This glossary is modified from those of Shinners (1958a) and Mahler (1988), with additional entries obtained or modified from a variety of sources including Lawrence (1951), Featherly (1954), Correll (1956), Gleason and Cronquist (1963), Radford et al. (1968), Correll and Johnston (1970), Gould (1975), Lewis and Elvin-Lewis (1977), Benson (1979), Schmutz and Hamilton (1979), Fuller and McClintock (1986), Jones and Luchsinger (1986), Schofield (1986), Gandhi and Thomas (1989), Blackwell (1990), Isely (1990), Harris and Harris (1994), Spjut (1994), and Hickey and King (1997).

- **A** - A prefix meaning without or not.
- **Abaxial** - Located on the side away from axis; e.g., lower leaf surface; contrasting with adaxial.
- **Aberrant** - Different from normal or typical condition.
- **Abortive** - Not developing or imperfectly developed; barren; defective.
- **Abscission** - Act or process of cutting off or shedding; e.g., the shedding or absicising of leaves.
- **Abscission Layer** - Zone at base of petiole or other structure (e.g., pedicel) forming a layer of separation. This layer is important in the drop or shedding of leaves and fruits.
- **Acaulescent** - Stemless or apparently so; having leaves basal with stems not elongated.
- **Accessory Fruit** - A fruit or assemblage of fruits with fleshy parts derived from organs other than the pistil; e.g., strawberry with fleshy receptacle with achenes (individual fruits) embedded in its surface.
- **Accrescent** - Enlarging after anthesis or with age, frequently in reference to the calyx.
- **Accumbent Cotyledons** - Cotyledons lying face to face with the edges against the radicle.
- **Acerose** (＝ Acicular) - Needle-shaped or -like.
- **Achene** - Small, dry, indehiscent, one-seeded fruit with ovary wall free from seed.
- **Achlamydeous** - Lacking a perianth.
- **Chlorophyllous** - Lacking chlorophyll or apparently so; e.g., a number of non-green saprophytes or parasites.
- **Acicular** (＝ Acorose) - Needle-shaped or -like.
- **Acorn** - Fruit of a Quercus species (oak) composed of a nut and its cup or cupule made of fused bracts.
- **Acrid** - With sharp and harsh or bitterly pungent taste.
- **Acropetal** - Developing or maturing in succession from the base toward the apex.
- **Actinomorphic** (＝ Regular) - Radially symmetrical. The term usually refers to the arrangement of flower parts.
- **Acuminate** - Having a long, tapering point; longer tapering than acute.
- **Acute** - Forming a sharp angle of less than 90 degrees; less tapering than acuminate.
- **Ad-** - A prefix meaning to or toward.
- **Adaxial** - Located on side towards axis; e.g., upper leaf surface; contrasting with abaxial.
- **Adherent** - Touching or sticking together, when two organs or parts (typically dissimilar) touch each other but are not grown or fused together.
- **Adnate** - United or fused, when the fusion involves dissimilar structures; e.g., as in fusion of stamens and corolla.
- **Adpressed** (＝ Appressed) - Lying flat against a surface.
- **Adventitious** - Referring to structures or organs that develop in an unusual position; e.g., buds or roots that develop out of their usual place.
- **Adventive** - Not fully naturalized or established; of occasional occurrence.
- **Aerial** - Above ground level.
- **Aestival** - Appearing in or pertaining to the summer.
- **Aestivation** - Arrangement of young flower parts in the bud.
- **Agamospermy** - The production of seeds without fertilization.
- **Aggregate** - Crowded into a dense cluster or tuft.
- **Aggregate Fruit** - A fruit formed by the clustering together of a number of separate pistils from a single flower; e.g., a blackberry is a cluster of druplets.
- **Aglucone** - The nonsugar component of a glycoside. Glycosides are composed of a sugar plus another compound (the aglycone); many aglycones are toxic.
- **Alate** - Winged.
- **Albidus** - White.
- **Albumen** - Nutritive material stored within the seed.
- **Alkali** - Any of a broad class (> 5000 known alkaloids) of bitter, usually basic (alkaline), organic compounds that contain nitrogen and typically have a ring in their structure. They are often physiologically active in animals; many are poisonous; many affect the nervous system; there are a number of general types based on chemical structure including indole, isoquinoline, piperidine, purine, pyrrolidine, quinoline, and tropane alkaloids; well-known examples of alkaloids include atropine, caffeine, cocaine, quinine, morphine, nicotine, theobromine, and strychnine.
- **Allelopathy** - Harmful or detrimental chemical effect by one species upon another; e.g., a plant producing phytotoxic compounds that inhibit the germination or growth of other plants.
- **Allergen** - Substance capable of inducing an allergic response.
- **Allergenic** - Causing an allergic response or an allergy to become manifest.
- **Allergy** - Hypersensitivity of the body cells to specific substances as antigens and allergens, resulting in various types of reactions (e.g., anaphylaxis, contact dermatitis, hay fever).
- **Alliaceous** - Onion-like.
- **Alluvial** - Of or pertaining to alluvium (= organic or inorganic materials, including soils, deposited by running water).
- **Alternate** - Bearing one leaf or other structure at a node; having only one attached at a given point; contrasting with opposite or whorled.
- **Alveolate** - Honeycombed.
AMORPHOUS  Without regular or definite form; shapeless.

ANTHESIS  (a) Time or process of flower expansion or opening; (b) also descriptive of period during which a flower is open and functional.

ANTHOCARP  A structure that includes a fruit united with the perianth or the receptacle; e.g., Nyctaginaceae.

ANTHOCYANIN  A red, purplish, or blue water-soluble pigment found in most flowers. The color of these pigments is affected by pH (e.g., in Hydrangea); chemically, anthocyanins are phenolic.

ANTIPETALOUS  Referring to stamens that are of the same number as, and borne in front of (= on the same radius as) the petals or corolla lobes.

ANTIPSEPALSAL  Referring to stamens that are of the same number as, and borne in front of (= on the same radius as) the sepals or calyx lobes.

ANTORSE  Directed toward the summit, upward, or forward; e.g., pubescence directed up the stem, the free end of the hair above or distal to the attached end; contrasting with retrorse.

ANTROSERSLY BARBED  With barbs (= points) pointing upward toward the summit or apex.

APETALOUS  Having flowers without petals.

APEX  (pl. APICES) The tip or summit.

APHYLLODI  Lacking leaves at the base.

APHYLLOUS  Leafless; e.g., Cuscutaceae.

APICAL  At the tip or apex relating to the apex.

APICAL BUD (= Terminal bud) Bud at the end (= apex) of a stem or branch.

APICULATE  Having a small sharp point formed by blade tissue (of a leaf, sepal, or petal) rather than by projection of a rib or vein; with an abrupt tip or projection.

APOCARPOS  With the carpels separate or free from one another.

APOGAMOUS  Forming a sporophyte without the union of gametes.

APOMIXIS  A collective term for reproduction, including vegetative propagation, that does not involve sexual processes; any form of asexual reproduction.

APOPETALOUS  (= Polypetalous) Referring to a corolla consisting of separate petals.

APOPHYSS  Swelling or enlargement of the surface of an organ.

APOSEPALOUS  (= Polysepalous) Referring to a calyx consisting of separate sepals.

APPENDAGE  Any attached structure that is supplementary or secondary.

APPENDICULATE  With an appendage.

APRESSED (= Adpressed) Lying flat against a surface.

APPROXIMATE  Close together.

AQUATIC  Living in water.

ARACHNOID, ARACHNOSE  Cobwebby; cobweb-like, with entangled, slender, loose hairs; thinly pubescent with relatively long, usually appressed and interlaced hairs.

ARBORESCENT  Tree-like or becoming tree-like.

ARCHEGONIUM  Female sexual organ; structure forming female gametes; typically found in less derived plants (e.g., ferns) but so reduced evolutionarily as to not be present in flowering plants.

ARICULATE  Curved or bent like a bow, often used in reference to curving veins.

ARENACEOUS  Sand-like or growing in sand.

AREOLATE  Divided into small angular spaces; marked with areolae.

AREOLE, AREOLA  (pl. AREOLAE) (a) Small space marked out on a surface, usually referring to the space bounded by veinlets on the surface of a leaf; (b) the small spine-bearing areas on a cactus stem.

ARGILLACEOUS  Clayey; growing in clay or clay-like material.

ARIL  An appendage or covering on a seed, typically involved in dispersal by animals.
**A**
- **Arillate** With an aril.
- **Aristate** Bearing a stiff awn or bristle.
- **Aristulate** Diminutive of aristate.
- **Armed** Possessing sharp projections; e.g., prickles, spines, or thorns.
- **Aromatic** (a) Generally, having a fragrant odor; (b) chemically, containing or patterned after benzene rings, with or without fragrance.
- **Article** The individual unit of a constricted or jointed fruit; e.g., in some Fabaceae such as Desmodium.
- **Articulate** Jointed; joined.
- **Articulation** A separation place; joint.
- **Ascending, Ascendent** Rising at an oblique angle.
- **Asepalous** Without sepals.
- **Asexual** Without sex; reproducing without sex.
- **Asperous** Rough to the touch.
- **Assurgent** Ascending, rising.
- **Asympetous** Without a style.
- **Asymmetrical** Without symmetry.
- **Atomiferous** Bearing very fine glands.
- **Atrorhizous** Very dark chestnut-colored.
- **Attenuate** Gradually tapering to a very slender tip, the taper more gradual than in an acuminate.
- **Atypical** Not typical; deviating from the norm.
- **Auricle** Earlobe-like lobe or appendage; e.g., at the base of some leaves, sepals, etc.
- **Auriculate** With an auricle.
- **Autotrophic** Descriptive of an organism capable of making its own food, usually through photosynthesis; free living, not parasitic or saprophytic; e.g., green plants.
- **Autumnal** Associated with or occurring in the fall of the year.
- **Awl-shaped** (= Subulate) Tapering from the base to a slender or stiff point; narrow and sharp-pointed.
- **Axillary** In a leaf axil.
- **Axil** Angle between two organs; e.g., upper angle formed by a leaf and a stem.
- **Axile of Axillary Placentation** Placentation with the ovules attached to the central axis of the ovary.
- **Axillary** In an axil; e.g., in the angle between a leaf and a stem.
- **Axis** (pl. Axes) (a) the central stem from which organs arise; (b) a portion of a plant from which a series of organs arises radially; e.g., the axis of an inflorescence.

**B**
- **Baccate** Resembling or having the structure of a berry; berry-like.
- **Ballistic** Referring to fruits that are forcibly or elastically dehiscent, whose seeds are thrown catapult-like; e.g., *Phyllanthus* (Euphorbiaceae).
- **Banner** (= Standard) Adaxial and typically largest petal of a papilionaceous flower.
- **Barbed** With short reflexed points like a multi-pronged fishhook.
- **Barbellate** Diminutive of barbed; with short, fine, stiff hairs.
- **Bark** Outer (= external to vascular cambium) protective tissues on the stems or roots of woody plants.
- **Basal** Located at the base of a plant or of an organ.
- **Basal Rosette** Cluster of leaves on or near the ground.
- **Basal Style** Style projecting from among the lobes of a deeply lobed ovary.
- **Basifixed** Attached basally, typically referring to attachment of an anther to a filament; contrasting with either dorsifixed or versatile.
- **Basilaminar** At base of blade of leaf or other structure.
- **Basiapel** Developing or maturing in succession from the apex toward the base.
- **Basiscope** Directed toward the base.
- **Basionym** The original epithet assigned to a species (or other taxon of lower rank) by its author.
- **Beak** A long, prominent, and relatively thickened point; a tapering projection; e.g., projection on a fruit resulting from a persistent style.
- **Beaked** Ending in a beak.
- **Beard** A group of long awns or bristle-like trichomes; a zone of pubescence; e.g., on some corollas.
- **Bearded** Bearing long or stiff hairs, typically in a line or tuft.
- **Berry** Indehiscent type of fruit with the entire pericarp fleshy and lacking a stone, usually with several to many seeds; e.g., tomato, grape.
- **Betals** Reddish, nitrogen-containing pigments (characteristic of most Caryophyllidae) that derive their name from the genus *Beta* (beets).
- **Binomial** The combination of a generic name and a specific epithet given to each species.
- **Binominal Nomenclature** System of nomenclature where each species has a two-part name composed of a generic name and a specific epithet.
- **Bipartite** Two-parted; divided into two parts nearly to the base.
- **Bipinnate** (= Twice-pinnate or 2-pinnate) Descriptive of a leaf with leaflets pinnately arranged on lateral axes that are themselves pinnately arranged on the main axis; with the primary divisions (pinnae) themselves pinnate.
ILLUSTRATED GLOSSARY 1425

LEAF AND TWIG STRUCTURE AND ARRANGEMENT

FLOWER SHAPE

FLOWER SYMMETRY

FLOWER STRUCTURE

ADAPTÉ FROM MASON (1957); USED WITH PERMISSION OF UNIV. OF CALIFORNIA PRESS; ©1957.
**Bisected** Completely divided into two parts.

**Biseriate** In two whorls or cycles; e.g., a perianth with both calyx and corolla.

**Bisexual flower** Type of flower with both stamens and pistil(s) functional within the same flower.

**Bivaluate** Opening by two valves.

**Bladder** (a) A thin-walled, inflated structure; (b) a hollow, membranaceous appendage that traps insects; e.g., *Utricularia* (Lentibulariaceae).

**Bladdery** Thin-walled and inflated, like the bladder of an animal.

**Blade** Flat, expanded portion, as the main part of a leaf or petal.

**Bloom** (a) Flower or flowering; (b) coating of white wax or powder, as on plums or grapes.

**Bolé** The main trunk or stem of a tree.

**Boss** A protrusion.

**Brackish** Somewhat salty.

**Bract** A modified reduced leaf typically subtending a flower or cluster of flowers. Bracts can vary from very leaf-like to scale-like or thread-like; in some cases they can be colorful and attract pollinators.

**Bracteal** Having the form or position of a bract.

**Bracteate** Having bracts.

**Bracteolate** Having bracteoles.

**Bracteole, Bractlet** A usually small bract borne on a secondary axis (e.g., on a pedicel).

**Bracteose** Having numerous or conspicuous bracts.

**Branch** A shoot or secondary stem growing from the main stem.

**Branchlet** The ultimate division of a branch.

**Bristle** Stiff, strong but slender hair or trichome.

**Bristly** Bearing bristles.

**Broad** (= Wide) Distance across a structure (equal to diameter if tubular); sometimes restricted to signify the width or diameter of three-dimensional structures.

**Bryophyta** Group containing the mosses, liverworts, and hornworts. The Bryophyta is not treated in this flora.

**Bud** (a) Undeveloped or unopened flower; (b) undeveloped, much-condensed shoots, containing embryonic (meristematic or growing) tissue, usually covered by scales or bracts. Such buds are usually found at the tips of stems or in the axis of leaves.

**Bulb** Underground structure composed of a short, disc-like stem and one or more buds surrounded by layers of thickened fleshy leaf bases or scales; e.g., an onion.

**Bulbil** Small bulbs produced in an inflorescence or in leaf axils; e.g., *Allium* inflorescences.

**Bulblet** Small bulbs produced alongside a parent bulb; e.g., the numerous underground small bulbs produced by some garlics.

