prefix meaning self.

autecology n. The ecology of an individual species.

authority n. The botanist who officially names or alters the name of a taxon (news).

autochory n. (Greek *autos*, self, & *χωρεῖν*, *khōrein*, to go, to be spread abroad, to disperse) Self-dispersal.

autogamous adj. Relating to, or reproducing by autogamy, aka self-fertilization.

autogamy n. (*aut-* & *-gamy*, Greek *-gamia*, from, *gamos*, marriage) Self-fertilization, the pollination of a flower by its own pollen.

autonym n. The name of a species automatically applied at the infraspecific level to the type when another infraspecific taxon is described in that species. Cf synonym, basionym.

autotroph n. A plant that makes its own food from raw materials obtained from the sun, water, & soil (news).

autotrophic adj. Independent of other organisms in respect of organic nutrition. Cf heterotrophic.

autumnal adj. Growth form for late summer & fall (eg *Dichanthelium*).

auxins n. ①Growth promoting hormones that cause cell elongation, & are responsible for many developmental responses including phototropism.

awn n. (Icelandic *ogen*, chaff) ①A stiff, bristlelike appendage, usually at the end of a structure; ②a stiff, bristle-like projection from the back or tip of an organ, ③the extension of the vein (nerve) of spikelet bracts beyond the leaf-like tissue, a stiff bristle, usually situated at the tip of a leaf or perianth element, or (in grasses), at the tip of a glume or lemma; ④A slender bristlelike appendage, usually at the apex of a structure. ⑤A terminal appendage or elongation, typically bristle-like (mfn). ⑥A bristle arising from a spikelet part. ⑦Fine bristle (usually referring to scales of *Carex* or bracts of grass flowers) (news). Hence awned.

axil n. (Latin *axilla*, armpit) ①The angle found between any two organs or structures; ②the upper angle between an organ (branch) & its axis; ③the apical angle between two organs, eg between a leaf & the stem. ④The angle formed by a leaf or lateral branch with the stem, or of a vein with the midrib; ⑤the area or angle formed between the base of an organ & the structure from which it originated, such as the upper angle between the leaf base & the stem. ⑥The angle between a structure & the axis to which it is attached (eg, the angle between a leaf & the stem). ⑦The angle where a leaf or branch joins a stem or main axis, or where a lateral vein joins the midrib of a leaf (mfn). ⑧The juncture where a lateral organ, such as a leaf, joins a main axis, like a stem (news). Hence axillary.

axile placentation n. A pattern of placentation where the ovules are attached to the partitions of a compound pistil near the center of the ovary.

axillary adj. (Latin *axilla*, armpit) ①In an axil, growing in an axil, as buds; ②occurring in an axil; ③pertaining to the axil. ④Used in reference to structures attached in the axil or juncture of stem & leaf stalks.

axillary flower n. A flower that emerges from an axil (ie the juncture between a branch or leaf & the stem) (news).

axis pl *axes* n. () ①The central stem(s) of an inflorescence, particularly of a panicle; ②the central part of a longitudinal support (usually of a stem or inflorescence) on which organs or parts are arranged; ③the main or central line or stem about which the lateral organs or parts are arranged; adjective form is axile. ④The main stem of a structure, such as a plant or inflorescence (plural: axes) (news).

B

bacca n. (Latin *bacca*, berry) See berry.

baccarium n. (Latin *bacca*, berry, & *-arium* an ending that indicates a schizocarpic fruit) A schizocarpic fruit whose indehiscent fleshy fruitlet resemble berries (sk08).

baccetum n. A multiple fruit consisting of indehiscent berry-like fruitlets (carpels) (sk08).

bagasse n. The fine organic material removed from vacuum drums during the processing of sugar cane. Because it is of high organic matter & sugar content bagasse makes a good inoculant carrier, but bagasse must first be sterilized to stop the growth of fungi & other contaminant organisms. (rr1)

balled & burlapped (B&B) n. Plants established in the ground which have been prepared for transplanting by digging so that the soil immediately around the roots remains undisturbed. The ball of earth containing the roots of the plant is then bound up in burlap or similar mesh fabrics.

balled & potted (B&P) n. Plants dug with a ball of earth & placed in a container in lieu of burlapping.

ballistic dispersal n. Dispersal of diaspores through direct or indirect catapult mechanisms, ie explosively dehiscent fruits or movement of plant parts by wind (anemoballism) & passing animals, respectively; mode of dispersal by which the diaspores are actively or passively catapulted away from the plant. This can happen either suddenly or by an external trigger. (sk08)

banner n. The largest upper petal of a papilionaceous flower.

barb n. ①A short, firm, reflexed process. ②A small sharp projection, usually retrorse, as on a fish-hook (mfn).

barbate adj. Bearded, provided with tufts of long, weak hairs

barbed adj. ①Retrorse projections or hairs; ②bearing sharp, spine-like hooks which are bent backwards, diminutive barbellate.

barbellate (Latin *barba*, beard) ①Provided, usually laterally, with fine, short points or barbs; ②beset with fine barbs. ③With little barbs (mfn). ④Minutely or "finely-barbed"; bearing stiff hairs with barbs.

bare-root (B.R.) n. Harvested plants from which the soil or growing medium has been removed.

barren n. Land with sparse vegetation, often with bedrock at or very near the surface (especially in mountainous states, often populated with scrubby pines).

barren adj. Sterile, incapable of reproducing

bark n. (Middle English *barke*; Anglo-Saxon *bare*, bark or rind) ①The outermost covering of trees & some plants. This is composed of the cuticle or epidermis, the outer bark or cortex, & the inner bark or fiber. ②The outermost layer of non-living tissue on the main stem of a woody plant (news).

basal adj. (classical Latin *basis* lowest part of any architectural structure, foundation, pedestal, (in medical use) point of attachment (of an organ or tumour), (in astronomy) lower extremity (of a constellation), (in geometry) base (of a triangle), chord (of an arc), in post-classical Latin also fundamental principle (Vulgate) from ancient Greek βάσις, *basis*, step, stepping, foot, pedestal, (in geometry) base (of a solid or plane figure), in Hellenistic Greek also (in medical use) point of attachment (of an organ or tumour), foundation, basement from the stem of βαίνειν, *bainein*, to go, & -al suffix (oed)) ①Pertaining to the base of the plant or some organ of the plant; ②referring to the base or located there; ③the lower portion of a structure; ④at, towards or forming the base of an organ or axis. ⑤At the base; ie, unless the context indicates otherwise, at the base of the plant, or at ground level (mfn). ⑥At the bottom or base of; "all basal" leaves are confined to the base of the plant (cf alternate, whorled, or opposite leaves) (news).

basal density The area that the base or stem of the plant covers at the surface of the soil.

base n. Bottom of a plant at the ground, or proximal part of structure where it meets another structure (ie, leaf base near junction with petiole) (news).

base- prefix meaning of or towards the base. Cf acro-.

basic Any soil with a pH above 7 on a scale of 1 to 14; the higher the number, the more basic the soil.

basifixed adj. ①Attached by the base. ②Attached at the base, as in the area where a petiole meets the leaf blade (news).

basionym n. (from Greek βάσις, *basis*, step, stepping, foot, pedestal) The synonym (viz.) or combination (viz.) from which the specific epithet was derived

basipetal adj. ①Produced in succession towards the base. ②In the direction of the base (news). Cf acropetal, centipetal, centrifugal.

basiscopic adj. ①The side of the organ directed towards the base of the axis on which it is borne. ②In the direction of the basal end (news). Cf acroscopic.

bathyphyll n. A lower leaf or frond, especially of high-climbing ferns. Cf acrophyll.

beak n. ①A slender terminal process, usually abruptly differentiated from the general outline of the organ from which it originates, usually applied to fruits & pistils; ②a prominent, pointed projection of an organ. ③A comparatively slender prolongation (sometimes of firmer texture) on a broader organ (mfn). ④A long, slender projection on a broader structure such as a fruit or seed. ⑤Slender projection (news).

bay n. (Fr. *baia*; Late Latin *baia*, bay) A part of a sea or lake indenting the shoreline; the word is often applied to very large tracts of water around which the land forms a curve, as Hudson's Bay.

bayou n. (Fr. *boyau*, a gut, long narrow passage) A marshy inlet or outlet of a lake, river, etc, also a backwater.

bean rust n. A disease of beans caused by the fungus *Uromyces appendiculatus* (rrl).

beard n. ①A concentration or tuft of hairs (mfn). ②Tuft of long hairs (news).

bearded adj. ①Having a tuft or tufts, or zone of hairs; ②bearing long, stiff hairs, eg at culm nodes of *Dichanthium*.

beautification As used in the Granite Seed web site, it refers to a project that emphasizes the use of wildflowers in a revegetation project.

Bennettitales n. An extinct order of gymnospermous seed plants that first appeared in the Triassic period, 248-206 million years ago, & became extinct towards the end of the Cretaceous, 142-65 million years ago. Because of their superficial resemblance to cycads, they are also called cycadeoides (cycad-like) (sk08).

berry n. (Anglo-Saxon *berie*, berry, Old German **bazjo-m*, similar to Sanskrit *bhas-*, to eat) ① Any fleshy simple fruit with one or more seeds & a skin, as a tomato, cranberry, banana, grape, etc; ② a several-sided indehiscent fruit with a fleshy pericarp & without a stony layer surrounding the seeds; ③ a usually fleshy or pulpy fruit, typically with two or more seeds developed from a single ovary. ④ "A many-seeded inferior pulpy fruit, the seeds of which are, when mature, scattered through the pulp; called also *bacca*. In this sense, many of the fruits popularly so called, are not berries: the grape, gooseberry & currants, the bilberry, mistletoe berry, & potato fruit, are true berries; but, botanically, the name also includes the cucumber, gourd, & even the orange & lemon." (oed) ⑤ A simple fruit whose pericarp (fruit wall) is entirely fleshy (sk08). ⑥ A fleshy indehiscent several-seeded fruit derived from a single ovary (mfn). ⑦ A fleshy fruit with a juicy or succulent wall (called a pericarp) that encloses two or more seeds (news).

bi- prefix (Latin *bi-* (earlier *dui-*, cognate with Greek *δι-*, Sanskrit *dvi-*) ① Twice, doubly, having two, two-, which is in Latin a prefix of adjectives, occasionally of nouns rarely of verbs) two. ② A prefix meaning two or twice (mfn). Cf *di-*, *duo-*

bibacca n. (Latin double berry) A compound fruit composed of two mature ovaries that are partially fused, eg *Lonicera xylosteum*, *Caprifoliaceae* (sk08).

bicolorous adj. With white or clear walls & dark red or brown septae as in some hairs.

biconvex adj. ① Convex on both surfaces; ② in section with both surfaces curved outwards away from the centre. ③ Convex on both sides; cf plano-convex (mfn).

bidentate adj. Having two teeth. "2-cleft".

biennial (Latin *biennialis*, from *biennis*, from *bis*, twice, & *annus*, year) ① A plant which requires two years to complete a life cycle, the first year typically forming a rosette, the second year forming an inflorescence; ② a plant requiring two years in which to complete its life cycle, the first year growing only vegetatively, the second flowering, fruiting, then dying; ③ a plant which lives for more than one but less than two years. ④ Living for two years. ⑤ Such plants often produce a rosette of leaves the first year and a flowering stem the second year (mfn). ⑥ Living for two seasons. ⑦ A plant which completes its life cycle in two years. Usually it produces leaves and roots the first year and then blooms and produces seed the second year. ⑧ A plant that lives for two years, usually reproducing only in the second year before dying (news). Cf annual, perennial.

bifarious adj. Arranged in two opposite rows

bifid adj. (Latin *bifidus*, forked, from *bis*, twice and *findere*, to cleave, divide) ① Forked; ② divided into two +/- equal parts, usually cut half way; ③ divided by a cleft; ④ cleft into two parts, usually at the summit of some organ; ⑤ apex with one cleft or having two teeth. ⑥ Cleft in two (mfn). ⑦ Divided at the tip into two equal parts by a cleft (think "Pac Man") (news).

bifurcate Divided into two branches; split in two. Hence bifurcation.

bilabiate adj. ① Two-lipped; having two lips, as a bilabiate corolla of a flower; ② most often applied to zygomorphic perianths. ③ Two-lipped; often with reference to a zygomorphic flower. ④ A corolla with two prominent lips & petals that are fused (usually into a tube) at the base (news).

bilateral (Latin *bilateralis* from *bi*, two, and *latus*, a side) having two sides; having two equal sides on either side of an axis, two sided; structures on two sides of an organ; of, on, or with equal sides, eg bilaterally symmetric, bilaterally flattened or compressed etc. Cf radial, dorsiventral.

bilaterally symmetrical ① Referring to a calyx or corolla that is zygomorphic, capable of being divided into two equal halves along one plane only; ② said of corolla or calyx (or flower) when divisible into equal halves in one plane only; zygomorphic. ③ Capable of division into similar (mirror-image) halves on only one plane (= "zygomorphic" of many works); cf regular (mfn).

bilobed having two lobes.

bilocular divided into two cells or compartments.

binate adj. almost or quite divided into two parts, eg leaflets, bristles etc

binomial n. ① Collectively, the genus name and the specific epithet name of a plant or animal; The Latin, scientific name, or "species."

bioavailable nitrogen N in an inorganic form, nitrate or ammonium, that plants are able to absorb through their roots.

biogeochemical n. In reference to systems influenced by a combination of biological, chemical, and geological processes

biological nitrogen fixation (BNF) The conversion of atmospheric nitrogen (N₂) directly into living organic tissues by specific prokaryotic organisms.

biomass (Greek *bios*, life, and *massein*, to squeeze) Weight of all living material in a unit area at an instantaneous time. May be expressed as g/m², mt/ha, or other similar expressions.

bipartite adj. divided into two +/- equal part, to the base or almost so

bipinnate adj. ① Twice pinnately compound; twice or doubly pinnate. ② Twice-divided, as with leaves that are further subdivided into separate leaflets (news). Cf bipinnatifid, pinnate.

bipinnatifid adj. ① Twice pinnatifid; twice branched; with the primary divisions again pinnatifid (mfn).

biseriate adj. Arranged in two rows, doubly serrated. Cf distichous.

bisexual n., adj. (Latin *bis*, twice, and *sexus*, sex) ① Having both sexes; ② having both female and male reproductive organs present and functional in the same flower; ③ amphisporangiate; ④ said of a plant having all bisexual flowers. ⑤ Bearing both male and female reproductive structures. ⑤ Hermaphrodite. ⑥ A flower that bears both pollen-bearing organs (stamens) & ovule-bearing organs (carpels); aka "perfect" (news).

biternate adj. Twice ternate; when the divisions of a ternate leaf are divided into three. Two groups of three.

bivalved having two sides or units originating at a common point; with two valves or flaps.

bladder n. ① An inflated sac or receptacle containing a fluid. ② A hollow appendage that assists with flotation or captures prey (in *Utricularia* spp) (news).

blade n. (Anglo-Saxon *blaed*, leaf) ① The leaf of a plant, especially grass; ② the flat or expanded portion of a leaf; ③ lamina; the expanded portion of a foliar or floral organ; ④ the expanded part of a leaf, petal, etc; ⑤ part of the leaf above the sheath. ⑥ The expanded portion of a leaf or other flat structure (mfn). ⑦ The expanded, outer portion of an organ, such as a leaf or petal, as opposed to the narrow, basal or inner portion (news).

-blast suffix like element (ancient Greek βλαστός, *blastos*, sprout, shoot, germ) "A terminal element of technical terms, esp. in Biology, forming ns. with the sense germ, embryo, as in epiblast, mesoblast, and hypoblast; cf blastoderm n." (oed).

bloat/nonbloat Bloat is the swelling of the digestive tract or rumen of a grazing animal resulting from excess gas production from eating certain legumes and green forage. Nonbloat refers to plants that do not cause this swelling.

bloom n. ①A whitish powdery covering of the surface, often of a waxy nature; ②a waxy covering on surfaces, such as fruits and leaves; usually results in a bluish color; ③a white or glaucous (viz.) powdery covering. ④A white or white-blue powdery or waxy coating on a surface that can be rubbed away (news). Cf glaucous.

bloom n. (Middle English *blome*, a blossom) ①A blossom; ②the flower of a plant; an expanded bud; ③the opening of flowers in general, leaves, flowers, or fruits.

blossom n. (Middle English *blossome*, a flower) ①A flower or bloom, esp. of a fruit bearing plant. ②A state or time of flowering, literally, and figuratively.

blunt ①obtuse, round-tipped. ②Ending abruptly in a rounded or squared-off tip; opposite: "sharp" (news).

bog (Irish *bogach*, a bog, from Gaelic *bog*, soft moist) ①A wetland, usually peaty, in which the substrate is typically acid; ②a quagmire covered with grass or other plants; ③wet, spongy ground; ④a small marsh; ⑤plant community on wet, very acid peat. ⑥An acidic peatland dominated by *Sphagnum* mosses and shrubs in the family *Ericaceae*, often found around lakes and ponds with vegetation in ± concentric zones of increasing maturity from open water to surrounding swamp forest or upland; its water typically derives mostly from precipitation not groundwater flow (mfn). Cf fen.

bole n. ①A strong unbranched caudex; ②the trunk of a tree.

boreal northern.

boss n. (Middle English *boce*, *bos*, from Old French *boce* (modern French *bosse*) = Old Northern French *boche*, Italian *bozza*; perhaps connected with Old High German *bôz-an*. In Middle English *boss* and *botch* are partly synonymous, but the former is not recorded in the sense pimple, boil, nor the latter in the sense boss of shield, ornamental stud (oed)) ①A protuberance with a rounded surface. ② "A protuberance or swelling on the body of an animal or plant; a convex or knob-like process or excrescent portion of an organ or structure" (oed).

bottomland n. Lowlands along streams and rivers, usually on alluvial floodplains that are periodically flooded.

brachidodromous (brochidodromous) adj. The pattern of pinnate venation of leaves in which the secondary veins do not terminate at the margins or in a tooth at the margin but rather are joined to the superadjacent secondary vein in a series of prominent arches.

brackish adj. (Dutch *brak* brackish (whence German *brackwasser* brackish water); identified by Franck with Middle Dutch *brak* worthless.) ①Mixed with salt; ②briny; of a mixture of salt and fresh waters. Cf estuarine.

bract n. (Latin *bractea*, a thin metal leaf or plate) ①A modified leaf, growing at the base or on the stalk of a flower, it usually differs from other leaves in shape or color. ②A reduced leaf or scale, typically one which subtends a pedicel or inflorescence, but it also can refer to minute leaves on a stem; ③a modified, usually reduced leaf at the base of a flower stalk; ④usually a +/- modified leaf subtending an axis; in grasses a modified leaf, often scale-like (eg, glumes, lemmas, paleas). ⑤ "A reduced or rudimentary leaf in the region of the flower or inflorescence; bracts can be either small, green, and inconspicuous, or large and brightly colored" (sk08). ⑥A reduced leaf-like, sometimes scale-like, structure, often subtending a flower, inflorescence, branch, etc (mfn). ⑦A modified leaf, reduced in size or form, that is associated with a flower or an inflorescence; in conifers, a main appendage arising from the axis of a cone. ⑧A leaf-like structure occurring at the base of a flower and are frequently colorful, as in poinsettias or flowering dogwoods. ⑨A modified leaf that subtends an inflorescence or flower that is not part of the flower proper, commonly of reduced size cfd with the foliage leaves (news). Hence bracteate. Diminutive bracteole, bracteolate.

bracteal adj. Pertaining to a bract.

bracteate adj. Having bracts.

bracteolate adj. Furnished with bracteoles.

bracteole pl bracteoles n. (New Latin *bracteola*, from the diminutive of Latin *bractea*, a thin gold leaf) ①A small bract, typically that which subtends a flower, the pedicel of which is already subtended by a bract; ②a small bract, especially one on a floral axis. ③Small specialized bracts immediately subtending a flower; contrary to bracts, bracteoles are only ever associated with a single flower (sk08). ④A small, modified leaf that grows just beneath the flower or on the pedicel above larger bracts (news).

bractlet n. ①A secondary bract, as one upon the pedicel of a flower. A small or secondary bract, syn. bracteole.

branch (Late Latin *branca*, paw) ①A lateral stem or part of the panicle inflorescence; ②a natural division of a plant stem; ③an outgrowing shoot, stem, or twig that grows from the main stem or trunk. ④The side shoot of a stem or flower stem (news).

branched hairs n. Hairs with divided tips (news).

branchlet n. ①A division of a branch, smaller than the main branch; ②a small usually terminal branch. ③An ultimate segment of a branch; a twig (news).

breeder seed The stock seed produced by the breeder of a cultivar and from which foundation seed is produced.

breeding vt. The identification and selective combination of desirable genes, with the goal of enhanced yield, reduced susceptibility to plant disease, improved seed quality or better nitrogen-fixing ability (rrl).

breeding lines n. Lines identified as superior in one or more selected traits and having value as parents in breeding programs (rrl).

bristle n. (Middle English *brustel*, *brostle*, Anglo-Saxon *bristl*, *byrst*, or Old English **brystl*, and Old Saxon **brustil*, a bristle) ①A +/- linear epidermal appendage, circular in section, stiff several to many cells wide at the base; ②A stiff, strong but slender hair or trichome; ③stiff hair or trichome; a stiff, slender hair or appendage likened to a hog's bristle. ④In *Setaria*, *Pennisetum*, and a few other grasses, it is a highly reduced branch without a spikelet at the apex. ⑤A stiff, hairlike structure. ⑥A stiff hair (news). Cf hair, scale.

bristly adj. With bristles.

brittle adj. ①Easily broken when bent, as in some branchlets of *Salix* (willow) spp (news).

broad leaf n. Leaves with blades that are conspicuously flattened & wider than needles (news).

broadcast seeding A method of seeding that involves scattering seed on the surface of the soil. Contrast to drill seeding whereby seed is placed at a precise spacing and depth.

brochidodromous, brochidodrome (New Latin *brochidodromus*, from Greek *brochid-*, *brochis*, small noose (diminutive of *brochos* noose) and New Latin *-o-* and *-dromus*, *-dromous*.) Of a leaf nerve: forming loops (as in members of the genera *Aristolochia*, *Olea*, *Sapindus*)

bronzing adj. Referring especially to the color of foliage after a winter, usually referring to a metallic bronze or coppery color.

browse, browze v. (from 16th cent. French *broust* (Old French *brost*, modern French *brout*) 'bud, young shoot') □“*intr.* or *absol.* To feed on the leaves and shoots of trees and bushes; to crop the shoots or tender parts of rough plants for food: said of goats, deer, cattle. (Sometimes carelessly used for *graze*, but properly implying the cropping of scanty vegetation.) (oed) ②(noun) Shrubs, trees and herbs eaten by grazing animals. (verb) The act of eating shrubs, trees and/or herbs. Cf graze.

bud (Middle English *budde*; Anglo-Saxon *budda*, beetle) ①Very young developing tissue enclosed in scales or valves; ②an undeveloped stem, branch, leaf, or flower; ③a small swelling or projection on a plant, from which a shoot, cluster of leaves, or flowers develops; ④a rudimentary, undeveloped shoot, leaf, or flower. ⑤An undeveloped leafy shoot or flower (news). Cf *gemma*.

bulb (Fr. *bulbe*; Latin *bulbus*; Greek *bolbos*, a bulbous root) ①A specialized underground bud that sends down roots and consists of a very short stem covered with leafy scales or layers which store water and nutrients, the whole enclosing next years bud. ②A short, often subglobose, stem surrounded by scales or modified leaves, typically underground, a subterranean bud with fleshy scales, such as those of an onion. ③A small, stout underground stem bearing modified (scalelike) leaves and fibrous basal roots; ④generally food storage organs. ⑤A short underground shoot which bears fleshy overlapping leaves (as in an onion) (mfn). ⑥Underground storage organ enclosed by leaf bases or fleshy scales, such as an onion (news).

bulbiferous adj. ①Bearing bulbs or bulbils for vegetative propagation. ②Producing or having bulbs.

bulbil n. ①A small, usually axillary bulb-like organ; a small bulb-like structure; ②a small bulb developing on some fern fronds and often developing into a new plant. ③A small bulb produced above the ground, often on the flowering stem. ④A small, leafy bulb, usually produced in the axils, capable of growing into a new plant; it is a plantlet that is genetically identical to the parent (news).

bulbulet n. ①A small bulbiform organ, particularly one proliferating from a leaf axil or sterile flower. ②A small, ± bulb-like vegetative propagule (mfn). ③A small bulb, usually arising from a parent bulb (news).

bulbous adj. ①Bulb-shaped; swollen like an onion; ②having the character of a bulb. ③With a bulb-shaped thickening (mfn). ④Swollen (news).

bulk pound A term used in the seed industry that refers to a pound of seed that does not take into account its purity and germination. A bulk pound is synonymous to a 16 ounce pound. Contrast to a "pure live seed pound" which takes into account the seed's purity and germination.

bullate adj. (Latin *bullātus*, having bubbles) ①Blistered or puckered; ②bubble-like; puckered or blistered, describing a layer of tissue (part of a leaf, scales etc) strongly arched and raised between the margins. ③"Having blisters; inflated: said of leaves, in which the surface rises in a convexity between the veins" (oed).

bunchgrass A grass that grows in clumps or bunches and has no prominent rhizomes or stolons in contrast to grass that forms a mat or turf.

bundle scar n. A mark on the stem of a woody plant, created by the petiole & vascular bundles of vessels, that shows where a fallen leaf or twig had been attached; aka "leaf trace" (news).

bundle sheath n. Cylinder of cells surrounding a vascular bundle or bundle scar (news).

bur, burr (apparently identical or cognate with Danish *borre* bur, burdock, Swedish *borre*, sea-urchin, and in combination *kard-borre* burdock (oed)) ①A spiny or prickly, usually dry, fruit or cluster of fruits; ②in grasses a rough or prickly covering surrounding the fruits or spikelets of some genera. ③"Any rough or prickly seed-vessel or flower-head of a plant: *esp.* the flower-head of the Burdock (*Arctium lappa*); also, the small seed-vessel of the Goose-grass (*Galium aparine*) and other plants; the husk of the chestnut" (oed).

bush n. Shrub (news).

buttress n. Flares or extension of a tree base that support the main stem (news).

C : N The ratio of %C to %N in organic residue, soil organic matter, and soil microorganisms; whether N is mineralized or immobilized depends on the C:N ratio of the organic matter being decomposed.

caducous adj. (Latin *caducus*, falling, from *cadere*, to fall) ① Said of a plant part, such as a sepal, petal, or leaf that falls off quickly or early; ② falling off early or prematurely; ③ deciduous; ④ short-lived and falling early in the development of the plant or organ. ⑤ Falling off the plant early relative to other similar structures. ⑥ Falling off very early in the season or stage of development of an organ (news). Cf deciduous, fugacious.

Caenozoic See Cenozoic.

caespitose, caespitose (cespitose) adj. (Modern Latin *caespitōsus*, from *caespitem* turf) ① Tufted; ② several or many stems in a close tuft; ③ tufted or matted, growing in tufts or patches. ④ Growing in dense, low-lying clumps.

calcareous adj. ① Limy; as in water or soil made basic by a prevailing amount of calcium ions; ② derived from limestone, or with an excess of lime (calcium carbonate). ③ Limy—rich in calcium carbonate, as from limestone (or dolomite) or marl (mfn). ④ Containing calcium carbonate (lime), usually referring to soil or bedrock (news).

calcareous soil Soil that is rich in calcium carbonate, usually derived from limestone or other calcium rich parent material.

calcic horizon n. A subsurface mineral soil horizon characterized by enrichment in calcium carbonate, often by the downward movement of ions with precipitation of the carbonate in a lower horizon.

calciphile, calciphilous adj. ① Lime-loving. ② Favoring alkaline (calcareous) habitats (mfn).

caliche soils A kind of soil that was formed from the deposit of crystalline salts, such as sodium chloride or sodium nitrate and form a hard cemented layer of soil.

caliper n. In the landscape or nursery trade, this is the diameter of a tree, measured at a point 6 inches above the ground line if the resulting measurement is no more than 4 inches. If the resulting measurement is more than 4 inches, the measurement is made at a point 12 inches above the ground line. This in contrast to the method used to measure caliper in the timber industry, which is to make the measurement at a point 4 ½ feet above the ground line, or the "diameter breast height" (dbh).

callose adj. Bearing callosities.

callosity n. A hardened thickening. See callus.

callous adj. ① Having the texture of a callus. ② With a thick, firm texture (news).

callus n. (Latin *callus*, *callum*, hard skin) ① A hard protuberance or callosity; ② new tissue covering a wound; ③ the indurate downward extension of the mature lemma in *Stipa*, *Aristida*, and some other genera; ④ a hard protuberance or callosity; often (in grasses) the swelling at the base or joint of insertion of the lemma or palea. ⑤ A firm thickening or protuberance; the hard often enlarged area at the base of a grass floret (mfn). ⑥ A hard or firm thickening of a structure; in grasses, the thick, hardened basal portion of the lemma. ⑦ A hard projection at the base of a floret, spikelet, or inflorescence segment, indicating a disarticulation point. ⑧ Horned, tough projection, or tissue that grows over a wound (news).

caltrop n. () A structure that consists of four spines that are arranged to point to the four corners of a tetrahedron so that however it falls, it will sit on three spines with the forth spine pointing up in the air; caltrops were first used as a means to slow down pursuers on horseback, but later proved effective against car tires (sk08).

calyculate adj. With a set of small bracts at the base of an involucre (news).

calyptra n. (modern Latin from Greek καλύπτρα, *kalyptra*, covering, veil, from καλύπτειν, *kalyptein*, to cover. Compare French *calypstre*) ①A cap-like covering. ②“Botany. A hood or cover; *spec* the interior membranaceous and often hairy covering of the ovarium, or a thickened membrane of parenchymatous cells which protects the growing root of a vascular plant; a root-cap” (oed). Hence calyptrate.

calyx n. (Latin *calyx*, from Greek κάλυξ, *kalyx*, outer covering of a fruit, flower, or bud; shell, husk, pod, pericarp, from root of καλύπτειν, *kalyptein*, to cover; see the oed for the discussion of Latin *calix*, cup, goblet, drinking vessel.) ①The outer covering of a flower external to the corolla, which it encloses, and consisting of a whorl of leaves, or sepals, usually of a green color and less delicate in texture than the corolla; ②the outer part of the flower, the sepals; ③the outer, usually green, series of perianth parts; the sepals taken collectively. ④“The whorl of leaves (sepals), either separate or grown together, and usually green, forming the outer envelope in which the flower is enclosed while yet in the bud” (oed). ⑤The summary of the sepals of a flower, ie the outer whorl of the floral leaves in a perianth (sk08). ⑥The outer series of perianth parts (or the only one); the sepals, collectively (mfn). ⑦A collective name referring to the sepals, the outer whorl of the perianth. ⑧Refers to the group of sepals, or leaves, making up the flower. ⑨The outer whorl of floral organs, usually consisting of sepals (news).

calyx tube n. Tube formed by wholly or partially fused sepals. Not the floral tube of an epigynous or perigynous flower.

camara pl **camerae** or **camaras** n. (Greek καμάρα, *kamara*, vault) ①An indehiscent or tardily dehiscent fruit formed by a single carpel; *camaras* may be internally dry, eg peanut, *Arachis hypogaea*, *Leguminosae*, or fleshy eg tamarind, *Tamarindus indica*, *Leguminosae* (sk08). ②A membranous fruit composed of two united valves and enclosing one or many seeds attached to the internal angle (oed).

cambic horizon n. A subsurface mineral soil horizon characterized by the alteration or removal of mineral materials as indicated by mottling or gray colors, or by more intense or redder colors than the parent material from which the soil formed, or by the removal of carbonates.

cambium n. (Latin *cambiare*, to exchange, more at change) ①The layer of tissue between the bark and wood in woody plants, from which new wood and bark develops; ②thin layer of meristematic cells, typically that which gives rise to secondary xylem or phloem.

campanulate adj. (diminutive of Late Latin *campana*, a bell) ①Bell-shaped, usually applied to calyx and corolla; ②bell-shaped or cup-shaped, typically with a flared or enhanced rim. ③“Bell-shaped” to saucer-shaped. ④Bell-like (news).

campo n. (American Spanish, from Portuguese or Spanish *campo* field, open country) In Brazil, a grass plain with occasional stunted trees, a savannah (oed).

canaliculate adj. ①Having a groove or channel; ②longitudinally channeled or grooved; ③with a channel or a groove, “grooved”. ④With longitudinal channels (news).

cancellate (Latin *cancellātus*, pp, of *cancellare*, to make like a lattice; alternately Latin *cancelli* crossing bars, gratings, lattice, railings, plural of *cancellus*, diminutive of *cancer*, plural *cancri* crossing bars, grating) ①Latticed, or resembling a latticed construction, usually said of a surface such as that of an achene or seed; ②having a net-like or sculptured surface.

cane n. ①A primary stem which starts at a point not higher than ¼ the height of the plant; ②the elongated new shoot of shrubs, such as in *Rubus*. ③In *Rubus* spp., woody shoots that arise each year.

canescent adj. ①Densely beset with matted, often grayish-pubescent, hairs; ②with a grey-white pubescence. ③Appearing white or gray due to very short, fine hairs.

canopy n. The cover of foliage layer of a community especially forests.

cap n. Convex removable portion of a plant part (news).

capillary adj. (Latin *capillaris*, from *capillus*, hair, from *caput*, head) ① Resembling hair in the manner of growth; ② very slender, threadlike; ③ very slender and/or hair like. ④ Very fine & hair-like (news).

capitate adj. (Latin small head, diminutive of *caput*, head) ① Enlarged or swollen at tip, gathered into a mass at apex, as compound stigma; ② a knoblike stigma terminating a style; ③ in a globular cluster or head; ④ head-like, rounded; ⑤ very densely clustered; ⑥ in a "headlike" cluster. ⑦ Like a pin-head (as certain stigmas on the style) (mfn). ⑧ Abruptly expanding at the apex, like a knob (news).

capitellate adj. Possessing a minute swelling at the apex, diminutive of capitate.

capitiform adj. Shaped like a head, somewhat globose.

capitulescence n. A group of capitula or heads (inflorescences of Asteraceae) (news).

capitulum pl capitula n. (Latin *capitulum*, small head) ① A knob-like swelling. ② an inflorescence forming a head of sessile flowers or florets crowned together on a receptacle and usually surrounded by an involucre; a small head of flowers. ③ An inflorescence with a condensed main axis bearing sessile flowers in a dense cluster, usually surrounded by an involucre of bracts (sk08). ④ "A close head of sessile flowers. Also a term vaguely applied among fungals to the receptacle, pileus, or peridium" (oed) ⑤ A type of inflorescence, found mostly in the *Asteraceae* (aster family) composed of many flowers borne on an expanded receptacle & subtended by a common involucre. Hence capitulate; eg *Asteraceae*, *Dipsacaceae*.

capsiconum n. (from Latin *capsa*, box, and *conum*, from *conus*, a cone) A compound fruit composed of capsular fruitlets (sk08). eg *Liquidamber styraciflua*, *Hamamelidaceae*.

capsule n. (Latin *capsula*, a little chest, diminutive of *capsa*, box, capsule, repository) ① A case, pod, or fruit, containing seeds, spores, or carpels; it usually bursts when ripe. ② A dry dehiscent fruit composed of two or more carpels; ③ a dry, dehiscent fruiting body. ④ A dehiscent fruit developing from a syncarpous gynoecium (ie composed of more than one carpel) and dispersing the seeds by opening the pericarp (sk08). ⑤ A dry dehiscent seed-vessel, containing one or more cells, and opening when ripe by the separation of its valves (oed). ⑥ A fruit which dehisces along two or more sutures (derived from 2 or more carpels) usually several- or many-seeded (mfn). ⑦ A dry, dehiscent fruit comprised of more than 1 carpel; method of splitting further classifies the capsule type (eg, circumscissile, septicidal, etc). ⑧ A dry, dehiscent fruit that opens along two or more seams (valves), pores, or teeth to release two or more seeds (news). Hence capsular.

Carboniferous adj. and n. (carbon bearing, in reference to the many coal deposits) The geological time period 354(9)-290 million years ago, preceded by the Devonian and followed by the Permian. In the United States, Mississippian and Pennsylvanian are used instead, corresponding to the Lower and Upper Carboniferous respectively.

carbohydrate utilization n. Plants metabolize carbohydrates during growth; use them in the synthesis of cell components such as cellulose; or store them as starch against future need. Carbohydrate utilization patterns refer to the balance between these activities. (rrl)

carcerule, carcerulus n. (diminutive of Latin *carcer*, prison) ① A simple, indehiscent fruit formed by a syncarpous gynoecium, bearing one or more seeds surrounded by an air space within a firm pericarp (sk08). ② The Carcerule is a superior, many-celled fruit, each cell being dry, indehiscent, and one or few-seeded (oed).

carina n. ① A keel; longitudinally keeled. Hence carinate.

carinate adj. (Latin *carinatus -a -um*, participial stem of *carināre* to furnish with a keel (or shell), from *carina*, a keel) ① Keeled, furnished with a carina, or ridge; ② longitudinally keeled; ③ shaped like the keel of a ship; ④ having a longitudinal prominence on the back, like a keel; applied to a calyx, corolla, or leaf.

carpel n. (New Latin, *carpellum*, little fruit, originally from Greek καρπός, *karpos*, fruit) ①A pistil, or one of the units of a compound pistil; ②individual female part of a flower, comprising the style, stigma, and ovary; ③a simple pistil, regarded as a modified leaf; also, any of the two or more carpels that unite to form a compound pistil; ④the unit of structure of the female portion of a flower. ⑤“One of the divisions or cells of a compound pistil or fruit; or the single cell of which a simple pistil or fruit consists” (oed) ⑥In angiosperms a fertile leaf that enclosed one or more ovules (megasporophyll). Carpels are usually differentiated into an ovule-bearing part (ovary), a style, and a stigma. The carpels of a flower can either be separate from each other to form an apocarpous gynoecium or joined to form a syncarpous gynoecium (sk08). ⑦The basic female structural unit of the flower, homologous to a sepal, petal, or stamen; in a compound pistil, the carpels are united (connate), but the number can often be determined from the number of styles, stigmas, lobes, or locules (compartments in the ovary) (mfn). ⑧The basic unit of a pistil, a modified seed bearing leaf. ⑨One type of highly modified leaves of a flower, bearing the ovules & usually composed of an ovary, style, & stigma (news).

carpellate adj. ①Having carpels. ②With female organs (carpels) (news).

cartilaginous, cartilagineous adj. (Latin *cartilāginōs-us, cartilāgine-us*, from *cartilāgin-em* cartilage, and -ous) ①Of the nature of, or consisting of, cartilage (oed); ②cartilage-like; firm and tough but neither rigid nor bony; ③firm and tough, but flexible; like cartilage.

carpophore n. (Greek *karpophorus*, literally fruit bearing, and καρπός, *karpos*, fruit, and -φορος, *-phoros*, bearing, from φέρειν, *pherein*, to bear (*phorein in one source*)) ①Generally the organ that supports the carpels; specifically, a very much elongated axis to which the carpels are attached; the stalk of the sporocarp. ②“A prolongation of the axis of a flower, raising the pistil above the stamens, as in *Geraniaceae* and *Umbelliferae*; also, in *Thallophytes*, the stalk of a sporocarp or spore-fruit.” (oed) ③The central column or axis, of a schizocarpous fruit from which the fruitlets separate at maturity except a one point as in the typical fruit of the carrot family, *Apiaceae* (sk08).

carpophagous adj. (Greek καρπός, *karpos*, fruit, and -φαγος, *phagos*, eating) Fruit-eating.

carpophyll n. ([Greek καρπός, *karpos*, fruit, and φύλλον, *phyllon*, leaf, literally fruit-leaf) The modified leaf which by its folding produces a carpel, synonym of carpel (oed).

cartilaginous adj. ①Hard, tough, without chlorophyll and vasculature; ②like cartilage.

catadromic, catadromous adj. With the first subbranch of a lateral branch produced on the basiscopic margin, mostly of venation in pinnate ferns. Cf anadromic, anadromous.

caruncle n. An often fleshy appendage at or near the attachment point (hilum) of some seeds.

caryopsis n. (Greek κάρυ-ον, *karyon*, walnut, or any nut or kernel, and -ῶσις *-opsis*, an appearance, a resemblance) ①A small one-seeded, dry, indehiscent fruit, in which the seed adheres to the thin pericarp, so that the fruit and seed are incorporated into one body, as in wheat and other kinds of grain (oed). ②The traditional name of the fruit (nut) of the members of the grass family (*Poaceae*). The caryopsis is very similar to the achene. the only difference is that in a caryopsis the pericarp is not distinguishable from the seed coat except under high magnification. (sk08) ③One-seeded, dry, indehiscent fruit or grain of grasses with a lateral embryo. The seed coat is adnate to the pericarp; in grasses, a seed-like fruit with a thin pericarp; a grain. ④The dry, 1-seeded fruit found in grasses. ⑤A specialized dry fruit characteristic of grasses, in which the seed and ovary wall have become united. ⑥A type of achene in grasses, in which the seed coat is joined to the pericarp (news).

Castanea (Latin, a chestnut, from Greek *kastanon*) A genus of trees typified by the COMMON CHESTNUT.

castaneous adj. Relating to or having the color of a chestnut.

cataphyll n. (*cata-* and *-phyll*; intended as translation of German *niederblatt*, literally, lower leaf; alternately from Latin *catus, cātus, cattus, catta*, and *-phyll*; most likely from Greek κατά, *kata*, down, degraded, and

φύλλον, *phyllon*, leaf) ①A rudimentary scalelike leaf (as a bud scale) that precedes the foliage leaves of a plant; ②any rudimentary leaf, as a bud scale, preceding the true foliage leaves.

cataphyllary leaves n. Rudimentary or scale-like leaves, which act as a covering of buds.

catena (from Latin *catena*, *catenae* f., a chain; series; fetter, bond, restraint; imprisonment, captivity; chain mail) A sequence of soils of about the same age, derived from similar parent material, and occurring under similar climatic conditions, but having different characteristics due to variation in relief and in drainage. "W. D. Thornbury Princ. Geomorphol. iv. 78 A soil catena consists of a group of soils within a particular soil region which developed from similar parent material but differ in the characteristics of their profiles because of the varying topographic and drainage conditions under which they formed" (oed).

cathartic adj. (Latin *catharticus*, from Greek καθαρτικός, *kathartikos*, fit for cleansing, purgative) "Cleansing (the bowels), promoting evacuation, purgative. A medicine which has the power of purging or evacuating; a purgative. More strictly: a medicine which is capable of producing the second grade of purgation, of which laxative is the first and drastic the third (*New Sydenham Soc. Lexicon*)." (oed)

cation Positively charged ion.

catkin (Latin a dim. of *cat*, from its resemblance to a cat's tail; more accurately from Dutch *katteken* 'kitten' and 'catkin' of hazel, willow, etc, diminutive of *katte* cat, from the soft downy appearance of many catkins) ①A scaly spike, the flowers of which are unisexual and without petals; ②a normally dense spike or spike-like raceme of tiny, scaly-bracted flowers or fruits. ③Ament: a slender, usually pendulous inflorescence, with crowded male or female flowers (news). Cf ament.

caudate adj. ①Tail-like, or bearing a tail-like appendage; ②tailed excessively acuminate so that the tip is long and weak. ③With a well-defined very long-prolonged (tail-like) appendage or abruptly long-acuminate apex (mfn). ④Bearing a terminal, long and slender appendage like a tail. ⑤With a tail-like basal or terminal appendage (news).

caudex pl **caudices**, dumbed-down to **caudexes** n. (Latin *codex*, *caudex* trunk or stem of a tree, split block of wood, tablet of wood covered with wax on which the ancients wrote, book, a writing; akin to Latin *cadere* to beat. Tree stump in one source.) ①The compact stem or trunk of a tree-fern or other erect fern. ②The base of a perennial plant; ③the axis or stem of a woody plant, especially of a palm or tree fern. ④The woody base of a perennial plant; ⑤the ligneous or woody base of a perennial plant. ⑥"The axis of a plant, consisting of stem and root (*Treasury Bot.* 1866): esp. applied to the stem of palms, ferns, and the like "(oed). ⑦The woody, thickened and persistent basal portion of a herbaceous perennial that gives rise to leaves and flowering stems each year, ie "stem-base". ⑧A hardened summit of a root mass, which usually survives the winter (news). Cf rootstock.

caulescent adj. (Latin *caulis*, Greek καυλός, *kaulos*, stem, stalk, and *-escent*, suffix forming adjectives) ①Having a well-developed stem above ground level; ②having an aboveground stem. ③Having an obvious leafy stem(?).

caulicarp n. (Latin *caulis*, Greek καυλός, *kaulos*, stem, stalk, and Greek καρπός, *karpos*, fruit) ①The bearing of fruits directly on the bark of the main trunk or the major branches of a tree (sk08).

cauline adj. (Latin *caulis*, Greek καυλός, *kaulos*, stem, stalk) ①Stem; of, relating to, or pertaining to the stem or features of the stem; ②belonging to the stem, such as stem leaves. ③On or pertaining to the stem - often in contrast to basal (mfn). ④Of, or pertaining to, the stem, ie "stem leaves". ⑤Arising on the stem (news).

caustic adj.

cell n. (classical Latin *cella*, store or larder, chamber in a temple, small room, poor man's apartment, slave's room, porter's lodge, coop, pen, compartment, cell of a honeycomb) ①The small structural components of which all plant tissue is composed. ②"Biology. The fundamental, usually microscopic, structural and functional unit of all living organisms, which consists of a small quantity of protoplasm enclosed within a membrane, typically contains a nucleus or nucleoid and other organelles and internal compartments, and is capable of utilizing energy,

synthesizing proteins and other biomolecules, and (usually) replicating itself. Botany. Any of various larger chambers in the structure of a tissue or organism, typically with known functions. Now largely *disused*, except in *Bot.* when describing the locules of an ovary or the thecae of an anther.” (oed)

Cell Theory n. A theory published in 1839 by Matthias Jakob Schleiden and Theodor Schwann, claiming that all organisms are composed of similar basic units of organization, called cells. In 1858, Rudolf Virchow completed the classical cell theory by adding his conclusion that all cells come from pre-existing cells. (sk08)

cellular adj. A term used in reference to the cell-shaped network of minutely raised and lignified ridges on epidermis (eg, on the culm of some *Carex* spp.).

cellulose n. (French from Latin *cellula*, dim. of *cella*, a small room) The chief substance composing the cell walls or woody part of plants; an insoluble carbohydrate of unknown molecular structure but having the composition represented by the empirical formula $(C_6H_{10}O_5)_n$.

Cenozoic or Caenozoic Era (also Cainozoic, Kainozoic) n. (from Greek *καίνω-ς*, *kaino-s*, recent, new, and *ζῷον*, *zoion*, living being or animal, meaning new animals) The time period from 65 million years until today; the Cenozoic is divided two periods that are divided into epochs, the Tertiary with Paleocene, Eocene, Oligocene, Miocene, and Pliocene epochs and the Quaternary, with Pleistocene and Holocene; an alternative classification divides the Cenozoic into the Paleogene (Paleocene to Oligocene) and Neogene (Miocene to Holocene) periods (sk08). (The omega ω in *zoion* has a *ypogegrammeni*, and is the letter for the diphthong *oi*.)

central axis n. The main axis of the inflorescence.

central cavity n. In some horsetails (*Equisetum* spp), the main hollow center of the stem (news).

central groove n. A longitudinal depression in the sides of the pedicels of *Bothriochloa*.

central placentation n. Type of placentation in which the ovules are borne on a freestanding placenta in the center of the ovary, as in *Primulaceae* (sk08).

centri- prefix pertaining to the centre of an organ.

centrifugal adj. Tending outwards or developing from the centre outwards. Cf centripetal, acropetal, basipetal.

centripetal adj. Tending inwards or developing towards the centre from the outside. Cf centrifugal, acropetal basipetal.

centrum (Latin from Greek *kentron*, center) Central portion.

cernous adj. Drooping

Certified Seed Seed that is produced, harvested, cleaned and tested under the regulations and supervision of a seed certifying entity such as members of the Association of Official Seed Certifying Agencies. The term is also used when referring to fourth generation seed produced from foundation seed. **For more information, see the Certified Seed section in the Technical Guidelines section of the Granite Seed web site.**

cespitose see caespitose; ①Tufted, growing in tufts or clumps; ②matted, usually referring to the compact arrangement of the stem bases with respect to each other and their position in the soil. ③Growing in tufts or dense clumps (mfn). ④Growing in dense clusters, as a clump or tuft (alternate spelling: "caespitose") (news). Sometimes spelled caespitose.

cf oed calls it a noun? (Latin *confer*, compare, from *conferre*, to bring together, collect, gather, contribute, connect, join, consult together, bring together for joint examination, compare; also to confer, or bestow; from Latin *con-* together, and intensive *ferre* to bear, to bring.) ①“To bring into comparison, compare, collate. Const.

usually *with*; also *to, unto*.” (oed) ②From the Latin “*confer*,” meaning “compare.” Used, especially in keys, to mean see also that entity and compare it with your plant (mfn).

chaff n. (Anglo-Saxon *ceaf*, chaff) ①Thin, membranous scales or bracts. ②dry scales or bracts, as those on the receptacle subtending the flowers in the heads of certain *Compositae*; ③Dry, scaly, often small, bracts; typically referring to those scales subtending the individual flowers in composite heads. ④(Receptacular chaff) The scales, bracts, or bristles on the receptacle of a head in the *Asteraceae*, ordinarily subtending the ovaries (later, achenes) (mfn). ⑤Small, papery scale, often associated with the base of a ray or disk flower in *Asteraceae* (news). Hence chaffy.

chaffy adj. With thin dry scales or bracts; "papery", "papery-bracted".

chalaza pl chalazae n. (modern Latin, from Greek *χάλαζα*, *khalaza*, hail, any small lump or knot like a hail-stone. Compare French *chalaze*.) ①The basal part of an ovule where it is attached to the funiculus. ②“A spot on the seed where the nucleus joins the integuments.” “1880 A Gray Struct. Bot. vi. §8. 277 The proper base of the ovule..is the Chalaza..In the simplest form of ovule, hilum and chalaza are one.” (oed).

chamaephyte n. (chamae- and -phyte) A perennial plant that bears its over-wintering buds above the surface of but within a few inches of the soil.

chambered adj. Having areas in the hollow pith of twigs where vertical walls occur at close intervals.

chambered pith n. Interior branchlet tissue divided into many empty horizontal chambers by solid cross partitions (news).

channeled adj. ①Having a deep longitudinal groove. ②Folded or with 1 or more deep grooves.

chartaceous adj. (Latin *chartaceus*, from *charta*, a leaf of paper) ①Having the texture of thin but stiff paper; thin, but firm; resembling the more ancient writing paper; of a thin papery texture. ②Having the texture of stiff paper or parchment; ③"firm-papery", thickly membranous. ③With the texture of paper (news). Cf coriaceous.

chasmogamous adj. ①(Of a flower) open and showy (as opposed to cleistogamous) (mfn). ②Flowers that are pollinated when they are open (opposite: "cleistogamous") (news).

chasmogamy n. (Greek *chasma*, an opening, chasm, and *gamos*, marriage) The opening of the perianth of a flower for the purpose of fertilization; contrast with cleistogamous.

chink n. A modified pore, usually involving an opening in the anther.

Chiroptera, Cheiroptera n. (from Greek *χειρο-*, *kheiro-*, hand, and *πτερος*, *pteros*, feather, wing) An order of *Mammalia*, distinguished by greatly elongated fingerbones supporting a membrane or wing attached to the posterior limbs and the side of the body, and adapted for flight, the Bats (oed)

chiropterochorous adj. (New Latin *chiroptera* (*cheiroptera*), bats, from Greek *χειρο-*, *kheiro-*, hand, and *πτερος*, *pteros*, feather, wing, and *χωρεῖν*, *khōrein*, to go, to be spread abroad, to disperse) Bat dispersed.

chiropterochory n. (New Latin *chiroptera* (*cheiroptera*), bats, from Greek *χειρο-*, *kheiro-*, hand, and *πτερος*, *pteros*, feather, wing, and *chorien*, to disperse) Dispersal of diaspores by bats (sk08).

chlorophyll n. ①The green photosynthetic pigment; ②the green coloring in plants concerned with the production of sugars. ③The pigment that gives a plant its green color & absorbs light energy, the first step in photosynthesis (news).

chlorosis n. (Greek *chloros*, pallid) Abnormal condition characterized by absence of green pigments in plants.
② Because iron is needed for the synthesis of chlorophyll, one of the symptoms of iron deficiency in the plant is a yellowing or chlorosis of leaves (rrl).

Choripetalae

choripetalous adj. (Greek *choris*, apart, and *petalon*, leaf) ①Polypetalous; ②having unconnected or separate petals. Cf sympetalous.

chromagen The part of a cell (or organelle) that converts a compound to a pigment.

chromosomes n. () Deep-staining thread-like bodies containing the genetic material in the cell nucleus, the number usually constant for a given species.

cilia, singular **cilium** n. ①Hairs or slender bristles confined to the margins of some organ; ②a hair or bristle; usually with marginal hairs. ③Hairs along a margin or edge (mfn). ④Hairs found at the margin of an organ (news). Hence ciliate.

ciliate adj. (Latin *cilium*, eyelid) ①With marginal hairs that form a fringe; ②fringed with cilia; ③bearing cilia on the margins; ④fringed with hairs on the margin. ⑤With hairs along the margin or edge (mfn). ⑥Leaves fringed on the margins, with fine hairs (cilia), "fringed". ⑦With hairs (cilia) at the edges (news).

ciliolate adj. ①Minutely ciliate. ②Ciliate but with smaller hairs.

ciliolulate adj. Minutely ciliolulate.

cinereous, cinerous adj. ①Ash-gray colored; ②light, ashy grey. ③Ash-colored or light grey, sometimes somewhat bluish, usually due to short hairs.

-cipital Suffix meaning -headed, eg multicipital

circinate adj. ①Rolled coil-wise from the top downward; ②coiled, with the apex innermost (n. *circinnus*), as in many developing fern fronds. ③Coiled inward upon itself, like a fern crozier or some tendrils of vines (news).

circumboreal adj. ①Distributed at the top or the bottom of the world in the boreal zone. ②An encircling region of habitats between the temperate zone & the Arctic (news).

circumpolar adj. Distributed around the North or the South Pole.

circumscissile adj. (Latin *circum*, around, and *scindere*, to cut) ①Opening splitting by a transverse fissure around the circumference, leaving an upper and lower half; ②pertaining to the dehiscence of a capsule (pyxis) which opens by a circular, horizontal line, the top usually coming off as a lid; said of certain seed pods or capsules. ③Dehiscing by a circular line around the fruit (mfn). ④Splitting completely around the centre, the top valve coming off like a lid. Said of a capsule that dehisces transversely in a circular line, like the opening of a lid.

circumscissile capsule see pyxidium.

cirrhose adj. ①Tendril-like, with a slender, coiled or wavy tip.

cladode n. A flattened stem resembling a leaf in form and function. Cf phyllode.

Cladoprophyll, *cladoprophyllum* n. (New Latin *cladophyllum*, from *clad-* and *-phyllum*) A branch assuming the form of and closely resembling an ordinary foliage leaf and borne in the axil of a true leaf, often bearing leaves or flowers on its margins, as in butcher's-broom. Cf cladode.

clammy adj. Sticky-hairy.

clasping adj. ①Tending to encircle or invest, as in the base of a leaf, which forms partly around the stem to which it is attached; ②to hold parts together; holding. ③Sessile and at least slightly surrounding the stalk to which attached (mfn). ④Closely surrounding the stem, as when the bases of a leaf almost meet on either side of the stem (news).

clathrate adj. Lattice-like in the form of a lattice; used to describe scales with a single layer of translucent cells with dark cross-like walls (news).

clavate adj. (Latin *clava*, a club) ①Club-shaped; having the form of a club; ②growing gradually thicker toward the top, as certain parts of a plant; ③dilated upwards. ④Club-shaped; ie, with a ± prolonged and narrow base (mfn). ⑤Club-shaped, gradually thickened towards the apex. ⑥Widened at the distal end, like a baseball bat or club (news).

claw n. (Anglo-Saxon or Old English (West Saxon) *clawu*, *clauua*, a claw, hoof) ①The narrowed, stalk-like base of some sepals or petals. ②A ± abruptly or strongly narrowed basal portion of some blades; eg, of petals or tepals (mfn). ③The narrowed, basal portion of some petals or sepals. ④A narrowed portion at the base of an otherwise flat structure, such as a petal (news).

cleft adj. (Anglo-Saxon *cleofan*, to cut) ①Divided halfway down to the midrib or further, or generally, any deep lobe or cut; ②distinctly divided or incised, usually to about the middle. ③The narrowed base or stalk of some petals. ④Usually applied to leaf margins and sinuses cut sharply and about half-way to the midrib or base; deeply lobed.

cleistogamous adj. ①Fertilized in the bud, without the opening of the flower; applied to flowers or florets fertilized without opening; must be self-fertile. ②Of a flower, fertilized and setting seed without opening (mfn). ③Of flowers, small, closed, self-fertilized. ④Flowers that self-pollinate when they are still closed (opposite: "chasmogamous") (news). Cf chasmogamous.

cleistogamy n. (Greek *kleistos*, closed, and *gamos*, marriage) The condition of having flowers, which never open, and self-pollination occurs, and the flowers are often small and inconspicuous.

cleistogene n. or adj. ①As an adjective bearing cleistogamous flowers; ②as a noun, a plant structure acting as a dispersal unit containing one or more cleistogamous flowers, as in the lower sheaths of the grass *Triplasis purpurea*. ③Plants which bear cleistogamous flowers.

climacteric fruits n. Fruits that enter a sudden and irreversible burst of ripening marked by a distinct increase in respiration (CO₂-production) and the production of the volatile phytohormone ethylene. In contrast, non-climacteric fruits undergo a gradual and continual ripening process (sk08).

climax community A stage in ecological development in which a community of organisms is stable (less likely to change over time) and capable of perpetuating itself.

clone (Greek *klon*, a twig) ①A group of individuals, resulting from vegetative multiplication. ②Any plant propagated vegetatively and therefore, presumably a duplicate of its parent. ③A group of plants all of whose members are directly descended from a single individual. ④A set of organisms produced from one parent by vegetative reproduction, hence genetically identical. ⑤A group of plants that are genetically identical and have descended from a single common ancestor, such as a grove of aspen trees.

club moss n. "Common name for a member of the *Lycophyta*, a group of seedless, spore-producing vascular plants. In the Carboniferous time period (345-290 million years ago), tree-like Clubmoss-relatives such as *Lepidodendron* and *Sigillaria* together with horsetail-relatives were the major components of the giant forests that thrived in the extensive swamps occupying parts of our planet. Today, Lycophytes are represented by about 1280 species of herbaceous plants such as clubmosses (*Lycopodium* spp.), *Selaginellas* (*Sellaginella* spp.), and the aquatic quillworts (*Isoetes* spp.)." (sk08).

cluster n. A number of similar things, eg bracts or spikelets, grouped together.

coalescent adj. With separate organs unifying by growth. Cf conrescent.

coarse adj. Rough.

coccarium n. (Greek κόκκος, *kokkos*, grain, seed, berry, kermes-grain, and *-arium* an ending that indicates a schizocarpic fruit) A schizocarpic fruit characterized by fruitlets opening along their ventral and dorsal suture; capsular fruits which do not break up entirely into their carpels but display loculicidal, septicidal, and septifragal dehiscence simultaneously are included here (eg the fruits of *Euphorbiaceae*, *Hamamelidaceae*, and some *Rutaceae*). (sk08).

cocum n. (Greek κόκκος, *kokkos*, grain, seed, berry, kermes-grain) A simple dehiscent fruit consisting of one carpel that opens along two sutures (the *cocum* of the *Leguminosae* is traditionally termed a legume). (sk08).

coenosorus n. ①An extended sorus or series of sori that have united not coalesced. ②A continuous line of sporangia. It is seen in certain ferns, eg *Pteridium*, where discrete sori are not produced.

coetaneous adj. When organs such as the leaves & flowers expand at about the same time (news).

co-evolution n. The co-existence of legume hosts and rhizobia in a particular location or ecosystem over considerable periods of time can lead to modification of their interaction in nodulation and nitrogen fixation. Thus the pea landrace Afghanistan will nodulate with pea rhizobia from Middle Eastern countries, but not with those from Europe. This difference is regulated by genes in both host and bacteria. (rrl)

coherent adj. (Latin *cohaerere*, to stick together) ①Having parts united. ②Sticking together in a group but not actually fused (as individual pollen grains) (mfn). ③Of two similar organs or parts touching one another, +/- adhesively but easily separated and not fused or grown together. Cf adherent, adnate, connate.

cold hardy A general definition describing a plant's ability to withstand temperatures below freezing.

cold sensitive A plant that is easily damaged from temperatures below freezing.

coleoptile n. ①A protective sheath for the young shoot in the embryo. ②The sheath of tissue that protects the emerging shoot of monocots (news).

collar n. (Latin *collare*, a band or chain for the neck) ①The line of junction between the root of a plant and its stem or trunk, also called "Root Collar"; ②region of junction between blade and leaf sheath of grasses; ③the area on the outer (abaxial) side of a leaf at the junction of the sheath and blade. ④In grasses, the band on the outside area of the leaf at the point where the leaf blade and the sheath converge. ⑤Pale or purplish zone at the junction of leaf sheath and blade. ⑥Encircling band of tissue (news).

collateral adj. Standing side by side.

collateral accessory bud n. An extra bud placed next to a bud on the side of a branch (news).

collenchyma n. (Modern Latin from Greek κόλλα, *kolla*, glue, and ἔγχυμα, ἔγχυματ-, *enkhyrna*, *enkhyrnat-*, an infusion) Living, supportive tissue with chloroplasts generally just beneath the surface consisting of more or less elongated cells usually thickened unevenly in a manner somewhat variable in different groups of plants.

collected plant n. ①A plant that has been gathered from the wild or taken from an established landscape planting; ②not grown in a nursery.

colleter n. A mucinagious hair that secretes gum.

colonial adj. (French *colonial*, from Latin *colonia*, a colony) ①Usually used to describe cloning by vegetative reproduction, the seemingly separate plants having arisen from rhizomes, stolons, or roots of a single or of neighboring "parent" plants. ②Forming clusters of plants by vegetative spreading via rhizomes or stolons (news).

colony n. A stand, group, or population of neighboring plants of one species, the origin having been colonial, from seeds, or both.

colpate (Greek κόλπος, *kolpos*, bosom, womb, and *-ate*, of pollen grains; alternately from Late Latin *colpus*, stroke, from earlier Latin *colaphus*.) ①Having one or more *colpi*, or grooves on each pollen grain; ②having longitudinal germinal furrows in the exine;

columella n. (small column, diminutive of Latin *columna*, column) ①The persistent central axis of a capsule of schizocarpic fruit (sk08). ②The central axis of a cone, etc. ③The long axis round which the parts of a (dehiscent) fruit are united: in reality, the ripened growing point. The fruit of Umbellifers is a bipartite schizocarp with two halves separating from the columella. (oed) ④In anatomy, an old name for the uvula. ⑤In conchology, the axis of a spiral shell.

column n. ①The lower, undivided part of the awns of certain *Aristida* species; ②the lower twisted portion of a geniculate awn, or the part below the awn branching-point in *Aristideae*: ③sheath or structure formed by the uniting of stamens around the pistil. ④In the *Orchidaceae*, the structure resulting from fusion (adnation) of stamen(s) and pistil (mfn). ⑤A cylindrical body formed by the fusion of organs; in orchids, the central body that contains the styles & stamens (news).

columnar adj. Shaped like a column or pillar.

coma n. (Latin *coma*, adapted from Greek κόμη, *kome*, hair of the head, also applied to foliage, and to the tail of a comet) ①A dense tuft of hairs, often resembling a beard, attached to the end of a seed, as in *Epilobium* or *Asclepias*. ②A tuft of soft hairs, as at the apices or bases of seeds. ③A tuft of hair usually at the apex of structures like seeds. ④A tuft of hairs. ⑤A terminal cluster of bracts on a flowering stem, as in pineapples. ⑥A bunch of branches. ⑦A tuft of hairs resembling a tail; a structure in seeds that aids in dispersal (news). Hence comose.

coma (from Greek κῶμα, κῶματ- *kōma*, *kōmat-*, deep sleep, lethargy)

combination n. Taxonomically the name of a genus combined with a specific epithet. Cf synonym.

community n. An assemblage of plants living in the same place.

commissure (Latin *commissura*, a joining together) ①A place of joining or meeting, joint or seam, as where one carpel joins another in the *Umbelliferae*. ②The surface where two carpels cohere (news).

comose (Latin *comosus*, hairy, from *coma*, hair) ①Having a tuft of hair; ②bearded, with a coma. ③With a tuft of hairs (coma), usually referring to a seed (news).

compact adj. Short and dense.

competition (Latin *competitiōnem*, an agreement, rivalry, from *competēre*) ①Involves the removal or reduction of some factor from the environment by a plant or group of plants that is sharing the same habitat. Competition can be by an individual or groups of plants of the same or different species. Factors that may be reduced include water, minerals, food, and light. ②Because each plant only forms a finite number of nodules, the ability of indigenous rhizobia to form nodules will limit the number produced by inoculant strains. This can limit nitrogen fixation, and in the American Midwest can mean that the plant derives less than 50% of its nitrogen from symbiosis. While this is generally seen as a competition between inoculant and indigenous rhizobia, various factors play a role. These include the great numerical superiority of the indigenous rhizobia in the bulk soil, and the limited mobility of the inoculant rhizobia. It is also assumed that indigenous rhizobia are also better adapted to soil conditions. ③The simultaneous demand by two or more organisms for limited environmental resources, such as nutrients, living space, or light.

composite adj. Compound. Cf simple.

compound adj. ①Composed of two or more similar parts; pertaining to leaves, which are divided into distinct leaflets. ②With 2 or more parts or components. ③Composed of more than one part, or branched; eg, a leaf with two or more blades (leaflets), a pistil with more than one carpel, a branched inflorescence (mfn). ④Referring to inflorescences made up of a number of small constituent inflorescences (as in some *Andropogoneae*), or a raceme with some secondary branching. ⑤Composed of several +/- similar parts. ⑥Comprised of multiple separate parts (news). Cf composite, simple.

compound fruit n. A fruit derived from more than one flower. Most modern textbooks apply this meaning to multiple fruit, a term which should, however, correctly be used for fruits developing from flowers with an apocarpous gynoecium; see also explanation under multiple fruit. (sk08).

compound leaf n. A leaf that is divided to the midrib, with distinct, expanded portions called leaflets (news).

compound pistil n. A pistil formed by two or more joined carpels.

compressed adj. ①Flattened strongly, typically laterally; ②keeled.

concave adj. ①Dished inward, an existing hollow; ②hollow; in the context of the interior of a curved surface. ③U-shaped; curving inward (news). Opposite of convex.

concentric adj. Two or more circles having a center in common.

conceptacle n. The fruit-case of the sporocarp (viz.) in *Marsileaceae*

concolorous adj. Of uniform color, eg on both sides of a leaf. Cf discolourous.

conrescent adj. (Latin *conrescent-*, *-ens*, present participle of *conrescere*, to grow together) Growing together. Hence conrescence. Cf coalescent.

concretion n. (Latin *concrētiōnem*, from *concretio*, *concrēscere*, to grow together) ①The act or process of making or becoming solid. ②“The action or process of growing together or of uniting in one mass; conrescence, coalescence” (oed).

conduplicate, conduplicant adj. (from Latin *conduplicānt-em*, present participle of *conduplicāre*, from *con-* together and *duplicāre* to double) ①Folded together lengthwise; ② “Doubling up; as when the leaflets of a compound leaf rise up and apply themselves to each other's faces” (oed). ③Folded lengthwise with the upper surface inwards, eg on a leaf folded along the midrib. The leaves of many *Prunus*, *Rosaceae*. ④Folded lengthwise into equal parts (news).

contact dermatitis n.

cone n. ①Three-dimensional object with a circular base, the sides all tapering to a point at the summit. ②Geometrically a solid, circular in cross-section, triangular in longitudinal section. ③The fruit of pines and their relatives; ④spore case of equisetum; ⑤botanically a series of spirally arranged wooden scales or sporophylls. Hence conical. Cf strobilis, strobile.

confluent adj. n. (Latin *confluentem*, present participle of *confluere* to flow together (as two rivers), from *con-* and *fluere* to flow) ①Merging together or blending. ②With structures merging into one. ③Fusing at the bases. ④Blending or running together. ⑤ “Of organic members, structures, processes, etc.: Running together; becoming at length united, connected, or blended into one” (oed).

conform v. Being of the same or similar shape, eg pinnate fronds with the apical pinnae similar to the lateral.

congener adj. n. (As noun apparently from French *congénère* (16th cent. Paré), from Latin *congener* of the same race or kind, from *con-*, together with, and *gener-* (*genus*) kind; as adjective, perhaps directly from Latin. (*Cogener* is a rare and needless variant)) ① "A member of the same kind or class with another, or nearly allied to another in character. Const. of or possessive. a. said of animals and plants which are related according to scientific classification. (Rarely in the strict literal sense 'of the same genus'.)" (oed) ② A chemical by-product in the making of whisky, etc, which gives the drink a distinctive character (oed).

congeneric adj. n. (Latin *con-* together, and *gener-* (*genus*) race, after Latin *congener* and *generic*.) ① Belonging to one and the same genus. ② Of the same genus, kind, or race; allied in nature or origin. Hence congener. Cf conspecific.

congested adj. Crowded, clustered.

conic adj. ① Cone-shaped; "conelike". ② Shaped like a cone (3-dimensional triangle with a round base) (news).

conical adj. ① Cone-shaped, of a solid in the form of a cone, attached by the broad end. ② Shaped like a cone (3-dimensional triangle with a round base) (news). Cf obconical.

conifer pl **conifers** or scientifically **Coniferae** n. (Latin *cōnifer* cone-bearing, from *cōnus*, cone, and *ferre*, to carry, to bear) ① Group of gymnosperms generally distinguished by needle- or scale-like leaves and unisexual flowers borne in cones. Well-known examples of conifers are pines, spruces, and firs. (sk08) ② A plant belonging to the *Coniferae*, a large and important order of gymnospermous exogens, comprising trees (mostly evergreen) bearing cones (oed). ③ A cone-bearing seed plant with vascular tissue; a gymnosperm (news).

coniferous adj. Cone-bearing.

connate adj. (Latin *connātus* born together, twin, past participle of *connāscī* to be born together, from *con-* together, and *nāscī*, to be born) ① Congenitally united; ② fusion of like parts, such as sheath margins to form a tube; ③ fused or united to a similar plant part. ④ Union or attachment of like parts (eg, petals), "fused". ⑤ United (fused) to other parts of the same kind; eg, petals to petals, leaf margin to leaf margin (mfn). ⑥ Of similar organs united or fused together. ⑦ Two similar organs are fused, grown together, or mutually attached, such as flower petals fused to form a corolla tube (news). Cf adnate, coherent, adherent.

connective adj. The part of the stamen which connects the two parts of an anther.

connivent adj. (Latin *connivent-*, *connivens*, present participle of *connivēre*, coming together; Latin *connivere*, to close the eyes) ① Meeting at a common point but not fused; such as connivent stamens; ② approximate but not organically united; ③ convergent but not fused; converging; arching over so as to meet. ④ Coming into close contact but not actually fused (as in some anthers, eg, in *Solanaceae*) (mfn). ⑤ Converging together, usually of organs with their bases separate and their apices approaching each other, not touching or fused. ⑥ Touching, but not actually joined, referring to two similar organs (news). Cf convergent, divergent.

conocarp n. (modern Latin *cōnocarpium*, from Greek κώνος, *konos*, cone, and καρπός, *kapros*, fruit) "A fruit consisting of a collection of carpels arranged upon a conical centre, as the strawberry" (*Treasury Bot* 1866)" (oed)

conspecific adj. ① Said of two or more taxa belonging to the same species; ② belonging to one and the same species

conspicuous Obvious to the eye.

constricted adj. Abruptly narrowed (news).

container n. A flat, pot, tub, etc, usually made of plastic, wood, ceramic, or metal, used to grow or hold one or more plants and which generally prevents the growth of roots beyond its side walls or bottom. See grow bag.

container grown plant n. A plant grown and marketed in a container. See also pot in pot.

contiguous adj. Adjacent and touching but not united.

continuous adj. Of a rachis or other organ that does not disarticulate.

contorted adj. Twisted. ②Petals or sepals that overlap their neighbors on one side, & are overlapped by another neighbor on the other side (news).

contracted adj. ①Narrow or dense inflorescences, the branches being appressed or short; ②abruptly narrowed, reduced, or shortened.

convergent adj. Growing or lying towards one another. Cf connivent, divergent.

convex adj. ①Rounded on the surface; ②curved or rounded, as the exterior of a circular form viewed from without; ③opposite of concave. ④Curving or bulging outward, like an upside-down U (news).

convolute adj. (Latin *cum*, together, and *volvere*, to wind) ①Said of parts rolled or twisted together when in an undeveloped stage, as in some corollas in the bud stage; rolled up longitudinally. The leaves of many *Prunus*, *Rosaceae*. ②The arrangement of petals or sepals such that each petal or sepal has 1 edge exposed while the other is covered; ③in grasses, a leaf that is rolled longitudinally so that 1 edge is inside the other. ④Each petal, sepal or leaf overlaps most of the next, so the whole structure (usually in bud) looks like a closed umbrella (news).

cool season A plant that completes most of its growth during the cooler periods of spring and fall. Contrast to warm season plant.

copious adj. Very much, very many.

coralline adj. White and coral-like.

coralloid adj. Like coral (news).

cordate (Latin *cor*, *cordis*, a heart) ①Heart-shaped; ②the heart-shaped base and pointed apex of a structure eg a leaf blade; ③with a sinus and rounded lobes at the base, the overall outline usually ovate; often restricted to the base rather than to the outline of the entire organ. ④Shaped like a heart, with the notch at the base; "heart-shaped". ⑤Broadly two-lobed; heart-shaped (mfn). ⑥Heart-shaped, basally rounded with a deep notch. ⑦Heart-shaped; with a rounded lobe on each side of a central sinus (news). Diminutive cordulate.