**Bulbose, Bulbos** Having bulbs or bulb-like structures.

**Bullate** Describing a surface with rounded elevations resembling blisters or puckers.

**Bur, Burr** A structure with a rough or prickly envelope or covering; e.g., sandbur.

**Bush** (= Shrub) A woody perennial usually branching from the base with several main stems.
Types of Inflorescences

- Raceme
- Corymb
- Cyne
- Umbel
- Panicle
- Compound Corymb
- Dichotomous Cyne
- Compound Umbel
- Thyrsus
- Spike
- Scrobytoid Cyne
- Head
- Vertical
- Ament (Catkin)
- Spadix
- Head (Anthodium)
Caryopsis A dry dehiscent fruit developed from more than one carpel.

Capsular A substance potentially inducing cancer or malignancy.

Cardiac Glycoside A glycoside (two-component molecule) that upon breakdown yields a heart stimulant as the aglycone (= non-sugar component). The aglycones are steroidal in structure and are typically poisonous; e.g., digoxin and digitoxin from Digitalis, used as in treating heart trouble.

Carina (= Keel) The two lower (= abaxial) fused petals of a papilionaceous flower (Fabaceae); (b) prominent longitudinal ridge, shaped like the keel of a boat.

Carinate Keel-shaped; provided with a ridge or keel extending lengthwise along the middle. If more than one keel is present, the fact may be indicated by a numerical prefix.

Carinaceous Maturation of parts from the periphery toward the center.

Carinose Waxy.

Cariposate (= Cariposity) Growing in clumps or tufts.

Chaff Thin, dry, or membranous scales or bracts, often used to refer to receptacular scales or bracts in many Asteraceae; see pale or palea.

Chaffy Thin, dry, or membranous.

Chalaza The basal part of the ovule where it attaches to the funiculus.

Channeled Deeply grooved.

Chartaceous Stiffly papery.

Chasmogamous Referring to flowers that open at anthesis; with pollination after opening of flowers; contrasting with cleistogamous.

Chiropetophylly Chiropetophilous Bat-pollination.

Chlorophyll The light-capturing pigment giving the green color to plants. Because chlorophyll absorbs less green than other wavelengths of light (and thus reflects and transmits relatively more green), leaves appear green to the human eye.

Choripetalous Composed of or characterized by separate petals.

Chorisepalous Composed of or characterized by separate sepals.

Chromosomes Thread-like “colored bodies” occurring in the nuclei of cells and containing the genetic material.

Ciliate With a marginal fringe of hairs similar to eye lashes.

Ciliolate Diminutive of ciliate.

Ciliurn (pl. Cilia) Marginal hair or trichome.

Cinnamus A curl; e.g., a helicoid (= curled or coiled) cyme, as in the Boraginaceae.

Cinerous Ash-colored; light-gray.

Circinate Coiled, with the apex innermost, as the young fronds in some ferns.

Circumsissile Dehiscing by a regular transverse line around the fruit or anther, the top coming off like a lid.

Cirrhous Tendril-like; e.g., a leaf with a slender coiled apex.

Cladophyll Cladode (= Phylloclade) A portion of a stem having the general form and function of a leaf; a flattened photosynthetic stem.

Clampering Vine-like; growing over other plants often without the aid of tendrils or twining stems.

Clasping (= Amplicaul) With base of leaf or other structure (e.g., stipule) wholly or partly surrounding the stem.

Class The unit, category, or rank in classification made up of one or more orders; ending in -ae or -opsida; sometimes divided into subclasses which in turn are made of orders.

Clathrate Latticed; with a series of crossed members.

Clavate Club-shaped; becoming gradually enlarged apically.

Clavellate Diminutive of clavate.

Claw Stalk-like basal portion of some petals or sepals.

Clawed Having a claw.

Cleft (a) Cut 1/2 or more the distance from the margin to midrib or from the apex to base; (b) generally, any deep cut.

Cleistogam A small flower that does not open and is necessarily self-pollinating.

Cleistogamous Cleistogamic Referring to flowers not opening at anthesis and thus self-pollinating; with pollination prior to opening of flowers. Such flowers frequently have reduced or incompletely formed parts (e.g., petals).

Cleistogamy The self-pollination of flowers that do not open.

Clone A group of individuals of the same genotype, usually propagated vegetatively.
TYPES OF FRUITS AND ROOT AND STEM VARIATIONS

Types of Fruit

- Septical dehiscence capsule
- Loculicidal dehiscence capsule
- Vascular dehiscence capsule
- Circumsissile dehiscence capsule
- Operculate dehiscence capsule
- Silicle
- Silique
- Drupe
- Pome
- Druplets
- Ovary wall
- Utricle
- Nutlets

Placentation

- Parietal
- Axile
- Basal
- Free central

Root and Stem Variations

- Fibrous root
- Fleshy root
- Scaly bulb
- Stolon
- Woody root
- Rhizomatous bulb
- truncated bulb
- Tuberc
- Caudex

Adapted from Mason (1957); used with permission of Univ of California Press; ©1957.
Clump. A single plant with two to many, more or less crowded stems arising from a branched rootstock or short rhizome. cm. Centimeter; 10 mm; 1/100 of a meter; ca. 2/5 of an inch.

Coalescent. Referring to organs of one kind that have grown together.

Coarctate. Crowded together.

Cob. Rachis or central stalk of the pistillate inflorescence of corn.

Coccus (pl. Cocc). (a) a berry; (b) one of the parts of a lobed or deeply divided fruit with 1-seeded sections.

Cochlate. Coiled like a snail shell; spiral.

Coetaneous. At the same time or of the same age; e.g., flowers and leaves appearing at the same time.

Coherent. Descriptive of the close association of two similar structures without fusion.

Collar. The outer side of a grass leaf at the junction of the blade and sheath.

Collateral. Located side by side; e.g., ovules located side by side; e.g., accessory buds located on either side of a lateral bud.

Columnella. The persistent central axis around which the carpels of some fruits are arranged.

Colonial. Forming colonies usually by means of underground rhizomes, stolons, etc. The term is commonly used to describe groups of plants with asexual reproduction.

Colony. A stand, group, or population of plants of one species, spreading vegetatively, or from seeds, or both.

-Colporate. A suffix referring to pollen grains having grooves (= colpi).

-Colporate. A suffix referring to pollen grains having grooves and pores.

Column (a) United style and filaments in Orchidaceae; (b) united filaments in Malvaceae and Asclepiadaceae; (c) basal differentiated portion of the awn(s) in certain grasses.

Columnar. Column-shaped.

Coma. (a) A tuft of soft hairs or trichomes, as at the apices or bases of some seeds; (b) tuft of structures projecting from something (e.g., tuft of bracts projecting from heads of some Eryngium species).

Cominate. Comose. Resembling or provided with a coma.

Commissure. The surface where organs are joined; e.g., the face by which one carpel joins another.

Complanate. Flattened.

Complete. With all of the usual parts; e.g., a flower with all four flower parts: sepals, petals, stamens, and pistils.

Complicate. Folded together.

Composite (a) (= Compound) made up of several distinct parts; (b) common name for species of the Asteraceae.

Compound (= Composite). Made up of several distinct parts.

Compound inflorescence. One having two or more degrees of branching; e.g., a compound umbel is one whose branches bear branchlets rather than ending directly in flowers.

Compound leaf. A leaf that is cut completely to the base or midrib into segments (= leaflets) resembling miniature leaves; a leaf with two or more leaflets.

Compound ovary. Ovary developed from two or more united carpels, as evidenced by the presence of two or more locules, valves, placentae, styles, or stigmas.

Compound pistil. Pistil composed of two or more united carpels.

Compressed. Flattened.

Concave. Hollow; with a depression on the surface.

Concolor. Concolorous. Of a uniform color.

Conductive. Folded together lengthwise.

Cone (= Strobilus). A usually globose or cylindrical structure involved in reproduction and composed of an axis with a spiral, usually dense aggregation of sporophylls, bracts, or scales (these bearing spores, pollen, or seeds).

Confluent. Blending of one part into another.

Congested. Crowded together.

Conglomerate. Densely clustered.

Conical. Cone-shaped.

Coniferous. Cone-bearing.

Conjugate. Jointed in pairs.

Connate. United or fused, when the fusion involves two or more similar structures; e.g., as in fusion of stamens into a tube.

Connate-perfoliate. Both connate and perfoliate; e.g., two leaves grown together and completely encircling a stem; e.g., in Eupatorium perfoliatum.

Connective. The tissue connecting the pollen-sacs of an anther.

In certain plants the connective is prolonged at its base or apex.

Connivent. Converging or nearly or quite in contact, but not fused; e.g., connivent stamens in Solanum.

Conserved. Term applied to a scientific name whose use, even though illegitimate according to nomenclatural rules, is allowed by the International Code of Botanical Nomenclature; e.g., many family names long in use, such as Cactaceae and Caryophyllaceae, have been conserved to prevent confusion.

Conspecific. Of the same species.

Constricted. Tightened or drawn together or narrowed.

Contact dermatitis. Inflammation of the skin due to contact with poisons, irritants, or sensitizers. In some individuals it can be caused by even the slightest contact; caused by a variety of plants including poison-ivy (Toxicodendron radicans).

Contiguous. Touching, but not fused.

Continuous. Not interrupted; not articulated; not jointed.

Contorted. Twisted or distorted.

Contracted. Narrowed or shortened; reduced in size.

Contrary. In an opposite direction or at right angles to.

Convergent. Coming together or approaching.

Convex. Rounded or bulged on the surface.

Convolute. Rolled or twisted together when in an undeveloped stage.

Coralloid. Coral-like.

Cordate. Cordiform. (a) Heart-shaped; with a notch at the base and ovate in outline (the words apply specifically to flat surfaces and to solid shapes, respectively); (b) often referring only to the notched base of a structure; e.g., leaf base.

Coriaceous. With texture like leather; tough; leathery.

Corm. Bulb-like usually subterranean stem base, solid instead of with layers of modified leaves as in a true bulb.

Cormous. Having a corm.

Corneous. Horny in texture.

Corniculate. Bearing a small horn or horns.

Cornute. Horned or spurred.
TYPES OF PUBESCENCE

PILOSE

HISPID

HIRSUTE

VILLOUS

HIRSUTE-VILLOUS

LANATE

DOWNY

VELUTINOUS

ARACHNOID

FLOCCOSE

ARACHNOID-FLOCCOSE

STRIGOSE

SERICEOUS

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ADAPTED FROM MASON (1957); USED WITH PERMISSION OF UNIV. OF CALIFORNIA PRESS; ©1957.
COROLLIFORM SCALES  greatly resembling an extra corolla or perianth.

CORolla  Collective term for the petals; the inner series of floral "leaves". Corollas are typically but not always colorful and showy.

Corolla Lobe  A free projecting part of a synsepalous corolla; also referred to as a corolla tooth.

Corolla Tube  The basal or tubular portion of a synsepalous corolla, as opposed to the free, distal, corolla lobes.

Corona  (= Crown)  Projection or outgrowth of a corolla, perianth, or anthers, in the form of a fringe, cup, or tube, sometimes greatly resembling an extra corolla or perianth.

Coroniform Scales  Membranous scales broader than long.

Corpusculum  In Asclepiadaceae, the gland-like clip connecting the two bands (= filament-like retinacula) attached to the pollinia; part of the translator.

Corrugate  Having wrinkles or folds.

Cortex  (a) The tissue between the stele and epidermis of a stem; (b) bark or rind.

Corymb  (a) An irregular perennial or over-wintering stem or stem-like growth; (b) specifically, the units of the inflorescence in Asteraceae.

Corymbiform  Shaped like a corymb.

Corymbose  In corymbs or corymb-like inflorescences (i.e., flat-topped).

Costa  (pl. Costae)  A rib; the midvein of a leaf.

Costate  Longitudinally ribbed.

Costules  Midveins of the pinnules.

Cotyledon  Seed leaf; main leaf or leaves of the embryonic plant.

Coumarin Glycoside  A glycoside (two-component molecule) that upon breakdown yields coumarin as the aglycone (= non-sugar component). Coumarin can be converted to dicoumarin, that upon breakdown yields coumarin as the aglycone (= non-sugar component). Hydrocyanic acid is extremely dangerous, causing cyanide poisoning; e.g., amygdalin in cherry and peach leaves or apple seeds (Rosaceae).

Coumarin Glycoside  A glycoside (two-component molecule) that upon breakdown yields hydrocyanic (prussic) acid (HCN) as the aglycone (= non-sugar component). Hydrocyanic acid is extremely dangerous, causing cyanide poisoning; e.g., amygdalin in cherry and peach leaves or apple seeds (Rosaceae).

Crateriform  Shaped like a saucer; shallow and hemispherical.

Crassulaceae  (Crassulaceae)  A family of succulent plants, with opposite leaves that are fleshy and waxy, often flattened or succulent, with a rosette-like growth habit.

Crest  An elevated ridge, process, or appendage on the surface of an organ or structure.

Crested  Having a crest.

Crispate  Irregularly curled or twisted.

Crispule  A young coiled leaf of some ferns.

Cruicate Cruiform  Cross-shaped.

CruCiferous  (a) Cross-bearing; (b) specifically descriptive of cross-like arrangement of petals of members of the Brassicaceae (Cruciferae).

Custard Apple  A tropical fruit with a thick, yellowish rind and a sweet, custard-like flesh.

Custode  Boat-like or boat-shaped.

Custode  A stone-like mineral concretion, usually of calcium carbonate.

Cycloidal  Having a rim or margin.

Cylindrical Cylindric  Elongate, circular in cross-section; having the form of a cylinder.

Cymbiform  Boat-like or boat-shaped.

Cyme  A broad, flattish or convex, determinate inflorescence with the central flowers maturing first.

Cymose  With the flowers in cymes; having an inflorescence type with the oldest flowers in the center.

Cymule  A small or few-flowered cyme.

Cypsela  Achene derived from an inferior ovary and adnate to the enclosing floral tube; e.g., in Asteraceae.

Cytoplasm  The gel-like cytoplasm of a cell, composed of a variety of substances including proteins, nucleic acids, and carbohydrates.

Cystolith  A stone-like mineral concretion, usually of calcium carbonate.

DC  De Candolle, name of a distinguished family of Swiss botanists; specifically Augustin Pyramus, who sponsored early botanical exploration in Texas by Berlandier, and named many Texas species; A. DC.; Alphonse, son of the preceding.

Deciduous  Falling away; not persistent over a long period of time.

Declinate  Declined  Bent forward or downward.

Decompound  More than once compound.
DECUMBENT  Lying flat or reclining with terminal shoots or stem tips ascending.

DECURVED  Curved downward.

DECUSATE  Arranged oppositely in pairs; each successive pair at right angles to the preceding one (resulting in the appearance of four rows), typically referring to arrangement of leaves.

DEFLEXED  Bent downward.

DEFOLIATE  To shed or remove leaves.

DEHSCE, DEHISCENT  To open at maturity to discharge the contents; e.g., fruit releasing seeds or anther releasing pollen.

DEHISCENCE  The process or act of opening.

DELIQUESCENT  Softening, dissolving, melting away, or wasting away; e.g., ephemeral petals of Tradescantia.

DELTATE, DELTOID  Shaped like an equilateral triangle, like the Greek letter delta (Δ).

DENARDIC  Tree-like, as in branching.

DENTATE  With sharp teeth not directed forward.

DENTICULATE  Minute dentate.