Cordatiales n. An extinct order of Paleozoic gymnosperms considered to be directly related to modern conifers. The *Cordatiales* were trees up to 30 m tall with strap-like leaves. They were abundant during the Cretaceous period (142-65 million years ago) and became extinct in the early Permian (290-248 million years ago. (sk08). **Their original data not proofread.** First known from the Pennsylvanian. Diminished in the Permian. May have persisted into the Triassic.

coriaceous adj. (Latin *coriaceus*, from *corium*, leather) ①Leathery; tough; with a leathery texture. ②Having a tough, thick, and leathery (leather-like) texture. ③With a firm, leathery texture (news). Cf chartaceous.

corm n. (Modern Botanical Latin *cormus*; from Greek κορμός, *kormos*, the trunk of a tree with the boughs lopped off, from κείρειν, *keirein*, (ablaut stems κερ-, κορ-, *ker-*, *kor-*) to cut, poll, lop) ①An enlarged solid subterranean stem, often rounded in shape but of no distinct characteristic shape or size in some species, filled with nutrients, composed of two or more internodes and covered externally by a few thin membranous scales or cataphyllary leaves. ②A short, bulb-like stem, a solid, bulb-like part, usually subterranean, as the "bulb" of a crocus or gladiolus. ③A thickened, underground stem with papery leaves; a storage organ. ④A short thick underground stem lacking the thick fleshy leaves that characterize a bulb (mfn). ⑤Underground vertical stem that is not enclosed by leaves (ie, of some orchids), usually acting as a storage organ (news).

Cormophyta n. (Greek *kormos*, the trunk of a tree with the boughs lopped off, and *phyton*, plant) In older classifications, a division comprising all plants that have a proper stem and root.

cormophyte n. A plant of the division *Cormophyta*.

cormose adj. Bearing corms.

corn n. (Middle English, from Old English; akin to Old High German & Old Norse *korn* grain, Gothic *kaurn*, Latin *granum*, Greek *geras* old age, Sanskrit *jirna* worn out, frail, old; basic meaning: ripening.) ①The seeds of any of the cereal grasses used for food; especially the seeds of the important cereal crop (as wheat, oats, or Indian corn) of a particular region. Particularly to the British it means wheat, while to Scots & Irish it means oats. ②It is also an obsolete term for the stalk of a cereal plant, in reference to *spicata* and *-stachya*.

corniculate adj. ①Furnished with a little horn. ②Bearing small horns.

corolla n. (Latin *corolla*, a little crown or a small garland, diminutive of *cōrona*, crown, garland; used as a botanical term by Linnaeus) ①The inner, usually colored or otherwise differentiated, whorl or whorls of the perianth; ②the petals of a flower as a whole; ③the inner series of perianth parts, often colored; ④the petals taken collectively; ⑤the inner, normally conspicuous part of a flower, the petals. ⑥The whorl of leaves (petals) either separate or grown together, forming the inner envelope of the flower, and generally its most conspicuous part; usually 'colored' (*ie* not green), and of delicate texture. (oed) ⑦The summary of the petals of a flower, *ie* the inner whorl of floral leaves in a perianth (sk08). ⑧The inner series of perianth parts (when there are two series); the petals, collectively (mf). ⑨The collective term describing the petals of a flower. ⑩The second (inner) whorl of floral organs, enclosed by the calyx, often consisting of petals (news).

corona n. (Latin *corōna* crown, chaplet or wreath, fillet or circlet of gold or other material) ①A short-cylindric or crown-like modification of the corolla; also, a small crown in the throat of a corolla, as in narcissus; ②An appendage on the top of a seed, as the pappus on that of a dandelion or thistle; ③a crown-like appendage on the inner side of the corolla in some flowers, as the daffodil and lychnis; ④the circle of florets surrounding the disc in a composite flower; the 'ray', *Obs.* (oed) ⑤A set of lobes or projections that form an often crown-like series above the petals, such as the hoods & horns in the genus *Asclepias* (milkweed) (news).

coronate adj. (Latin *corōnātus*, past participle of *corōnāre* to crown) With a corona or crown.

corpusculum adj. A sticky gland to which a pollinium is attached (in the *Apocynaceae*) (news).

corrugated adj. (Latin *corrūgāt-*, participial stem of *corrūgāre* to wrinkle, from *cor-* (*com-*) intensive and *rūgāre* to wrinkle, from *rūga* wrinkle) ①Wrinkled or folded longitudinally; ②having a wrinkled appearance; ③marked with parallel ridges and furrows, usually wavy or curved.

cortex n. The region of a stem or root surrounding the vascular cylinder but inside the epidermis. Cf medulla.

corymb n. (Greek *korys*, a helmet; or French *corymbe*, from Latin *corymbus*, from Greek κόρυμβος, *korymbos*, head, top, cluster of fruit or flowers, *esp.* of ivy-berries; with Pliny, also the *capitulum* or close head of a composite flower) ①A racemose type of inflorescence in which the lower pedicels are successively elongated forming a more or less flat-topped inflorescence, the outer flowers opening before the inner; ②a flat-topped or dome-shaped flowerhead with the outer flowers opening first; ③an arrangement of the inflorescence in which stalked flowers are situated along a central axis, but with the flowers all nearly or quite attaining the same elevation with respect to each other, the oldest at the edges. ④An inflorescence of the racemose or paniculate type, flowering from the margins inward, but with the lower pedicels or branches longer than the upper so that the inflorescence is relatively short, broad, and flat-topped (mf). ⑤A flat-topped, indeterminate inflorescence where pedicels of florets are progressively shorter towards the center of the inflorescence; may be simple or compound. ⑥An indeterminate inflorescence that has long lower branches & progressively shorter upper branches that create a more or less flat-topped shape (news).

corymbiform adj. Resembling a corymb.

corymbose adj. Corymb-like. A flat or convex-topped inflorescence, resembling a corymb.

corymbulosa adj. Resembling small corymbs.

cosmopolitan adj. ①World-wide in distribution.

costa pl *costae* n. ①Rib, especially the midrib of a leaf or pinna; ②a prominent rib or vein; ③The midrib of a fern pinna; the midrib of a leaflet (news). Hence costate; diminutive costule.

costal adj. ①Pertaining to or near the *costa*; diminutive costular.

costate adj. ①Ribbed; having one or longitudinal nerves.

costule n. ①Midrib of higher order pinnule or lobe; ②The midrib of a fern pinnule (leafulelet) (news). Hence costulate.

cottony adj. ①With the consistency of cotton.

cotyledon n. (New Latin from Linnaeus, from Latin *cotylēdon*, the succulent plant navelwort or pennywort, from Greek κοτυληδών, *kotyledon*, from κοτύλη, (in Latin form *cotyła*) A hollow thing, a small vessel, a small liquid measure of about half a pint; a cup-shaped cavity, the sucker of an octopus, an *acetabulum*.) ①A seed leaf; ②the first leaf (or leaves) to appear during the development of a seedling; ③the first leaf or leaves of a seed plant, found in the embryo of the seed which may form the first photosynthetic leaves or may remain below ground. ④The primary leaf in the embryo of higher plants (Phanerograms) (oed). ⑤The first leaf in Monocotyledons or pair of leaves in Dicotyledons. (sk08). ⑥The first functional leaf of a seedling. Also a genus of plants of the family *Crassulaceæ*, having thick succulent peltate leaf. ⑦Seed lobe or seed leaf in higher plants, referring to the often spoon- or bowl-shape of the seed leaves. ⑧The first leaf produced by the embryo before the true leaves begin to grow after germination (news).

County Extension Agent A government employee who serves as a consultant and advisor on such subjects as agriculture, education and home economics, such as Hank Kimball of Hooterville. Easily found by contacting a college or university.

cove n. (Old English - Middle English *cofa*, *coua*, *cove*, Common Germanic; compare Middle High German *kobe* (modern German *koben*), Middle Low German *cove*, *coven*, mod. *koven*; Old Norse *kofi* cell, hut, shed, Swedish *kofva*, dialect *kove*, *kuvi*, hut, Norwegian *kove* from Old Germanic **kuþon*) ①A sheltered place or recess among hills, woods, etc; a gap or a pass; a strip of prairie extending into the woodland (J.R. Bartlett Dict. Americanisms, 3rd ed.[not in 1st ed.]

cover crop A crop of plants that are planted for temporary purposes such as to provide erosion control and protection to establishing perennials, but the latter is better called a nurse crop. Cover crops may also be used to improve soil condition by plowing under and incorporating into the soil profile.

craspedium n. (Greek κράσπεδον, *kraspedon*, edge, border) A fruit consisting of a single carpel that disarticulates onto one-seeded segments, the seed-bearing segments separating transversely from each other and separating longitudinally from a marginal frame (sk08).

crater n. A bowl. Hence craterous, crateriform.

crateriform adj. Saucer-shaped or cup-shaped (usually shallowly so).

creek n. (Middle English *creke*, *crike*, from Old Norse *-kriki*, bend, concavity; akin to Old Norse *krikr*, bend, bay) A natural stream of water normally smaller than and often tributary to a river.

creeping adj. Growing along the ground, sometimes rooting at intervals (news).

cremocarp n. (irregular, from Greek κρεμα-, *krema-*, to hang, κρεμαστός, *kremastos*, suspended, hanging, and καρπός, *karpos*, fruit) “A species of fructification, occurring in the *Umbelliferae*, in which the simple inferior fruit divides into two indehiscent one-seeded mericarps, which remain for some time suspended by their summits from the central axis” (oed).

crenate adj. (Latin *crēna*, an incision, a notch) ①Having a notched, indented, or scalloped edge, as certain leaves; ②very shallowly toothed with broad, blunt teeth. ③Toothed with shallow, rounded teeth, scalloped; in many scanned old botanies now available online, this may appear as “erenate”. ④With very rounded teeth; scalloped (mfn). ⑤Toothed with rounded, broad teeth, “round-toothed”. ⑥With shallow, rounded teeth; diminutive crenulate. ⑦With rounded teeth (news). Cf dentate, serrate.

crenulate adj. ①Minutely crenate; ②crenate but with smaller teeth. ③Finely crenate (mfn). ④With fine rounded teeth; finely crenate (news).

crest n. ①A ridge or strong keel, typically along one side of an achene or nutlet; ②also, the elevated portion of a petal, as in some *Iris*.

crested adj. With an elevated ridge or line along the summit of an organ

Cretaceous n. (Latin *crētāceus* chalk-like, chalky, from *crēta* chalk) The geologic time period from 65-142 million years ago.

crisp adj. (Old English *crisp*, *cyrps*, from Latin *crispus* curled) ①Crispate, having the margin curled or undulated; ②undulating in a horizontal plane.

crispate, crisped adj. (from Latin *crispātūs*, past participle of *crispāre* to curl) ①Having the margin curled or undulated. ②With the margins finely wavy, curled or crumpled.

cristate adj. ①With an appendage resembling a crest. ②Covered with crest-like ridges; usually refers to the texture of a quillwort (*Isoetes*) megaspore (news).

crop A plant that is cultivated for a particular purpose.

cross-inoculation groups n. Groups of legumes, any one of which will form nodules when inoculated with rhizobia isolated from another legume in the group (rrl). A group of plant species amongst which a strain of rhizobia are freely interchangeable in terms of the ability to produce nodules.

crown n. (Latin *corona*, a crown, wreath) ①The portion of a tree comprising the branches; ②part of a tree, shrub, etc, above the first branching; persistent base of a perennial; ③that portion of a stem at the ground surface; ④in the *Asteraceae* family, scales or awns at the summit of an achene; ⑤that part of a stem at or just below the surface of the ground; ⑥an inner appendage of a petal or the throat of a corolla; ⑦an appendage or extrusion standing between the corolla and stamens, or on the corolla; ⑧an outgrowth of the staminal part or circle as in milkweeds. ⑨The persistent basal portion of a perennial plant (eg, grass), or the leafy portion of a tree; any appendage situated between the corolla and the stamens. ⑩A summit that is surrounded by a lobed or toothed rim (usually refers to a pappus) (news).

crown gall disease n. A disease occurring on many species of plant and caused by the bacteria *Agrobacterium tumefaciens*. In this disease, in which large galls develop, the bacteria transfers part of its genetic information to the host plant. (rrl)

crozier n. The coiled young fronds of ferns

cruciate, cruciform adj. In the shape of a cross; cross-shaped.

crude protein content An estimation of nutritional protein content of the plant calculated by determining its nitrogen content and multiplying that figure by 6.25. Referred to as 'crude protein' because this calculation does not take into account the non-protein nitrogen content of the plant, which is a very minor portion of total protein.

cryptogams n. (scientific Latin, a term used by Linnaeus, from Greek *kryptos*, hidden, and *gamein*, to marry, to copulate) old collective term referring to all plants without recognizable flowers.) ①Cryptogams include algae, fungi (not really plants) mosses, ferns, and fern allies. The Greek meaning 'those who copulate in secret' refers to the absence of flowers as obvious indicators of sexual propagation. (sk08) ②Plants belonging to the former taxonomic division *Cryptogamia*, which formed one of the two major divisions of plants. Cf *Phanerogamia* n.) and comprised the cryptogams (in the broader sense). (oed) ③Plants reproducing by spores and not seeds, eg. ferns, mosses, fungi, etc. Cf phanerogam.

cucullate adj. Hooded or hood-shaped.

culm n. (Latin *culmus*, a stalk, stem) ①The stalk or stem for such plants as grasses and sedges, usually jointed and hollow; ②the stem of grasses, sedges, and rushes; ③the jointed grass stem, composed of nodes, internodes, leaves, and axillary buds. ④The stem of a grass or sedge (mfn). ⑤The flowering stem of grasses, sedges (also sterile culms) and rushes. ⑥Stem of a grass (*Poaceae*) or sedge (*Cyperaceae*) (news).

culm base The base of the stem on a plant.

culm sheath (bamboos) n. Modified, often non-photosynthetic, culm leaf with an expanded sheath and much reduced blade, usually deciduous as the culm matures.

cultigen n. (from cult- as in cultivated, and Greek γεν-, gen-, root of γίγνεσθαι, *gignethai*, to be born, γεννάειν, *gennaein*, to beget) ①A species that is known only in cultivation; ②plant known only in cultivation, apparently originating under domestication. ③A cultivated plant species or variety of which no wild ancestor has been identified (oed).

cultivar n. ①A cultivated variation; ②a distinct true-breeding race or form, established in cultivation a distinct form not considered to warrant full botanical recognition, selected from either cultivated or wild plants and maintained by propagation. ③A named horticultural variety; it may be designated either by placing the cultivar epithet in single quotation marks or by preceding it with the abbreviation cv. (mfn). ④Lines of a particular plant species that have been bred or selected for particular traits (rrl). ⑤A cultivated plant that is clearly distinguishable from other plants of the same species by one or more traits and when reproduced will retain those traits.

-culus -a -um suffix (classical Latin *-culus* (masculine singular) A suffix forming diminutives from nouns ending in *-o*, *-onis* and *-o*, *-inis*, an extended form of *-ulus*; also *-cula*, feminine singular, and *-culum*, neuter singular. In classical Latin, further enlarged to *-unculus -a -um*. (after oed)

cuneate adj. (Latin *cuneatus*, wedge-shaped, from *cuneus*, a wedge) ①Wedge-shaped, narrowly triangular with the acute angle toward the base; ②wedge-shaped, tapering toward the point of attachment; ③wedge-shaped, with straight sides converging at the base. ④Wedge-shaped; ie, with straight but not parallel sides (mfn). ⑤Triangular or "wedge-shaped" with the acute angle at attachment point. ⑥Wedge-shaped; tapering to the base with relatively straight, non-parallel margins (news).

cupule, cupula n. (Latin *cūpula*, little cask, diminutive of *cūpa* cask, tub, (later) cup) ①The cuplike organ surrounding the female flowers and fruits of oaks (*Quercus* spp.), beeches (*Fagus* spp.), chestnuts, (*Castanea* spp.) and other *Fagaceae* (sk08). ②A cup-shaped involucre consisting of bracts cohering by their bases, as in the oak, beech, and hazel. ③Also, a cup-like receptacle found in such fungi as *Peziza*. (oed) ④A cup-like structure the subtends flower or fruit.

cupulate adj. Cup-shaped, "cuplike".

cupuliform adj. Shaped like a cup (news).

curbstone, kerbstone, kirbstone adj. As in curbstone broker, one who conducts business in the street, used in the term curbstone data, ie data gathered in the street, from opinions, observations, experiences, and other non-measurable “scientific methods”.

cuspidate n. (Latin *cuspidem*, *cuspidem*, a point) ①An abrupt point or tooth; rigid, sharp point, especially on a leaf. ② “A pointed end of any organ; *esp.* a sharp rigid point of a leaf” (oed). ③A sharp, rigid point; with the apex abruptly narrowed into a point. Hence cuspidate. Cf apiculate.

curbstone adj. (Latin *cuspidare*, to make pointed; modern Latin *cuspidatus*, from *cuspidem*) ①Bearing a cusp; ②tipped with a short, rigid point; ③abruptly sharp pointed. ④Bearing a short, rigid and sharp point, usually in reference to the apex of a leaf, “awl-tipped”. ⑤“Of leaves: ending in a rigid point or spine” (oed) ⑥With a firm, sharp point (mf).

cuticle n. (Latin *cuticula*, diminutive of *cutis* the skin) ①A continuous layer of fatty substances covering over the outer surfaces of the epidermis of plants; it contains cutin and protects against water and gases; ②an often waxy, outer film of dead epidermal cells; ③waxy layer covering the epidermis (*viz*) of the plant. ④ “Formerly, the primary integumentary tissue or epidermis; now, a superficial film formed of the cutinized outer layers of the superficial walls of the epidermal cells” (oed).

cutin n. (Latin the skin) ①A waxy substance which, together with cellulose, forms the outer layer of the skin of many plants. ②“The cellulose body forming the cuticle of plants. 2) The peridium of certain fungi.” (oed)

cyanic adj. (Greek *κύανος*, *κύανεος*, *kyanos*, *kyaneos*, ‘dark-blue’) “In *Botany*, one of the two series into which Candolle divided the colours of flowers (the other being *xanthic* = yellow). *Chemistry*. Of cyanogen, containing cyanogen in composition.” (oed)

cyanogenic glucoside (glycoside) n. A glycoside capable of generating CN- on metabolism, such as amygdalin.

cyathium pl cyathia n. (Greek *kyathos*, cup) ①A type of inflorescence characteristic of some members of *Euphorbiaceae*; consisting of a cuplike involucre bearing unisexual flowers; staminate on its inner face, pistillate from the base; ②the cup-like involucre characteristic of the genus *Euphorbia*. ③A cup; cup-like. ④A cup-like involucre with the flowers inserted on it, found in members of the *Euphorbiaceae* (news). Hence cyaniform.

cycadeoides n. (modern Latin *Cycadæa*, and) See *Bennettiales*.

cycads n. (supposed Greek *κύκας*, *kykas*, found in old editions of Theophrastus, but now known to be a scribal error for *κόικας*, *koikas*, accusative plural of *κόϊξ*, *koix* the Egyptian doum-palm, alluding to their palm-like look) ①Ancient gymnosperms superficially resembling palms. Cycads are woody plants distinguished by thick, unbranched trunks, large palm-like pinnate leaves and bug cones. Cycads are living fossils that were a food source for dinosaurs. (sk08) ③A plant of the genus *Cycas* which gives its name to the *Cycadaceae*, a family of *Gymnosperms*, related to the *Conifers*, but in appearance resembling palms, and having affinity with tree-ferns (oed).

cycle n. Whorl, usually referring to series of structures such as petals or sepals in a flower (news).

cylindric adj. Shaped like a soda can, with parallel sides & circular ends (news).

cylindrical adj. ①Shaped like a cylinder; shaped like a tube, round in cross section with parallel margins. ②Shaped like a soda can, with parallel sides & circular ends (news).

cyme n. (New Latin *cyma*, from Latin, young sprout of cabbage, from Greek *kyma*, wave, young sprout, fetus, anything swollen, from Greek *kyein* to be pregnant, to swell; akin to *koilos* hollow.) ①An often flat-topped inflorescence, the central floret of which blooms first. ②An inflorescence in which all floral axes terminate in a single flower with the terminal flower, at the apex of the inflorescence, blooming first. ③A type of inflorescence in which the terminal (rather than lower) flower matures first (mf). ④ Flower cluster (inflorescence) with stalks

(pedicels) on the individual flowers, usually broad & rather flat (news). Middle flowers usually come into bloom first, which causes the central axis of the inflorescence to stop growing (it is determinate) (news).

1 : an inflorescence in which the main and secondary axes always terminate in a single flower whether one flower is produced (as in the wood anemone) or the inflorescence is continued by secondary and tertiary axes (as in the buttercup)

2 : any flower cluster of the cyme type containing several or many flowers (as in pink or phlox) with the first-opening central flower terminating the main axis, subsequent flowers developing from lateral buds, and the inflorescence therefore exhibiting determinate growth. A flat-topped or dome-shaped flowerhead with the inner flowers opening first. A cluster of flowers in which each main and secondary stem bears a single flower, the bud on the main stem blooming first; determinate inflorescence in which each growing point ends in a flower.

cymiform adj. Boat-shaped(?) in one source. Cf navicular.

cymose adj. (from cyme and -ose, -ous) ① Bearing a cyme or cymes; ② cyme-like, or being, having the form of, or derived from a cyme as in cymose branching; ③ resembling a cyme.

cymule n. A small, often compacted and usually few-flowered, cyme.

cypsela pl *cypselae* n. (Greek κυπέλη, *kypselé*, box, hollow vessel, chest) ① A single-seeded fruit with longitudinally oriented awns, bristles, feathers or similar structures derived from accessory parts of the flower or inflorescence. *Cypselae* are typically found in the *Asteraceae* and *Dipsacaceae* but also in some *Cyperaceae*, *Proteaceae*, and some other families. (sk08) ② A kind of dry one-seeded fruit; an achene with an adnate calyx, as in the *Compositae* (oed). ③ A special type of achene that has a pappus (a bristly or scaly structure formed out of the calyx) attached to the apex, found in spp of the *Asteraceae* & *Caprifoliaceae* (news).

cystolith n. (Greek κύστις, *kystis*, bladder, and λίθος, *lithos*, stone) ① A mass of calcium carbonate concretion, occasionally silica, formed on ingrowths of modified epidermal cell walls in some plants, esp. of the *Acanthaceae* family. ② Dots of calcium carbonate found on some leaves of the *Urticaceae* (news).

cytotype n

D

date tested The most recent date that a seed lot has been tested for total seed viability (germination + dormant or hard seed).

day neutral plants n. Plants that flower regardless of day length.

de novo adj. (Latin *de novo*, *de*, from, and *novo*, ablative of *novus*, new) Over again from the beginning, afresh, anew. A *de novo* restoration starts from bare soil.

deciduous adj. (Latin *deciduus*, falling down, falling off) ① Pertaining to plants which shed their herbaceous tissues after one year's growth; ② not evergreen; ③ not persisting, falling away in less than one year; ④ falling after completion of the normal function; ⑤ falling off at maturity, often referring to the loss of leaves in response to seasonal variations; caducous. ⑥ Of leaves, falling off naturally at the end of the growing season; (of floral parts) shed readily, often ephemeral (mfn). ⑦ Seasonal shedding of leaves or other structures after the growth period. ⑧ A plant that sheds its foliage each year at the end of the growing season. ⑨ A leaf or other organ that is not persistent, falling off after it has performed its normal function, often seasonally (news). Contrast with evergreen plant which retains its foliage throughout the year.

decimeter n. (from French *décimètre*) (dm) 3.973 inches, 10 cm, or 0.1 m.

declinate, declined adj. (Latin *declinatus*, past participle of *declinare* to turn aside) Bent or curved downward or aside. Curved downwards.

decompound adj. (from *de* and *compound*, after Late and Medieval Latin *dēcompositus*, a Latin rendition of Greek *παρασύνθετος*, *parasynthetos*, further and more deeply compound.) ①Compounded of what is already compound; compounded again. ②Of a leaf or inflorescence; having divisions that are themselves compound; ③having or consisting of divisions that are themselves once or several times compound; ④bipinnate: ⑤a decompound leaf; divided or compound more than once; ⑥several times divided or compound.

decumbent adj. (Latin *decumbere*, to lie down) ①Trailing on the ground and rising at the tip, as some stems; ②reclining, with ascending tips; ③lying along the ground with the tip ascending; ④curved upward from a horizontal or inclined base, eg stems; ⑤trailing along the ground but with the inflorescence or summit of the stem ascending or erect. ⑥Lying on the ground with the end curved upward. ⑦Prostrate basally but ascending toward the tip (mfn). ⑧Lying on the ground, but with the outer portion of the stem upright (news).

decurrent adj. (Latin *decurrentem*, present participle of *dēcurrere* to run down, from *de* down, away and *currere* to run; running or extending down the stem) ①Used especially of a leaf whose base extends downward from its point of insertion and often forms a wing or ridge along the stem; ②usually pertaining to some flat, foliar organ, the tissue of which continues beyond its base down an elongate axis (usually a stem or petiole); ③extending downward, applied usually to leaves in which the blade is apparently prolonged downward as two wings along the petiole or along the stem; ④extending downwards beyond the point of insertion, eg. the base of leaf blade tapering into the stem. ⑤A structure adnate or confluent to the stem near its insertion point, with an adnate wing or margin extending down the stem or axis below the point of insertion. ⑥Extending downward and along, as a leaf base on a stem or a leaf blade on a petiole (mfn). ⑦“*Bot.* Of leaves, etc: Extending down the stem or axis below the point of insertion or attachment” (oed). ⑧With an axis that extends below a node (as with a wing extending from below a leaf along a stem) (news).

decurved adj. Curved downwards

decussate adj. (Latin *decussatus*, past participle of *decussare*) ①Arranged in pairs each at right angles to the next pair above or below. ②With x-shaped leaves arrangement, each pair at right angles to those below and above; ③opposite leaves in four rows up and down the stem; ④alternating in pairs at right angles; ⑤four-ranked, in opposite pairs alternately at right angles. ⑥With two opposite organs at each node, alternating by 90 degrees at each successive node (news). Cf quadrifarious, distichous.

definite adj. ①Of precise and constant number or extent. ②Distinct; precise. Cf indefinite, determinate, indeterminate.

deflexed adj. ①Turned downward abruptly; ②abruptly directed downward; ③reflexed; ④bent downwards towards the base of the stem; ⑤bent downward or backward.

dehiscence n. (Latin *dehiscere*, to gape) Opening and shedding contents; said of stamens and fruits; the opening of a fruit or anther by sutures, valves, slits, pores, etc.

dehiscent adj. ①Said of a fruit or anther that opens by sutures, valves, slits, pores, etc; opening as seed vessels. ②Splitting open naturally at maturity at one or more definite points; cf indehiscent (mfn). ③Discharge of contents by the opening of pores or slits, most often pertaining to the opening of fruit at maturity. ④Separating or splitting open at maturity, as in a capsule that opens to release seeds (news).

dehisce, dehisces v.t. ①To burst or split open, as the seed capsules of plants; ②to split open. Hence dehiscence, dehiscent. Cf indehiscent.

deltate, deltoid adj. Greek *delta*, and *-eidos*, form) ①Shaped like the Greek letter delta, Δ; ②triangular in outline; ③broadly triangular and attached at the base. ④Shaped like an equilateral triangle.

dendriform, dendritic, dendroid adj. ①Tree-like, mainly of branching and form but not in size. ②Branched like a tree (news).

dense adj. Inflorescences having crowded spikelets.

densely tufted A plant's culms growing in very dense bunches.

denitrification Process that converts nitrate (NH₄⁺) into nitrogen gas, mostly N₂.

dentate adj. (Latin *dens*, a tooth) ①Toothed, with large saw-like teeth on the margin pointing outward, not forward; ②toothed, the teeth perpendicular to the margin; ③with sharp teeth perpendicular to the margin. ④With sharp, spreading teeth, "sharp-toothed". ⑤With ± outward-pointing (often coarse and/or obtuse) marginal teeth (mfn). Cf serrate, crenate, edentate. Diminutive denticulate.

denticulate adj. With small, outward-pointing teeth; finely dentate (news).

denticidal capsule n. A capsular fruit dehiscing regularly along sutures but incompletely - not more than one-fifth of the length of the capsule (sk08).

denticle n. (Latin *denticulus*, little tooth) A small tooth or tooth-like projecting point.

denticulate adj. ①Having small teeth; ②finely or minutely dentate. ③With minute, usually ± remote, marginal teeth (mfn).

depauperate adj. ①Poor; with little sustenance or vigor; ②stunted; ③reduced in size, as if starved; ④impoverished, poor in composition (eg. few species, forms etc). ⑤Stunted or otherwise poorly developed (mfn). ⑥With few of a given structure (cf "congested"), or small-statured due to poor growing conditions (news). Cf rich.

depressed adj. Flattened from above

dermal adj. Having to do with the epidermis.

determinate adj. ①Inflorescence whose terminal flowers open first; of definite or limited growth. ②An inflorescence with the terminal or central flower developing first so that the inflorescence does not continue to grow in length. Cf indeterminate.

determinate plant ①A plant whose flowering stem terminates in a flower and blooming in a sequence that begins with the upper most flower. ②Growing to a fixed size, with the apex or apical portion developing first, then successively developing to the base (news). Also see 'indeterminate plant.'

Devonian adj. n. (medieval Latin *Devonia*, Latinized form of *Devon*, Old English *Defena-*, *Defna-scír* Devonshire, in reference to rocks exposed in Devonshire) Geologic time period 417-354 million years ago. Name given to a geological formation or 'system' of rocks lying below the Carboniferous and above the Silurian formations; hence, of or pertaining to this formation and the geological period during which it was deposited (oed).

di- Prefix two. Cf bi-, duo.

diabase n. Fine-grained, compact, crystalline granular rock, consisting essentially of augite and a triclinic feldspar, with chloritic matter in varying amount; a variety of the class of rocks called greenstone and trap, being an altered form of basal (oed)

diadelphous adj. (from *di-*, twice, and Greek *adelphos*, brother, and *-ous*) ①In two sets as applied to stamens when in two, usually unequal, sets; ②combined into two, often unequal sets; primarily spoken of in connection with the *Fabaceae* family, where the flowers typically have a set of stamens consisting of nine and another consisting of only one stamen.

diaphragm n. A dividing membrane or partition, a feature of chambered pith.

diaphragmed pith n. Interior branchlet tissue divided into many horizontal chambers by semi-flexible cross partitions (news).

diaspore n. (Greek διασπορά, *diaspora*, dispersion, dissemination) ①The smallest unit of seed dispersal in plants. Diaspores can be seeds, fruitlets of compound or schizocarpic fruits, entire fruits, or seedlings (in mangroves) (sk08). ②In mineralogy, the name of a hydrate of aluminum.

diazotroph n. ()

dichasial cyme n. An inflorescence comprised of one or more repeating units of trios of flowers: a terminal flower & a two lateral flowers that usually overtops the terminal flower (news).

dichasium pl *dichasia* (New Latin, irregular from Greek δίχασις, *dikhasis*, division, halving, from *dikhazein* to divide in half (from *dikha* in two, and *-sis*) ①A cymose inflorescence that produces two main axes (as in a dichotomous cyme); ②a cyme with two lateral axes. ③A form of cymose inflorescence, apparently but not really dichotomous, in which the main axis produces a pair of lateral axes, each of which similarly produces a pair, and so on; a biparous cyme (oed). ④A cyme bearing 3 flowers: a central, earlier-blooming one, & two later-developing flowers opposite each other (news).

dichlamydeous adj. Perianth comprised of 2 series of parts, as in a cycle of sepals &/or petals (news).

dichotomous (Greek *dichotous*, a cutting in two) ①Having or consisting of a pair or pairs; ②paired; ③forking regularly in two directions; ④forking into two equal branches. ⑤Forked with both branches of approximately equal size. Cf pseudodichotomous, monopodial, sympodial.

dichotomous key n. ①Tool used in the identification of unknown plants by stating the conspicuous features by which the various taxa can be recognized. Two contrasting choices are presented at each step. One choice in the couplet is accepted and the other rejected, weaving a path to the identity of the plant.

diclesium n. (New Latin from Greek *di*, two, double, *klesis*, a higher calling, and *-ium*, or modern Latin, from Greek δι-, di-, twice, and κλήσις, *klesis*, a shutting up, closing) ①A simple anthocarpous fruit consisting of a mature ovary covered partly or entirely by a loose or tightly adhering fruiting-perianth, eg tomatillo, (*Physalis philadelphia*, *Solanaceae*), Cape Gooseberry (*Physalis peruviana*) and bird catcher (*Pisonia brunoniana*, *Nyctaginaceae*) (sk08). ②A dry indehiscent fruit consisting of an achene enclosed within the indurated base of the adherent perianth (oed).

dicot n. ①Dicotyledons, angiosperms with 2 seed leaves. ②A flowering plant with embryos that produce two seed leaves dicotyledon (news). Cf monocotyledon or monocot.

dichotomous adj. (Latin *dichotomos*, *dichotomus*, from Greek διχότομος, *dikhotos*, cut in half, equally divided, from δίχα, *dikha*, in two, asunder, apart, and classical Latin *-ōsus -a, -um*, forming adjectives with the sense of 'abounding in, full of, characterized by, of the nature of (oed)) ①Forking into two ± equal branches (mfn). ②Botany, etc. Dividing into two equal branches; *esp.* so branched that each successive axis divides into two; relating to, or of the nature of, such branching" (oed).

Dicotyledons, *Dicotyledones* n. (modern Bot. Latin *dīcotylēdones* (plural), from Greek δι-, di-, twice, and κοτυληδών, *kotyledon*, cup-shaped hollow or cavity) One of two major groups of the angiosperms distinguished by the presence of two opposite leaves, or cotyledons, in the embryo. Other typical characters of the Dicotyledons are characterized by reticulate leaf venation, floral organs usually in fours or fives, vascular bundles arranged a circle, a persistent primary root system developing from the radicle, and secondary thickening (present in trees and shrubs, usually absent in herbaceous plants). The Dicotyledons were long considered a homogenous entity. Only recently have they been split into two groups (magnoliids) and *Rosidae* (eudicots). (sk08).

dictyostele n. A complex stele with large overlapping leaf-gaps, in section composed of many meristeles (viz.)

didymous adj. (modern Latin *didymus*, from Greek δίδυμος, *didym-os*, twin, and -ous) ①Twinned, the two parts similar and attached by a short portion of their inner surface. ②“Growing in pairs, twined” (oed). ③Occurring or developing in pairs. Cf geminate.

difform adj. Dissimilar. Cf conform.

diffuse adj. ①Open and much branched, widely spread; ②widely or loosely spreading; ③of opening or straggling form; spreading and much-branched.

diffuse (bamboos) Culms arising singly from long slender rhizomes.

digestibility The degree to which a plant material is able to be broken down and utilized by an animal.

digitate adj. (Latin *digitus*, finger) ①Having fingerlike divisions, as some leaves; ②with the parts spreading from the centre like the fingers of a hand; ③parts (three or more) arising from the summit of a structure (eg, branches of the *Chloris* inflorescence); typically referring to a compound leaf in which the leaflets originate from a common point at the apex of a petiole; also spoken of a flower cluster; handlike. ④Like fingers (news). Cf palmate.

dilated adj. Expanded, enlarged, or wider.

dimidiate adj. Of a leaflet or pinnule with the lamina lacking or nearly lacking on the basiscopic side.

dimorphic, dimorphous (Greek *dimorphos*, having two forms) ①Having two forms; ②existing in two easily recognizable forms. ③Of two forms (mfn). Cf monomorphic, polymorphic.

dinitrogen fixation See nitrogen fixation.

dioecious, dioecious adj. (New Latin *Dioecia* and English -ous, from Greek *di*, two, and ancient Greek οἰκία, *oikia*, house) ①Having staminate and pistillate flowers borne on different individuals, bearing male and female flowers on different plants; ②unisexual, the staminate and pistillate flowers being on separate plants; ③pertaining to plants, individuals of which bear either staminate or pistillate flowers but not both; ④said of a kind of plant having unisexual flowers, the male and female flowers on different individual plants. ⑤Having the sexes on separate plants; ie, all flowers on a single plant either staminate or pistillate; cf monoecious (mfn). ⑥Male and female reproductive structures borne on different plants. ⑦A plant species whose male and female organs occur on different plants. ⑧Referring to plants that bear staminate (pollen-bearing) flowers on one individual & carpellate (ovule-bearing) flowers on a separate individual (news). Contrast with monoecious. Also see dioecy.

dioecy n. (modern Latin (Linnæus 1735), from Greek type *διοικία, abstract n. from *δίοικος having two houses, from Greek *di*, double, and ancient Greek οἰκία, *oikia*, house) (1) the formation of male and female sexual organs on separate gametophytes (eg in some mosses and ferns); (2) in seed plants the formation of male and female flowers on separate individuals (sk08).

diplochory n. (from Greek διπλός, διπλοῦς, *diploos*, *diploos*, twofold, double, occasional in ancient Greek, and χῶρειν, *khōrein*, to go, to be spread abroad, to disperse, literally meaning two-phase dispersal) Seed dispersal by a sequence of two or more steps or phases, each involving a different dispersal agent (sk08).

diploid adj. (Greek *diploos*, double, and *eidos*, form) ①Having twice the number of chromosomes normally occurring in a germ cell; ②with a complement of two sets of chromosomes. See n (mfn). ③An organism with a full set of paired chromosomes, one chromosome from each parental set. Cf haploid, polyploid.

dissected adj. Divided into many narrow segments.

disarticulate (disarticulation) vt. ①To separate; separating at the nodes (joints) naturally at maturity; ②to separate at a joint or articulation. ③The separation of structures at maturity.

disciform adj. With the form of a disk; in the *Asteraceae*, with the central flowers of a head perfect (or functionally staminate) and the marginal flowers pistillate but without a ligule.

discoïd adj. (Greek *diskos*, a disk) ①Having the form of a disk; ②discoïd flower; ③a compound flower not radiated but with tubular florets; ④resembling a disk or platter. ⑤Consisting only of disk flowers (*Asteraceae*) (mfn). ⑥Resembling a disk; in the *Asteraceae*, with the flowers of a head all tubular and perfect (or functionally staminate).

discolorous adj. Of different color, eg. when two sides of the leaf are different colours, also variegated. Cf concolorous.

discrete adj. Clearly separate from each other, not united.

disease resistant The ability to resist certain diseases. This characteristic is frequently sought after in plant breeding.

disk or disc n. ①The central portion of a capitate inflorescence, or the receptacle of such an inflorescence; also, a structure formed by the coalescence of stigmas as in the *Papaveraceae* family; ②also, the development of the receptacle at or around the base of a petals, as in *Acer* and *Euonymus*. ③In the *Asteraceae*, the portion of the head consisting of radially symmetrical flowers (disk flowers); a ring of tissue around the base of the ovary (an enlargement on the receptacle) or at the margin of a floral tube (mfn).

disk flowers or disc flowers (disk corolla) n. ①In the *Asteraceae* family, the central, tubular flowers of the head; the radially symmetrical flowers of the head in *Compositae*, as distinguished from the ligulate ray flowers. ②Tubular corolla or flower of some members of the *Asteraceae*. ④The tiny flowers located in the center of a composite flower head (*Asteraceae*) (news). Compare ray flower.

dispersal n. The mechanism by which a seed is transported from one place to another; dispersal agents in plants include wind, water, animals, insects, & gravity (news).

dissected adj. ①Cut or divided into narrow segments; deeply divided or cut into many segments. ②So finely divided (as in some leaf blades) that the blade tissue is nearly restricted to bordering the main veins (definite leaflets not evident) (mfn). ③Divided into many small, fine and often repeated parts or segments. Cf -sect.

distal (Latin *distare*, to stand apart) ①Farthest away from the point of attachment or origin; ②the direction or point away from the point of attachment; ③situated away from the point of attachment; towards the free or developing end of an organ. ④At or toward the apex; ie, toward the opposite end from that at which a structure is attached (mfn). ⑤Denoting the region furthest away from the organ's point of attachment. ⑥Positioned at the end away from the point of attachment (cf with proximal) (news). Cf proximal.

distichous adj. (Greek *distichos*, having two rows) ①Obviously 2-ranked and appearing as the rungs of a ladder; ②arranged in two vertical series; ③arranged in two opposite rows; two-ranked; in the case of plants with alternate leaves, the arrangement is such that 1st is directly below the 3rd. ④With parts on opposite sides of the stem in the same plane, "2-ranked". ⑤With leaves or stems growing on opposite sides of the stem in a two-dimensional plane (news). Cf biseriate, decussate, polystichous.

distigmatic adj. Bearing two stigmas.

distinct adj. ①Separate, and usually evident. ②Not connate; in general use, easy to see (mfn). ③Not fused with another similar structure (news).

dithecal adj. ① With two locules (refers to an anther) (news).

divaricate adj. (Latin *divaricare*, to spread apart) ①To branch or spread widely apart; ②widely spreading or divergent; ③spreading at a very wide angle, extremely divergent. ④Strongly divergent; spreading or forking at about a 90° angle or more (mfn). ⑤ Horizontally spreading (news).

divergent adj. (Latin *divergere*, to bend away) ①Separated from one another, having tips further apart than the bases; ②extending away from each other by degrees; directed away from each other; ③spreading away from one another, usually at a wide angle. ④Spreading away from the surface or axis to which attached (mfn). ⑤Gradually spreading apart (news). Cf convergent, connivent.

diversity of the host See host diversity (rrl).

diverticulate adj. (Latin *divertere*, to turn aside) Having short offshoots approximately at right angles to axis.

divided adj. (Latin *dividere*, to divide) Referring to the blade of an appendage when it is cut into distinct divisions to, or almost to, the midvein.

dommatia n. Pits or pockets, sometimes with tufts of hair in the axils of nerves on the lower surfaces of leaves.

domestication n. The collection from the wild state and the use in agriculture of plants having desirable traits (rrl).

dormancy adj. (Old French *dormant*, present participle of *dormir*, from Latin *dormire* to sleep) ①Generally referring to a quiescent period in the life of a plant. When referring to seeds, dormancy summarizes the various mechanisms that ensure the seeds do not germinate, even under the most favorable conditions. (sk08). ②When a seed does not germinate immediately upon leaving the parent plant, it is said to be in a state of dormancy. Dormancy is not confined to seeds, however, but is also characteristic of many offshoots such as rhizomes, bulbs, tubers, etc. (J.E. Weaver & F.E. Clements Plant Ecol. vi. 113)

dormant seed The percent of the number of seeds, other than hard seed, that fail to germinate, but are determined to be viable by subjecting them to other seed testing techniques. Dormant seed is generally considered to be seed that will germinate at a later date than seed reported in the % germination calculation.

dorsal adj. (Latin *dorsum*, the back) ①Pertaining to the back; ②the surface turned away from the axis; ③relating to or located on the back of an organ, away from the axis; abaxial surface; ④relating to the back or outer surface of an organ. ⑤Pertaining to or attached to the back of body or organ. ⑥Pertaining to the surface (eg, of a leaf, sepal, *perigynium*, seed, or nutlet) away from the axis to which a structure is attached; abaxial (mfn). ⑦Pertaining to or located on the back or outer surface of a structure, like a shark's dorsal fin (news). Cf ventral.

dorsifixed adj. Attached at or by the back

dorsiventral adj. With a distinct upper and lower surface, eg. dorsiventrally flattened. Cf bilateral, radial.

duo- Prefix two' or 'paired'. Cf bi-, di-.

double adj. (Middle English, from Old French *duble*, *doble*, later *double* = Provençal *doble*, Spanish *doble*, Italian *doppio*, from Latin *duplus* twice as much, double, from *duo* two, and *-plus* from root *ple-* to fill) ①Of flowers, with more than the usual number of petals, often with the style and stamens changed. ②“Of flowers: having the number of petals increased to twice the number or more by conversion of stamens and carpels into petals” (oed). ③Of a flower, with extra cycles of perianth parts (morphologically derived usually from stamens and carpels converted to petals); of serrations, with primary teeth again toothed, doubly serrate. Cf single. (mfn)

double-toothed adj. A margin with larger teeth with smaller teeth on them (news).

down n. (Middle English *down*, *downe*, down; probably of Scandinavian or German origin) ①Fine, soft feathers; ②soft, fine hair.

downy adj. Covered with short, fine hairs.

drill seeding A method of seeding that uses a seed drill to place seeds at a specific depth and spacing. Contrast with broadcast seeding which involves scattering the seed on the surface of the soil.

drought hardy A general and relative term used to describe a plant's ability to withstand prolonged periods without water. Synonymous to drought tolerant.

drought tolerant A general and relative term used to describe a plant's ability to withstand prolonged periods without water. Synonymous to drought hardy.

drupa n. (Latin *drupa*, an overripe olive, from Greek *dryppa*, olive) A drupe.

drupe n. (modern Botanical Latin *drūpa*, a stone-fruit, from Latin *drūpa*, *druppa* (sc. *olīva*) over-ripe, wrinkled olive, same as Greek *δρύππᾱ*, *dryppa* (*druppa*), in same sense; compare French *drupe* (oed)) ① A fleshy or pulpy fruit with the inner portion of the pericarp hard or stony and enclosing the seed; usually 1-locular and 1-seeded, sometimes more than 1-locular and more than 1-seeded; ② a typically one-locular, fleshy or pulpy fruit with a hard or stony center. ③ "A stone-fruit; a fleshy or pulpy fruit enclosing a stone or nut having a kernel, as the olive, plum, and cherry" (oed). ④ An indehiscent simple fruit with a fleshy mesocarp and a hardened endocarp that produces one or more stones (sk08). ⑤ A fleshy, 1-seeded or 1-stoned fruit of some plants of the rose family (eg, cherries, peaches). ⑥ A fleshy indehiscent fruit with the seed (or seeds) enclosed in a hard tissue (endocarp) forming one (usually) or more central pits (or "stones") (mfn). ⑦ A fleshy fruit with a firm inner ovary wall (endocarp) that encloses a single seed (ie a cherry); sometimes the endocarp encloses two or more, closely positioned seeds (called pyrenes) (news).

drupelet, drupel, drupeole n. (modern Latin *drupella*, diminutive of *drūpa*, a stone-fruit; Latin type **drūpeola*, irregularly formed diminutive of *drūpa*) A small or little drupe, such as those of which a blackberry is composed.

drupetum n. A multiple fruit of indehiscent carpels with the pericarp of each drupe-like fruitlet (drupelet) differentiated into a thin skin-like epicarp, a fleshy mesocarp, and a hardened endocarp (sk08).

duripan n. A subsurface mineral soil horizon cemented by illuvial silica; a type of hardpan.

dry adj. Without flesh or juice, usually referring to fruit (news).

dryad, dryade pl, dryad, dryades n. (Latin *Dryas*, plural *Dryades*, equivalent Greek *Δρυάς*, *Dryas*, plural *Δρυάδες*, *Dryades*, wood-nymphs, from *δρῦς*, *δρῦός*, *drys*, *dryos*, tree) ① In Greek and Roman mythology, a nymph supposed to inhabit trees; ② a wood-nymph.

Dryas n. (Latin *Dryas*, plural *Dryades*, adapted from Greek *Δρυάς*, *Dryas*, plural *Δρυάδες*, *Dryades*, wood-nymphs, from *δρῦς*, *δρῦός*, *drys*, *dryos*, tree; first used as a genus name by Linnæus, *Genera Plantarum* (1737) 148.) ① Botany. An evergreen sub-shrub of the genus so called, belonging to the family *Rosaceæ* and found in cold or alpine regions of the Northern Hemisphere. (oed). ② Geology. With capital initial. [after Swedish *Dryaszonen* (A. G. Nathorst *Sveriges Geologi* (1894) 292, 301).] Used *attrib.* to designate each of three cold (subarctic) climatic phases of the Late Pleistocene epoch in northern Europe, during the climatic oscillation which followed the last period of major glaciation, or the deposits from these phases, which characteristically contain the remains of dryas and other tundra vegetation. Now freq. *absol.*, and usually with qualifying word. Subfossils of the alpine/tundra *D. octopetala* in European peat beds have given names to the Older and Younger Dryas climatic periods.

Older Dryas n. a cold stadial preceding the Allerød interstadial in some parts of northern Europe (approximately 14,000 years ago). **Oldest Dryas** n. a cold stadial immediately following the last phase of glaciation in northern Europe (approximately 18,000 to 15,000 years ago). **Younger Dryas** n. a cold stadial following the Allerød interstadial and preceding the beginning of the Holocene epoch (approximately 12,700 to 11,500 years ago). (oed)

duff A product of litter decomposition; incompletely decomposed organic matter.

dwarf strain A variety of a plant that has been altered to make it shorter than the original plant.

dysploid n. or adj. A plant or species in which the chromosome number is more or less than the expected normal euploid number.

dystrophic adj. Of a water body turning brown with suspended organic material and having a high carbon to nitrogen ratio of 10:1 or greater.

E

e- or ex Prefix meaning lacking, without; not; eg. ebracteate.

e. g. Latin phrase *exempli gratia*, or for example. The noun *exemplum* in the possessive genitive singular with *gratia* in the prepositional ablative singular. "E.g." is used in expressions similar to including, when you are not intending to list everything that is being discussed. Our website uses eg. Cf i. e.

ebracteate adj. Without bracts.

eccentric adj. Off center, or one-sided.

echinate adj. (Latin *echinus*, a hedgehog) ①Set with prickles; ②prickly, like a hedgehog; ③having sharp points; ④bearing stout, often bluntish, spines or prickles; ⑤bearing prickles or spines; diminutive echinulate. ⑥Covered with spines like a sea-urchin; usually refers to the texture of a quillwort (*Isoetes*) megaspore (news).

eciliate adj. Without cilia.

ecological niche The functional role an organism or population within a community or ecosystem including the resources it uses, how and when it uses the resources and how it interacts with other species and populations.

ecology n. (ancient Greek οἰκία, *oikia*, house, and Greek *-logia*, from *legein*, to speak) The branch of science concerned with the interrelationships of organisms and their environments especially as manifested by natural cycles and rhythms, community development and structure, interaction between different kinds of organisms, geographic distributions, and population alteration.

ecoregion A geographic area of relative homogeneity characterized by distinct ecological factors such as climate, topography, soils, plants and animals.

ecostate adj. Lacking a costa or midrib.

ecosystem n. ①A community of organisms and the environment in which they live (rrl). ②A functional unit consisting of the living organisms (plants, animals, and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. An ecosystem can be of any size—a log, pond, field, forest, or the earth's biosphere—but it always functions as a whole unit.

ecosystem reconstruction The process of recreating the natural ecosystem in an area that has been disturbed.

ecotype A population within a species which is genetically adapted to a habitat that is different from other habitats in which other populations of the same species is found.

ecto- Prefix meaning 'outside'. Cf endo-.

ectophloic siphonostele n. A cylindrical stele with a parenchymatous central strand and phloem around the outside only (= medullated protostele). Cf amphiphloic siphonostele, solenostele.

edaphic adj. (from German *edaphisch*, from Greek ἔδαφος, *edaphos*, floor, and *-ic*.) ①Relating to, or determined by, or influenced by conditions of the soil; ②pertaining to the soil.

edentate adj. Lacking teeth. Cf dentate.

effective nodulation When a rhizobium successfully nodulates with a legume.

effective rhizobia When a rhizobium successfully nodulates and effects N₂- fixation with a legume.

effectiveness n. The ability of nodules once formed to actively fix nitrogen (rr1).

effuse adj. Spreading loosely.

eglandular adj. Without glands. Cf glandular

elaiosome n. (from Greek ἔλαιον, *elaion*, oil, and σῶμα, *soma*, body) ①Literally oil body, a general ecological term referring to fleshy and edible appendages of diaspores, usually in the context of ant dispersal (sk08). ②An oily or fatty appendage on seeds, offering food to dispersers (news).

elater n. ①A spirally thickened cell associated with spores and aiding in dispersal; ②spore appendages in *Equisetum*.

eligible crop The term used in seed certification referring to crops that have been approved by state, federal or international review boards to enter into the seed certification program

eligulate adj. Lacking a ligule (viz.)

elevated adj. ①Raised, often forming a ridge.

ellipsoid adj. ①Of a solid body with an elliptic section or outline. ②Elliptical, but applied to a 3-dimensional object rather than to a plane surface (mfn). ③The 3-dimensional equivalent of elliptic: more or less shaped like a stretched sphere (an ellipse), widest in the middle & tapering to each end (news).

elliptic (Greek *elleipsis*, a falling short, defect, ellipse) ①An outline that is oval, narrowed to rounded at the ends and widest at about the middle (as the outline of a football); ②ellipsoid, a solid with an elliptical outline; ③a circular shape which has been laterally compressed, widest about the middle; ④widest in the middle, narrowing equally at both ends; ④arching margins of leaf which is pointed at both ends, about two times longer than wide. ⑤Longer than wide, broadest at the middle, and tapering ± equally toward both ends (mfn). ⑥Of a plane with the shape of an ellipse, longer than wide and rounded at both ends, the widest part near the middle. ⑦Shaped like an ellipse, the broadest point midway between the ends, and the width about one half the length. ⑧More or less shaped like a stretched circle (an ellipse), widest in the middle & tapering to each end (news).

elongate adj. ①Narrow, the length several times the width or thickness; ②drawn out into a form much longer than wide; drawn out in length. ③Stretched out lengthwise (news).

emarginate adj. (Latin *emarginare*, to deprive of the edge) ①Said of leaves, sepals, or petals, and other structures that are notched at the apex; ②slightly notched apex; ④with a shallow notch at the tip. ⑤With a shallow notch at the apex (mfn). ⑥Having a shallow notch at the apex, usually with reference to a leaf or petal. ⑦Notched at the extremity; diminutive emarginulate. ⑧With a small notch at the tip (news).

embossed adj. With a small central nodule.

embryo n. (modern Latin, embryo, unborn fetus, germ, from medieval Latin corruption of Greek ἔμβρυον, *embryon*, in Homer, a young animal, later the fruit of the womb before birth, from ἐν, *en*, in, βρύειν, *bryein*, to swell or grow, to be full to bursting) ①The product of the egg and endosperm nuclei that forms the sporophyte in a developing seed. In plants the young sporophytes developing from the egg cell after fertilization (sk08). ②The rudimentary plant contained in the seed (oed). ③The developing zygote in the fertilized seed or archegonium. embryo④The immature plant inside the seed (news).

embedded adj. ① Appearing or growing as part of another structure.

emerge vt. (Latin *emergere*, to rise up, rise out) ① To rise out of a fluid or other covering.

emergent (Middle English(?) from Latin *ēmergentia*, *emergens*, pres. part. of *ēmergĕre*, to emerge - from *ē* out, and *mergĕre* to dip) ① Any of various plants (as a cattail) rooted in shallow water and having most of the vegetative growth above the water.

emergent adj. ① Pertaining to aquatic plants, which have some portion of the plant extended out of the water.

emersed adj. ① Above water; standing out of or rising above a surface as an aquatic plant with flower stalk
emersed. ② Normally extending above the water; cf submersed (mfn).

emersed plants n. ① Plants growing with their roots and a portion of the shoot below the water and the remainder of the shoot above the surface of the water.

emetic adj. (Greek ἐμετικός, *emetikos*, provoking vomiting, from ἐμεῖν, *emein*, to vomit) ① A medicine that excites vomiting.

emollient n.

enation n. (Latin *ēnātiōnem* outgrowth, from *ēnātus*, past participle of *ēnāsci*, to spring up, from *ē*- out, and *nāsci* to be born) ① An abnormal growth of an organ or of an excrescence upon any part of a plant. "Outgrowths, mostly from the anterior or sometimes posterior face of organs: Enation" (A. Gray in oed) ② An epidermal outgrowth. Hence enate.

endangered n. A sp in danger of extinction throughout all or a large portion of its range (news).

endemic adj. (Greek *endemos*, native, belonging to a people, from ἐν, *in*, and δῆμος, *demos*, people) ① Said of a plant that is native to a particular country or region; ② confined to a given region; not introduced or naturalized; confined to a small geographic area. ③ "A plant native to a certain limited area" (oed). ④ A taxon recorded from, & restricted to, only a small geographic area (news).

endo- prefix (combining form of Greek ἔνδον, *endon*, within, inside) Prefix meaning inside. Cf ecto-.

endocarp n. (Greek ἔνδον, *endon*, within, inside, and καρπός, *karpos*, fruit) ① "The inner layer of a pericarp, which lines the cavity containing the seeds. It is fleshy, as in the orange; membranous, as in the apple; or hard, as in the peach" (oed). ② The inner layer of the wall of a matured ovary; when its texture differs from the outer wall, it may be hard and stony, membranous, or fleshy. ③ The innermost layer of the fruit wall (pericarp) forming the hard stone in drupes (sk08). ④ Inner portion of a pericarp (news).

endophyte-free Referring to the absence of a group of fungi found in certain grasses and are toxic to grazing animals. Endophytes are especially troublesome in tall fescue. Be sure to plant endophyte free tall fescue if your objective grazing.

endosperm n. (Greek ἔνδον, *endon*, within, inside, and σπέρμα, *sperma*, seed) ① the nutritive tissue in seeds; in a seed, the reserve food stored around, or next to, the embryo, develops from a fusion of polar nuclei and sperm nucleus. Generally, the term endosperm refers only to the nutritive tissue in the seeds of the angiosperms where it represents a (usually) triploid tissue as the result of double fertilization. The food storage of gymnosperm seeds consists of haploid tissue of the megagametophyte. To distinguish the two different types, the nutritive tissues of gymnosperms and angiosperms are called "primary endosperm" and "secondary endosperm" respectively. (sk08). ② "The nutritive element, also called albumen, enclosed with the embryo in many seeds." (oed)

endozoochory adj. (Greek ἔνδον, *endon*, within, inside, ζωο-, *zoio-*, combining form of ζῷον, *zoion*, animal and, χωρεῖν, *khōrein*, to go, to be spread abroad, to disperse) ① Dispersal through transport in an animals gut. See also endozoochory. (sk08).

endozoochory n. (Greek *ἔνδον*, *endon*, within, inside, *ζωο-*, *zoio-*, combining form of *ζῶον*, *zoion*, animal and *χωρεῖν*, *khōrein*, to go, to be spread abroad, to disperse) ① Dispersal of the diaspores of a plant by being eaten and carried inside the gut of animals (and humans) the usually hard seeds or endocarps pass the intestines undamaged and are deposited with the faeces (sk08). ② “Disseminules eaten and egested by animals” (McGraw-Hill Encycl. Sci. & Technol. X. 499/2)

ensiform adj. (F. *ensiforme*, from Latin *ensis* sword, and *forme*, form) ① Having sharp edges and tapering to a slender point; sword-shaped; ② having a shape suggesting a sword. ③ With long, parallel sides & a sharp tip, like a sword (news).

entire adj. (Latin *integer*, whole, untouched, undiminished) ① Having a margin devoid of any indentations, teeth, or lobes; ② with a smooth, even margin, lacking teeth or other indentations; ③ a continuous margin without teeth, divisions, or lobes; ④ undivided and without teeth; ⑤ pertaining to margins without crenation, serration, or dentition; ⑥ even though the margin may be variously ciliate or pubescent. ⑦ Without teeth; with a continuous margin (mfñ). With a margin lacking teeth or lobes, usually referring to a leaf (news).

entomophilous adj. (from the combining form of Greek *ἔντομος*, *entomos*, adj., ‘cut up’, used in sense of ‘insects’, in reference to the division of their bodies into segments, (or Greek *entomon*, insect) and *philein*, to love) ① Pollination by insects. “Bot. applied to plants in which fertilization is effected through the agency of insects” (oed).

eolian n. In reference to entrainment, transport, and deposition of sedimentary particles by the wind.

epappose adj. (from e- and *papposus*, from *pappus*, the white down on certain seeds, from Greek *πάππος*, *pappos*, white down on certain seeds, grandfather, parallel to *πάππας*, *pappas*) ① Not pappose, not having a pappus; ② not of the nature of a pappus, not downy.

epedaphic adj. Of, like, or pertaining to atmospheric conditions.

ephemeral adj. (Greek *ephemeros*, lasting for a day) ① Referring to an organ living a very short time, usually a day or less; ② lasting a very short time; lasting for one day or less. ③ Lasting for a short time (of flower parts, less than a day) (mfñ). ④ A plant, or of a plant with a very short life-cycle. ⑤ Happening or growing only during a short span of time (news). Cf perennial, annual.

epicalyx n. A set of closely-spaced bracts outside the actual calyx (news).

epispore n. Perispore

epi- prefix (from Greek *ἐπί*, *epi*, upon) Prefix meaning on or above. Cf hypo-.

epiblast n. (from Greek *ἐπί*, *epi*, upon, and ancient Greek *βλαστός*, *blastos*, sprout, shoot, germ) ① A small, nonvasculated flap or flange of tissue on the side of the grass embryo axis opposite the scutellum. “1866 J. Lindley & T. Moore Treasury Bot., Epiblast, a small transverse plate (a second cotyledon), found on the embryo of some grasses” (oed).

epicarp n. (from Greek *ἐπί*, *epi*, upon, and *καρπός*, *karpos*, fruit) ① The outermost layer of the fruit wall (pericarp), mostly a soft skin or leathery peel (sk08). ② “In fruits: The outermost layer of the pericarp; the peel, rind, or skin.” (oed) cf endocarp.

epicotyl n. (from Greek *ἐπί*, *epi*, upon, and, Greek *κοτύλη*, *kotyle*, (in Latin form *cotyla*) ① A hollow thing, a small vessel, a small liquid measure of about half a pint) “1880 C. Darwin & F. Darwin Movements & Habits Plants 5. The stem immediately above the cotyledons will be called the epicotyl or plumule” (oed).

epicormic (from Greek ἐπί, *epi*, upon, at, and corm) ①Of a shoot or branch: ②growing from a dormant bud which has been suddenly exposed to the light and air; ③as a resprout from a small burl formed at nodes where layering stems establish roots.

epidermis n. (from Greek ἐπί, *epi*, upon, and) ①The superficial layer of cells; ②outermost layer of cells covering the plant, beneath the cuticle. ③The surface cell layer of a leaf, stem, or root (news). Hence epidermal.

epigeal, epigeous adj. (Greek ἐπίγειος, *epigeios*, from ἐπί, *epi*, upon, near to, and γῆ, *ge*, earth) ①Pertaining to cotyledons that are borne above the ground after germination. ②Of cotyledons: borne above ground after germination” (oed). ③Growing above ground. ④On or near the surface of the ground (usually refers to where seeds germinate) (news).

epigeal germination Germination where the cotyledons are brought above the surface of the soil.

epigynous n. (from Greek ἐπί, *epi*, upon, γυν-ή, *gyn-e*, woman, in *Botany*, used for ‘female organ, pistil’) ①Growing upon the top of the ovary or seeming to do so, as petals, sepals, and stamens; flower with the calyx situated on the ovary. ②“That is placed upon the ovary; growing upon the summit of the ovary. Said of the stamens or corolla; hence of plants in which these are so placed. (oed) ③With an inferior ovary (with or without a hypanthium) (news).

epigynous flower n. (from Greek ἐπί, *epi*, upon, γυνή, *gynē*, woman, in *Botany*, used for ‘female organ, pistil’) A flower in which sepals, petals, and stamens are inserted above the ovary. As a result, the ovary is inferior and no longer visible (sk08).

epigyny n. (from Greek ἐπί, *epi*, upon, and) The condition of being epigynous.

epipetalous (from Greek ἐπί, *epi*, upon, and *petalon*, leaf) ①Having stamens inserted on petals. ②Attached to the petals (news).

epiphyllous adj. Borne on the leaves or leaf-like organs.

epiphyte n. ①An organically independent plant growing on another, not connected to the ground, not parasitic. ②A plant that grows on another plant but does not receive nourishment from it. ③A plant that grows on the aerial shoot of another plant (news).

epispermium n. (from Greek ἐπί, *epi*, upon, and σπερματο-, *spermato-*, combining form of the stem of σπέρμα, *sperma*) A gymnospermous seed of the *Podocarpaceae* subtended or enclosed by a swollen appendage.

epiterranean vegetation Above-ground vegetation.

epizoochorous adj. (from Greek ἐπί, *epi*, upon, ζωο-, *zōio-*, combining form of ζῷον, *zōion*, animal, and χωρεῖν, *khōrein*, to go, to be spread abroad, to disperse) Dispersal by adhesion to the outside of an animal. See also epizoochory. (sk08)

epizoochory n. (from Greek ἐπί, *epi*, upon, ζωο-, *zōio-*, combining form of ζῷον, *zōion*, animal, and χωρεῖν, *khōrein*, to go, to be spread abroad, to disperse) Dispersal of diaspores on the surface of a body of an animal. Endozoochorous diaspores adhere to the coat or feathers of a body of an animal or the clothes of a human by hooks or sticky substances. (sk08)

equal adj. Same length or width.

equator n. On a sphere (such as a pollen grain or megaspore), the section around the widest part or circumference (news).

equitant adj. (Latin *equitant-*, *equitans*, present participle of *equitare* to ride on horseback, from *equit-*, *eques* horseman) ①Of leaves, overlapping each other transversely at the base (as in an iris or sweetflag); conduplicate

(viz.) and overlapping in two or more ranks. ②Pertaining to the two-ranked arrangement of usually conduplicate leaves, overlapping in two ranks; ③overlapping; said of leaves whose bases overlap the leaves within or above them, as in the *Iris*. ④Folded lengthwise and straddling the structure beneath, as in the leaves of *Iris* (mfn). ⑤With alternate leaves whose basal portions overlap and are flattened lengthwise (eg, *Iris*). ⑥With the edge of the leaves set toward the stem (as in *Iris*) (news).

erect adj. ①Upright; ②upright in relation to the ground; perpendicular to the ground. ③Upright; diverging from an axis at an angle of up to 15°, as in leaves or branches that point straight upward (news).

erecto-patent adj. Between spreading and erect.

erose adj. (Latin *ērōsus*, past participle of *ērōdēre*, to wear away, from *ē* out, and *rōdēre*, to gnaw.) ①Having small irregular notches in the margin, as if gnawed; ②with an irregular, jagged margin, as if torn or bitten; ③irregularly toothed on the margins or at the apex; ④appearing to be chewed off; ⑤pertaining to margins which appear unevenly cut or incised, as if eroded or eaten; ⑥having the margin irregularly incised or indented, as if bitten by an animal. ⑦Irregular (of a margin), as if chewed or gnawed (mfn). ⑧An irregular margin, appearing eroded or gnawed, not fringed or toothed. ⑨With a ragged edge (news).

Having a shallow notch at the apex, usually with reference to a leaf or petal.

erubescens adj. Inclined to be reddish.

-escent suffix () Suffix meaning inclined to be or becoming, eg. accrescent, coalescent.

esetose adj. Lacking setae.

esker n. (from Irish *eiscir*, Scandinavian *ösar*, the same as Scottish *kame*) ①“‘The name given in Ireland to the elongated and often flat-topped mounds of post-glacial gravel which occur abundantly in the greater river-valleys of that country’ (Page); (not now restricted to Ireland or to Irish usage).” (oed) ②An esker is a narrow ridge of gravel left by a stream that ran through a glacier, often meandering. An ice contact stratified drift deposit created by a sub- or englacial stream, sometimes with meanders or tributaries, generally indicative of ice stagnation and associated with kames (moulin kames)

essential flower parts The stamen and pistil organs of the flower that are required for pollination.

established The state of a plant when it is adjusted to the site and is thriving.

estuarine adj. Pertaining to estuaries or river mouths, usually brackish conditions. Cf brackish.

estuary pl **estuaries** (Latin *aestuarium*, part of the seacoast over which the tide ebbs and flows, from *aestus*, the tide; or Latin *aestuārium*, *aestuāri(i)* prop. adj. ‘tidal’, hence a tidal marsh or opening, from *aestus*, *aestus*, heat, boiling, bubbling, passion, tide, sea spray) ①An inlet or arm of the sea; ②especially the wide mouth of a river, where the tide meets the current. ③“*Gen.* A tidal opening, an inlet or creek through which the tide enters; an arm of the sea indenting the land. *rare* in mod. use. *Spec.* The tidal mouth of a great river, where the tide meets the current of fresh water.” (oed)

etaerio, *aetaerio*, or rarely *hetaerio* n. (French *etairion*, *etairium* (C.F.B. de Mirbel 1813, in *Nouveau Bulletin des Sciences, par la Société Philomatique* III. 317), from Greek *ἐταιρεία*, *etaireia*, association) ①An aggregate fruit, like that of the buttercup, strawberry, or raspberry (oed); ②a cluster of drupels.

-etum suffix (from Latin *-ētum*, neuter of *-ētus*, *-tus*) ①An ending that in carpological terms indicates a multiple fruit (sk08). ②“Appended to names of trees or other plants, (a) to designate a collection or plantation of various species of a single genus or group of plants, as in Latin *arboretum* and *pinetum*; (b) in Ecology, to designate an association dominated by the species or genus named, as in *characetum*, *ericetum*, *salicornietum*.” (oed)

etymon n. (“Latin *etymon*, from Greek ἔτυμον, *etymon*, (originally neuter of ἔτυμος true) ① (1) the ‘true’ literal sense of a word according to its origin; (2) its ‘true’ or original form; (3) hence, in post-classical grammatical writings, the root or primary word from which a derivative is formed.”) ② “The primitive form of a word; the word or combination of words from which it has been corrupted. Sometimes nearly meaning etymology” (oed)

eu- prefix (Greek εὐ-, combining form of εὖς, *eus*, good) A prefix meaning good, occasionally adverbally as meaning well, in English used almost exclusively in words of Greek derivation or with Greek root words.

Eudicots n. () The “good” dicots.

euploid n. (from German *euploid*, from Greek εὐ-, *eu-*, combining form of εὖς, *eus*, good, and -ploid) ① An organism or cell having a chromosome number that is an exact multiple of the monoploid or haploid (1n) number; terms used for a euploid series are haploid (1x), diploid (2x), triploid (3x), tetraploid (4x), etc. ② “Of a cell, an organism, or tissue: having each of the different chromosomes of the set in equal numbers; having an exact multiple of the haploid chromosome number” (oed).

eusporangiate adj. ① Of primitive ferns with sporangial walls more than one cell thick originating from several cells. ② With a sporangium two or more cell layers thick, lacking an annulus & stalk (cf leptosporangiate) (news). Cf leptosporangiate.

eutrophic adj. (Greek εὐτροφία, *eutrophia*, from εὖ, *eu*, well, and τρέφειν, *trephein*, to nourish) The gradual increase in nutrients in a body of water. Natural eutrophication is a gradual process, but human activities may greatly accelerate the process.

eutrophication n. The process of becoming eutrophic.

evanescent adj. Fading, disappearing in time.

even-pinnate adj. ① Said of compound leaves having an even number of leaflets, this is usually easily determined because there is a pair terminally; = paripinnate. Cf odd-pinnate, imparipinnate.

evergreen adj. With green foliage throughout the year. ② Bearing leaves or other organs with chlorophyll throughout the year (news).

evergreen n. A plant that retains its foliage throughout the year. Contrast with deciduous plant which sheds its foliage each year at the end of the growing season.

ex- Prefix meaning without or lacking. Cf a-. Or meaning outwards. Cf re-.

ex Latin proposition ① With respect to plant authorities, indicates that the first author proposed the name for a plant and the second author published that name.

excescence (Latin *excescere*, to grow out, from *ex*, out, and *crescere*, to grow) ① A normal outgrowth; outgrowth from the surface; ② a disfiguring addition.

excurrent (Latin *excurrere*, to run out, to project) ① Projecting beyond the tip, as the midrib of a leaf or bract. ② Usually in reference to veins and nerves which run beyond the margin of the organ from which it originates; often as an awn or bristle. ③ Running beyond, as a vein prolonged beyond the margin of a leaf or other structure (mfn). ④ Running or proceeding outwards, away from the axis or costa, or of a vein that proceeds beyond the margin. ⑤ Extending beyond the margin or tip, as a midrib developing into a mucro or awn. ⑥ With a continuing central axis from which lateral branches arise. ⑦ With the rib or axis projecting beyond an organ (news). Cf recurrent.

exfoliate vt. (Latin *ex*, out, and *folium*, leaf) ① To peel off in thin layers, shreds, or plates; to come away in scales or flakes, as the bark of some trees. ② To peel off in shreds, thin layers or plates, as bark from a tree trunk.

exfoliating adj. ①Loosely shedding in thin or stringy layers. ②Peeling (news).

exindusiate adj. (ex-, as in privation, Latin *indusium*, from *indūsium* a tunic, apparently, from *induĕre* to put on, (and -ate, forming participial adjectives from *-ātus*, *-āta*, *-ātum*) Lacking an indusium, or lacking the membranous shield or scale covering the sorus or fruit-cluster of a fern (after oed) .

exine, extine n. (Latin *ex*, *ext*- out of, out, outward) ①The outer of two layers forming the wall or membrane of certain spores (as pollen grains); ②the outer membrane of the pollen grain, the inner is the intine; ③also called the exosporium, the outer coat of a pollen grain or spore.

explanate adj. spread out flat. Cf applanate.

exocarp n. (Greek *exo*, without, and *καρπός*, *karpos*, fruit) The outer layer of the wall of a matured ovary.

exotic n., adj. ①A species introduced to Illinois, purposefully or accidentally, from a natural range outside of Illinois. ②Introduced from abroad. Cf adventive, introduced, indigenous.

exogen n. (in French *exogène* (de Candolle 1813), modern Latin *exōgena*, *exōgenus* (imitating Latin *indigena*, *indigenus*) adj., growing on the outside, used in feminine as noun, from Greek ἔξω, *exo*, and γενής, genes born, produced) ① “A plant whose stem grows by deposit on its outside” (oed). 1889 Chambers's Cycl., 1889 in oed “*Exogenous Plants*, or *Exogens*, a term applied to dicotyledons by Lindley to express an erroneous view of the mode of stem-thickening from that of monocotyledons, and now wholly disused by botanists” Cf endogen.

exsert vt. (Latin *exserere*, to stretch out) To put forth; to thrust out; to protrude. ②Projecting beyond a surrounding structure, like stamens projecting beyond a corolla.

exserted adj. ①Sticking out; extending beyond (some enclosing part). ②Protruding beyond the surrounding structure(s), as stamens beyond a corolla; cf included (mfn). ③Prolonged beyond the rim of an enveloping or confining structure; protruding (eg, the inflorescence from the sheath). ④Projecting beyond. ⑤Projecting beyond an enclosing structure (news). Cf included.

exstipulate adj. (Latin *ex*, without, and *stipula*, a stalk, stem) ①Having no stem, having no stipules, as in exstipulate leaves.

extinct adj. A sp having no living members (news).

extirpated adj. A sp not seen for many years, with low likelihood of rediscovery (news).

extrafloral adj. Of nectaries borne outside flowers

extravaginal adj. ①Located outside the sheath that surrounds another organ. ②Branching in which the young shoot breaks through the base of the leaf sheath.

extrorse adj. ①Looking or facing outward; directed outwards. ②Curved outward (news). Cf introrse, latrorse, retrorse.

exudate n. A liquid, resinous or gelatinous substance secreted by organs or parts of the plant, or yielded when the plant is damaged

eye n. ①A dormant bud on a corm, tuber, or root division from which a stem will develop when the corm or tuber is planted.

f. abbreviation Various *filius*, the son, as in Michaux f.; form/*forma*, a minor variation in a species; or feminine, the gender of a Latin noun.

face n. A flat side.

facilitation The successional process whereby a plant so modifies its environment that the environment becomes better suited for other plant species.

facultative adj. ①Occasional; not essential; incidental. Cf obligate.

falcate adj. (Latin *falcātus -a -um*, sickle-shaped, from *falx, falcem*, sickle) ①Bent or curved like a sickle; ②sickle-shaped; ③strongly curved, sickle-like; ④slenderly curved and tapering to a usually sharp tip; ⑤curved like a sickle; ⑥hooked; ⑦shaped like the beak of a falcon; ⑧curved with parallel edges. ⑨Curved sideways and tapering, "sickle-shaped". Synonyms falciform, acinaciform. Cf arcuate.

fall regrowth The process of responding to conditions conducive to growth in the fall resulting in a return to active growth.

falls n. Outer whorl or series of perianth parts of an iridaceous flower, often broader than those of the inner series and, in some iris, drooping or flexuous.

false indusium n. A covering of the sorus formed from the reflexed margin of the lamina. ②A flap of unspecialized tissue, such as an inrolled leaf edge, that covers & protects the sorus of a fern (news). Cf indusium.

false veins n. Zones of epidermal cells of similar appearance to veins but not associated with vascular tissue, eg. in some *Davallia* and *Hymenophyllaceae*.

family n. ①A taxonomic grouping of similar genera; similar families grouped into orders. One of the main units in the hierarchical system of taxonomic classification of living organisms. The major classification units are, in descending order, class, order, family, genus, and species. (sk08) ②The grouping in a taxonomic hierarchy that encompasses related genera (news).

fan n. A descriptive term for the growth habit of certain perennial plants, such as *Iris* and *Hemerocallis*, which have no vertical stem because the leaves originate from the rhizome.

farina n. ①Inflated hairs that create a mealy coating on a surface (news). ②A mealy or flour-like covering. Hence farinose, farinaceous.

farinaceous adj. (Latin *farina*, meal) ①Containing flour; ②starchy; ③mealy.

farinose adj. ①Full of meal; ②mealy; ③covered with a white, powdery substance; ④resembling farina; typically used to describe the white-mealy, strongly modified hairs in the genus *Chenopodium*. ⑤Covered with a fine granular or powdery (mealy) coating (mfn). ⑥Covered with a white mealy substance. ⑦With a mealy coating (news).

fascicle n. (Latin *fasciculus*, small bundle) ①A small bundle or tuft, as of fibers, leaves, etc; ②a cluster or bundle; ③Small bundle or cluster; ④A close cluster or bundle. ⑤Compact cluster (news). Hence fascicled, fasciculate.

fasciculate adj. ①With fascicles. ②With leaflets or needles in a bundle or compact cluster (news).

fastigate adj. (Latin *fastigare*, to slope up) ①Branches close to stem and erect; ②of erect and clustered branches; ③with branches erect and close together; usually in reference to branches which are stiffly erect; neither divaricate nor divergent.

febrifugal adj. ()

febrifuge

felsic adj. ()

fen n. (Middle English *fen, fenne*; Anglo-Saxon *fen, fenn*, a marsh, bog, fen) ①Low land covered wholly or partially with water but producing sedge, coarse grasses, or other aquatic plants; ②boggy land; ③a moor or marsh; ④plant community on alkaline, neutral, or slightly acid peat; ⑤a general term used in reference to habitats which are calcareous in nature and which are fed throughout the year by a flow of water at or just beneath the surface. ⑥A peatland nourished by calcareous groundwater flow through its near surface peat layers and dominated by sedges and non-*Ericaceous* shrubs, with little if any *Sphagnum* and more alkaline compared to the typical acid bog; gradations between bog and fen may occur, and some large peatlands are mosaics (mfn).

fenestrated adj. (Latin *fenestrāt-us*, past participle of *fenestrāre*, from Latin *fenestra, fenestrae*, window, from Etruscan?, from root of Greek φαίνειν, *phainein*, to show) ①A type of leaf anatomy with small perforation or transparent spots. Confined to a few tropical monocotyledons which grow on the island of Madagascar. ②With openings or window-like slits (news).

fern n. ①A non-flowering plant that produces spores, which themselves germinate to form sexual plantlets whose offspring in turn become the spore-bearing plant (news).

ferromagnesian adj.

ferruginous adj. Rust-colored, rust-covered.

fertile adj. ①Capable of producing a fruit or caryopsis; ②capable of reproducing sexually; ③producing seeds, spores or pollen capable of germination; ④of a plant with reproductive organs. ⑤Normally reproductive; eg, a fertile stamen produces pollen, a fertile flower bears seed (or at least reproductive parts); by extension, a structure associated with a fertile flower (as "a fertile lemma"). (mfn) Cf sterile, vegetative.

Fertilizer N n. Forms of fertilizer that include a source of N. The fertilizer is usually described in terms of its content of nitrogen, phosphorus and potassium, with one labelled 0:36:10 containing 0 nitrogen, 36 lbs P₂O₅ and 10 lbs K₂O per 100 lb fertilizer. Fertilizer N is usually in the form of urea, ammonium sulfate, potassium nitrate or anhydrous ammonia. (rrl)

festooned brochidodromy n. A subset of brochidromous leaf venation where a subsidiary set of secondary vein loops forms between the first set of loops and the leaf margin.

fetid, foetid adj. (Latin *fētidus* (often incorrectly written *fœtidus*), from *fētēre*, to have an offensive smell) Having a disagreeable odor.

fibril n. Short, threadlike hair.

fibrillose adj. (modern Latin *fibrilla*, diminutive of Latin *fibra*, and classical Latin *-ōsus* full of, abounding in) ①Beset or provided with numerous fine fibers; ②having or composed of thin fibers, like the finest roots of a plant; ③finely fibrous furnished with thread-like structures. ④“Covered or supplied with fibrils; composed of fibrils” (oed). ⑤Separating into fibers (fibrous) (news).

fibrous adj. (modern Latin *fibrōsus*, from Latin *fibra*, of uncertain origin; variously referred by etymologists to Latin roots *fid-* (as in *findere* to split) and *fis-* or *fī-* (as in *filum* thread)) ①Looking like a mass of fiber; ②thread-like but may appear branched; ③referring usually to a much branched root system with progressively smaller branches.

fibrous root system A root system comprised of many small, sinewy and widely spread roots and lacking a taproot.

-fid suffix (terminal element representing Latin *-fidus* cleft, divided, related to *findere* to cleave, as in *bifid*) Suffix or terminal element meaning dividend or lobed =/- half way, eg. bifid, trifid, 6-fid, pinnatifid etc. Cf -sect.

fiddlehead n. Referring to the unusual circinate unrolling of fronds, in many ferns.

field potted adj. See Balled and Potted.

filament n. (modern Latin *filamentum*, from late Latin *filāre* to spin, from *filum*, thread, string) ① Any thread-like body, especially the stalk of stamens; ② the stalk bearing the anther, the anther-bearing stalk of the stamen. ③ The stalk of a stamen, usually thread-like but sometimes flattened or expanded (mfn). ④ The slender stalk of the stamen that supports the anther. ⑤ The stalk supporting the pollen-bearing structure (anther) (news).

filiform adj. (Latin *filum*, thread, and *forma*, shape) ① Thread-like, long and very slender; ② thread-like; long and narrow; ③ very slender, thread-shaped, usually terete in cross section. ④ Thread-like; very slender and approximately as broad as thick (mfn). ⑤ "Threadlike", slender and cylindrical.

fimbriate adj. (Latin *fimbriātus*, fringed) ① Fringed, cut into regular segments and appearing fringed at the margins; ② fringed, the edge bordered by slender processes. ③ Fringed with hairs coarser than cilia. ④ "Bot. and Zool. Fringed; bordered with hairs or filiform processes" (oed). Diminutive fimbriolate.

fimbriolate adj. With tiny fringes.

first glume n. ① The lowermost of the two typical glumes of a spikelet; attached to the rachilla; empty (without flower parts in the axil; odd veined)

fissuricidal capsule n. (from Latin *fissura*, a fissure) A capsular fruit opening irregularly by one or more parallel slits, or regularly along sutures between a closed apex and base (sk08).

fistula n. (Latin *fistula*, pipe) ① Pathological or artificial pipe-like opening; ② water-conducting vessel. Cf trachea.

fistular adj. Cylindrical and hollow like a pipe.

fistulose, fistulous adj. ① Hollow, often pertaining to stems with hollow centers. ② Having the form or nature of a fistula.

fl (Latin *floruit*, he, she, or it flourished, Latin, 3rd person singular perfect indicative of *flōrēre* to flourish) "To be at the height of fame or excellence; to be in one's bloom or prime. Also in weaker sense, used in past tense of a person to indicate that his life and activity belong to a specified period. Occasionally used for: The period during which a person 'flourished'." (oed)

flabellate adj. (Latin *flabellare*, to fan) ① Fan-shaped; ② broadly wedge or fan-shaped.

flabelliform adj. Fan-like, fan-shaped. See flabellate.

flaccid (Latin *flaccidus*, flabby) ① Weak, limp, soft, or flabby; ② leaves that do not have enough water and are about to wilt or are wilting; ③ very limber, without apparent support; limp, not rigid or turgid (viz.).

flagellum pl *flagella* n. ① A whip-like hair, usually motile. Hence flagelliform, whip-like, and flagellate, bearing flagella.

flange n. A bit of projecting tissue.

fleshy adj. Succulent, with a high water content (news).

flexible adj. Easily bent but recovering the original form.

flexuose, flexuous adj. ①Flexible; easily bent this way and that; ②bent gradually in one direction and then another; ③of a wavy, zig-zag form. ④More or less loose and sinuous, bent or curved (usually several times in alternate directions); zigzag (mf). ⑤Bent in opposite directions; having a more or less zig-zag or wavy form. ⑥Sinuous, curving alternately in different directions (news).

floating adj. On the surface of the water (floating leaves neither rise above the surface nor live entirely under the surface) (mf).

floccose adj. (Latin *floccus*, a lock of wool) ①Copiously beset with tangled woolly hairs; ②with tufts of soft, woolly hairs. ③Said of pubescence which gives the impression of irregular tufts of cotton or wool. ④Covered with tufts of soft woolly hairs that usually rub off readily.

flora n. ①The assemblage of plant species in any area; a book or treatise on this. ②A collective term for plant life, or the plant species found in a region.

floral axis n. The structure that the palea and flower are attached to the rachilla.

floral tube n. The usually saucer- or cup-shaped structure formed by the adnate portions of perianth and stamens, on which the free portions of these organs are inserted. (In some works = "calyx tube" or "hypanthium.") (mf).

florescence n. (Latin *florescence*, to begin to flower) Bursting into bloom. Cf anthesis.

floret pl florets n. (Latin *flos*, flower) ①One of the small individual flowers of a crowded inflorescence such as capitulum; ②flower with lemma and palea, of grasses; ③small individual flowers of a dense inflorescence; ④a single small flower, usually a member of a cluster, such as a head; used particularly in grasses (*Poaceae* family) and composites (*Asteraceae* family); the lemma, floral axis, and palea with the included flower (pistil, stamen, and lodicules) or caryopsis (floret with all parts). ⑤A small flower, particularly 1 in a floral cluster; pertains also to the flower of a grass spikelet which includes the lemma, palea and reproductive structures. ⑥A reduced flower, as in a grass (mf). ⑦ The individual unit of a spikelet, comprising a lemma and palea with enclosed reproductive organs. ⑧Small or single flower (flower plus lemma & palea in *Poaceae*) (news). Alternately floscule.

floricane n. ①The stem at flowering and fruiting stage (of a bramble, *Rubus*). ②Second-year flowering stem of *Rubus* (news). Cf primocane.

floriferous adj. Bearing flowers.

floscule n. (Latin *flosculus*, little flower) A small flower; a floret.

floss n. (Of doubtful origin. Possibly an adoption of some form of Old French *flosche* down, pile of velvet; also as adjective in *soye flosche* (modern French *soie floche*) floss-silk (= Italian *seta floscia*). Possibly, however, there may have been a native English or Scandinavian word floss cognate with *fleece* n. Compare modern Icelandic *flos* nap of cloth, Danish *flos* plush (recorded from 17th cent.), and Cleveland dialect *floss-seave* the cotton-grass) ①A downy substance in some plants, especially the coma of *Asclepias*, *Apocynum*, and *Epilobium*. The term was once used for corn silk. In Orkney and Shetland, a collective term for reeds, rushes, etc (oed).

flower n. (Middle English *flowre*, *flour*, *flur*, from Old French *flour*, *flur*, *flor*, from Latin *flōrem*, *flōs*, *floris*, a flower from Aryan root **bhlō-*: cognate with French *fleur*, Provençal *flour*, *flor*, Spanish, Portuguese, and Old Italian *flor*, and Italian *fiore*) ①A reproductive short shoot with determinate growth at least one of the sexual reproductive organs, male or female. This definition of a flower applies to the reproductive structures of both angiosperms (flowering plants) and gymnosperms. (sk08) ② "A complex organ in phenogamous plants, comprising a group of reproductive organs and its envelopes. In the popular use of the word, the characteristic feature of a *flower* is the 'coloured' (not green) envelope, and the term is not applied where this is absent, unless there is obvious resemblance in appearance to what is ordinarily so called. In botanical use, a flower consists normally of one or more stamens or pistils (or both), a corolla, and a calyx; but the two last are not universally present." (oed) ③The part of a plant containing or consisting of the organs of reproduction, either together in a monoclinous flower or separate in male

and female flowers; (grass flower) 2(-3) lodicules, (-1,-2) 3(-6)stamens, and pistil with 2(-3) stigma branches; flowers are within and part of the floret. ④The reproductive structure of a plant (news).

flowering vt. Producing the male and female reproductive structures.

flowering plants n. The meaning is regionally different depending on the definition of flower. In continental Europe considered to comprise both gymnosperms and angiosperms, in Anglo-America and the UK only applied to angiosperms. In a strict scientific sense, “flowering plants” are circumscribed as defined under “anthophyta.” (sk08)

flush n. A period of rapid vegetative growth, often involving the expansion of non-green or pale green leaves at the shoot extremities.

fluted adj. With a parallel series of grooves.

foetid adj. ①With a stinking odor; ②smelling offensively.

foliaceous adj. (Latin *foliāceus* leafy from *folium*, leaf) ①Having the form or texture of a foliage leaf; ②thin and leaf-like; ③bearing leaves; leafy. ④Leaf-like (in color, texture, or size) (mfn).

foliar adj. Pertaining to the leaves or leaf-like parts.

foliate adj. ①With leaves; ②leaved, clothed in leaves; also as a suffix, eg. bifoliate.

foliolate, -foliolate adj. suffix ①Having leaflets; suffix denoting a leaf made up of leaflets, eg trifoliate, unifoliate.

foliose adj. ①Bearing numerous crowded leaves. ②Like a leaf in form or texture (news).

follicarium n. (Latin *folliculus*, small sac, a little bag, diminutive of *follis* bellows, and *-arium* an ending that indicates a schizocarpic fruit) A schizocarpic fruit in which the carpels are distinctly separate from one another before maturing and dehiscent along their ventral sutures; eg *Apocynaceae*. (sk08).

follicetum n. (Latin *folliculus*, small sac, a little bag, diminutive of *follis* bellows, and) A multiple fruit of dehiscent fruitlets that open only along one suture, dorsally or ventrally (sk08).

follicle n. (Latin *folliculus*, small sac, a little bag, diminutive of *follis* bellows) ①A dry dehiscent fruit formed of one carpel, and dehiscent along one side; a dry fruit consisting of a single carpel and dehiscent along only one suture. ②“A kind of fruit, consisting of a single carpel, dehiscent by the ventral suture only (Lindley); formerly used for any kind of capsular fruit” (oed) ③A fruit or fruitlet derived from a single carpel dehiscent along one (usually the ventral) suture, eg the fruitlets of marsh marigold, *Caltha palustris*, *Ranunculaceae* (sk08). ④A fruit which dehisces along a single suture (derived from a single carpel) (mfn). ⑤A dry, dehiscent fruit composed of one carpel that splits at the side upon maturing to release its seeds. ⑥A dehiscent fruit with a single ovary, that splits along a single seam on one side of the mature carpel to release the seeds (news).

folliconum n. (from Latin *folliculus*, little bag, and *conum*, from *conus*, a cone) A compound fruit composed of united follicular fruitlets; eg *Banksia menziesii*, *Protaeaceae* (sk08).

forage n, v. (noun) Food for grazing and browsing animals. (verb) The act of obtaining food by grazing and browsing animals.

foraminicidal capsule n. A capsular fruit opening by irregular diverging cracks or slits, eg *Antirrhinum spp.*, *Plantaginaceae* (sk08).

forb n. ①A herbaceous plant that is not a grass, grass-like or woody. It is a broadleaved herb. ②Herbaceous plant usually less than 2 meters (6 feet) tall (news).

forest n. (Old French *forest* (French *forêt*), from medieval Latin *forest-em* (*silvam*) The 'outside' wood, ie that lying outside the walls of the park, not fenced in, from *forīs*, out of doors (oed)) ①A community dominated by trees with long trunks. ②Vegetation dominated by trees closely enough spaced to provide a continuous or closed canopy (mfn). ③“An extensive tract of land covered with trees and undergrowth, sometimes intermingled with pasture. Also, the trees collectively of a 'forest'.” (oed)

-form Suffix meaning like or resembling, eg. fusiform, falciform. Cf -aceus, -oid.

form, *forma* pl *formae*, abbreviated f. or fo., pl ff, n. ①A taxonomic division below the level of variety; ②slightly differing variant of a species, ranked below *varietas* (var); an infraspecific taxonomic entity, usually involving single-gene traits such as flower or fruit color. ③A taxonomic rank below that of variety, usually used for minor, sporadic variants involving such features as flower color or pubescence, without any geographic coherence (which describes most boomers and post boomers who had social studies; my brother had the right idea, phys ed and geography. Don't know the capital of Paraguay? 10 laps.) (mfn).

fork n. A vein that branches (news).

fornix pl *fornices* n. ① A small, scale like or petaloid appendage in the tube or throat of the corolla. ②A scale or appendage in the corolla tube of some *Boraginaceae* (news).

foundation seed This is seed that is produced from Breeder seed. Foundation seed is typically second-generation seed. However, in the event there is an inadequate quantity of Breeder seed available for multiplying the variety, the certifying agency can designate seed grown on a foundation field as Foundation seed.

fovea n. A pit. Hence foveate. Diminutive foveolate.

free adj. (of complex Germanic origin from indo-European base similar to Sanskrit *priya* beloved, dear, (rare) riendly, Avestan *friia* beloved, dear, Welsh *rhydd* free) ①Individually arising or inserted, not united, nor fused, adherent, adnate, connate etc. ②Not adnate (mfd). ③*Biol.* (chiefly *Bot.*). Not fused or attached to an adjacent structure (oed). ④Not fused with another dissimilar structure, such as stamens that are not connected with petals (news).

free central placentation n. A pattern of placentation where the ovules are borne on a single stalk, which is anchored at the base of a 1-celled ovary.

free-living Non-symbiotic organisms.

freeze-drying n. One of the methods used to preserve bacteria. Cells are suspended in a sucrose/peptone solution and dried under vacuum at -40°C. They are then sealed in vials while still under vacuum, and in this condition can survive for many years. Vials prepared in this way serve as a reserve supply of important strains. (rrl)

fresh weight n. Same as wet weight. Generally not a useful measurement for aquatic plants.

friable adj. (from French *friable*, from Latin *friābilis* -is -e, from *friāre*, to crumble into small pieces) ①Easily crumbled; fragile. ② “Capable of being easily crumbled or reduced to powder; pulverizable, crumbly” (oed).

frond n. (Latin *frons*, a leafy branch) ①A leaf, especially of fern or palm; the leaf, especially of a fern or palm, including the stipe, often finely divided; ③a leaf-like expansion; ④the foliaceous blade of a fern leaf. ⑤The leafy part of a fern, including the stipe (petiole) & blade (pinnae) (news).

frugivore n. (Latin *frūgi-*, *frux*, fruit and -*vorus* devouring, from *vorare*, to swallow, to devour) ①A fruit-eating animal. Facultative frugivores, such as many birds in temperate regions, eat mainly fruit when available but also other plant and animal matter, where as obligate frugivores are specialized animals, predominately in the tropics, who feed exclusively on fruits. (sk08)

fruit (Old French *fruit, fruict*, from Latin *fructus*, fruit, from **frugv-* root of *fruī*, to enjoy) ① That structure which bears the seeds; ② ripened ovary; the developed ovary of the flower containing ripe seeds, whether fleshy or dry, often used to include other associated parts such as a fleshy receptacle, then called a false fruit. ③ “The seed of a plant or tree, regarded as the means of reproduction, together with its envelope; *spec.* in *Botany* ‘the ripe pistil containing the ovules, arrived at the state of seeds’ (Lindley); also, the spores of cryptogams.” (oed) ④ Any coherent seed-bearing structure, including domesticated fruits bred to be seedless (sk08). ⑤ A ripened ovary and any closely associated structures (mf). ⑥ The ripened ovary and any other structures that enclose it. ⑦ The mature or ripened ovary & any associated structures that ripen & unite with it (news).

fruitlet n. A separate dispersal of some fruit that may be 1) a carpel or half-carpel of a mature schizocarpic fruit, 2) a single carpel of a mature multiple fruit, or 3) a mature (mono- or multicarpellate) ovary of a compound fruit (sk08).

funneliform adj. Shaped like a flaring tube (funnel) (news).

frutescent adj. (Latin *frutex*, a shrub) ① Shrubby or becoming shrubby. ② Becoming shrub-like.

fruticose adj. ① Shrubby or shrub-like and woody; ② shrub-like. Hence frutescent.

fugacious, fugaceous adj. (Latin *fugac-*, *fugax* swift, fleeting (from *fugere* to run away) and English -ious) ① Of an unsubstantial nature: ② lasting a short time: ③ evanescent: ④ falling away early; ⑤ falling off or disappearing before the usual time -- used chiefly of plant parts other than floral organs (as stipules or moss calyptras) as opposed to persistent. Cf caducous.

fulvous adj. Yellow, tawny, dull yellow with a mixture of grey or brown.

functional ecosystem An ecosystem that is fully self-perpetuating without requiring management inputs from man to maintain its stability.

funicle n. (New Latin *funiculus*) Funiculus.

funiculus pl **funiculi** n. (New Latin from Latin *fūniculus*, diminutive of *fūnis*, rope) ① The stalk of an ovule. “A little stalk by which a seed or ovule is attached to the placenta” (oed). The stalk by which an ovule or seed is connected to the placenta in the ovary. The funiculus acts like an “umbilical cord” supplying the developing ovule with water and nutrients from the parent plant. (sk08)

funnelform adj. ① Shaped approximately like a funnel; ② “funnel-shaped,” usually pertaining to the corolla. Sometimes called infundibuliform. Cf the works of Vonnegut for *chrono-synclastic-infundibulum*.

furcate adj. Forked, also as bifurcate, trifurcate etc.

furfuraceous adj. Scurfy, provided with soft scales.

furrow n. Longitudinal groove or channel (news).

furrowed adj. With +/- parallel longitudinal grooves or channels.

fuscous adj. ① Grayish-brown; ② dusky, blackish, of a brownish or greyish brown color.

fused adj. Joined and growing together. Cf free.

fusiform adj., n. (Latin *fusus*, a spindle, and *forma*, form) ① A spindle- or cigar-shape, a solid swollen in the middle and tapering at both ends; ② shaped like a spindle; thick, tapering at both ends; ③ spindle-shaped; ④ swollen in the middle and gradually narrowed toward each end; ⑤ widest near the middle and tapering in toward both ends.

Ⓒ "Spindle-shaped," broadest at the middle and tapering to opposite ends. Ⓓ Narrowly tapering at both ends & fat in the middle (spindle-shaped) (news).

G

gabbro n. (from Italian *gabbro*) A dark crystalline rock predominated by ferromagnesian minerals.

galea n. Ⓐ The hooded portion of the perianth in some irregular or bilabiate flowers (eg, as in *Castilleja*). Ⓑ The concave, hoodlike upper lip of some flowers, such as some spp in the *Lamiaceae* & *Orobanchaceae* & other families (news).

galeate adj. Hood-like; helmet-shaped.

gall n. Abnormal proliferating tissue, usually produced in stems or leaves by a parasite, insect, or fungus (news).

gamete n. () The male and female sexual cells that combine at fertilisation to form the zygote; in pteridophytes produced on the prothallus (gametophyte) by the antheridia (male) and archegonia (female). Ⓒ Egg or sperm (news).

gametophyte n. (modern Latin *gameta*, from Greek γαμετή, *gamete*, a wife, γαμέτης, *gametes*, a husband, from γαμεῖν, *gamein*, to marry, from γάμος, *gamos*, marriage, and ancient Greek φυτόν, *phyton*, plant) Ⓐ The gamete-forming haploid phase in the alternation of plant generations. Ⓑ "The sexual form of a thallophyte, as distinguished from the sporophyte, or asexual form" (oed). Ⓒ The generally haploid generation in a plant's life cycle producing gametes. Examples are the prothallus of the ferns or the megaprothallium (=female gametophyte) and the germinated pollen grain (=microprothallium=male gametophyte) of the seed plants. (sk08) Ⓓ The sexual or haploid stage in the life cycle of cryptogams producing the ova and sperm; in pteridophytes it is a separate, inconspicuous and short-lived generation. Ⓔ The sexual reproductive stage of a plant that produces gametes; in ferns it is often the small inconspicuous form of the plant. Ⓕ A type of plant that produces gametes (eggs &/or sperm) (news). Cf prothallus, sporophytes.

gambog, gamboge adj. (ultimately from the name of *Cambodia*) "A gum resin obtained from various trees of the genus *Garcinia*, used as a yellow pigment or dye, and also (now hist.) as a purgative in medicine. Also: the yellow pigment or dye prepared from this; the colour so produced. More fully gamboge tree. of several tropical Asian trees of the genus *Garcinia* (family *Clusiaceae* (*Guttiferae*)) from which the gum resin gamboge is obtained; esp. the widely cultivated *G. xanthochymus*." (oed)

gamopetalous adj. (from Greek γάμος, *gamos*, marriage, and *phyllon*, a leaf) Ⓐ Having the petals united so as to form a tube-like corolla. Ⓑ Flowers which are fused to any degree. Ⓒ With joined petals (news). Same as sympetalous.

gamophyllous adj. With leaf bases joined around a stem so the stem seems to pierce the leaves (news).

gamosepalous adj. (from Greek γάμος, *gamos*, marriage, and sepalous) Having the sepals united.

geitonogamy n. ()

gelatinous adj. Ⓐ Of a slimy, clear sticky nature, water soluble, like gelatine. Cf glutinous, mucilaginous)

geminate n. Twinned, arranged in pairs. Cf didymous.

gemma pl **gemmae** n. (Latin *gemma*, a swelling, bud, gem) Ⓐ A bud or outgrowth of a plant, which develops into a new organism; Ⓑ a vegetative bud which a species propagates and disperses itself. Ⓒ A leaf bud rather than a flower bud. Ⓓ A young bud from which plants vegetatively reproduce. Ⓔ A small, adventitious bud produced by ferns & some Lycophytes that can develop into a plantlet identical to the parent plant (news).

gemmates (Latin *gemma*, to put forth buds) Buds or outgrowths of a plant which develop into a new individual.

gemmiferous adj. Bearing gemmae (news).

gemmaiferous (Latin *gemma*, a bud, and *parere*, to bear) To produce gemmates.

gene n. () The hereditary factor producing a character in an organism, borne on the chromosomes. Hence genetic.

genet n. ()

genetically appropriate species: A plant species adapted to site conditions (e.g., has good establishment, vigor, and reproductive capabilities), sufficiently diverse to respond to changing climates and environment conditions, unlikely to cause genetic contamination and undermine local adaptations, community interactions, and function of native species in the ecosystem; unlikely to become invasive and displace other native species, unlikely to be a source of non-native, invasive pathogens; likely to maintain critical connections with pollinators.

genetics n. () The study of inheritance of characters.

geniculate adj. (Latin *geniculatus*, having knee joints, joints) ①Bent like a knee; ②with a knee-like bend; bent abruptly at the nodes; bent sharply, like a bent knee; abruptly bent; usually referring to the alternate, abrupt bends at the nodes of some stems; also referring to bent awns.

genotype (Greek *genos*, race; type) The genetic constitution of an individual.

genus pl *genera* n. (Latin *genus*, race) ①Generic; a taxonomic group consisting of closely related species, genera being grouped into families; ②a taxonomic grouping of similar species, similar genera are grouped into families; ③an inclusive, taxonomic category whose species have more characteristics in common with each other than with species of other genera within the same family; ④the primary category between family and species, grouping together species that have many characteristics in common; ⑤a group of related species, as the genus *Ulmus* (elm), the genus *Syringa* (lilac), embracing respectively all kinds of elms and all kinds of lilacs. ⑥The grouping in a taxonomic hierarchy that encompasses related spp; a family is made up of related genera (news).

geocarpy n. (from Greek *γεω-*, *geō-*, combining form of *γῆ*, *ge*, earth, and *καρπός*, *karpos*, fruit) A condition of plants whose fruits ripen underground; eg *Arachis hypogaea*, *Fabaceae*, and *Citrullus humifrutus*, *Cucurbitaceae*, AARDVARK CUCUMBER (sk08).

Gestalt, *gestalt* n. (from German for form, shape) “A ‘shape’, ‘configuration’, or ‘structure’ which as an object of perception forms a specific whole or unity incapable of expression simply in terms of its parts (eg a melody in distinction from the notes that make it up)” (oed)

geophyte n. (Greek *ge*, earth, and *phyton*, plant) ①Plants with an underground dormant part such as a tuber, bulb, rhizome, etc. to help the plant survive adverse conditions; ②a perennial plant that bears its overwintering buds below the surface of the soil.

germander n (post-classical Latin *germandra*, *germandrea* (from 13th cent. in British sources), apparently a variant (of unexplained motivation) of *gamandrea*, *gamandria* (in an undated glossary; from German *gamander*, Dutch *gamander*), ultimately from Hellenistic Greek *χαμαίδρυς*, *khamaidrys*, lit. ‘ground oak’, from ancient Greek *χαμαί*, *khamai*, on the ground, + *δρῦς*, *drys*, oak. Compare Anglo-Norman and Middle French *germandree* (12th cent. in Old French; French *germandrée*.) “Freq. with distinguishing word. Any of the plants constituting the genus *Teucrium* (family *Lamiaceae* (*Labiatae*)), comprising aromatic shrubs and subshrubs native chiefly to Mediterranean regions, with tubular pink to purple flowers often with a prominent lower lip; *esp.* (more fully common or wall germander) *T. chamaedrys*, an evergreen shrub with bright pink flowers, formerly used medicinally and now commonly grown as an ornamental. Also (usu. with distinguishing word): any of several speedwells (genus *Veronica*) (now only in compounds.” (oed)

germination Germination is the percent of the number of seeds that, when tested, will develop from the seed embryo the essential structures necessary to produce a normal plant under favorable conditions.

gibberellins n. (*Gibberella*, a fungal genus) Growth hormones that accelerate shoot growth. First discovered in the fungus *Gibberella fujikuroi*, and later in other plants.

gibbous adj. (Latin *gibbus*, hump) ①A distended, rounded swelling on one side, as on a calyx or corolla tube or segment. ②Somewhat swollen on one side, usually near the base, forming a pouch or sack. ③Swollen on one side; ④protuberant, often interrupting the radial symmetry of a structure; see the second glume of *Sacciolepis*. ⑤Noticeably swollen on one side (news).

girdle n. The central sector of a quillwort (*Isoetes*) megaspore just below the ridge that marks the equator; the texture of the girdle relative to the rest of the megaspore is helpful in telling spp apart (news).

glabrate adj. (Latin *glaber*, smooth) ①Becoming glabrous with age; ②almost glabrous. ③Nearly without hairs (mfn). ④"Nearly smooth," or becoming smooth, usually with age. ⑤Now nearly smooth, but once having had hairs (news).

glabrescent adj. () ①Becoming smooth, becoming naked or devoid of covering at maturity. ②Becoming glabrous (without hairs) as that plant structure ages or matures. Cf glabrous.

glabrous adj. () ①Without hairs of any type; naked, lacking hairs or scales; ②hairless; smooth, in the sense of ③not possessing hairs; ④with a smooth, even surface; ⑤without hairs. ⑥Without pubescence of any kind (mfn). ⑦"Smooth," without hairs or glands.

glacier n. (French *glacier*, earlier *glacière*, from *glace* ice; apparently Savoyard word; also German *gletscher*, *gletcher*, adopted in 16th century from Swiss dialect) "A large accumulation or river of ice in a high mountain valley, formed by the gradual descent and consolidation of the snow that falls on the higher ground. The resulting mass is often many miles in length, and continues to move slowly downward until it reaches a point where the temperature is high enough to melt the ice as fast as it descends." "continental glacier n. a sheet of ice which covers a large part of a continent. "I. C. Russell *Glaciers N. Amer.* i. 3 (in oed) The principal characteristics of continental glaciers are their vast extent, their comparatively level surfaces, and the prolongation..of their borders into lobes and..streams" (oed)

glade n. (probably Scandinavian *golead*, a lighting, illumination, from *goleu*, light, clear, Anglo-Saxon *glaed*, bright) ①An open space surrounded by woods or a forest; ②a marshy and usually low-lying area; ③a periodically inundated grassy marsh often running between adjacent slopes; ④a marshy area bounding or forming the headwaters of a stream.

gland n. (Latin *glands*, acorn) ①A secreting part or appendage. ②A general term applying to any number of small protuberances, viscid dots, or secretions. ③A secretory structure; any small protuberance (often of different texture, eg, shiny or sticky in appearance) resembling such a structure (mfn). ④A spot or structure that produces a sticky or greasy substance. ⑤A protuberance or depression on an organ or at the summit of a hair that produces a sticky or greasy substance (news).

glandarium n. (and *-arium* an ending that indicates a schizocarpic fruit) ①A fruit formed by a schizocarpous gynoecium on an enlarged, fleshy receptacle (sk08). ②An organ or part that secretes oil, resin or other liquid. Hence glandular.

glandetum n. A multiple fruit of indehiscent carpels that mature on an enlarged receptacle, the fruitlets embedded in the receptacle: eg *Fragaria spp*, *Rosaceae* (sk08).

glandular (Latin *glandula*, small acorn) ①Having or bearing secreting organs, glands, or trichomes; ②with glands; bearing glands, or of the nature of a gland. ③Bearing glands (news). Cf eglandular.

glandular-pubescent adj. ①With gland-tipped hairs, "glandular-tipped". ②With hairs or trichomes capitate and secretory.

glans n. (Latin *glans* acorn, cognate with the synonymous Greek βάλανος, *balanos*) ①An indehiscent fruit composed of a mature ovary subtended or enclosed by an aril-like structure that may be derived from united bracts (eg in *Fagaceae*) or a swollen pedicel (eg in *Anacardium occidentale*), receptacle, or perianth (sk08). ② "The nut is often enclosed or surrounded by a kind of involucre, termed a Cupule; such as the cup at the base of the acorn, the bur of the chestnut, and the leaf-like covering of the hazel-nut. The name Glans (sometimes Gland in English) is technically applied to such nuts." A. Gray, Structural Botany, in oed.

glaucous adj. () Weakly glaucous; ②slightly glaucous or becoming so.

glaucous adj. (Latin *glaucus*, sea-green, from Greek γλαυκός, *glaukos*, bluish-green or grey) ①Bluish green; covered with a pale green bloom; ②a waxy bloom or white covering of a surface. ③In plants the result is usually a blue-green color; ④covered by a white or pale, often waxy, bloom; ⑤covered with a bloom, bluish-white or silvery. ⑥Covered with a pale (gray to blue-green) waxy coating or "bloom." (mfn). ⑦With a distinct bluish, waxy bloom or powder on the surface. ⑧Covered with a whitish or bluish waxy powder that readily rubs off, with a bloom. ⑨With a waxy bluish-gray or green bloom (news). Cf bloom.

globose adj. (Latin *globosus*, rounded as a ball) ①Of a solid of almost spherical shape; ②rounded; ③almost spherical; ④globular, round or spherical; ⑤globe-like.

globular circular.

glochidiate adj. (modern Latin *glōchidium* barbed hair of a plant, from Greek *γλωχίδιον, **glokhidion*, diminutive of γλωχίς, *glokhis*, point of an arrow) With minute barbed bristles.

glochidium, glochid pl *glochidia* n. (modern Latin *glōchidium* barbed hair of a plant, from Greek *γλωχίδιον, **glokhidion*, diminutive of γλωχίς, *glokhis*, point of an arrow) ① "Bot. B. D. Jackson Gloss. Bot. Terms, *Glochid, glochidium*., (1) a barbed hair or bristle; (2) a similar structure on the massulae of certain Cryptogams which act as organs of attachment to a macrospore." In Zoology, also the larva of a pond-mussel of the family *Unionidae*, parasitic on the gills of freshwater game fish. (oed) ②Retrorsely barbed hairs. ③A bristle or spine bearing one or more barbs (news).

One online source has a very dense cluster. Hence glomerulate.

glomerate (Latin *glomus*, a ball of yarn) ①To gather or wind into a ball; ②growing, collected or arranged in a rounded mass, as glands, flowers, etc; ③clustered; ④tightly clustered, usually in reference to compact clusters of short-stalked flowers. ⑤Aggregated or condensed into heads.

glomerulate adj. () Similar to glomerate, but with smaller clusters.

glomerule n. () ①A small, compact cluster; ②a condensed cyme of almost sessile flowers; ③a dense cluster, usually of flowers; ④a compact cluster as of spores. ⑤Dense, rounded cluster; usually refers to bunches of sessile flowers (news).

glucoside n. (glucose n., and -ide suffix) One of a class of vegetable substances which being treated with dilute acids or alkalis, or subjected to the action of ferments, are resolved into a sugar and some other substance. Now usually restricted to mean: a glycoside n. which on hydrolysis gives glucose.

glume, glumes n. (Latin *glūma*, hull, husk of a grain) ①A chaffy or membranous bract, a bract at the base of a grass inflorescence or spikelet. ②Odd veined bracts that delimit the spikelet; usually 2 per spikelet; attached to the rachilla; empty; the lowest two (sometimes one) empty scales subtending the usually fertile scales in grass spikelets. ③ "One of the chaff-like bracts which form the calyx or outer envelope in the inflorescence of grasses and sedges;

the husk of corn or other grain” (oed). ④A bract or scale at the base of a grass spikelet (mf). ⑤The two small bracts located at the base of a grass spikelet; they do not subtend flowers. ⑥One of a pair of empty scales at the base of a grass spikelet. ⑦The bracts (usually in pairs) at the base of a grass (or sometimes *Cyperaceae*) spikelet (news).

glutinous adj. (from Latin *glutinōsus*, from Latin *glūten* glue, perhaps through French *gluten* (16th cent.))
①Having a sticky, moist surface; ②a gluey or sticky exudation; covered with a sticky exudation. ③Covered with sticky exudate or a sticky, glue-like resin. ④Covered with a sticky substance (news). Cf mucilaginous, gelatinous.

glycoside n. (glyco- combining form after glucoside n.) ①Any of a class of compounds, many of which are present in plants, which on hydrolysis give a sugar and one or more other compounds, one of which is usually an alcohol or a phenol.

Gondwanaland n. (from German *Gondwana-Land* (E. Suess *Antlitz d. Erde* (1885) I. xii. 768) from *Gondwana*, the name of a region in central north India, from Sanskrit *goṇḍavana*, from *goṇḍa*, *Gond*, noun and adjective, and *vana* forest.) “A vast continental area or supercontinent thought to have once existed in the southern hemisphere and to have broken up in Mesozoic or late Palaeozoic times forming Arabia, Africa, South America, Antarctica, Australia, and the peninsula of India. Also, these land masses collectively as they exist today.” (oed)

Gnetales n. () A heterogeneous group of gymnosperms comprising just three families with three genera, *Gnetum*, *Ephedra*, and *Welwitschia*, and a total of 5 species (sk08).

gradate adj. () Graded, or stepped, of a sorus with the youngest sporangia at the apex and the older ones lower down. Cf mixed sorus.

grade n. () A grade is a classification unit based on a specific size or size range, number of stems or canes, etc. for the purposes of this standard, grade is not intended to describe quality, except for roses.

grain n. ((1) Old French *grain*, *grein*, from Latin *grānum* a grain, seed; (2) Old French *grain(n)e*, seeds collectively, seed, from popular Latin *grāna* (feminine), originally plural of *grānum*) ①The fruit of most grasses. ②“In botanical language a grain of a cereal plant is not a ‘seed’ but a ‘fruit’ of the kind called a caryopsis” (oed)

gram negative bacteria n. A common staining technique used with bacteria stains the organisms with crystal violet, then rinses them in alcohol. Some retain the dye and appear purple in color, while in others including the rhizobia, the stain washes out. To see such organisms they must be restained with some other dye. Bacteria that stain with crystal violet are termed Gram positive; those in which the dye washes out are called Gram negative. (rrl)

graminoid adj. n. Grass-like, with long, narrow leaves (news).

granivores n. (Latin *grani-*, from *granum*, grain, and *-vorus*, from *vorare*, to swallow, to devour) Seed-eating animals (sk08).

granular adj. () ①Appearing to consist of tiny grains; ②of a surface like grains of sand etc.

granulate adj. () Granular.

granulose adj. () Granular.

grass flower n. () The reproductive axis subtended by the palea and lemma and consisting of lodicules, stamens, and carpels, although it may also be unisexual.

grassland n. () A community dominated by grass species. Cf savannah.

grass-like A plant that resembles a grass but it is not a true grass. For example, sedges are grass-like plants.

graze v. () “*intr.* Chiefly of cattle: To feed on growing grass and other herbage (oed). Cf browse.

greda n. A European term for a linear topographic ridge of sandy loess in a loess-covered landscape. Cf paha.

green manure crop A crop that is grown and then tilled into the soil before it flowers to increase soil fertility and organic material content.

green up Term used to describe the initial period of plant growth.

grit cells n. () The hard, almost stony, cells, found in some fruits, especially pears.

grow bag also called in-ground fabric bags. n. () An in-ground fabric bag is a porous bag into which liner plants are placed for growing on to landscape size. Root growth through the bag is restricted, resulting in a compact, fibrous root ball within the bag. For purposes of the *American Standard For Nursery Stock*, these are not containers unless used to grow plants above the ground.

growth habit n. () The mode or rate of growth, general shape, mature size, and branching structure of a plant, including the changes which take place seasonally during its life cycle, eg deciduous, flowering, fruiting, etc.

grumous, grumose adj. (modern Latin **grūmōsus*, from late Latin *grūmus*, grume. little heap, hillock; compare obsolete French *grume* ‘a knot, bunch, cluster; clutter’.) “*Bot.* Of roots, etc: Consisting or formed of clustered grains; granulated” (oed).

guild n. (as in the sense ‘member of a guild, guild-brother’, was expressed by Old English *gylda* and *gegylða*, medieval Latin as *gildō*, and in Old French *gelde*, *geldon*, one of a company (*gelde*) of foot-soldiers (oed)) “A group of species which have similar roles in the same community” (oed). “A guild is defined as a group of species that exploit the same class of environmental resources in a similar way” (Ecol. Monogr. 37 335/2).

guttation n. (Latin *gutta*, drop) ①Formation of drops of water on plants from moisture in air; ②the process of water being exuded from hydathodes at the enlarged terminations of veins around the margins of the leaves.

gymnosperm n. (modern Latin *gymnospermus*, from Greek γυμνόσπερμος, *gymnospermos*, from γυμνός, *gymnos*, naked, and σπέρμα, *sperma*, seed) ①Seed-bearing plant in which the ovules are borne on open scales. ② “A plant which has naked seeds, as the pine, hemlock fir, etc; one of the *Gymnospermæ*, a class of exogenous plants so characterized, embracing the orders *Cycadaceæ*, *Coniferae*, and *Gnetaceæ*” (oed) ③Inhomogenous group of seed plants bearing their ovules on open megasporophylls (or ovuliferous scales in confers) and not in closed megasporophylls (=carpels) like angiosperms. Gymnosperms comprise three distantly related groups: conifers (8 families, 69 genera, 630 species) cycads (3 families, 11 genera, 292 species) and *Gnetales* (3 families, 3 genera, and 95 species) (sk08). ④Plant with the ovules borne naked or unprotected, the conifers or cone-bearing plants and their allies. ④Plants that bear seeds that are not enclosed in an ovary (news). Cf angiosperms.

Gymnospermae n. (Greek *gymnos*, uncovered, naked, and Greek σπέρμα, *sperma*, seed) An important division of the plant kingdom, being woody plants with alternation of generations, having the gametophyte retained on the sporophyte and seeds produced on the surface of the sporophylls and not enclosed in an ovary.

gynaecandrous, gynecandrous adj. () ①Having staminate and pistillate flowers in the same spike or spikelet, the latter above the former. ②A spike bearing staminate (male) and pistillate (female) flowers where the staminate flowers are positioned below the pistillate flowers, thus the pistillate flowers are closest to the spike apex. ③In *Carex* spp, spikes that contain both male & female flowers, with the females positioned above the males (news).

gynaecium, gynoecium n. (Latin *gynaeceum*, -ium, from Greek γυναικεῖον, *gynaikeion*, from γυναικ-, *gynaik-*, from γυνή, *gyne*, woman *gyne*, and ancient Greek οἰκία, *oikia*, house; alternately Greek *gynaikeie*, woman's part of a house) ①The pistil or pistils of a flower, taken collectively; ②the pistil or collective pistils of a flower; ③The female portions of a flower as a whole -- *gynaecium*. The corresponding term for stamens is the *androecium*. ④The female organs of the flower, consisting of one or more carpels forming one or several ovaries with their stigmas and styles. ⑤The summary of all carpels in a flower, irrespective of whether they are joined or separate (sk08). ⑥”The

female organs of a flower, collectively. Now usually spelt gynœcium n. having been supposed to be from Greek οἰκίον house; under the influence of this notion andrœcium n. has been formed as its correlative.” (oed) ⑦The collective term for the female organs (carpels) of a flower (news).

gynodioecy n. (and ancient Greek οἰκία, *oikia*, house) ①“Having perfect and female flowers on different plants” (oed) ②The condition in which bisexual and female flowers are born on different plants of the same species. In certain *Ficus spp.* (Including *F. carica*, the edible fig) the synconia of the so-called male trees bear male flowers as well as both kinds of female flowers (short- and long-style) whilst female trees only bear synconia with purely (long-styled) female flowers. (sk08).

gynophore n. (Greek *gyne*, woman, and *pherein*, to carry) ①A stalk supporting the ovary. ②A stalk that elevates the gynoecium above the flower base (news).

gynostegium n. (Greek *gyne*, woman, and *stege*, roof) A protective covering for a gynaecium, especially as formed by the union of stamens and style.

H

habit n. (Latin *habitus*, condition, appearance, dress, from *habēre* to have) ①The external appearance or way of growth of a plant, eg climbing, erect, bushy, etc; ②the tendency of a plant to grow in a certain way; ③general appearance or aspect of a plant; ④growth form. ⑤“The characteristic mode of growth and general external appearance of an animal or plant” (oed). ⑥The overall shape & bearing of a plant (news).

habitat n. (Latin *habitat*, 3rd person singular present tense of *habitare*, to inhabit) ①The locality or external environment in which a plant lives; the kind of place in which a plant grows. ②“*Natural Hist.* The locality in which a plant or animal naturally grows or lives; habitation. Sometimes applied to the *geographical area* over which it extends, or the special locality to which it is confined; sometimes restricted to the particular *station* or spot in which a specimen is found; but chiefly used to indicate the kind of locality, as the sea-shore, rocky cliffs, chalk hills, or the like.” (oed) ③The sum total of all environmental factors in the physical place occupied by an organism, population or community. ④The environment in which a plant normally grows (news).

habitat enhancement Any changes made to a habitat that serves to improve its value and ability to meet the requirements of one of more organisms.

hair n. () ①An epidermal appendage, either unicellular or consisting of a single row or cells. ②A soft, slender, straight or branched outgrowth of the epidermis, often only one cell thick (news). Cf bristle, scale.

hallucinogenic adj. (late Latin *ālūcinātiōnem* (*all-*, *hall-*), n. of action, from *ālūcinārī*, (*h*)*allūcinārī*, to wander in mind, talk idly, prate, and -gen, from French -*gène*, ultimately Greek -γενής, -genes, from γεν-, gen-, root of γίγνεσθαι, *gigesthai*, to be born, become, γεννάειν, *gennaein*, to beget, γένος, genos, kind, etc) ①Being or containing such a hallucinogen; ②causing hallucinations.

halo- prefix (from Greek ἅλς, ἅλος, *hals*, *halos*, sea, salt)

halophilic adj. (from Greek ἅλς, ἅλος, *hals*, *halos*, sea, salt, and) Preferring saline soils.

halophyte (modern Latin *halophyta*, Greek ἅλς, ἅλος, *hals*, *halos*, sea, salt, and *phyton*, plant) ①A plant that is adapted to grow in and tolerate saline soils; ②any species capable of tolerating 0.5% or more NaCl. ③Plant of saline habitats (mfñ).

haplocorm n. (from Greek ἀπλό-ας, *hapl-as*, contraction of ἀπλοῦς, *haplous*, single, simple, and corm, which see, from modern Botanical Latin *cormus* (Willdenow c1800), from Greek κορμός, *kormos*, the trunk of a tree with the boughs lopped off, from κείρ-ειν, *keir-ein*, (ablaut stems κερ-, κορ-, *ker-*, *kor-*.) to cut, poll, lop) The swollen lowest internode of *Phleum pratense* that forms when the lowest internode enlarges with stored food

reserves as the shoots mature. At the late boot to early heading stage, adventitious buds in haplocorms form new tillers.

haplography n. (from Greek ἀπλοῦς, *haplous*, single, simple, and Latin *-graphus*, Greek *-γραφος*, *-graphos*.) “Single writing; the unintentional writing of a letter or word, or series of letters or words, once, when it should be written twice. (The opposite of dittography n.)” (oed)

haploid n. () With a complement of one set of chromosomes. Cf diploid, polyploid.

haplophyte n. (Greek *haploos*, simple, and *-eidos*, form) Having the number of chromosomes characteristic of the gametes for the organism.

haplotype n. () A specimen where doubt exists if the author actually handled the specimen mention in the description.

hapteron n. (Greek *haptein*, to fasten) Holdfast, specialized root-like projections that function to anchor a plant.

hard seed Hard seed is the percent of the number of seeds that remain hard at the end of the testing period because they have not absorbed water because of an impermeable seed coat. Hard seed is generally considered to be seed that will germinate at a later date than seed reported in the % germination calculation.

hastate adj. (Latin *hastatus*, from *hasta*, spear) ①Spear shaped, more or less triangular with the two basal lobes divergent; ②resembling an arrowhead, particularly with respect to the lobed basal portion, which is usually at about right angles to the main portion; ③with the shape of an arrow head with the basal lobes pointed and narrow and spreading at a wide angle. ④Shaped like an arrowhead but with basal lobes diverging, cf sagittate (mfn). ⑤Shaped like the head of an arrow with the basal lobes flaring outward, "arrowhead-shaped". ⑥Leaf base consists of two triangular lobes pointed outward (news).

hastiform adj. () More or less hastate.

haustorium pl *haustroia* n. (modern Latin, from Latin *haustor*, a drawer, drainer, from *haurire*, to draw, drain, and classical Latin *-ōrium*, used as noun base in the sense of a place for or belonging to, thing used for) ①In parasitic plants, a specialized outgrowth of a stem or root, serving for the absorption of food, as in the dodders. ②An absorbing organ through which a parasitic plant absorbs nourishment from its host. ③“A small sucker of a parasitic plant, which penetrates the tissues of the host; a specialized branch or organ of the mycelium of a fungus, whereby it attaches itself to its host” (oed). ④The structures on a parasitic plant by which it attaches to its host (mfn). ⑤The sucker by which a parasitic plant anchors itself on a host plant (news).

hay Grass and other plants such as alfalfa or clover that are cut and cured for use as animal feed.

head n. ①A dense, compact cluster of mostly sessile flowers. ②Also used to describe the inflorescence in the *Asteraceae* family. ③A compact inflorescence of sessile flowers or fruits crowded on a receptacle. Loosely used for compact clusters of fruits from a single flower (mfn). ④A dense indeterminate inflorescence of sessile (or nearly sessile) flowers, situated on an axis that is much compressed vertically and sometimes flattened or saucer-shaped. ⑤Short, dense inflorescence (news). Synonym capitulum.

heavy soil A fine grained soil that is high in clay and/or silt content.

height n. ①Unless otherwise specified, the vertical distance between the collar or ground line and the top of the stem, measured in the plant’s natural position. Techniques for proper measurement are determined by the particular growth habit of the plant, and may not always extend to the tip of the stem. ②Vertical distance (in meters) from the base of a plant at ground-level to the uppermost growing tip (news).

helical, helicoid adj. ①Refers to racemes or spikes, which are coiled from the tip downward with successive, lateral branches arising on the same side. ②Coiled like a spring (news).

helix n. Coil (news).

helmet n. (obsolete French *healmet*, *helmet*, diminutive of Old French *helme*, from Old High German *helm*, from Old Germanic **helmo-z*, from pre-Germanic **kelmo-s*, from the root *kel-*, to cover, conceal) A hood-shaped organ, usually a petal, best exemplified in the genus *Aconitum*.

hemi- prefix (Greek ἡμι-, *hemi-*, combining form, from earlier **σᾶμι-*, **sami-*, = Latin *sēmi-*) A prefix meaning half.

hemicryptophyte n. (Greek ἡμι-, *hemi-*, half, and *kryptos*, hidden, and *phyton*, plant) A perennial plant having its over-wintering buds located at the soil surface.

hemiparasitic adj. (Greek ἡμι-, *hemi-*, half, and) ①Partly parasitic, ie, attached to a host plant but also with capacity for photosynthesis. ②A parasitic plant capable of limited photosynthetic production of sugars, etc. ③A parasitic plant that possesses chlorophyll & can photosynthesize but also obtains nutrition from its host plant (news). Cf holophyte, saprophyte.

hemispheric, hemispherical adj. (Greek ἡμι-, *hemi-*, half, and) ①Shaped like half a sphere (mfn). ②In reference to a head, with a half-sphere shape.

hemoglobin n. A red pigment present in nitrogen-fixing root nodules that maintains oxygen flow to the bacteria. It is similar in overall composition and function to the hemoglobin in our blood. (rrl)

hemoglobinuria n. (Greek αἷματ-, *haimat-*, blood, classical Latin *globulus* round lump, little ball, pill, and οὔρον, *ouron*, urine) *Pathol.* the presence of free hæmoglobin in the urine (oed)

hepatotoxic adj. (ancient Greek ἥπατο-, *hepato-*, combining form of ἥπαρ, *hepar*, liver, and medieval Latin *toxic-us* poisoned, imbued with poison, from *toxicum*, which see) Having a toxic effect on the liver.

herb n. (Latin *herba*, grass, green crop, herbage, herb) ①Any seed plant whose stem withers away to the ground after each season's growth; ②a seed plant with a green, non-woody stem; ③a non-woody, often non-grass-like plant. ④Plant with stem that dies back to the ground after flowering or at the end of the growing season. ⑤A vascular plant which is not wood. ⑥A plant that dies back to the ground at the end of each growing season (non-woody) (news). Hence herbaceous.

herbaceous adj. () ①Having the character of an herb; not woody. ②A non-woody plant. ③Not woody; having the texture of a leaf (news). Grasses, grasslikes, and forbs are herbs.

herbage (French *herbe*, an herb) ①Herbs collectively; ②the green foliage and juicy stems of herbs. ③Referring to green leaves and shoots. ④Stems & leaves (above the ground) (news).

herbivore n. (Latin *herba*, vegetation, and *vorare*, to swallow, to devour) A plant-eating animal.

herbarium specimen Dried and pressed plants mounted for permanent preservation with collection data such as habitat and geographical location included.

hermaphrodite n. (Latin *hermaphroditus*, from Greek ἑρμαφρόδιτος, *hermaphroditos*, originally proper name of Ἑρμαφρόδιτος, *Hermaphroditos*, son of Hermes (Mercury) and Aphrodite (Venus), who, according to the myth, grew together with the nymph Salmacis, while bathing in her fountain, and thus combined male and female character) ①An individual or structure bearing both male and female reproductive organs, eg a bisexual flower has both fertile stamens and carpels (sk08). ② "A plant or flower in which the stamens and pistils (or equivalent organs) are present in the same flower, as in the majority of flowering plants" (oed). ③Bearing both sexes, usually in the same flower.

hesperidium n. A partitioned berry with a leathery, removable rind (such as an orange) (news).

hetero- prefix (combining form of Greek ἕτερος, *heteros*, the other of two, other, different) Prefix meaning dissimilar, often used in opposition to *homo-*, sometimes to *auto-*, *homæo-*, *iso-*, *ortho-*, or *syn-*.

heterogamous spikelets n. The paired spikelets found in most *Andropogoneae*, where one spikelet of the pair is sessile and produces a caryopsis, and the other spikelet is pedicelled, of different form, and staminate or sterile.

heteromorphic, heteromorphous adj. () Existing in two or more easily recognisable forms. Cf isomorphic, monomorphic, dimorphic, polymorphic

heterophyllous adj. (Greek *heteros*, other, and *phyllon*, leaf) ①The presence on a single individual of two or more distinct leaf shapes. These leaves may differ markedly in shape, yet have similar gross anatomical organization. ②Having two types of leaves. ③Producing two or more types of distinct leaves (news).

heterophylly n. () The phenomenon of producing two kinds of leaves, quite different morphologically, on the same individual, either simultaneously or in the course of development (mfn).

heterosporous adj. (*heter-* and *-sporous* or *-sporic*) ①Characterized by heterospory: reproducing asexually by heterospory <heterosporous plants>; specifically: producing microspores and megaspores, from some pteridophytes and all spermatophytes are heterosporous. ②Producing of two different types of spores, generally differing in size. ③Bearing spores of distinctly different types. Cf homosporous.

heterospory n. (from *heter-* and *-spory*) The production of asexual spores of more than one kind, the development of microspores and megaspores in some ferns and fern allies and in all seed plants -- opposed to homosporous.

heterostylous, heterostyled (*heter-* and *-styled*) ①Having styles of two or more distinct forms or of different lengths. ②With styles (and generally stamens) of different lengths in different flowers (mfn).

heterotrophic adj. () Dependent on external sources of organic nutrients. Cf autotrophic, parasite, saprophyte.

heterozygote n. (Greek *heteros*, other, and *zygon*, yoke) An organism or cell having two different alleles at corresponding loci on homologous chromosomes.

hexa- prefix () Prefix meaning six.

hibernaculum n. (Latin *hibernare*, winter residence) ①A plant organ such as a bud, rhizome, turion, etc which allows a plant to live through adverse conditions.

high desert Usually refers to desert regions that experience cold winters.

hilum n. (Latin *hīlum* little thing, trifle; according to Festus, thought to have originally meant 'that which adheres to a bean'; hence in modern Botany use) ①The scar or point of attachment on a seed marking the place where it was attached to the seed stalk. ②"The point of attachment of a seed to its seed-vessel; the scar on the ripe seed" (oed). ③The scar on the caryopsis marking the site of the attachment of the pericarp and testa, found on the opposite side from the embryo. ④The scar at the point of attachment of a seed (news).

hip, hep n. (Old English *héope*, *hiope* weak feminine, from same root as Old Saxon *hiopo*, Old High German *hiufo*, *hiaofo*, Middle High German *hiefe* weak masculine, thorn-bush, bramble, from Old Germanic types **heupôn-*, **heupon-* (oed)) The 'fruit' of roses.

hirsute adj. (Latin *hirsutus*, bristly) ①Set with bristles, hairy, or shaggy; ②beset with stiff or stiffish, usually straight, hairs; ③covered with coarse, straight rather stiff hairs, usually perpendicular to the surface; ④with distinct hairs, often rather stiff or bristly. ⑤Covered with long, stiff and coarse hairs, "stiff-hairy". ⑥With rather coarse or stiff hairs (mfn). ⑦With stiff, coarse, curving hairs (news).

hirsutulous adj. () Slightly hirsute.

hirtellous adj. () Minutely hirsute.

hispid adj. (Latin *hispidus* -a -um rough) ①Having stiff hairs, spines, or bristles; ②coarsely hirsute or bristly-hairy; ③rough with erect, bristly hairs. ④With stiff hairs or bristles (mfn). ⑤Bearing long, rigid and very sharp bristles or "bristlelike" hairs. ⑥With stiff or rigid spreading hairs or bristles. ⑦With long, stiff hairs or bristles (news). Diminutive hispidulous.

hispidulous adj. ①Minutely hispid. ②Minutely hispid (mfn). ③Slightly hispid.

historical adj. Not seen for several years (news). This is a reference to a states' status of a plant sp, indicting the sp has not been recently seen as a live plant in the state.

hoary adj. () ①Pubescent with close, fine, usually grayish or whitish, hairs. ②With fine gray or whitish pubescence (mfn). ③Covered with hairs so fine as to not be readily visible to the naked eye, giving the surface a pale greyish hue. ④Covered with short and fine white or grey hairs.

holarctic adj. (Greek ὅλος, *holos*, whole, and) "In the geographical distribution of animals: Of or pertaining to the entire northern or arctic region, as the holarctic region, or holarctic family of birds.