DEPAUPERATE  Smaller than the usual natural size; short of the usual development; stunted; impoverished.

DEPRESSED  Low as if flattened.

DERMATITIS  Inflammation of the skin due to exposure to poisons, irritants, or sensitizers. It can be caused by a number of plants including poison ivy.

DESCENDING  With a gradual downward tendency.

DETERMINATE  Descriptive of an inflorescence whose flowers begin to open first at the top or center, progressing downward or outward; with the number of flowers fixed or limited to a tenth separate; e.g., numerous Fabaceae.

DISCARD  Halved, as if one half is missing.

DIMORPHIC, DIMORPHISM  Occurring in two forms.

DIOSCIOUS  With staminate flowers on one plant (staminate plant) and pistillate flowers on a different plant (pistillate plant), literally, “two houses.”

DIPLID  Possessing two sets of chromosomes in each nucleus; twice the haploid number typical for gametes.

DIPLOSTEMONOUS  The stamens in two series, those of the outer series alternating with the petals.

DIPTEROPHILY  Pollination by dipterans (members of the insect order Diptera—flies, gnats, mosquitoes, and their relatives).

DISARCTICULATING  Separating; coming apart or falling apart.

DISC, DISK  (a) A more or less fleshy or elevated development of the receptacle or of coalesced nectaries or staminodes about the pistil; (b) the central part of an Asteraceae head.

DISC FLOWER  (= Disk flower)  In Asteraceae, small flower with tubular corolla, in disk (disc) portion of head; contrasting with ray (= ligulate) floret.

DISCIFORM  (a) Shaped like a disc; (b) in Asteraceae, in reference to a head with disk florets in center and marginal florets with ligule reduced or lacking.

DISCLIMAX  The condition where succession is indefinitely arrested or altered due to factors such as persistent disturbance (e.g., overgrazing).

DISCOID  (a) Outside the main range of a species; (b) being divided into separate groups; disconnected.

DISCOID HEAD  In Asteraceae, a head with only disk (disc) florets.

DISCOLOROUS  Having the two surfaces of a structure dissimilar in color.

DISC FLOWER  (= Disk flower)  In Asteraceae, small flower with tubular corolla, in disk (disc) portion of head; contrasting with ray (= ligulate) florets.

DISCIFORM  (a) Shaped like a disc; (b) in Asteraceae, in reference to a head with disk florets in center and marginal florets with ligule reduced or lacking; (c) without ligulate flowers.

DISTAL  Located at or toward the apex of a plant or organ; the terminal portion; the end opposite the attachment; contrasting with proximal.

DISTANT  In reference to similar parts remote from one another; contrasting with approximate.

DISTICHIOUS  In two vertical rows or ranks, not spirally arranged; e.g., leaves occurring in two rows on opposite sides of a stem.

DISTINCT  (= Free)  Separate, not united or fused.

DISTURBED  Referring to a habitat that has been altered or modified but not completely destroyed.

DIURNAL  Occurring during the daytime.

DIVARICATE  Very widely spreading.

DIVERGENT  Spreading, but less broadly than divaricate.

DIVIDED  (a) Cut 3/4—completely the distance from margin to midrib or from apex to base; (b) generally, cut deeply.
DIVISION The highest rank, category, or taxon in the plant kingdom; made up of classes; ending in -phyta; equivalent to the rank of phylum in the animal kingdom. 

DN Decimeter, 10 cm. 

Doctrine of signatures Ancient belief that a plant structure that resembles a portion of the human body (a sign or signature) gives clues to its use. Some people believed that a creator had placed such signs to indicate the plant’s value as a remedy for ailments of those body portions; e.g., Hepatica, named for its lobed, liver-shaped leaves, possibly useful for liver problems. 

Dolabiform (a) Referring to pubescence where the hairs are attached near the middle or towards (but not at) one end and are thus 2-forked; (b) having the form of an ax or hatchet. 

Dormant Not active. 

Dorsal Referring to the back or outer surface of an organ; the side away from the axis; the lower or abaxial surface; contrasting with ventral. 

Dorsifixed Attached by the back or dorsal edge, often in reference to the attachment of an anther to a filament; contrasting with either basifixed or versatile. 

Dorsiventral Differentiated into upper and lower surfaces distinct in appearance or structure. 

Double fertilization Process essentially unique to the angiosperms in which an egg unites with a sperm, forming a zygote, and a second sperm often unites with two nuclei resulting in a triploid endosperm. Double fertilization is also known in the small gymnosperm group the Gnetophyta. 

Double flower (a) One with more than the normal number of petals (anywhere from a few more to many times the usual number); (b) in Asteraceae, double can refer to a head with more than the normal number of ray (= ligulate) florets. 

Doubly serrate With coarse serrations bearing minute teeth on their margins; the teeth angled toward the apex of the structure. 

Downy Closely covered with short, weak, soft hairs. 

Drooping More or less erect at base but with upper part bending downward. 

Drupaceous Pertaining to, or of the nature of a drupe. 

Drupe One-seeded indehiscent fruit with a stony endocarp, the middle part fleshy or juicy, and an outer skin; e.g., plum or cherry. 

Drupellet A small drupe; one drupe from an aggregate fruit. 

Duplex Double as in pubescence composed of two kinds of hairs. 

DOCTRINE OF SIGNATURES 

DRUPE with either basifixed or versatile. 

ECILIATE Without cilia. 

ECOLOGICAL INDICATOR An organism that is sensitive to pollution or some other environmental problem and can therefore be used as an indicator or gauge of the condition of an ecosystem. 

ECOTONE Transition zone between two biological communities; e.g., much of nc TX is an ecotone between the eastern deciduous forest and the central North American grassland. 

ECOTYPE Those individuals adapted to only one of the kinds of environment occupied by a widespread species. 

Edaphic Pertaining to soil conditions. 

Edentate Without teeth. 

Egg A female gamete or sex cell, in flowering plants contained in an ovule. 

EGLANDULAR Without glands. 

ELAISOME An oily appendage on the seeds of some plants. These structures have apparently evolved to attract ants that act as dispersal agents. 

Eliminate Referring to a corolla without a limb. 

Ellipsoid A solid that is elliptic in outline. 

Elliptic Shaped like an ellipse with widest part at the middle in the form of a flattened circle usually more than twice as long as wide. 

Elongate Lengthened; stretched out. 

Emarginate With a notch in the usually rounded apex. 

Embro The new plant in a seed. 

Emersed, emergent Raised above and out of the water. 

Emetic A substance that causes vomiting. 

Enation Outgrowth on the surface; epidermal outgrowth. 

Endemic Confined geographically to or native to a single area. 

Endocarp Innermost layer of pericarp or fruit wall. 

Endogenous Produced deep within another body. 

Endosperm The food reserve of many angiosperm seeds. 

Ensiform Sword-shaped; e.g., leaves of an Iris. 

Entire With smooth margins; without teeth. 

Entomophilous, entomophily Pollinated by insects. 

Epappose Without pappus. 

Ephemeral Lasting for a brief period; e.g., for only one day. 

Epi Greek prefix meaning upon or on. 

Epicalyx A whorl or involucel of sepal-like bracts just below the true sepal; e.g., Malvaceae. 

Epicarp (= Exocarp) The outermost layer of the pericarp or fruit wall. 

Epicotyl The portion of the embryo just above the cotyledon(s); the young stem. 

Epidermal Relating to the epidermis. 

Epidermis The cellular covering of plant tissue below the cuticle. 

Epigean Growing upon or above the ground. 

Epigynous Borne on the ovary; indicating a flower in which the hypanthium or the basal parts of the perianth are adnate to the ovary, the perianth and stamens thus appearing to rise from the summit of an inferior ovary. 

Epigny The state of being epigynous. 

Epipetalous Descriptive of stamens in which the filaments are adnate to the corolla for all or part of their length; borne upon or arising from the petals or corolla. 

Epiphyte A plant growing on another plant for physical support only and not parasitic; e.g., many Bromeliaceae including Tillandsia species. 

Epiphytic Having the character of an epiphyte. 

Equidistant Of equal distance.
Glossary: Equitant–Fibrous

**Equitant**
Overlapping in two ranks; folded lengthwise and distichous; e.g., leaves folded around a stem in the manner of the legs of a rider around a horse.

**Eradiate**
Lacking ray (= ligulate) florets; e.g., discoid heads in Asteraceae.

**Erect**
(a) Growing essentially in a vertical position (e.g., whole plant); (b) a structure perpendicular to the object to which it is attached.

**Ergot**
An alkaloid producing fungus, *Claviceps purpurea* (and related species).

**Ergotism**
A sometimes lethal poisoning due to a number of alkaloids (e.g., lysergic acid dihydroxyethylamide—LSD-like, ergotamine—vasoconstrictive) produced by ergot fungi, *Claviceps purpurea* (Fr.) Tul., *C. paspali* Stev. & Hall, and related species, which sometimes infect the inflorescences of members of the grass family (e.g., Secale—rye). Symptoms resulting from eating ergot-contaminated grain can include hallucinations, psychosis, convulsions, and gangrene of the extremities (due to vasoconstriction); referred to in ages past as Saint Anthony’s Fire. The reference to fire resulted from the assumption that the burning sensations and blackened (gangrenous) limbs were retribution for sins. Saint Anthony, supposedly with special powers to protect against fire, infection, and epilepsy, was often prayed to for help by those with the condition. Large scale epidemics of ergotism in Europe prior to 1800, from eating bread made with contaminated grain, resulted in 1,000s of deaths; isolated instances still occur where grain purity is not controlled; ergotism is blamed by some for the hysteria that resulted in the Salem witch trials in 17th century Massachusetts. See treatment of *Secale* (Poaceae) for references.

**Erode**
With ragged margin, as if nibbled or chewed.

**Escape**
A cultivated plant not purposely planted but found growing as though wild.

**Escarpment**
A steep slope.

**Essential oils**
Fragrant (often pleasantly so) substances that are typically rather simple terpenoid compounds (monoterpenes, sesquiterpenes). They are responsible for the fragrance of many flowers and other plant tissues and are currently used in aromatherapy, e.g., in mint family and citrus family.

**Estipellate**
Without stipels.

**Estipulate**
Without stipules.

**Etiolate**
Lengthened and deprived of color by absence of light.

**Evanescence**
Of short duration; quickly lost.

**Even-pinnate**
Descriptive of a compound leaf with terminal leaflet absent; with an even number of leaflets.

**Evergreen**
Remaining green through the winter.

**Exalate**
Without wings.

**Exalbuminous**
In reference to seeds without endosperm.

**Excenetric**
Not having the axis placed centrally.

**Excurved**
Curved outward or away from a central part.

**Exfoliate**
To peel off or come off in scales, flakes, plates, layers, or shreds; e.g., some types of bark.

**Exocarp** (= Epicarp)
The outermost layer of the pericarp or fruit wall.

**Exotic**
Foreign; not native; from another geographic area.

**Explanate**
Spread out flat.

**Explosively dehiscent**
Descriptive of a fruit that suddenly and forcibly dehisces its seeds, with the seeds being thrown away from the plant; e.g., *Impatiens*.

**Exserted**
Projecting out or beyond (e.g., stamens projecting beyond the corolla); contrasting with included.

**Exstipulate**
Lacking stipules.

**Extant**
Still existing; contrast with extinct.

**Extinct**
No longer in existence; descriptive of a species for which living representatives no longer exist. Locally extinct refers to extinction in a given geographic region.

**Extraloral**
Outside the flower; e.g., extrafloral nectaries.

**Extrorse**
Facing outward, away from the axis, typically used to refer to manner of anther dehiscence.

**Exudate**
Material coming out slowly through small pores or openings.

**Eye**
(a) The marked or contrastingly colored center of a flower; (b) a bud on a tuber; e.g., on potatoes.

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f. (a) After an author’s name: abbreviation of filius, the son, or “f.”; (b) abbreviation of forma or form (see next page).

**Facet**
One of a set of small plane surfaces.

**Facultative**
Not necessary or essential; optional; contrasting with obligate.

**Falcate**
Sickle-shaped, with the tip curved to one side.

**Fall**
Outer, spreading, often recurved, and commonly bearded perianth segment in *Iris*.

**Family**
The unit, category, or rank in classification made up of one or more genera; ending in -aceae; sometimes divided into subfamilies, which in turn are made up of genera.

**Farinaceous**
Mealy in texture.

**Farinose**
Covered with a whitish mealy powder or mealiness.

**Fasciated**
With an abnormal widening and flattening of the stem as if several stems had grown together.

**Fascicle**
A condensed or close bundle or cluster.

**Fasciculate**
Congested in bundles or clusters.

**Fastigate**
In reference to branches, close together and nearly parallel.

**Fenestrate**
Perforated with holes, openings (windows), or translucent areas.

**Feral**
Wild; not cultivated.

**Ferrugineous**
Rust-colored.

**Fertile**
Capable of normal reproductive functions, as a fertile stamen producing pollen, a fertile pistil producing ovules, or a fertile flower normally producing fruit (although it may lack stamens); e.g., used to describe Asteraceae flowers capable of maturing achenes, irrespective of ability to produce pollen.

**Fertilization**
Union of two gametes (e.g., egg and a sperm) to form a zygote.

**Fetid**
With a disagreeable odor.

**Fibrillose**
Having small fibers or appearing finely lined.

**Fibrous**
Resembling or having fibers.
**Fibrous root system** One with several roots about equal in size and arising from about the same place; contrasting with taproot.

- **fid** A suffix meaning deeply cut.

**Filament** (a) The thread-like stalk supporting an anther; (b) a thread or thread-like structure.

**Filamentous, filamentose** Composed of filaments or threads; thread-like.

**Filiferous** With coarse marginal threads.

**Filiform** Slender; having the form of a thread; filamentous.

**Fimbriate** Fringed; with narrow or filiform appendages or segments along the margin.

**Fimbrillate** With a minute fringe.

**First glume** Lowermost of the two glumes in a grass spikelet.

**Fissured** Cracked or fractured.

**Fistulose** A suffix meaning deeply cut.

**Flabellate, flabelliform** Fan-shaped; broadly wedge-shaped.

**Flaccid** Lax, weak, floppy, not rigid.

**Flagelliform** Zigzag; bending or curving alternately in opposite directions.

**Flagellate** With tufts of soft woolly hairs.

**Flammeate** Covered with tufts of soft woolly hairs.

**Flacculent** Minutely floccose.

**Flora** (a) Collective term for the plants of an area; (b) a taxonomic work on the plants of an area.

**Floral envel** The calyx or corolla; the floral "leaves."

**Floral tube, floral cup** Tube or cup formed by union of sepals, petals, and stamens bases. The structure can be either adnate to or free from the ovary; in some cases it is synonomous with hypantherium.

**Flore** (a) Small flower in a dense cluster; (b) in reference to individual flowers of Asteraceae and Poaceae; (c) in grasses referring to the lemma and palea together with the enclosed reproductive structures.

**Florian** Flowering stem of the genus *Rubus* (dewberries and blackberries).

**Floriferous** Bearing or producing flowers.

**Flower** An axis bearing stamen(s), pistil(s), or both, and in addition, often floral envelopes (= calyx and corolla); the reproductive structure of an angiosperm.

**Fluted** With alternating ridges and grooves.

**Folaceous** Leaf-like.

**Foliage** Collective term for the leaves of a plant.

**Foliate** With leaves.

**Foliolate** With leaflets.

**Foliose** Leafy.

**Follecular** Dry, one-carpellate fruit dehiscing along one suture only.

**Forb** An herbaceous, non-grass-like plant.

**Forked** Dichotomous; divided into two equal or nearly equal branches.

**Forma, form** (abbreviated f.) A taxon below the rank of variety used to refer to minor variations without distinctive geographic occurrence; e.g., occasional albinos or seasonal growth forms. This category is generally ignored in this book.

**Fornices** Internal appendages in the upper throat of a corolla; e.g., in some Boraginaceae.

**Fovea (pl. fovea)** A pit or depression.

**Foveate** Pitted.

**Foveolate** Minutely pitted.

**Free (= Distinct)** Separate from one another.

**Free-central placentation** Placentation with the seeds attached to a central column and surrounded by a single continuous locule.

**Frong** The leaf of a fern, often compound or decompound.

**Fructiferous** Producing or bearing fruit.

**Fruigivore** Animal that feeds on fruits.

**Fruit** A mature, ripened pistil or ovary. In the case of accessory "fruits" other tissues may be involved.

**Fruticoso** Shrubby or bushy in sense of being woody.

**Fugacious** Falling or disappearing early, usually in reference to parts of a flower.

**Fulvous** Tawny, brownish yellow.

**Funicle, funiculus** The stalk attaching an ovule or seed to the ovary wall or placenta.

**Funneliform (= Infundibuliform)** Funnel-shaped; gradually widening upwards.

**Furrowed** With longitudinal channels or grooves.

**Fuscos** Grayish-brown.

**Fused** United by normal growth.

**Fusiform** Spindle-shaped; with broadest diameter at middle tapering to each end.

**Galea** The helmet-like or hood-like upper lip of a bilabiate corolla or calyx, especially one that is strongly concave.

**Galeate** Hooded, hood-like, or helmet-like.

**Gamete** A sex cell; an egg or sperm.

**Gametophyte** The gamete-producing, typically haploid generation alternating with the sporophyte (= spore-producing, typically diploid); the stage in the life-history of a plant that produces male or female cells (= gametes); the dominant generation in mosses and liverworts. In ferns and fern allies it is green and autotrophic, although small; in all flowering plants it is microscopical and develops within the tissues of the sporophyte.

**Gamophore** A prefix meaning united; e.g., gamopetalous or gamosepalous.

**Gamopetalous (= Sympetalous)** With petals united, at least basally, forming a tube.

**Gamosepalous (= Synsepalous)** With sepals united, at least basally, forming a tube.

**Gastroenteritis** Inflammation of the stomach and intestines. It can be caused by a number of plant materials.

**Geminate** In pairs; twin.

**Gemma** An asexual propagule sometimes appearing as, but not homologous with, a vegetative bud.

**Geniculate** Bent abruptly, like a knee.
Genus (pl. genera) The unit, category, or rank in classification between family and species; composed of one or more closely related species; sometimes divided into subgenera, which in turn are made up of species.

Gibbous Swollen basally on one side.

Glabrate gladrescent Becoming hairless with age.

Glabrous Without hairs.

Gladiate Sword-shaped.

Gland A secreting part or appendage, often protruding or wart-like.

Glandular Having or bearing secreting organs, glands, or trichomes.

Glandular-pubescent With gland-tipped, pinhead-like hairs.

Glandular-punctate With glands recessed in depressions.

Glaucous Becoming glaucous.

Glaucous With waxy substances forming a whitish or gray-silvery covering or bloom.

Globose Nearly spherical or rounded.

Glochid (pl. Glochidia) An apically barbed bristle or hair; e.g., in many Cactaceae.

Glomerate In a dense cluster or glomerule.

Glomerulate Arranged in small dense clusters.

Glomerule A dense cluster of two or more structures.

Glucoside A glycoside with glucose as the sugar.

Glumaceous With greenground bracts or petals similar in appearance to the glumes in grass spikelets.

Glume One of a pair of bracts at the base of a grass spikelet.

Glutinous Sticky, gluey, or resinous.

Glycoside Complex, two-component chemical compound that can break down or hydrolyze under certain conditions, yielding a sugar plus another compound (= aglycone) that can be physiologically active including poisonous. Types of glycosides include cardiac, coumarin, cyanogenic, mustard oil, steroideal, and saponic; the term glucoside refers to those in which the sugar molecule is glucose.

Glycosinolate (= Mustard oil glycoside) A complex molecule that upon breakdown yields a sugar, a sulfate fraction, and isothiocyanates (= mustard oils); e.g., in the Brassicaceae or mustard family.

Gonous A suffix meaning angled; e.g., trigonous means threeangled.

Graduated Referring to a sequence in shape or size; e.g., leaves becoming narrowed up a stem.

Grain The 1-seeded fruit typical of cereal crops; often used synonymously with Caryopsis.

Granular, Granulose, Granulate Covered with minute, grain-like particles.

Grit cell (= Stone cell) A sclerotic or hardened cell, as in the flesh of pears.

Gymnosperms Literally, “naked seed”; a polyphyletic assemblage of plants without flowers, the seeds “naked,” (= not enclosed in a special structure), often on the surface of thick or thin, sometimes woody cone scales.

Gynandrous The pistillate flowers above (= distal to) the staminate of the same spike; e.g., in some Cyperaceae.

Gynobasal, Gynobasic Referring to or having a gynobase.

Gynobase An enlargement of the receptacle at the base of the ovary.

Gynodioecious Basically dioecious, but with some flowers perfect and others pistillate.

Gynoeicum The pistil or pistils of a flower considered collectively; collective term for the female parts of a flower.

Gynonomoecious Having female and bisexual flowers on the same plant.

Gynophore Prolonged stipe (= stalk) of a pistil.

Gynostegium (a) Sheath or covering of the gynoecium; (b) in Asclepiadaceae, the columnar or disk structure made up of the connate stamens, style, and stigma.

Gypsicferous, Gypsum Containing gypsum (= calcium sulfate).

Habit Style or arrangement of growth; general appearance.

Habitat Type of locality in which a plant grows; e.g., prairie.

Hair An epidermal appendage that is usually slender, sometimes branched, not stiff enough to be called a spine, not flattened as a scale; often used synonymously with trichome.

Halberd-shaped (= Hastate). Arrowhead-shaped but with the two basal lobes turned outward.

Hallerd-shaped (= Hasty). Arrowhead-shaped but with the two basal lobes turned outward.

Hallerd-shaped (= Hasty). Arrowhead-shaped but with the two basal lobes turned outward.

Halostigma (pl. HASTORIA) Sucker-like attachment organ of parasitic plants by which they draw their food supply from the host-plant; e.g., in Cuscutaceae and some Scrophulariaceae.

Hay fever Respiratory allergy, frequently due to plant substances or microstructures such as pollen; e.g., Ambrosia (ragweed) pollen is a well-known cause of hay fever.

Head (= Capitulum) Dense cluster of sessile or nearly sessile flowers; the type of inflorescence typical of the Asteraceae.

Heartwood The innermost and oldest wood, often with materials (e.g., toxins) giving it different characteristics from sapwood (e.g., more durability or resistance to rotting).

Hedral A suffix signifying surface, usually preceded by a number and then indicating the number of sides, as a tetrahedral spore.

Helicoid, Helical Coiled or spiraled, usually in reference to inflorescences.

Heliphyte A plant adapted to grow in or tolerate full sun.

Hemi Greek prefix meaning half.

Hemiparasitic (= Semiparasitic). Descriptive of a plant that carries out photosynthesis but obtains some of its food, mineral nutrition, or water needs from another living organism (the host).
HERB  A vascular plant lacking a persistent woody stem and typically dying back to the ground each season.

HERBACEOUS  (a) Referring to the aerial shoot of a plant that does not become woody; typically dying back to the ground each year; (b) of a soft texture, as green leaves.

HERBAGE  Collective term for the green or vegetative parts of a plant.

HERBARIUM (pl. HERBAREA)  A collection of dried pressed plants prepared for permanent preservation (see Appendix eight for further details).

HERBICIDAL  Having the ability to kill plants.

HERMAPHRODICTIC  With stamens and pistils in the same flower; bisexual.

HESPERIDIUM  A specific type of fruit usually associated with the citrus family; a berry developed from a pistil with numerous carpels, pulpy within, and externally covered with a hard rind; e.g., orange.

HETER-  Greek prefix meaning other, various, or having more than one kind.

HETEROCARPous  With more than one kind of fruit.

HETEROCYHAMYDEOUS  With the perianth differentiated into a calyx and a corolla.

HETEROGAMOUS  (a) With more than one kind of flower; (b) in Asteraceae, with each head composed of more than one kind of flower.

HETERogeneous  Not uniform in kind.

HETEROPHYLLous  Having more than one form of leaf.

HETEROSPORous  Having two spore types; e.g., Selaginella.

HETEROSTYLOUS  Having styles of different lengths.

HEXAGONAL  Six-angled.

HEXPLOID  Having six sets of chromosomes.

HILUM  Scar or mark on a seed indicating where the seed was attached by a funiculus (= stalk) to the ovary wall or placenta. The hilum is the “eye” of a bean or other large seeds.

HIP  The “fruit” of a rose; actually a fleshy hypanthium or floral cup with the true fruits (= achenes) inside.

HIPPOCREPIFORM  Horseshoe-shaped.

HIRSUTE  With straight moderately stiff hairs.

HIRSUTULOUS  Diminutive of hirsute.

HIRTELLous  Minutely hirsute.

HISPID  Resembling hirsute but the hairs stiffer, ± bristly, feeling rough to the touch.

HISPIDULose  Minutely hispid.

HOARY  Covered with a fine, white, whitish, or grayish white pubescence.

HOLOPHYLETIC  A term used to describe a group consisting of a common ancestor and all of its descendants. The term monophyletic is sometimes used in the same sense.

HOLOTYPE  The one specimen used or designated by the author of a species or other taxon as the nomenclatural type in the original publication. The holotype is the specimen to which the scientific name is permanently attached; it is not necessarily the most typical or representative element of a taxon.

HOMO-  Greek prefix meaning all alike, very similar, same, or of one sort.

HOMOCHLAMYDEOUS  With a perianth of tepals undifferentiated into calyx and corolla.

HOMOGAMOUS  (a) With only one kind of flower; (b) with anthers and stigmas maturing simultaneously.

HOMOGENEOUS  Of the same kind or nature; uniform; contrasting with heterogeneous.

HOMOSPORous  With spores all of one type.

HOOD  (a) A segment of the corona in Asclepiadaceae; (b) a hollow arched structure.

HOODED  Descriptive of an organ with the lateral margins more or less rolled and the apex more or less inflexed; helmet-like; shaped like a hood.

HONEY-LEAF  Petal-like perianth part producing nectar; e.g., in some Ranunculaceae.

HORN  An exerted tapering appendage resembling a cow’s horn; e.g., appendage on the hood in some Asclepiadaceae.

HORNY  Hard or dense in texture.

HOST  Organism from which a parasite obtains nourishment.

HUMIC  Consisting of or derived from humus (= organic portion of soil).

HUMISTRATE  Laid flat on the soil.

HUMUS  Decomposing organic matter in the soil.

HUSK  The outer covering of some fruits; typically derived from the perianth or bracts.

HYALINE  Thin, membranous, and transparent or translucent.

HYBRID  (a) A cross between two unlike parents; (b) specifically, the offspring resulting from a cross between two species.

HYDATHODE  An epidermal structure, usually marginal or terminal, that excretes water.

HYDROPHILY, HYDROPHILous  Water-pollination; water-mediated pollination; using water as the mechanism of transferring pollen; e.g., in some Callitrichaceae; see Philbrick (1991).

HYDROPHYTE  A plant typically growing partially or wholly immersed in water; contrasting with mesophyte and xerophyte.

HYGROSCOPIC  Susceptible of expanding, shrinking, twisting, or untwisting on the application or removal of water or water vapor.

HYMENOPTEROPHYLous, HYMENOPTEROPHYL  Pollination by hymenopterans (= members of the insect order Hymenoptera—bees, wasps, and their relatives).

HYPOGYNOUS  Referring to a flower having floral organs attached below the ovary. Hypogynous flowers have superior ovaries.
ILLEGITIMATE NAME  Name unacceptable as the accepted scientific name because it is not the earliest one given to the plant in question, or published without description, or violating some other specific requirement of the International Code of Botanical Nomenclature.

IMMATURE  Without any kind of specialization.

INCOMPLETE GLOSSARY  of the first flowers; contrasting with determinate.

INCOMPLETE VEINS  Of flowering; growth of inflorescence not stopped by opening the number of flowers not pre-determined at the beginning of this cross and plants of one parent species, followed by further interbreeding between mongrels of varying percentage of impurity with purebreds of the parent line. This eventually leads to whole populations of one parent species being contaminat-ed with genes derived from the other.

INSERTED  Attached to another part or organ.

INSERTION  The place or mode of attachment of an organ.

INTEGRUMENT  The covering of an organ; e.g., of the ovule.

INTER-  Latin prefix meaning between.

INTERCALARY  Medial in position.

INTERCOSTAL  Located between the ribs or costae.

INTERLACUNAR  Between air spaces.

INTERNODE  Area of stem or other structure between two nodes.

INTERRUPTED  Not continuous or regular.

INTERSPECIFIC  Between different species.

INTERSTITIAL  Referring to the space intervening between one thing and another.

INTRA-  Prefix used to denote within.

INTRODUCED  Brought from another geographic region; not native.

INTROGRESSIVE HYBRIDIZATION  Successive crosses, first between plants of two species, then between the offspring of this cross and plants of one parent species, followed by further interbreeding between mongrels of varying percentage of impurity with purebreds of the parent line. This eventually leads to whole populations of one parent species being contaminat-ed with genes derived from the other.

INTRORSE  Facing inward, toward the axis, typically used to refer to manner of anther dehiscence.

INTROULED  Projecting inward or forward.

INVAGINATE  To enclose in a sheath.

INVOLUCEL  Diminutive of involucre; a secondary involucre; e.g., the bracts subtending the secondary umbels in Apiaceae or the whorl of bracts subtending a flower in Malvaceae.

INVOLUCELLATE  With an involuhracel.

INVOLUCRAL INVOLUCRATE  Pertaining to or having an involuhracal.

INVOLVURE  The whorl of bracts subtending a flower cluster or flower; e.g., involvure of bracts (= phyllaries) subtending a head in Asteraceae or small involvure (= involucel) subtending a flower in many Malvaceae (specifically called an epicalyx).

INVOLUTE  With margins or edges rolled inward toward the upper side.

IRREGULAR  (a) Structures not similar in size or shape; asymmetrical; (b) descriptive of a flower without any plane of symmetry; contrasting to regular and zygomorphic.

-ISH  Suffix meaning “slightly,” often used with color terms.

ISODIAMETRIC  Of equal dimensions.

ISOLATERAL  Equal-sided.

ISOHOCYANATE  (= Mustard oil)  Organic compound containing nitrogen and sulfur that has a pungent odor and taste and is irri-tating to the skin and mucous membranes. Isothiocyanates are toxic and can cause liver and kidney damage as well as other problems; e.g., in the Brassicaceae or mustard family.