Mr. P. Sclater divided the surface of the globe into six great zoological regions, two of which, the *Palæarctic* and *Nearctic*, comprised the Old and the New World respectively north of the Tropic of Cancer (nearly). It has since been proposed to unite these into one region, to which Prof. A. Newton has applied the term *Holarctic*. It corresponds essentially to Huxley's *Arctogæal*." (oed)

hollow pith n. Interior of branchlet has little or no tissue (news).

Holocene n. An epoch of the Quaternary period beginning at the end of the ice ages approximately 10 000 years ago and extending to the present day.

holoparasite n. A parasitic plant that lacks chlorophyll & depends entirely on a host for its nutrition (news).

holophyte n. () A plant maintained entirely by its own organs. Cf parasite, saprophyte.

holotype n. () The one specimen designated by the author to which the name of the taxon is permanently attached (see type).

homo- prefix (ancient Greek ὁμο-, *homo-*, comb. form of ὁμός, *homos*, same) ①Prefix meaning even, equal, like, or similar, in opposition to hetero-. Cf iso-, hetero-. ② "The pronunciation of the first syllable, with primary or secondary stress, varies; etymologically the o is short /ɒ/ and is so usually pronounced by scholars (compare holo- comb. form); but popularly it is often /əʊ/; when stressless it is /əʊ/ (though some make it /ɒ/)" (oed)

homogamous spikelets n. In *Andropogoneae* the paired spikelets sometimes present at the base of the raceme, of similar appearance and not producing any caryopses, often resembling the pedicelled spikelets or assuming a protective involucre function.

homonym n. () The same name; ②a combination (viz.) where the genus-species pair is exactly the same as an already existing combination, based on a different type (viz.). Cf synonym, basionym.

homophyllous adj. ①With leaves that are all identical or very similar in form. ②With leaves & bracts all of similar size (news).

homosporous adj. () ①Bearing spores of uniform type. ②Production of one type of spore. Cf heterosporous.

homospory n. (hom- and -spory) The production by various plants (as the club mosses and horsetails) of asexual spores of only one kind.

homostylic adj. (from homostyled from hom- and styled; homostylic from hom- and style and -ic; homostylous from hom- and -stylous) ①Having styles all of one length. ②With styles and stamens about the same length (mfn).

honey plant Plants from which nectar and pollen are collected by bees in order to make honey.

hood n. () ①Specifically, that part of the milkweed flower in which the stamens are greatly modified into hood-like organs; in general, an organ, which is arched, or concave. ②A covering structure with the top & sides curving inward (news).

horizon n. A layer of soil, usually parallel to the land surface, with a distinctive set of physical, chemical, and biological properties and differentiable from horizons above or below it by differences in appearance and properties.

horn n. ①An incurved body often present in the hooded body of milkweed flowers. ②A slender process at the base of the corona of some *Apocynaceae* (news).

horsetail n. () ①A common name for a member of the *Sphenophyta*, a group of seedless, spore-producing vascular plants. Three hundred million years ago in the Carboniferous time period, lowland forests and swamps consisted of a great variety of spore producing trees, the most prominent being relatives of clubmosses and horsetails. Today, the sphenophytes have only one surviving genus, *Equisetum*, with about 15 species worldwide (sk08).

②“The common name of the genus *Equisetum*, consisting of cryptogamous plants with hollow jointed stems, and whorls of slender branches at the joints; the whole having some resemblance to a horse's tail” (oed).

host n. () ①The plant on which a parasite lives and from which it derives its nourishment; ②also the plants on which epiphytes grow. The legume component of the legume rhizobiapartnership.

host diversity n. Plants from a particular crop, pasture or prairie species are not all the same. This may be because of cross pollination between plants, or because of genetic mutations. Such differences can mean that some plants in a species will be resistant to particular diseases or are better in their ability to fix nitrogen. Because of such differences and their potential importance, the US maintains a strong germplasm collection program. (See Germplasm Resources Information Network - GRIN.) (rrl)

host preference or specificity The degree to which a strain of rhizobia is able to effect nodule formation and N₂-fixation with a species of legume.

humifuse adj. () Spreading over the ground.

hummock n. () A small, low mound in an otherwise wet plant community.

hyaline adj. (Greek *hyalos*, glass) ①Of thin, membranous, transparent or translucent texture; ②thin and translucent or transparent. ③Thin and translucent (mfn). ④Translucent, usually thin. ⑤Thin, almost completely transparent tissue, translucent, "wax papery".

hybrid adj., n (Latin *hibrida*, cross) ①Any cross-bred plant; a plant resulting from a cross between different species; ③the progeny of sexual reproduction between two different, recognized species. ④A cross between 2 taxa, usually a cross between 2 species of the same genus. ⑤The progeny of different taxa (genera or species), often of intermediate appearance. ⑥The offspring of genetically dissimilar parents. Hybrids are usually the result of crossing two species with different desirable characteristics for the purpose of creating offspring that would possess more of the desirable characteristics. Hybrids may also be created naturally without man's influence. Hence hybridism. Cf heterozygote.

hybrid cross A plant resulting from the crossbreeding between two different species.

hybrid swarm n. () A population of hybrids and plants derived from backcrossing the hybrids with the parent species. Cf introgression.

hybridization The act of creating a hybrid

hydathodes n. (German *hydathode* (G. Haberlandt 1894, in *Sitzungsber. Akad. Wiss. Wien* CIII. i. 494), from Greek ὑδατ-, ὕδωρ, *hydat-, hydor*, water, and ὁδός, *hodos*, way, path, or Greek *hydatos*, of water, and *hodos*, way) ①An epidermal structure specialized for secretion, or for exudation, of water. ②Water-secreting gland on the surface of margin or leaf, at the ends of veins, often indicated by a white deposit of salts. ③A structure near a leaf margin that discharges water (news).

hydic adj. (Greek *hydor*, water) Characterized by an abundant supply of water.

hydrochorous adj. () Water dispersed. See also hydrochory.

hydrochory n. (from Greek ὑδρο-, *hydro-*, combining form of ὕδωρ, *hydōr*, water, and χωρεῖν, *khōrein*, to go, to be spread abroad, to disperse) ①“The dissemination of seeds by water” (oed) ②Dispersal of plant diaspores by water. Hydrochory can be subdivided further into nautohydrochory, dispersal by water currents, and ombrohydrochory, dispersal by rain and-or dew (sk08).

hydromesophytic adj. () Referring to the wet mesophytic swamps behind the high dunes near Lake Michigan.

hydrophilic adj. (Greek ὑδρο-, *hydro-*, combining form of ὕδωρ, *hydōr*, water, and ancient Greek -φίλος, combining form φίλος loving, dear, literally water loving) Of seeds, viable for only a short time; *specifically* unable to survive drying or freezing, making them difficult to preserve; same as recalcitrant.

hydrophilous, hydrophily n. (Greek *hydor*, water, and *philein*, to love) Water pollination.

hydrophyte n. (Greek *hydor*, water, and *phyton*, plant) ①An aquatic plant living on or in water; ②a plant growing submerged, or almost so, in water.

hydroponic culture n. Growth of plants in an aerated liquid medium that supplies all nutrients needed for growth.

hydropote (Greek *hydropotes*, water drinker) A cell or cell group found on the lower epidermis of some species such as *Nymphaea*. These cells are thought to function in the uptake of ions from the water.

hygrochastic adj. See hygrochasy.

hygrochasy n. (Greek ὑγρο-, ὑγρ-, *hygro-, hydr-*, combining form of ὑγρός, *hygros*, wet, moist, fluid, and *chasis*, crack, gullet) Production of hygroscopically dehiscent capsules that open only when wet (and often close again upon desiccation), eg the capsules of many succulent *Aizoaceae* (sk08).

hygroscopic adj. () Absorbing water and changing shape as a result.

hypanthium, hypanthodium n. (Greek, ὑπο-, ὑπ- *hypo-, hyp-*, under, beneath, and ἄνθος, *anthos*, flower, in one source *anthodes*, like flowers) ①An expansion of the receptacle of a flower that forms a saucer-shaped, cup-shaped, or tubular structure (often simulating a calyx tube) bearing the perianth and stamens at or near its rim; it may be free from or united to the ovary. ②“In certain plants, an enlargement of the receptacle, sometimes becoming fleshy and surrounding the ovary” (oed). ③A cup-shaped to tubular organ in the flower derived from the receptacle carrying the sepals and petals or tepals, and the stamens. In perigynous flowers, the hypanthium surrounds the gynoecium but stays separate from it. In epigynous flowers, the dorsal parts of the gynoecium are included in the formation of the hypanthium, which results in an inferior ovary. (sk08). ④A cup-like structure surrounding the ovary, formed by the fusion of the basal portions of the calyx, corolla and androecium. ⑤Floral tube formed by the adnation of the sepals, petals, and stamens; most commonly tubular and simulating a calyx tube. ⑥See floral tube (mfn). ⑦A cup- or tube-

shaped section of tissue in a flower formed from the fusion of the basal portion of the sepals, petals, & stamens; especially common in many spp of rose (*Rosa*) (*news*).

hypertrophy n. (Greek *hyper*, above, and *trophe*, nourishment) Excessive growth due to increase in cell size.

hypha pl hyphae

hyphal adj.

hypo- prefix () Prefix meaning beneath or under. Cf epi-.

hypocotyl n. The part of the stem of a young seedling between the radicle (embryonic root) & the cotyledon (embryonic leaf) (*news*).

hypogeal adj. (The form hypogæal is perhaps after late Attic ὑπόγαιος, *hypogaios*, from γαῖα, *gaia*, earth.) Subterranean.

hypogeal germination n. () Germination where the cotyledons remain below the surface of the soil.

hypogynium n. () The disk-like structure subtending the ovary in the genus *Scleria*.

hypogynous adj. (Greek *hypo*, under, and *gyne*, female) ① Inserted below the gynoecium, and not adherent; immediately below oogonium; the ovary thus said to be superior. ② A flower with the calyx situated below the ovary; n. hypogyny. ③ With a superior ovary that lacks a hypanthium (*news*).

hypogynous flower n. (Greek *hypo*, under, beneath, and *gyne*, female) A flower in which the sepals, petals, and stamens are inserted below the exposed and clearly visible (superior) ovary.

hypostomic adj. () With stomata confined to the abaxial surfaces.

I

i. e. Latin phrase *id est*, or that is. I.e. is used in place of in other words, or it/that is. It specifies or makes more clear. Our website uses ie. Cf e. g.

IAA n. Indole-acetic acid, a natural growth hormone found in plants.

-ic suffix (from French *-ique*, from Latin *-icus*, of Latin origin, as in *civic-us*, *classic-us*, *public-us*, or from Greek -ικός, *-ikos*, κωμικός *kōmikos*, γραμματικός *grammatikos*. This was in Greek one of the commonest of suffixes, forming adjectives, with the sense ‘after the manner of’, ‘of the nature of’, ‘pertaining to’, ‘of’ (oed)) A suffix used to form adjectives, especially scientific terms.

identification n. () The process of comparing and matching an unknown entity with a known entity; the known may be a specimen, an illustration, a photo, or electronic image.

idioblasts n. (Greek *idios*, one's own, *blastos*, a bud, offshoot) ① Plant cells containing oil, gum, calcium, or other products, and appearing to help provide mechanical support. ② Specialised cells which differs from their neighbours in size, structure, and function.

-idium suffix (post-classical Latin and scientific Latin *-idium*, and its etymon ancient Greek -ίδιον, *idion*, diminutive suffix) “Suffix forming nouns denoting small or compact biological structures of a type indicated by the first element, as *conidium* n., *ommatidium* n., *pyxidium* n., *sporidium* n. (Not always diminutive in force.)” (oed)

illuviation n. A soil-forming process involving the movement of soluble or particulate soil materials from one horizon downward into another horizon (cf argillic horizon, calcic horizon).

imbricate adj. (Latin *imbricare*, to tile) ①Having parts overlapping each other like roof tiles. ②A general term which applies under various conditions where one organ, or series of organs, overlaps another organ or series of organs; as in roof shingles, overlapping, as do shingles on a roof. ③Partly overlapping in a spiral manner, shingle-like, "graduated". ④With overlapping edges, as in scales on a fish. ⑤With the edges overlapping, like shingles on a roof. (mfn). ⑥Overlapping, as shingles on a roof; arrangement of bud scales with the outer/lower ones overlying & partially concealing the inner/upper ones (news). Cf valvate.

immaculate adj. () Without spots, compare with maculate.

immersed adj. (Latin *in*, into, and *mergere*, to dip, plunge) ①Growing under water; ②growing beneath the surface of the water. ③Imbedded in another organ.

immobilization The conversion of an element from the inorganic to the organic form in microbial or plant tissues.

imparipinnate adj. (modern Latin *imparipinnātus* (Linnæus, 1751)) ①Pinnate with the rachis terminated by a single leaflet or tendril. ②A compound leaf with pairs of leaflets & a single terminal leaflet (cf with paripinnate) (news). Cf odd-pinnate, even pinnate, paripinnate.

imperfect adj. ①Pertaining to a flower in which there is but one set of sex organs; ie, those flowers which are either strictly male or strictly female; imperfect flowers occur in both monoecious and dioecious plants; ②having unisexual flowers. ③Having either stamen or pistil (carpels) but not both. ④Flowers lacking either female or male reproductive structures, a unisexual flower.

imperfect flower A flower containing stamen and pistil organs required for pollination but lacking sepals or petals or both of these organs.

impressed adj. ①Sunken in; situated inferior to the surface of a blade, usually in reference to veins which are neither flush with nor raised above the surface of the blade or organ. ②Slightly sunken, as the veins on the surfaces of some leaves (mfn). ③Sunk or immersed below the level of the surface.

in- prefix () "1) Latin *in-* adv. and prep., used in combination with verbs or their derivatives, less commonly with other parts of speech, with the senses 'into, in, within; on, upon; towards, against'; 2) the Latin *in-*, cognate with Greek $\alpha-$, *av-*, Common Germanic *un-*, prefixed to adjectives and their derivatives, rarely to other words, to express negation or privation." (oed) ②Prefix meaning not or inwards.

In preposition ①With respect to plant authorities, indicates that the first author described the plant in an article edited or published by the second author.

in situ (Latin *in*, preposition used with the ablative case to mean 'in', and the noun *situs*, *situs* m., situation, position, site) ①Latin phrase meaning in its (original) place; in position (oed).

incertae sedis adjectival phrase? (Latin of uncertain position, without assurance of relationship) Used to define a taxonomic group where its relations to other groups are unknown or undefined.

incised adj. (Latin *in*, into, and *caedere*, to cut) ①With sharp angles between the lobes; having deeply cleft margins; ②deeply cut or divided, usually irregularly. ③Cut \pm deeply (but not as deeply as in pinnatifid or dissected) (mfn). ④Cut sharply, deeply and irregularly, as in leaf margins. ⑤Cut sharply, sometimes and rather deeply. ⑥Cut deeply into visible lobes (but not quite teeth) (news). Hence incisure. Cf dissected, -sect.

included adj. (Latin *in*, in, and *cludere*, to shut, close) ①Not projecting beyond an enclosing part; ②contained within, usually in reference to stamens, pistils, or capsules which do not surpass or exceed the calyx or corolla in length. ③Not protruding beyond the surrounding structure(s); cf exserted (mfn). ④Enclosed, not protruding. Cf exserted.

inconspicuous adj. () ①Hard to see; ②not easily seen; ③not striking to the eye.

incrassate adj. (Latin *in*, in, and *crassus*, thick) ①Becoming thick or thicker, especially toward a tip or margin; thickened.

incumbent adj. () Resting or leaning upon.

incurved adj. () ①Curled or directed inward, such as hairs, the tips of which curve back toward the stem or surface of an organ. ②Curved upwards or to the adaxial (upper) side. Cf recurved.

indefinite adj. (Latin *indēfīnītus -a -um*, from *in-*, not, and *dēfīnītus -a -um*, definite) ①“Said of inflorescence in which the central axis grows indefinitely in length, producing a succession of lateral branches bearing flower-buds (or of sessile flower-buds) which open successively from the lowest upwards; also called *centripetal* or *indeterminate*.” (oed) ②Of unlimited, or apparently unlimited number of extent. Cf definite, determinate, indeterminate.

indehiscent adj. (Latin *in*, not, and *dehiscens*, gaping) ①Fruits which do not open to release seeds, but whole fruit is shed from the plant; ②not opening to release spores; ③not opening at maturity, staying closed; a term generally referring to some fruits. ④Remaining closed at maturity, not splitting. ⑤Not splitting open naturally(mfn). ⑥Not separating or splitting open at maturity (news). Cf dehiscent.

indeterminate adj. (Latin *indēterminātus, -a -um* (Tertullian), from Latin *dēterminātus, -a -um*, past participle of *dētermināre*, to determine) ①An inflorescence whose terminal flowers open last. Synonym indefinite, which see. See determinate. “Indeterminate, ...when a stem is never terminated by a flower, nor has its growth stopped by any other organic cause” W. T. Brande Dict. Sci., Lit. & Art 594/1 (in oed). of indefinite growth, or apparently capable of unlimited growth. ②An inflorescence with the terminal or central flower developing last thus allowing the inflorescence to continue growing. ③A plant whose flowering stem continues to grow and bear new flowers throughout it’s flowering period thereby resulting in flowers in all stages of development (from flower initiation to seed set) occurring on the same plant. The flowering sequence begins on the lower most flowers. ④A structure that develops from the base & continues to elongate or expand throughout the growing season (news). Also see the definition for ‘determinate plant.’ Cf determinate. *Polygala sanguinea, Verbena urticifolia*, certain tomato varieties.

indicator categories:

Upland - Not on National List of Plant Species That Occur In Wetlands:

Facultative Upland - Usually occurs in upland or non-wetlands (probability 67%-99%); but occasionally found in wetlands (probability 1%-33%).

Facultative - Equally likely to occur in wetlands or non-wetlands (probability 34%-66%).

Facultative Wetland - Usually occurs in wetlands (probability 67%-99%), but occasionally found in non-wetlands.

Obligatory Wetland - Under natural conditions occurs in wetlands (probability >99%).

indigenous adj. (Latin *in*, within, and *gignere*, to bear, produce) ①Native; ②originating or occurring naturally in the place specified. ③Native, occurring naturally in an area. ④Organisms that are native to a specific environment (rrl). Applied to a species that occurs naturally in an area; native. Hence indigene. Cf introduced, adventive, exotic.

indument, indumentum pl indumenta n. (Latin *indumentum* garment, clothing, from *induĕre* to put on) ①Hairy or pubescent, usually rather heavy, covering. ②Any covering of a plant surface, especially hairs and scales. ③“The covering of hairs on part of a plant, esp. when dense, eg the covering of the lower surface of the leaves of many species of rhododendron” (oed). ④Appendages or outgrowths from the epidermis of a plant, a collective term, of hairs or scales. ⑤Outgrowths of the epidermis that are only 1 cell wide (ie, hairs); a collective term for all of the hairs on a plant or on a plant organ (news).

induplicate adj. () With the margins bent inwards, and the external faces of these edges applied to each other, without twisting.

indurate (Latin *indūrāt-us*, past participle of *indūrāre* to make hard, *from in-*, in- prefix toward, intensive, and *dūrus* hard; formerly stressed in 'durate) ①Made hard, physically hardened. ②Hard, firm, or stiff.

indurated adj. (see above) ①Physically hardened; hardened and toughened.

indusium pl *indusia* n. (New Latin, from Latin *indūsium* woman's undergarment, a tunic, perhaps from *induēre* to put on) ①An outgrowth of tissue that covers the spore producing structures in ferns. ②An outgrowth of the leaf which covers or invests the sori in many ferns; a delicate flap or covering connected to the sorus in ferns. ③The protective membrane covering a sorus, not originating from the margin of the lamina. ④A scale-like outgrowth that covers and protects the cluster of sporangia located on the underside of a fern frond. ⑤A specialized flap of tissue that covers & protects the sorus in ferns (plural: *indusia*) (news). Cf false *indusium*.

inert The percent weight of the sample that is not viable seed. It can include plant parts, broken seeds or other materials that are not viable seeds.

infectiveness n. The ability of a particular rhizobial strain to induce nodule formation on a particular host (rrl).

inferior ovary n. () ①When the perianth and androecium are fused at the top of the ovary wall, the ovary position is described as inferior. ②The ovule-bearing organ of a flower that has the other floral parts (calyx, corolla, etc (news).) attached to its summit (news). See epigynous flower.

infertile adj. () Incapable of sexual reproduction.

inflated adj. Puffed up, bladdery.

inferior adj. () ①In reference to an organ which appears subordinate to or lower than another similar organ; ②in reference to an ovary, at least the sides of which are adnate to the hypanthium. ③ (Of an ovary) below the perianth; cf superior (mfn). ④Situated below another organ or part. Cf superior.

infertile adj. () ①Sterile; unable to produce seeds.

inflated adj. () Blown up or dilated as if by air; bladder-like.

inflexed adj. () Bent inward; turning sharply inwards. Cf reflexed.

inflorescence n. (Modern Latin *inflōrēscēntia*, from Linnæus, from Latin *inflōrēscēre* to come into flower, to begin to blossom) ①Discrete flowering portion or portions of a plant; ②a flower cluster; ③flowering part of a plant, above the uppermost leaf or portion thereof; ④a flower or putting forth blossoms; the mode of development and arrangement of flowers on an axis; a flowering branch. ⑤ “The mode in which the flowers of a plant are arranged in relation to the axis and to each other; the flowering system” (oed). ⑥The part of a plant which bears group of flowers; inflorescences can be a loose group of flowers (as in lilies), or highly condensed and differentiated structures resembling individual flowers as in the sunflower family, *Asteraceae* (sk08). ⑦An entire flower cluster, including pedicels and bracts (mfn). ⑧The flowering cluster, categorized by the arrangement of flowers on the floral axis. ⑨A cluster of flowers segregated from other flowers on the same plant. ⑩Flower array; arrangement of flowers on a stem (news).

infra- prefix (Latin *infra*, adverb & preposition, ‘below, underneath, beneath’ (in medieval Latin also ‘within’), usage) Prefix meaning beneath, less than, lower than, or within. The opposite of *supra-*.

infraspecific adj. () ①Of taxonomic divisions of a lower rank than species; similarly infrageneric, infrafamilial, etc. ②Pertaining to any taxon within a species, such as a subspecies, variety, or form. Cf interspecific and intraspecific.

infructescence n. (French *infructescence*, from Latin *in*, into, and *fructus*, fruit, after inflorescence) ①The inflorescence in a fruiting stage; ②collective fruits; the fruiting inflorescence. ③ “Name for an aggregate fruit, bearing the same relation to a simple fruit that inflorescence does to a single flower” (oed) ④The flowers of an

inflorescence at the fruiting stage (sk08). ⑤ A fruiting inflorescence (mfn). ⑥ Arrangement of fruits on a stem (news).

inhibition The successional process whereby a plant so modifies its environment that the environment excludes other plant species.

innovation n. () A new vigorous shoot, carrying on the continued growth of the plant.

inoculant n. A commercial preparation, often but not always based on peat, that is used to introduce rhizobia into soils. Inoculants may be seed applied or introduced directly to the soil ().

inoculant-quality rhizobia n. Strains of rhizobia which combine superior nodulation and nitrogen-fixing ability with the other traits needed in a strain suitable for use in inoculant preparations (rri).

inrolled adj. () Said of leaf margins rolled inward toward the midrib.

insectivorous adj. () Trapping and supposedly feeding on insects

inserted adj. () ① Attached to or on; appearing to arise from, often applied to the free portion of an adnate structure, (as stamens from a corolla to which they are adnate) (mfn). ② Attached to or growing upon. Hence insertion, the place or mode of attachment.

insipid adj. (late Latin *insipidus* tasteless, from *in-*, negation or privation, and *sapidus* well-tasted, wise, prudent, *sapid*) Without taste or flavor.

integument n. (Latin *integument-um* covering, from *integere* to cover) ① A covering (in particular the covering of an ovule). ② "The natural covering or investment of the body, or of some part or organ, of an animal or plant; a skin, shell, husk, rind, etc" (oed).

inter- (Middle English *enter-*, *inter-*; Old French *entre-*, *inter-*; Latin *inter-* from *inter*, prep. between, among, during) A prefix meaning between, among - as intercellular

intercellular adj. () Lying between cells, as intercellular space in plant tissue.

interference adj. (Latin *inter*, between, and *ferire*, to strike) The overall influence of one plant or groups of plants on another, and encompasses allelopathy or competition, or both of these processes.

internode n. (Latin *inter*, between, and *nodus*, knot) ① The portion of a stem between nodes; that portion of the stem other than the node; ② the portion of stem between two nodes or joints; the distance between two nodes. ③ The portion of a stem or rachis between nodes (mfn). ④ The portion of stem between two adjacent nodes. ⑤ The portion of the stem between two nodes, ie where leaves or branches join it (news). Cf node.

inrolled adj. () Having margin rolled toward the midvein; involute.

intercalary meristem n. Meristematic tissue occurring in an area other than at the apical meristem; ② tissue at the base of the internode in young culms.

intergradients n. Taxa that interbreed and consequently share many characteristics making it difficult to separate them taxonomically.

International Code of Botanical Nomenclature The documentation containing the rules that governs the assignments of names to plants. the ultimate goal, being to provide a single correct name for each taxon.

Internode n. The section of a stem or another structure between 2 nodes.

interrupted adj. () ① Broken or discontinuous. Discontinuous, with gaps.

interspecific adj. () ①Among species or between two species. Compare to infraspecific and intraspecific.

interspecific competition n. () Competition between species for nutrients, space, light, etc.

interstitial adj. () ①Of that space which is between or among two or more discriminate structures; ②in the *Rosaceae* family, referring to the small leaflets between two large leaflets on the rachis.

intine n. (from Latin *intus*, within) The inner membrane of the pollen grain, the outer is the extine or exine (oed).

intra- prefix (Latin, from *intra*, within, inside) A combining form meaning within, inside of, as intracellular; prefix meaning within.

intracellular adj. () Being or occurring within a body cell or within the body cells.

intramaginal adj. () Situated within the margin and near the edge

intraspecific adj. () Referring to a taxonomic entity with a species. Compare to infraspecific and interspecific.

intraspecific competition n. () A type of competition whereby an individual plant competes with one or more members of the same species for nutrients, space, light, etc.

intrastaminal adj. () Among the stamens.

intravaginal adj. Branching in which the young shoot grows up inside the leaf sheath, emerging at the sheath mouth.

introduced adj. () Not indigenous (viz.), not native to the area in which it now occurs, brought in by accident or design. Cf adventive, exotic.

introduced plant A plant species that was not originally part of the plant community in which it is found

introgression n. () ①The gradual infiltration of genes from one taxon into another, as the result of hybridization and back-crossing with the parent(s) (mfn). ②The modification of species by the back-crossing of the hybrids with the parent species. Cf hybrid swarm.

introrse adj. () ①Turned inward or toward the axis; directed inwards. ②Curved inward (news). Cf extrorse, latrorse, retrorse.

invaginated adj. Sunken inwardly; used in connection with the achene in *Carex*.

invasive adj. (French *invasif*, *-ive* (15–16th cent. in Godefroy), in medieval Latin *invāsīv-us*, *invās-*, participial stem of *invado*, *invādēre*, *invasi*, *invasus*) ①“Of a plant: tending to spread prolifically or uncontrollably; encroaching upon or replacing other vegetation” (oed). ②A sp noted as rapidly spreading or a noxious weed in the indicated New England state (news).

invasive plant A non-native plant that is likely to cause environmental harm or harm to human health.

invasive exotic n. An exotic that not only has naturalized but is expanding on its own in Illinois plant communities.

invest vt. () ①To enclose or envelope (news). ②To clothe. Hence invested

involucel n. (Latin *involucrum*, covering) ①A secondary involucre, as the bracts subtending the secondary umbels in the *Umbelliferae*; ②a secondary involucre, such as that subtending an umbellet in the *Apiaceae* family.

③Bracts at the base of a unit in a compound inflorescence, in contrast to the involucre at the base of the entire inflorescence (mfn).

involucral Pertaining to an involucre.

involucral bract n. One of the many leaf-like bracts that surround the base of the capitulum in *Asteraceae*; synonym "phyllary" (news).

involucrate adj. () Having an involucre.

involucre n. (French *involucre*, from Latin *involūcrum*) ①A whorl or imbricated series of bracts, often appearing somewhat calyx-like, typically subtending a flower cluster or a solitary flower; ②a whorl of bracts surrounding a flower or flower cluster; ③a group of closely placed bracts that subtend or enclose an inflorescence. ④“A whorl or rosette of bracts surrounding an inflorescence, or at the base of an umbel. Also: a. in ferns, sometimes applied to the indusium; b. in liverworts, a sheath of tissue surrounding the female sexual organs; c. in fungi, the velum.” (oed) ⑤One or more whorls of bracts at the base of an inflorescence, eg in a capitulum of the *Asteraceae* and *Dipsacaceae* (sk08). ⑥The bract or bracts (or even leaves) at the base of an inflorescence. Cf spathe (mfn). ⑦One or more whorls of bracts surrounding an inflorescence. ⑧A rosette of bracts subtending an inflorescence or head. ⑨A grouping of many involucral bracts, which are modified leaflets that grow at the base of an inflorescence or flower, as in the "cup" of an acorn in members of the oak family (*Fagaceae*) (news).

involute adj. (Latin *involutus*, rolled up) ①Describing leaves having the edges rolled inwards at each side, toward the adaxial side. ②Leaf margins rolled toward the upper surface of the midrib. ③With the margins rolled in (ie, adaxially); cf revolute (mfn). ④Rolled inwards or to the adaxial (upper) side. ⑤Margins longitudinally in-rolled, on the upper side, toward the center. ⑥Rolled inward/upward toward the adaxial surface (news). Cf revolute.

involution n. (Latin *involutus*, rolled up) A rolling inwards of leaves.

Irrigated pasture Pasture that has a current supply of supplemental water.

irregular adj. ①Referring to a calyx or corolla which is bilaterally symmetrical, capable of being divided into two equal halves along only one plane. ②Pertaining to a flower in which similar parts (eg, petals) are unequal in shape and size. Synonym zygomorphic, which see.

iron (Fe) deficiency chlorosis n. Iron is one of the more abundant minerals on earth, but may often be present in forms that are not readily available to plants. In alkaline soils, particularly those that are rich in limestone and low lying, plants cannot access the iron that is present, and may become deficient in this element and chloritic (rrl).

iso- prefix (Combining form of Greek ἴσος, *isos*, equal, used in numerous terms, nearly all scientific, the second element being properly and usually of Greek origin, rarely of Latin (the proper prefix in the latter case being equi-)) Prefix meaning same or equal. Cf homo-, hetero-.

isobilateral adj. () Having the same structure on both sides.

isodiametric adj. () ①Shapes with sides or diameters of nearly equal lengths; ②of a shape (eg. a cell) with all diameters +/- equal.

isomorphic adj. () Of the same form or appearance. Cf monomorphic, dimorphic, polymorphic.

isotype n. () A duplicate of the holotype, a specimen made from the same collection as the holotype (see type).

itercautant (bamboos) adj. Inflorescence with pseudospikelets with glumes subtending axillary buds capable of partial or extensive spikelet ramification.

J

joint n. () ①The node of a grass culm, spikelet, inflorescence, or any other node. ②A zone, usually of a stem, often swollen & with a groove, where an organ can bend & eventually break off (news).

jointed adj. () With nodes, or points of real or apparent articulation.

jugate adj. () ①Yoked together in a pair, mostly of pairs, of pinnae in a pinnate leaf; ②also as a suffix, bijugate, 4-jugate etc.

Jurassic adj., n. (French *Jurassique*, from the *Jura* Mountains between France and Switzerland, after *Liassic*, *Triassic*) ①Geologic time period 206-142 million years ago (sk08). ②“Of or pertaining to the Jura mountains: applied to geological formations belonging to the period between the Triassic and the Cretaceous, characterized by the prevalence of oolitic limestone, of which the Jura mountains between France and Switzerland are chiefly formed. Also applied to the period itself and to flora and fauna found in Jurassic formations” (oed)

juvenile adj. (Latin *juvenilis* of or belonging to youth, from *juvenis* a young person) young, immature.

juvenile leaves n. () ①The first-formed leaves, especially when they differ from the mature leaves. ②“A type of foliage characteristic of the immature stages of certain trees, shrubs, or woody climbers, differing in shape, colour, etc, from the adult form” (oed).

K

kame, kaim n. (A common Germanic n.: Old English *cōmb*, *camb*, Old Saxon *camb*) “North English and Scotch form of *comb* n. 6d (q.v.) in various senses, esp. that of a steep and sharp hill ridge; hence in Geology one of the elongated mounds of post-glacial gravel, found at the lower end of the great valleys in Scotland and elsewhere throughout the world; an esker or osar.” (oed)).

karyotype n. () Gross morphology of the chromosomes. Hence karyology.

keel n. (Anglo-Saxon *ceol*, ship) ①The folded edge or ridge of any structure; ②the sharp fold at the back of a compressed sheath, glume, lemma, palea, or caryopsis; ③a longitudinal fold or ridge. ④In a papilionaceous flower, the 2 lowermost connate petals; resembles the keel of a boat; in grasses, the sharp crease or ridge of the leaf blades, the lemma or the glume. ⑤In the *Fabaceae* family, the two anterior united petals of a papilionaceous flower -- a flower shaped like a sweet pea blossom; a ridge, usually on the back, like the keel of a boat. ⑥A ridge ± centrally located on the long axis of a structure, such as a sepal or an achene; the pair of connate lowermost petals in a papilionaceous flower (mf). ⑦A narrow ridge sticking out from an otherwise rounded surface, like the bottom of a boat hull, or, the two lower, united petals in the corolla of some plants in the pea family (*Fabaceae*) (news). Hence keeled. Cf carinate.

kleptotype n. (from Greek *κλεπτο-*, *klepto-*, combining form of *κλέπτης*, *kleptes*, thief, *κλέπτειν*, *kleptein*, to steal) A fragment removed from or stolen from the type; a highly illegal and immoral procedure.

krotavina, pl *krotavinas* or *krotavina* n. (from Russian *кrotовина*, *krotóvina*, molehill, from *крот*, *krot*, mole) An animal burrow that has been filled in with organic matter or soil of a contrasting character.

L

labiate adj. (Latin *labium/em*, lip) Lipped, as in a calyx or corolla.

labellum n. In orchids, the lowest, highly modified petal (news).

labium pl **labia** n. (Latin *labium/em*, lip) ①lip. ②“The lip, esp. the lower or anterior lip, of a labiate corolla. 1823 G. Crabb Universal Technol. Dict., Labium, the Lip, the exterior part of a labiate or ringent corolla. It is

distinguished into upper and lower; but sometimes the upper lip is called the labium, and the lower galea.” (oed)
Hence labiate.

lacerate adj. (Latin *lacer*, mangled, lacerated) ① Said of a margin torn irregularly; ② appearing torn on the margin; ③ irregularly cleft; ④ unevenly cut or incised. ⑤ Ragged, irregularly cleft, appearing as if torn (mfn). ⑥ With an irregular, ragged margin, as though torn. ⑦ With an irregular or jagged margin, as if torn. ⑧ With a jagged margin that appears torn (news).

lacinate adj. (Latin *lacinia*, a hem) ① Cut into narrow, jagged lobes or segments; ② deeply and sharply slashed into slender segments. ③ Deeply and ± narrowly lobed or slashed (mfn). ④ Deeply, usually irregularly divided into very narrow, pointed segments. ⑤ Cut into narrow lobes or long teeth (news).

lacuna pl *lacunae*, lacunas n. (Latin *lacūna* a hole, pit, from *lacus* lake) ① Defined space. ② “An air-space in the cellular tissue of plants, an air-cell. Also, a small pit or depression on the upper surface of the thallus of lichens.” (oed) ③ A gap, a space enclosed by but free from veins. ④ A space or gap within a tissue (news). Hence lacunose, lacunate.

lacunate adj. (Latin *lacuna*, cavity) With air spaces or chambers in the midst of tissue.

lagoon n. (Italian and Spanish *laguna*, from Latin *lacuna*, a ditch, pool, from *lacus*, lake) ① A shallow lake or pond, especially one connected with a larger body of water; an area of shallow salt water separated from the sea by sand dunes; ② the area of water surrounded by an atoll, or circular coral reef.

lake n. (Middle English *lake*, *lak*; Anglo-Saxon *lacu*, a lake, pool; Latin *lacus*, a hollow, a basin, tub, pool, lake) ① An inland body of water, usually fresh water, formed by glaciers, river drainage, etc, larger than a pool or pond.

lamella pl *lamellæ* n. () Thin flat plates or laterally flattened ridges. ② Thin plate or layer. Hence lamellar.

lamellate adj. () Made up of thin plates or lamina.

lamina pl *laminæ* (Latin *lamina*, *lām(m)ina*, a thin piece or plate of metal or wood) ① The expanded, blade part, of a foliar leaf, petal, etc; ② blade, usually of a leaf. ③ The flattened portion (ie, the blade) of a leaf or petal. ④ A thin, flat organ or part, especially the expanded blade of a leaf. Hence laminate, diminutive lamella, lamellate.

laminar adj. Thin, with broad faces (as with a leaf) (news).

lanate adj. (Latin *lana*, wool) ① Woolly, with long intertwined, curled hairs; ② densely white woolly-pubescent; ③ woolly covering of short dense hair. ④ Clad in woolly, usually intertwined, hairs. ⑤ Woolly, with long intertwined, curly hairs.

lanceolate adj. (Latin *lancea*, a lance) ① Shaped like a lance, broadest toward the base and narrowed to the apex, several times longer than wide.; ② lance-shaped; shape or outline like the head of a spear; ③ pointed at both ends and widest below the middle; ④ lance-shaped, broadest below the middle, long-tapering above the middle, several times longer than wide. ⑤ Narrow and elongate, broadest below the middle (mfn). ⑥ Lance-shaped, of a plane several times longer than wide, widest in the basal third, tapering gradually towards the tip, more rapidly towards the base. ⑦ "Lance-shaped"; longer than broad, widening above the base and tapering to the apex. ⑧ Widest below the middle & tapering at both ends, narrower than ovate but wider than linear; lance-shaped (news). Cf oblanceolate.

lanceoloid The 3-dimensional equivalent of lanceolate: widest below the middle & tapering at both ends, lance-shaped (news).

land reclamation The creation of an ecosystem that is substantially different ecologically from the endemic ecosystem, yet is compatible with existing land-use practices, such as grazing, recreation, or supplemental irrigation.

land rehabilitation The establishment of an ecosystem that is ecologically reminiscent of, but not representative of, the pre-disturbance ecosystem, including native and/or introduced species that are similar in ecological structure and function to species native to the site.

land restoration The re-creation of conditions that would allow the ecosystem to return to the characteristics that are ecologically representative of those prior to the land disturbance.

land revegetation As used in the Granite Seed Project Planner, land revegetation encompasses 'land restoration' (the re-creation of conditions that would allow the ecosystem to return to the characteristics that are ecologically representative of those prior to the land disturbance), and 'land rehabilitation' (the establishment of an ecosystem that is ecologically reminiscent of, but not representative of, the pre-disturbance ecosystem, including native and/or introduced species that are similar in ecological structure and function to species native to the site).

lanuginose adj. () Woolly or cottony; downy, the hairs somewhat shorter than in lanate.

lanulose adj. () Very short-woolly.

lateral adj. () ①On, to, or at the side; referring or pertaining to the sides; to the side. Cf apical, axillary, terminal, basal, etc.

lateral vein n. A vessel that branches off the main midvein of a leaf (news).

latex n. (*latex, laticis* m., water; any liquid or fluid; running, stream, or spring water; juice) ①The milky juice (or highly colored juice) of some plants; ②a milky exudate, drying rubber-like. ③“A milky liquid found in many plants (in special vessels called *laticiferous*), which exudes when the plant is wounded, and coagulates on exposure to the air; *spec.* that of *Hevea brasiliensis* or other plants used to produce rubber” (oed). ④A clear or colored (often milky) liquid produced by plants (news).

latitudinal adj. Perpendicular to the main axis (news).

latrorse adj. (?) Directed laterally or sideways. Cf extrorse, introrse, retrorse.

Laurasia n. (modern Latin (R. Staub *Der Bewegungsmech. der Erde* (1928) ii. 121), from *Laur(entia)*, a name given to the ancient forerunner of North America (from the Laurentian strata of the Canadian Shield by which it is represented today) and *Eur(asia)*) “A vast continental area or supercontinent thought to have once existed in the northern hemisphere and to have broken up in Mesozoic or late Palaeozoic times forming North America, Greenland, Europe, and most of Asia north of the Himalayas. Also, these land masses collectively as they exist today.” (oed)

lax adj. (Latin *laxus -a -um*, loose; cognate with *languēre* to languish) ①A general term meaning open, loose, without clear form or shape, or scattered, depending on the context; ②loosely arranged or distantly placed; ③ “*Bot.* ‘Said of parts which are distant from each other, with an open arrangement, such as the panicle among the kinds of inflorescence’ (*Treasury Bot.* 1866)” (oed). ④Loose, open; drooping (news).

leaching The downward movement and drainage of minerals, or inorganic ions, in solution from the soil by percolating water.

leaf n. (Middle English *leaf* from Old English *leaf*, akin to OHG. *loub*, leaf, foliage) ①A lateral outgrowth from a stem that constitutes part of the foliage of a plant and functions primarily in food manufacture by photosynthesis; ②the lateral organ of a grass culm, typically consisting of a sheath, blade, ligule, and auricles. ③Usually a blade-like organ attached to the stem, often by a petiole or sheath, and commonly functioning as a principal organ in photosynthesis and transpiration. Leaves characteristically subtend buds and extend from the stem in various planes. A leaf axil is the upper angle between a leaf petiole, or sessile leaf base, and the node from which it grows. A leaf scar is formed on a twig following the fall of a leaf, usually revealing the pattern of vascular bundles in the leaf trace. ④A flattened, lateral appendage of the axis of a plant that conducts photosynthesis (news). See also leaflet.

leaf blade n. ①The expanded and flattened portion of a leaf. ②The distal expanded part of a grass leaf.

leaf-gap n. () The break in the vasculature of the stem where the leaf-trace(s) leaves the stem to enter the petiole.

leaf sheath n. () The tubular basal portion of a leaf that encloses the stem, as in grasses and sedges. ②The basal part of the grass leaf which normally encloses a culm internode.

leaf spot Round shaped blemish occurring on the leaves of some plants that are caused by parasitic fungi or bacteria.

leaf-trace n. () The vascular bundle from the stele entering the petiole.

leaflet n. () ①Part of a compound leaf; ②the basic element of a compound leaf; ③one of the discriminate segments of the compound leaf of a dicotyledonous plant. Leaflets may resemble leaves, but differ principally in that buds are not found in the axils of leaflets, and that leaflets all lie in the same plane. ④One of the segments or divisions of a compound leaf. ⑤One of the blades of a compound leaf (mfn). ⑥One of the expanded, first-order-division portions of a compound leaf (news). Cf pinna, pinnule.

leafule n. The ultimate segment of a twice-compound leaf (the division of a leaflet) (news).

lectotype n. ①A specimen or similar element selected from the original material to serve as the nomenclatural type when a holotype was not originally designated, or as long as it is missing. Cf see type.

legume n. (French *légume*, from Latin *legūmen*, from the verb *legĕre*, to gather, in allusion to the fact that the fruit may be gathered by hand) ①The typical dehiscent fruit of the *Leguminosae*, developed from a single carpel that opens along two sutures (dorsally and ventrally) with the seeds attached along the ventral suture (sk08). ②A 1-locular fruit, usually dehiscent along two sutures, bearing seeds along the ventral suture; ③the fruit in the *Fabaceae* family, produced from a one-celled ovary, and typically splitting along both sutures; as in the pea pod; a leguminous plant. ③The collective common name for a large family of dicotyledonous plants (peas, beans, clovers, soybean, etc) that have irregularly shaped flowers, produce pods and fruit of a particular shape, and form nitrogen-fixing root or stem nodules in symbiosis with rhizobia (rrl). ④Member of the vascular plant family *Leguminosae*, also called *Fabaceae* after the broadbean genus *Faba*. ⑤Any plant belonging to the legume (*Leguminosae*, formerly named *Fabaceae*) family. This family is also known as the pea family. Legumes have special interest to revegetation specialists because they fix nitrogen into the soil thereby reducing the need for adding fertilizers. ⑥The fruit pod characteristic to spp of the *Fabaceae* (the spp are also referred to as "legumes") (news).

legume seed inoculation The process of introducing cultures of microorganisms, rhizobia, externally to the seeds of legumes.

Leguminous Of or characteristic of the legume family.

lemma n. (Greek *lemma*, husk) ①The lower (abaxial), and larger, of two membranous bracts enclosing the flower in grass; ②the lowermost of the two scales forming the floret in a grass spikelet -- the uppermost, less easily seen, is called the palea; ③an odd-veined bract, the lowermost of the floret which is attached to the rachilla where it delimits the floret. ④The lower or outer bract or scale at the base of a grass floret (mfn). ⑤The outermost of the two bracts that subtend the grass floret. ⑥The lower of the two bracts enclosing the grass flower and together with the palea comprising a floret. ⑦In grasses (*Poaceae*), the outer of the two bracts enclosing a floret (news). See palea.

lenticel n. (Latin *lens*, *lentis*, lentil) ①Corky spots on young bark, arising in relation to epidermal stomates; ②a corky spot on young bark, corresponding functionally to a stoma on a leaf. ③A corky, porous spot on bark (especially noticeable and large on *Betula* and *Prunus*) (mfn). ④A small, corky dot or streak on the bark or roots of woody plants, normally arising around pores (news).

lenticular adj. (Latin *lenticula*, a lentil) ① Shaped like a double-convex lens; ② lens-shaped; two-sided, with the faces convex. ③ Biconvex in shape, "lens-shaped". ④ Lens-shaped, like a biconvex lens; ie, biconvex or at least 2-sided (rather than, eg, 3-sided) (mfn). ⑤ Lens-shaped; in cross-section with two convex surfaces (news).

lepidote n. (modern Latin *lepidōtus*, from Greek *λεπιδωτός*, *lepidotus*, from *λεπίς*, *λεπίδ-*, *lepis*, *lepid-*, scale.) ① Surfaced with small scurfy scales; clad in small scurfy scales. ② "Covered with scurfy scales; leprose, leprous" (oed). ③ Covered with small scales (news).

lepto- prefix (combining form of Greek *λεπτός*, *leptos*, fine, small, thin, delicate) Prefix meaning thin, slender or narrow.

leptomorph (bamboos) adj. Rhizome monopodial, elongated, more slender than culms.

leptosporangiate adj. () ① Of the more advanced ferns with sporangial walls one cell thick, originating from a single cell. ② With a sporangium one cell layer thick, & an annulus & stalk (cf eusporangiate) (news). Cf eusporangiate.

liana, liane n. (the form *liane* is from French *liane* (1658 *liene* in Rochefort), supposed to be a derivative of *lier* to bind. The form *liana* is either a latinization of *liane*, or has arisen from the notion that the word was of Spanish origin (oed)) ① A woody, climbing plant. ② "The name given to the various climbing and twining plants which abound in tropical forests" (oed). ③ A woody vine rooted in the ground. ④ A woody, climbing or trailing plant that does not support its own weight (news). Hence lianoid.

liber n. (Latin *liber* bark) "The inner bark of exogens; bast" (oed).

lignify vt. ① To convert into wood or woody tissue; ② to become wood or woody by chemical and physical changes in the cell walls that convert some or all of the constituents into lignin or lignocellulose.

ligneous woody.

lignin (n. Latin *lignum*, wood) ① Organic substances which act as binders for the cellulose fibers in wood and certain plants, and adds strength and stiffness to the cell walls. Chemical structure of lignin is composed of a polymer of high carbon content but distinct from the carbonates. Consists of C6, C3 units.

ligulate adj. (Latin *ligula*, little tongue) Having or pertaining to ligules; ② bearing a ligule.

ligule, also **ligula** n. (Latin *ligula* strap, spoon, by-form of *lingula*, from *lingua* tongue) ① In the *Asteraceae* family, pertaining to the dilated or flattened, spreading limb of the composite ray flower; ② in other families, such as *Poaceae* family, an extension, often scarious, of the summit of the leaf sheath. ③ The adaxial appendage, membrane, ciliate membrane, or ring of hairs on the inside of a leaf at the junction of sheath and blade; hyaline extension of the leaf sheath on the adaxial side of the leaf. ④ An appendage (eg, membranous collar or fringe of hairs) at the base of a leaf or summit of a leaf sheath and on its adaxial side. ⑤ "A narrow strap-shaped part in a plant, as the 'limb' of a ray floret in composite flowers, a projection from the top of a leaf-sheath in grasses, 'an appendage at the base of some forms of Corona' (Henslow 1856)" (oed). ⑥ In *Asteraceae*, the corolla of a bilaterally symmetrical (petal-like) flower; cf ray (mfn). ⑦ Flattened part of the ray corolla in the *Asteraceae*; in many grasses and some sedges and rushes, a membranous (or hair-like) appendage on the inner side of the leaf at the junction of the leaf blade and the sheath. ⑧ A strap-shaped body; ⑨ an appendage near the base of leaves in *Selaginella* and *Isoetes*. ⑩ A membrane or line of hairs on the inner (adaxial) side of the junction of the leaf sheath and leaf blade; bamboos sometimes have an external ligule on the abaxial side of the junction. ⑪ A projection or collar on the leaf sheath of grasses (*Poaceae*), *Cyperaceae*, or a small triangle of tissue on the fertile leaves of quillworts (*Isoetes* spp) or *Selaginella* (news). Hence ligulate.

liguliform adj. () Tongue- or strap-shaped.

limb (Anglo-Saxon *lim*, limb) ① The spreading part of a synsepalous calyx or sympetalous corolla, usually referring only to the calyx or corolla lobes, sometimes to their lips; ② the expanded portion of a corolla above the

throat; the expanded portion of any petal. ③The expanded part of an organ; generally the expanded part of a corolla in contrast to the narrow tubular portion (mfn). ④The expanded portion of a tubular corolla, in front of the throat (news).

limestone soil Soil that has formed from limestone and as a result has a high soil pH.

limnology n. The scientific study of physical, chemical, meteorological, and biological conditions in fresh waters.

line n. () As a unit of measurement, 1/12 inch (=ca 2mm)

linear adj. (Latin *linea*, line) ①Long and slender with parallel or nearly parallel sides; ②very long and narrow, with nearly or quite parallel margins; ③long and narrow with nearly parallel margins. ④Narrow and elongate with ± parallel sides (mfn). ⑤Long and narrow, with parallel margins. ⑥Very narrow, with more or less parallel sides, narrower than lanceolate (news).

lingulate adj. () Tongue-shaped.

lip (Anglo-Saxon *lippa*, *lippe*, lip) ①The upper or lower part of a bilabiate calyx or corolla; ②one of the parts of an unequally divided flower; ③referring to either the upper or lower lip of a bilabiate corolla; ④the principal, seemingly lower, petal in the *Orchidaceae*. ⑤In the *Orchidaceae*, the one odd petal which is specially modified, usually the lowest (through twisting of the ovary 180°); in many other bilaterally symmetrical flowers, one of a set of lobes (eg, 3 lobes in one lip and 2 lobes in another, representing a total of 5 corolla lobes) (mfn). ⑥A projecting portion of a corolla or calyx whose petals or sepals are fused into a tube (news).

lithophyte n. () A plant growing on rocks.

littoral adj. () Coastal, or growing along the beach.

llano n. (from Spanish *llana*, *plana*, from classical Latin *plānum*, a flat level area, compare Old Occitan *planha*, Catalan *plana*) “A level treeless plain or steppe in the northern parts of South America” (oed).

lobe n. () ①Any segment or division, particularly if blunt; ②any protruding part of an organ, as in leaf, corolla, of calyx. ③A projecting portion or segment, generally set off by an indentation (sinus) (mfn). ④Partial portion of a leaf or other organ, especially when rounded. ⑤A projection from an edge of a plant structure (such as a leaf), larger than a tooth (news). Hence lobed, lobate, diminutive lobule, lobulata.

lobed adj. Having a projecting portion of an organ in which the divisions are less than half the distance to the base or midrib; usually rounded at apex.

lobulate adj. (Greek *lobos*, lobe) ①Divided into small lobes; ②bearing lobes.

local native plant material Plant material that is the same species as plant material naturally occurring at the site and whose origin is from the region where it is being planted. It may be wildland-harvested, pre-varietal, or variety/cultivar plant material as long as the first generation of plant material came from the region where it is being planted.

locoism n. (ultimately American Spanish *yerba loca*, *hierba loca* (18th cent.), from *yerba*, *hierba*, plant, and *loca*, feminine of *loco* insane, mad, so called on account of its effect on livestock that eat it; the second o was probably altered after the Spanish masculine form *loco*.) The loco disease in livestock caused by consuming one of several species of *Astragalus* or *Oxytropis*.

locular (Latin *loculus*, a cell, box) Having the nature of, or consisting of cells; having locules.

locule, *loculus* n. (Latin *loculus*, a little place, a cell, box, diminutive of *locus*, place) ①A compartment of an anther or an ovary; a discriminate cavity or space within an ovary, fruit, or anther. ② “One of a number of small

cavities or cells separated from one another by septa" (oed). ③One of the seed-bearing cavities of a gynoecium; a gynoecium may have only one loculus if monocarpellate or if pluricarpellate and aseptate (i. e. lacking septae between the carpels) (sk08). ④A compartment or cavity, as in an anther or ovary (sometimes termed a "cell") (mfn). ⑤A compartment in the ovule or anther. ⑥A compartment or cavity of an organ. ⑦Chamber containing seeds in an ovary (news). Hence loculate

loculicidal adj. (Latin *loculus*, a cell, box, and *caedere*, to cut) ①Dehiscent dorsally down middle of carpels; ②pertaining to a capsule which dehisces along the dorsal suture of each locule, thus opening directly into the cavity.

loculicidal capsule n. () A capsular fruit opening completely along dorsal sutures, the valves consisting of the two halves of the adjoining carpels (sk08).

locus n. () Place.

lodicule, lodicules n. (Latin *lodricula*, coverlet) ①A scale at base of an ovary in grasses, supposed to represent part of a perianth. ②Two or three membranous parts at the base of the grass flower; thought to be reduced perianth. ③One of 2 or 3 scales appressed to the base of the ovary (Poaceae). ④A small scale-like or fleshy structure at the base of the stamens in a grass floret, usually 2 in each floret (often 3 or more in bamboos); they swell at anthesis, causing the floret to gape open.

loess, also *löss*, erroneously *loëss* n. (from *löß*, German dialect *lösz*, Alemannic *lösch* meaning loose) A deposit of fine yellowish-grey or buff (or pinkish Roxanna Silt) loam which occurs extensively from north-central Europe to eastern China, in the American mid-west, and elsewhere, especially in and the basins of large rivers, and which is composed of fine grained material transported by the wind during the Pleistocene. "*Löß*" was first described in Central Europe by Karl Cäsar von Leonhard (1823-1824). Loess is properly pronounced similarly to Lübs.

-logy suffix (from Ancient Greek *λόγος*, *logos*, word, speech, discourse, reason, from *λογ-*, *log-* ablaut-variant of *λεγ-*, *leg-*, in *λέγ-ειν*, *legein*, to say)

loment, lomentum n. (Latin *lōment-um* bean-meal, originally a 'wash' or cosmetic made of bean-meal, from *lō-*, *lavāre* to wash (oed)) ①A fruit of some legumes, contracted between the seeds, the 1-seeded segments separating at fruit maturity. ②"A legume which is contracted in the spaces between the seeds, breaking up when mature into one-seeded joints" (oed). ③Specifically applied to the series of one-seeded articles of a fruit in the genus *Desmodium*. "The Lomentum..is a kind of legume..contracted in a moniliform manner between each seed." (R. Bentley Man. Bot. i. iv. 313) "*Loment (lomentum)*, an elongated pericarp, which never bursts. It is divided into small cells, each of which contains a seed attached to the under suture." (Edinb. Encycl. (1830) IV. 45/1 in oed) ④A schizocarp of some plants in the Fabaceae composed of one-seeded parts that separate from each other (news).

lomentaceous n. (modern Latin *lōmentāceus*, from *lōmentum*, which see) "Of the nature of or resembling a lomentum; characterized by lomenta; belonging to the family *Lomentaceæ*, a former sub-order of *Cruciferae*" (oed).

long-day plant n. () A plant that requires more than 12 hours of daylight before flowering will occur.

longevity n. () Life span of an organism; in plants annual, biennial or perennial.

longiligulate adj. () With long ligules.

lorate adj. () Strap- or thong-shaped.

lucid adj. () With a shining surface.

luminescence dating n. A radiometric age-dating technique that measures the time elapsed since a mineral grain was last exposed to sunlight. Most often applied to age-dating a sample of eolian sediment.

lunate adj. (Latin *luna*, moon, and *-ate*) Crescent-shaped.

lustrous adj. () Shiny.

lycophyte n. The group broadly containing the *Lycopodiaceae*, *Selaginellaceae*, *Huperziaceae*, & *Isoetaceae* - spore-bearing plants usually with tiny leaves (news).

lyrate adj. () ①Pinnately lobed into large, broad lobes, the terminal one typically noticeably larger than the reduced lateral ones. ②Pinnatifid but with a relatively large terminal lobe (mfn). ③Pinnatifid with the terminal lobe much larger than the others. ④Pinnatifid with the end lobe enlarged and rounded.

M

macro- prefix (ancient Greek μακρο-, *makro-*, combining form of μακρός, *makros*, long, large) ①Prefix meaning large. ② “Forming terms (esp. in *Biol.* and *Crystallogr.*) in which *macro-* denotes relatively large size or the existence of smaller individuals, chiefly in contrast with similar words beginning *micro-*.” (oed). Cf mega-, micro-.

macrogametophyte = megagametophyte

macrophyte adj. (Greek *makros*, large, and *phyton*, plant) ①A member of the macroscopic plant life especially of a body of water; large aquatic plant; the term 'aquatic macrophyte' has no taxonomic significance.

macroscopic adj. (Greek *makros*, large, and *skopein*, to view) Items large enough to be observed by the naked eye.

macrosporangium = megasporangium

macrospore = megaspore

macrosporophyll = megasporophyll

macula n. () Spot or blotch. Hence maculate.

maculate adj. () ①Spotted. ②Spotted or splotched (news). Cf immaculate.

mafic adj. (from a blend of magnesium and ferric (iron)) ①Referring to dark-colored minerals of igneous rocks, which are predominantly ferromagnesian, resulting soils are basic, fertile and nutrient rich. Soils are richer in nutrients, particularly calcium, iron, magnesium. pH is relatively high by piedmont standards (maybe only circumneutral) Moisture regimes are harsh, with flooding during wet weather and periods of extreme drought. ②“Of, relating to, or designating the dark-coloured minerals of igneous rocks, which are predominantly ferromagnesian in character; (of a rock) containing a high proportion of such minerals. Opposed to *felsic*.” (oed).

magnetic susceptibility n. The ratio of induced magnetization to the strength of the magnetic field causing the magnetization.

mamilla n. A nipple-shaped projection (news).

mamillate adj. (classical Latin *mamilla*, *mammilla* breast, nipple (used of men and women), from *mamma*, breast, and *-illa -illa*) ①With nipple-like projections. ② “*Anat, Bot, etc* Any nipple-shaped organ or protuberance; a papilla” (oed).

malodorous adj. () Foul-smelling.

malpighian hairs n. (post-classical Latin *malpighianus* (late 18th century, from the name of Marcello Malpighi (1628–94), Italian physician and anatomist and -an suffix) ①Hairs which are straight and attached by the middle, and typically appressed to the leaf surface; ②a T-shaped unicellular hair characteristic of the family *Malpighiaceae*. Example the hairs on the lower leaf surface of *Astragalus canadensis*.

malpighiaceous adj. Of hairs attached to a surface by their centers.

mammaliochorus adj. () Mammal-dispersed; see also mammaliochory.

mammaliochory n. (from scientific Latin *Mammalia*, from classical Latin *mamma*, a breast, and *-ālia*, neuter plural of *-ālis*-al, and *χωρεῖν*, *khōrein*, to go, to be spread abroad, to disperse) Dispersal of plant diaspores by mammals (sk08).

marcescent adj. (Latin *marcescere*, to wither) ①Withering but remaining persistent; ②withering but persistent, usually remaining green. ③Withering but persistent & not falling (news).

margin, margins n. () Edge, the edges (eg the leaf edge or margins).

marginal adj. () ①Attached or occurring at or along the margin or edge. ②Pertaining to the edge of a structure (news).

marine adj. () Referring to an aquatic habitat in salt water; ②pertaining to the sea or salt water. Cf brackish, estuarine, saline.

maritime adj. () ①Pertaining to the sea; coastal. ②Near to, or influenced by, the sea.

marker-assisted selection n. A molecular tool used by plant breeders that permits them to identify plants having particular desirable traits without the need to grow the plant out under field conditions (rrl).

marl n. (Anglo-Norman and Old French *marle*, from post-classical Latin *margila*, classical Latin *marga*, (from Gaulish *marga*) and *-illa*) A deposit of calcium carbonate resulting from the activity of photosynthetic plants in altering the carbonate/bicarbonate balance in a lake or pond (mfn).

marly adj. Very limy, often with calcium carbonate concretions at or near the surface.

marsh adj. n. (Middle English *marsh*, meadowland, from post-classical Latin *mariscus*, *marisca*, *marescus*, a marsh) ①A tract of wet land principally inhabited by emergent herbaceous vegetation. ②A wetland dominated by coarse, non-woody vegetation. Cf swamp (mfn). ③A waterlogged area, a swamp.

mass plantings Planting one or more species close together. Often done to reduce maintenance or obtain a visually dramatic effect.

massula pl massulae n. (classical Latin *massula* little lump, from *massa*, mass, and *-ula*) Rounded mass of hardened cytoplasmic foam containing one or more spores in the *Salvineales*. ②In certain orchids: any of the clusters of pollen grains, each developed from a single cell, which make up a pollinium.

mat-forming adj. A low growth form appearing like a pad.

meadow n. () A treeless area less wet than a marsh and dominated by smaller grasses or sedges. Wet meadows are often dominated by sedges and may grade into fens or bogs; if dominated by grasses, they may grade into prairies in southern Michigan. When upland, meadows are usually successional or formed by clearing and often include many introduced species (mfn).

mealy adj. () Covered with a coarse flour-like powder. Cf farinose.

medial adj. () Attached near or at the middle, especially midway between costa and margin.

median adj. () Pertaining to the middle

medifixed adj. () Attached at the middle; two-pronged, as in some kinds of hairs (mf).

Mediterranean-type climate A climate with hot and dry summers, mild to cool and wet winters.

medium pl media n. () A mixture of two or more ingredients such as soil, peat moss, perlite, ground bark, sand, etc, in which a container plant has been grown. ② A solid or liquid preparation containing all of the different compounds (sugars, vitamins, minerals) that microorganisms need for their development. Such media may be liquid or solidified with an extract from seaweed called agar. (rrl)

medulla n. () Parenchymatous tissue within the vascular cylinder. Cf cortex, pith.

medullated protostele n. () A cylindrical stele with a nonvascular, parenchymatous centre, with the phloem around the outside only, also known as an ectphloic siphonostele. Cf solenostele.

mega- prefix (ancient Greek *μεγα-*, *mega-* great, combining form (found in a large number of ancient and later Greek formations) of *μέγας*, *megas*, great, from the Indo-European base of *mekki-*) ① Prefix meaning large. ② “Forming scientific and technical terms with the sense ‘very large’, ‘comparatively large’, or (esp. in *Pathol.*) ‘abnormally large’, often having correlatives beginning *micro-*, and sometimes also synonyms beginning *macro-*” (oed) Cf *macro-*, *micro-*.

megagametophyte (also macrogametophyte) n. (from Greek *mega*, big, *gametes*, spouse, and *phyton*, *plant*) ① Female gametophyte developed from the megaspore, eventually producing the female gametes, the egg cells. The megagametophyte of gymnosperms gives rise to the archegonia and persists as the seed’s nutritious tissue; in angiosperms gives rise to the homologue of the megagametophyte is the embryo sac (sk08). ② The gametophyte developing vegetatively from the megaspore of a heterosporous plant, female. Cf microgametophyte.

megasporangium pl megasporangia (also macrosporangium) n. (New Latin, from Greek *mega*, big, and *sporangium*, from *sporos*, germ, spore, modern Latin *spora*, from Greek *σπορά*, *spora*, sowing, seed, and *ἀγγεῖον* *angeion*, vessel, small container) ① The organ of a sporophyte that produced the female megaspores. The term is usually applied to cryptogams, whereas the homologous structure in seed plants is called the nucellus (sk08). ② A sporangium that develops only megaspores (as the nucellus in a seed plant) called also macrosporangium. ③ “A sporangium containing megaspores; the part of a plant in which the female gametophyte is formed” (oed). ④ The sporangium in heterosporous plants where the megaspores develop. ⑤ The sporangia of a heterosporous plant that produces megaspores. Cf microsporangium.

megaspore (also macrospore) n. (from Greek *μεγα-*, *mega-* great, and *sporos*, germ, spore) ① One of the spores in heterosporous plants that give rise to female gametophytes and are generally larger than the microspores. ② “The larger of the two kinds of spores produced by heterosporous cryptogams, which develops into the female gametophyte. Also: the analogous structure in seed plants (ie the immature embryo sac). Contrasted with *microspore*.” (oed) ③ The larger spore formed by heterosporous plants that give rise to a female gametophyte (sk08). ④ The larger type of haploid spore (when two sizes are present) which gives rise to the female gametophyte; the other called a microspore. The largest of the spore types in heterosporous plants, producing the female gametes. On a heterosporous plant, the larger of 2 spore sizes produced; a spore involved in development of female reproductive organs. ⑤ In spp that produce two kinds of spore (eg, *Isoetes*, *Selaginella*, *Azolla*, *Marsilea*), the larger spore that gives rise to the “female”, egg-producing gametophyte (news). Cf microspore.

megasporophyll (also macrosporophyll) n. (ancient Greek *μεγα-*, *mega-* great, modern Latin *spora*, from Greek *σπορά*, *spora*, sowing, seed, and ancient Greek *φύλλον*, *phyllon*, leaf) ① Specialized fertile leaf producing megasporangia with female spores, eg the carpel of the angiosperms (sk08). ② “A sporophyll that bears megasporangia (eg the carpel of an angiosperm or ovuliferous scale of a gymnosperm)” (oed) ③ A specialized leaf bearing or subtending one or more megasporangia. Cf microsporophyll.

meiosis n. () Division of diploid cells at the sexual stage of a life-cycle when the chromosome number is halved in the production of haploid gametes. Hence meiotic. Cf mitosis.

membrane n. () A thin, soft, flexible, +/- translucent piece of tissue. Hence membranous.

membranaceous adj. ①Membrane-like; ②Very thin, flimsy, and often more or less translucent. ③Of parchmentlike texture. ④Thin, flexible, almost translucent; like a membrane or film (news).

membranous (Latin *membrana*, membrane) ①Having a thin, soft, pliable texture; ②thin, soft, pliable. ③Of parchmentlike texture.

meniscoid adj. () Venation in which the veins are arranged pinnately from a main vein and anastomose with the neighbouring group to form a single excurrent vein.

meri-, mero- prefix (from Hellenistic Greek *μερο-*, *mero-*, combining form of ancient Greek *μέρος*, *meros*, a part) A prefix used for forming scientific and technical words with the sense 'part' or 'partial', sometimes opposed to holo-.

mericarp n. (French *méricarpe*, from ancient Greek *μερίς*, *meris*, part, and *-carpe* -carp) ①One of the two carpels that resemble achenes and form the schizocarp of an umbelliferous plant; the discriminate units of a schizocarp which ultimately splits apart into two individual nutlets, usually referring to units of the fruits of the parsley family. ②“Each of the one-seeded units into which a schizocarp separates at maturity, each unit forming a dry indehiscent fruit; *esp.* either of the halves of the fruit (cremocarp) of a plant of the family *Apiaceae* (*Umbelliferae*)” (oed). ③A fruitlet representing half a carpel as in the schizocarpic fruits of the *Lamiaceae* (sk08). ④One of the (usually indehiscent, 1-seeded) parts into which certain fruits separate (mfn). ⑤One portion of the fruit (eg, a schizocarp) that splits into two halves at maturity, found in members of the *Apiaceae* and the *Haloragaceae*. ⑥A single-carpellate section of a schizocarp (news).

meristele n. () The individual vascular bundle of a complex stele such as a dictyostele.

meristem n. () Region of tissue actively involved in cell division and production of undifferentiated cells capable of developing into a number of organs and/or tissues; a growing point.

-merous suffix (French *-mère* and its etymon ancient Greek *-μερής*, *-meres*, having (a specified number of) parts, sharing) ①A suffix pertaining to the discriminate portions into which a floral organ or series of organs can be divided; for example, a flower with 5 sepals, 5 petals, and 10 stamens can be said to be 5-merous. ②-parted; ie, with parts in the number cited or a multiple thereof (mfn). ③A suffix referring to the division of floral parts, eg, a 3-merous flower would have 3 petals, 3 sepals, 3 stamens, and a pistil with 3 carpels. ④“Bot. and Zool. Forming adjectives with the sense 'having (a specified number of) parts', in a series running numerically from monomalous to octamalous. Cf oligomalous, polymalous” (oed). ⑤Having a specified number or multiple of parts (news).

mesi-, meso- prefix (from ancient Greek *μεσο-*, combining form of *μέσος*, *mesos*, middle) Forming chiefly scientific terms with the sense 'middle, intermediate' (oed)

mesic adj. (Greek *μέσος*, *mesos*, middle) ①Conditioned by temperate moist climate; ②neither xeric nor hydric; ③pertaining to conditions of medium moisture supply; ④a microclimatic term which refers to an area in which the soils are usually well drained, but contain a lot of moisture for all or much of the year; such areas typically occur on north or east-facing exposures. ⑤Characterized by having a medium moisture supply eg, a type of habitat or soil. ⑥Relating to habitats with a moderate or average amount of moisture. ⑦A site that has a moderate or well balanced supply of moisture. ⑧Moist (as in a habitat) (news). Compare to xeric.

mesifixed adj. Attached at or toward the middle, as in the area where a petiole or hairs meet the leaf blade (news).