ISOTYPE  A specimen of the type collection other than the holotype; an extra or duplicate specimen made at the same time and place as the holotype.
JOINTED With or apparently with nodes or points of articulation; e.g., jointed hairs of Physalis (Solanaceae).

JUVENILE LEAVES In plants with more than one leaf type (e.g., leaf dimorphism), the leaves on new growth, often quite different in appearance from adult leaves; e.g., found in Juniperus, Hedera.

K

KEEL (a) (= Carina) The two lower (= abaxial) fused petals of a papilionaceous flower (Fabaceae); (b) prominent longitudinal ridge, shaped like the keel of a boat.

KEELED With a ridge or keel.

KNEES Erect woody projections; e.g., found in Taxodium (bald-cypress).

L

LAMINA The blade or expanded part of an organ.

LANCEOLATE Tongue-shaped; strap-shaped.

LANCEOLEATE Lance-shaped; several times longer than wide, tapering at both ends, widest about a third above the base.

LACINiATE Cut into long, narrow, ± equal divisions or segments.

LACTIFEROUS Latex-bearing.

LACTINESCENT With milky sap.

LACTESCENT With milky sap.

LACTATE An acid that stimulates mitosis; they apparently function in the binding of symbiotic nitrogen-fixing bacteria to roots and in protecting against pathogenic bacteria; often found in members of the Fabaceae.

LACTIC Acid.

LACTOCOCCUS A genus of Gram-positive, non-sporulating bacteria.

LACTOPLANTUS A genus of tropical American plants.

LACTOSTALIN A compound found in milk.

LACTOSE A disaccharide consisting of glucose and galactose.

LABELLUM (= Lip) In Orchidaceae, the enlarged upper petal that appears to be the lowest petal because of twisting of the pedicel.

LABIA (= Lip) In Orchidaceae, one of the two lower fused petals of a bilabiate or strongly zygomorphic corolla.

LABIATE Lipped; differentiated into an upper and a lower portion.

LACUNA (pl. LACUNAE) A space, hole, cavity, or areole.

LANATE, LANOSE Woolly; covered with dense, long, entangled hairs resembling wool.

LANEATE, LANOSO, LANOShesive along both sutures (= margins); (b) a member of the Fabaceae; (c) any fruit type within the Fabaceae.

LEAF The primary photosynthetic organ of most plants, usually composed of an expanded blade and a stalk-like petiole.

LEAFLET A single, expanded segment or division of a compound leaf.

LEAF SCAR The mark or scar left on the stem by the fall of a leaf.

LEAF TRACE A vascular bundle, one or more in number, extending from the stem into the leaf.

LECTOTYPE A specimen or other material selected by a later worker from the original material studied by the author of the species (or other taxon) to serve as the nomenclatural type when a hostotype was not originally designated or was lost or destroyed.

LECTINS Certain plant proteins that cause linking or agglutination between cells. They can be toxic or mitogenic (= capable of stimulating mitosis); they apparently function in the binding of symbiotic nitrogen-fixing bacteria to roots and in protecting against pathogenic bacteria; found in many dicots.

LEIANA, LIANA A woody climber (e.g., grape vine). Lianas are common in the tropics.

LINGUOUS Woody.

LIGNESCENT Somewhat woody or becoming woody.

LIGULATE Tongue-shaped; strap-shaped.

LIGULATE FLORET (= Ray floret) Flower, with corolla expanded into a ligule, typical of many Asteraceae.

LIGULATE HEAD Head having only bisexual flowers with strap-shaped corollas.

LINGULE A blade-like extension of the leaf blade; often prominent in some plants.

LINGUIFORM Strap-shaped.

LINBURGHIA A genus of flowering plants.

LINUM A genus of flowering plants.

LINGULAR A leaf with pointed or rounded teeth along the margin.

LIP (a) Either of the principal lobes of a bilabiate or strongly zygomorphic corolla or calyx (e.g., Lamiaceae); (b) (= Labelium) the enlarged upper petal in Orchidaceae that appears to be the lowest petal because of twisting of the pedicel.

LITHOPHYTE Plant that grows on rocks but derives its nourishment from the atmosphere and from accumulated humus.
**LITTORAL**  Of a shore, particularly of the seashore.

**Loam**  Soil consisting of a mixture of sand, clay, silt, and organ-ic matter.

**lobate**  Having lobes.

**lobe**  A usually rounded segment or division of a leaf, petal, or other organ.

**Lobed**  Having deep or coarse indentations of the margin, larger than mere teeth (However there is no sharp distinction between large teeth and small lobes).

**lobulate**  Having small lobes.

**locular**  Having one or more locules.

**locule, loculus**  The cavity, compartment, or cell containing the ovules in a carpel or the pollen in an anther.

**loculicidal**  Descriptive of a capsule dehiscing along the middle of the back of each locule or chamber (= along the midrib of each carpel).

**lodicule**  One of the two or three minute scales at the base of the ovary in most grasses, thought to be a rudiment of a perianth part. They swell and thus open the lemma and palea, allowing the reproductive parts to be exposed.

**loment, lomentum**  An indehiscent fruit separating into one-seeded segments at maturity.

**LONICERACEAE**  A family of flowering plants that includes woody vines, some of which are cultivated in gardens for their showy flowers, such as honeysuckle (Lonicera). The family is characterized by tubular flowers, with petiolules and bracts on the calyx.

**M**  Meter; 10 decimeters; 39.37 inches.

**macro-**  Greek prefix denoting large or long.

**macropod**  A large spore giving rise to the female gametophyte; the larger of two kinds of spores produced by heterosporous plants; a female spore.

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**macrosporangium**  Sporangium in which megaspores are formed.

**macrospore**  (= Macrospore)  A large spore giving rise to the female gametophyte; the larger of two kinds of spores produced by heterosporous plants; a female spore.

**macrosporophyll**  A sporophyll (= spore-bearing leaf) bearing one or more megaspores.

**membranaceous, membranous**  Having the nature of a membrane; thin, somewhat flexible, translucent.

**mentum**  A projection near the base of some flowers in the Orchidaceae.

**Mephitic**  Having an offensive odor.

**Mericarp**  The individual, separated carpels of a schizocarpic fruit; e.g., one of the fruit segments in the Apioideae or one of the “nutlets” in the Boraginaeae.

**meristem**  Embryonic or undifferentiated tissue, capable of developing into various organs.

**Meristematic**  Pertaining to or with the nature of a meristem.

**merous**  Greek suffix used to refer to the number of parts (or multiples of such) in each circle of the floral organs, usually with a numerical prefix (e.g., a 3-merous perianth would mean there are three petals and three sepals or some multiple of three). The term often refers to the perianth only.

**mesa**  A flat-topped hill with abrupt or steeply sloping side or sides.

**mesocarp**  The middle layer of the pericarp or fruit wall.

**mesophyte**  Plant that grows under medium moisture conditions; contrasting with hydrophyte and xerophyte.

**micro-**  Greek prefix meaning small.

**microphyll**  A relatively small leaf with a single unbranched vein, typical of the Lycopsidophyta and Equisetophyta.

**microphyllous**  Having small leaves.

**microstyle**  A minute opening through the integuments into the ovule through which the pollen-tube usually enters and often distinguished in the mature seed as a slight depression.

**microsporangium**  Sporangium in which microspores are produced. In angiosperms, the microsporangium is equal to the pollen sac and there are typically four microsporangia per anther.

**microspore**  A small spore giving rise to the male gametophyte; the smaller of two kinds of spores produced by heterosporous plants; a male spore.

**microsporophyll**  The sporophyll (= spore-bearing leaf) upon which microspores are produced.

**microtuberculate**  Minutely tuberculate.

**Midrib**  The central or main rib or vein of a leaf or other similar structure.

**mitiform**  Shaped like a miter or bishop’s hat.

**mixed inflorescence**  One in which the parts are not consistent in being all determinate or all indeterminate.

**mm**  Millimeter; 1000 microns or 1/1000 of a meter.

**monadelphous**  With all filaments united into a single tube surrounding the pistil.

**Monandrous**  Having a single stamen.

**Moniliform**  Like a string of beads.

**mono-**  Greek prefix meaning one or of one.

**Monocarpic**  (a) Descriptive of a plant that flowers only once before dying; (b) having a single carpel.
MONOCEPHALOUS, MONOCEPHALIC Bearing only a single head.
MONOCHASIAUM A cyme with lateral branching on only one side of the main axis.
MONOCOMANYA Liposus or the same plant, but lacking perfect flowers.
MUCILAGINOUS Gelatinous; slimy; with mucilage.
MUCRO A short and small abrupt tip, as with the midrib extending as a short point.
MUCRONATE With a mucro.
MUCRONULATE Diminutive of mucronate.
MULTI Latin prefix for many.
MULTICIPITAL Literally, “many-headed”, descriptive of a crown of roots or a caudex from which several stems arise.
MULTIFID Divided into many narrow segments or lobes.
MULTIFLOROUS Many-flowered.
MULTIPLE FRUIT (= Syncarp) A single “fruit” formed by the coalescence of several fruits from separate flowers; e.g., Morus (mulberry), Maclura (bois d’arc), Ananas (pineapple).
MURICATE Diminutive of muricate.
MUSTARD OIL (= Isothiocyanate) Organic compound containing nitrogen and sulfur that has a pungent odor and taste and is irritating to the skin and mucous membranes. Mustard oils are toxic and can cause liver and kidney damage as well as other problems; e.g., in the Brassicaceae or mustard family.
MUSTARD OIL GLYCOSIDE (= Glycosinolate) A complex molecule that upon breakdown yields a sugar, a sulfate fraction, and an irritating mustard oil or isothiocyanate; e.g., in the mustard family.
MUTICOUS Blunt, lacking a point.
MYCORRIZA (pl. MYCORRIZAE) A mutually beneficial, symbiotic association of a fungus and the root of a plant. Mycorrhizal relationships are characteristic of most vascular plants.
MYCORRIZAL Pertaining to mycorrhiza.
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MYCORRIZAL Pertaining to mycorrhiza.
OB- Latin prefix indicating the reverse or upside-down, as obcordate, meaning cordate or ovate with wider end at top or away from point of attachment.

OBDELTOID Inversely deltoid; triangle-shaped with base pointed.

OBDELPISTEMONOUS Describing a flower with two circles of stamens, in which those of the outer circle are borne in front of (= on the same radius as) the petals.

OBLANCEOLATE Lanceolate with broadest part above the middle and tapering toward the base.

OBLATE Nearly spherical but flattened toward the poles.

OBLATE An erect ovule, with the micropylar end at the summit.

OBSELETE Not apparent or evident; rudimentary; vestigial; extinct.

OBSCURORUM Inversely cone-shaped, with attachment at the small end.

OBSCURUS Slanting; unequal-sided.

OBSCURUS Longer than wide with sides nearly parallel.

OBSCURUS Solid oval or solid ovate.

OBSCURUS Inversely ovoid; a solid that is obovate in outline.

OBSCURUS Pear-shaped with attachment at narrow end.

OBSCURUS Nearly or becoming obsolete; rudimentary; referring to structures that are not or are only slightly evident.

OBSCURUS Not apparent or evident; rudimentary; vestigial; extinct.

OBTUSE Forming a blunt or rounded angle of more than 90 degrees; not pointed.

OCHROLEUCOUS Ochre-colored, yellow with a tinge of red.

OCHROLEUCOUS Yellowish-white, buff.

OCHROLEUCOUS Tube formed by fused, sheathing stipules; e.g., in Polygonaceae.

OCHROLEUCOUS With an ocrea.

OCHROLEUCOUS Secondary sheath; sheath surrounding a fascicle of flowers; e.g., in Polygonaceae.

OCHROLEUCOUS A chaffy scale or bract on the receptacle of many Asteraceae; see chaff.

OCHROLEUCOUS Chaffy; with small membranaceous scales.

OCHROLEUCOUS Pale in color.

OCHROLEUCOUS Attached or radiating from one point, as leaflets in a palmately compound leaf, veins in some leaf blades, or fingers of a hand.

OCHROLEUCOUS With the leaflets attached at one point at the apex of the petiole, like the fingers all attached to the palm of a hand.

OCHROLEUCOUS Having three leaflets with the terminal leaflet unstalked, sessile.

OCHROLEUCOUS Having the texture or appearance but not necessarily the structure of a panicle.

OCHROLEUCOUS Having the texture or appearance of woolen cloth or felt.

OCHROLEUCOUS Descriptive of a flower having a bilaterally symmetrical corolla composed of a banner (= standard), two lateral wing petals, and a keel of two fused petals; descriptive of flowers characteristic of many Fabaceae in the subfamily Papilionoideae.

OCHROLEUCOUS (pl. PAPILLAE) Small pimple-like or nipple-like projection.
**PAPILLATE, PAPILLIFORM, PAPILLOSE** Shaped like or bearing papillae.

**PAPUS** The crown of bristles, awns, scales, etc. at the apex of the achene of most Asteraceae, thought to be the modified calyx.

**PAPYRACEOUS** Papery.

**PARALLEL-VEINED** With main veins parallel to each other. Such leaves are typical of many monocots.

**PARAPLHYLETIC** A term used to describe a taxonomic group consisting of an ancestral species and some but not all of its descendants. Paraphyletic groups can give an inaccurate view of phylogeny but are often useful in classification; see Appendix 6 for discussion.

**PARASITE** A plant that derives its food, mineral nutrition, and/or water wholly or chiefly from another plant (the host) to which it is attached; contrasting with epiphyte, saprophyte, or autophyte.

**PARASITIC** Deriving food, mineral nutrition, water, or any combination from another living organism (the host).

**PARITIES** Seasons (years); lasting from year to year.

**PATENT** Referring to a pinnately compound leaf with an even number of leaflets or pinnae.

**PATTERNS** Reflex to indicate the number of segments.

**PATTERN** A suffix synonymous with -parted.

**PATTERN** Spreading.

**PAUCI-** Latin prefix denoting few.

**PECTINATE** With narrow closely set segments or units similar to the teeth of a comb.

**PEDIATE** Palmately divided with the lateral segments again divided.

**PEDIcEL** (a) Stalk supporting a single flower of an inflorescence; (b) in grasses the stalk supporting a single spikelet.

**PEDIcELLATED, PEDIcELLED, PEDIcELLED** Borne on a pedicel; contrasting with sessile.

**PEDIcLE** Stalk of a leaf supporting the blade.

**PEDICULATE** With a pedicule.

**PEDIcLATE** Having petals.

**PETAL** A petal, usually showy.

**PETALIFEROUS** Bearing petals.

**PETALOID** (= Petaloid) Having the character or appearance of a petal, usually showy.

**PETALOid** (= Petaloid) Having the character or appearance of a petal, usually showy.

**PETALIFORM** Shaped like or bearing papillae.

**PETAL-LIKE** (=Petaloid) Having the character or appearance of a petal, usually showy.

**PETALIZED** Bearing petals.

**PETIOLATE** Stalk of a leaf supporting the blade.

**PETIOLULATE** Having a petiolute.

**PETIOLULE** Stalk supporting a leaflet.

**PHANEROGAM** A seed plant or spermatophyte; contrasting with cryptogam.

**PHENOLIC, PHENOL** An aromatic alcohol; more technically, a substance with an alcohol (= hydroxyl) group attached to an aromatic (= benzene or phenyl) ring structure. Plant phenolics are sometimes toxic; a number of plant resins or resinoids are phenolic in nature; e.g., urushiol from poison ivy, tetrahydrocannabinol (THC) from marijuana; other phenolic compounds include vitamin E and anthocyanins.

**PHENOLIC PHENOLOGY** Study of the times at which various events occur in the life of a plant or a flower.

**PHLOEM** The food-conducting tissue in a plant.

**PHOTODERMATITIS** Skin inflammation resulting from increased sensitivity to sunlight, often caused by exposure to certain plants or plant-derived materials.
**Photosynthesis**  The process by which plants convert carbon dioxide and water into carbohydrates in the presence of light.

**Phyllary**  (= involucral bract)  One of the bracts subtending a head in the Asteraceae.

**Phylloclade**  (= Cladophyll, Cladode)  A portion of stem having the general form and function of a leaf.

**Phylloclade, Phylodium**  An expanded bladeless petiolo; a leaf reduced to a flattened petiolo. These structures typically serve the photosynthetic function of a blade.

**Phyllodial**  Having the character of a phyllode.

**Phylloclade, Phyllophyllum**  The evolutionary history of a group.

**Phytophotodermatitis**  Plant-induced skin inflammation resulting from increased sensitivity to sunlight.

**Phytotoxic**  Term used to describe materials that are toxic to plants.

**Phytotoxin**  (a) General term for a plant-derived toxin; (b) more typically used to refer to toxic plant proteins or toxalbumins; e.g., ricin from Ricinus.

**Pilose**  With long, soft, ± straight hairs; softer than hisperate, not flexuous or curved as in villous.

**Pilosulous**  Diminutive of pilose.

**Pinning**  (pl. Pinnae)  A primary division of a compound leaf. A pinna can be simple (and thus equivalent to a leaflet) or compound and divided into leaflets. The term is frequently used in describing fern leaves—here the term is used for any primary division of a leaf (e.g., a leaflet or a leaf division divided into leaflets). In flowering plants the term is generally used to describe a primary division of a compound leaf (a pinna is thus divided into leaflets).

**Pinnate, Pinnately compound**  Descriptive of a compound leaf with leaflets distributed along both sides of an elongate axis; feather-like. Bipinnate or 2-pinnate leaves have the leaflets distributed along a secondary axis; tripinnate or 3-pinnate leaves have the leaflets along a tertiary axis, etc.

**Pinnately trifoliate**  Referring to trifoliate leaves in which the terminal leaflet is extended beyond the other two by having a distinct petiolo.

**Pinnatifid**  Pinnately divided into stalkless segments, but the segments not distinct leaflets (i.e., not divided all the way to the midrib).

**Pinnatisect**  Pinnately divided to the midrib.

**Pinnipalmate**  Descriptive of a leaf exhibiting a combination of pinnate and palmate arrangements of the leaflets.

**Pinnaule**  A secondary pinna; division of a pinna or a leaflet.

**Pisiform**  Pea-shaped.

**Pistis**  The female reproductive organ of a flower consisting of the ovary, stigma, and style. Pistils can be either simple (of one carpel) or compound (with > one carpel); the pistils are collectively referred to as the gynoeceum.

**Pistillate**  With only the female reproductive structures being functional or with female reproductive structures only.

**Pistillode, Pistilloidium**  A rudimentary or vestigial pistil.

**Pith**  The soft spongy center of a stem.

**Pitted**  Having little depressions or cavities.

**Placenta**  (pl. Placentae)  Place of attachment of the ovule(s) within an ovary.

**Placentation**  Arrangement of placentae and thus ovules in an ovary.

**Plait**  A lengthwise fold or pleat.

**Plaited**  (= Plated)  Folded like a fan.

**Plane**  With a flat even surface.

**Plano-**  A suffix denoting flat.

**Pleated**  Folded.

**Plicate**  (= Plated)  Folded like a fan.

**Pollen, Pollen grain**  The microscopic spheroidal structures that produce the male cells and borne within the anther of a flowering plant or on the microsporophyll of a gymnosperm; technically microgametophytes develop from microspores.

**Pollen sac**  A microsporangium containing pollen. In angiosperms there are typically four pollen sacs per anther.

**Pollen tube**  The slender tube that develops from a pollen grain, penetrates the tissue of the ovary, and enters the ovule.

**Pollinate**  To transfer pollen from a stamen to a stigma.

**Pollination**  The act or process of pollinating.

**Pollinium**  (pl.Pollinia)  A mass of coherent pollen, as developed in Asclepiadaceae and Orchidaceae.

**Poly**  Greek prefix meaning many.

**Polyadaphous**  With several groups of stamens.

**Polygamo-dioecious**  Descriptive of dioecious plants having some perfect flowers; bearing on one plant flowers partly perfect and partly pistillate, on another plant flowers partly perfect and partly staminate.

**Polygamo-monoecious**  Descriptive of monoecious plants having some perfect flowers; bearing partly perfect, partly unisexual flowers.

**Polygamous**  Bearing unisexual and bisexual flowers on the same plant.

**Polymorphic**  Of various forms; with three or more forms.

**Polypetalous**  (= Apopetalous)  With corolla of separate petals; contrasting with gamopetalous.

**Polyphyletic**  A taxonomic group having species derived from more than one common ancestor, the species having been placed in the same group because of similarities due to convergent or parallel evolution. Polyphylectic taxa give an inaccurate view of phylogeny.

**Polyploid**  A plant with three or more basic sets of chromosomes.

**Polypsepalous**  (= Aposepalous)  Composed of or possessing separate sepals.

**Polystichous**  Arranged in several longitudinal rows.

**Pome**  A fleshy indehiscent fruit developing from a compound inferior ovary embedded in receptacular or floral cup tissue; e.g., apples or pears.

**Pore**  A small aperture or opening; e.g., opening at end of anther in Solanum species.

**Poricidal**  Opening by pores.
**PORUS** Somewhat porous (= pierced with small round holes).

**POSTERIOR** Describing the position of an organ located on the side adjacent to the axis. In flowers, the upper lip is posterior, the lower anterior.

**PRAEMORSE** Short and truncate at the base, as if eaten or chewed off; descriptive of the rhizomes in some species of *Viola* and *Hieracium*.

**PRECOCIOUS** Developing or appearing very early; denoting flowers that appear in advance of the leaves.

**PREHENSILE** Clasping or grasping; e.g., tendrils.

**PRICKLE** A slender, sharp, epidermal outgrowth without vasculature; e.g., the armature of roses.

**PRIMOCANE** The first year’s shoot of woody biennials, typically non-flowering; e.g., *Rubus*.

**PRISMATIC** Angulate with flat sides; shaped like a prism.

**PROFUSE** Bearing or developing offshoots or redundant parts; producing numerous new individuals, or parts, of the same kind; bearing offsets, bulbils, or other vegetative progeny.

**PROPHYLL** (a) In the Poaceae, the first leaf of a lateral shoot or vegetative culm branch, consisting of a sheath without a blade; (b) bracteole subtending an individual flower; e.g., in some species of *Juncus*.

**PROPHYLLATE** Furnished with prophylls.

**PROSTATE** Lying flat.

**PROTANDROUS, PROTERANDROUS** Having the anthers mature before the pistils in the same flower.

**PROTHALLUS, PROTHALLIUM** Gametophyte stage or generation in ferns and fern-allies, bearing the sexual organs.

**PROTEGYNOUS** Having the stigma receptive to pollen before pollen is shed from the anthers of the same flower.

**PROTEROUS** Located nearest to the base or attachment point of a structure; contrasting with distal.

**PRUNOSE** Having a bloom on the surface; with a waxy or powdery secretion; with a surface coating more pronounced than glaucous.

**PSEUDO-** Greek prefix meaning false, not genuine.

**PSEUDANTAGONISM** Pollination system (e.g., in some Orchidaceae) in which a flower mimics a male insect, thereby attracting a male insect that “fights” with the flower in an effort to protect his territory. In the process of repeating this activity, pollen can be transferred from one plant to another.

**PSEUDOCARPS** The thickened or bulb-like, above ground stems of certain orchids.

**PSEUDOBULB** The thickened or bulb-like, above ground stems of certain orchids.

**PSEUDOCARP** A structure made up of the mature ovary combined with some other organ; e.g., the hip of a rose.

**PSEUDOCOPULATION** Pollination system (e.g., in some Orchidaceae) in which a flower mimics a female insect (e.g., wasp or fly), thereby attracting male insects who copulate with the flowers and in the process of repeating this activity transfer pollen from one plant to another.

**PSYCHOACTIVE** Mind altering. A number of psychoactive materials are produced by plants.

**PTERIDOPHYTE** A fern or similar plant; any member of the Lycophyta, Psilophyta, Polypodiophyta (formerly Pteridophyta), or Equisetophyta (formerly Sphenophyta).

**PUBERULENT** Minutely pubescent.

**PUBESCENCE** The covering or indumentum of hairs on a plant without reference to specific type (e.g., pilose, hirsute).

**PUBESCENT** (a) General term for covering or indumentum of hairs; (b) sometimes used in a more restricted sense to refer to fine short hairs; downy.

**PULP** The juicy or fleshy tissue of a fruit.

**PULVINATE** With a pulvinus; cushion-shaped.

**PULVINUS** The swollen base of a petiole, as in many Fabaceae. The structure is often involved in leaf movements.

**PUNCTATE** Dots, depressions, or pits, commonly glandular in nature.

**PUNCTULATE** With translucent or colored dots, depressions, or pits.

**PUNCTICULATE** Minutely punctate.

**PUNGENT** (a) Ending in a rigid sharp point or prickle; (b) acrid to the taste or smell.

**PURPURASCENT** Becoming or turning purple.

**PUSTULATE** With pustules, blisters, or blister-like swellings.

**PUTAMEN** The bony endocarp or “pit” of some fruits.

**PYRENE** The “nutlet” or “pit”, or stone in a drupe or drupelet; a seed together with the bony endocarp.

**PYRIFORM** Pear-shaped.

**PYXIS** (pl. **PYXIDES**) A capsule with circumscissile dehiscence, the top coming off as a lid; e.g., in *Plantago*.

**QUADRANGULAR** Four-cornered; square.

**QUADRATE** Nearly square.

**QUASI-** Prefix meaning “as if.”

**RACEME** An unbranched (= simple) inflorescence with pedicelled flowers from an elongate main axis. Racemes are indeterminate.

**RACEMIFORM** Having the form, but not necessarily the technical character of a raceme.

**RACEMOSE** In racemes or resembling a raceme.

**RACHILL** (a) A small rachis; (b) specifically the axis of a spikelet in the Poaceae.

**RACHIS** (a) Leaflet-bearing central axis of a pinnately compound leaf; (b) axis of an inflorescence.

**RADIASTYMMETRICAL** Descriptive of a structure that can be cut into halves from any marginal point through the center. When used in reference to flowers, the term is synonymous with actinomorphic or regular.

**RADIATE** (a) Spreading from a common center; (b) in Asteraceae, describing a head with disk florets in center and a whorl of ray (= ligulate) florets around the periphery.

**RADIATE HEAD** In Asteraceae, a head with both peripheral ray (= ligulate) florets and central disk florets.

**RADICAL LEAVES** Leaves arising from a root crown; basal leaves.

**RADICLE** Embryonic root of a germinating seed.

**RAMEAL** Pertaining to or located on a branch.

**RAMIFICATION** The arrangement of branching parts.
and Hypericum perforatum. Examples of phenolic resins are tetrahydrocannabinol (THC) from marijuana, urushiol from poison ivy, and hypericin from Hypericum perforatum. Some are terpene derivatives while others are phenolic substances from plants. A number are toxic, sometimes extremely so; some are resinous resins, resembling or having raphides.

Ray (a) Flat or strap-shaped type of corolla found in many Asteraceae; (b) primary branch of a compound umbel. Ray floret (= Ligulate floret). Flower, with corolla expanded into a ligule, typical of many Asteraceae. Receptacle (a) (= Torus) Tip of a stem or pedicel, usually more or less enlarged, on which flower parts are attached; (b) in Asteraceae, the structure on which the florets of a head are attached. Receptacular Referring to the receptacle.

Reclined Reclinate Bent or turned downward. Recumbent Leaning or reclining. Recurved Curved downward or backward. Reduced Small but probably derived from larger forerunners. Reflexed Abruptly bent downward. Regular (= Actinomorphic or Radially symmetrical) Referring to a structure that can be cut into halves from any marginal point through the center; with the parts in each series alike or uniform. The term usually refers to flowers. Relic (a) A long-surviving species whose relatives have become extinct; (b) a plant persisting in a relatively small portion or portions of its former range. Remote Widely or distantly spaced. Reniform Kidney-shaped. Repand With a shallowly sinuate, undulating, or slightly wavy margin; less strongly wavy than sinuate. Repent Creeping and rooting at the nodes. Replicate Folded backward. Replum The partition between the halves of a fruit; e.g., Brassicaceae. Resin, resinoid A miscellaneous or catchall term for a variety of amorphous, sometimes semisolid, perhaps gummy substances from plants. A number are toxic, sometimes extremely so; some are terpene derivatives while others are phenolic compounds; examples of phenolic resins are tetrahydrocannabinol (THC) from marijuana, urushiol from poison ivy, and hypericin from Hypericum perforatum.

Resinous, resiniferous Producing or bearing resin. Resupinate Upside down; inverted; turned 180 degrees; e.g., some members of the Fabaceae and Orchidaceae have resupinate flowers. Reticulate Net-veined or with a net-like pattern. Retinaculum (pl. Retinacula) (a) In Asclepiadaceae, the filament-like band connecting a pollinium to the gland-like corpusculum; (b) in Acanthaceae, the curved, hook-like, modified funiculus which retains the seed until maturity. Retorse Bent or turned backward or downward; e.g., hairs pointing down a stem, the free end of the hair below or proximal to the attached end; contrasting with antorse.

Retorsely barbed With barbs (= points) pointing downward toward base. Retuse Shallowly notched at a rounded apex. Revolute With margins rolled down and inward; e.g., revolute leaves. Rhizoid A filamentous root-like structure (without the anatomy of a root) on the gametophyte of ferns or other non-seed-producing plants. Rhizomatous Possessing a rhizome. Rhizome Underground stem with nodes and scale leaves. Rhizophore In certain Pteridophytes, a specialized leafless stem emitting roots. Rhombic Somewhat diamond-shaped, shaped like two adjacent equilateral triangles. Rhomboid Rhomboidal A three-dimensional rhombic figure. Rib (a) One of the principal longitudinal veins of a leaf or other organ; (b) ridge on a fruit. Ribbed With prominent ribs or veins. Ringent Gaping; open. Root The portion of the main axis (or one of its subdivisions) of a plant usually found below ground and lacking nodes, internodes, or leaves. Rootlet (a) A little root; (b) term often applied to the holdfast roots of certain climbing plants. Rootstock According to Shinners (1958), a “weasel-word” indicating an elongate crown, rhizome, or rhizome-like structure; an old inaccurate term for rhizome.