MesoAmerica n. The region of Mexico and Central America that is one of several possible centers of domestication for *Phaseolus vulgaris*. Bean varieties from this area tend to be small seeded compared to those from the Andean region of South America. (rrl)

mesocarp n. (from ancient Greek μέσος, *mesos*, middle, and post-classical Latin *-carpium*, from ancient Greek -κάρπιον, *-karpion*, from καρπός, *karpós*, fruit) ①The fleshy middle layer of the pericarp (fruit wall) in a drupe (sk08). ② “The typically fleshy middle layer of the pericarp of a fruit, between the endocarp and the exocarp” (oed)

mesophyll n. () The photosynthetic tissue of a green plant borne beneath the epidermis.

mesophytic adj. () Refers to plant species or plant communities which grow under mesic conditions.

mesotrophic adj. (and Greek τροφικός, *trophikos*, from τροφή, *trophe*, nourishment)

Mesozoic adj. n. (from ancient Greek μέσος, *mesos*, middle, and ζῷον, *zoion*, living being or animal, meaning middle animals) ①The time from 248-65 million years ago, spanning the Triassic, Jurassic, and Cretaceous periods. ②“Of, relating to, or designating the second era of the Phanerozoic eon, between about 245 million and 65 million years ago, which followed the Palaeozoic and preceded the Cenozoic and was marked by the rise of dinosaurs and the appearance of the first birds, mammals, and flowering plants” (oed)

micro- prefix (ancient Greek μικρο-, *mikro*, combining form of μικρός *mikros*, small. Cf macro-, mega-.

microbasarium n. (ancient Greek μικρο-, *mikro*, small, Latin *basis*, from Greek βάσις, *basis*, a stepping, also that on which one steps or stands, pedestal, base, and *-arium* an ending that indicates a schizocarpic fruit) A fruit derived from a schizocarpous gynoecium which at maturity disarticulates into discrete, seed-containing half-carpels (mericarps); eg *Boraginaceae*, *Lamiaceae* (sk08).

microbiotic crusts Living soil crusts found throughout the world especially in arid and semiarid regions; aka cryptogamic crusts, cryptobiotic crusts, microphytic crusts; these crusts are formed by living organisms and their by-products creating a surface crust of soil particles bound together by organic materials; organisms include cyanobacteria, green and brown algae, mosses, lichens, liverworts, fungi, bacteria.

microgametophyte n. () The gametophyte developing vegetatively from the microspore of a heterosporous plant, male. Cf megagametophyte.

micrometer n. (ancient Greek μικρο-, *mikro*, small, and ancient Greek μέτρον, *metron*, measure) One millionth of a meter, a thousandth of a millimeter, abbreviated μm .

micromorphology n. The study of undisturbed soil samples by light microscopy from specially prepared microscope slides, called thin sections.

micronutrients (microelements) n. Elements such as zinc, boron, iron and molybdenum that are essential for plant and microbial growth, but are only needed in very small amount. In the case of molybdenum, this may only be ounces per ha. (trl)

microphyll n. () The sterile leaves of *Lycopodiaceae*, *Selaginellaceae* etc.

microphyllidious adj. () Small, leaf-shaped.

micropyle n. (ancient Greek μικρο-, *mikro*, small, and ancient Greek πύλη, *pyle*, gate, entrance, of unknown origin.) ①The opening of the integument(s) at the apex of the ovule or seed, usually acting as a passage for the pollen tube on its way to the embryo sac. The micropyle is formed by one or both integuments, the outer one producing the exostome, the inner one the endostome (sk08). ②“An opening in the integument of an ovule, through which the pollen tube penetrates to the embryo sac. Also: the small pore in the ripe seed which represents this opening.” (oed)

microsporangium pl microsporangia n. (New Latin, from ancient Greek μικρο-, *mikro*, small, and *sporangium*, from *sporos*, germ, spore, modern Latin *spora*, from Greek σπορά, *spora*, sowing, seed, and ἀγγεῖον,

angeion, vessel, small container) ①The organ of a sporophyte that produces the male microspore. The term is usually applied to cryptogams whereas the homologous structure in seed plants is called the pollen sac (sk08).

②A sporangium bearing microspores (as the pollen sac of the anther in a seed plant). ③“A sporangium containing microspores” (oed). The sporangia of a heterosporous plant that produces microspores. The sporangium in heterosporous plants where the microspores develop. Cf megasporangium.

microspore n. (International Scientific Vocabulary *micr-* and *spore*; from ancient Greek μικρο-, *mikro*, small, and modern Latin *spora*, from Greek σπορά, *spora*, sowing, seed) ①The smaller spore formed by heterosporous plants that gives rise to a male gametophyte (sk08). ②One of the spores of a heterosporous plant (as the pollen grain of a seed plant) that gives rise to male gametophytes and that is generally smaller than the megaspore. Haploid spore which gives rise to the male gametophyte; other being called megaspore. ③“The smaller of the two types of spore produced by heterosporous cryptogams, which develops into the male gametophyte. Also: the analogous structure in seed plants (ie the immature pollen grain); the smaller of two types of spore produced by certain fungi.” (oed) ④The smaller of the spore types in plants with two sizes of spore, producing the male gametes. ⑤On a heterosporous plant, the smaller of two spore sizes produced. ⑥A spore involved in the development of male reproductive organs. ⑦In spp that produce two kinds of spore (eg, *Isoetes*, *Selaginella*, *Azolla*, *Marsilea*), the smaller spore that gives rise to the "male", sperm-producing gametophyte (news). Cf megaspore.

microsporophyll n. (ancient Greek μικρο-, *mikro*, small, modern Latin *spora*, from Greek σπορά, *spora*, sowing, seed, and ancient Greek φύλλον, *phyllon*, leaf) ①Specialized fertile leaf producing microsporangia with male spores, eg the stamens of the angiosperms (sk08). ②A leaf or modified leaf which bears microsporangia” (oed). ③Specialized leaf bearing or subtending one or more microsporangia. Cf megasporophyll.

microsymbiont n. The bacteria associated with legumes in the formation of nitrogen fixing nodules. In a symbiotic partnership, the microbiotic component such as bacteria or fungi.

middlings n. The mid grade of flour. “1981 Cook's Mag. Jan. 55/1 The best wheat flours are called ‘patents’, the next grade are ‘middlings’ and the poorest are ‘clears’.” (oed)

midnerve, midrib, midvein n. ①The central or principal vein of a foliar or bracteal organ, or of a sepal or petal. ②The main or central vein of a leaf or similar organ. Cf costa.

midrib n. ①The central vein or rib of a leaf or leaflet. ②The prominent central vein of many leaves (often best seen from the lower side) (mf). ③The main or central vein of a leaf or similar organ. ④The main vessel of a leaf, the continuation of the petiole; midvein (news). Cf costa.

midvein N. ①The central vein or vascular bundle of a leaf, lemma, glume, or similar structure. ②The main or central vein of a leaf or similar organ. ③The biggest vein that runs down the middle of the leaf blade; midrib (news). Cf costa.

milky adj. () Like a thick white juice.

mine spoil A mixture of rocks, rock fragments, soil and other natural materials that result from surface mining operations.

mineralization The microbial decomposition of organic matter that releases ammonium ions in an inorganic form.

minerotrophic adj. (from mineral and Greek τροφικός, *trophikos*, from τροφή, *trophe*, nourishment, after German *minerotroph* (G. E. du Rietz in *Vegetatio* (1954) 5– 6 573.) ①Rich in calcium and magnesium carbonate. ②“Esp. of a swamp, fen, or peatland: fed chiefly by ground and surface water and hence supplied with dissolved minerals (oed). Cf ombrotrophic.

minute adj. () ①Very small; ②so small as to be difficult to see with the naked eye.

mire n. (early Scandinavian (compare Old Icelandic *mýrr* (Icelandic *mýri*), Norwegian *myr*, Old Swedish *myr* (Swedish *myr*), Danish *myr*, from a variant of the Germanic base of *mese*, moss) ①Synonymous with any peat-

accumulating wetland. ② “An area of swampy ground; a boggy place, *esp.* one in which a person may be engulfed or become stuck fast; (*gen.*) swampy ground, bog” (oed).

mirepoix n. (French *mirepoix* (1833; earlier *à la Mirepoix* (1808)), from the name of the *Duc de Lévis-Mirepoix* (1699–1758), French diplomat and general, whose cook is said to have devised the dish) “A mixture of sautéed diced vegetables used in various sauces, as a base on which to braise meat, or as a separate dish, often served with some bacon or ham” (oed). Classically, the aromatic vegetables onion, carrot, and celery sautéed together.

mitosis n. () The regular division of cells without the reduction in chromosome number. Hence mitotic. Cf meiotic.

mixed sporangia n. () Sporangia of all ages borne at all levels in sorus. Cf gradate.

mollisol n. A soil order of the US system of soil classification; a mineral soil that has a dark-colored humus-rich surface horizon and one of several kinds of subsurface horizons.

monadelphous adj. () ①Spoken of stamens united by their filaments into a tube or column. ②With all of the filaments of the stamens joined into a single group (news).

monadnock n. (from the name of Mount *Monadnock*, a mountain in New Hampshire, U.S.A., having this character (oed).) ①Geomorphology. ②A hill, mountain, or ridge of erosion-resistant rock rising above a peneplain (oed).

moniliform adj. (Latin *monīle*, necklace, and *forma*, shape) ①Being constricted laterally and appearing beadlike; ②appearing as a string of beads; ③resembling a string of beads; ④Cylindrical, with contractions at regular intervals resembling a string of beads.

mono-, mon- prefix (ancient Greek *μνο-*, *mono*, combining form of *μόνος*, *monos*, alone, only, sole, single. The second element of ancient Greek *μόνος*, *monos*, corresponds to that of ancient Greek *οἶος*, *oios*, alone, with a syllable-initial digamma. The first element is unexplained. (oed))

monocarp n. (ancient Greek *μνο-*, *mono*, alone, only, sole, and post-classical Latin *-carpium*, from ancient Greek *-κάρπιον*, *-karpion*, from *καρπός*, *karpōs*, fruit) ①A whole carpel of a schizocarpous fruit that functions as a diaspore; see also fruitlet (sk08). ②“In many trees of the family *Annonaceae*: each of the separate carpels (often arranged in bundles) which form the fruit. Opposed to *syncarp*.” (oed) 2) A monocarpic plant. *rare* before late 20th century” (oed).

monocarpellate adj. () Consisting of a single carpel only.

monocarpic adj. (ancient Greek *μνο-*, *mono*, alone, only, sole, and post-classical Latin *-carpium*, from ancient Greek *-κάρπιον*, *-karpion*, from *καρπός*, *karpōs*, fruit, and *-ic*, adjectival suffix) ①“Of a plant: bearing fruit only once during its life cycle” (oed). ②Flowering only once before dying (news).

monochasial cyme n. An inflorescence comprised of one or more repeating units of a pair of flowers: a terminal flower & a single lateral flower that usually overtops the terminal flower (news).

monochlamydeous adj. Perianth comprised of 1 series of parts, as in a single whorl of sepals or petals (news).

monoclinous adj. (Greek *monos*, single, alone, and *kline*, bed) Having both stamens and pistils in the same flower.

monocot n. (from monocotyledons) ①Angiospermous plant having only one cotyledon. ②A flowering plant with embryos that produce only one seed leaf (cf “dicotyledon” or “dicot”); monocotyledon (news).

monocotyledons n. (ancient Greek *μνο-*, *mono*, alone, only, sole, and Latin *cotylēdon*, the plant navelwort or pennywort, from Greek *κοτυληδών*, *kotyledōn*, from *κοτύλη*, *kotyle*, a hollow thing, a small vessel, referring to the

often spoon- or bowl-shape of the seed leaves) ①A class of angiosperms having an embryo with only one cotyledon, part of the flower usually in threes, leaves with parallel veins, and scattered vascular bundles; having one cotyledon or seed leaf. ②“A flowering plant with an embryo bearing a single cotyledon (seed-leaf); a member of the *Monocotyledoneae* (also *Monocotyledonae* or *Monocotyledones*), the smaller of the two major divisions traditionally recognized among angiosperms, comprising such plants (now often called *Liliopsida* or *Liliidae*)” (oed). ③One of two major groups of the angiosperms distinguished by the presence of only one leaf (cotyledon) in the embryo. Other typical characteristics are parallel leaf venation, floral organs usually organized in whorls of three, scattered vascular bundles, a rudimentary primary root, which is soon replaced by lateral adventitious roots (i. e. roots formed by the stem), and the lack of secondary thickening, which is why most Monocotyledons are herbaceous plants (if secondary thickening is present, as in *Agave*, *Aloe*, *Dracaena*, *Xanthorrhoea* and others, then it is different from Dicots). Monocotyledons include grasses, sedges, rushes, lilies, orchids, bananas, aroids, palms, and their relatives. (sk08).

monoculture n. The growing of a single crop species or cultivar.

monoecious or **monecious** adj. (New Latin *Monoecia* and English *-ous*; ancient Greek $\mu\omicron\nu\omicron$ -, *mono*, alone, only, sole, and from $\omicron\acute{\iota}\kappa\omicron\varsigma$, *oikos*, house) ①A plant having unisexual male and female flowers on the same individual; ②said of a plant having unisexual flowers; ③having pistillate and staminate flowers on the same plant but each sex on different flowers; ④pertaining to plants, individuals of which bear both staminate and pistillate flowers but not perfect flowers. ⑤“Of a spermatophyte: having male and female reproductive organs on separate flowers on the same plant. Also: designating such a flower. Of a cryptogam: having both male and female reproductive organs on the same individual.” (oed) ⑥Having the sexes in separate flowers but on the same individual; cf dioecious (mfn). ⑦Male and female reproductive structures borne on the same plant. ⑧A plant species whose male and female parts are found on the same plant but on different flowers. ⑨A plant that bears some flowers with pollen-bearing organs (stamens) & separate flowers with ovule-bearing organs (carpels) (news). Cf dioecious.

monoecy n. (ancient Greek $\mu\omicron\nu\omicron$ -, *mono*, alone, only, sole, and $\omicron\acute{\iota}\kappa\omicron\varsigma$, *oikos*, house) 1) The formation of male and female sexual organs on the same gametophyte (eg in many mosses and ferns), 2) in seed plants the formation of male and female flowers on the same individual. (sk08).

monomorphic adj. () Having only one form. Cf isomorphic, dimorphic, polymorphic.

monophyletic adj. () Drived from a single ancestral line. Cf polyphyletic.

monopodial adj. (New Latin *monopodium* and English *-al*) ①Of or relating to a monopodium: ②having or involving the formation of offshoots from a main axis; racemose.

monopodium n. (New Latin, from *mon-* and *-podium*) ①A main or primary axis that continues its original line of growth giving off successive axes or lateral branches (as in the excurrent trunk of some coniferous tree). ②An axis in which the growth is continued from year to year by the same growing point. Hence monopodial. Cf sympodial, dichotomous, pseudodichotomous.

monostelic adj. () With a single stele.

monotypic adj. (Greek *monos*, only, and *typos*, type) ①A plant of only one type. ②(Of a family or genus) containing only one species (mfn). ③Having only one representative, eg a genus or family with a single species. Cf polytypic.

montane adj. () Pertaining to or occurring in mountains.

moor n (Middle English *mor*, from Old English *mor*; akin MD. *moer*, mire, swamp) ①Chiefly British: an extensive area of open rolling infertile land consisting of sand, rock, or peat usually covered with heather, bracken, coarse grass, and sphagnum moss; ②a boggy area of wasteland usually dominated by grasses and sedges growing in a thick layer of peat.

moraine n. (French *moraine* (1779), from French regional (Savoie) *moraina*, *morêna*, Middle French *morion* light helmet (1542), probably from *morra* crown of the head) “1. a mound, ridge, or other feature consisting of debris that has been carried and deposited by a glacier or ice sheet, usually at its sides or extremity; the till or similar material forming such a deposit. 2. *Horticulture*, a flower bed made largely of stones covered with fine chippings, designed to produce conditions suitable for alpine plants.” (oed)

-morphic Suffix pertaining to form, eg. dimorphic, polymorphic etc.

morphology n. (Greek *morphologie*, from μορφή, *morphe*, form, and from Ancient Greek λόγος, *logos*, word, speech, discourse, reason) ① A branch of biology that deals with the form and structure of animals and plants, a study of the forms, relationships, metamorphoses, and phylogenetic development of organs apart from their functions. ② “The branch of biology that deals with the form of living organisms and their parts, and the relationships between their structures. Formerly: *spec.* the comparison of the forms of organisms and their parts in order to identify homologous structures” (oed) ③ The study of form in the widest sense but mostly restricted to the external structure of an organism as opposed to anatomy which refers to the internal structure of an organism (sk08).

motile adj. () Actively moving, self-propelled.

motte n. (Probably ultimately from French *motte*, a clod, mound, or lump, perhaps via Irish English: see discussion in Southern Folklore Q. (1972) 36 127–32. Connection with Spanish *mata* group of trees or bushes, copse (10th cent.), plant, bush (late 15th cent.) is unlikely (oed)) ① Small grove or clump of trees. ② A clump of trees in prairie country, a regional term, largely Texan.

mottled adj. () ① Covered in part with spots, areas, or lines of different color than the main surface. ② Marked with spots or blotches.

moulin n. (French *moulin*, post-classical Latin *molina* from classical Latin *mola* mill, with reference to the swirling motion of the water as it falls down the shaft) ① “A deep, nearly vertical circular well or shaft in a glacier, formed by surface water falling through a crack in the ice and gradually carving out a hole. Cf glacier-mill.” (oed) ② The gravel deposited in a moulin forms a moulin kame, often with an esker(s) leading away. Also known as a glacier-mill.

mouth n. Where a tubular structure such as a flower opens up into lateral lobes (news).

moxa pl moxas n. (Japanese *mokusa*, variant of *mogusa*, mugwort, moxa (1603 in *Vocabulario da Lingoa de Iapam*, glossed *Erua com que se dão botoês de fogo* ‘herb with which buttons of fire are given’), contracted from *moye-kusa*, literally ‘burning-herb’ (now as *moekusa* in sense ‘vegetation used as fuel’) from *moye-*, combining stem of *moyeru* (now *moeru*) to burn, and *kusa* grass, plant, herb. Compare French *moxa* (1694). Japanese *mokusa*, with devoiced *u*, was perceived phonetically by English speakers as /'mɒksa/, giving rise to the spelling *moxa*. (oed)) ① “A soft wool prepared with down from the young leaves of any of various Asiatic plants, esp. *Artemisia indica* and *Crossostephium artemisioides*, used in the form of a cone or cylinder for burning on or next to the skin at one of the vital points of the body as a counterirritant, cauterizing agent, etc. Also: a cone or cylinder of this. Now chiefly *Alternative Med.* (originally and chiefly in oriental medicine) More generally: any substance prepared for moxibustion; a device which simulates the effects of moxa.” (oed) ② It is a method of applying heat to acupuncture points.

mucilage n. () ① A vegetable gelatine of slimy consistency, water-soluble. ② A slimy or snot-like excretion, rich in heavy starches (news). Hence mucilaginous. Cf gelatinous.

mucro n. (Latin *mucro*, sharp point) ① A stiff or sharp point abruptly terminating an organ; ② a small awn; ③ a short and small abrupt tip; ④ a minute awn or excurrent midvein of an organ (eg, on a lemma). ⑤ A short, sharp, slender point (mfn). ⑥ A small, short and abrupt point. ⑦ A short, sharp tip, such as a prolong midrib. ⑧ A short, abrupt projecting tip (news). Hence mucronate.

mucronate adj. () ① Tipped with a short tip or point like an awn; ② with a short, abrupt tip, usually the short extension of a vein beyond the leafy tissue. ③ Having a mucro or abrupt, short projection on the midrib at the leaf tip, "abruptly slender-tipped". ④ Produced into a short, sharp tip, or mucro. ⑤ Ending abruptly in a short, stiff point (news). Cf acuminate.

mucronulate adj. Minutely mucronate.

mulch A loose surface either natural or manmade, composed of organic or mineral materials, deposited on top of soil to protect soil and plant roots.

Müllerian mimicry n. (müllerian from Fritz *Müller* and English -an) Mimicry between two distasteful or dangerous species (as of butterflies).

multi- Prefix meaning many. Cf poly-, pauci, pluri-.

multifarious adj. () Many-ranked, in many rows. Cf polystichous.

multifid adj. () Cleft into many lobes or segments; divided into many parts.

multiple fruit n. ① A fruit that develops from an apocarpous gynoecium. Most modern authors apply this term to a fruit that is derived from more than one flower (compound fruit) and call fruits developing from acarpous gynoecia "aggregate fruits." However, "aggregate fruit" is historically synonymous with "compound fruit", both being defined as being composed of more than one flower (Spjut and Thieret 1989). Spjut and Thieret (1989) traced the confusion to Lindley (1832) who had reversed the meanings for aggregate and multiple as defined by de Candolle (1813). English textbooks have generally adopted Lindley's errors, while non-English text books have followed de Candolle's (1813) definitions, or have employed other related terms. To avoid further confusion between aggregate and multiple, Spjut and Thieret (1989) recommended the term compound fruit be adopted instead of aggregate fruit for fruits composed of more than one flower, and that the original and correct meaning for multiple fruit be maintained. The distinction between multiple and compound fruits was first made by Gaertner (1788), but more clearly by Link (1789). (sk08)

multiseriate adj. () Arranged in many rows.

muricate adj. (Latin *muricatus*, having sharp points) ① Having a rough surface texture owing to small, sharp projections; ② rough, with short, hard tubercular excrescences; ③ copiously beset with hard, often sharp, tubercles. ④ Roughened with short, firm and sharp projections. ⑤ With small, pointed projections (news).

muskeg n. (Cree *maske-k*; some early forms are from Ojibwa *maški-k*) "A swamp or bog consisting of a mixture of water and partly dead vegetation, often covered by a layer of sphagnum or other mosses; terrain characterized by such swamps" (oed).

mutation n. An inheritable change in the DNA of an organism. Most commonly this will result in the loss of some specific ability or abilities, for example the ability to form nodules on a particular host. (rrl)

muticous adj. () ① Blunt, or without a definite point; ② blunt; ③ lacking a distinct process.

myceto-, myco- (ancient Greek *μύκης, μυκητ-, μύκης, mykos, myket-, mykes*, mushroom, fungus (probably ultimately cognate with mucus) Prefix forming chiefly scientific terms relating to fungi.

mycoheterotroph n.

mycorrhiza pl **mycorrhizae** n. () ① A mutually beneficial combination of fungus and plant root (mfn). ② A fungus associated with the root of a plant, the association of mutual benefit. ③ A symbiotic relationship between fungi and plant roots, from which both benefit. Hence mycorrhizal.

myrmecochore n. (dispersed by ants, from Hellenistic Greek μυρμηκο-, *myrmeko*- combining form of ancient Greek μυρμηκ-, μύρμηξ, *myrmek*-, *myrmes*, ant, probably cognate with classical Latin *formīca* ant, and - χωρεῖν, *khōrien*, to go, be spread around) ①Originally: a seed or fruit having an appendage rich in oil or protein which makes it attractive to ants, so facilitating its dispersal (now *rare*). In later use chiefly: a plant bearing such seeds. (oed) ②A plant bearing seeds having an appendage rich in oils or proteins which attract ants that disperse the seed, sometimes a reference to the seeds or fruits themselves.

myrmecochorous adj. Ant-dispersed; see also myrmecochory.

myrmecochory n. (from Hellenistic Greek μυρμηκο-, *myrmeko*- combining form of ancient Greek μυρμηκ-, μύρμηξ, *myrmek*-, *myrmes*, ant, probably cognate with classical Latin *formīca* ant, and - χωρεῖν, *khōrien*, to go, be spread around) Dispersal of plant diaspores by ants.

myrmecophilous adj. () Ant-loving, of plants inhabited by ants and offering specialised shelters and food for them.

N

n. adj. () The haploid or gametophytic number of chromosomes; ordinary cells of a seed plant have this number of pairs of chromosomes. Many plants have more than the basic two sets or complements of chromosomes (diploid) and the number of these is indicated with the suffix -ploid; triploid (3n) = 3 sets; tetraploid (4n) = 4 sets; pentaploid (5n) = 5 sets; octoploid (8n) = 8 sets; etc. An allopolyploid is of hybrid origin, including sets of chromosomes from different parents (rather than mere multiplication of chromosomes from one species) (mfn).

naked adj. () ①Lacking bracts or epidermal appendages. ②Lacking various organs, hairs or appendages. ③Exposed, without a covering (news). Cf glabrous.

National Certified Variety Review Board: A division of the Association of Official Seed Certifying Agencies (AOSCA) that review applications for entering varieties into the certified seed program.

native adj., n. () ①A species whose natural range included Illinois at the time of European contact; ②A plant species naturally found in the particular area in question; ③inherent and original to an area.

naturalize (French *naturel*, natural) ①To adapt to an environment not native; ②of foreign origin, but established and reproducing outside cultivation as though native.

naturalized exotic ①An exotic species that sustains itself outside of cultivation (it has not "become" native). ②A well established plant originating from another area.

naturalized species An introduced species that can consistently reproduce and sustain populations over successive generations without human intervention, and can coexist with other members of the ecosystem without becoming invasive.

nautohydrochory n. (New Latin, from classical Latin *nauticus*, of or relating to ships, seafaring, from ancient Greek ναυτικός, *nautikos*, of or belonging to ships, seafaring from ναύτης, *nautes*, sailor, Greek ὑδρο-, *hydr(o*-, combining form of ὕδωρ, *hydōr*, water, and χωρεῖν, *khōrein*, to go, to be spread abroad, to disperse) Dispersal of diaspores by water currents.

navicular, naviculariform adj. () Boat-shaped. Cf cymbiform.

Nearctic, Neoarctic adj. () "Designating a biogeographical region which includes North America south to the Mexican plateau, with Greenland; of, relating to, or inhabiting this region. This (the former) term is used chiefly in zoology; the form *Neoarctic* is now rare and confined mainly to botany." (oed). Cf holarctic, neotropical, Palaearctic.

nectar n. (Latin *nectar*, nectar; Greek *nektar*, the drink of the gods, from base of *necros*, dead, dead body, and *tar-*, who overcomes; hence, death overcoming; so named because the drink was held to confer immortality)

①The sweetish liquid in many flowers used by bees for the making of honey; ②a sweet substance typically produced by flowers which are insect-pollinated.

nectary pl nectaries (Greek *nektar*, nectar) ①A part of a flower that secretes nectar. ②An organ that produces nectar (mfn). ③A gland secreting a sweet fluid (nectar) commonly in insect-pollinated flowers but not restricted there. ④A structure or gland that secretes nectar, the sugar-rich substance that attracts pollinators & other feeders (news).

needle n. A shape that is much longer than wide, as in a sewing needle; usually refers to leaves of conifers (news).

neo- prefix new. Cf paleo-.

neomorphosis n. (Greek *neos*, new, and *morphosis*, change) Regeneration in cases where the new part is unlike anything in the body.

neoteny n. (Greek *neos*, young, and *teinein*, to extend, stretch) The retention of juvenile characteristics in the adult individual.

neotropics n. () The tropical areas of the 'New World', central America and the northern part of South America. Cf paleotropics.

Neotropic, Neotropical ①Of or pertaining to Central America and South America. "In zoology, the neotropical faunal region comprises South America, Central America south of the Mexican plateau, and the West Indies; in botany, the neotropical floristic kingdom extends slightly further north, to the southernmost U. S., and excludes the Patagonian region (southern Chile and southern Argentina) " (oed). Cf Nearctic.

neotype n. () A specimen selected to serve as the nomenclatural type as long as the original material is missing.

nerve n. () ①The same as a vein. ②A vein or ridge, usually a relatively weak or less strong one (mfn). ③Strand of vascular and supporting tissue in a leaf or similar structure. ④The raised or channeled portion of epidermis that indicates the path of a vein (news). Cf vein.

nest-leaves n. () Specialised sterile leaves modified for catching leaves and debris

net- (or netted-) veined adj. () ①With main veins (if more than one) branched (other veins diverging from the main veins, ± anastomosing or reticulate). ②With lateral veins that branch & reconnect, forming a network of anastomosing vessels (news). Cf reticulate, parallel-veined (mfn).

neuter adj. () ①Without sexual structures; ②not having stamens or pistils. ③In reference to a flower lacking functional stamens and pistils.

neutral adj. () Spoken of a flower which has neither stamens or pistils.

neutral flower n. () Said of a sterile flower composed of a perianth without any sexual organs.

New World "

nigrescent adj. Becoming black or blackish.

nitrate-tolerant symbiosis n. The ability in some host strain combinations to continue to nodulate and fix nitrogen at levels of soil nitrogen that would normally be inhibitory to these activities. In the case of soybean this has been reported most commonly in genotypes from Korea; it may also be due to mutations affecting the regulatory process. (rrl)

nitrification Microbial transformation via oxidation of ammonium cations to nitrate anions which can be used by plants (ammonium salts to nitrites to nitrates).

N-augmentation Addition of inorganic or organic sources of nitrogen.

nitrogen cycle The circulation and conversion of nitrogen-containing compounds among the atmosphere, the waters, the soils, and living organisms.

N-deficient soil Soils in which the available nitrogen is so low that the growth of plants is impaired.

nitrogen fixation, N₂-fixation n. The process by which nitrogen gas from the atmosphere is converted into ammonia. The transformation is energy requiring and can be achieved industrially through the Haber Bosch process or by specific microorganisms -- all bacteria (rrl). Conversion of gaseous dinitrogen (N₂) in the air to organic nitrogenous forms by certain bacteria, algae, and actinomycetes.

nitrogen saturation The point at which N retention capacity by biota and soil chemical fixation mechanisms is exceeded.

N-transfer The transfer of nitrogen that was obtained through legume-rhizobial N₂- fixation to non-legumes in proximity.

nitrogen transport n. Soon after flowering, plants begin to mobilize fixed nitrogen from the leaves to the developing pod. Species and varieties can differ in the efficiency and timing of this process. In some farming systems it may even be desirable that some N remain in the stover for the fertilization of subsequent crops. (rrl)

nodding adj. ①Hanging on a bent peduncle or pedicels. ②Curving to one side; minutely pendulous.

node n. (Latin *nodus*, knob) ①A knob or joint of a stem from which leaves, roots, shoots, or flowers may arise. A node will contain one or more buds. ②The point along a stem which gives rise to leaves, branches, or inflorescences; ③the joint of a culm, inflorescence, or spikelet; ④the place on the stem where the leaves are attached; the joint. ⑤The point on a stem at which a leaf or branch arises (extended to include the axis of an inflorescence) (mf). ⑥The location on a stem where stems or leaves usually originate, generally a swollen area, other structures like tendrils and flowers may also originate here. ⑦A point on the stem where leaves or branches are inserted. ⑧Point of attachment of a leaf, peduncle, or branch to a stem (news). Cf internode.

nodose adj. () Knotty, knobby, knobby, or knodular. Diminutive knodulose.

nodulation n. The process by which rhizobia induce the formation of galls or nodules on the roots (or occasionally stems) of their specific hosts (rrl). The process whereby rhizobia penetrate a legume root and provoke a response that results in the formation of a root-nodule that surrounds the rhizobia.

nodule n. () A small, +/- spherical swelling. Enlargements or swellings on the roots of legumes inhabited by symbiotic nitrogen-fixing bacteria. Hence nodular.

nodulose adj. () ①Provided with little knots or knobs. ②More or less knobby, diminutive of nodose, especially for describing roots.

nomen n. (Latin) name.

nomen confusum n.

nomen conservandum n. () The name of a taxon internationally agreed upon to be exempt from the rules of priority of publication.

nomen illegitimum n. () An illegitimate name.

nomen nudum n. () A name published without an accompanying description.

nomen rejeciendum n. () A name proposed for conservation but rejected by the committee.

nomen superfluum n. ①A plant name that has been superceded by a valid name; ②a superfluous name.

nomenclatural synonyms n. () Synonyms (viz.) with the same basionym (viz.) or based on the same type (viz.), the result of the transference of a species from one genus to another. Cf taxonomic synonyms.

nomenclatural type n. () See type

nomenclature n. (Latin *nomen*, name, and *calare*, to call) ①The aspect of taxonomy concerned with the orderly application of names to taxa in accordance with the International Code of Botanical Nomenclature; ②the making and giving distinguishing names to all groups of plants; ③the study of the application of the names of taxa. Cf taxonomy.

non-arcuate adj. Straight (news).

nonbloat Bloat is the swelling of the digestive tract or rumen of a grazing animal resulting from excess gas production from eating certain legumes and green forage. Nonbloat refers to plants that do not cause this swelling.

non-local native plant material Plant material that is the same species as that occurring at the site but that does not originate from the region targeted for use

notched adj. With a small indentation in an apex, as in the tip of a leaf (news).

noun substantive n. (after post-classical Latin *nomen substantivum*) ①A word used as the name or designation of a person, place, or thing, as in the Latin adjective *arcanus* being used as a noun meaning a secret. ② “Of a word: denoting a substance; designating a person, place, or thing” (oed).

noxious weeds Those plant species designated as noxious weeds by the Secretary of Agriculture or by the responsible state representative. Noxious weeds generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of seriously destructive diseases or insects,

nucellus n. (New Latin, a little nut, from classical Latin *nuc-*, *nux* nut, and French *-elle*, diminutive suffix) ①The megasporangium of the seed plants (sk08). ③ “The undifferentiated tissue of the ovule, in which the embryo sac develops” (oed)

nuculanium n. (scientific Latin *nuculanium*, from classical Latin *nucula*, nucule, and *-anium*, after French *nuculaine*) ①A simple fruit with a dry pericarp, which is differentiated into a hard endocarp and an outer fibrous or coriaceous layer that may or may not be dehiscent; eg *Cocos nucifera*, *Arecaceae*, *Prunus dulcis*, *Rosaceae*. (sk08). ② “A fleshy fruit containing several stony seeds; *spec.* (J. Lindley's term for) a type of berry formed from a superior ovary” (oed)

nucule n. (classical Latin *nucula*, a small or young nut, from *nuc-*, *nux* nut) “Originally: †each of the seeds in a nuculanium (*obs.*). Later: a small nut or nutlet; a section of a compound (usually hard) fruit; a nut borne in an involucre. Now *rare.*” (oed)

nurse crop Annuals or short-term perennials established as a companion crop to provide rapid soil stabilization to assist in the establishment of a more permanent plant community.

nursery stock n. () Plants grown in or obtained from a nursery.

nut n. (Middle English *nute*, note, from Old English *hnute*; akin to Old High German *nuz*, *hnuz*, nut; compare Old Irish *cnú* nut, Irish *cnó*, Welsh *cnau*, nuts) ①A hard-shelled dry fruit or seed having a more or less distinct

separatable rind or shell and interior kernel or meat; ②a dry indehiscent one-seeded fruit with a woody pericarp developing from an inferior syncarpous ovary; ③a hard, indehiscent, one-seeded, fruit, typically with an outer shell. ④ "A hard, indehiscent, usually one-seeded fruit, often surrounded by a cupule" (oed) ⑤A dry, indehiscent, usually single-seeded fruit where the pericarp is contiguous to the seed (sk08). ⑥A dry, hard, indehiscent (usually 1-seeded) fruit, often larger than normally termed an achene (or nutlet) (mfn). ⑦A hard, indehiscent fruit, with 1 seed. ⑧A dry, indehiscent fruit with a hard wall, usually containing only one seed & usually subtended by an involucre (as in acorns of the oak family, Fagaceae) (news). Because, sometimes you feel like a nut, sometimes you don't.

nutlet n. (from *nut*, and *-let*, a diminutive suffix) ①A small nut or achene, typically 1-seeded, usually lacking a specific outer shell. ② "A small nut or nutlike fruit. Often applied to the fruit of plants of the mint family, (*Lamiaceae* (*Labiatae*)) or the birch family (*Betulaceae*)." (oed) ③Diminutive of nut, referring to an individual nut-like carpel or half-carpel (mericarp) of a fruit derived from an apocarpous or schizocarpous gynoecium (sk08). ④An achene or similar tiny 1-seeded indehiscent fruit; also used for the stony carpels embedded in the pome of *Crataegus* (mfn). ⑤A small nut; also used when referring to each lobe of the 4-lobed nuts found in *Boraginaceae*. ⑥A small nut (news).

O

ob- prefix () ①A prefix signifying inversion, inversely, usually with adjectives indicating shape; eg, obovate, obconic, or obcordate (with the small end basal), or oblanceolate. ②A prefix meaning in the reverse of the typical direction.

obconic, obconical adj. () ①A solid figure with the shape of a cone; ②inversely conical; ③widest at the apex and pointed at the base. ④Inversely conic (-al), a cone attached at the narrow end. Conical in shape with attachment point at the narrow end of the cone. Cf conic (-al).

obcordate adj. () ①Referring to leaves or petals which are heart-shaped at the tip and tapering to a wedge-shaped base. ②Having an inverted heart shape, "heart-shaped".

oblanceolate adj. (Latin *ob*, reversely, and *lancea*, spear) ①Shaped like a lance point reversed, that is, having the tapering point next to the leafstalk; ②several times longer than wide, but widest above the middle, long-tapering at the base. ③Of a plane several times longer than wide, widest in the apical third, tapering gradually towards the base, more rapidly towards the apex. ④Reverse of lanceolate, widest above the middle and tapering to the base. ⑤Widest above the middle point between the point of attachment & the apex, & tapering at both ends; narrower than obovate but wider than linear (cf lanceolate) (news). Cf lanceolate.

obligate adj. () Mandatory, essential, unable to exist under other conditions. Cf facultative.

obligately dependent The survival of one organism dependent upon the presence of another organism.

oblique adj. (Latin *obliquus*, slanting) ①Slanting; ②unequal-sided; ③slanting, or unequal-sided. ④Asymmetrical, unequal, or slanting (mfn). ⑤Emerging at an angle other than perpendicular or parallel (news).

oblong adj. (Latin *oblongus*, rather long) ①Elliptical and from two to four times as long as broad; ②object with round ends and parallel margins, three times longer than wide; ③longer than broad, with nearly parallel sides; ④several times longer than wide with nearly or quite parallel sides. ⑤Much longer than wide with parallel or nearly parallel sides. ⑥Longer than wide and ± parallel-sided (but not as elongate as linear) (mfn). ⑦Longer than broad, with parallel margins and rounded ends. ⑧Shaped similar to a rectangle that is longer than wide & with rounded ends (news).

oboloid adj. Three-dimensional equivalent of oblong (news).

obovate adj. (Latin *ob*, against; *ovum*, egg) ①Inversely ovate; ②having the shape of the longitudinal section of an egg, with the broad end at the top, as some leaves; ③inversely ovate; egg-shaped with widest part above the middle. ④The reverse of ovate; attached at the narrow end, "egg-shaped". ⑤Inversely ovate, of a plane with the outline of

an egg, attached at the narrower end. ⑥Roughly oval, widest above the point of attachment & the apex (cf ovate), & broadly tapering to each end; wider than oblanceolate (news). Cf ovate.

obovoid adj. (Latin *ob*, against, *ovum*, egg, and Greek *eidōs*, shape) ①Inversely ovoid; ②roughly egg-shaped, with narrow end downwards; ③said of some fruits; having the form of an egg, but with the broad end at the tip; ④a solid that is obovate in outline. ⑤Inversely ovoid, of a solid with the form of an egg, attached at the narrower end. Cf ovoid.

obpyramidal adj. Having the shape of an inverted pyramid.

obpyriform adj. () Pear-shaped, with the wide end toward the apex.

obsolescent adj. () Not functional, but not reduced to a rudiment.

obsolete adj. (Latin *obsolescere*, to go out of use) ①Rudimentary or not evident; ②applied to a structure that is almost suppressed; ③vestigial; ④lacking or rudimentary; ⑤not evident. ⑥Reduced to the point of being entirely, or almost, undetectable.

obtriangular adj. Any triangular shape with the broad end toward the apex (news).

obtuse adj. (Latin *obtusus*, blunt) ①With blunt or rounded end; ②blunt or rounded; ③pointed with an angle greater than 90°. ④A broad pointed apex or base. ⑤With the sides or margins converging at more than a 90° angle (mfn). ⑥Evenly narrowed into a blunt point at an angle of 90° or more. ⑦Bluntly pointed, with the margins forming an angle of greater than 90° (news). Cf acute.

ocean n. (Middle English *ocean*; Latin *oceanus*, from Greek *okeanos*, the ocean) ①The great body of salt water that covers more than two thirds of the surface of the earth; ②any of its five principal geographical divisions, the Atlantic, Pacific, Indian, Arctic, and Antarctic.

ochraceous adj. () ①Ochre-coloured; ②dull yellow with a tinge of red.

ochroleucous adj. () Yellowish white to buff or cream-colored.

ocrea, ochrea n. (Latin *acrea*, greave or legging; classical Latin *ocrea*, a greave or legging, worn by foot-soldiers, hunters, and country people; of uncertain origin) ①A tubelike covering around some stems, especially of plants of the *Polygonaceae*; in the *Polygonaceae*, refers to the tubular sheathing stipules along the stem. ②“A dry sheath around a stem or stalk; (usually) *spec.* one formed by the cohesion of two or more stipules, characteristic of the dock family *Polygonaceae*” (oed) ③The tubular sheathing stipule peculiar to the *Polygonaceae* (mfn). ④A tubular stipule where the leaf base sheaths the stem (in spp of the buckwheat family, *Polygonaceae*) (news).

ocreola n. (from *ocrea*, as above, and *-ola*, feminine diminutive suffix used with nouns) ①In the *Polygonaceae*, a secondary ocrea, usually referring to those of the inflorescence. ②A small ocrea subtending the flowers in inflorescences of *Polygonaceae* (mfn).

odd-pinnate adj. () Said of compound leaves having an odd number of leaflets, this is usually easily determined because there is a single terminal leaflet. = imparipinnate. Cf even-pinnate, paripinnate.

-oecious, -ecious suffix (ancient Greek *oikía*, *oikia*, (Cretan and Locrian *φοικία*, *woikia* [digamma as w]) house, from *οἶκος*, *oikos*, house) “Forming adjectives describing the distribution or arrangement of sexual organs, chiefly in plants” (oed)

official n. adj. (post-classical Latin *officinalis* (adjective) used as a household storeroom or workshop (11th cent. in a French source), (of remedies) made to a standard (1674 or earlier), (of plants) used as a remedy (1702 or earlier), from classical Latin *officina*, *officina*, noun, workshop, studio, and *-ālis* -al. Classical Latin *officīna* was applied in post-classical Latin also to a store-room of a monastery in which provisions, medicines, or necessities of any kind were kept for use (9th cent.). In later use it seems to have been extended, like ‘shop’, from a work-

shop to a sale-shop.) ① “A medicine kept as a standard or stock preparation. Of a medicinal preparation: kept as a stock preparation by apothecaries or pharmacists (now rare); made to a standard prescribed in a pharmacopoeia or formulary, included in a pharmacopoeia. Of a plant: used for medicinal purposes; included in a pharmacopoeia. Of a scientific name: adopted by a pharmacopoeia. Of, belonging to, or characteristic of a shop or shopkeeper.” (oed)

-oid suffix meaning -like, eg. indusioid. Cf -form, -aceus.

Old World n. ① “Usually with capital initials. The continents of Europe, Asia, and Africa, known to Europeans before the New World of the Western hemisphere. In later use also (*esp.* in *Biol.*): the Eastern hemisphere (ie also including Australasia).” (oed)

oligo- Prefix meaning few. Cf pauci-, multi-, poly-.

oligolectic adj. (post-classical and scientific Latin *oligo-*, and its etymon ancient Greek ὀλιγο-, *oligo-*, combining form of ὀλίγος, *oligos*, small, little, few (of uncertain origin), and ancient Greek λεκτός, *lektos*, chosen) “Entomology (of a bee) gathering pollen from the flowers of only a few closely related plants; cf oligotropic” (oed).

oligolege n. (post-classical and scientific Latin *oligo-*, and its etymon ancient Greek ὀλιγο-, *oligo-*, combining form of ὀλίγος, *oligos*, small, little, few (of uncertain origin), and ancient Greek λέγειν, *legein*, to choose, to say, from λέξις, *lexis*, diction, word, from λεγ-, *leg-*, to speak) “*Entomol.* An oligolectic bee” (oed).

oligotrophic adj. (and Greek τροφικός, *trophikos*, from τροφή, *trophe*, nourishment) A water body low in nutrients.

oligotropic adj. (post-classical and scientific Latin *oligo-*, and its etymon ancient Greek ὀλιγο-, *oligo-*, combining form of ὀλίγος, *oligos*, small, little, few (of uncertain origin), and Greek τροπή, *trope*, turning (n.), as in turning or attracted to) Entomology. Of an insect, esp. a bee: collecting nectar from the flowers of only a few related plants (oed). Contrasted with polytropic, see also oligolectic.

olivaceous adj. () ① Having an olive-like or olive-green color; ② olive-colored, a yellowish green darkened with black.

-olus, ola, olum suffix (classical Latin *-olus -a -um*, a diminutive suffix used with nouns)

ombrohydrochory n. (from ancient Greek ὄμβρος, *ombros*, shower of rain, cognate with classical Latin *imber* rain, and ὑδρο-, *hydro-*, combining form of ὕδωρ, *hydōr*, water, and χωρεῖν, *khōrein*, to go, to be spread abroad, to disperse) ① Dispersal of diaspores by rain or dew, either directly by flushing the seeds out of their fruits (splash-rain dispersal), or indirectly by triggering a springboard mechanism (rain ballism) (sk08).

ombrotrophic adj. (from ancient Greek ὄμβρος, *ombros*, shower of rain, and Greek τροφικός, *trophikos*, from τροφή, *trophe*, nourishment, after German *ombrotroph* (G. E. du Rietz 1954, in *Vegetatio* 5–6 572) Of bogs and their vegetation: mostly dependent on precipitation for formation and sustenance (oed). Cf minerotrophic.

one-sided adj. ① Secund; ② arranged only on one side.

ontogeny n. () The development of a single organism, the stages through which it passes in its lifetime. Cf phylogeny.

opaque adj. () ① Dull; ③ neither shining nor translucent.

open adj. () Loose, spreading, eg. inflorescences, with few spikelets and long branches.

operculate adj. ① Provided with an operculum; ② having a little lid, the deciduous cap of a circumscissile fruit, ③ said of a fruit that dehisces along the circumference near the apex.

opposite adj. (Latin *opponere*, to oppose) ① Structures that are paired at the nodes and placed one on each side of the node; ② said of leaves or bracts occurring two at a node on opposite sides of the stem; ③ said of flower parts when one part occurs in front of another stamen inserted directly in front of the petal; ④ Of a pair of organs arising at the same level on opposite sides of the stem. ⑤ Of leaves borne two to each node, opposite each other, arranged in pairs along an axis, not alternate. ⑥ Two at a node (and $\pm 180^\circ$ apart), as in some leaves; centered upon rather than alternating with, as stamens opposite the petals (mfn). ⑦ Positioned directly across from one another; referring to the arrangement of a node that bears 2 similar organs (news). Cf alternate, basal, decussate, whorled.

oral setae n. Marginal setae inserted at junction of leaf sheath and blade, on the auricles when these are present.

orbicular adj. (Latin *orbis*, circle) ① Round or shield-shaped with petiole attached to center; circular in outline; ② approaching a circular outline. ③ Circular in outline or nearly so (mfn). ④ Rounded or circular in outline. Cf rotundate.

order n. () A taxonomic grouping of similar families.

organ n. A plant structure that performs a metabolic, structural, or reproductive function, such as a leaf, stem or flower (news).

organism n. () A complete, living individual of a species.

orifice n. Opening into a cavity (news).

ornamental A plant grown for its beauty and esthetic value.

ornamented adj. With elaborate patterns or textures (news).

ornitho- prefix (ancient Greek ὀρνιθο-, *ornitho-*, combining form of ὀρνιθ-, ὄρνις, *ornith-*, *ornis*, bird, cognate with *erne*) A prefix forming nouns and adjectives with the sense ‘of, relating to, or resembling birds’. Mostly combined with second elements of Greek word origin. (oed)

ornithochorous adj. () Bird dispersed, see also ornithochory.

ornithochory n. (from ancient Greek ὀρνιθο-, *ornitho-*, bird, and and χωρεῖν, *khōrein*, to go, to be spread abroad, to disperse) Dispersal of plant diaspores by birds.

ortet n. (classical Latin *ortus* origin, and *-et*, a suffix forming diminutives) “An individual plant that gives rise to a clone of plants (ramets) by vegetative reproduction or propagation” (oed). Cf ramet.

ortho- Prefix meaning straight.

orthographic, orthographical adj. (ancient Greek ὀρθο-, *ortho-*, combining form of ὀρθός, *orthos*, straight, right, probably from the same Indo-European base as Sanskrit, *ūrdhva*, erect, upraised, Avestan, *ərəduua*, upraised, and Latin *-graphus*, Greek *-γραφος*, *-graphos*, passive sense of ‘written’ or in the active sense, ‘that writes, delineates, or describes’) “Relating to orthography; belonging or relating to correct spelling, or to spelling in general; correct in spelling” (oed).

orthostichous adj. () In a vertical row.

osier n. (post-classical Latin *osera*, *osiera*, from Anglo-Norman *osier*, *oser*, *ozier*, Frankish *auseria*, *ausaria*, willow-bed, probably from earlier **alisaria*, from *alisa* alder, both trees and shrubs growing streamside) ① A long, lithe stem. ② “Any of several willows with tough pliant branches used in basketwork, esp. *Salix viminalis*; (also) a flexible branch of any of these willows. Also with distinguishing word.” (oed)

osseus, osseous adj. (Scientific Latin *osseus* from Linnaeus, from classical Latin *osseus* made or consisting of bone, in post-classical Latin also hard as bone) “That resembles bone in hardness or firmness. Of, relating to, consisting of, or of the nature of bone; bony; ossified.” (oed)

-osum suffix () An ending that in carpological terminology indicates a compound fruit (sk08).

oval adj. () ①Broadly elliptical but with rounded ends; similar to oblong, but not as long; ②broadest in the middle. ③Broadly elliptic, narrowing somewhat from the middle to rounded ends.

ovary n. (post-classical Latin *ovarium*, a place or device containing eggs, from *ōvum*, an egg, and *-ārium*) ①The enlarged hollow part of a pistil in angiosperms in which ovules are formed; ②the basal part of the pistil, containing the ovules; ③that portion of the pistil which contains the ovules. ④ “In the flower of an angiosperm: the hollow basal part of the pistil or gynoecium, which encloses the ovules and from which the seed-vessel is developed. Formerly also called *germen*.” (oed) ⑤The enlarged, usually lower portion of a pistil containing the ovules (sk08). ⑥The lower portion of a pistil, usually ± expanded, in which the seed or seeds are produced; ripens into a fruit (mfn). ⑦The enlarged base of the pistil that contains the developing seeds, matures into the fruit. ⑧The expanded basal portion of a carpel that bears the immature seed (news).

ovate adj. (Latin *ovum*, an egg) ①Having the shape of a longitudinal section of an egg; egg-shaped and attached by the broader end; ②broadest below the middle like a hen’s egg; ③egg-shaped with the widest part below the middle. ④Shaped in general outline like a longitudinal section of an egg; ie, broadest below the middle (but broader than lanceolate) (mfn). ⑤Of a plane with the outline of an egg, attached at the broad end. ⑥Shaped like a hen’s egg, attached at the broader end, "egg-shaped". Term applied to plane surfaces. ⑦Egg-shaped, widest below the middle & broadly tapering to each end; wider than lanceolate (news). Cf obovate.

overseeding Sowing seeds in an area, where other plants are already growing, to promote new growth or fill gaps in the existing vegetation.

oviparous adj. (Latin *ovum*, an egg; *parere*, to produce) ①Egg-laying; ②producing eggs which hatch after leaving the body of the female; ③germinating while still attached to the parent plant, as in mangrove.

ovoid adj. (Latin *ovum*, an egg) ①Egg-shaped; a solid with an ovate outline. ②Egg-shaped (mfn). ③Of a solid with the form of an egg, attached at the broad end. ④Shaped like a hen’s egg, "egg-shaped", term applied to solid objects. ⑤The 3-dimensional equivalent of ovate; shaped like an egg widest below the middle (news). Cf obovoid.

ovulate bearing ovules.

ovule, ovulum n. (post-classical Latin *ovulum*, from Latin *ovum*, an egg) ①A structure in seed plants which contains the megasporangium (nucellus), megaspore (embryo sac), a food store, and a coat, and develops into a seed after fertilization. The structure within the ovary that will become the seed after fertilization. The body which, after fertilization, becomes the seed. ②“In a spermatophyte: a small rounded structure which consists of the female gamete within a mass of tissue (the nucellus) surrounded by one or two protective integuments, and which develops into the seed after fertilization” (oed). ③The integumented megasporangium of the seed plants which, after fertilization of its egg cell, develops into the seed (sk08). ④The immature seed within an ovary (mfn). ⑤A young or undeveloped seed. ⑥An immature seed (news).

oxidation A reaction in which atoms or molecules gain oxygen or lose hydrogen or electrons.

oxisol n. A soil order of the US system of soil classification; a mineral soil that has an oxic horizon, which is highly weathered, infertile, and is highly enriched in kaolin clays or in iron and aluminum oxide minerals.

P

PVP Synonym for Plant Variety Protection.

pachymorph (bamboos) Rhizome sympodial, thicker than culms.

paha pl paha or pahas n. (from Dakota Sioux *paha* meaning hill) Oval, oblong or elongated loess capped hills in Iowa and northwest Illinois, the Palouse, China, and central and eastern Europe, formed by aeolian processes during tundra conditions. Cf *greda*.

paired adj. () Occurring in two's, eg two spikelets per node.

palate n. () ①A rounded projection of the lower lip of some irregular corollas, often closing the throat, as in *Utricularia*. ②In a 2-lipped corolla, a projection or hump on the lower lip that closes the throat (mfn). ③A raised area on a lower lip of a two-lipped corolla that obscures or blocks the mouth (news).

palea n. (classical Latin *palea* chaff, husk, in post-classical Latin also in botanical use in sense 1a (18th cent.), ultimately from the same Indo-European base as cognates Sanskrit *palāva* chaff, husks, Old Church Slavonic *plěvy* husks, Russian *pelēva*, *polova*, chaff, and forms in other Indo-European languages.) ①The adaxial bract of a floret; two-veined, arising from the floral axis; ②the uppermost of the two scales forming the floret in a grass spikelet (often obscure). ③The upper, and usually shorter and thinner, of two membranous bracts enclosing the flower in grasses. ④“Any of the scales found on the receptacle at the base of the individual florets in many plants of the family *Asteraceae* (*Compositae*). Either of the two bracts commonly enclosing the stamens and ovary in the floret of a grass; *spec.* the upper or inner of the two. Any of the scales found on the stipe in many ferns. A wattle or dewlap on the throat of a bird.” (oed) ⑤The upper or inner bract or scale at the base of a grass floret (mfn). ⑥A scale; clothed with scales. The innermost of the 2 bracts that subtend the floret in grasses. ⑦The upper and inner scale of the grass floret which encloses the grass flower, usually 2-keeled. ⑧In grasses (*Poaceae*), the inner of the two bracts enclosing the floret (plural: paleae) (news). Hence paleate. Cf lemma.

paleaceous adj. () Furnished with chaffy scales.

paleo-, palaeo- prefix (classical Latin and scientific Latin *palaeo-* and its etymon ancient Greek *παλαιο-*, *palαιο-*, combining form of *παλαιός*, *palaios*, old, ancient, from *πάλαι*, *palai*, long ago, of uncertain origin) ①Prefix indicating ancient, old; of or belonging to ancient times, esp. in the geological or prehistoric past (oed). Cf neo-.

Palaearctic, Palaeartic adj., n. () ①“Designating a biogeographical region which includes the cold and temperate zones of the Old World (ie Europe, North Africa, and Asia north of the Himalayas); of, relating to, or inhabiting this region. Cf holarctic adj., Nearctic adj. and n., palaeotropical adj.”

Also “*Archaeol.* and *Cultural Anthropol.* Usually in forms **palaeoarctic**, **paleoarctic**. Of or relating to the Arctic region during prehistoric times, or the human cultures characteristic of it; *spec.* (with capital initial) designating or relating to a prehistoric cultural tradition of northern Eurasia and north-western North America between about 8,500 b.c. and 6,000 b.c., marked by a characteristic microblade stone technology.” (oed).

paleoclimate n. Referring to climate conditions of times prior to today.

paleosol n. A buried soil profile formed in an environment of the past or a surface soil that has undergone weathering during several climatic episodes.

Paleotropic, Palaeotropic n., adj. () The tropical areas of the Old World, Africa, SE Asia, and the western Pacific. Cf neotropics.

Paleozoic, Palaeozoic n. (classical Latin and scientific Latin *palaeo-*, from Greek *παλαιο-*, *palαιο-*, ancient, old and *ζῷον*, *zōion*, living being or animal, meaning ancient animals) ①The time period from 540-248 million years before the present, spanning the Cambrian, Ordovician, Silurian, Devonian, Carboniferous (Mississippian and Pennsylvanian), and Permian periods (sk08). ②“Of, relating to, or designating the earliest of the three geological eras characterized by abundant fossil remains (the first era of the Phanerozoic eon), between about 570 million and 245 million years ago, following the Proterozoic eon and preceding the Mesozoic era, and marked by the

diversification of multicellular plants and animals in both aquatic and terrestrial habitats (oed). To remember these periods, think Can Olive See Down My Primrose Path?

palmate adj. (Latin *palma*, palm) ①Leaves divided into lobes arising from a common center; ②lobed or divided in a hand-like fashion, usually 5-7 lobed; radiately lobed or divided, the axes of the individual segments originating at a common point or nearly so. ③Radiating from a common point, as veins or leaflets in a leaf (mf). ④Radially lobed or divided like the fingers of a hand. ⑤Lobed or divided in a palm- or hand-like fashion. ⑥With parts radiating from a common point, like fingers of a hand (news). Cf digitate.

palmately compound adj. ①leaf comprised of separate leaflets that radiate from a common point, like parts of a fan (news).

palmately lobed adj. ①With projections that radiate from a common point, as fingers in a hand (news).

palmatifid adj. () Radially lobed +/- half way. Cf digitate.

palmatisect adj. () Radially lobed almost to the base. Cf digitate.

palynology n. () The study of pollen and spores.

paludal adj. () Pertaining to marshes.

pan-, occasionally **pam-** prefix (from ancient Greek *παν-*, *pan-*, combining form, from *πάν*, *pan*, neuter of *πάς*, *pas*, all) A prefix forming terms relating to the whole of the universe or mankind, or denoting that the second element exists or operates at a universal level (oed).

pandurate adj. (Latin *pandūra*, a lute or bandore, from Hellenistic Greek *πανδοῦρα*, *pandoura*, probably by metathesis from Arabic *ṭanbūr* and its etymon Persian *ṭanbūr*, a long-necked lute with a pear-shaped body) ①Shaped somewhat like a violin, as some leaves; ②fiddle-shaped. ③“Esp. of a leaf: rounded at both ends and narrowed in the middle; fiddle-shaped” (oed). ④Fiddle-shaped, +/- obovate but with a waist. ⑤Fiddle-shaped (constricted in the middle) (news).

Pangaea n. (from ancient Greek *παν-*, *pan-*, all, and ancient Greek *γαῖα*, *gaia*, poetic form of *γῆ*, *ge*, the earth) ①The ancient supercontinent in which all continents of the earth were all joined before they separated by continental drift (sk08). ②“(The name of) a vast continental area or supercontinent, comprising all of the continental crust of the earth, which is thought to have existed during the Permian and Triassic periods (and earlier, perhaps from the Proterozoic era, in some theories) before breaking up into Gondwana and Laurasia” (oed).

panicle n. (Latin *panicula*, a tuft of plants) ①A branched racemose inflorescence often applied more widely to any branched inflorescence; ②a branching raceme; ③an inflorescence composed of two or more racemes or racemiform corymbs; ④an inflorescence type in which the central axis branches and rebranches. ⑤A branching inflorescence on which younger flowers are borne at the apex. ⑥An inflorescence in which the pedicels arise from a branched axis rather than a simple central axis and the lower flowers mature first, ie, a "branched raceme" (mf). ⑦An elongate inflorescence with compound branching. ⑧In grasses, an inflorescence in which the primary axis bears branched secondary axes with pedicellate spikelets. ⑨A branched, indeterminate flower cluster (inflorescence) with individual flowers on stalks (pedicels) (news). Hence panicked or paniculate.

paniculate adj. () ①Bearing panicles, panicked; ②arranged or growing in panicles; resembling a panicle.

paniculiform adj. () ①Panicle shaped. ②Resembling a panicle.

pannate, **pannose** adj. () ①With a tight, densely tangled tomentum; ②appearing felt-like.

panne n. () Typically, a moist interdunal depression, often scoured down to the water table, in calcareous sands on the lee sides of dunes near Lake Michigan -- the vegetation quite fen-like in composition.

pannose adj. () See pannate.

pantropic(-al) adj. () Found throughout the tropics

papilionaceous adj. ①Butterfly-like; in the *Fabaceae* family particularly, having a corolla composed of a standard, keel, and two wing petals. ②Literally, "butterfly-like;" (of a flower) bilaterally symmetrical with 2 usually spreading lateral petals or wings, a lower keel (of 2 connate petals), and 1 upper (usually the largest) petal or standard (see *Fabaceae*) (mfn). ③Shaped like a pea-flower, with an upright banner petal, two lateral wing petals, & two lower petals fused into a keel (news).

papilionaceous flower n. ①A strongly irregular flower with five petals, the lowermost 2 petals are connate or fused, and form the keel, as in *Fabaceae*.

papilla pl *papillea* n. (Latin *papilla*, nipple) ①A glandular hair with one secreting cell above the epidermis level; ②a minute, nipple-shaped projection. ③A minute blunt or rounded projection on a surface (mfn). ④A small rounded superficial projection. ⑤A short, rounded, blunt projection (news). Hence papillose, papillate.

papillate, papillose adj. (Latin *papilla*, nipple) ①Descriptive of a surface beset with short, blunt, rounded, or cylindric projections; ②bearing papillae; ③wartly or tuberculate; ④having minute nipple-shaped projections on the surface. ⑤Covered with small minute rounded protuberances (papillae) "pimpled". ⑥Covered with small, soft projections (news).

pappus pl **pappi, pappuses** n. (classical Latin *pappus* white down on certain seeds, old man, from ancient Greek *πάππος*, *pappos*, white down on certain seeds, grandfather, in Hellenistic Greek also first down on the chin, a reduplicated formation parallel to *πάππας*, *pappas*, child's word for 'father') ①Bristles, awns, hairs, or scales that develop at the upper margins of the fruit of the *Asteraceae*, possibly representing a reduced calyx. A pappus is often an adaptation for wind dispersal of the fruit (cypsela) eg in dandelion, *Taraxacum officinale*, meadow salsify, *Tragopogon pratensis* (sk08). ②The modified outer perianth series crowning the ovary and achene in the *Asteraceae*; usually plumose, bristle-like, or of scales. ③A modification of the calyx, usually in the *Asteraceae* family, such that the segments are manifest as a low crown, a ring of scales, or fine hairs. ④“A downy or feathery appendage on certain fruits, esp. on the achenes of many plants of the family *Asteraceae* (*Compositae*), which assists their aerial dispersal (as in thistles, dandelions, etc). Also: the reduced calyx of plants of the family *Asteraceae* (*Compositae*) generally, whether downy, bristly, scaly, toothed, or membranous. Also as a mass noun: thistledown, down.” (oed) ⑤The bristles, hairs, scales, or other structures on the summit of the ovary (or achene) in the *Asteraceae*, ie, at the base of the corolla (where one would expect a calyx) (mfn). ⑥A series of scales, hairs or bristles surrounding the tip of the achene in *Asteraceae* (plural: pappi) (news).

papule n. () A single wart or tubercle.

para- prefix (ancient Greek *παρα-*, *para-*, (before a vowel *παρ-*), combining form of *παρά*, *para*, ‘by the side of, beside’, hence ‘alongside of, by, past, beyond’, etc, (oed))

parahomonym n. ()

parallel adj. () Running side-by-side, from base to tip.

parallel-veined adj. () ①A feature occurring largely in the monocots, where, instead of a network, the observable veins are parallel to each other and the midrib, or nearly so. ②With three or more main veins (\pm parallel) running from the base of the blade to the apex of the leaf (with or without minute cross-veins) (mfn). ③With veins that run side-by-side at the same angle & do not converge, often arranged parallel to the midvein of the leaf blade (news). Cf net-veined.

paraphysis pl paraphyses n. () A sterile filament or hair borne among the sporangia.

parapinnate adj. A compound leaf in which all the leaflets are paired, with no terminal leaflet (cf with imparipinnate) (news).

parasite n. (classical Latin *parasītus* (also *parasīta*, feminine) a person who lives at another's expense, from ancient Greek παράσιτος, *parasitos*, a person who eats at the table of another, a person who lives at another's expense and repays him or her with flattery, a person who dines with a superior officer, a priest who is permitted meals at the public expense, from παρα- para-, by the side of, beside, and σῖτος, *sitos*, food made from grain, bread) ① A plant which grows on and derives nourishment from another living plant. ② An organism living in or on another (the host), and deriving nourishment from it. Cf holophyte, hemiparasite, saprophyte, epiphyte.

parasitic adj. (see parasite) ① Dependent upon (and attached to) another plant for nutrition (mfn). ② Living on, & deriving nutrients from, another organism (usually to the disadvantage of the host) (news).

paratype n. Specimens cited at the same time as the original description, other the holotypes and isotypes (see type).

parenchyma n. (Greek *para*, besides, and *enchyma*, infusion) Plant tissue, generally soft and of thin-walled, relatively undifferentiated cells which may vary in structure and function.

parenchymatous adj. () Composed of thin-walled cells.

parent material In soils: the unconsolidated, chemically weathered mineral from which the A and B horizons may have developed by pedogenic processes.

parietal adj. (Latin *paries*, wall) ① Pertaining to the wall of an organ;

parietal placentation n. () ① Type of placentation in which the ovules are attached to placentas on the wall of the ovary (sk08). ② A pattern of placentation, in compound pistils only, where ovules are attached to the outer wall of the carpel. ③ When the placenta is attached to the wall of the ovary.

paripinnate adj. () Pinnate with the rachis terminate by a pair of leaflets or pinnae. Cf even-pinnate, odd-pinnate, imparipinnate.

parthenogenesis n. (ancient Greek παρθενο-, *partheno-*, combining form of παρθένος, *parthenos*, virgin, of unknown origin, as in eg παρθενοπίπης, *parthenopipes*, a person who ogles maidens, seducer, and from post-classical Latin *-genesis*, combining form, and partly from its etymon ancient Greek γένεσις, *genesis*) ① Form of asexual reproduction whereby an egg cell develops into an embryo without prior fertilization by a male gametophyte. Parthenogenesis is usually the result of an abnormal meiosis resulting in an egg nucleus with an unreduced number of chromosomes (e. g. dandelion, *Taraxacum officinale*, *Asteraceae*) (sk08). ② “Reproduction from a gamete without fertilization, occurring most commonly in invertebrates and lower plants. Formerly also: asexual reproduction, as by fission or budding” (oed).

-partite suffix () Suffix meaning deeply divided to the base or almost so, into +/-equal parts, eg bipartite, tripartite, 4-partite, etc.

parts per million n. A rule of thumb is that one hectare of land area, taken to the depth of the plow layer weighs two million kilograms. ie. 30 ppm equals 60 kilograms per hectare.

parturition n. (from post-classical Latin *parturition-*, *parturitio*, childbirth, action of bringing something into being (*Vetus Latina*), offspring (5th–6th cent.), from classical Latin *parturīt-*, past participial stem of *parturīre* to be in labor) The action of giving birth to young; childbirth (oed).

passerines adj., n. (ultimately from classical Latin *passer* sparrow) ① Birds belonging to the order *Passeriformes*, better known as “perching birds” or “song birds”. Over five thousand species, more than half of all known species of birds, belong to the passerines. Familiar examples are sparrows, finches, and thrushes.