Roseate Rosy or pinkish. Rosette A cluster or whorl of leaves or other organs closely arranged in a radial pattern. Rosellate Diminutive of rostrate. Rosellum (a) A small beak; (b) in Orchidaceae, an extension from the upper edge of the stigma. Rostrate Beaked. Rostrum A beak or any beak-like extension. Rosulate Beaked. Rosy The rich pink characteristic of the petals of some roses. Rotate Wheel-shaped or saucer-shaped as in a sympetalous corolla with an obsolete or very short tube and a flat circular limb. Rotund Essentially circular in outline. Ruderal Weedy or growing in waste places. Rudiment A structure very imperfectly developed, non-functional, or represented only by a vestige, e.g., rudimentary non-functional florets in some grass spikelets. Rudimentary Having the character of a rudiment. Rufescent Becoming reddish brown. Rufous Reddish brown. Rugose Wrinkled. Rugulose Diminutive of rugose. Ruminate Appearing as through chewed or wadded; roughly wrinkled. Runcinate With margins that are coarsely serrate to sharply incised with the segments pointing toward the base, as in Taraxacum. Runner An elongate, slender, prostrate stem taking root at the nodes or tip. Rupturing Bursting open along irregular lines. Russet Reddish brown.
A pouch or bag.

Sac-like; pouch-like.

With the form of an arrowhead; triangular with the basal lobes pointing downward or inward toward the petiole.

A dry, indehiscent, winged fruit; a fruit that is achene-like but with a flat wing; e.g., in maple, Acer (Aceraceae).

The juice of a plant.

Soapy, slippery to the touch.

A soap-like molecule that lowers the surface tension of aqueous solutions. Saponins usually have a bitter acrid taste and are commonly irritating to mucous membranes; chemically saponins are either triterpenes or steroids; they can alter the permeability of cell membranes and may react with proteins and are thus potentially toxic; they are highly toxic to cold-blooded animals and have long been used to stun fish.

A non-photosynthetic plant without chlorophyll, deriving its food from dead organic material in the soil by mycorrhizal relationships or otherwise; e.g., Monotropa (Ericaceae).

Subsisting on dead organic matter.

Growing on rocks.

Rough to the touch due to short stiff hairs or the structure of the epidermis.

Membranous, dry, papery, translucent or transparent, not green.

A pouch or bag.

A fruit that splits between carpels into one-seeded parts in a complete flower. Sepals typically cover the other flower parts during the bud stage; they are collectively referred to as the calyx.

Marked by minute or shallow depressions.

Sac-like; pouch-like.

Vegetation of stunted or densely crowded bushes.

With whitish, scaly, blister-like structures or scales on the surface.

A shield-like protrusion on the calyx; e.g., in some Lamiaceae.

Naturally occurring plant materials not essential to the primary (= life-sustaining) metabolism of the plant; examples of categories include alkaloids and glycosides. Many are significant because of their physiological activity when given to animals; they are probably important to plants in defense against herbivores or microbes.

The uppermost of the two glumes of a spikelet.

Directed to one side; arranged on one side only; unilaterial; one-sided.

A fertilized ripened ovule, covered by a seed coat (developed from the integument(s)) and containing the embryo and in flowering plants the endosperm. The seed also contains the remnants of the nucellus (= sporangium) and megagametophyte.

Outer covering of a seed, developed from the integument(s).

A moist spot where underground water comes to or near the surface.

One of the parts of a leaf, petal, or calyx that is divided but not truly compound.

Term used as a noun or adjective to refer to or describe a taxon that is sometimes recognized separately from a more inclusive group; e.g., depending on authority, the segregate, Tovara (or the segregate genus, Tovara), is either included in, or recognized separately from, the more inclusive genus Polygonum.

Containing selenium.

An element that is concentrated in the tissues of some plants (e.g., poison-vetches in genus Astragalus) and can cause a toxic, sometimes fatal response in livestock.

Capable of self-fertilization (= union of gametes from same plant).

Incapiable of self-fertilization.

Latin prefix meaning half.

Descriptive of a plant that carries out photosynthesis but obtains some of its food, mineral nutrition, or water needs from another living organism (the host).

Aging or aged.

"In a broad sense"; used to refer to the broad treatment of taxa; e.g., a genus sensu lato is one that has not been split into a number of segregates.

"In a narrow sense"; used to refer to a restricted or narrow treatment of a taxonomic group; e.g., a genus sensu stricto is viewed in a more restricted sense than previously as the result of segregating or splitting out various taxa.

A single unit of the calyx; one of the outermost whorl of parts in a complete flower. Sepals typically cover the other flower parts during the bud stage; they are collectively referred to as the calyx.
**Sepaloid**  Sepal-like, usually green and thicker in texture than a petal.

**Separate**  Not joined; of individual units.

**Septate**  With partitions or divisions.

**Septicidal**  Descriptive of a capsule that dehisces along or through the septa or partitions separating its locules or seed chambers; contrasting with loculicidal.

**Septifragal**  Breaking away at the partitions, as the valves of a capsule.

**Septum**  A partition or cross wall within an organ; e.g., the septa of an ovary or of the leaf of a rush (Juncus).

**Seriate, Serial**  With series or distinct rows.

**Sericeous**  Silky; with appressed, fine, and straight hairs.

**Serotinous**  Literally, "late"; in *Salix* indicating those species in which the catkins develop later than the leaves; produced or occurring late in the season.

**Serrate**  With pointed teeth sloping forward; saw-toothed.

**Serrulate**  Finely serrate.

**Sessile**  Without a pedicel, petiole, or stalk; inserted directly.

**Seta (pl. Setae)**  A bristle.

**Setaceous**  Bristle-like.

**Setiferous**  Bearing bristles.

**Setiform**  Resembling a bristle.

**Setose**  Bearing bristles.

**Setulose**  Diminutive of setose.

**Sheath**  (a) ± tubular structure surrounding an organ; portion that clasps or encloses; (b) specifically, the basal tubular portion of the leaf in grasses and grass-like plants between the node and the blade.

**Shoot**  (a) A young stem or branch; (b) the ascending axis of a plant.

**Shoulder**  That part of an organ that rather abruptly curves inward.

**Shrub**  A woody perennial usually branching from the base with several main stems.

**Sigmoid**  S-shaped; doubly curved.

**Silica**  Silicon dioxide; a white or colorless, very hard, crystalline mineral substance.

**Siliceous**  Containing or composed of silica (the principal component of glass and sand); e.g., descriptive of certain hairs, with high silica content, that easily break off in the flesh.

**Silicel, Silicula**  A short silice; short and broad capsular fruit of the mustard family. A silice is not much longer than broad; sometimes defined as < 3 times as long as broad.

**Silique, Siliquea**  Dry, dehiscent, variously shaped, many-seeded, 2-valved capsule with valves splitting from the bottom and leaving a false partition known as a replum; the fruit type typical of the mustard family. The term is sometimes restricted to long and narrowly cylindrical fruits 3 times as long as broad or longer; shorter fruits with the same structure are then referred to as silicles.

**Silky**  Sericeous; with appressed, fine, and straight hairs.

**Silvery**  With a whitish, metallic, more or less shining luster.

**Simple**  (a) Single, of one piece, not compound, as a pistil of one carpel. (b) descriptive of an unbranched stem, inflorescence, or other structure. (c) descriptive of a leaf that is not compound.

**Simple Leaf**  Single-bladed leaf; not divided into individual leaflets.

**Simple Pistil**  Pistil composed of only one carpel (and with a single style branch).

**Sinuate, Sinuous**  Having the margin wavy with regular strong indentations.

**Sinus**  The space or recess between two lobes, segments, or divisions of a leaf or other expanded organ.

**Slough**  A wet place or deep mud or mire; a sluggish channel.

**Smooth**  Not rough to the touch; without vestiture or other special covering.

**Solitary**  Borne singly.

**Sordid**  Dirty white.

**Sorus (pl. Scra)**  A cluster or heap of sporangia. The term is used mainly to refer to the sporangial clusters of ferns.

**Spadix (pl. Spadices)**  Fleshy spike with inconspicuous flowers, usually surrounded or partially enclosed by a spathe; e.g., characteristic of Araceae.

**Spataceous, Spatiform**  Resembling a spathe.

**Spathe**  Enlarged leafy bract surrounding or partially enclosing an inflorescence.

**Spatulate**  Spatula-shaped; rounded above and gradually narrowed to base.

**Species**  Unit of classification below the rank of genus; a group of individuals that are actually or potentially capable of interbreeding in natural populations and are reproductively isolated from other such groups. Generally there are morphological characteristics that distinguish and can thus be used to separate such groups; the definition is complicated by instances of asexual reproduction.

**Specific Epithet**  The second half of the scientific name of a species, the scientific name being composed of the genus name and the specific epithet.

**Spermaphyte**  A plant that produces seeds; all gymnosperms and angiosperms.

**Spherical**  Globular; orbicular.

**Spicate**  In spikes or resembling a spike.

**Spiciform**  Having the form of a spike but not necessarily the technical structure.

**Spike**  Indeterminate inflorescence with sessile flowers on a ± elongate floral axis.

**Spikelet**  The basic unit of the grass inflorescence, usually consisting of a short axis (= rachilla) bearing two empty bracts (= glumes) at the basal nodes and one or more florets above. Each floret usually consists of two bracts (the lemma = lower bract and the palea = upper bract) and a flower. The flower usually includes two lodicules (= vestigial perianth segments that become turgid and open the bracts at flowering time), three stamens, and a pistil. The term spikelet is also used to refer to the basic unit of the inflorescence in the Cyperaceae.

**Spine**  A sharp-pointed structure, usually vascularized and thus ± stout or woody, generally modified from part or all of a leaf or stipule. A spine is sometimes distinguished from a thorn, which is a modified branch.

**Spinescent**  Becoming spine-like; ending in a spine; having spines.

**Spiniferous, Spinose**  Having spines.
**Spinulose** With small spines over the surface, margin, or edge.

**Spiral** Describing the arrangement of like organs, such as leaves, at regular angular intervals along an axis.

**Spiral thickening** Thickening of the walls of a xylem cell laid down in the form of a spiral.

**Splitter** A taxonomist who in general has the tendency to split or divide larger taxa into a number of segregates; contrasting with lumpier.

**Spongios** Soft, spongy.

**Sporadic** Of irregular occurrence.

**Sporangiophore** An appendage holding a sporangium.

**Sporangium** (pl. **Sporangia**) A spore case or spore sac.

**Spore** An asexual, usually one-celled reproductive body; a cell resulting from meiotic cell division in a sporangium representing the first cell of the gametophyte generation.

**Sporocarp** A specialized structure containing sporangia.

**Sporophyll** Spore-bearing leaf.

**Sporophyte** The spore-producing, typically diploid generation that alternates with the gametophyte (= gamete-producing, typically haploid); the dominant generation in most plants except mosses and liverworts.

**Spreading** Diverging to the side, almost to the horizontal.

**Spreading hairs** Hairs that are ± erect, not at all appressed.

**Spur** (a) Basal, sac-like, hollow projection, short or long and narrow, from a corolla or calyx, and often containing nectar; (b) a short lateral branch with little internode development resulting in closely clustered leaves or flowers.

**Squama** (pl. **Squamae**) A scale, usually reduced from and homologous to a leaf.

**Squamella** (pl. **Squamellae**) A tiny or secondary scale.

**Squamose** Squamate Covered with scales; scaly.

**Squamulose** With small scales.

**Squarroso** Spreading rigidly at right angles or more; e.g., with leaves or bracts spreading and bending backward abruptly in the upper part.

**Stalk** The supporting structure of an organ; e.g., petiole, pedicel, peduncle.

**Stamen** The male reproductive organ of a flower consisting of a filament (= stalk) and anther (= pollen-bearing structure). The stamens of a flower are collectively referred to as the androecium.

**Staminal** Pertaining to a stamen.

**Staminate** Referring to a flower with only the stamens being functional or with stamens only.

**Staminode, Staminodium** (pl. **Stamiododes**) An abortive, sterile, or nonfunctional stamen with reduced anther or usually none. A staminode can be enlarged or widened, sometimes so much so as to be petal-like.

**Standard** (a) (= Banner) The usually large, upper (= adaxial) petal of a papilionaceous flower (Fabaceae); (b) the inner erect tepals or perianth segments in *Iris* (Iridaceae).

**Stele** The central vascular cylinder of a plant.

**Stellate** Star-shaped or star-like; when used in reference to hairs it means those branched hairs with a central stalk and branch hairs arising at the top of the stalk (like points of light coming out of a star).

**Stem** A major division of the plant-body in contrast to root and leaf, distinguished from both by certain anatomical features and commonly also by general aspect; the main axis or axes of a plant; the portion of the plant axis bearing nodes, leaves, and buds and usually found above ground.

**Sterile** Unproductive; nonfructing; without functional sex organs; without spores.

**Sterigma** (pl. **Sterigmata**) A very short persistent stipe or stalk.

**Sternotribal** Descriptive of flowers in which anthers are positioned to dust pollen on underside of thorax of insects.

**Steroid** Any of a large group of lipid soluble organic compounds based on a complex framework of four interconnected rings of carbon atoms. A number of plant glycosides have steroids as the aglycone; these aglycones are often toxic.

**Steroid glycoside** A glycoside (two-component molecule) that upon breakdown yields a steroid as the aglycone (= non-sugar component). Cardiac glycosides and some saponic glycosides have steroidal aglycones; these are often poisonous.

**Stigma** Portion of pistil (usually terminal and small) modified (roughened, sticky, or branched) to catch or receive pollen; the receptive surface of the pistil.

**Stigmatic** Like or pertaining to a stigma.

**Stipe** (a) In general, a stalk; (b) specifically, the leaf stalk of a fern; (c) specifically, the narrow, stalk-like, basal portion of an ovary or fruit; e.g., in Cleome.

**Stipel** Appendage at the base of a leaflet, analogous to a stipule at base of a leaf.

**Stipellate** With stipels.

**Stipitate** With a stalk or stipe.

**Stipular** Pertaining to or located on a stipule.

**Stipulate** With stipules.

**Stipule** Paired appendages subtending the petiole of a leaf. Stipules can be conspicuous and persistent, small and rapidly lost, or totally lacking; the evolutionary origin and original function of stipules is unclear. They have become variously modified to serve as spines, additional photosynthetic area, etc.

**Stolon** A creeping horizontal stem that loops or runs along the surface of the ground and roots at the nodes.

**Stoloniferous** Producing stolons.

**Stoma, Stomate** (pl. **Stomata**). A minute opening ("breathing" pore) between the epidermal cells of a leaf or stem through which gases and water-vapor enter and leave the plant.

**Stomatiferous** Bearing stomata.

**Stone** Bony endocarp of a drupe.

**Stone cells** (= Grit cells) Individual cells that have become hardened or sclerotic; e.g., in fleshy of a pear.

**Stramineous** Straw-colored.

**Striate** With fine longitudinal lines, channels, or ridges.

**Strict** Very straight, unbranched, upright.

**Strigillose, Strigulose** Diminutive of strigose.

**Strigose** With sharply bent (at base) but otherwise straight, appressed hairs.

**Strobilus** (pl. **Strobilus**) (= Cone) A usually cone-like, globose or cylindrical structure involved in reproduction and composed of an axis with a spiral, usually dense aggregation of sporophylls, bracts, or scales (these bearing spores, pollen, or seeds).

**Strophiolate** Having a strophiole.
STROPHIOLE On certain seeds, an appendage to the hilum.

STRUMOSE Descriptive of the surface of an organ bearing cushion-like swellings.

STYLE Portion of pistil between ovary and stigma, often elongated and narrow, frequently branched with the number of branches often indicative of the number of carpels making up the pistil.

STYLOPODIUM Enlarged base of style as in many Apiaceae.