(sk08) ②“Of or relating to the large order *Passeriformes* (formerly *Passeres*), which comprises birds with feet adapted for perching and includes all the songbirds” (oed)

pasture Land that is used for livestock grazing that is managed to provide feed.

pasture improvement: Managing pasture to increase feed value for grazing animals while maintaining or improving soil, water and vegetative resources.

patent adj. () Spreading or opening widely.

patina n. () A fine crust or film.

pauci- () Prefix meaning few. Cf oligo-, poly-, multi-,

peat n. (Middle English *pete*, from medieval Latin *peta*, perhaps of Celtic origin; akin to Welsh *peth*, thing) ①A piece of turf cut for use as a fuel; ②a mass of partially carbonized plant tissue formed by partial decomposition in water of various plants and esp. of mosses of the genus *Sphagnum*, widely found in many parts of the world, varying in consistency from a turf to a slime used as a fertilizer, as stable litter, as a fuel, and for making charcoal; ③soil or substrate heavily invested with or even totally composed of partially decayed organic matter.

peat-based inoculants n. Because it is readily available, and can absorb large quantities of inoculant culture, peat has long been used as a carrier for inoculant bacteria. Not all peats are equally effective, and some are acid and must be limed before use. (rrl)

pectinate adj. (Latin *pecten*, comb) ①Comb-like; ②fringed or dissected in comb-like fashion; ③an arrangement of parts resembling the teeth of a comb (eg, the spikelets on *Bouteloua hirsuta*). ④Very deeply pinnatifid, with central axis and unbranched lateral segments like teeth on a (double) comb (mfn). ⑤Comb-like; deeply divided with the segments narrow and close. ⑥"Comb-like", pinnately lobed with narrow segments arranged like the teeth of a comb.

pedate adj. () Palmately divided but with the lateral lobes themselves divided.

pedicel n. (attributed to Latin *pedicellus*, foot, properly *pediculus*, *pediculi*, little foot or a foot-stalk) ①The stalk of a flower in an inflorescence; ②the stalk of a spikelet, except for spikelets on a spike inflorescence; ③the stalk of a single flower in a cluster; ④the stalk of an individual flower in an inflorescence. ⑤The stalk of an individual flower, spikelet, or head (mfn). ⑥The stalk of an individual flower in an inflorescence or of a spikelet in grasses. ⑦The stalk of a sporangium or of a conceptacle. ⑧In grasses, the stalk of a single spikelet within an inflorescence. ⑨The stalk of a single flower in an inflorescence (news). Hence pedicellate.

pedicellate adj. () ①Having a pedicel or stalk. ②Borne on a pedicel (news).

pedionomite n. (ancient Greek *πεδιονόμος*, *pedionomos*, dwelling in the plain, from *πεδίον*, *pedion*, plain and *-νόμος*, *nomos*, combining form and the stem of *νέμειν*, *nemein*, to manage, also to dwell) ①An inhabitant of a plain, a dweller in a plain.

pedogenesis n. The physical, chemical, and biological processes of soil formation.

peduncle n. (Late Latin *pedunculus*, small foot, peduncle) ①The stalk or stem of an inflorescence; ②the stalk of a flower borne singly or the stalk of an inflorescence; ③the stalk of a flower cluster or of an individual flower; ④characteristically referring to the second internode below a flower, but generally applied to any primary stalk which supports a head, flower cluster, or occasionally a single flower; ⑤in ferns, the stalk of a sporocarp; ⑥the stalk of a flower, inflorescence, (flower cluster) or fruit, especially a main stalk bearing a solitary flower or subordinate stalks. ⑦The stalk of an entire inflorescence (or of a solitary flower when there is only one) (mfn). ⑧The stalk of a raceme or cluster of spikelets. ⑨A stalk that supports an inflorescence composed of 1 or more flowers (news).

pedunculate, pedunculed, peduncled adj. ①Having a peduncle. ②Borne on a peduncle (news).

pellucid adj. () ①Clear; ②transparent; transmitting light. ③Transparent or translucent (news). Cf translucent.

peltate adj. (Greek *pelta*, target) ①Shield-shaped, leaves that are shaped like a shield and attached to the stem at the center or by some point distinctly within the margin, and having the petiole inserted into the undersurface of the lamina not far from the center; ②leaf/petiole relationship in which the petiole attaches to the blade away from the blade margin; also similar relationships between stigmas and styles, indusium attachments to the frond surface, etc. ③With the stalk attached to the mid-surface of a blade-like structure (rather than at the margin) (mfn). ④Attached by the lower surface, remote from the margin. ⑤An umbrella-shaped leaf whose attachment point is on the underside of the leaf rather than at the base or margin, "umbrella-like". ⑥Attached to the middle of an overlying structure, like a mushroom to its stalk or a handle to an umbrella (news).

pendent, pendulous adj. () ①Hanging or drooping (mfn). ②Hanging down from its support.

pendulous adj. () ①Drooping, hanging downward, suspended.

penepplain n. (classical Latin *paene* almost, of unknown origin, and classical Latin *plānum*, a flat or level ground.) ①“A low, nearly featureless tract of land of gently undulating relief, *esp.* one held to be the product of long-continued subaerial erosion of land undisturbed by crustal movement and to represent the penultimate stage in the cycle of erosion in a humid climate. Also: a former surface of this kind subsequently uplifted and dissected, or buried as an unconformity.” (oed)

penicillate adj. (post-classical Latin and scientific Latin *penicillatus* (1738 or earlier), from classical Latin *pēnicillus*, a pencil or small brush) ①Having the form of a penicil. ②“Bearing or forming a small tuft or tufts of hairs, bristles, or similar structures; bearing penicilli.” (oed). ③Like a tuft of hairs; pencil references are to a small tuft of hairs, bristles, etc. ④With a tuft of hairs at the top (news).

penniform adj. ①With ribs, the upper segments confluent at the apex

penninerved, -veined adj. () With pinnately arranged lateral veins.

penta- prefix () Greek prefix meaning five.

pentagonous adj. () Five-angled.

penultimate adj. () ①The one before the last or final, often said of syllables in long Latin words, but one must travel the right circles. ②Next-to-last (news). Cf antepenultimate, ultimate.

pepo n. (classical Latin *pepōn-*, *pepō* (in post-classical Latin also *pepon*, c400) a water-melon or other gourd, from ancient Greek πέπων, *pepon*, a kind of gourd or melon eaten when ripe, use as noun (short for πέπων σίκυος, *pepon sikuos*, lit. a ripe cucumber) of πέπων, *pepon*, (adjective) ripened, ripe, mellow, from the base of πέσσειν, *pessein*, (Attic πέττειν, *pettein*) to cook, from the same Indo-European base as classical Latin *coquere* to cook (oed)) ①The specialized fruit in the gourd family, essentially a large berry but possessing a thick rind. ②“A type of berry developed from an inferior ovary, with numerous seeds attached to parietal placentas and usually a hard outer rind, *esp.* characteristic of the family *Cucurbitaceae* (gourds, melons, squashes, cucumbers, etc)” (oed). “The Pepo ... is illustrated by the fruit of the Gourd, Melon, and other *Cucurbitaceae*, where the calyx is adherent, the rind is thick and fleshy, and there are three or more seed-bearing parietal placentas.” JH Balfour *Man Bot* §551. ③A large, thick-walled leathery berry as in a pumpkin, derived from an inferior ovary (news).

per- () Prefix meaning very or all over .

perennates, perennating v. (classical Latin *perennt-*, past participial stem of *perennre*, to continue for a long time, endure, in post-classical Latin also to make perennial or long-lasting (early 3rd cent.), from *perennis*) ①Of a plant or plant part: to survive a winter or a dry season, *esp.* in a dormant form, enabling it to grow again in a further season

or seasons. Present participle perennating or perannating. ②To maintain a dormant state through the non-growing season. ③Surviving the winter or dormant season (news). Hence perennating buds etc.

perennation n. (Latin *perennis*, perennial) ①Survival of a plant for a number of years. ②To live over from season to season.

perennial adj. (Latin *perennis*, through, and *annus*, a year) ①A plant that grows for 3 or more years and usually flowers each year; ②a plant that lives more than 2 years or growing seasons; ③completing several reproductive cycles. ④Living three or more years (mfn). ⑤With a life cycle lasting two or more years. ⑥Herbaceous or woody plant species that lives a few years (short-lived perennial) or longer. It could be an evergreen species or one that goes dormant each year. Dormant perennials renew themselves from underground rootstocks. ⑦A plant that lives more than two years (news). Cf annual, biennial, ephemeral.

perfect adj. () ①Pertaining to flowers that contain both stamens and pistils; ②a flower that has functional stamens and pistils; ③flowers having both stamen and pistils (carpels). ④(Of a flower) containing both stamen(s) and pistil(s); bisexual; hermaphrodite (mfn). ⑤With both male & female organs on the same flower (news).

perfect flower n. () A flower with both essential and accessory organs.

perfoliate adj. (Latin *per*, through, and *folium*, a leaf) ①Said of opposite or whorled leaves or bracts that are united into a collar-like structure around the stem that bears them. ②Bearing opposite leaves whose bases are wrapped around the stem and connate, giving the appearance that the stem passes through the leaf. ③With the stem (or other stalk) appearing to pass through the leaf (or other blade); ie, the blades sessile (or two opposite blades connate) and their basal tissue surrounding the stem (mfn). ④Having pairs of opposite leaves fused at the base, with the stem appearing to pass through them; ⑤A condition in which the stem appears to pass through the leaf. ⑥Of a leaf or bract completely encircling the axis and so the stem apparently passing through it. ⑦The bases of a leaf or two opposite leaves join around a stem so that the stem appears to pass through the leaf or leaf pair (news).

peri- prefix (ancient Greek *περι-*, *peri-*, combining form of *περί*, *peri*, preposition and adverb, ‘round, around, round about, about’) “Used with the sense ‘encircling, around, surrounding, in the vicinity of, near’, to form adjectives and nouns (and words derived from these), referring to a region or structure lying around or near a part specified by the second element, or to something occurring near a place or event specified by the second element. a. Forming adjectives referring to a region, structure, etc, situated or occurring around or near a part specified by the second element.” (oed)

perianth n. (scientific Latin *perianthium*, ancient Greek *περι-*, *peri-*, round, around, and ancient Greek *ἄνθος*, *anthos*, flower) ①“1. A structure surrounding or forming the outer part of a flower. †a. A part of a flower outside the corolla; a calyx. Also: an involucre, esp. of a plant of the family *Asteraceae* (*Compositae*). b. The floral whorl or whorls outside the stamens; the calyx and corolla collectively, esp. when their parts are not easily distinguishable.” (oed) ②The calyx and corolla together, also used for a flower where there is no distinction between the corolla and the calyx. The floral envelop that is clearly differentiated into calyx (outer perianth whorl), and corolla (inner perianth whorl) (sk08). ③The outer whorl of floral leaves of a flower, when not clearly divided into calyx and corolla; ④collectively, the calyx and corolla, or either one if one is absent; ⑤pertaining to the floral series of sepals, petals, or both, spoken of collectively. ⑥All of the calyx and corolla together insofar as these are present, in contrast to the reproductive organs of the flower (mfn). ⑦A collective term for the calyx and corolla. ⑧The whorls of sepals (calyx) &/or petals (corolla) that enclose the reproductive parts of an angiosperm flower (news).

pericarp n. (post-classical Latin *pericarpium*, from Greek *περικάρπιον*, *perikarpion*, from ancient Greek *περι*, *peri*, around, and *καρπός*, *karpos*, fruit) ①The fruit wall which has developed from the ovary wall; sometimes used for any fruit covering; ②the wall of the matured ovary; the ripened ovary wall after it becomes a fruit. ③“A structure containing the seeds of a flowering plant; a seed-vessel or fruit; (now) *spec.* the wall of the ripened ovary of a plant.” (oed) ④The wall of the ovary at the fruiting stage. The pericarp can be homogenous as in berries or differentiated into three layers as in drupes, called the epicarp, mesocarp, and endocarp. (sk08) ⑤The wall of a fruit; ie, excluding the seeds (mfn). ⑥The mature ovary wall of a fruit (news).

perigone n. (French *périgone* (A. P. de Candolle *Théorie Élém. de la Bot.* (1813) 360), from scientific Latin *perigonium*, from ancient Greek περι-, *peri-*, round, around, and ancient Greek γόνος, *gonos*, offspring, seed)
①Floral envelop composed of uniform floral leaves, ie without differentiation into sepals (calyx) or petals (corolla) (sk08). ②“The perianth of a flowering plant. Also: †the utricle of a sedge (obs.)” (oed)

perigynium pl **perigynia** n. (Scientific Latin *perigynium*, from ancient Greek περι, *peri*, around, and γυνή, *gyne*, woman, female, and Scientific Latin *-ium*.) ①The fruit investing the utricle of the sedges, *Carex*; referring specifically to the often inflated sac which encloses the achene in the genus *Carex*. ②“A structure surrounding the ovary or archeogonium of a plant; *spec.* an inflated membranous sac (utricle) surrounding the ovary in sedges. Also: the perichaetium of a moss; the perianth of a liverwort.” (oed) “SF Gray Nat. Arrangem Brit Plants I 163 in oed *Urceolus, Perigynium*, a small cartilaginous, or membranaceous bladder, surrounding the ovary, and open at the top, to let the style pass through.” ③The flask-shaped or sac-like (sometimes flattened) structure surrounding the ovary (and later the achene) in *Carex* (mfn). ④A "pouched" bract surrounding the pistil or achene in *Carex* spp. ⑤A membrane sac enclosing the flower & later, the fruit (achene) of *Carex* spp (plural: perigynia) (news).

perigynous adj. (ancient Greek περι, *peri*, around, and γυνή, *gyne*, woman, female) ①Growing in a ring around the pistil, as the stamens; having stamens, etc growing in this way, said of a flower; ②with the perianth surrounding the ovary. ③Surrounding the ovary or ovaries (but not adnate); possessing a floral tube (mfn). ④With a superior ovary that has a hypanthium (news).

perigynous flower n. (ancient Greek περι, *peri*, around, and γυνή, *gyne*, woman, female) A flower in which the gynoecium is surrounded by a hypanthium but stays separate from it (sk08).

perispore n. () A wrinkled or folded outer covering to some spores. Cf epispore.

persistent adj. ①A leaf or organ that remains attached to the plant throughout the year or after performing its normal function; evergreen (news).

peristome n. (after scientific Latin *peristoma*, from ancient Greek περι, *peri*, around, and French *-stome*, scientific Latin *-stoma*, and their etymon ancient Greek στόμα, *stoma*, mouth) “Botany A single or double ring of teeth around the mouth of the capsule of many mosses. Zoology The margin of the aperture of the shell of a mollusc.” (oed)

Permian n. adj. (from *Perm*, Russian *Perm'*, the name of a city in the Urals in Russia (and of the surrounding area) ①Geologic time period from 290-248 million years ago (sk08). ②“The last period of the Palaeozoic era, following the Carboniferous and preceding the Triassic, in which amphibians and mammal-like reptiles flourished, many marine animals became extinct, and many sandstones were deposited; the system of rocks dating from this time; (in *pl*, now *rare*) Permian strata or deposits.” (oed)

persistence n. The ability of strains of rhizobia to survive in the soil, even in the absence of an appropriate host plant (rrl).

persistent adj. (Latin *persistere*, to persist) ①Remaining attached after the normal function has been completed; ②remaining attached, either after other parts have been shed or for a considerable period; ③remaining until the part that bears it is fully mature or longer that otherwise expected; especially after withering; ④not caducous.

perula, **perule** pl **perulae**, **perules** n. (French *pérule* scaly covering of a leaf-bud, and its etymon scientific Latin *perula*, from classical Latin *pēra*, from ancient Greek πήρα, *pera*, leather bag, wallet, and *-ula* *-ula*) ①The covering of a seed or leaf-bud; ②scale of a leaf bud. ③“Originally: the scaly covering of a leaf bud. Later: a bud scale (usu. in *pl*). The covering of a seed. *Obs. rare*” (oed). Hence perulate, scaly.

perulate adj. ①Covered with 1 or more scales, as in the winter buds of woody plants (news).

pestle n. (see pistil) An obsolete term for the pistil of a flower or the spadix of an aroid.

petal, petaloon n. (New Latin *petalum*, from Greek *petalon*, leaf, in Hellenistic Greek also leaf of metal, specifically a plate of gold worn by a Jewish high priest) ①Any of the component parts, or leaves, of a corolla; the unit of structure of the corolla; one of the separate segments of a corolla. ②“Each of the modified leaves, typically distinctly coloured, which form the segments of the corolla of a flower” (oed). ③In flowers where the outer whorl of the perianth is different from the inner whorl the elements of the inner whorl of the floral envelope are addressed as petals. The summary of the petals forms the often brightly colored, showy corolla of a flower. (sk08) ④One of the divisions of the corolla (mfn). ⑤One of the highly modified leaves of a flower, usually pigmented & attracting pollinators (news).

petaloid n. (Greek *petalon*, leaf, and *eidōs*, form) ①Like a petal. ②Colored like a petal, or resembling a petal. ③An organ such as a sepal that resembles a typical flower petal in color & shape (news).

petiolar, petiolate adj. (Latin *petiolus*, small foot) ①Growing on, or provided with, a petiole; ②having a leafstalk. ③With a petiole (leaf stalk) (news).

petiole n. (Latin *petiolus*, small foot, correctly from French *pétiole*, n., and *-ate*, from Latin *-atus*, used to introduce words into from Old French into Scientific Latin, after scientific Latin *petiolatus* (1740 or earlier).) ①The slender stalk or stem of a leaf, also called a leaf stalk; ②the leaf stalk; ③stalk of a leaf blade. ④The stalk portion of a leaf (mfn). ⑤“Having or attached by a petiole; stalked” (oed). ⑥Stalk of a leaf that bears the blade (news). Hence petiolate. Cf sessile, *petiolus*.

petiolulate adj. ①Having a leaflet stalk.

petiolule n. ①The stalk of a leaflet. ②The stalk of a leaflet in a compound leaf (mfn). ③Stalk of a leaflet in a compound leaf (news). Hence petiolulate.

petiolus pl *petioli* n. (classical Latin *petiolus*, variant (in later MSS and editions) of *peciolus*, little foot, stalk of fruit, probably representing a diminutive formation, from *pēs*, *ped-*, foot... after scientific Latin *petiolus* leaf stalk (Linnaeus, 1751 or earlier). (oed) From Old French via Scientific Latin) “Botany. In early use: the stalk of a plant part (leaf, flower, etc). Later: specifically a leaf stalk; = petiole n. Now rare.” (oed)

petrocalcic horizon n. A subsurface mineral soil horizon characterized by cementation by calcium carbonate.

pH A classification system used for describing acid and basic materials. The system is a scale from 0 to 14 with 7 being neutral. Measurements below 7 indicate increasing acidity and numbers greater than 7 indicate increasing alkalinity (basic conditions).

phanerogam n. (scientific Latin, originated by Humboldt, from *φανερός*, *phaneros*, visible, evident, from the stem of *φαίνειν*, *phainein*, to show, cause to appear, and ancient Greek *γάμος*, *gamos*, marriage, from *γαμειν*, *gamien*, to marry, to get married, to copulate) ①A plant of the division *Phanerogamia*; a flowering plant; a spermatophyte. ②One of the two major divisions of plants, consisting of those having easily visible reproductive structures (flowers or cones) and comprising the angiosperms and the gymnosperms; (also *phanerogamia*) plants belonging to this division, phanerogams, spermatophytes. Cf *Cryptogamia* n. (oed) A term first used by Alexander von Humboldt, *Nova Gen. et Sp. Plant.*, 1815. A seed-plant or spermatophyte, eg. the flowering plants and gymnosperms. Cf cryptogam.

phanerophyte n. (*phaner-* and *-phyte*) ①A perennial plant that bears its overwintering buds well above the surface of the ground.

phenology n. (from Greek *φαίνειν*, *phainein*, to show, and *λόγος*, *logos*, word, discourse) ①“The field of science concerned with cyclic and seasonal natural phenomena, esp. in relation to climate and plant and animal life” (oed) ②The study of flowering or fruiting periodicity of plants.

phenophase n. (from Greek *φαίνειν*, *phainein*, to show, and) ①“An observable stage or phase in the annual life cycle of a plant or animal that can be defined by a start and end point. Phenophases generally have a duration of a few days or weeks. Examples include the period over which newly emerging leaves are visible, or the period over

which open flowers are present on a plant. (See also phenological event) (Note: The definition of the term “phenophase” has not yet been standardized and varies among scientists. The definition presented here reflects our usage of the term on the USA-NPN website.)” <http://www.usanpn.org/glossary/term/16>

phenotype (Greek *phainein*, to appear, and *typos*, image) ①The characters of an organism due to the interaction of genotype and environment, a group of individuals exhibiting the same phenotypic characters. ②The detectable expression of the interaction of genotype and environment constituting the visible characters of an organism. ③The physical characteristics of an organism as opposed to its genetic composition or genotype; Hence phenetic.

phenotypic adj. A set of characters arising from reaction to environmental stimulus.

phenotypic plasticity n. Ability to adapt, morphologically, to changing environmental conditions.

-phil, -philous Suffix meaning liking or preferring.

phloem n. (Greek *phloios*, inner bark) ①The tissue involved in the transport of carbohydrates and food materials in a vascular plant, being composed of sieve elements, parenchyma cells and sometimes also of fibers and sclereids. ②The conducting tissue of the vascular system that transports sugars and other compounds, primarily from the leaves, throughout the plant. ③The vascular tissue concerned with the transport plant products and sugars from the leaves to the roots. Compare to xylem.

photoblastic adj. (Hellenistic Greek φωτο-, *phyto-*, combining form of ancient Greek φωτ-, φῶς, *phot-*, *phos*, light, of uncertain origin, and blastic, combining form after French *-blastique* and German *-blastisch*, cf Hellenistic Greek βλαστικός, *blastikos*, springing forth; Forming adjectives relating to the germinal layers and cleavage of the embryo, and, more generally, to developmental, reproductive, and formative processes.) ①Said of seeds that require light to germinate.

photosynthesis n. () The production of sugars, etc from water and carbon dioxide with the aid of chlorophyll, using energy from sunlight. ②The process by which plants, algae and some other organisms convert the sun's energy into the organic compounds they need for growth (rrl). ③A series of chemical reactions by which plants use light energy to convert carbon dioxide into carbohydrates (news). Hence photosynthetic. Cf autotrophic, heterotrophic.

phyllary n. ①An involucre bract in the *Asteraceae* family. ②One of the bracts in the involucre of the *Asteraceae* (mfn). ③One of the many leaf-like bracts that surround the base of the capitulum in *Asteraceae*. (news). Synonym involucre bract.

-phyll, phyllo- ①Suffix or prefix meaning leaf

phylloclade, phylloclad n. (New Latin *phyllocladium*) A flattened stem or branch (as a joint of a cactus or a cladophyll) that functions as a leaf.

phyllode n. (Greek *phyllon*, leaf, *eidos*, form, or New Latin *phyllodium*, from Greek *phyllodes* like leaves, from *phyllon* leaf, and New Latin *-ium*) ①A flat expanded petiole that replaces the blade of a foliage leaf, fulfills the same functions, and is analogous to but not homologous with a cladophyll; ②a winged petiole with flattened surfaces placed laterally to the stem and functioning as a leaf; ③a flattened and expanded petiole with the function and appearance of a leaf. ④A somewhat expanded but bladeless petiole taking on the function of a leaf. Cf cladode.

phyllopodic adj. ①Having well developed lower leaves instead of scales. ②With blade-bearing leaves arising only from the base of the plant (center of parent shoot) (news).

phyllodium n. ①An outgrowth of the rhizome in ferns to which the frond or stipe is joined

phyllodium n. ①A somewhat dilated leafstalk having the form of and serving as a leaf blade.

phyllotaxis, phyllotaxy n. (Latin *phyllo-*, and Greek *taxis*, arrangement) ①The arrangement of the leaves on the stem. The three common positions are alternate, opposite, and verticillate. ②The arrangement of leaves etc around an axis.

phylogeny n. (Greek *phyle*, tribe, or Latin *phyllum*, and Latin *genesis*, from Greek *γένεσις*, *genesis*, origin, creation, generation, from *γεν-, *gen-*, root of *γίγνεσθαι*, *gignesthai*, to come into being, be born) ①The racial history or evolutionary development of any plant or animal species. ②The evolutionary development of a group and its derivation from ancestors and the relationship between its members. Hence phylogenetic. Cf ontogeny.

physicochemical ①Involving physical and chemical processes.

phytophotodermatitis

phytolith, often opal phytolith n. (from Greek *φυτόν*, *phyton*, plant, literally 'that which has grown', and *λίθος*, *lithos*, stone) ①A minute mineral particle formed inside plant tissues by the deposition of silicates, often surviving as a microfossil in geological or archaeological deposits (oed). ②In Illinois, phytolith remains have been used to demonstrate changes from forest to grassland during the Holocene (J. J. Lowe & M. J. C. Walker, 1984, *Reconstructing Quaternary Environments* iii. 120; Fuzzy @ WIU). ③Microscopic structures of opaline silica formed within the tissues of living plant. Phytoliths extracted from soils or sediments are sometimes used like fossil pollen to infer vegetation or climates of the past. The common varieties are opal-phytoliths, but calcite-phytoliths and quartz-phytoliths have also been detected.

phytomere n. ①The basic unit of structure of the grass shoot, an internode together with the leaf and portion of the node at the upper end and a bud and portion of the node at the lower end.

pileus pl ***pilei*** (Latin *pileus*, cap) ①Umbrella-shaped structure of mushrooms or toadstools.

piliferous adj. () ①Bearing hairs.

piliform adj. ①Having the shape of a long, sometimes wavy, hair.

pilose adj. (Latin *pilosus*, hairy) ①Hairy; pubescence comprised of scattered long, slender, soft hairs. ②Long, soft hairs that are typically straight; ③pubescent with soft hairs; hairy, usually with long and distinct hairs. ④Shaggy with soft hairs, "soft hairy". ⑤With soft, usually long and ± straight, hairs (mfn). ④With sparse, thin, spreading hairs (news).

pilosulous, pilosulose adj. (diminutive of Latin *pilosus -a -um* hairy, shaggy) ①Minutely pilose; ②bearing minute, long, soft, straight hairs.

pin n. ①A type of flower in which the style is longer than the stamens (news).

pinna pl pinnas or *pinnae*. (Latin *pinna*, feather) ①A leaflet or a primary division of a compound leaf; ②one of the principal divisions in a pinnate or pinnately compound leaf or frond. ③One of the primary divisions of a pinnately compound leaf or frond. ④The leaflet of a pinnate leaf, or the primary division of a bi- or tripinnate leaf. ⑤Leaflet of a fern frond (news). Diminutive pinnule.

pinnate adj. (Latin *pinnatus*, feathered) ①Divided in a feathery manner; ②with lateral processes of a compound leaf, having leaflets on each side of an axis or midrib; ③referring to a foliar structure which is compound or deeply divided, the principal divisions arranged along each side of a common axis; ④with leaves arranged on either side of a central stalk; ⑤having two rows of lateral divisions along the main axis. ⑥Arranged in two rows, one on each side of a common axis, as veins in a leaf or leaflets in a compound leaf; in an odd-pinnate leaf, there is a terminal leaflet; in an even-pinnate one, there is no terminal leaflet; twice-pinnate; with the primary divisions again pinnate (mfn). ⑦Compound leaf with the leaflets on both sides of an elongated axis. ⑧Compound, with leaflets or pinnae, arranged in a single row each side of the common rachis (viz.) ⑨Once-divided, as with ferns with fronds divided into pinnae (news).

pinnately compound n. ① A leaf comprised of leaflets that are arranged along both sides of an elongate axis, as in a feather (news).

pinnately lobed adj. ① With projections on each side of an axis, as in a leaf with lobed margins on both sides of the midvein (news).

pinnatifid adj. ① Incompletely pinnate, the clefts between segments not reaching the axis. ② Pinnately lobed +/- halfway. ③ Deeply lobed or cleft in a pinnate pattern (mfn). ④ Not quite divided all the way to a midrib of a leaf, ie without separate leaflets; once pinnately lobed (news).

pinnatipartite adj. () Pinnately lobed half to two thirds the depth of the lamina.

pinnatisect ① Pinnately dissected; ② pinnately lobed almost to the rachis. ③ Very deeply cleft in a pinnate pattern (often to the midrib) (mfn).

pinnule (also pinule) n. (New Latin *pinnula*, from Latin, small feather, small fin) ① A secondary pinna, one of the ultimate divisions of a bipinnate or twice-pinnate leaf; ② one of the principal divisions of a pinna; ③ a secondary leaflet in a bipinnately compound leaf; ④ the second or third order divisions of a bi- or tripinnate leaf, or the ultimate free divisions of such a leaf.

pioneer species In successional theory they are the species that are the first to naturally colonize a previously unoccupied habitat.

pistil n. (Scientific Latin from Latin *pistillum* or *pistillus*, pounder, pestle, an allusion to the shape) ① An individual ovary with one or more styles and stigmas, composed of one or more carpels; introduced in 1700 by Tournefort. Nowadays, many authors use the term pistil only to refer to syncarpous ovaries or omit its usage and replace it with gynoecium. (sk08) ② The unit of female function of a flower, may be comprised of a single carpel or two or more carpels united. ③ The female reproductive part of a flower, comprising one or more carpels (ovary, style, and stigma); seed producing organ of a flower with ovary, style and stigma. ④ “The female reproductive organ of a flower, usually comprising an ovary, style, and stigma. There has been considerable inconsistency in the use of the terms *carpel*, *gynoecium*, and *pistil* among botanists. A pistil can be considered equivalent to a single carpel in an apocarpous gynoecium (*simple pistil*), or to the united carpels of a syncarpous gynoecium (*compound pistil*).” (oed) ⑤ One of the female or seed-producing structures of a flower, whether composed of a single carpel or two or more carpels; usually consisting of one ovary and one or more styles and stigmas (mfn). ⑥ Flowers possessing pistils, but no functional stamens (ie, a female flower). ⑦ The ovule-bearing parts of a single flower, composed of one or more carpels that are usually differentiated into an ovary, style, & stigma (news).

pistillate adj. ① Applied to spikelets bearing female parts only and to an inflorescence or a plant with female flowers; ② referring either to plants, inflorescences, or flowers which bear pistils but not stamens. ③ Said of a flower bearing a pistil or pistils but not stamens, may refer also to a plant having only pistillate flowers.

pit n. ① The seed and its stony covering in a drupe; ② a tiny but often relatively deep depression on a surface (mfn).

pith (Anglo-Saxon *pitha*, pith) ① The soft, spongy tissue, consisting of cellular tissue, in the center of certain plant stems; ② the parenchymatous, often spongy or porous, central portions of stems and branchlets; ③ the central region of a stem, inside the vascular cylinder. ④ The spongy center of a stem (consisting of thin-walled cells) (mfn). ⑤ The spongy tissue in the center of a root or stem that surrounds vascular bundles. ⑥ Internal tissue of a stem or root (news).

pithy adj. The spongy tissue in the center of some stems eg *Saccharum*.

pitted (pit) adj. ① Marked with small depressions or pits; ② beset with depressions or pits; ③ having numerous small depressions in the surface.

placenta n. (Latin *placenta*, flat cake, from ancient Greek πλακόεντ-, πλακόεις, *plakoent-*, *plakoeis*, (contracted πλακοῦντ-, πλακοῦς, *plakoent-*, *plakous*) ①Flat cake, also mallow seed, from πλάκ-, πλάξ, *plak-*, *plax*, flat plate, and -όεις, *-oeis*, suffix generally forming adjectives) ①The region within the ovary where the ovules are formed and remain attached (usually via a funiculus) to the parent plan until the seeds are mature. In botany the term was adopted from the similar structure to which the embryo is attached in animals and humans. (sk08) ②The part of the ovary from which the ovules arise; it generally occupies the whole or a portion of an angle of a cell. ③The inside portion of the ovary which bears the ovules. ④“The place or part in an ovary where the ovules are attached. Also (in ferns and fern allies) the point on a leaf where the sporangia arise.” (oed) ⑤The part of the ovary to which the ovules or seeds are attached; placentation describes the arrangement of the placenta in the ovary (news).

placentation n. ①The manner in which the placenta is arranged in the ovary. ②The arrangement of ovules in an ovary (mf). ③The pattern of attachment of ovules in the ovary. ④How the ovules in an ovary are attached to it (news). See axile, parietal or free central placentation.

plait adj. ①Specifically, referring to the folded, often fringed, membrane between the corolla lobes in the genus *Gentiana*.

plane adj. ①Flat; the orientation of a flat surface (news).

planoconvex, plano-convex adj. ①Similar to lenticular, but with one of the faces flat instead of convex; ②flat on one side and convex on the other. ③Flat or flattish on one side and convex on the other (mf). ④In cross-section, with one flat surface & one convex surface (news).

plant n. (Latin *planta*, plant) ①Any of a kingdom (*Plantae*) of living beings typically lacking locomotive movement or obvious sensory organs, generally making its own food, possessing cell walls, and unlimited growth.

plant litter ①An accumulation of dead plant remains on the soil surface.

plant variety ①Taxonomic category consisting of members of a species that differ from others of the same species in traits that are identifiable and heritable.

Plant Variety Protection Act ①Provides those who develop a new variety with patent-like rights that protect the reproduction and use of the variety.

Plant Variety Protection Office ①A division of the USDA, located in Beltsville, MD and responsible for administering the Plant Variety Protection Act.

plantlet n. ①A little plant. ②A tiny plant that is produced vegetatively & is identical to the parent plant (news).

plastic adj. () ①Influenced in form by the environment.

playa n. () ①A dried up lake basin.

plectostele n. () ①A complex stele with the vascular bundles arranged in several parallel ribbons.

Pleistocene epoch n. (ancient Greek πλειστός, *pleistos*, most, superlative of πολύς, *polys*, much, and ancient Greek καινός, *kainos*, new, recent) ①The geologic time period from 1.8 million to 11,550 years ago (sk08). ②“Originally: of, relating to, or designating the latter part of the Pliocene epoch (as containing the greatest number of fossil remains of modern species). In later use: of, relating to, or designating the earliest epoch of the Quaternary period, between about 1,640,000 and 10,000 years ago, following the Pliocene and preceding the Holocene. The Pleistocene epoch was marked by great fluctuations in temperature, resulting in glacial and interglacial stages and corresponding falls and rises in sea level (the end of the final glacial stage marking the end of the epoch), and saw the appearance of the earliest forms of *Homo sapiens*.” (oed) ③ An epoch of the Quaternary period that began approximately 2.4 million years ago and ended approximately 12 000 years ago. A time period corresponding to the ice ages.

plicate (Latin *plicatus*, to fold) ①Folded into plaits, usually lengthwise; ②arranged in pleats, as a fan; ③folded into plaits or pleats, usually lengthwise, thus similar to corrugated. ④Folded (along veins) like a fan or pleats of an accordion (mfn).

- plinerved suffix () ①Of a leaf with lateral nerves similar to the midrib arising near the insertion of the petiole, eg. triplinerved, 5-plinerved etc.

-ploid suffix (as from Greek ἀπλόος, *aploos*, single, διπλόος, *diploos*, double, τριπλόος, *triploos*, triple, etc, in part derived from εἶδος, *eidos*, form) ①A suffix indicating the number of sets of chromosomes of an organism, used with a prefix to show the number of chromosome sets. See n (mfn).

ploidy n. (from *-ploidy* (in haploidy n. Derivatives, polyploidy n., etc) “The number of homologous sets of chromosomes in a cell or in each cell of an organism; degree of polyploidy” (oed).

PLS ①The acronym for pure live seed.

plug n. ①A cylinder of medium in which a plant is grown; the term is generally used to describe seedlings and rooted cuttings that have been removed from the container but with the medium held intact by the roots.

plumbeous adj. ①Lead-colored.

plumose adj. (Latin *plumosus*, feather) ①With hairlike branches, feathery, featherlike; ②feathery in appearance, having fine hairs on each side; ③beset with numerous, fine, pinnately arranged hairs; resembling a feather. ④(Of hairs) with lateral branches, like a feather — a pectinate hair (but usually 3-dimensional, not flat) (mfn).

pluri- ① Prefix meaning several. Cf poly-, multi, pauci-.

pluricaespitose (bamboos) – ① culms arising in a series of clusters along a long slender rhizome

pluricarpellate adj. () ① Consisting of two or more carpels.

pluricellular adj. () ① Of a hair of several cells and opposed to unicellular .

pneumathodes n. () ① Bands or pores or aerating tissue, especially along the stipes of ferns. Cf aerophores.

pneumatophore n. () ① Aerating structures with many air vessels.

pocosin n. (Algonquian) ①A bog that has formed in a shallow, undrained depression, the surrounding land being somewhat elevated, the vegetation predominantly evergreen shrubs or small trees; ②a swamp partially or completely enclosed by a sandy rim; pocosins vary greatly in size. ③“In the south-eastern United States: a marsh, a swamp; *esp.* an area of low, swampy, wooded ground in an upland coastal region.” (oed)

pod n. (Origin uncertain; perhaps shortened from *podder*, seed grains, plants with pods, from codware, podded vegetables, pulse) ①Colloquially used as a general term for any dry fruit composed of one or more carpels with a firm pericarp surrounding a cavity and containing one or more seeds. Some botanists restricted the usage of the term pod to certain fruits of the legume family, *Leguminosae*. (sk08) ②A general term used with different fruit types, such as legume (pea pod), follicle (milkweed pod), or for certain seed-bearing capsules (iris pod). ③“An elongated, seed-bearing fruit formed from a single carpel that splits along the sides on ripening; *spec.* that of plants of the families *Brassicaceae* (*Cruciferae*) and *Fabaceae* (*Leguminosae*) (as the pea or bean plant); (more widely) such a fruit of other plants, *esp.* a hollow one (as that of the cacao tree, poppy or capsicum pepper” (oed). ④Any type of dry, dehiscent fruit. ⑤A dry, dehiscent fruit enclosing a hollow space with one or more seeds; a legume is a type of pod (news).

polachenarium n. ① A schizocarpic fruit in which the fruitlets at maturity separate from one another and remain attached to a central column, the carpophore, formed by the central vascular bundles of the carpel, eg *Apiaceae* (sk08).

pollen n. (post-classical Latin *pollen*, from Latin *pollin-*, *pollen*, fine flour, fine powder) ① A general term pertaining to the haploid (n) microspores produced in the anther. ② The microspores of the seed plants, able to germinate on or near the megasporangium to produce a very small and strongly simplified microgametophyte (sk08). ③ The male or fertilizing element of seed plants, consisting of fine yellowish powder formed within the anther of the stamen; ③ spores, or grains contained in the anther, containing the male element; the microspores or the dust-like fertilising cells of gymnosperms and angiosperms. ④ “The fine granular or powdery substance produced by the anthers of a flowering plant or the male cones of a gymnosperm, consisting of microscopic grains (microspores) that each contain a developing male gamete. Also (freq. with distinguishing word): this substance produced by a particular kind of plant.” (oed) ⑤ The grains (microspores, containing male gametes) produced in the anther (mfn). ⑥ The sperm-bearing microgametophyte of seed plants (news).

pollen sac n. ① The microsporangium of the angiosperms; one anther typically bears four pollen sacs (sk08). ② “Each of the chambers (in angiosperms usually four in each anther) in which pollen is formed; the microsporangium of a seed plant” (oed)

pollen tube n. ① Tube-like structure formed by the germination pollen grain. In cycads and *Ginkgo*, the pollen tube releases the motile sperm directly into the pollen chamber from where they swim into the archegonia. In conifers and angiosperms the pollen tube delivers the sperm nuclei straight to the egg cells. (sk08) ② “A microscopic tube formed by protrusion of the intine of a germinating pollen grain, which grows towards and conveys the fertilizing male gametes to the ovule” (oed)

pollinarium pl **pollinaria** n. ① A pair of pollinia plus the structures holding them together in orchids, milkweeds, & some other plants (news).

pollination n. ① The process by which pollen is transferred to a receptive stigma; fertilization (news).

pollinator n. ① An agent such as an insect or animal that transfers pollen between plants (news).

pollination drop n. A drop of liquid secreted by the micropyle of many gymnosperms as a means to collect pollen. The pollination drop is finally reabsorbed and the captured pollen sucked into the pollen chamber (sk08).

pollinium, pl **pollinia** n. ① A coherent mass of pollen, such as in the *Orchidaceae* and *Asclepiadaceae*. ② An aggregation of pollen grains in orchids, *Orchidaceae*, *Asclepias*, milkweeds, & some other plants (news).

poly- prefix (ancient Greek *πολυ-*, *poly-* combining form of *πολύς*, *πολύ*, *polys*, *poly*, much (in plural, *πολλοί*, *πολλαί*, *πολλά*, *polloi*, *pollai*, *polla*, many), from an ablaut variant (o -grade) of the Indo-European base of *fele*) ① “Used as a freely productive prefix, chiefly in scientific and technical use, with the senses ‘many, much’, ‘having, involving, containing, consisting of, etc, many’, where *many* variously connotes ‘two or more’, ‘three or more’, ‘several’, or ‘a large number’, depending on the context” (oed). ② Prefix meaning many. Cf multi-, pauci-, pluri-.

polygamo-dioecious adj. ① Polygamous but chiefly dioecious.

polygamo-monoecious adj. ① Polygamous but chiefly monoecious.

polygamous (Greek *polys*, much or many, and *gamos*, marriage) ① Having bisexual, pistillate, and staminate flowers on the same individual plant; typically referring to an individual plant that contains both perfect and imperfect flowers. ② Bearing perfect and unisexual flowers on the same individual. Polygamo-monoecious: polygamous with unisexual flowers of both sexes. Polygamo-dioecious: polygamous with unisexual flowers of only one sex (mfn). ③ With both unisexual & bisexual flowers on the same plant (news).

polygonous, **polygonal** adj. ① Having many angles

polyhedral adj. ①Having many faces or planes

polymerase chain reaction (PCR) n. A molecular technique in which the DNA of plant or microbe is used to generate banding patterns that can be used in determining the relationship between organisms (rrl).

polypetalous adj. (Greek *polys*, many, and *petalon*, a petal) ①With many separate petals. ②Flowers with all petals distinct, not united.

polymorphic, polymorphous adj. (Greek *polys*, many, and *morphe*, shape) ①Having, assuming, or occurring in various forms, characters, or styles; ②having a number of various forms; ③existing in several or many forms. Cf heteromorphic, isomorphic, monomorphic, dimorphic.

polyphagous adj. (ancient Greek πολυ-, *poly-*, much, many and classical Latin *-phagus*, from ancient Greek -φάγος, *phagos*, eating, combining form of φαγεῖν, *phagein*, to eat, from the same Indo-European base as Sanskrit *bhaj-* to distribute, partake of); compare classical Latin *polyphagous*, voracious, omnivorous) “Chiefly Zool. Able to eat a variety of different foods” (oed).

polyphyletic adj. Composed of members that descended independently from two or more ancestral lines. Cf monophyletic)

polyploid, polyploidy adj. ①A plant, or of a plant, with more than two sets (diploid) of the basic chromosome number (haploid). ②Two or more sets of chromosomes (eg, 3n, 4n, 8n). Cf allopolyploid.

polystichous adj. Arranged in many rows. Cf multifarious.

polytypic adj. Of a taxon containing two or more taxa of lower ranks. Cf monotypic.

polytrophic adj. (ancient Greek πολυ-, *poly-*, much, many, and Greek τροφικός, *trophikos*, from τροφή, *trophe*, nourishment; after Hellenistic Greek πολυτρόφος, *polytrophos*, supplying food, nutritious, highly nourished; compare also post-classical Latin *polytrophus* nutritious (c400)) Ecology Of a lake: rich in nutrients, or a particular category of nutrient (oed). Cf mesotrophic, oligotrophic.

polytropic adj. (ancient Greek πολύτροπος, *polytropos*, turning many ways, versatile, etc, (also) much-travelled (epithet of Odysseus in Homer's *Odyssey* (also from post-classical Latin *polytropus* (a1540))); πολυ- *poly-* comb. form and Greek -τροπος, *tropos*, or τροπή, *trope*, turning (n.), as in turning or attracted to) Of a bee or other insect: visiting the flowers of many species (oed).

pome n. (post-classical Latin *pomum*, fruit, apple, (1686 or earlier in botanical use), from the use of classical Latin *pōmum*, fruit of any kind, of unknown origin, perhaps a loanword) ①A fleshy fruit (as in the apple), formed from an inferior ovary with several locules. ②“The type of fruit that is characteristic of the apple (*Malus domestica*), the pear (*Pyrus communis*), and related members of the family *Rosaceae*, which consists of a fleshy, enlarged receptacle enclosing a tough central core (the true fruit), formed from several united carpels and containing the seeds” (oed). ③An indehiscent simple anthocarpous fruit composed of a thick fleshy hypanthium and a pericarp differentiated into a thin fleshy outer layer (which is fused with the hypanthium) and a crustaceous or stony endocarp, eg *Rosaceae-Maloidea* such as apple, (*Malus pumila*), pear (*Pyrus communis*), and quince (*Cydonia oblonga*) (sk08). ④A fleshy fruit derived from an inferior ovary, the fleshy tissue developed chiefly from the floral tube (adnate to the ovary which forms a papery or cartilaginous core), as in apples and pears and the rest of their subfamily of the *Rosaceae* (mfn). ⑤A fleshy fruit derived from a compound, inferior ovary, with a papery or bony inner ovary wall (endocarp) that usually encloses several seeds, as in an apple (news).

pometum n. ①A multiple fruit of carpels embedded in a hypanthium or receptacle that is not divided into more than one cavity, eg rose hips (*Rosa* spp., *Rosaceae*) (sk08).

pond n. (form of *pound*, enclosure, a body of still water) A body of standing water smaller than a lake, often artificially formed.

pore n. (post-classical Latin *porus* passage, channel in the human body (4th cent.), from ancient Greek πόρος, *poros*, passage, channel in the human body, pore) ①The small area which bursts open in some types of dehiscent capsules; also the opening in some anthers from which the pollen discharges. ②“A small, circular, or slightly elliptical opening in the surface of a plant tissue or organ, *esp.* a lenticel or other epidermal stoma. Also: an opening in an anther or capsule through which pollen or seed is discharged; a cross-section of a vessel in wood; a circular aperture in the wall of a pollen grain.” (oed) ③A small ± round natural opening through which pollen or seeds can escape (mfn). ④Small hole (news).

poricidal adj. (literally pore cutter, from post-classical Latin *porus* passage, and classical Latin *-cida* cutter, killer, slayer, from *caedere* (in compounds *-cida*) to cut, kill) Dehiscing by means of pores.

poricidal capsule n. A capsular fruit that opens with a localized pore in each loculus (sk08).

porosity n. The ratio of the volume of void or pore space to the total volume of a rock or sediment.

porrect adj. Directed outward and forward.

posterior adj. ①Next to or close to the main axis; ②towards the back, next to or towards the main axis. ③Positioned in back of (news). Cf anterior.

postpartum adj.

pot in pot A method of container-grown nursery production whereby a container is placed into another larger container which has been placed in or on the ground, surrounded by soil or mulching material, to aid in weed control and fertilization processes, maintain a more constant media temperature, and prevent the plant from being blown over by winds.

prairie n. ①A naturally treeless dry to wet area dominated by native grasses (mfn).

precocious adj. When flowers expand before the leaves (news).

preference in nodulation n. Cultivars in some plant species select for particular rhizobia from among the numerous strains present in their environment. They are said to have a preference in nodulation for these strains. (rrl)

prehensile adj. Grasping.

pre-varietal plant material Plant material that exhibits characteristics of a variety but has not been definitively proven to have traits that can be inherited by subsequent generations. It is usually material that is undergoing testing and awaiting conclusions. It may be field produced or harvested from natural stands. Synonymous to Selected Class

prick) ①Very sharp; ②a sharp point; acrid to the taste or smell; ③ending in a rigid or sharp point, acrid to taste. ④“In Botany, especially of a leaf, ending in a sharp stiff point” (oed)

prickle n. (Middle English *prikle, prikel*, from Old English *prickle, pricel*; akin to Middle Dutch *prikel*, prickle) ①A sharp pointed emergence arising from the epidermis or bark of a plant; ②a sharp, usually slender, bristle or spine of the epidermis, though originating in the deeper cell layers. ③Small, sharp outgrowth from epidermis, contains no vascular tissue. ④A hard, sharp emergence of subepidermal tissue, not vascular. ⑤Small, more or less sharp outgrowth of the epidermis, which does not contain a vascular bundle (news). Cf spine.

primary adj. Principal; first order.

primary branch n. ①Any branch arising from the main axis; ②all branches that come from the central axis of a grass inflorescence.

primary production n. The quantity of new organic matter created by photosynthesis.

primary succession A succession initiated on a newly produced bare area. ②The establishment of plants on land that has not been previously vegetated, such as land that has been created from a volcanic eruption.

primary unilateral branch n. ①Any branch that originates from the central or main axis of a panicle inflorescence with spikelets along one side or what appears to be one side.

primocane n. ①In *Rubus*, the cane of the first year, usually lacking flowers. ②The first-year, non-reproductive stem produced by raspberries & blackberries, *Rubus* spp. (news). Cf floricane.

prismatic adj. Of the shape of a prism, prism-shaped -- angulate with flat sides.

Pro parte In part.

Pro parte sed non typus ①Resembles, in part, but not completely the type specimen; ②possessing some but not all characteristics of the type specimen.

process n. (classical Latin *prōcessus*, advance, progress, course or development of an action, protruberance, outgrowth) ①A projection or outgrowth from some parent tissue; ②A projecting appendage. ③Any slender, protruding structure (news).

processed balled plant n. A plant dug bare root, while dormant, to which a moist growing medium is added around the roots to form a ball designed to sustain plant growth.

procumbent adj. (Latin *pro*, forward, and *cubare*, to lie down) ①Trailing or lying flat on the ground but not rooting; ②trailing or reclining, but not rooting at the nodes. ③Prostrate or trailing stem, does not usually root at nodes. ④Trailing or prostrate (news).

production (Latin *producere*, to produce) ①The weight of new organic material formed over a period of time, plus any losses during that time period. Losses may be due to respiration, excretion, secretion, injury, death, or grazing.

productivity n. ①Amount of production over a given period of time; expressed as a rate such as g/m² per day, kg/ha per year, etc.

prohibited adj. A sp banned for sale or distribution due to invasiveness (news).

prohibited noxious weeds Weeds that the USDA or state agencies have designated as prohibited from sale. Seeds that are designated as Prohibited must be completely absent from seed lots that are to be used in the prohibited area. See the State Noxious Weed Seed list located on this site under Technical Guidelines, Seed Labeling.

prokaryote A cell lacking a membrane-bound nucleus and membrane-bound organelles; a bacterium.

proliferous adj. (Latin *proles*, *prolis*, offspring, and *ferre*, to bear) ①Producing buds and/or new plants vegetatively. ②Bearing supplementary structures such as buds or flowers, either in an abnormal manner or in a manner that is normal but from adventitious tissue. ③Rooting from apical bulbil (a small bulb produced above the ground, often on the flowering stem. Cf bulbil.

prominent adj. Standing out beyond some other part. Diminutive prominulous.

pronate, pronated adj. (post-classical Latin *pronatus*, past participle of *pronare* to throw forward (5th cent.; from classical Latin *prōnus*, prone adj.) ①*Biology and Medicine*, pronated, also (rare): bent forward and downward; prone. ②Of, relating to, or exhibiting pronation; ③placed in a prone position; ④turned downwards. Contrasting with supination.

propagulum, propagule pl *propagula*, propagules. n. (Latin *propages*, layer of a plant) ①A body with the capacity to give rise to a new plant; eg. seed, spore, bulbil, fragment etc, often a runner or sucker used in the asexual propagation of plants. ②Any part of a plant capable of growing into a new organism; eg, seed, spore, gemma, cutting. ③A reproductive body such as a seed, bulb, or turion (news).

prophyll ①First leaf of a lateral branch; ②a sheath with 2 veins. ③In grasses, a 2-keeled, hyaline, modified leaf, placed within a leaf sheath on the adaxial side of a branch. ④A bract subtending a branching inflorescence (or a perianth in *Juncus*) (news).

prostrate adj. (Latin *prostratus*, pp. of *prosternere*, to lay flat) ①Growing on the ground, trailing on the ground; ②lying flat on the ground or substrate. ③Lying flat on the ground, may root at the nodes. ④Lying flat along the ground (news).

prothallium pl *prothallia*; *prothallus* pl *prothalli* (New Latin, from *pro-* and *thallus* and *-ium*) The gametophyte of a fern or other pteridophyte that is typically a small flat green thallus attached to the soil by rhizoids but is sometimes filamentous and branching, that occasionally forms a subterranean tuberous mass, or that rarely (as in the club mosses) develops within the megaspore by which it is produced. 2: any of various structures (as several cells of the pollen grain or in gymnosperms of the megaspore) that in seed plants correspond to the pteridophyte prothallium. The growth following a germinating spore, for the purpose of sexual reproduction, producing the antheridia and archegonia (viz.). Cf gametophyte.

proto- Prefix meaning first.

protogyny n. (Greek *proteros*, fore, and *gyne*, female) Development of the female organs before the appearance of the corresponding male products - thus inhibiting self-fertilization.

protolog, protologue n. (prot- and -log) ①The original description of a species; ②the original or first publication of a taxonomic name.

protostele n. () A primitive type of stele (viz.) with a solid vascular strand.

protuberance n. () A swelling or bump on the surface.

proximal adj. ①At or toward the base; ie, the end at which a structure is attached (mfn). ②Denoting the region nearest to the organ's point of attachment. ③Produced near the base of a structure (news). Cf distal.

proximate adj. ①Near the near end. ②Towards the attached end of an organ. Cf distal.

pruinose adj. See glaucous.

pseud-, pseudo- prefix (ancient Greek *ψευδο-*, *pseudo-* (before a vowel *ψευδ-*, *pseud-*), combining form of *ψευδής*, *pseudes*, (adjective) false, *ψεῦδος*, *pseudos*, falsity, falsehood, from *ψεύδειν*, *pseudein*, to deceive, cheat, *ψεύδестhai*, *pseudesthai*, to be false, speak falsely) Adjectival prefix forming nouns and adjectives with the sense 'false, pretended, counterfeit, spurious, sham; apparently but not really, falsely or erroneously called or represented, falsely, spuriously (oed).

pseudanthecium n. (ancient Greek *ψευδο-*, *pseudo-*, false, Greek *ἄνθος*, *anthos*, flower, ancient Greek *οικία*, *oikia*, house, and *-ium*) A fruit of the *Cyperaceae* in which the mature achene-like ovary is enclosed by a loose or inflated sac of modified connate bracts (eg *Kyllinga squamulata*).

pseudanthium pl pseudanthia n. A cluster of small flowers that appear to be a single flower, as in spp of *Benthamidia* (big-bracted dogwoods), *Asteraceae* (aster family), & *Euphorbiaceae* (news).

pseudocarp n. (ancient Greek *ψευδο-*, *pseudo-*, false, and Greek *καρπός*, *karpos*, fruit) ①Meaning false fruit, a term used in modern textbooks to denote a fruit in which not only the gynoecium but also other floral parts participate. The correct term for such a fruit is anthocarp. (sk08) ② "A fruit that incorporates either parts of a

plant not belonging to the flower, or parts of the flower besides the gynoecium (especially the receptacle); a false fruit” (oed)

pseudodichotomous adj. () Apparently dichotomous with a dormant terminal bud and two equal lateral branches. Cf dichotomous, monopodial, sympodial.

pseudolamina n. (ancient Greek ψευδο-, *pseudo-*, false, and Latin *lamina*, plate) The extended apical portion of a phyllode.

pseudopetiole n. the narrow basal portion of some leaf blades, resembling a petiole.

pseudosamara n. (ancient Greek ψευδο-, *pseudo-*, false, and modern Latin use of Latin *samara* or *samera*, seed of the elm) An anthocarpous fruit bearing distal wings longer than the mature ovary; eg accrescent sepals in *Dipterocarpaceae* (sk08).

pseudospikelet (bamboos) n. Spikelet in which the outer glumes or bracts subtend axillary buds which can develop to form lateral spikelets or branches.

pseudoterminal adj. A bud at the tip of a branch that resembles a terminal bud but shows both a leaf bundle scar & a twig bundle scar near its base (news).

pseudovivipary n. (ancient Greek ψευδο-, *pseudo-*, false, Latin *vivus*, alive, and *parere*, to produce) A condition where vegetative propagules replace some or all of the normal sexual flowers in the inflorescence.

pseudowhorl n. Actually alternate but with nodes so crowded that the organs appear whorled (news).

pterido prefix (post-classical and scientific Latin *pterido-*, from Hellenistic Greek περιδ-, περις, *pterid-*, *pteris*, fern) Adjectival prefix forming words with the sense ‘fern, ferns’ (oed)

Pteridophyte, pteridophyte n. (Greek *pteris*, fern, and *phyton*, plant) ①A major division of the plant kingdom, having clear alternation of generations with a dominant vascular sporophyte initially dependent upon the gametophyte, which is very reduced. ②The general name for the ferns and their allies.

pteridosperms n. (post-classical and scientific Latin *pterido-*, fern-, and Greek σπέρμα, *sperma*, seed) ①Fossil group of gymnosperms superficially resembling ferns; therefore also called “seed ferns” (sk08). ②“Any of various extinct gymnosperms belonging to the division *Pteridospermatophyta*, which originated in the late Devonian period and became widespread towards the end of the Palaeozoic era, and resembled modern ferns in their leaves but unlike them produced seeds” (oed).

puberulent adj. (probably from scientific Latin *puberulus*, and -ent suffix. Compare French *pubérulent* (1853 or earlier in botanical use), scientific Latin *puberulentus* (c1903 or earlier as specific epithet in botanical use).) ①Covered with fine, short, and nearly imperceptible down; ②minutely pubescent, the hairs soft, straight, erect, but scarcely visible to the unaided eye; ③minutely pubescent, minutely hairy, the hairs soft and very short, scarcely visible to the naked eye. ④“Chiefly Bot. Of a leaf, stem, etc: slightly downy with very short hairs; minutely pubescent.” (oed). ⑤Minutely or finely pubescent (mfn). ⑥Bearing very short, loose or erect hairs, scarcely visible to the unaided eye, minutely pubescent, "short-hairy". ⑦With tiny hairs barely visible to the naked eye (news).

puberulous adj. (alternately scientific Latin *puberulus*, 1803 or earlier as specific epithet in botanical use, from classical Latin *pūber*, taken in the sense of ‘downy’ (oed).) Slightly hairy, puberulent.

pubescence n. Hairs (news).

pubescent adj. (Latin *pubescere*, to become mature) ①A general term for hairiness; covered with soft hair or down; ③hairy, covered with short, soft hairs; covered with hairs, especially soft, downy hairs. ④With hairs (of whatever size or texture) (mfn). ⑤Bearing hairs (news).

pulverulent adj. ① Appearing powdery, dusty, or mealy. ② Covered with a dust-like surface (mfn).

pulvinus, pl *pulvini* n. () ① A swelling at the base of a leaf or a branch of the inflorescence; ② a swelling or enlargement, typically in the axils of the branches in a grass inflorescence; ③ swelling at the base of a stalk or leaf or leaflet, sometimes glandular or responsive to touch. ④ Swollen tissue at the insertion point of the leaf petiole, or sometimes at a joint or a minute gland. ⑤ A swelling at the base of a branch of the inflorescence (in some grasses) or at the base of a petiole or petiolule (the stalk of a leaflet) as in many *Fabaceae* (mfn). Hence pulvinate.

punctate adj. (Latin *punctum*, point) ① Dotted; ② with depressed dots scattered over the surface; ③ covered with glandular dots, pits, or depressions; ④ dotted, particularly with dark or translucent dots or glands. ⑤ Marked with pits or dots formed by glands or waxy spots, "pitted". ⑥ Dotted with tiny pits or glands or spots (mfn). ⑦ Marked with dots or translucent glands (news).

puncticulate adj. () ① Minutely punctate. ② Very minutely punctate (mfn).

punctum pl *punctae* n. () ① A dot or pit. ② Covered with dots or pits. Hence punctate;

punctiform adj. () Reduced to a mere dot or point.

pungent adj. (post-classical Latin *pungent-*, *pungens* sharp or piquant to the taste or smell, prickly (14th cent. in a British source), use as adjective of classical Latin *pungent-*, *pungēns*, present participle of *pungere*, punge, to

pure-live-seed Abbreviated (PLS, is a measure used by the seed industry to describe the percentage of a quantity of seed that will germinate. PLS is obtained by multiplying the purity percentage by the percentage of total viable seed, then dividing by 100.

purity The percent weight of the entire sample of each seed species or variety that is present in excess of 5% of the total.

pustule n. Blister (news).

pustular adj. Bearing blisters or pustules.

pustulate adj. () With blister-like swellings (mfn).

pustulate hair n. (Latin *pustulare*, to blister) Hair with an enlarged base.

pustule n. A low projection like a blister or pimple, larger than a papilla. Hence pustular, pustulate.

pustulose adj. More or less with little blisters or pustules, "minutely blistery".

putamen pl **putamina** n. (classical Latin *putāmen* hard outer covering, husk, shell, in post-classical Latin also *putamen* hard, woody endocarp, from *putāre*, to prune, and -men) "A hard, woody endocarp; *spec.* the stone of a drupe. Now *rare*." (oed)

putative adj. () Reputed, generally regarded as such, supposed; eg. putative hybrids.

pyramidal adj. () ① Broadest at the base, tapering apically; ② triangular in outline; ③ shaped like a pyramid. ④ Shaped like a pyramid (three-dimensional triangle) (news).

pyrene n. (from scientific Latin *pyrena*, from ancient Greek *πυρήν*, *pyren*, fruit stone (from *πυρός*, *pyros*, wheat, grain, from the same Indo-European base as Old Prussian *pure* oats, brome-grass, Lithuanian *pūrai* (plural) winter wheat, Old Church Slavonic *pyro* spelt, Russian *pyréj* couch grass, and perhaps *furze* n., -ην, -en, suffix forming nouns, and scientific Latin -a (oed)) ① The hard, bony endocarp of a drupe, usually referred to as a "stone". The stones of drupes are usually single-seeded but there are also multi-seeded stones (eg *Pleiogynium timoriense*,

Anacardiaceae). The term pyrene is mostly used when a drupe contains more than one stone (eg *Ilex* spp., *Aquifoliaceae*, *Uapaca* spp., *Phyllanthaceae*): it is also used to refer to the entire fruit, if a multi-stoned drupe. The nutlet of a drupe, such as the seed and bony endocarp of a cherry. (sk08). ②“The stone of a fruit (esp. a drupe) consisting of a single seed surrounded by a hard woody endocarp. Cf putamen.” (oed) ③A fruit in which several seeds are each surrounded by a stony, hard endocarp, as in some spp of holly (*Ilex*) or shadbush (*Crataegus*) (news).

pyriform adj. (Latin *pyrum* or *pirum*, a pear) ①Pear-shaped.

pyxidium pl *pyxidia* n. (new Latin from Hellenistic Greek πυξίδιον, *pyxidion*, a small box, from πυξίς, *pyxis*, box, and -ίδιον, *-idion*, diminutive suffix) ①A capsular fruit opening with a lid that is created by a transverse suture cutting across all loculi if the fruit (sk08). ②“In a flowering plant: a capsule opening by transverse dehiscence, so that the top comes off like the lid of a box” (oed)

pyxis n. A dehiscent fruit that splits open around the middle like a box, with the top falling off & exposing the seed(s) (news).

Q

quadrangular adj. Four-angled, as in a square (news).

quadri- prefix meaning four. Cf tetra-

quadrifarious adj. Arranged in four close-set rows along the stem. Cf decussate.

Quaternary n. A period within the Cenozoic era consisting of the Pleisocene and Holocene epochs.

quinate adj. (post-classical Latin or scientific Latin *quinatus* (1740 or earlier), from classical Latin *quīnī* five each, and *-ātus*, *-ate*) “Of a compound leaf: having five leaflets growing from a common point” (oed).

R

raceme n. (Latin *racemus*, bunch) ①Inflorescence having a common axis and stalked flowers in acropetal succession; ②an inflorescence type in which all the spikelets are pedicellate on the rachis; ③a simple elongated inflorescence with stalked flowers; ④a simple inflorescence in which the flowers are pedicellate and arranged singly along an elongate axis. ⑤A type of inflorescence in which each flower is on an unbranched pedicel attached to an unbranched ± elongate central axis; the flowering sequence is from the base to the apex (mfn). ⑥An indeterminate, elongated inflorescence where single flowers are borne on pedicels arranged on a single axis; the youngest flowers are at the apex. ⑦In grasses, an unbranched axis bearing spikelets; racemes may be solitary, digitate, or scattered. ⑧A long inflorescence with individual flowers borne on short, unbranched side stalks off a larger central stalk. ⑨A long array of flowers (inflorescence) with stalks (pedicels), each of which grows directly from the main axis (rachis) of the inflorescence. Flowering starts at the bottom & the main stalk of the inflorescence (peduncle) continues to grow, forming new flower buds (news).

raceme base n. Short stalk beneath the individual racemes of a pair in some *Andropogoneae*.

raceme pair n. Pairs of racemes supported by spatheoles in the compound panicles of some *Andropogoneae*.

racemiform adj. ①Resembling a raceme; ②possessing the form of a raceme.

racemose adj. ①An inflorescence whose growing points continue to add to the inflorescence and in which there are no terminal flowers, and the branching is monopodial, as racemes, or spikes; ②having flowers in racemes.

racemose adj. ①Branches that are like racemes; ②With some combination of sessile and short pedicellate spikelets.

rachilla pl rachillae, rachillas n. (scientific Latin rachilla (1834 or earlier) From post-classical Latin *rachis* (which see) from Greek *rhachis*, spine and *illa*, Latin feminine singular diminutive suffix) ①The zigzag center upon which the florets are arranged in the spikelet of grasses or in some sedges; ②the axis of the spikelet; ③the structure to which the glumes, lemma and floral axis are attached; ④a secondary rachis. ⑤The axis of a spikelet in the grasses and sedges (mfn). ⑥The axis of a spikelet in grasses, refers to a secondary axis in sedges. ⑦ The central axis of the spikelet which bears the florets. ⑧The main axis of the spikelet in grasses (*Poaceae*), which bears the spikes (news).

rachilla extension n. A prolongation of the rachilla beyond the uppermost (or single) floret.

rachis (also **rhachis**, which see) pl **rachises** or **rachides**, n. (Partly from post-classical Latin *rachis* vertebral column or spinal cord (1690 or earlier), main axis of a pinnate leaf or frond (1704; from ancient Greek *ράχις*, *rhakhis*, spine, ridge, outer edge of the arm of the polypus, in Hellenistic Greek also rib (of a leaf) from the same Indo-European base as Lithuanian *ražas* dry rod (in a bunch or broom)) (oed)) ①The central prolongation of the stalk (peduncle), the axis through an inflorescence, or of a leaf stalk (petiole), the axis through a compound leaf; ②the axis of a spike, spicate raceme, or raceme inflorescence; ③the principal axis of an inflorescence or compound leaf. ④The main stalk of an inflorescence or compound leaf, the "axis of inflorescence". ⑤The central axis of an inflorescence or a compound leaf (mfn). ⑥The axis (excluding petiole) of a pinnately compound leaf or inflorescence. ⑦ "The main axis of an inflorescence; esp. (in grasses) the axis on which the spikelets are borne (cf rachilla n.)" (oed). ⑧The term is also used in anatomy, zoology, malacology, ornithology, and to describe the gonads of certain nematodes. ⑨The central axis of a leaf, such as that bears the pinnae in ferns (news). Diminutive rachilla.

radial, radiate (?) adj. (from post-classical Latin *radialis*, radial) ①Spreading as in the spokes of a wheel, eg. radially symmetric. ②In the *Asteraceae*, "heads with ray and disk flowers". Cf bilateral, dorsiventral.

radially adj. (Latin *radius*, a ray, a rod, a spoke) ①Arranged or having parts arranged like rays developing uniformly around a central axis. ②"In a radial manner; in the form or direction of radii or diverging rays" (oed).

radially symmetrical ①Said of a flower or set of flower parts which can be cut through the center into equal and similar parts along two or more planes; ②actinomorphic; capable of being bisected into two or more similar planes; same as regular.

radiate adj. ①Spreading in all directions. ②With ray flowers in the head (*Asteraceae*) (mfn).

radicle n. () ①Of leaves arising at the base of the stem and forming a rosette or tuft.

radicant adj. () ①Rooting, usually applied to stems and leaves.

rain ballism See ombrohydrochory.

rainforest n. A complex community dominated by trees, with high rainfall, many epiphytes, and lianes.

rame n. A long inflorescence containing both sessile & stalked flowers (as in *Poaceae*) (news).

ramentum n. The scales on a plant (usually used with a fern rachis) (news).

ramet n. (a little branch, from classical Latin *rāmus*, branch of a tree or any analogous object, probably from the same Indo-European base as classical Latin *rādīx* and *root*, ane -et, a suffix forming diminutives) ①An individual member of a clone. ② "Originally: an individual member of a clone of plants derived by vegetative reproduction from a single parent plant (ortet) and often (at least initially) remaining physically connected with it. Later also: a member or part of any clonal or modular organism; the basic unit or module of such an organism." (oed)

range condition ①The current productivity of rangelands relative to that land's natural productivity.

range improvement Any practice designed to improve rangeland condition or facilitate more efficient utilization of the range.

rangeland Land on which the historic climax plant community is predominantly grasses, grass like plants, forbs, or shrubs. Includes lands revegetated naturally or artificially when routine management of that vegetation is accomplished mainly through manipulation of grazing. Rangelands include natural grasslands, savannas, shrub lands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows.