SUB - Latin prefix meaning almost, somewhat, of inferior rank, beneath.

SUBAPICAL Almost at the apex.

SUBBASAL Almost at the base.

SUBCLASS The unit, category, or rank in classification between class and order, composed of one or more orders; e.g., the Liliidae is a subclass of class Monocotyledonae.

SUBCORIACEOUS Somewhat leathery in texture.

SUBEROSITY Corky in texture.

SUBFAMILY The unit, category, or rank in classification between family and genus, composed of one or more genera.

SUBGENUS A unit, category, or rank in classification between genus and species, composed of one or more species.

SUBORDER The unit, category, or rank in classification between order and family, composed of one or more families.

SUBMERGED, SUBMERGED (= Immersed) Growing under water.

SUBSOLUTE Almost sessile.

SUBSPECIES A unit, category, or rank in classification below the level of species and between species and variety; a geographically distinct variant. The categories of subspecies and variety are not used consistently by taxonomists.

SUBTEND To be present just below; e.g., an involucre of bracts immediately subtends the flowers of some Malvaceae.

SUBTERRANEAN Below ground.

SUBULATE (= Awl-shaped) Tapering from the base to a slender or stiff point; narrow and sharp-pointed.

SUCULENT Fleshy, thickened.

SUCKER A shoot of subterranean origin. Many tree species have sucker shoots with leaves atypical for the species (e.g., oaks).

SUFFRUTESCENT, SUFFRUTICOSITY Woody only at base with the upper parts herbaceous and annual; obscurely shrubby or fruticose.

SULCATE Grooved or furrowed longitudinally.

SULCUS A furrow or groove.

SUPERIOR OVARVY One that is separate from the other flower parts. The other flower parts may over-top it but are attached at or under its base; a superior ovary is found in either a hypogynous or a perigynous flower.

SUPINE Laying flat with face upward.

SUPRATHEICAL Above the middle; when used to refer to the location of fern sori, it means somewhat beyond the middle of the distance between the leaf segment midvein and margin, but not so much so as to be called submarginal.

SUPPRESSED Failing to develop.

SURCULOSITY Producing suckers or shoots arising from underground parts.

SURCURRENT Extending upward; said of a pinnule whose base extends upward and forms a wing along the rachis; opposite of decurrent.

SUSPENDED Hanging downward.

SUTURE A line of dehiscence or a longitudinal seam.

SWALE A moist meadowy area lower than the surrounding areas.

SWAMP Wet or periodically wet area with some trees.

SYM - Greek prefix meaning with or together.

SYMMETRICAL Possessing one or more planes of symmetry; regular in number and size of parts.

SYMPATRIC Growing together with or having the same range as.

SYMPETALOUS (= Gamopetalous) With petals united, at least basally, forming a tube.

SYMPodial With the main axis or stem ceasing to elongate but growth being continued by the lateral branches.

SYMPODIUM An apparent main axis formed of successive secondary axes, each of which represents one fork of a dichotomy, the other being much weaker or entirely suppressed.

SYN - Greek prefix meaning united.

SYNCAEPH (= Multiple fruit) Used to refer to a structure composed of several more or less coalescent fruits from separate flowers; e.g., Morus (mulberry), Maclura (bois d’arc), Ananas (pineapple).

SYNCAEPHALOUS (a) Having carpels united; (b) of or pertaining to a syncarp.

SYNCONIUM The multiple, hollow "fruit" of a fig (Ficus), which is actually an enlarged fleshy branch or receptacle enclosing the inflorescence (with flowers borne inside). Much of the tissue of a fig is morphologically derived from the stem.

SYNGENESIOUS With anthers united into a tube surrounding the style. This condition is typical of Asteraceae.

SYNSEPALOUS (= Gamosepalous) With sepals united, at least basally, forming a tube.

SYNONYM A currently unaccepted scientific name for a taxon.

SYNONYMY Referring to the series of names no longer used for a taxon.

SYSTEMATICS Scientific study of the kinds and diversity of living organisms and of the relationships between them. The term is often used synonymously with taxonomy.

TANNIN A type of phenol (= aromatic alcohol) that can act as a digestion inhibitor by binding up proteins and thus stopping enzymatic action. They are widespread in plants apparently as a chemical defense against herbivores; used by humans to tan leather; when ingested in quantity they can be toxic to animals.

TAP ROOT, TAPROOTED The primary descending root, giving off small laterals but not dividing; the one dominant root markedly larger than the others.

TAWNY Dull brownish-yellow; fulvous.

TAXON (pl. TAx) (a) General term referring to any unit of classification such as variety, subspecies, species, genus, family, etc.; (b) term used to refer to a specific variety, subspecies, etc.

TAXONOMY The branch of science that deals with classification, identification, and nomenclature.

TEETH (plural of tooth) Marginal projections, protuberances,
serrations, or dentations, usually sharply pointed.

**Tendril** A slender twining or coiling appendage or axis that enables plants to climb; often a modified leaf or stem.

**Tepal** Part of a perianth, usually of a perianth consisting of only one whorl, or of one not differentiated into sepals and petals; a part of the outermost whorl or whorls of flower parts.

**Teratological** Distinctly abnormal; malformed.

**Terete** Rounded or circular in cross-section, cylindrical.

**Terminal** At the tip or apex; distal.

**Terminal bud** (= Apical bud) Bud at the end (= apex) of a stem or branch.

**Ternate, Ternary** In threes.

**Terpenes, Terpenoids** Common organic compounds in plants that are products of acetate metabolism. Numerous kinds are known resulting from variations in the use of 5-carbon isoprene units in their structures; they are often combined with other substances to form complex molecules; essential oils, saponins, some resins, latex, cartenoid pigments, and steroids are examples of compounds that are terpene derivatives.

**Terrestrial** Growing in the ground; supported by soil; contrasting with aquatic.

**Testa** (= Seed coat) The outer covering of a seed; hardened mature integument(s).

**Tetra** Greek prefix referring to four.

**Tetrad** A group of four similar objects; e.g., in Ericaceae, the four pollen grains remaining together.

**Tetradynamous** With four long stamens and two short stamens.

**Tetragonal** **Tetragonus** Four-angled.

**Tetrahedral** Four-sided, as a three-sided pyramid and its base.

**Tetramerous** (= 4-merous) Having flower parts in fours or multiples of four.

**Tetraploid** With four sets of chromosomes; twice the normal diploid level.

**Thalloid** Consisting of a thallus; thallus-like.

**Thallophytes** Algae and fungi.

**Thallus** (a) A plant body not differentiated into true leaves, stems, or roots; (b) a flat, leaf-like organ.

**Theca** (= Anther cell) One of the pollen sacs or locules of an anther.

**Thorn** A sharp-pointed, stiff, woody structure derived from a modified branch.

**Throat** The area of juncture of limb and tube in a sympetalous corolla.

**Thyrse** A panicle-like inflorescence consisting of cymules, and the lateral axes determinate.

**Thysoid** With the appearance of a thyrse.

**Tomentose** Covered with short, soft, curly, densely matted or entangled hairs.

**Tomentulose** Diminutive of tomentose.

**Tomentum** Densely matted wool.

**Tooth** (pl. **Teeth**). Any marginal projection, protuberance, serration, or dentation, usually sharp pointed.

**Toothed** With minor projections and indentations alternating along the margin.

**Topotypic** A specimen from the original or type locality of that species or other taxon.

**Torose** Alternately contracted and expanded.

**Tortuous** Twisted or bent in different directions.

**Torulose** Cylindrical with slight constrictions at intervals; necklace-like.

**Torus** (= Receptacle) Tip of a stem or pedicel, usually more or less enlarged, on which flower parts are attached.

**Toxalbumin** Toxic plant proteins; e.g., ricin from *Ricinus*. The term phytoxin is also often used in this context.

**Trabecula** A transverse partition or cross-bar.

**Trabecular, Trabeulate** Like or with a partition or cross-bar.

**Trailing** Prostrate, but not rooting.

**Translator** In Asclepiadaceae, the wishbone-shaped combination of the clip (= gland-like corpusculum) and bands (= filament-like retinacula) connecting a pair of pollinia from adjacent anthers.

**Translucent** Allowing the passage of light rays, but not transparent.

**Transverse** Lying or being across or in a cross direction.

**Trapezoid** A body with four unequal sides.

**Tree** A woody perennial with usually a solitary trunk or main stem.

**Tri-** Latin prefix indicating three, or three times.

**Triad** In threes.

**Tribe** The unit, category, or rank in classification between sub-family and genus, composed of one or more genera.

**Trichome** Any hair, hair-like projection, or bristle from the epidermal surface.

**Trichotomous** Forking into three equal parts.

**Tricolpate** Three-grooved; e.g., a three-grooved pollen grain.

**Trifid** Three-cleft.

**Trifoliolate** Having three leaves. The term is often used synonymously with trifoliolate.

**Trifoliolate** Having three leaflets.

**Trifurcate** With three prongs; three-forked.

**Trigonous, Trigonol** Three-angled.

**Trilobed, Trilobate** Three-lobed.

**Trimorphic** Of three forms.

**Trinerved** With three primary nerves; triple-nerved; usually with a midrib and two main lateral nerves arising from the base of the midrib.

**Trispetal** Three-parted.

**Triquetrous** Three-angled in cross-section.

**Tristichous** In three vertical rows.

**Truncate** Ending abruptly as if cut off squarely at the end; appearing “chopped off.”

**Tube** The narrow, cylindrical, basal portion of a sympetalous corolla or gyno-sepalous calyx in which the tube gradually widens upward.

**Tubercle** (a) A small, tuber-like structure; (b) small rounded protuberance or projection from a surface; (c) the persistent style base in some Cyperaceae.
A TWICE-PINNATELY COMPOUND store carbohydrates and serve as propagules.

UNCINULATE UMBO on the side of a solid organ.

UMBONATE on the side of a solid organ.

"type" specimen.

is named, the name has to be associated with a particular "type" specimen.

TUBERCULATE Covered with tubercles or warty or nipple-like protuberances.

TUBERERIFEROUS Bearing tubers.

TUBEROUS Bearing tubers or resembling a tuber in appearance.

TUBULAR With the shape of a hollow cylinder.

TUFT, TUFTED A cluster or fascicle of trichomes, leaves, or other elongate structures.

TUMID Swollen; inflated.

TUNIC A loose, membranous, outer skin or coat.

TUNICATE Describing a bulb in which the leaves are arranged in concentric circles; with coats or tunics.

TURBINATE Top-shaped; inversely conical.

TURGIS Swollen, but solid or full; contrasting with inflated.

TURION A scaly swollen structure or offshoot, often serving to overwinter; e.g., in some Myriophyllum species the turions store carbohydrates and serve as propagules.

TWICE-PINNATELY COMPOUND (= Bipinnate) Descriptive of a leaf with leaflets pinnately arranged on lateral axes that are themselves pinnately arranged on the main axis; with the primary divisions (= pinnae) themselves pinnate.

TWIG A young woody stem; the growth of the current season.

TWO-LIPPED (= Bilabiate) Descriptive of a corolla (or calyx) of united petals (or sepals) cut on the two sides forming an upper and a lower portion.

TYPE A plant specimen to which the name of a taxon is permanently attached. When any new taxon (e.g., species, variety) is named, the name has to be associated with a particular "type" specimen.

UBIQUTOUS Occurring everywhere.

UMBEL Usually flat-topped or convex inflorescence with flower pedicels all attached at the same point, like the rays of an umbrel-la; inflorescence type typical of Apiaceae (Umbelliferae).

UMBELLATE Umbel-like, or in an umbel.

UMBELLET A secondary or ultimate umbel; one of the smaller umbellate flower clusters in a compound umbel.

UMBELLIFORM Resembling an umbel in appearance.

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UMBELLIFORM Resembling an umbel in appearance.

UMBEL A rounded elevation or protuberance at the end of or on the side of a solid organ.

UMBONATION With an umbo or projection.

UNCINATE With apex hooked; e.g., hairs with a hook at tip.

UNCINULATE Minutely uncinate.

UNDULATE Gently wavy, less pronounced than sinuate.

UNICULICULATE Narrowed at the base into a claw.

UN- Latin prefix meaning one.

UNIFOLIATE With only one leaf.

UNIFOLIOLATE Referring to a compound leaf reduced to a single leaflet; e.g., in some members of the Fabaceae.

UNILATERAL One-sided; developed or hanging on one side.

UNIOLOCULAR Having only one locule or cell.

UNISERIATE Arranged in a single horizontal row.

UNISEXUAL Having only stamens or only pistils; of only one sex; having flowers either staminate or pistillate.

UNITED Fused into one unit.
**VESICLE** A small cavity or bladder.

**VESSEL** Water conducting structure of the xylem, formed from the walls of a series of dead xylem cells stacked end to end.

**VESTIGIAL** Reduced to a trace, rudiment, or vestige; degenerate; referring to a once more fully developed structure.

**VESTURE, VESTITURE** Any covering on a surface making it other than glabrous; e.g., hairs, scales.

**VEXILLUM** The standard or banner in papilionaceous flowers.

**VILLOSULOUS** Diminutive of villous.

**VILLOUS, VILLOSE** With long, soft, spreading, or ascending, unmatted hairs; shaggy.

**VINE** A plant that climbs by tendrils or other means, or that trails or creeps along the ground.

**VIRGATE** Wand-shaped; slender, straight, and erect.

**VISCID, VISCOUS** Sticky; with sticky surfaces formed by secretions; glutinous.

**VISCIDULOUS** Slightly viscid.

**VIVIPAROUS** Germinating or sprouting from seed or bud while attached to the parent plant.

**VOLUBLE** Twining.

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**Z**

**ZYGOMORPHIC** Referring to a flower or other structure with only one plane of symmetry; divisible into halves in one plane only; bilaterally symmetrical; e.g., with the left half a mirror image of the right; contrasting with both actinomorphic and irregular.

**ZYGOTE** Cell produced from fertilization or the union of two gametes; a fertilized egg.

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**W**

**WAIF** A species that is only fleetingly established and probably not permanently naturalized.

**WEED** (a) A plant growing where it is not wanted; (b) a plant with the genetic endowment to inhabit and thrive in places of continual disturbance, most especially in areas that are repeatedly affected by the activities of humankind.

**WHORL, WHORLED** (= Verticillate) With three or more leaves or flowers attached at the same node; in a circle or ring.

**WIDE** (= Broad) Distance across a structure (equal to diameter if tubular).

**WING** (a) A thin, membranous or flat extension or projection; (b) the two lateral separate petals in some Fabaceae and Polygalaceae.

**WINTER ANNUAL** An annual plant (the total life cycle taking one year or less) vegetatively persistent through the winter, and flowering and fruiting in the late winter or early spring.

**WOOLLY** (= Lanate) With long, soft, and more or less matted or entangled hairs; wool-like.

**WORT** An old word of Anglo-Saxon origin meaning the equivalent of herbaceous plant.

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**X**

**XERIC** Characterized by or pertaining to conditions of scanty moisture supply; dry.

**XERO-** Greek prefix signifying dry.

**XEROPHYTE** A plant that can subsist with a small amount of moisture, such as a desert plant; contrasting with hydrophyte and mesophyte.

**XEROPHYTIC** Dry-adapted; drought resistant; contrasting with mesophytic and hydrophytic.

**XYLEM** Water conducting tissue.