-ranked, -rowed suffix ①Two-ranked structures are in two rows on opposite sides of an axis and 3-ranked structures are in 3 rows (best seen by examining the apex of the axis from above) (mfn).

rank n. A vertical row on an axis (news).

ranked adj. Ordered in a series, usually used with a number, such as two-ranked.

raphe n. (post-classical Latin *raphe* seam-like ridge on the skull, etc, a similar ridge on a seed, and its etymon ancient Greek *ῥαφή*, *raphe*, seam, suture of the skull, a wound, etc, cognate with *ῥάπτειν*, *rhaptein*, to sew) ①The area of the seed coat in which the continuation of the funicular vascular bundles runs from the hilum to the chalaza. The raphe is the longest in anatropous seeds, shorter in moderately campylotropous seeds, and entirely absent in strongly capmulotropous and atropous seeds (sk08). ②“A ridge formed on a seed by fusion of the funiculus with the nucellus of an anatropous ovule” (oed).

raphide n. (French *raphide* (A. P. de Candolle *Organographie végétale* (1827) I. xiii. 126), from ancient Greek *ῥαφίδ-*, *ῥαφίς*, *raphid-*, *raphis*, a needle) ①“Any of certain crystals, typically needle-shaped and composed of calcium oxalate, which are found, usually in bundles, in particular cells (idioblasts) in certain plants and are thought to be a defense mechanism against herbivory.” (oed)

rare adj. A sp with low population levels, at risk of becoming threatened (news).

rate of inoculation Minimum number of rhizobial inoculants applied per seed.

ray, ray flower n. ①A strap-shaped, ligulate, typically marginal, flower in the head of a composite inflorescence; ②also one of the principal branches of an umbellate or cymose inflorescence. ③A branch of an inflorescence such as a compound umbel. ④Strap-shaped corolla (ligule), as in the *Asteraceae*. ⑤In *Asteraceae*, the expanded portion (limb) of a petal-like (bilaterally symmetrical) flower or ligule (mfn).

ray flower ①A strap-shaped, ligulate, typically marginal, flower in the head of a composite inflorescence. ②Also called ligulate flower. ③Flower with a single, long strap-like "ray" petal that forms the outer ring of a composite head (ie, the "petals" of a daisy) (news). Compare to disk flower.

re- Prefix meaning backwards.

recalcitrant adj. (classical Latin *recalcitrāt-*, past participial stem of *recalcitrāre* to kick out (Horace), to be refractory (*Vetus Latina*, Vulgate), from *re-* and *calcitrāre*) ①“Of seeds, viable for only a short time; *specifically* unable to survive drying or freezing, making them difficult to preserve; of a plant, having seeds of this kind” (oed).

receptacle n. (Latin *recipere*, to receive; classical Latin *receptāculum*, place where things are put or stored, repository, container, place for keeping animals, place of refuge, shelter, retreat, from *receptāre*, reset, and *-culum*) ①The more or less expanded apex of a floral axis which bears the floral parts; ②the often enlarged end of a stalk or disk on which the flowers or fruiting bodies are borne; ③an enlarged or elongated end of a pedicel, peduncle, or scape on which some or all of the flower parts are borne, such as in the *Asteraceae* family or certain genera in the *Rosaceae* family. ④“The central axis to which the parts of a flower are attached, consisting of the modified (often enlarged and convex) end of the pedicel or peduncle (also *floral receptacle*, formerly †*proper receptacle*); also called *torus*. Also: the modified (usually flattened) top of the axis of a capitulum or head; the hollow top of the axis of a syconium or hypanthodium; (also *common receptacle*).” (oed) ⑤The surface on which the parts of a flower are

inserted, or on which the flowers in a head or other dense inflorescence are inserted (mfn). ⑥The expanded end of the stem on which floral parts are borne. ⑦The base of a flower, comprised of the enlarged top of the stalk, which holds some or all of the flower parts (news). In the Asteraceae (aster family), the receptacle is formed from the enlarged top of the peduncle that holds many small flowers (florets) (news).

receptacular chaff. n. See chaff (mfn).

recurved adj. ①Directed backward or downward. ②Bent or curved downward (news).

recline adj. () Reclining, turned or bent downwards upon some other part.

reclining adj. Lying on the ground or one plant pressed on another.

recruitment The influx of new members into a population by reproduction or immigration.

recurrent adj. () Running or proceeding backwards towards the axis or costa. Cf excurrent.

recurrent selection: A form of plant breeding in which the best plants from one evaluation are used as parents and intercrossed to generate plants for the next round of evaluations (rrl).

recurved adj. () Curved downwards or to the abaxial (lower) side. Cf incurved.

reduced adj. () ①Smaller in size, frequently lacking parts; ②in flowers the sexual parts may be absent. ③Lower or smaller than normal (news).

reduced floret n. ①A floret that is either staminate or neuter; if it is highly reduced (eg awnlike structures) then it is sometimes called a rudimentary floret.

reflexed adj. () ①Bent downward or backward from the apex; ②abruptly turned or bent downward; ③bent sharply downward or backward. ④Bent back or downwards (mfn). ⑤Bent sharply backwards. ⑥Abruptly bent backward or downward (news). Cf inflexed.

registered seed Seed that has been produced from Foundation Seed. It is typically third generation seed.

regular adj. () Radially symmetrical, capable of being bisected into two or more similar planes; ②uniform or symmetrical in shape and structure. ③With radial symmetry; capable of division into similar halves on more than one plane (= "actinomorphic" of many works); cf bilaterally symmetrical (mfn). See actinomorphic.

regular flowers n. ①Flowers with radial symmetry; ②petals and sepals that are similar in shape, size, colour and orientation.

released plant material Plant material that has been made available to the public after approval by officials in the public or private sectors. It may be either a variety/cultivar or a pre-variety germplasm; be either local native, non-local native, or introduced in origin; originate from either a single location or multiple locations; and be developed using the plant breeding techniques of hybridization and artificial selection for certain performance characteristics ("genetically manipulated") or without such techniques ("natural").

remote adj. (Latin *remotus -a -um*, to remove) ①Separated from one another; ②separated by intervals or spaces greater than the ordinary, far apart, spaced. ③Relatively far apart (mfn). ④Separated from others of same form (as in a flower produced at a distance from other flowers on the same stem) (news). Cf approximate.

remotely adv. ①Distantly; ②far apart.

renascent adj. () Springing up afresh each year.

reniform adj. (Latin *ren*, kidney; *forma*, shape) ①Having the form or shape of a kidney; kidney-shaped. ②Shaped in general outline like a longitudinal section of a kidney; ie, broader than long, ± shallowly cordate at base and otherwise ± rounded (obtuse at apex) (mf).

repand adj. () ①Shallowly sinuate. ②Typically with a shallowly, unevenly lobed or sinuate margin.

repent adj. (Latin *repens*, crawling) ①Said of a stem that is prostrate and rooting at the nodes; ②prostrate, creeping along the ground, typically applying to those plants which root at the nodes.

replum n. Placenta that forms the partition between separating valves of a silique (in *Brassicaceae*) (news).

resaca n. (from Spanish *resacar*, to retake, in reference to the diversion of the river water, or from Spanish *rio seco* dry river) An old river bed, eg and ox-bow.

resinous adj. ①Producing a viscous substance or resin; ②appearing to secrete or exude resin. ③Covered with a resin.

Restinga n. ①A distinct type of tropical and subtropical forest found on acidic, nutrient-poor soils on the Atlantic coast of Brazil (sk08).

restricted noxious weeds A weed that has been identified by state regulators as a threat to the environment if it occurs in relatively dense stands. Seeds from restricted noxious weeds are permitted to be sold, but only in small quantities. For the number of seeds of restricted weeds that are permitted in seed lots see the State Noxious Weed Seed List in the Seed Labeling section of the [Technical Guidelines section of this website](#).

resupinate adj. (post-classical Latin *resupinatus* (1704 or earlier in botanical contexts), spec. use of classical Latin *resupinātus*, past participle of *resupināre* to lay (someone or something) face upwards, to lay (someone) flat on his or her back, to upset or overturn, to tilt back, to bend back, to cause to lie flat, flatten, from *resupīnus* (oed)) ①Literally oriented upside down; turned through 180 degrees; reversed. ②“Chiefly *Bot.* and *Mycol.* Inverted; *spec.* (a) (of a flower, esp. an orchid) turned upside down or apparently so by a twist of the stalk or ovary; (b) (of the cap (pileus) or fruiting body of a fungus) adpressed to the substrate with the spore bearing surface (*hymenium*) uppermost.” (oed) ③With flowers that appear upside-down (news).

reticulate adj. (Latin *reticulatus* -a -um, latticed) ①Like a network; ②forming a network of interconnecting veins; in the form of a network like some types of netted venation. ③Having the appearance of a net (mf). ④Forming a network, netted like the veins of a leaf, "net-veined". ⑤Net-veined or with ribs that inter-connect to form a honeycomb pattern (news).

reticulum n. () A network (of veins or other linear structures), formed by repeated branching and anastomosis (viz.). Cf areole, areolate.

retinaculum pl *retinacula* n. (New Latin from Latin that which holds or binds, band, from *retinere*, to hold back, retain) ①The hook-like funicle of a seed of a plant of the family *Acanthaceae*; ②a band or band-like structure that holds an organ in place.

retorse adj. (Latin *retorsum*, backward) ①Having hairs or other processes turned toward the base; ②pointing downward toward the base, as do the barbs on *Cenchrus* (sandbur); ③directed backward or downward. ④Directed toward the base or "downward," eg, barbs on a bristle or awn (mf). ⑤Pointing downward or inward toward the basal end (news). Cf antrorse, introrse, extrorse, latrorse.

retuse adj. (classical Latin *retūsus* not sharp, blunt, use as adjective of past participle of *retundere*, in post-classical Latin and scientific Latin) ①With a shallow notch in a round or blunt apex; ②the apex rounded with a small notch; ③having a broad end with a central depression; ④with a shallow, rounded notch at the apex; ⑤notched slightly at an usually obtuse apex. ⑥“Having a broad or rounded end with a notch or indentation at the apex; shallowly notched” (oed). ⑦With a terminal notch in an otherwise blunt or rounded apex (news). Cf emarginate.

revegetation n. The re-establishment of vegetation on denuded areas.

revolute adj. (Latin *revolvere*, to roll back) ① Said of margins that are rolled backward (toward the abaxial side); ② turned under along the margins toward the abaxial surface; ③ referring to margins which tend to roll back toward the lower surface of the midrib of a foliar structure. ④ With the margins rolled back or under (ie, abaxially); (mfn). ⑤ Leaf margins rolled toward the underside of the leaf. ⑥ Rolled under, toward the abaxial surface (news). Cf involute.

rhachis = rachis “The spelling *rhachis* conforms more closely to the Greek but is less common. The plural form *rachides* (compare scientific Latin *rachides*, plural (1773 or earlier)) is strictly unetymological, as the stem of ancient Greek *ῥάχις*, *rhakhis*, is not **ῥάχιδ-*, *rhakid-*, but *ῥάχι-*, *rhakhi*.” (oed)

rheophyte n. () A flood persistent plant, living between the high and low water levels of rivers. Cf aquatic, amphibious, terrestrial.

Rhizobia n. The common name for several genera of bacteria which have the ability to infect the root of legumes and to produce root nodules. Each species of *Rhizobia* can infect some but not all legumes. (rrl) The entire group of bacteria that are capable of forming symbiotic root-nodule partnerships with legumes.

rhizoid n. () A filamentous root-like structure, as on a pteridophyte prothallus.

rhizomatous adj. ① Having or bearing rhizomes; ② horizontal underground stems with nodes and internodes. ③ Proliferating by means of underground, horizontal stems (rhizomes) (news).

rhizomatous tuber n. The same as a corm.

rhizome n. (Greek *rhiza*, a root) ① A subterranean horizontal root-like stem sending out leaves and shoots from its upper surface and roots from its lower surface; ② a horizontal, underground stem with modified leaves at the nodes; ③ a modified underground stem, usually growing horizontally; ④ the stem of ferns; ⑤ An underground stem, usually ± elongate and growing horizontally (distinguishable from a root by the presence of nodes) (mfn). ⑥ A creeping, underground stem or rootstalk that roots at the nodes. ⑦ Horizontally growing stems, usually underground, often sending out roots and shoots from its nodes. ⑧ Underground, horizontal stem (news). Hence rhizomatous.

rhizophore n. () A specialized leafless stem which bears roots, as in *Selaginella*.

rhizosphere That part of the soil which is modified physically and chemically by the presence of plant roots.

rhizotaxis, rhizotaxy n. (“after French *rhizotaxie* (D. Clos *Ébauche de la rhizotaxie, ou, De la disposition symétrique des radicelles sur la souche* (1848))] the arrangement or disposition of roots” (oed)) J. H. Balfour Class Bk. Bot., 1852, ii. 57 “The mode in which the fibres of roots are produced and developed, thus gives origin to different forms of Rhizotaxis, or root-arrangement.” M. T. Masters Veg. Teratol., 1869, i. 1 “This regularity of arrangement (Rhizotaxy), first carefully studied by M. Clos, is connected with the disposition of the fibro-vascular bundles in the body of the root.” (oed)

rhombic adj. ① Describing a four-sided, typically obliquely angled, shape; ② "diamond-shaped".

rhomboid n. () A plane of diamond shape.

rhomboidal adj. A solid with a rhombic outline.

rhombus n. (Greek *rhombos*, object that can be turned) ① An outline like a rhomboid, a parallelogram with equal sides, having two oblique angles and two acute angles.

rib n. (Old Frisian *rib*, *reb*, Old Saxon *ribba*, possibly related to post-classical Latin *riba*, cross-timber, purlin) ① A prominent vein, usually in a leaf. ② “Any of the principal veins of a leaf; (formerly) *spec.* †the central vein, the midrib (*obs.*)” (oed)

rich adj. () With many forms, species etc. Cf depauperate.

riparian adj. ①Growing along rivers; ②pertaining to rivers. ③An area of land adjacent to a stream, river, lake or wetland that contains vegetation that, due to the presence of water, is distinctly different from the vegetation of adjacent upland areas.

roadside revegetation n. In a number of states, roadsides damaged during roadwork must be revegetated. Often, this revegetation makes use of a mix of native prairie plants. In Minnesota, there is a chain of "wildflower highways" that span the state. (see Minnesota Department of Transportation -- MnDOT.) (rrl)

root n. (Anglo-Saxon *wyrt*, root) ①The part of a plant, usually below the ground, that holds the plant in position, draws water and nutrients from the soil, stores food, and is typically non-green. ②The typically underground extension of the stem that tends to grow downwards, not bearing leaves and absorbing minerals and water from the soil or substrate. ③The descending axis of a plant that anchors and absorbs moisture from the ground, lacks nodes and internodes. ④The underground part of a plant that anchors the plant to the ground & absorbs nutrients & water (news).

root ball n. The intact ball of earth or growing medium containing the roots of a nursery plant.

root collar n. See collar.

root flare or trunk flare n. ①The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.

root-nodule bacteria See Rhizobia

root pressure n. ①Pressure in the roots which, when the shoot is cut off, will cause liquid to secrete from the root stump; the mechanisms and tissues involved in this process are not clearly understood.

root pruning adj. The systematic pruning of roots of nursery plants growing in the field, in order to stimulate branching of roots and the production of fibrous roots.

rootlet n. ①A radicle; a little root or small branch of a root.

rootstock n. () ①A swollen root and/or part of all of a very short stem, sometimes partly above the ground; the same as a rhizome; or the root system to which a scion is grafted. ②Used loosely to mean a main root or an underground root-like stem or branch. Cf caudex.

root tuber n. Swollen food-storing roots.

rose hip n. (Old English *héope*, *híope* weak feminine, from same root as Old Saxon *hiopo*, Old High German *hiufo*, *hiafo*, Middle High German *hiefe* weak masculine, thorn-bush, bramble) ①"The fruit of the rose, esp. of any of several wild or dog roses, which is a small rounded pome, typically orange red in colour, with a variety of uses including the making of preserves and syrup. A rose hip is a pseudocarp (a false fruit) consisting of a hollow receptacle containing numerous achenes." (oed)

roseate adj. (Latin *roseus -a -um*, rosy) Rose-colored; rosy.

rosette n. (French, diminutive of rose) ①A group of organs, such as leaves, clustered and crowned around a common point of attachment; ②referring to a dense cluster of basal leaves, particularly with reference to winter annuals or biennials, or to scapose plants in which all the leaves are basal; ③a cluster of spreading or radiating basal leaves, as the winter rosettes in *Dichanthelium*, ④a group of organs radiating from the centre, especially with numerous overlapping leaves appressed to the soil. ⑤A ± dense and circular cluster of leaves (mfn). ⑥A dense cluster of flowers or leaves radiating around a central axis, usually basal in the case of leaves. Hence rosulate. ⑦A circle of tightly packed leaves, usually at ground level (news).

rostellar adj. Pertaining to the little beak, or rostellum, found in some orchid flowers such as *Goodyera*.

rostellum n. A slender projection like a bird beak; on orchids, an outgrowth of the column that keeps the stigma lobe separate from the anthers to avoid self-pollination (news).

rostrate adj. Beaked.

rosulate adj. ①Turning outward and downward, such as in the petals of a double rose. ②In the form of a rosette.

rotate adj. (Latin *rota*, wheel) ①Shaped like a wheel. ②Radially spreading in one plane. ③Pertaining to corollas which are more or less flat and circular in general outline; ④wheel-like. ⑤ (Of a corolla) having a broad, flat limb and a very short tube (mfn). ⑥A saucer-shaped corolla where the corolla tube is short and petals are generally reflexed. ⑦A corolla that is platter-shaped, without a basal tube (news).

rotund, rotundate adj. () Rounded, almost circular. Cf orbicular.

rounded adj. ①Having an arched apex rather than a pointed and angled apex. ②With a gently curving outline (news).

rudiment n. An imperfectly developed organ or part, specifically used in reference to florets. The rudiment of a spikelet is formed by structures of a reduced sterile floret.

rudimentary adj. () ①Primitive; ②Poorly developed. ③Arrested at an early stage of development; ④Not fully developed and non-functional. ⑤Usually a small, imperfectly developed structure, generally reminiscent of an earlier evolutionary stage. ⑥Small & arrested early in development (news).

rufescent, rufous adj. Reddish-brown.

rufous adj. () ①Reddish, of all shades. ②"Reddish-brown".

rugose adj. (Latin *ruga*, a wrinkle) ①Having or full of wrinkles; ②corrugated; ③ridged; ④wrinkled or folded; ⑤having horizontal folds in the surface; ⑥wrinkled, (viz.) ⑦Wrinkled or puckered in appearance (mfn). ⑧Possessing a "wrinkled" surface. ⑨Rough or wrinkled (news). Diminutive rugulose.

rugulate adj. Covered with low, mounded ridges or wrinkles, not forming a honeycomb pattern; usually refers to the texture of a quillwort (*Isoetes*) megaspore (news).

rugulosa adj. Same as rugose.

rugulose adj. Minutely or slightly rugose.

runcinate adj. (Latin *runcina*, a plane) ①Pinnatifid, with the lobes convex before and straight behind, pointing backward, like the teeth of a saw, as in the dandelion leaf; ②coarsely and sharply cut or incised, the principal divisions typically directed backward, typified by the leaf of a dandelion; ③pinnately and rather sharply incised with the lobes directed backwards away from the apex.

runner n. (Anglo-Saxon *rinnan*, to run) ①A specialized stolon consisting of a prostrate stem rooting at the node and forming a new plant which eventually becomes detached from the parent plant as in a strawberry plant. ②A trailing shoot taking root at the nodes. ③A filiform or very slender stolon. ④A slender, prostrate stem which terminates in a bud that produces leaves and roots. ⑤The ultimate branch of a stolon or rhizome (news). Cf stolon.

rupestral adj. () Growing among rocks or on rock walls .

rust Generic term for various plant diseases, especially those caused by a group of parasitic fungi that attack the leaves and stems of plants.

S

sac n. A pouch or bladder. ②A pouch-like structure. Hence saccate.

saccate adj. (Latin *saccus*, bag) Having the form of a sac or pouch; ②pouchlike; having a sac; swollen or sac-shaped; see the second glume of *Sacciolepis*. ③Shaped like a pouch or bag (news).

sagenoid adj. ①Of anastomosing venation with regular areoles with included, free, often branched veinlets pointing in all directions. ②Like species of *Tecaria*.

sagittate adj. (Latin *sagitta*, arrow) ①Shaped like the head of an arrow with the basal lobes pointing downward; ②shaped like an arrowhead, usually referring to leaves in which two basal lobes are directed backward and downward. ③Arrowhead-shaped, with basal lobes pointing downward (not divergent, but often \pm parallel) (mfn). ④Leaf base consists of two triangular lobes pointed downward, like an arrow-head (news). Cf hastate.

saline adj. Salty. Cf brackish, marine.

saline soil Soil on which plant growth is usually dominated by salt tolerant plants, or void of any vegetation, and which, because of its high salt concentration, is problematic for agriculture.

salt tolerant plant Plant that thrives in saline soils.

saltation n. The transport of sand-sized sediment particles in which grains are moved by wind in a series of short leaps or bounces.

salverform adj. (Latin *salvus*, safe; *forma*, shape, figure, image) ①Said of a corolla in which the tube is essentially cylindrical, the lobes abruptly spreading; ②a gamopetalous corolla; ③having a slender tube abruptly expanded into a flat limb, like a phlox blossom. ④A corolla having a long slender tube that flares abruptly at the end. ⑤Having a slender tube and abruptly expanded flat limb (mfn). ⑥A corolla with a basal tube that expands out into a flat limb (news).

samara n. (modern Latin use of Latin *samara* or *samera*, *samerae* seed of the elm from Pliny) ① “The indehiscent winged fruit of the elm, ash, sycamore (etc).” (oed, sycamore in the European sense, *Acer pseudoplatanus*) ①An indehiscent, winged fruit. Winged achenes are termed samaras, as in ash or elm, the small nutlets of birch and alder are also achenes. A winged nut or achene in which the wing(s) is (are) longer than the seeded portion (sk08). ②A dry indehiscent nut-like fruit with a well developed wing (mfn). ③A winged, dry, indehiscent fruit (achene) that has wings (news).

samarium n. ①A schizocarpic fruit breaking up into indehiscent fruitlets that bear wings longer than the seeded portion, eg *Acer* spp., *Dipteronia* spp. (both *Sapindaceae*) (sk08). ② “Chem. A hard grey metallic element of the lanthanide series, found in small quantities in monazite sand, samarskite, and other rare earth minerals. Symbol Sm; atomic number 62” (oed)

samaroid n. Resembling a samara.

sap n. A watery solution of sugars, salts, & minerals that circulates through the vascular system of a plant (news).

saprophyte n. (Greek *σᾰπρός*, *sapros*, putrid, and *φυτόν*, *phyton*, plant) ①A plant incapable of photosynthesis, but not directly parasitic on any green plant (usually on a fungus) (mfn). ②An organism using decaying or non-living organic matter for nourishment. ③A plant which grows on and derives nourishment from a dead plant or organic matter. ④A plant that derives its nutrients from dead organic matter and lacks the chlorophyll that gives most plants their green color. Hence saprophytic, of or relating to saprophytes. Cf parasite, holophyte, hemiparasite.

saprophytically adv. () After the manner of saprophytes. Said of a plant living on dead or decaying organic matter. Hence saprophytism.

sarmentose adj. (Latin *sarmentosus*, from *sarmentum*, twig; plus, *-osus*, *-ose*) ①Producing slender prostrate branches or runners; ②producing slender, often, prostrate, runners or branches. ③Producing long, flexuose runners or stolons.

sarcotesta n. (from Greek σαρκ-, σάρξ, *sark-*, *sarx*, flesh, and *testa*, *testae*, an earthenware jar) A fleshy seed coat.

satiny adj. Of an indumentum of fine hairs closely appressed to form a complete, very smooth, more or less shiny cover.

savanna, savannah n. (post-classical Latin *zauana* (1516 in the passage “Hauynge towarde the southe a playne of twelue leages in breadth and veary frutefull. This playne, they caule *Zauana* [L. *Zauánam*].”) and its etymon Spanish *řzavana*, *řsavana* (1519 as *řçavana*; now *sabana*), from Taino *zavana*.) ①Vegetation consisting mostly of grassland with trees scattered (not forming a closed canopy) or in scattered clumps (mfn). ②A community dominated by species of grass with scattered trees; mostly strongly seasonal.

③oed 1a. An open plain of long grass, freq. with scattered drought-resistant trees, which is characteristic of certain tropical and subtropical regions with distinct wet and dry seasons (in early use esp. with reference to tropical America). Also: the grassland or vegetation of such a plain. b. Chiefly *Caribbean*. A tract of grassland with defined limits such as a meadow, paddock, ranch, or park. 2. *N. Amer.* An area of marsh, bog, or other damp or low-lying ground. 3. *N. Amer.* Originally: the open pine woodland of parts of the southern United States and Central America. In later use also (with distinguishing word): any of various kinds of open woodland dominated by a particular kind of tree.

Savan(n)a is also a form of Shawnee, an Algonquian Indian People.

scaberulous adj. Minutely scabrous, "more or less rough".

scabrid adj. (Latin *scabridus*, rough) Slightly roughened.

scabridulous adj. ①Minutely scabrous; "minutely rough".

scabrous adj. (Latin *scabrosus*, rough) ①With small points or knobs, like a file; ②scaly, scabby, rough; rough or harsh to the touch; caused by short, stiff, angled hairs on the surface. ④Having a roughened surface caused by very short stiff hairs or short sharp projections, "rough short-hairy". ⑤Rough (to the touch) (mfn). ⑥Rough to touch due to minute, hard projections. ⑦With the rough texture of sandpaper (news). Diminutive scabridulous, scaberulous.

scabrula n. A stiff pointed projection or a short stiff hair.

scalariform adj. Ladder-like, the markings suggestive of a ladder. Eg venation.

scale n. ①A minute leaf or bract, or a flat gland-like appendage on the surface of a leaf, flower, or shoot; generally a thin, sometimes scarious, much reduced, leaf, bract, or perianth part. ②A small, flat structure resembling the scale of a fish. ③Any small thin bract, such as covers a bud or subtends an individual flower in *Poaceae* and *Cyperaceae*, or an individual flower in an ament (mfn). scale n. ④A small, often leaf-like organ, wider than thick, often dry and membranous. ⑤A tiny, modified, usually wedge-shaped leaf; in *Carex* spp, the tiny bract associated with the perigynium; or, in some *Asteraceae*, a pappus of flattened chaff (news). Cf hair, bristle.

scalloped adj. Said of margins marked by a series of circular or arc-shaped teeth or projections.

scandent adj. (Latin *scandent-*, *scandens*, present participle of *scandere*, to climb) ①Climbing, usually without special climbing organs. ②Climbing plant of a creeping or scandent nature.

scanning electron microscope n. A scientific instrument that produces highly-magnified images by using an electron beam to scan the specimen.

scape n. (Latin *scapus*, the shaft of a pillar, the stalk of a plant, or Latin *scapus* shaft of a column, stalk) ①A stem growing from the crown of the root, bearing the blossom without leaves; ②a peduncle arising at or beneath the surface of the ground in an acaulescent plant (as the bloodroot, tulip, or primrose); ③broadly a flower stalk, the leafless stem of a flower or inflorescence; ④a leafless flowering stem arising directly from the ground; or, such a stem which possesses minute scale-like leaves much smaller than the basal leaves. ⑤A peduncle arising from the base of a plant (directly from root, rhizome, etc); a "leafless stem" (mfn). ⑥A peduncle arising from near the ground, leaflets or with scale-like leaves. ⑦A flower or inflorescence stalk that arises without leaves from ground level (news).

scapiform adj. (from *scapi-* and *-form*) Resembling a scape especially in being a stem without leaves.

scapose adj. ①Scape-bearing; ②scapigerous; ③consisting of a scape; ④having or appearing to have a scape.

scarious adj. (Late Latin *scariousus*, rough) ①Tough, thin, dry, and semitransparent, typically, thin, dry, papery or membranous; ②usually not green (eg, the margins of a *Poa* lemma). Thin and dry, papery in texture (mfn). ④Thin, dry and +/- translucent. ⑤Having chaffy, membranous, brown or "wax-papery" edges. ⑥Thin & dry, often paper-like (news).

scent n. The smell given off by a plant or plant part; usually indicates an underlying chemical or signal (news).

schizocarp n. (Greek *σχίζειν*, *skhizein*, to split or to cleave, and *καρπός*, *karpos*, fruit) ①A dry fruit, as in the maple, that splits at maturity into two or more one seeded carpels which remain closed; ②a dry compound fruit that splits at maturity into several indehiscent one-seeded carpels, or mericarps; ③a pericarp which splits into two to several one-seeded portions, termed mericarps or nutlets. ④A fruit that splits at maturity into 2 or more (usually indehiscent and 1-seeded parts which are dispersed as separate units (mericarps) (mfn). ⑤A term applied to dry fruits which break up into two or more one-seeded mericarps without dehiscing (oed). ⑥A dry, dehiscent fruit that splits into sections, each holding a single seed, as in some plants in the *Apiaceae* (carrot family) (news).

schizocarpic fruit n. (New Latin, from Greek *skhizo-*, from *skhizein*, to split, and *καρπός*, *karpos*, fruit) ①One in which the carpels are partially or completely joined at the time of pollination but separate at maturity into their carpellary constituents, sometimes dividing into mericarps, each part functioning as a seed dispersal unit (sk08).

sclerenchyma plural *sclerenchymas* or *sclerenchymata* n. (Greek *skleros*, hard; *enchyma*, an infusion) ①Tissue of uniformly thick-walled, dead cells in the stem whose principal function is mechanical. The cells are usually grouped into fibers. ②A protective or supporting tissue in higher plants composed of cells with walls thickened and lignified and often mineralized. ③Mechanical tissue of cells with immensely thickened walls, often without living cell matter. Hence sclerified, sclerenchymatous.

scorpioid adj. (Greek *skorpois*, scorpion; *eidon*, form) ①Resembling a scorpion's curled tail. ②Said of a circinnately coiled determinate inflorescence in which the flowers are two-ranked and borne alternately at the right and left. ③Resembling a scorpion's curling tail; as in an inflorescence with small alternating branches that curves to accommodate developing flowers (news).

scrambling adj. Slightly reclining.

scree n. Relatively small broken rock material characteristic of alpine areas, usually a result of freeze-thaw cycles.

scrobiculate adj. Marked with minute depressions.

scrub n. A community dominated by shrubs

scurf n. ①Fine scaly covering. Hence scurfy.

scurfy adj Bearing mealy or bran-like granules or scales. ②Covered with small, dandruff-like scales (news).

scutelliform adj. Saucer-shaped; a slightly upwardly rounded corolla (news).

scutellum pl *scutella* n. A shield. Hence scutate, scutelliform, shield-shaped.

second glume ①The uppermost of the two glumes; ②an odd-veined, empty bract of the spikelet.

secondary adj. ①Not primary, once removed from primary, subordinate; ②the branches that arise from the primary branches. Compare primary.

secondary spathe n. Spathe supporting a second tier of branching within the compound panicle of some *Andropogoneae*.

secondary thickening n. The production of additional vascular and supporting tissue through the activities of a vascular cambium.

-sect Suffix meaning deeply divided or lobed almost to the base, eg. pinnatisect, palmatisect. Cf dissected, -fid.

section n. A subgroup of a genus used to identify closely related species.

secondary succession Plant establishment into a recently disturbed habitat that was previously vegetated. See succession and primary succession.

secund adj. (Latin *secundus*, following, from root of *sequi* to follow; consult oed; more appropriately from the second meaning of the Latin preposition *secundum*, after; according to; along or next to, following or immediately after, close behind) ①Arranged or growing on one side only, as flowers or leaves on a stem; ②having some part or element arranged on one side only, as in the flowers of many goldenrod species; ③arranged or oriented along one side of an axis, typically referring to the flowers of an inflorescence. ④Having all flowers or branches borne on one side of the axis. ⑤“Arranged on or directed towards one side only, especially in botany, of the flowers, leaves, or other organs of a plant” (oed) ⑥With the parts directed to one side only. ⑦Bearing all like structures on one side of an axis, as with leaves or flowers all pointing to one side (news).

sedge Grass-like plants of the *Cyperaceae* family, often found on wet ground or in water, usually with triangular, solid stems, three rows of narrow, pointed leaves and minute flowers borne in spikelets.

seed n. (Anglo-Saxon *saed*, *séd*, seed, ultimately from Germanic **sādi-*, *sādo-*, from root **sā-* to sow) ①The part of a flowering plant that contains the embryo and will develop into a new plant if sown; ②a fertilized and mature ovule. ③ “An individual grain of seed. In *Botany*, technically restricted to the fertilized ovule of a phanerogam. Popularly applied also to the ‘spore’ of a cryptogam, and to certain ‘fruits’ (in the scientific sense of the word) which have the appearance of seeds, eg that of the strawberry.” (oed) ④The organ of seed plants (spermatophytes) that encloses the embryo together with a nutritious tissue inside a protective seed coat. Seeds develop from integumented metasporengia (ovules) the defining organ of the seed plants. (sk08) ⑤A mature, fertilized ovule that contains the developing embryo (developing plant) (news).

seed cone n. An organ on conifers that contains the reproductive structures; the familiar "pine cone" is the organ that produces seeds (news).

seed dormancy The inability of a healthy seed to germinate under favorable conditions unless strategies are used by natural or artificial means to break the dormancy.

seed plant n. Plants that produce seeds, see *Spermatophyta*.

seed size n. Seed size in *Phaseolus vulgaris* is one of several seed characteristics influencing consumer acceptance. Thus Guatemalans prefer small-seeded black beans while Colombians favor large-seeded red beans.

In general beans from the Mesoamerican center of domestication are small-seeded; those having an origin in the Andes of Ecuador and Peru are large-seeded. (rrl)

seed sterilization n. A method used to remove contaminant organisms from the surface of seeds. Laundry bleach is commonly used, although, where the seed must be scarified as well to break dormancy, concentrated sulfuric acid is also effective. (rrl)

seed stratification A method of pre-treating seeds to simulate natural conditions that a seed must endure before germination to allow the seed to overcome seed dormancy.

Seed tag A legal document describing the contents of a seed lot and the party responsible for providing this information.

seed test A document describing the contents of a seed sample. Information includes species name, variety, percent seed purity, which includes pure seed of tested species, other crop seed, weed seed and inert material percentages. Also included is the seed viability (percent germination, dormant and hard seed) and the names of any weed or crop seeds.

seed yield The quantity of harvestable seed produced.

seedling vigor Those seedling properties which determine the potential for the plant to continue its growth toward maturation under a wide range of field conditions.

segment n. ①One of the units of a leaf or perianth that is divided but not fully compound. ②Each free part of a divided whole, eg the subdivisions of a divided leaf.

selected class seed Plant material that exhibits characteristics of a variety but has not been definitively proven to have traits that can be inherited by subsequent generations. It is usually material that is undergoing testing and awaiting conclusions. It may be field produced or harvested from natural stands.

self incompatible n. In some plant species, embryos initiated by fertilization of the ovary with pollen from the same plant do not develop. All seed then results from cross pollination between plants. (rrl)

semelactant (bamboos) adj. Inflorescence with glumes not subtending viable buds or branches.

semi- adj. Prefix meaning half.

semi-aquatic n. A plant that may tolerate partial submersion in water or a plant that roots in the soil but produces aquatic leaves.

senesce The processes of deterioration that terminate naturally the life of an organism.

senescent adj. ①Growing old; aging. ②The process of becoming old. ③Nodules formed on the root of a host have a finite life span, usually 50-60 days. Plants can have several "crops" of nodules in a single growing season, and in leguminous trees current nodules may be at some distance from the stem. The breakdown of nodules over time is called senescence. (rrl) ④Aging, about to die back (news).

sensu lato adj. adv. (from Latin *sēnsū lātō*, ablative case of *sensus latus*, literally sense broad) In the broad sense, used as an adjective or adverb.

sensu strictu (from Latin *sēnsū strictō*, ablative case of *sensus strictus*, literally sense tight or sense close) In the narrow sense, used as an adjective or adverb. Often abbreviated: *s.s.*, *s. str.*, *sens. str.* or *sens. strict.*

sepal n. (New Latin *sepalum*, from French *sepale*; Latin *separatus*, separate; made after *petalum*, petal; an invented word, perhaps from *petalum* and Greek *skepe*, cover, blanket) ①Any of the leaf divisions or segments of the calyx; when a calyx consists of but one part, it is said to be monosepalous; when of two parts, it is said to be disepalous; when of a variable and indefinite number of parts, it is said to be polysepalous; and when the parts are

more or less united, it is said to be gamosepalous. ②“Each of the divisions or leaves of the calyx of a flower” (oed). ③In flowers where the outer whorl of the perianth is different from the inner whorl, the elements of the outer whorl are addressed as sepals. The summary of the sepals from the generally green calyx of a flower (sk08). ④One of the divisions of the calyx (mfn). ⑤The outermost whorl of floral leaves, also called the calyx and is usually green in color. ⑥A single part of the outermost whorl of flower organs (the calyx) (news). Often green, but sometimes other colors (news).

sepaloid adj. ①Of the texture of, or resembling, a sepal. ②An organ that resembles a typical, leaf-like sepal in color (green, brown or drab), texture, & shape (news).

septae n. Erroneous plural of *septum*, correctly *septa*.

septate n. (Latin *septatus*, surrounded by a fence) ①Having or divided by a septum or septa; ②divided by partitions. (Nodulose), transversely wrinkled at regular intervals, "cross-wrinkled". ③With cross-partitions; jointed (mfn). ④With one or more partitions (septa) (news).

septate-nodulose adj. With swollen cross-partitions as in cross-veins of some leaves (mfn).

septicidal adj. (Latin *sēptum*, *sæptum*, a partition, and *cædĕre*, to cut or divide) ①Dividing through middle of ovary septa. ②Dehiscing or breaking open at a natural dividing line. ③Referring to capsules which dehisce through the side walls or partitions, not opening directly into the locule. ④“Applied to the form of dehiscence in which the pod splits through the dissepiments. Also to the capsule so divided.” (oed) ⑤Splitting along a partition (septum) (news).

septicidal capsule n. A capsular fruit opening completely along ventral sutures, each valve consisting of the whole carpel with the placenta attached (sk08).

septifragal adj. (Latin *sēptum*, *sæptum*, a partition, *frag-*, root of *frangĕre* to break, and -al) “Applied to the form of dehiscence in which the septa are separated from the valves” (oed)

septifragal capsule n. A capsular fruit that incompletely opens along the dorsal or ventral sutures by a break in the partitions (septae) (sic) nearer the central axis, leaving persistent columella after the valves have separated (sk08).

septum pl *septa* n. (Latin *sēptum*, *sæptum*, a partition, from *sēpĭre*, *sæpĭre* to enclose, from *sēpĕs*, *sæpĕs* hedge) ①A partition separating two cavities or masses of tissue, as in fruits. ②“In Botany, the division-wall of a cell, a partition in a compound ovary or spore. Anatomy ... eg the partition between the nostrils (*septum nasi*), the membrane separating the ventricles of the heart (*septum cordis*). *Septum lucidum* or *pellucidum*, a thin double layer of tissue forming a partition between the two lateral ventricles of the brain” (oed). ③A partition; in an ovary, a partition formed of the fused walls of adjacent carpels. ④A partition or cross-wall. ⑤A partition (news). Hence septate, internally divided by transverse partitions.

seral stage The term used for each successional stage of an ecosystem from a disturbed unvegetated states to a climax plant community.

-seriate Suffix indicating arranged in rows, or in a series of rows eg uniseriate, biseriate, multiseriate etc.

sericeous adj. ①With silky hairs; ②clothed with soft, straight appressed hairs. ③A surface with long, soft, appressed hairs, giving a silky appearance and texture, "silky-hairy". ④Silky with long, soft hairs (news).

series n. Number or group of similar objects arranged in a row.

seriform adj. Having the form of a bristle.

serological testing n. Bacteria injected into an animal such as a rabbit, induce the production of substances termed antibodies. These then react with the bacteria causing them to be precipitated. Since antibodies only react

with the organism that caused them to be formed, or one very similar to it, serological reactions are also of value in identifying particular bacteria, for example the rhizobia. (rrl)

serotinous adj. (Latin *sērōtinus*, from *sērō*, adverb of *sērus*, late) ①Produced late in the season; ②late to open; having cones that remain closed long after the seeds are ripe. ③ “Of a cone: remaining long unopened, slow to release seed” (oed)

serotiny n. (from Latin *sērōtinus*, coming late, from *sērō*, at a late hour, from *sērus*, late) ①Late in developing or blooming, in context with seeds referring to the condition in plants that maintain an aerial seed bank by holding on to their fruits for a long time after they have matures. Serotiny is an adaptation to fire probe habitats: the fruits of serotinous plants release their fruits after exposure to high temperatures. (sk08)

serrate adj. (Latin *serrare*, to saw) ①Notched on edge like a saw; ②having sharp notches along the edge pointing toward the apex; ③"sharp-toothed". ④Like a saw edge, as a serrate leaf. When a serrate leaf has small serratures upon the large ones, it is said to be double serrate, as in the elm. A serrate-ciliate leaf is one having fine hairs, like eyelashes, on the serratures. A serrate-dentate leaf has the serratures toothed. ⑤Saw-toothed with the teeth angled toward the apex, sharp teeth typically forward pointing. ⑥With sharp, ± forward-pointing, marginal teeth. In a doubly serrate margin, there are teeth on the primary teeth (mfn). ⑦With sharp teeth, oblique to the margin, pointing apically like a saw. ⑧With forward-pointing, sharp teeth (news). Cf crenate, dentate. Diminutive serrulate.

serrulate adj. ①Minutely serrate (mfn). ②Said of a leaf margin with small serrated teeth. ③With small, forward-pointing teeth on the margin, finely serrate (news).

sessile adj. (Latin *sedere*, to sit) ①Sitting directly on base without support, stalk, pedicel, or peduncle; ②attached or stationary as opposed to free living or motile; ③without a pedicel or stalk; ④not stalked, attached directly to the axis or organ. ⑤Without a stalk, "unstalked". ⑥Attached without a stalk (mfn).

seta pl *setae* n. (Latin *seta*, bristle) ①A bristle or bristle-like structure. ②Fine, bristle-like structure. ③A short, thin, straight bristle (news). Hence setose, with bristles. Diminutive setulose.

setaceous adj. (Latin *seta*, a bristle) ①Bristly, bristlelike, or with the character of a bristle; ②set with bristles; ③consisting of or having bristles; ④slender and bristle-like. ⑤Bristle-like (mfn).

setae n. ①A rigid bristle; ②sharp pointed bristle.

setiferous adj. Bearing bristles.

setiform adj. Bristle-like.

setose adj. ①Beset or covered with bristles. ②Bearing setae or bristles.

setulose ①Having minute bristles. ②With minute bristles (or stiff cilia) (mfn).

sexual adj. Concerned with reproduction through the union of male and female gametes to form a zygote which develops into a new plant. Cf asexual, vegetative.

shade tolerance The ability of a plant to tolerate slightly to fully shaded areas. Tolerance varies greatly by species.

sheath n. (Anglo-Saxon *sceth*, shell or pod) ①A protective covering; ②lower part of leaf enveloping stem or culm; the lower part of a leaf that encloses the culm; ③typically open or split and overlapping at the margins; a tubular structure effected by the formation of leaf margins around the stem. ④A +/- tubular structure surrounding an organ or part. ⑤A thin tubular organ that partially or wholly surrounds another organ; in grasses, the basal portion of the leaf blade that wraps around the stem. ⑥The base of a grass leaf that surrounds the stem. ⑦A tubular tissue enclosing another tissue, usually referring to the area where a leaf base encloses the stem (important in grasses & *Cyperaceae*) (news).

shoot n. (Middle English *schoten*, to shoot, dart) A young branch which shoots out from the main stock.

short-day plant n. A plant requiring less than 12 hours of daylight in order for flowering to occur.

short shoot n. A peg- or knob-like shoot (branchlet or other new growth) with closely crowded leaves (news).

shrub n. ①A woody plant, typically smaller than a tree, and typified as being branched from the base with two or more main stems. ②A woody perennial plant, less than 10 m tall, with several basal stems. ③A woody perennial plant that is generally less than 10 feet tall and has several woody stems, none of which is dominant (unlike a tree that has a single stem). Under certain conditions some forbs become shrubs and some shrubs become trees. ④A woody plant lacking a tree-like form, usually shorter than 6m (18 feet) & with many stems at the base (news).

siderophores n. Substances produced and expelled from the cell of some species of bacteria under conditions of iron deficiency. They complex to iron in the soil solution and are then reabsorbed and processed, providing the organisms with an efficient mechanism for obtaining a scarce resource. (rrl)

silage Livestock feed that is typically stored for later use and is prepared by fermenting.

siliceous adj. Containing crystals of silica.

silicle n. ①A short silique (see next) (mfn). ②A dry fruit of plants in the *Brassicaceae* generally not more than two times longer than wide which opens along the edges leaving the seeds attached to a central partition. ③A fruit, less than 3 times as long as wide, splitting by two valves (in *Brassicaceae*) (news).

silique n. (Latin *siliqua*, a pod) ①The long, narrow pod of plants of the mustard family, *Cruciferae*, with valves which fall away from a frame bearing the seeds; ②a specialized capsule in which a frame-like placenta or partition separates the two valves, most often occurring in the mustard family. ③A two-carpellate fruit which dehisces from the base upward, leaving a septum between the locules, characteristic of the *Brassicaceae*; usually elongate; if short, called a silicle (mfn). ④A long slender fruit of the Brassicaceae family which splits open along the edges leaving seed attached to a central partition. ⑤A fruit, 3 times as long as wide, splitting by two valves (in *Brassicaceae*) (news).

silky adj. ①With a covering of very fine, more or less appressed, lustrous hairs.

simple adj. ①Of a leaf, not compound; ②of an inflorescence, unbranched not compound; ③also, referring to a stem without branches or modifications. ④Composed of a single or unbranched part; eg, a leaf with one blade, a pistil of one carpel, an unbranched inflorescence, an unbranched hair (mfn). ⑤A leaf not compounded into leaflets, or an unbranched inflorescence. ⑥Composed of one piece or series, not divided. ⑦Undivided or unbranched (news). Cf composite, compound.

simple fruit n. A fruit that develops from one flower with only one pistil, in which a pistil can be either a single carpel or several joined carpels (sk08).

single adj. ①(Of flowers) with one cycle of showy perianth parts. (Not the same as solitary, which means only one). ②Of serrations, without additional teeth on the primary teeth. (mfn) Cf double.

single nut n. See camara.

sinuate adj. (Latin verb *sinuare*, to bend) ①Having a wavy margin, as some leaves; ②wavy, having a wavy margin. ③A pronouncedly waved leaf margin, "wavy". ④Broadly scalloped, with \pm open sinuses and low teeth; coarsely dentate or wavy-margined (mfn).

sinuous adj. ①With one or more bends or "kinks," as in the style of some *Carex* (mfn). ②Shallowly curved.

sinus pl *sinūs*, **sinuses** n. (Latin *sinus*, a bent surface, a curve, a fold or hollow, bosom, a bay) ①The rounded depression between two consecutive lobes as of a leaf. ②A cleft or dissection between two lobes. ③The space or

cleft between two lobes (mfn). ④The gap or recess between two lobes or segments. ⑤"Notch", a cavity or a depression between two adjacent structures (eg, the space between two lobes of a leaf). ⑥The space between two projecting lobes or teeth. ⑦The indented area between two lobes of an organ (news).

sinus membrane n. A hyaline flap of tissue occurring in the base of the sinus in some ferns.

siphonostele n. ①A cylindrical stele with a hollow parenchymatous centre; amphiphloic siphonostele (= solenostele) has phloem on both the inside and outside of the cylinder, an ectophloic siphonostele (=medullated protostele) has phloem on the outside only.

site adapted seed Seed from plants that originate from similar ecological conditions to those found at the site where they are being planted.

slender adj. Long and thin.

slough n. (Anglo-Saxon *sloh*, a slough, Old English *slóh* (*slóg*, *sló*) Of doubtful origin; perhaps ultimately related to *slonk*, of doubtful origin: compare Danish dialect *slånk*, *slunk* a hollow or depression in the ground, and Middle Low German *-slunc*, Low German *slunk*, German dialect *schlunk*, *schlonk* gullet, gorge, abyss) ①A wet place of deep mud or mire; ②a sluggish channel; a swamp, bog, or marsh, especially one that is part of an inlet or backwater. ③ "a. A piece of soft, miry, or muddy ground; *esp.* a place or hole in a road or way filled with wet mud or mire and impassable by heavy vehicles, horses, etc. N. Amer. /slu:/. = slew n.1 Also, a side channel of a river, or a natural channel that is only sporadically filled with water. *U.S. and Canada.* A marshy or reedy pool, pond, small lake, backwater, or inlet" (oed)

small beer n. "Beer of a weak, poor, or inferior quality" (oed).

smooth adj. Without hairs of any type.

soil horizons Developmentally-related layers of soil, each with a characteristic physical, chemical, and biological attribute.

Society of Commercial Seed Technologists: An organization that trains and provides accreditation of seed technologists, conducts research and proposes rule changes, and serves as an important resource to the seed industry.

sod-former A plant that covers the surface of the soil and is held together by a dense network of roots.

sodic soil A soil that has high sodium content

Soil erosion The processes by which soil is removed from one place by forces such as wind, water, waves, glaciers, and construction activity and eventually deposited at some new place.

soil microbial mass The total mass of the living microorganisms in the soil.

soil microbiota Bacteria, fungi, actinomycetes that reside in the soil.

soil organic matter Organic materials in all stages of decomposition.

soil seedbank or soil seed bank The ungerminated but viable seeds that lie in the soil. The summary of all viable seeds present on and in the ground.

soil stabilization Biological, chemical or mechanical treatment designed to improve or maintain the engineering properties of a mass of land.

soil texture A characteristic of soil that is determined by the amount of sand, silt, and clay in a particular soil. General texture designations include medium, fine (clayey), and coarse (sandy).

solitary adj. ①Single, alone; one; ③borne singly, not grouped together.

solonchak n. (Russian *solonchák*, salt marsh, salt lake, from *sol'* salt.) “A type of salty, alkaline soil that has little or no structure, is characteristically pale in colour, and occurs typically under salt-tolerant vegetation in poorly-drained semi-arid or desert regions” (oed).

solarization n. Weevils are a major problem in stored beans and force farmers to sell their produce soon after harvest, lowering prices. In solarization, the beans are covered with plastic and exposed to the heating effects of the sun, killing the weevils. (rrl)

sordid adj. ①Appearing dirty; dirty tinged"; ②definitely not white.

soriferous adj. Bearing sori.

sorophore n. Specialised sporangia-bearing lobes of the leaf margin in species of *Schizaeaceae*.

sorosus, sorosis n. (modern Latin, from Greek *σωρός*, *soros*, a heap) ①A compound fruit composed of many succulent fruitlets that develop on a peduncle where the fruitlets may either free from each other (eg *Broussonetis papyrifera*, *Morus nigra*, both *Moraceae*) or fused (eg *Ananas comosus*, *Bromeliaceae*, *Cornus kousa* subsp. *chinensis*) (sk08). ②“J. Lindley Introd. Bot. i. ii. 180 Sorosis,..a spike or raceme converted into a fleshy fruit by the cohesion in a single mass of the ovaria and floral envelopes. 1845 Encycl. Metrop. VI. 122*/1 The fruit [sc. mulberry], called a sorosis by botanists, has a peculiar aromatic flavour. 1849 J. H. Balfour Man. Bot. §557 Other instances of a sorosis are the Bread-fruit and Jack-fruit.” (oed)

sorus pl sori n. (New Latin, from Greek *soros* heap; akin to Latin *tumere* to swell) ①A cluster of reproductive bodies or spores on a lower plant; ②a clump of sporangia, or spore-producing organs on a fertile frond of a fern; ③a mass of spores bursting through the epidermis of the host plant of a parasitic fungus; ④a cluster of *gemmae* on the *thallus* of a lichen; specifically, in ferns, the clusters or discrete aggregations of sporangia. ⑤A group or arrangement of sporangia in ferns. ⑥A cluster of spore producing structures (sporangia) on the underside of a fern frond.

Source identified seed Seed that has been harvested from natural stands or grown in field production, but has not been tested for its traits. It is produced under the auspices of the state and if it meets the requirements it is labeled as Source Identified Seed.

spadix pl spadices n. (Latin *spadix*, a palm branch) ①A racemose inflorescence with elongated axis, sessile flowers, and an enveloping spathe; ②a succulent spike; ③a fleshy spike of flowers, usually enclosed in a spathe; ④an inflorescence spike typified by a very fleshy axis. ⑤An inflorescence consisting of small sessile flowers on a ± elongate fleshy axis (mfn). ⑥A spike with small, densely crowded, unisexual flowers on a thick and fleshy axis, the inflorescence is subtended by a spathe.

spathaceous adj. Having a spathe, or having the nature of a spathe.

spathate, spatheate adj. Having a spathe or with spathes.

spathe n. (Greek *spathe*, flat blade) ①A large leaflike part or pair of such enclosing a flower cluster (especially a spadix); ②a hoodlike bract surrounding a flower spike. ③A modified leaf sheath that subtends and often encloses some of the inflorescence; ④a foliaceous bract-like or sheathiform structure enclosing or partly enclosing an inflorescence. ⑤A large bract surrounding a spadix. ⑥A single bract (occasionally more) at the base of an inflorescence (equivalent to an involucre, but used only in the monocots) (mfn). ⑦A bract or modified bladeless leaf subtending the inflorescence or part of it.

spatheole – the uppermost spathe supporting the racemes within the compound inflorescence of some *Andropogoneae*.

spathiform adj. Resembling a spathe.

spatulate, spathulate, spatular adj. ① More or less shaped like a spatula or spoon, gradually widening distally and with a rounded tip, as some leaves; ② strongly dilated or expanded toward the distal end; ③ spoon-shaped. ④ Broad and rounded at the apex; narrowing to the base, "spoon-shaped". ⑤ Broad and flat distally, contracted or tapered toward the base; spoon-shaped (mf).

species pl **species**, also *speciēs* [specie is an obsolete and erroneous singular of species] n. (from Latin *species, speciei*, f., sight, appearance, show; splendor, beauty; kind, type) ① A group of interbreeding individuals, not interbreeding with another such group, being a taxonomic unit including two names in binomial nomenclature, the generic name and specific epithet, similar and related species being grouped into a genus; ② the scientific name of a plant; ③ the genus name and the specific epithet together; also equal to the Latin name or binomial; ④ a subdivision of a genus grouping together individual plants with certain distinguishing characteristics; a group of like individuals, as white pine or bur oak. ⑤ "A group or class of animals or plants (usually constituting a subdivision of a genus) having certain common and permanent characteristics which clearly distinguish it from other groups" (oed). ⑥ The fundamental unit of taxonomy, a group of plants of the same morphology, capable of interbreeding, sometimes with +/- distinct varieties; similar species are grouped into genera.

specificity in nodulation n. Specificity in nodulation can affect benefits to inoculation for closely related species. As example rhizobia nodulating white clover will also nodulate subterranean clover, but will not fix nitrogen with this host. (rrl)

sperm nucleus n. The extremely reduced, non-motile male gamete of conifers and angiosperms.

Spermatophyta, spermatophytes n. (Greek *σπερματο-*, *spermato*, combining form of *σπέρμα*, *sperma*, seed, and *φυτόν*, *phyton*, plant) ① Seed producing plants. Group of plants characterized by the female gametophyte being developed and retained within an integumented megasporangium (ovule), which after fertilization of the egg cell develops into a seed. The spermatophytes comprise two major groups, the gymnosperms and the angiosperms. (sk08) ② A major division of the plant kingdom, characterized by reproducing by seed and subdivided into the *Gymnospermae* and *Angiospermae*.

spherical adj. Shaped like a globe or a ball.

spicate adj. (Latin *spicatus*, pp. of *spicare*, to furnish with spikes) ① Having the form of a spike, spike-like; ② resembling or arranged in a spike, an inflorescence but having both sessile and pedicellate spikelets or flowers.

spicate raceme n. An inflorescence type with a rachis bearing some combination of sessile and/or pedicellate spikelets at each node.

spiciform adj. Spike-like. Said of an inflorescence resembling a spike.

spicular adj. Spiky.

spicule n. (Latin *spicula*, a small spike) ① A small, slender, sharp-pointed piece, usually on a surface; ② a small spike of flowers. ③ A hard point or protuberance, typically on a leaf margin. ④ A minute sharp slender point, as on the margins of some leaves (mf).

spike n. (Latin *spica*, spike, ear of corn) ① A long flower cluster attached directly to the stalk; ② an unbranched inflorescence in which the spikelets are sessile on the rachis (main axis); ③ an unbranched inflorescence in which the flowers are sessile or subsessile along an elongate axis. ④ An unbranched inflorescence; flowers are sessile. ⑤ An elongate unbranched inflorescence in which the flowers are sessile; loosely, a dense elongate spike-like inflorescence with crowded flowers (mf). ⑥ An unbranched, elongate, indeterminate inflorescence with sessile flowers; the arrangement of sporangia in *Ophioglossaceae*. Hence spicate.

spikelet n. ① A small spike of a large one; a subdivision of a spike; as the spikelets of grasses; the basic unit of a grass inflorescence, usually consisting of two glumes, one or more florets on a short axis, the rachilla; ② a secondary or small spike; specifically, in the *Poaceae* family, the unit composed of one or two glumes subtending one to several sets of lemma and palea combinations. ③ The unit of the inflorescence in a grass or sedge (ie, a

small spike, with reduced flowers on a central axis) (mfn). ④A small spike; in grasses, the primary inflorescence composed of two glumes and one or more florets. ⑤ the basic unit of a grass inflorescence; usually composed of two glumes and one or more florets on a rachilla.

spikelet pair n. The arrangement of one sessile and one pedicelled spikelet arising from the same node characteristic of the *Andropogoneae*.

spine n. (ME, thorn, spinal column, from Latin *spinsa*, thorn, spine, spinal column) ①A stiff sharp-pointed plant process as a modified leaf, leaf part, petiole, or stipule; ②a sharp pointed, stiff body arising from the epidermis; ③a sharp, stiff, often slender, process; a thorn; ④a sharp pointed end of a branch or leaf; in grasses these are usually flattened and modified inflorescence branches. ⑤Stiff process with a sharp point derived from subepidermal tissue. Hence spinose, spinous. Diminutive spinulose. Cf prickle.

spinescent adj. ①Ending in a spine, or bearing a spine; ②terminated by a spine; modified to form a spine.

spiniform adj. Thorn-like.

spinosa ①Having spines; spiny.

spinulose adj. ①With minute spines or stiff bristles. ②With minute spines; ③like a minute spine (mfn).

spiral n. ①An arrangement of objects along the outline of a coiled spring. ②Borne at different levels along the axis, in an ascending spiral.

splash rain dispersal n. See ombrohydrochory.

spontaneous adj. Growing wild, without cultivation.

sporangiosphore n. The stalk of a sporangium.

sporangium pl **sporangia** n. (from New Latin, from Greek *σπορά*, *spora*, sowing, seed, and Greek *ἀγγεῖον*, *angeion*, vessel, small container, receptacle) ①Spore producing structures. ②Reproductive structure of ferns that produces spores. ③A container with an outer cellular wall and a core of cells which give rise to spores (sk08). ④A case within which spores that are usually asexual are produced or borne: as a : a mother cell that in various bacteria, algae, and fungi produces one or a few cells endogenously b : the spore sac of a moss. ⑤“‘A receptacle containing spores; a spore-case or capsule” (oed). ⑥Broadly: a complex structure in most ferns and related plants that contains numerous spores nourished by a *tapetum* and is usually equipped with an annulus which aids in spore discharge; spore-producing structure.

spore n. (from Greek *sporos*, seed, or modern Latin *spora*, from Greek *σπορά*, *spora*, sowing, seed) A cell serving asexual reproduction (sk08). ①Any of various small reproductive bodies, often consisting of a single cell, produced by mosses, ferns, etc, asexually (asexual spore) or by the union of gametes (sexual spores); they are highly resistant and are capable of giving rise to a new adult individual, either immediately or after an interval of dormancy. ②“‘One of the minute reproductive bodies characteristic of flowerless plants” (oed) ③An asexual, one-loculed propagule of ferns and fern allies. ④A single, vegetative, reproductive cell that does not contain an embryo, in cryptogams. A haploid (n) reproductive cell.

sporeling n. A very young fern plant developing from the prothallus after fertilization.

sporocarp n. (from Greek *σπορά*, *spora*, sowing, seed) ①The fruit case of certain flowerless plants, containing sporangia or spores. ②A thick-walled body containing sporangia (eg. Marsilea). ③The structure that contains the sporangia in ferns.

sporogenous adj. Of tissue or cells in which the spores are formed

sporophore n. A leaf bearing reproductive structures; generally used in reference to the spore bearing leaves of ferns.

sporophyll n. (Greek σπορά, *spora*, sowing, seed) ①A fertile leaf carrying one or more sporangia. Heterosporous plants usually have specialized microsporophylls producing male (micro-)spores and megasporophylls producing female (mega-)spores. (sk08) ②A foliar organ (leaf) upon which one or more sporangia are produced. ③A leaf-like or foliaceous organ bearing reproductive parts or organs (particularly spores). ④A modified leaf bearing sporangia.

sporophytes n. (Greek σπορά, *spora*, sowing, seed, and *phyton*, plant) ①Literally, “spore plant”; the diploid generation in the life cycle of plants that produces sexual, haploid spores giving rise to haploid gametophytes (sk08). ②The diploid spore-producing phase in plants with alternation of generations. ③The diploid stage that produced the spores; the dominant and asexual stage in the life cycle of ferns. ④The generation in the reproductive cycle of plants that produces spores; in ferns generally refers to the conspicuous form of the plant. Cf gametophyte.

spread n. ①A term used to indicate the horizontal width of a shrub or the crown of a tree. Techniques for proper measurement are determined by the particular growth habit of the plant, and may not always be the maximum distance between any two branch tips.

spreading adj. With branches that are widely ascending to divergent from the main axis.

spur n. (Anglo-Saxon *spura*, *spora*, a spur) ①A slender, tubelike structure formed by an extension of one or more petals or sepals; ②an extended sac at the base of a corolla; also refers to a very short branch with closely spaced leaves; ③a short branchlet with a very compact arrangement of leaf scars. ④A slender and hollow floral appendage, generally nectariferous.

squamiform adj. "Scalelike".

squamose adj. Scaly or scale-like. Diminutive squamulose.

squamule n. A small papery scale. Hence squamulose.

squarrose, squarrous adj. (from Latin *squarrōsus* (rare), scurfy, scabby) ①Spreading rigidly at right angle, usually the shape of bracts; ②with spreading or divergent processes or scales. ③Having parts, generally at the tip of a structure, that are abruptly curving and spreading. ④“Composed of, covered with, scales or other processes standing out at right angles or more widely” (oed). ⑤Pertaining typically to perianth or involucre segments which bend outward or downward at the tip.

stable isotopes n. One of two or more species of the same nonradiogenic chemical element having the same number of protons but differing in the number of neutrons. The isotopes of an element have slightly different physical and chemical properties owing to their mass differences.

stalk n. (probably from Danish *stilk*; Swedish *stjolk*; Icelandic *stilker*, a stalk) ①The stem or main axis of a plant, which supports the leaves, flowers, and fruit. ②Any lengthened support on which an organ grows, as the petiole of a leaf or the peduncle of a flower; ③the stem of any organ, as the petiole, peduncle, pedicel, filament, or stipe.

stamen pl **stamens** or **stamina** n. (Latin *stare*, to stand; alternately from Latin, *stāmen*, neuter plural *stāmina*, warp, thread, thread spun by the fates at one's birth to determine the length of his life, a term Pliny applied to the stamens of the lily; akin to Greek στήμων, *stēmōn*, masculine warp, thread, στήμα, *stema*, some part of a plant; also Old Irish *sessam* act of standing, Sanskrit *sthāman* station, Greek *histanai* to cause to stand; basic meaning of standing upright; from Indogermanic **st(h)āmon-*, *-en-*, from **st(h)ā-* to stand) ①The male sex organ of a plant constructed of an anther and a filament, the anther produces pollen. ② “The microsporophyll of the angiosperms, consisting of the sterile filament that carries the fertile anther at the apex; each anther bears four pollen sacs (microsporangia) containing the pollen grains (microspores)” (sk08). ③The male organ of a flower comprising

filament and anther. ④The male organ of a flower, consisting of the pollen bearing anther on a slender filament; ⑤the collective term for stamen is androecium; ⑥pollen-producing structure comprised of the anther and the filament. ⑦The male reproductive organs in flowers, situated immediately within the petals, and is composed, in most cases, of two parts, the filament, and the anther, which is filled with pollen. ⑧One of the male or pollen-producing structures of a flower, usually consisting of a filament and an anther (mfn).

staminate adj. ①Producing or consisting of stamens; ②flowers with stamens but not pistils; ③containing stamen but not the pistil; ④referring either to plants, inflorescences, or flowers which bear stamens but not pistils.

staminode, staminodium pl **staminodia** n. (New Latin from Latin *stamen*, a thread, and Greek *eidose*, form) ①A sterile, sometimes modified stamen. ②A sterile stamen or an organ resembling one; ③a sterile stamen, or any structure lacking an anther but which corresponds to a stamen. ④A sterile stamen (so determined by its location), without an anther, but sometimes cleft, hairy, or otherwise considerably modified (mfn).

stand density The number of individual plants in a given area.

standard n. ①The upper, dilated or expanded, petal in a papilionaceous flower. ②The usually upright larger petal opposite the keel in a papilionaceous flower (mfn).

standing crop n. ①Weight or organic material that can be sampled or harvested at any one time from a given area, but may not necessarily include the entire plant. Usually refers to normal harvesting procedures, unless specified, for the particular plant under consideration.

stele n. The arrangement of vascular tissue in a stem.

stellate adj. (Latin *stella*, star) ①Starlike, star-shaped; ②having many rays radiating out from a common center; ③said of hairs that branch in such a manner as to radiate from a central point; ④star-shaped, usually in reference to hairs which are branched, forked or divided into two to several rays. ⑤ (Of a hair) ± radially branched (mfn).

stem n. (Anglo-Saxon *stemma*, tree stem) ①Main axis of a plant typically above the soil surface, having leaves or scales, and a characteristic arrangement of the vascular tissue; ②the main axis or principal shoot of a plant.

stem tuber n. ①Swollen structures produced by stolons and runners which remain dormant during adverse conditions and later grow into new plants when the conditions become favorable for growth.

steppe n. An extensive area of dry, arid grassland.

sterile adj. ①Without pistils, incapable of reproducing sexually. A sterile floret may be staminate or neuter. ②Not capable of producing a seed. ③Not fertile; lacking reproductive parts or flowers (mfn). ④Also, referring to soil, very poor in nutrients. ⑤Barren, not producing seed, pollen or spores capable of germination; of a plant lacking reproductive organs. ⑥Unable to produce viable seed. Cf fertile, vegetative.

starter doses n. Where soil N levels are low, small doses of nitrogen fertilizer are sometimes applied at the beginning of the season to ensure vigorous early plant growth and nodule formation. The "starter dose" used should be less than that causing inhibition of nodulation and nitrogen fixation. (rrl)

sticker n. Substance used in inoculation to ensure that the rhizobia adhere to the seed during planting. They range from milk or sugar solutions used in simple seed inoculation, to stronger adhesives (40% gum arabic, 5% methyl ethyl cellulose) used in pelleting seed. (rrl)

stigma pl **stigmata** or **stigmas** n. (from Latin *stigma*, from Greek *στίγμα*, *stigma*, mark made by a pointed instrument, brand, from the root **stig-* in *στίζειν*, *stizein* (from **stigy-*) to prick, puncture) ①The upper end of a carpel able to receive pollen grains; the stigma is usually elevated above the ovary by a style (sk08). ②The upper tip or part of the pistil of a flower receiving the pollen. It is generally situated at the upper extremity of the style; the part of the ovary or style that is receptive to pollen for fertilization; the summit of the pistil, which receives the

pollen, often sticky or feathery. ③“That part of the pistil in flowering plants which receives the pollen in impregnation, of very various form, situated either directly on the ovary (sessile) or at the summit (more rarely the side) of the style. Also applied to an analogous structure in cryptogams.” (oed) ④The part of a pistil which is receptive to pollen, usually distinguished by a sticky, papillose, or hairy surface (mfn). ⑤The generally expanded, apical portion of the pistil which is receptive to pollen.

stilt-roots n. Oblique adventitious roots from the stem.

stimulant n.

stipate adj. Pressed together, crowded.

stipe n. (Latin *stipes*, stalk) ①The stalk-like basal part of an ovary, or of a fruit such as an achene; ②the stem bearing pileus in mushrooms and toadstools; ③a stalk beneath the spikelets and bristles of the genus *Pennisetum*; a small connecting stalk; ④Sometimes a small stalk which elevates the pistil or flower above the receptacle or pedicel; also, the petiole of a fern frond or of *Lemna*. ⑤A stalk (generally used when no precise term such as petiole or pedicel is applicable); eg, the short stalk on which some ovaries are elevated above the receptacle (mfn). ⑥A stalk supporting the pistil; also the petiole of the frond of a fern. ⑦A stalk or support; the petiole of a fern frond. Hence stipitate

stipel n. ①A small secondary stipule at the base of a leaflet; ②an appendage of a leaflet analogous to a stipule. ③The stipule-like structure at the base of a leaflet (mfn).

stipitate adj. ①Stalked, as defined above under stipe. ②Borne on a stipe or short stalk, "short-stalked".

stipular adj. Belonging to stipules.

stipulate adj. With stipules.

stipule n. (Latin *stipula*, a stalk, a straw) ①One of two foliaceous or membranaceous processes developed at base of a leaf petiole, sometimes in tendril or spine form, sometimes fused; ②an appendage or bract, normally in pairs, on either side of the base of some petioles or leaf axils. ③An appendage on the stem at the base of a leaf (sometimes connate and sometimes partly or wholly adnate to the petiole); in *Potamogeton* appearing solitary and axillary (mfn). ④An appendage that maybe present on each side of the base of a leaf or petiole at its insertion point on the stem. ⑤One of a pair of leaf-derived organs inserted at or near the base of a petiole. Hence stipulate.

stipuliform adj. Resembling a stipule.

stock n. Rootstock. Cf caudex.

stolon, rarely *stolo* pl *stolones* n. (Latin *stolo*, *stolōnem*, sucker of a plant, or (?) Latin *stole*, *stolonis*, a twig, shoot) ①A stem which grows from a stem above the ground, taking root at the tip, and ultimately developing a new plant; ②a shoot at or below the surface of the ground that produces a new plant at its tip; ③a horizontal, prostrate, running branch or stem, often tending to root at the nodes; ④a horizontal, above-ground stem with modified leaves, nodes, internodes, and axillary buds; ⑤an elongate, creeping, above-ground horizontal stem that roots at the nodes or at the tips. ⑥An elongate above-ground (or at-ground) stem, growing ± horizontally and rooting at the nodes and/or apex (mfn). ⑦+/- horizontal, elongate stem rooting at the nodes and at least partly above the ground. ⑧A horizontal stem which grows along the surface of the soil and which propogates vegetatively by forming new shoots and roots at its nodes. Cf runner.

stoloniferous adj. ①Having stolons; ②bearing horizontal above ground stems that root at the nodes. ③A plant whose stem grows along the surface of the soil and propogates vegetatively by forming new shoots and roots at its nodes.

stoma, pl *stomata* n. (New Latin or Modern Latin from Greek στόμα, *stoma*, mouth) ①A minute orifice between two guard cells in a leaf epidermis, through which gaseous exchange is effected; ②stoma one of the

minute openings in the epidermis of leaves, stems, and other plant organs through which gaseous interchange between the atmosphere and the intercellular spaces within these structures occur; the opening together with its associated guard cells and accessory cells. ③A pore in the epidermis (especially of leaves) for the exchange of gases.

stomium pl *stomia* n. The opening of the annulus in a sporangium through dehiscence occurs and the spores are shed, often marked by thin-walled, enlarged cells.

strain(s) n. ①An isolate of a particular organism, thought to be different from other known organisms of that species (rrl). ②A group of individuals of the same species that have distinctive characteristics but that are not usually considered a different variety.

strain diversity n. Bacteria have a single "chromosome" plus additional smaller pieces of DNA termed plasmids, which can be transferred between organisms. This, plus genetic mutation and DNA rearrangements within the chromosome, means that organisms from the same species can show significant variation. (rrl)

stramineous, stramineus adj. (Latin *stramen*, straw) ①Of or like straw; ②straw-colored; ③tan or straw-colored.

strata n. Layers of sedimentary rock.

stria pl striae n. A fine longitudinal line or ridge. Hence striate.

striate, striated adj. (Latin *striatus*, grooved) ①Beset with fine, longitudinal lines or grooves; ②marked with longitudinal grooves or lines; ③appearing striped; ④marked by narrow lines or grooves, usually parallel; with fine longitudinal lines, channels, or ridges. ⑤With slender lines or stripes or low ridges (mfn).

strict adj. Upright, straight and rigid.

striga pl **strigæ** (Latin *striga* furrow, swath of hay or corn, flute of a column (= *stria*)) A row of stiff bristles; now, a stiff bristle, used mainly as the plural.

strigillose, strigulose adj. (Modern Latin diminutive of *striga*, furrow, swath of hay or corn, row of stacks, stack of hay, flute of a column) Minutely or finely strigose.

strigose adj. (modern Latin *strigōsus -a -um*, from Latin *striga*, a furrow, swath of hay or corn, flute of a column (= *stria*)) ①Covered with *strigæ* or stiff hairs; ridged; ②marked by small furrows; ③surface clothed with stiff, often appressed hairs, these usually pointing in one direction; ④pubescent with appressed hairs; a surface having sharp, appressed and straight hairs that are stiff and often basally swollen, "appressed hairy". ⑤With short, straight, strongly appressed hairs (mfn). ⑥Provided with pointed, appressed, rigid, hair-like scales or bristles.

strigulose, strigillose. adj. (Modern Latin diminutive of *striga*, furrow, swath of hay or corn, row of stacks, stack of hay, flute of a column) ①Minutely strigose; ②covered with small *strigæ* or stiff hairs.

strobile, strobilus pl strobili n. ①An inflorescence, often, but not always, indurated or woody, characterized by a series of imbricated scales; a cone. ②A scaly, cone-like structure that bears spores; an aggregation of sporophylls. Cf cone.

style n. (Old French *style*, *stile*, *stil*, *estile*, etc, from Latin *stilus* (also incorrectly written *stylus*) A stake or pale, pointed instrument for writing, style of speaking or writing; from the root **sti-* (? to prick) Greek *στῦλος*, *stylos*, pillar, column) ①In angiosperms the narrow, elongated part of a carpel or pistil connecting stigma and ovary through which the pollen tubes grow down into the ovary (sk08). ②Slender upper part of pistil, supporting the stigma. ③The middle part of the pistil, often elongated, between the ovary and stigma. ④A usually slender stalk connecting the stigma with the ovary. ⑤“A narrowed prolongation of the ovary, which, when present, supports the stigma at its apex” (oed). ⑥The portion of a pistil between the ovary and the stigma—often narrow

and elongate (mfn). ⑦A generally elongated stalk connecting the ovary and the stigma through which the pollen tube grows.

styliform adj. Resembling a long slender stalk, like a style.

stylopodium n. (Greek *stylos*, pillar; *pous*, foot) ①The fleshy support at the base of the style in flowers of the carrot family, *Umbelliferae*. ②A disk-like expansion of the base of the style, with the term often meaning to include the style as well.

sub- ①A prefix used to denote a lesser degree, an inferior rank, or a lower position; ②prefix meaning nearly, almost, or less than. ③A prefix signifying below, somewhat, slightly or rather. ④A prefix meaning almost, not quite, just below; eg, subterminal, just below the end (mfn). ⑤A prefix meaning not quite, almost, slightly or somewhat, eg subepiphytic, subpeltate.

subalpine zone The area between the continuously forested montane zone and the high elevation alpine zone. It is characterized by a mixture of alpine and forest shrubs and herbs interspersed with patches of trees.

subequal adj. Nearly equal in length.

suberin n. (French *subérine*, from Latin *suber*, *suberis*, cork-tree, cork, and French *-ine* -in) ①The cellular tissue which remains after cork has been exhausted by various solvents.

suberose adj. Corky in texture.

suberize v. ①To be converted into cork-tissue by the formation of suberin, the conversion of plant cell walls into water-impervious corky tissue through infiltration with suberin; ②as allowing the cut surface of a plant stem to suberize before rooting it.

subfamily n. A grouping of similar genera within a family, a category above tribe (viz.)

submerge vt. (Latin *submergere*, to dip or plunge under) To sink or plunge beneath the surface of water.

submersed adj. ①Found under water. ②Normally occurring under water and so adapted (not merely flooded), cf emersed (mfn).

submersed plants n. Plants growing with their root, stems, and leaves completely under the surface of the water.

suborbicular adj. (Latin *sub*, under, below; *orbis*, circle) Approximately circular.

subshrub n. (a rendering of Modern Latin *suffrutex*) ①A perennial plant having woody stems except for the terminal part of the new growth which is killed back annually; ②an under shrub or small shrub. Cf undershrub.

subsoil The subsurface soil.

subspecies, abbreviated subsp. (or ssp.) pl subspp. (or sspp.) n. ①A rank below species but above *varietas* (variety) and *forma* (form). ②A subdivision of a species. This rank is higher than the rank of variety; ie, a subspecies may include two or more varieties, but not vice versa (mfn). ③A grouping within a species used to describe geographically isolated variants, a category above variety (viz.) ④A category of biological classification ranking immediately below the species level.

substandard certified seed Seed that has gone through the certification process but has failed the minimum mechanical purity and germination requirements may be tagged as Substandard certified seed. Doing so is completely up to the state certifying agency and is considered on a lot-by-lot basis.

substrate n. The surface or medium to which the plant is anchored, not necessarily providing nourishment.

substantive n. (post-classical Latin *substantivus* having a real existence, that exists by itself) ①Of a word: denoting a substance; designating a person, place, or thing. Generic names are Latin noun substantives. Cf noun substantive.

subtend v. ①To be below and close to; ②referring to any structure situated at the base of another structure; ③refers to being positioned directly or closely beneath something. ④Occur immediately below, as a bract below a flower or a pedicel (mfn). ⑤To occur immediately below as in a bract subtending a flower.

subterranean adj. ①Below the ground or below the soil. ②Underground.

subulate adj. (Latin *subula*, an awl) ①Awl-shaped; slender and tapering gradually to a fine point. ②Awl-shaped, very slender, firm, and sharp-pointed (mfn). ③Awl-shaped, narrow and gradually tapering to a fine point. ④Narrowly triangular and tapering to a small point like an awl, "awl-like".

subulus n. A small point or bristle.

succedaneum n. (modern Latin, neuter singular of Latin *succēdāneus* (*succīdāneus*), from *succēdēre* to succeed v.) "A thing which (*rarely*, a person who) replaces or serves in the place of another; a substitute" (oed).

succession ①An ecological term referring to an orderly progression of changes in community structure and function. ②Succession is a directional non-seasonal cumulative change in the types of plant species that occupy a given area through time.

succulent n. (Latin *succus*, juice) ①Juicy; full of juice or sap; ②fleshy, soft or juicy; very fleshy and juicy; . ③fleshy, having a soft and thickened texture. ④Fleshy, juicy (mfn). ⑤A plant that has a specialized fleshy tissue in roots, stems, or leaves for the conservation of water. Most succulents are plants preferring dry climates, such as cactus or aloe, but some are found in wetter climates adapted for living in salty soils where water retention is a problem.

suckers noun (Old English *sūcan*, corresponding to Latin *sūgēre*) ①Vegetative shoots from a proliferating root system; ②a vegetative shoot of underground origin; ③a shoot thrown out from the base of a tree or plant, which in most cases may serve for propagation; now *esp.* such a shoot rising from the root under ground, near to, or at some distance from, the trunk; also (now *rare*), a runner (as of the strawberry); also, a lateral shoot; in the tobacco plant, an axillary shoot.

sudorific adj. (modern Latin *sūdōrificus*) Promoting or causing perspiration; diaphoretic.

suffruticose adj. (Latin *sub*, under, below, and *frutex*, a shrub) (Modern Latin *suffruticōsus*, from *suffrutic-*, *suffrutex*, woody below, herbaceous above) ①Nearly or slightly woody; ②woody at the base and herbaceous above; ③moderately frutescent; ④obscurely shrubby; usually woody only basally. Cf fruticose.

sulcate, sulcated adj. (Latin *sulcus*, a furrow, trench, ditch, or wrinkle, Latin *sulcātus*, past participle of *sulcāre*, to plow, plough) ①Furrowed, grooved; ②scored with deep, parallel furrows or grooves; grooved or furrowed lengthwise; ③marked with (parallel) furrows or grooves, as horsetail stems; of pollen grains with elongate apertures; longitudinally grooved or furrowed. Cf colpate, colporate, porate, pororate, ulcerate; costate, striate.

sulcus pl *sulci* n. A furrow or groove. Hence sulcate, longitudinally grooved.

superficial adj. On the surface, away from the margin.

superior adj. (Latin *superior*, *-ōrem*, comparative of *superus* that is above) ①Referring to an organ which stands above or appears over or higher than another similar organ; ②situated above another organ or part; or in reference to an ovary, free from the calyx. ③ (Of an ovary) with the perianth and stamens inserted beneath it; cf inferior (mfn).

superior ovary n. An ovary which is attached to the summit or center of the receptacle and is free from all other flower parts. See hypogynous flower.

supine adj. (Latin *supīnus*, from Italic **sup-*, root of *super* above, *superus* higher, and *-ine* suffix) The upper face.

supra-, super- Prefix meaning above, higher than, upon, or more than. Opposite of *infra-*.

supra-axillary adj. Borne above the axil.

suprafamilial adj. Above the rank of family; similarly supra generic, etc.

suspension n. The transport of generally silt-sized and finer sediment particles in air whose velocity or turbulence allows the particle to remain for a time aloft.

sustainable agriculture n. A system of agricultural production that supplies the necessities of the present without compromising or polluting the resources of the future (rrl).

suture n. (French *suture* or its source Latin *sūtūra*, noun of action, from *sūt-*, past participial stem of *suĕre*, to sew) ①A line marking a junction or seam of union of organs, sometimes representing preformed lines of dehiscence along which, for example, a carpel of a dehiscent fruit opens; the dorsal suture of a carpel usually coincides with the central vascular bundle (“midrib”) of the carpel, the ventral suture usually coincides with the line of fusion of the carpellary margins (sk08). ②A seam formed when two parts unite; ③a seam or line or groove, usually applied to the line along which a fruit dehisces; ④any lengthwise groove that forms a junction between two parts; ⑤a seam or union between partitions; ⑥a line of dehiscence as in a follicle or capsule. ⑦“Zool. and Bot. The junction, or (more freq.) the line of junction, of contiguous parts, eg the line of closure of the valves of a shell, the seam where the carpels of a pericarp join, the conflux of the inner margins of elytra, the outline of the septa of the shell of a tetrabranchiate cephalopod” (oed). ⑧The line or joint along which two parts are fused (and along which they may separate) (mfn).

swale n. (Old Norse *svala*, to cool, referring to a shady place; American usage unknown) ①Originally a shady place without definite reference to low ground. A hollow or depression, especially one in wet, marshy ground. ②“A hollow, low place; *esp. U.S.*, a moist or marshy depression in a tract of land, *esp. in the midst of rolling prairie. Also (U.S.) a hollow between adjacent sand-ridges.”* (oed) ③A natural (unlike a ditch) ± elongate depression, at least seasonally wet (mfn).

swamp n. (Low German *swampen*, Swedish *svampig*, swampy, Greek *σομφός*, *somphos*, (questionably from **swombhós*) spongy, porous) ①Spongy land; ②low ground filled with water; ③a wooded area having surface water much of the time. ④“A tract of low-lying ground in which water collects; a piece of wet spongy ground; a marsh or bog. Originally and in early use only in the N. American colonies, where it denoted a tract of rich soil having a growth of trees and other vegetation, but too moist for cultivation.” (oed) The word swamp was first recorded in Virginia, 1691, but was probably in local use in England before that. ⑤A wet (at least seasonally) forested area. Cf marsh (mfn).

syconium n. (modern Latin, from Greek *σῦκον*, *sykon*, fig) ①A fleshy compound fruit whose fruitlets are enclosed in an infolded peduncle (inflorescence axis) (sk08). ② “A multiple fruit developed from numerous flowers imbedded in a fleshy receptacle, as in the fig” (oed).

symbiosis pl **symbioses** n. A relationship between two organisms such that each benefits. With legumes and rhizobia, the legume gains by having the microbe supply it an additional source of nitrogen it can use for growth: the microbe gains a source of energy for growth and a habitat (the nodule) within which it is protected from outside stress. (rrl) “Intimate association of two dissimilar organisms; legume plants and bacteria, rhizobia, share a mutually beneficial symbiotic relationship” (Caltrans).

symmetrical adj. Regular as to the number of its parts and their shape.

sympatric adj. ① Occurring in the same area, region, or geographic area; ② capable of occupying the same geographic ranges without loss of identity by interbreeding; ③ of two or more species having coincident or overlapping ranges of geographic distribution. Cf allopatric.

Sympetalae

sympetalous adj. () ① With petals united, at least at the base. ② With the petals united to each other (connate) for at least part of their length (mfn). Cf choriopetalous.

sympodial adj. (New Latin *sympodium* and English -al; from Greek *syn*, with, and *pous*, foot) ① Branching, growth of axillary shoots when apical budding has ceased; ② a determinate inflorescence that simulates an indeterminate inflorescence, as if a scorpioid cyme were straight rather than circinate; or when an alternate-leaved plant's branching pattern mimics an opposite-leaved plant, producing forked branching; ③ cymose, shifting in line of direction or development in the manner of a sympodium; ④ having an apparent main or central axis that is actually comprised of several short overlapping branches.

sympodium n. (New Latin, from *syn-* and Greek *podion* small foot, base, an apparent main axis (as in the grapevine)) ① Not developed from a terminal bud but made up of successive secondary axes each of which represents one fork of a dichotomy the other fork of which is of weaker growth or suppressed entirely. ② An axis made up of the basal portions of several branches, the apex of each branch dying and growth continued by an axillary bud. Hence sympodial. Cf monopodial, dichotomous, pseudodichotomous.

syn- Prefix meaning 'together'.

synangium n. A sorus-like structure formed by the fusion of two or more sporangia, a single body divided internally into several locules each bearing spores.

syncarp, syncarpium n. (modern Latin *syncarpium* from Greek σύν, *syn-*, together, and καρπός, *karpos*, fruit) ① A multiple fruit derived from a flower with distinct carpels at the flowering stage that become fused at maturity (sk08). ② A multiple or aggregate fruit derived from numerous separate ovaries of a single flower; a collective unit, as a blackberry. ③ A multiple fruit (usually fleshy), typified by the mulberry group. ④ “A multiple fruit, ie one arising from a number of carpels in one flower: most properly applied when the carpels are coherent, usually distinguished from an *aggregate* or *confluent* fruit, ie one arising from a number of flowers.” (oed) May be seen as in some works as syncarp.

syncarpous gynoecium n. (from Greek σύν, *syn-*, together, and καρπός, *karpos*, fruit; Latin *gynæcēum*, -ium, from Greek γυναικείον, *gynaikeion*, from γυναικ-, *gynaik-*, from γυνή, *gyne*, woman *gyne*, and ancient Greek οἰκία, *oikia*, house) A gynoecium consisting of two or more joint carpels (sk08).

syncope n. (*sincopin* (so in 13th cent. Old French), orthographic variant of *syncopēn*, accusative of late Latin *syncopē* (also *syncopa*), from Greek συγκοπή, *sygkope*, *synkope*, from σύν, *syn-* prefix, and κοπ-, *kop-*, stem of κόπτειν, *koptein*, to strike, beat, cut off, weary) “A cutting short; abbreviation, contraction; sudden cessation or interruption” (oed).

synecology n. The total ecology of a given plant community or community complex.

synoecious adj. (in sense 1, from *syn-* and *-oecious* (as in *dioecious*); in sense 2, from *synoecy* and *-ous*) 1: exhibiting monoecism, 2: exhibiting or relating to synoecy.

synonym n. ① An equivalent superseded name, a second name to a given taxon. ② Another name for the same taxon, either the result of independent description, or the transference or combination of different taxa. Cf basionym, nomenclatural synonym, taxonomic synonym.

syntepalous adj. Flowers in which the tepals are fused.

syntopic adj. ①Living together at the same locality. ②Sharing the same habitat within the same geographical range; different species or two phenotypic variants within a species. ③Relating to or displaying conditions as they exist simultaneously over a broad area, as of the atmosphere or weather. Cf allopatric, allotopic, sympatric. This term is not in the oed

syntype n. One of two or more specimens used by the author without designating a holotype for one of two or more specimens designated as the type. See type.

systematics n. The broad field concerned with the study of the diversity of plants and their identification, naming, classification, and evolution.

T

taenia, tenia pl **taenias, taeniae** n. (Latin *taenia*, from Greek *ταινία*, *tainia*, a ribbon, band, tape, fillet) ①A formation of ribbon-like structure with little or no differentiation between the leaf blade and stem (oed). ②In zoology, the name of a genus of tapeworms.

taeniicide n. (From *taenia* and *-cide*) ①Teniacide alteration of taeniicide: ②an agent that destroys tapeworms.

talus n. An accumulation of rock material on or at the base of a slope, larger material than scree.

tannins n. (Latin *tannum*, oak bark) Complex aromatic compounds some of which are glucosides, possibly giving protection or concerned with pigment formation.

taproot n. ①The primary, central, downward-growing root. ②An underground tapering root from which smaller lateral roots may form (may be thick or thin). ③A central primary root continuing the axis of the stem into the ground (mfn). ④The main, vertically extending root of a plant from which lateral roots grow. See fibrous root system.

tautonym n. (Greek *ταυτώνομος*, *tautonymos*, adj., from ancient Greek *ταῦτο-*, *tauto-*, combining form of *ταῦτό*, *tauto*, contraction of *τὸ αὐτό*, *to auto*, the same, and *ὄνομα*, *ὄνομα*, *onoma*, *onoma*, name) ①An inadmissible name where the genus name is the same as the species name; ②a scientific name in which the same word is used for genus and species. Cf homonym, synonym, somewhat as in *Aletris farinosa*, *Arctostaphylos uva-ursi*, *Baptisia tinctoria*, *Liquidambar styraciflua* (plant tautonyms are frequently from both Greek and Latin roots; in zoology *Bison bison bison*, *Equus equus*, *Equus caballus* (the last from classical and vulgar Latin).

taxinomy n. “A more etymological form of taxonomy” (oed), as in taxinomic, taxinomist.

taxon pl **taxa** n. (German *taxon*, Greek *τάξις*, *taxis*, arrangement, order) ①A group of plants of the same type, eg. species, genus, family, order etc. ②“A taxonomic group, as a genus or species” (oed). ③A term applied to any taxonomic group at any taxonomic rank; ④a discrete taxonomic unit. ⑤Any taxonomically recognized unit, regardless of rank; eg, genus, species, variety, form (mfn). Hence taxonomy, the study of taxa.

taxonomic synonyms n. Synonyms (viz.) with different basionyms (viz.) or based on different types (viz.). Cf nomenclatural synonym.

taxonomy n. (French *taxonomie* (de Candolle 1813), from Greek *τάξις*, *taxis*, arrangement, order, and *nomos*, law (alternate *-νομία*, *-nomia*, distribution) ①A science that includes identification, nomenclature, and classification of objects, and is usually restricted to objects of biological origin. ②The orderly classification of plants according to their presumed natural relationships forming a basic biological discipline involving during its Linnean period the firm establishment of binomial nomenclature and acceptance of the static concept of fixity of the species, during its Darwinian period the dynamic concept of speciation by natural selection, and during its modern Mendelian epoch an expansion to include study of the mechanisms underlying speciation and related processes; the study of the division of life forms into similar and distinct categories. Cf nomenclature.

taxonomy, plant The classification of plants into an ordered system that indicates natural relationships.

teeth n. Sharp processes at the edges of tissues.

temperate adj. Pertaining to the cooler areas of the world with moderate climates. Cf tropic.

temperate zone The area or region between the Tropic of Cancer and the Arctic Circle (in the northern hemisphere), or between the Tropic of Capricorn and the Antarctic Circle (in the southern hemisphere).

temporary soil stabilization The temporary binding or coating the soil with seed and/or erosion control products to protect the site from the erosive forces of wind and water. Temporary soil stabilization is used to reduce soil runoff from a disturbed site until a more permanent solution can be implemented.

tendrill n. (Old French *tendrillon*, tender sprig) ①A slender, often ultimately coiled, foliar or branch-like organ, which clings to a support; ②a slender twining appendage or extension by which a climbing plant may attach itself. ③A long, slender, generally twisting structure from which a climbing plant acquires its support. ④A slender twining or clasping process, modified stem, leaf, or part of a leaf, by which some plants climb. ⑤A twining thread-like appendage. ⑥A slender coiling or twining organ, as on some vines (mfn).

tepal n. (French *tepale*, from *petale*, invented in analogy to petal and sepal, from A. P. de Candolle *Organographie Végétale* (1827)) ①A member of a perianth that is not differentiated into a calyx and corolla, ie a floral leaf of a perigone (sk08). ②Denoting a unit of the perianth when the sepals and petals are essentially alike and not readily differentiated. ③Used in reference to the sepals and petals (usually in the monocots) which often resemble each other; in such instances either a given sepal or a given petal is termed a tepal. ④“A segment of a perianth which is not divided into a corolla and a calyx” (oed). ⑤One of the divisions of the perianth when the sepals and petals are similar in color, texture, and (usually) size (though usually distinguishable by position, the sepals being the outer series and the petals the inner one (mfn). ⑥A collective term applied to petals and sepals when they are morphologically identical.

tephra n. Any rock materials ejected from a volcano and transported through the air, including pumice and ash.

terete adj. (Latin *teres*, round, smooth) ①Nearly cylindrical in cross-section, as stems; ②cylindrical, circular in transverse section. ③Said of a structure that is circular in cross section but imperfectly cylindrical since the object may taper one or both ways. ④Round in cross-section (mfn). ⑤Cylindric and slender, circular in cross section, as the normal culm of a grass plant.

terminal adj. ①Located at the end of a stem or shoot; ②borne at or belonging to the extremity or summit; ③distal; ④at the end of a stem or axis. Cf apical, axillary, lateral, basal, etc.

terminus n. The end.

ternate adj. (Latin *terni*, three each) ①In threes or three-parted; ②growing or arranged in groups of threes, as some leaves; ③with three principal divisions; also, occurring in threes. ④arranged or divided into threes; ⑤Basically divided into $3 \pm$ equal portions (as a compound or dissected leaf). ⑥Twice- or thrice-ternate structures have the first divisions again divided in a similar fashion (whereas sometimes each of the three primary divisions is pinnate) (mfn). Hence ternatifid, ternatisect.

terrestrial adj. ①Referring to plants which live out their lives on land; ②growing on the ground. Cf aquatic, amphibious, epiphytic.

Tertiary adj. n. (Latin *tertiarius*, of the third part or rank, from *tertius* third) ①Geologic time period 65-2 million years ago (sk08). ②“In modern geology, of or pertaining to the third series of stratified formations: formerly including all those above the chalk; now restricted to the strata from the Eocene to the Pliocene, both inclusive. Also called Cainozoic or Cenozoic.” (oed)

tessellate, tessellate adj. ①Of a checker-work pattern or divided into squares or squarish pieces. ②Of a surface marked with square to rectangular depressions.

testa n. (Latin *testa*, a tile, earthen pot, shard, shell, etc) The hard outer covering or integument of seed.

tetra- Prefix four.

tetrad n. ①A group of four; ②in groups of four. Cf quadri-.

tetragonal adj. Four-angled.

tetragonous adj. Having four angles.

tetrahedral adj. Of a solid with four sides.

tetraploid adj. ①See n (mfn). With four sets of chromosomes (4n). ③Having four sets of chromosomes; usually designated as 4X or 4N.

thalamus n. (Latin *thalamus*, from Greek *θάλαμος*, *thalamus*, an inner chamber) “The receptacle of a flower, on which the carpels are placed; the torus.” (oed)

thalloid adj. Of or resembling a thallus.

Thallophyta n. (Greek *thallos*, a young shoot, and *phyton*, a plant) ①A primary division of plants including all forms consisting of one cell and cell aggregates not clearly differentiated into root, stem, and leaf, including bacteria, algae, fungi, and lichens.

thallose adj. +/- flat, ribbon-shaped.

thallus n. (Greek *thallos*, a young shoot) ①Plant body not differentiated into leaves and stem. ②A plant body that lacks differentiation into distinct forms of stems, leaves, roots, and does not grow from an apical point. Hence thalloid, thallose.

therophytes n. (Greek *theros*, summer, and *phyton*, a plant) An annual plant that overwinters as a seed.

thicket n. A loosely defined term for usually small areas (or narrow ones, as along a stream) with ± dense shrubs or small trees (mfn).

thorn n. (Middle English, from Old English akin to Old High German *dorn*, *thorn*, Old Norse *thorn*, Gothic *thaurmus*, thorn, Skt. *trna*, grass, blade of grass) ①A reduced branch with a sharp, hard point. ②A sharp rigid process on a plant; specifically, a short, indurated, sharp-pointed, and leafless branch developed from a bud in a manner typical to a leafy branch. ③A reduced, sharply pointed branch or modified leaf; or remnant that originates below the epidermis; about the same as a spine. Cf spine, prickle.

throat n. (Greek *drossel*, the gullet) ①A term applied to an expanded part of a corolla tube just below the lobes. ②In a calyx or corolla of united parts, the region where the tube and the limb join — the entrance to the tube (mfn).

thyse n. ①A cylindrical or ovoid, often compact, panicle; ②a type of contracted flower panicle like lilac or horse-chestnut. ③An elongated and densely flowered panicle, often contracted and pyramidal in shape.

thyrsiform adj. Having the form of a thyse.

thyrsoid adj. Resembling a thyse.

thyrsus n. (Greek *thyrsos*, wand) A panicle-like inflorescence consisting of a slender indeterminate main axis with lateral axes determinate, ie, cymose.

tiller n. (OE. *telgor*, *telgra*, branch, twig, shoot) ①Sprout, stalk, especially one from the base of a plant or from the axils of its lower leaves; ②an erect, lateral shoot. ③A leafy, non-flowering shoot of a grass. ④A shoot of a plant, springing from the root or bottom of the original stalk.

tissue culture n., vt, The use of specialized laboratory methods to mass produce plants starting with small amounts of plant tissue.

tomentose adj. (Latin *tomentum*, down) ①Densely covered with short, matted hair; ②a vestiture of dense, short, soft, matted hairs; ③densely pubescent with matted hairs. ④More or less densely covered with curly, matted hairs; woolly (mfn). ⑤Densely pubescent with soft, matted wool-like hairs, "woolly-hairy", "woolly".

tomentulose adj. Slightly or finely tomentose or "slightly woolly".

tomentum n. ①Closely matted or tangled hairs; a dense woolly or matted covering of +/- appressed hairs; ②More or less dense, curly, matted hairs (mfn). Hence tomentose.

tonic adj., n. ()

toothed adj. () Bearing teeth or teeth-like protrusions.

toposequence n. () A sequence of related soils that differ, one from the other, primarily because of topography as a soil-formation factor. Cf catena.

topotype n. () A specimen collected from near the locality of the type (viz.).

topsoil n. The surface layer of soil containing organic matter, usually corresponding to the A horizon.

torose adj. Having successive swellings and contractions, "constricted between the seeds".

torulose, torulous adj. (modern Latin diminutive (with change of gender) of Latin *torus* a swelling, bulge, knot; muscle, brawn; bolster, cushion, couch, etc, after Latin type **torulōsus*) ①Cylindrical, abruptly contracted at intervals, typically occurring in fruits, between the seeds. ②“Having at intervals small rounded swollen parts, as a stem, pod, tube, antenna” (ED) The pods of *Wisteria*.

also torulose adj. Slightly torose.

torus n. (Latin *torus* a swelling, bulge, knot; muscle, brawn; bolster, cushion, couch, etc) ①“‘The swollen summit of the flower-stalk, which supports the floral organs.’” The same as receptacle or thalamus. (oed) “The Torus or Receptacle of the flower, also named Thalamus, is the axis which bears all the other parts.” (A. Gray, Structural Botany, in oed)

total viability Takes into account the seed germination, dormancy and hard components.

total viable seed percentage The sum of percent germination, percent dormant and/or percent hard seed.

toxic phytophotodermatitis

toxicum pl toxica n. (Latin *toxicum* ‘poison’, originally ‘poison for arrows’, from Greek τοξικὸν φάρμακον *toxikon pharmakon*, poison (*φάρμακον*, *pharmakon*) for smearing arrows (τοξικός, -όν, *toxikos*, -on, from τόξα, *toxa*, plural arrows, from by transference τόξον, *toxon*, bow). Τοξικόν, *Toxikon* = ‘of or pertaining to the bow’, and had originally nothing to do with poison. But the effect of using τοξικόν, *toxicum* as short for the Greek phrase was to transfer the sense ‘poison’ from φάρμακον, *pharmikon* to *toxicum*, first as ‘poison for arrows’ and at length as ‘poison’ generally, = Latin *venenum*) Poison.

trabecula pl trabeculae n. (Latin *trabecula*, *trabacula*, diminutive of *trabs* beam; the forms in *-um* and *-us* are modern Latin variants) ①A transverse partition dividing or partly dividing a cavity. ②“A projection extending across the cell-cavity in the ducts of some plants, or across the cavity of the sporangium in mosses and other cryptogams” (oed). Hence trabeculate.

Tracheophyta n. (Late Latin *trachia*, windpipe, and Greek *phyton*, plant) A division of plants comprising green plants with a vascular system that contains tracheids or tracheary elements, being the *Pteridophyta* and *Spermatophyta*, commonly called vascular plants.

translucent adj. () ①Between opaque and transparent, thus allowing some light to get through; ②letting light through, almost transparent. Cf pellucid.

transverse adj. () ①Running or lying across something; ②crossing the width of an object.

trapezoid n. () Trapezium-shaped, a four-sided figure with the opposite sides parallel.

tree n. () ①A woody plant, typically higher than a shrub, and typified as being unbranched at the base and having a strong single trunk. ②Woody perennial with a distinct central trunk.

tree claim n. In the Homestead Act of 1862, a land owner could stake a claim to 160 acres by planting ten acres of trees and keeping them alive for eight years. In the Timber Culture Act in 1873, settlers could claim 160 acres of additional land by devoting forty acres to trees.

tri- prefix () A prefix meaning three or three times; for example, trifoliolate refers to three leaflets.

triad n. ①A group of three spikelets borne together. ②A group of three, as applied to spikelets of *Chrysopogon* or *Hordeum*. ③Consists of a sessile spikelet and two pedicellate spikelets. In *Chrysopogon* this represents a reduced racemose branch.

triangular adj. Three-sided.

Triassic adj. n. (from German *Trias*, similar to late Latin *trias*, from Greek *τριάς*, *trias*, the number three) ①Geologic time period 248-206 million years ago (sk08). “Of or belonging to the Trias; the Triassic system. (Usually with capital initial.) Name for the series of strata lying immediately beneath the Jurassic and above the Permian; so called because divisible, where typically developed (as in Germany), into three groups (*Keuper*, *Muschelkalk*, and *Bunter Sandstein*); represented in Britain by the Upper New Red Sandstone and associated formations.” (oed)

tribe n. ①A taxonomic grouping of similar genera, a division of the family below the level of subfamily. ②A subdivision of a family, ranking above genus (mfn).

trichome n. (Greek *trichoma*, a growth of hair) ①An outgrowth of the plant epidermis, either hairs or scales; ②a hair tuft; ③any hairlike outgrowth of the epidermis; ④a stiff, often multicellular, hair. ⑤An unbranched hair-like outgrowth of the epidermis, often glandular.

trichotomous adj. Three-forked

tricuspidate adj. See cuspidate. Which is bearing a short, rigid and sharp point, usually in reference to the apex of a leaf, "awl-tipped".

trident adj. With three segments or lobes, usually having a common origin.

trifid adj. ①Three-cleft; ②divided or separated into three +/- equal parts, usually to about half-way. ③Cleft into three (mfn).

trifoliolate adj. A compound leaf with three leaflets.

trifoliolate adj. Of a compound leaf with three radial leaflets. ②With three leaflets (mfn).

trifurcate adj. Split into three forks or branches

trigonal adj. (Greek *trigonos*, triangular) Triangular in cross-section as applied to stems.

trigonus adj. ①Trigonal; ②three-sided, having three prominent longitudinal angles; ③with three angles, of a solid body, triangular in cross-section with rounded corners as a style or ovary. Cf triquetrous.

trilete adj. Of a spore with a radial, three-armed scar. Cf monolete.

trimerous adj. (Greek *tria*, three, and *meros*, part) Composed of three or multiples of three.

tripartite adj. Divided into three +/- equal parts, to the base or almost so.

tripinnate adj. ①Said of a leaf in which the blade is pinnately compound with each of the divisions then bipinnately compound; ②three times pinnate; ③branched three times. Cf pinnate.

triplinerved adj. With three main veins.

triploid adj. (Greek *triplus*, triple) Having or being a chromosome number three times the monoploid number.

triquetrous, triqueter adj. (Latin *triquetrus -a -um*, with three angles, three-cornered, triangular)
①Triangular; having a triangular cross section, three-edged, trihedral, triangularly prismatic or pyramidal (oed);
②having a triangular cross section acutely-angled; ③with three distinct longitudinal ridges; ④with three prominent acutely angled ridges. ⑤With three sharp angles, like a triangle with concave sides. Cf trigonus.

tristichous adj. (Greek *tria*, three, *stichos*, row) Arranged in three vertical rows.

tristigmatic adj. Bearing three stigmas.

trophic adj. (Greek τροφικός, *trophikos*, from τροφή, *trophe*, nourishment) “Ecol. Of or pertaining to the feeding habits of, and the food relationship between, different types of organisms in the food-cycle” (oed). “A level in the transfer of food or energy within a chain” (Caltrans).

trophic level n. (Greek τροφικός, *trophikos*, from τροφή, *trophe*, nourishment) “Any of a hierarchy of levels of an ecosystem, each consisting of organisms sharing the same function in the food-web, and the same relationship to the primary producers” (oed).

trophophore n. A vegetative leaf or frond, one that does not have reproductive structures attached.

tropic adj., n. Pertaining to the warmer or equatorial regions of the world. Hence tropical. Cf temperate.

trullate adj. Shaped like a brick-layer's trowel.

truncate adj. (Latin *truncatus*, cut off) ①Terminating abruptly, as if tapering end were cut off; ②as if cut squarely across, either at the base or apex of an organ; having the apex or base of a structure that is flat or ends abruptly as though cut off. ③Cut-off at the end; ④having a squared shape at the apex or base. ⑤Ending abruptly (at base or apex), as if cut off squarely (neither tapered nor lobed) (mfn). ⑥It appears to be cut off.

trunk n. (Old French *trone*; from Latin *truncus*, a trunk, stock, stem) ①The erect, unbranched portion of a tree-like plant; ②that portion of a stem or stems of a tree before branching occurs; ③the main stem or body of a tree, considered apart from its roots and branches.

trunk flare see root flare.

tryma n. (modern Latin, from Greek τρύμα, *tryma*, or τρύμη, *tryme*, hole, from τρύειν, *tryein*, to rub down, wear out) “A fruit resembling a drupe, but formed from an originally compound ovary, and having an ultimately dehiscent fleshy or fibrous exocarp, as the walnut and coco-nut; a kind of drupaceous nut” (oed).

trymetum n. () A multiple fruit characterized by mature ovaries that develop within a hypanthium or united bracts, and upon maturity are dispersed by the unfolding or splitting of the hypanthium or bracts; (e. g. *Monimiaceae*, *Palmeria scandens*) (sk08).

trymosum n. () A compound fruit consisting of mature ovaries that develop within united bracts or a receptacle, and at maturity are released by splitting or other movement of the bracts or receptacle; eg *Fagaceae* (eg *Fagus sylvatica*, *Castanea sativa*) Moraceae (eg *Dorstenia* spp.) (sk08).

trymoconum n. A compound fruit composed of fruitlets that are arranged in a conelike structure, where each fruitlet disperses its mature ovary by dehiscent bracts; eg *Casuarinaceae* (*Casuarina* spp.; *Allocasuarina* spp)

tube n. ① Any hollow elongate body of an organ; usually referring to the connate parts of either the calyx or the corolla. ② The fused portion of a cycle of perianth parts, beyond which the calyx lobes or corolla lobes extend (mfn). Hence tubular.

tuber n. (Latin *tūber*, neuter, a hump, swelling, plural *tūbera*, a swelling or knob on plants) ① A thickened, modified underground stem having many buds (eg, a potato). ② The short, thickened fleshy food-storing portion of an underground stem with many surface buds, generally shaped like a rounded protuberance; a swollen, usually underground, part of a stem or root. ③ A term generally referring to any thick, fleshy enlargement of a rhizome or stolon. ④ A thickened portion of rhizome or root, usually a starch-storing organ (mfn). ⑤ “An underground structure consisting of a solid thickened portion or outgrowth of a stem or rhizome, of a more or less rounded form, and bearing ‘eyes’ or buds from which new plants may arise; a familiar example is the potato. Also applied to other underground structures resembling this but of different origin, as in tuberous roots.” (oed) Hence tuberous, swollen.

tubercle, tubercule (Latin *tuberculum*, a swelling) ① A small rounded protuberance; ② a small, wart-like swelling; ③ root swelling or nodule; ④ bubil; ⑤ a surficial nodule; ⑥ a thickened, solid, spongy crown or cap, as on an achene; ⑦ a small tuber or tuberlike growth; ⑧ a small tuber-like, often indurated, process or protuberance.

tuberculate adj. ① Having tubercles, small wart-like projections; ② bearing small projections or warty protuberances; ③ bearing knobby projections or excrescences. ④ A distinct enlargement or appendage, as at the summit of the achene in some sedges or on the base of the lip in *Platanthera flava*; a small ± knobby projection (mfn).

tuberiferous adj. Bearing tubers.

tuberose adj. Resembling a tuber.

tuberous adj. ① Having the character of a tuber; tuber-like in appearance; thickened; producing tubers.

tubular adj. Tube-like.

tufted adj. (probably from Latin *tūfa*, a kind of helmet crest, or a kind of military standard, similar to Byzantine Greek τούφα, *toupha*) ① “A cluster of short-stalked leaves or flowers growing from a common point, of stems growing from a common root, etc; an umbel or fascicle; also, a clump of small herbs growing closely together” (oed). ② Bunched, usually referring to the compact arrangement of the stem bases with respect to each other and their position in the soil; ③ growing in small clumps; same as caespitose, caespitose.

tumid adj. (Latin *tumidus -a -um*, from *tumēre* to swell) ① Of a swollen or protuberant form. ② Swelling, bulging.

turbinate adj. (Latin *turbinatus*, whirl, rotation, from Latin *turbo* (also *turben*), *turbin-em* a whirlwind or tornado, a spinning-top, a reel or spindle, a whirl, twirl, twist, revolution) ①Inversely conical; top-shaped, shaped like a cone resting on its apex. ②“*Natural Hist.* Resembling a spinning-top in shape; of a mollusc, having a spiral shell; in *Bot. spec.* inversely conical; having a narrow tapering base and broad rounded apex; in *Anat.* applied to the scroll-like spongy bones of the nasal fossæ in the higher vertebrates.” (oed)

turfgrass n. Grass that is used for the purpose of establishing a lawn.

turgid adj. (Latin *turgidus* swollen, inflated, from *turgēre* to swell) ①Swollen, distended, puffed out; ②appearing to be filled from within; ③swollen, or tightly drawn; said of a membrane or covering expanded by pressure from within; ④swollen, rigid and stiff by means of internal pressure. Cf flaccid.

turion n. (French *turion* (15th cent.), from Latin *turio*, plural *turiones*, shoot) ①A small, scaly bud-like offset on an underground stem. ②Young scaly shoot budded off from underground stems; ③detachable winter bud used for perennation in many aquatic plants. ④“A young shoot rising from the ground, produced from a subterranean bud” (oed). ⑤A “winter-bud” of an aquatic plant, consisting of a modified branch or bud (eg, very short compact internodes and reduced leaves) (mf). ⑥“By turion..is meant a bud originating laterally on underground stem-structures and developing in the summer into a shoot which rises above the ground.” (Anton Kerner von Marilaun, 1894) *The natural history of plants: their forms, growth, reproduction, and distribution* (transl. Francis Wall Oliver) in oed)

twig n. (Old English, Anglo Saxon *twigge*, *tuigge*, twig) ①A small shoot or branch of a tree or other plant. ②Botanically, specifically, the shoot of a woody plant representing the growth of the current season and terminated basally by the circumferential terminal bud-scar of the previous year; ③the woody growth of the current year.

twiner n. (Middle English *twīnen*, = West Frisian *twine*, *twynje*, Dutch *twijnen* (in Kilian also *tweynen*). Compare Icelandic, Norwegian, Swedish *tvinna*, Danish *tvinde* (North Frisian *twinne*, etc), and Dutch *tweernen*, Middle Low German *twernen*, Middle High German and German *zwirnen* (Old High German *zwirnēn*), to twist (thread) (oed)) ①A climbing plant supporting itself by winding spirally around an object; ②a plant of twining habit.

type n. (French *type* (16th cent. in Littré) or Latin *typus*, from Greek *τύπος*, *typos*, impression, figure, type, from the root of *τύπτειν*, *typtein*, to beat, strike) ①In nomenclature, a specimen which fixes the application of a name; a name of a species, for example, applies at least to its type—and to all other specimens deemed to belong to the same species. If a taxon is divided into two or more, the name remains with that element which includes its type, and a new name is required for the other element(s) (mf). ②“*Natural Hist.* 1). A species or genus which most perfectly exhibits the essential characters of its family or group, and from which the family or group is (usually) named; an individual embodying all the distinctive characteristics of a species, etc, *esp.* the specimen on which the first published description of a species is based. 2). A certain general plan of structure characterizing a group of animals, plants, etc; hence *transf.* a group or division of animals, etc, having a common form or structure.” (oed)

type, type specimen n. () ①The nomenclatural type or specimen to which the name of a taxon is always attached. ②A specimen identified by the author of a species that, morphologically, represents the best example of this species (syn. holotype). Cf holotype, isotype, neotype, lectotype, paratype, haplotype, syntype, topotype, kleptotype.

type genus n. The genus to which the name of a genus is permanently attached.

type species n. The species to which the name of a genus is permanently attached.

type subspecies, type variety n. The variety or subspecies of the species that contains the nomenclatural type of the species. Cf autonym.

U

-ulent suffix (Latin *-ulentus* employed to form adjectives, usually with the force of 'abounding in', 'full of' (some thing or quality), as *fraudentus* fraudulent, *opulentus* opulent, *truculentus* truculent, etc. Variant forms of the suffix are *-olentus*, as in *vinolentus* vinolent, *violentus* violent, and *-ilentus* as in *gracilentus* slender, *pestilentus* pestilent.) "A considerable number of the formations occurring in Latin have been adopted in English, and a few have been added either from mediæval or modern Latin, or by direct formation on Latin stems, as *cinerulent*, *flatulent*, *herbulent*, *nidorulent*, *torpulent* (oed).

ultimate adj. ①Last; ②final. Cf penultimate, antepenultimate.

ultisol n. A soil order of the US system of soil classification; a mineral soil that has a clay-enriched subsurface horizon that is highly depleted in plant nutrients.

ultramafic adj. ①Rocks or soils that are very high in magnesium and iron (and often nickel and chromium, and low in the plant nutrients phosphorus, potassium, nitrogen and calcium).

-ulus -a -um suffix Classical Latin *-ulus*, diminutive, frequentative, and instrumental suffix, extended form of Old Latin *-lus*, diminutive suffix, probably related to *-el*; also *-ulum*, *-ula*, and *-ule*. (oed)

umbel n. (Latin *umbella*, sunshade, diminutive of *umbra* shade) ①An arrangement of flowers springing from a common center and forming a flat or rounded cluster; ②an inflorescence in which the branches all radiate from a common point. ③An inflorescence in which all flowers arise from a common point, younger flowers are in the center, may be simple or compound. ④An inflorescence in which the pedicels arise from the same point or nearly so; in a compound umbel, each primary ray bears an umbellet (mfn).

umbellate adj. ①With or bearing umbels; ②consisting of umbels; ③forming an umbel or umbels. ④Arranged in umbels, umbel-like, "umbrella-like".

umbellet n. A secondary umbel in a compound umbel.

umbelliferous adj. ①Bearing umbells, flat topped inflorescences in which the pedicles or peduncles all arise from the same point.

umbelliform adj. Resembling an umbel.

umbilicate adj. Indented, invaginated, or depressed near the center.

umbo n. ①A rounded protuberance or elevation in the centre. ②Bearing a protuberance in the center. Hence umbonate.

unarmed adj. Without spines, hooks or prickles. Cf armature.

unicaespitose adj. Of bamboos, having culms all arising in a single clump from pachymorph rhizomes.

uncinate adj. (Latin *uncinātus -a -um* from *uncin-us* hook) ①Hooked or bent at the tip; ②hooked; ③furnished with hooks; ④unciform; ⑤uncinated.

underground stems Stems that run under the ground allowing a plant to spread. These can also be called stolons.

undershrub n. ①Subshrub, or a small low-growing shrub; ②a plant having a woody base; ③a woody chamaephyte.

understock, or rootstock n. The term used to describe that part of a plant, including the collar and roots, on which another variety has been budded or grafted.

understory plant Plants that grow beneath the canopy of other plants. For example, grasses, forbs, and shrubs growing under a tree are understory plants.

undulate adj. ①Gently wavy; ②with a sinuate or wavy surface or margin (up and down, not in and out); ③corrugated or with the margin waved in a plane perpendicular to the surface; ④with a slightly wavy margin. ⑤Wavy (vertically) (mfn). Cf sinuate.

uni- prefix One or solitary. Cf mono-.

unicaespitose adj. Of bamboos, the culms all arising in a single clump from pachymorph rhizomes.

unifoliolate adj. (uni- and foliolate) ①Of a leaf: compound but having only a single leaflet and distinguishable from a simple leaf by the basal joint; ②of a compound leaf reduced to a single leaflet.

unilateral adj. ①One sided or turned to one side; eg, the spikelet arrangement on the branches of *Bouteloua*.

unilocular adj. With a single cavity

uniseriate, uniserial adj. ①Arranged in a single row; ②arranged in a row or series.

unisexual adj. (Latin *unus*, one; *sexus*, sex) ①Flowers that contain either stamens or pistils but not both; ②of one or other sex, staminate or pistillate only, but not both; ③of one sex, either staminate or pistillate only. ④(Of a flower) containing only stamen(s) or pistil(s); imperfect; cf perfect (mfn).

united adj. ①Connected; ②fused together, growing together. Cf free.

unsymmetrical adj. Irregular as to the number of its parts, or their shape.

upland birds Nonmigratory birds found on terrestrial habitats such as quail, pheasant, grouse, wild turkeys, etc.

ur- Prefix “representing German (also Middle High German, Old High German) *ur-*, denoting ‘primitive, original, earliest,’ ” (oed).

urceolate adj. (modern Latin *urceolatus -a -um*, from Latin *urceolus*, a little pitcher, from *urceus*, pitcher) ①Shaped like a pitcher or urn; ②hollow and contracted at the mouth like an urn or pitcher. ③Zoology provided with or contained in an *urceolus*, as a rotifer.

urn-shaped adj. ①Hollow and cylindrical or ovoid, and contracted at or below the mouth, like an urn; also known as urceolate.

utricle n. (Latin *ūtriculus*, a little bag or bottle, diminutive of *ūter* leathern bag or bottle, and classical Latin *-culus*, a suffix forming diminutives from nouns) ①An air bladder of aquatic plants; ②membranous, indehiscent, 1-celled fruit; a bladder-like, usually indehiscent, one-seeded fruit; ③a small, thin-walled, one-seeded, more or less inflated fruit; ④a small sac or bladder-shaped body; ⑤a bottle-shaped part or structure.

V

valvate adj. (New Latin *valvatus*, from Latin, having folding doors) ①Meeting at the edges without overlapping; ②opening as if by doors or valves. Meeting at the edges without overlapping; cf imbricate (mfn).

valve n. ①One of the segments into which a capsule dehisces, previously having been held together by union along a suture. ②A door of flap-like opening in some organs. ③One of the parts into which a dehiscent fruit (or other structure) splits at maturity (mfn). Hence valvate.

variant n. Any deviation from "normal" in a plant (without necessarily taxonomic recognition at any given rank) (mfn).

variegated adj. Irregularly colored in patches.

varietas, variety, var. pl vars. (Latin *varietas*, variety) ①A variant of a species, occurring in the wild, and ranked below subspecies and above *forma*. ②A taxonomic group below the species used in different senses by different specialists, including a race, stock, strain, breed, subspecies, geographical race, or mutant. ③An infraspecific taxon with a range or habitat relatively distinct from other taxa within a species; ④+/- recognizable entities within species that are not genetically isolated from each other; below the level of subspecies. ⑤A category of biological classification ranking immediately below the species or subspecies level. ⑥A subdivision of a species; this rank is below the rank of subspecies; cf subspecies (mfn).

vascular adj. ①Having veins or conducting vessels; ②of tissue containing the conducting elements of the plant. See also xylem and phloem.

vascular bundle n. ①A group of specialized cells consisting of xylem and phloem, sometimes separated by a strip of cambium and arranged in different patterns; an aggregate or cluster of vessels. ②The primary conducting system of plants consisting mainly of phloem and xylem.

vascular cambium n. Lateral meristem that forms the secondary tissue and is located between the xylem and phloem.

vegetation n. The total aggregation of plant communities within an area.

vegetative n. ①Referring to plant parts that are not involved in sexual reproduction. ②Of a plant lacking reproductive organs. Cf sterile, fertile.

vein n. ①The vascular bundles or veins or ribs of the blades, glumes, lemmas, and paleas. ②A thread of fibrovascular tissue in a leaf or other organ (which often branches); same as nerve. ③A strand or thin thread of vascular conducting tissue in a leaf or similar structure. ④A bundle of vascular tissue; the external ridge marking the location of an underlying vein (mfn) Cf nerve.

veinlet n. A small vein or secondary vein.

velamen n. (Latin *velamen*, covering) ①A membrane; ②water-storing tissue in the outer layer of some roots.

velvety adj. A vestiture of thick medium length hairs.

velutinous adj. ①Pubescent with velvety hairs; ②covered with fine, soft, +/- patent hairs, +/- velvet-like. ③Having a velvety texture.

venation n. The nature or arrangement of the veins, especially in leaves or leaf-like structures.

vernal adj. (Latin *vernalis -is -e*, of the spring) ①Belonging to the spring; ②appearing, pertaining, or occurring in spring; ③of the spring season; ④growth form for spring and early summer.

ventral adj. ①Pertaining to the inner or anterior face of an organ, the opposite of dorsal. ②Pertaining to the surface (eg, of a leaf, perigynium, etc) toward the axis to which a structure is attached; ③adaxial; in relation to the ground, often the "upper" surface; Cf dorsal (mfn).

vernation n. The arrangement of unexpanded leaves in a vegetative bud.

vernice n. Shining, as though varnished.

verrucose adj. (Latin *verrucosus*, full of warts, warty) ①Warty; ②having little warts or wart-like growths on the surface; ③covered with warty protuberances; ④with a warty, nodular surface, "wartlike". Diminutive verruculose.

versatile adj. (Latin *versatilis*, turning around) ①Turning freely on its support, as an anther attached near the middle and capable of swinging freely on the filament; ②attached at the middle and free to swing; ③attached at or near the middle and turning freely on its support, such as an anther.

verticil n. (Latin *verticillus*, whorl) ①A whorl, an arrangement of leaves, flowers, inflorescences, or other structures which surround the stem in a circle upon the same plane about the same point on the axis; ②a whorl of parts arising from a common point or around an axis. Hence verticillate.

verticillate adj. (Latin *verticillus*, whorl) ①Growing in a whorl or arranged on the same plane around an axis, as flowers, leaves, branches, etc; ②arranged in verticils, whorled; ③arranged in a whorl or ring; ④having branches or flowers arranged in whorls at two or more levels of an inflorescence; ⑤having verticils, that is, whorled or appearing so; ⑥in a circle or whorled about the axis. Cf whorl, whorled.

verification n. Matching unknown but keyed specimen with known material in the herbarium.

vesicle n. (Latin *vesicula*, bladder) ①Any small bladderlike structure, cavity, sac, or cyst; ②a small bladderlike sac filled with air.

vesicle n. ①A small bladder or cavity filled with air or fluid. ③Blistered on the surface. Hence vesicular.

vessel n. ①A duct or *atruncated* (sic) tube of cells, rendered continuous by the absorption or perforation of transverse walls.

vestige n. The reduction of a structure whose functional importance has decreased with evolutionary time.

vestigial adj. ①Reduced to a rudiment, not fully developed; ②Rudimentary, my dear Watson.

vestiture n. (Latin *vestitus*, garment) ①That which covers a surface, as hairs, scales, etc. ②Surface coverings (eg, hairs, or wax, or scales).

viable bacteria Bacteria having the capacity to live, grow, develop.

viable seed Seed that is able to germinate under favorable conditions. Viable seed includes seed that is dormant. See definition for total viable seed.

villous, villose adj. (Latin *villosus*, hairy) ①Pubescent; "long-hairy", with long, straight, soft hairs; ②shaggy; covered with fine long hairs, but the hairs not matted; ③with long, soft, unmatted hairs; ④shaggy; ⑤clad in long, soft hairs, not matted together. ⑥With soft, not necessarily straight, hairs — practically synonymous with pilose (mfn).

villus pl villi n. A long, weak hair.

vine n. (Old French *vigne* and *vine* (modern French *vigne*, also Provençal *vinha*, Portuguese *vinha*, Catalan *vinya*, Spanish *viña*, Italian *vigna*) from Latin *vīnea* vineyard, vine, etc, from *vīnum* wine) ①A plant which climbs or sprawls by means of twining or tendrils. ②A plant which trails or creeps extensively along the ground. ③A plant with the stem not self-supporting, but climbing or trailing on some support. ④"The trailing or climbing plant, *Vitis vini-fera*, bearing the grapes from which ordinary wine is made (= grape-vine n.); also generally, any plant of the genus *Vitis*" (oed). Apparently, a vine may be woody or herbaceous. Cf liana.

virgate, virgatus -a-um adj. (from Latin *virgatus -a -um*, from *virga*, rod, stick) ①Slenderly straight and upright; ②wand-shaped; ③wand-like; straight, slender, slim and erect; ④rod-like, long, slender, and straight; ⑤twiggy, elongate, straight and slender.

viscid adj. (from late Latin *viscidus -a -um*, viscous, sticky, from *viscum*, bird lime) ①Of surfaces, covered with a glutinous or sticky secretion; ②thick, syrupy, glutinous, greasy, gluey, and sticky, viscous; covered with a viscid substance as of leaves; glandular; ③thick, syrupy, and sticky, viscous; ④covered with a viscid substance as of leaves; gummy. ⑤Sticky, glutinous (mfn).

viscous adj. Slow-flowing, often sticky (of a liquid).

vitta pl **vittae** n. (Latin *vitta*, a band, fillet, chaplet, especially one worn round the head) ①One of a number of elongated club-shaped canals or tubes occurring in the pericarp of the fruit of most umbelliferous plants and containing their characteristic oil. Usually in plural. (oed) See *taenia*.

vivipary n. Germinating while still on the plant, as certain bulbs and transformations of floral tissues. As often seen in *Tradescantia ohiensis*, *Scirpus atrovirens*.

viviparous adj. (Latin *vivus*, alive, and *parere*, to produce) ①Producing young alive rather than in eggs, as in most mammals; ②multiplying by vegetative means such as buds or bulbils in the position of flowers. ③Producing propagules which may sprout or germinate where borne on the parent plant (mfn). ④Germinating or spouting from a seed or bud while attached to the parent plant.

voucher specimen n. ①An herbarium specimen that documents the morphology and identification for chromosome, ecological and anatomical studies, plant breeding (parents and progeny), and taxonomy.

vulnerary adj. & n. (Latin *vulnerārius* adj. and n. (Pliny), from *vulner-*, *vulnus* wound) ①Useful in healing wounds; ②having curative properties in respect of external injuries, any preparation, plant, or drug used in the cure of wounds. (oed)

W

Wanting adj. Lacking, absent or nearly so.

warm season plant A plant that completes most of its growth during the warmer times of the year (summer).

warty adj. Coarsely papillose.

water table n. The level below which the ground is completely saturated with water.

weed n. "Uncultivated herbaceous plants which do not bear handsome flowers" (Thoreau J 9:59). ②A plant out of place or growing where it is unwanted.

weed seed percentage Percentage, by weight, of seed that is weed seed, as defined by federal or state law.

welded soil n. Two or more soils of different ages in a depositional sedimentary system that are superimposed on one another and partially overlap.

wet weight n. Same as fresh weight; weight of plants after the outer surface covering of water has been removed. Wet weight is not a reliable measurement since methods to prepare plants prior to weighing vary considerably.

wet woodland n. A wooded area having surface water some of the time, for intermittent short periods.

wetland ①An area that is regularly saturated by surface water or groundwater and is characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions (eg, swamps, bogs, fens, marshes, and estuaries). ②Land areas with soil that is saturated with water either permanently or seasonally.

whip n. A young tree without branches; in some species and grades, spurs may be present.

whorl n. (Anglo Saxon *hweorfan*, to turn) ①The arrangement of three or more buds, leaves, flowers, or twigs at the same node; ②circle of flowers, parts of a flower, or leaves arising from one point; ③three or more flowers or leaves arranged in a ring; ④a cluster of 3-several branches around the inflorescence axis; ⑤an arrangement of three or more organs at a single node; ⑥an arrangement of three or more similar parts or organs at the same level about an axis; ⑦Three or more structures arranged in a circular manner around a common insertion point. ⑧A ring of 3 or more similar structures around a stem or other axis (ie, at the same node) (mfn). Hence whorled. Cf verticil, verticillate.

whorled adj. ①Having whorls. ②When three or more leaves are arranged at the same level on a stem, typical of such plants as hydrilla. ③Referring to the arrangement of a node that bears 3 or more similar organs, such as leaves or flowers (cf with alternate, basal, opposite).

wildflower n. A flowering plant found growing in a natural and uncultivated state.

wildland harvested Seed or plant material that was harvested from a native or introduced plant community on uncultivated land.

wing n. ①In general, any thin, expanded portion of an organ; sometimes referring to the well developed, exaggerated decurrence of a leaf base; also, one of the two lateral petals of a papilionaceous flower. ②A membranous or lamina-like border or surround. ③A thin membranous outgrowth. ④A flat, ± thin extension or appendage on the edge or surface of an organ (as on a seed or stem); one of the lateral petals in a papilionaceous flower (mfn). ⑤A thin, flat projection from the side, top, or back of a structure such as a seed or flower; one of the 2 lateral petals in flowers of the *Fabaceae* (legume family); one of the 2 large, petaloid sepals in flowers of the *Polygalaceae* (milkwort family).

winged adj. ①Bearing a projection or border near the margins that resembles a wing. ②Bearing wings.

winter annual n. ①An annual which sets its rosette and flowers the following spring.

winter browse plant n. Plant used by wildlife and livestock in the winter as a source of browse.

winter bud n. The meristem (living undifferentiated cells) of branchlets & leaves during the dormant season; sometimes covered by one or more protective scales.

winter hardy adj. The ability to survive winter weather in a particular region.

wiry adj. Said of a stem which is thin but stiff.

woody adj. (Middle English *woddy*, *wody*, from *wode*, wood, and *-y*) ①Of or containing wood or wood fibers; consisting mainly of hard lignified tissues. ②Plants with secondary growth, with stems that thicken each year by adding new tissue. The outermost layer of the main stem consists of a hard, nonliving tissue called bark. The living parts of woody plants, such as the inner bark & buds, remain alive.

woolly adj. ((Middle) Low German *wullig*, Dutch, German *wollig*) With long, soft, matted or tangled hairs. Often translated into Latin *lanatus* or *tomentosus*.

wort n. (Old English *wyrt* root, plant = Old Saxon *wurt*, Old High German (Middle High German and German) *wurz*, Old Norse (Icelandic, Norwegian, Swedish, Danish) *urt*, Gothic *waurts*; the stem is related to those of Old Norse *rót* root n., and of Latin *rādx*, Greek *ρίζα*, *rhiza*.) A plant, herb, or vegetable, used for food or medicine; often = pot-herb. Not in ordinary use after the middle of the 17th cent. and now *arch*. As a second element, however, retained in various plant-names, as *colewort*, *liverwort*. (oed)

wrinkled adj. Creased, folded up irregularly in every direction. Cf rugose.

Wurz n. (Old High German (Middle High German and German)) Plant or root.

Wurzel pl **Wurzein** n. (Old High German *wurzala*, from Proto-Germanic **wurt-* and **waluz-*) A root.

X

xanthic adj. (from French *xanthique*, from Greek ξανθός, *xanthos*, yellow) “*Botany.* de Candolle's name for a series or class of colours in flowers, of which the type is yellow: opposite to *cyanic*.” (oed)

xenogamy n. ()

xeric adj. (Greek ξηρός, *xeros*, dry) ①“Characterized by a scanty supply of moisture” (oed). ②Of plants, tolerating, or adapted to, arid conditions; ③a microclimatic term which refers to an area in which the soils are dry, containing very little, if any, moisture; ④a dry soil or habitat, in the Midwest due to excessively drained sands, gravels, or thin soils over porous bedrock. ⑤Of, characterized by, or adapted to an extremely dry environment. Compare to mesic.

xerophilous adj. In dry places

xerophyte n. A drought resisting plant

xylem (modern (Nägeli in German) from Greek ξύλον, *xylon*, wood) ①Woody tissue that is part of the water-transporting system in plants, consisting of lignified tracheids or vessels, and which also acts as a supporting tissue; the conducting tissue of the vascular system that transports water, primarily from the roots, throughout the plant. ②“Collective term for the cells, vessels, and fibres forming the harder portion of the fibrovascular tissue; the wood, as a tissue of the plant-body” (oed). ③Vascular tissue concerned with the transport of water and nutrients from the roots to the leaves and often with physical support. Compare to phloem.

Y

yield n. (Anglo Saxon, *glidan*, to pay, restore, give up, also Old English (West Saxon) *gielidan*) ①Standing crop expressed as a rate, ie, g dry weight per meter square per day. ②“The action of yielding crops or other products, production; that which is produced, produce; *esp.* amount of produce” (oed)

Z

zinc chelate n. Zinc deficiency in plants can be controlled either by applying zinc sulfate to the soil or by spraying the foliage with relatively small amounts of an organic compound to which zinc has been chelated or bound (rrl).

zoo- (Greek ζῴο-, *zoio-*, combining form of ζῷον, *zoion*, animal, occurring in numerous scientific and technical terms, of which the more important will be found in their alphabetical places. (The second element is usually and properly from Greek, but in a few recent words from Latin or English.))

zoochorous adj. (from Greek ζῴο-, *zoio-*, combining form of ζῷον, *zoion*, animal and, χωρεῖν, *khōrein*, to go, to be spread abroad, to disperse) Animal dispersed; see zoochory.

zoochoory n. (from Greek ζῴο-, *zoio-*, combining form of ζῷον, *zoion*, animal and, χωρεῖν, *khōrein*, to go, to be spread abroad, to disperse) The dispersal or dissemination of plant diaspores by animals. See also endozoochory and epizoochory.

zygomorphic adj. (Greek ζυγόν, *zygon*, yoke, and μορφή, *morphe*, form) ①Said of the corolla or calyx when divisible into equal halves in one plane only, bilaterally symmetrical, with only one plane of symmetry; referring to a calyx or corolla which is bilaterally symmetrical, capable of being divided into two equal halves along one plane

only. ②“Applied to a flower that is symmetrical about a single plane, ie divisible into similar lateral halves in only one way; = monosymmetrical adj.” (oed) ③Bilaterally symmetrical; a shape that can be divided into equal halves by only one plane like a human face; usually refers to flower shape.

zygote n. (Greek ζυγωτός, *zygotos*, yoked, from ζυγοῦν, *zygoun*, to yoke) ①A fertilized (diploid) egg cell. ② “A body of living protoplasm, as a cell or cell-nucleus, formed by the conjugation or fusion of two such bodies in reproduction; a zygospore, or any germ-cell resulting from the union of two reproductive cells or gametes. Also *attrib.* or as *adj.* That is a zygote, formed by conjugation; of or pertaining to a zygote.” (oed) ③The fertilized egg before it undergoes differentiation; the result of the union between male and female gametes.

USDA yada yada

Scientific Name: Genus and species Latin name

Common Name: Name generally used for a specific plant

Growth Habit: Characteristic appearance, form and manner of growth: grass, grass-like, forb, shrub, or tree

Duration: Life cycle: annual, biennial, or perennial

US Native: Species native to the United States, native or introduced

Wetland Indicator Status: Code to indicate plants occurrence in wetlands, refer to “National List of Vascular Plant Species that occur in wetlands,” US Fish and Wildlife Service Biological Report 88, US Fish and Wildlife Service, 1988

Active Growth Period: Season when active plant development occurs

Bloom Period: The bloom period is defined as the time when pollen is shed and stigmas are receptive reported by season or indeterminate

Growth Form: Description of plant shoots at or below ground level in relation to soil stabilization: bunch, rhizomatous, stoloniferous, single or multiple stemmed

Foliage Texture: What is the general texture of the plant’s foliage: fine, medium, or coarse

Growth Rate: Relative rate of plant development during active growth period: slow, moderate, or rapid

Regrowth after Harvest: Relative rate of plant regrowth after harvesting by grazing or cutting

Bloat: Swollen or inflated reaction to consuming a plant species: none, low, medium, or high

C:N Ratio: Relative amount of carbon to nitrogen in the plant: low, medium, or high

Mature Height: Average plant height at end of growing season

Lifespan: Relative length of productive life: short, moderate, or long

Nitrogen Fixation: Conversion of atmospheric nitrogen by soil microorganisms into usable nitrogen compounds: yes or no

Shape and Orientation: Profile of plant development and growth: prostrate, decumbent, semi-erect, or erect

Toxicity: Presence of toxins: none or slight

Flower Color: Prominent color of the flowers in bloom

Course Textured Soil Species: Adapted to sands or loamy sands: yes or no

Medium Textured Soil Species: Adapted to sandy loams, loam, silt loam, or silts: yes or no

Fine Textured Soil Species: Adapted to sandy clay, silty clay, or clay: yes or no

Anaerobic Tolerance: Relative adaption to wet sites and occasional ponding: none, low, medium, or high

CaCO₃ Tolerance: Relative adaption to calcium carbonate in the topsoil: none, low, medium, or high

Moisture Use: Relative requirement for water through the active growth period: low, medium, or high

pH, Minimum: Lowest pH (water) for establishment and productive growth

pH, Maximum: Highest pH (water) for establishment and productive growth

Drought Tolerance: Relative adaption to severe water shortages during active growth period: low, medium, or high

Fertility Requirement: Relative need for nitrogen, phosphorus and potassium: low, medium, or high

Root Depth, Minimum: Minimum soil depth for plant establishment

Salinity Tolerance: Relative adaption to soil soluble salts: none, low, medium, or high

Shade Tolerance: Relative adaption to sites with limited sunlight: intolerant, intermediate, or tolerant

Temperature Minimum: Climate regime for plant survival in degrees Fahrenheit

Vegetative Spread Rate: Relative speed for expanding area of coverage with stolons or rhizomes: none, slow, moderate, or rapid

Seed Spread Rate: Relative speed for expanding population from seed production and distribution: slow, moderate, or rapid

Seedling Vigor: Relative measure of seedling development: low, medium, or high

Palatable Browse: Relative comparison of leaves, young shoots, and other vegetative growth consumed by goats and deer: low, medium, or high

Palatable Graze: Relative comparison of leaves, young shoots, and other vegetative growth consumed by grazers such as cattle, horses, and sheep: low, medium, or high

Protein Potential: Relative comparison of protein amount available to browsers and grazers: low, medium, or high.



Υσεδ υιθουτ περιμισιον.

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We will add your distinctiveness to our own. Resistance is futile.

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<http://michiganflora.net/glossary.aspx> Access started 12/17/11. [University of Michigan Herbarium](http://www.umich.edu/herbarium) | 3600 Varsity Drive | Ann Arbor, MI 48108-2228 | phone 734.615.6200 | fax 734.998.0038 Abbr. (mfn)

<http://www.oed.com/> Access started 4/15/11. Abbr. (oed).

<http://plants.ifas.ufl.edu/glossary>, University of Florida/IFAS, Center for Aquatic and Invasive Plants (Etymology is a tad unkempt and unorthodox; some is just wrong. If a little knowledge is a dangerous thing, this glossary is hazardous.)

<http://www.rhizobium.umn.edu/glossary.php> University of Minnesota Rhizobium Research Laboratory Abbr. (rrl).

<http://www.vplants.org/plants/glossary>. An expanded version of the glossary in *Plants of the Chicago Region* by Swink and Wilhelm (1994).

<http://www.usanpn.org/glossary/3#lettera> “Definitions of terms posted on the USA National Phenology Network website and commonly used in plant and animal description and identification. Glossary definitions have been taken from: Harris, J.G., and M.W. Harris. 1997. Plant identification terminology: an illustrated glossary. Spring Lake Publishing, Spring Lake, Utah. 197 pp.”

<http://zipcodezoo.com/>

<http://www.anbg.gov.au/glossary/croft.html> A Short Botanical Glossary, compiled by Jim Croft; Centre for Plant Biodiversity Research; Australian National Herbarium. Contains several inconsistencies. Accessed June, 2012.

Revised 17 June 2013. ‘Latinized’ transliterations of Greek are being found and being undumbed.