GLOSSARY of TECHNICAL TERMS for *Hawaii's Invasive Plant Species*

This glossary defines terms used in the key, *Hawaii's Invasive Plant Species*. It has been adapted from *A Tropical Garden Flora* (Staples & Herbst 2005) and *Manual of the Flowering Plants of Hawai'i* (Wagner et al. 1990). The principal works consulted for definitions included *Taxonomy of Vascular Plants* (Lawrence 1951); *Vascular Plant Systematics* (Radford et al. 1974); *Flowering Plants of the World* (Heywood 1985); *The New Royal Horticultural Society Dictionary of Gardening* (Huxley et al. 1992); *Botanical Latin* (Stearn 1992); *Plant Identification Terminology* (Harris & Harris 1994); *Plant Form* (Bell 1991); and *Guide to Flowering Plant Families* (Zomlefer 1994). The last two are particularly well illustrated and useful recent works that we highly recommend to readers wishing to learn more about the intricacies of plant morphology. The definition for rame was taken from *A Guide to Florida Grasses* (Taylor 2009). Terms in red are used in the key; others may be of use to the user when undertaking further research about invasive species contained within the key.

a-, an- Prefix of negation, meaning "not, no."
abscission Process by which plant parts are shed.
abrupt Suddenly narrowed at the apex.
acaulescent Stemless; plants without an obvious stem, such as rosette plants.
achene (kernel) A dry, usually small, 1-seeded, indehiscent fruit with a fruit wall tightly fitted to the seed coat.
actinomorphic Radially symmetrical; divisible into 2 equal halves along more than one plane. Compare zygomorphic.
acute, alt. **sharp-pointed, sharply pointed** Forming an angle less than 90°.
adventitious root A root that is "out of place," that is, developing on a stem or leaf or from an old organ, including old roots. Nearly all fibrous roots are adventitious, arising on the stem at or below ground level to replace the short-lived primary root system.
adventitious Said of parts that develop from unlike parts, as a root that appears from a stem.
adventive Introduced but not fully naturalized.
aerial bulb, alt. **bulbil** Small bulbs formed along stems, in leaf axils, or other above-ground places.
aerial Produced above the surface of ground or water.
aggregate fruit Formed from free pistils of a single flower that are coherent in fruit. Examples include *Rubus, Annona.*
alien Foreign, not native.
alternate 1. Arranged singly at each node, as the leaves on a stem. 2. Arranged regularly between organs of anothyer kind, such as stamens alternating with petals or sepals.
amphibious Plants capable of growing either in water or on wet soils subject to flooding.
amphistomatic Having stomata on both sides of a leaf.
androgynophore A stalk that raises stamens and pistil above the level where sepals and petals are attached.
angiosperm A class (Angiospermae) of vascular plants having seeds in a closed ovary.
angular, angled Surfaces and plane figures with acute angles rather than smooth curves.
annual Completing the entire life cycle (from seed to seed) in 1 year or less. Contrast biennial, perennial.
anther cell The cavity inside each theca (compartment) of an anther, where pollen grains are formed. *See also* pollen sac.
anther Pollen-producing organs of the flower. *See also* stamen, filament.
anthesis The act of flowering, at which time a mature floral bud expands into an open flower.
antitropic With leaves on one side of the plant mirror images of those on the other. Compare homotropic.
apex, adj. **apical** End of a plant structure furthest from the central axis; the distal end. Opposite of base.
apiculate Terminating in a short, acute, flexible tip.
apocarpous Having free rather than fused carpels, either in flower (as in *Magnolia*) or in fruit (as in many apocynads, in which the carpels separate after pollination to produce paired follicles).
appressed Pressed close to the surface.
appressed-hairy Hairs pressed against a surface rather than erect or ascending from it.
aquatic Plants growing partly or wholly in water. *Submerged* plants grow entirely beneath the water. *Floating* plants may either float freely on the surface with roots that trail beneath, or be rooted in the bottom substrate with leaves that float on the surface. *Emergent* plants are rooted in the substrate and have leaves that rise above the water's surface. Intermediates are possible as well.
areole 1. In cacti, tufts of hairs, glochids, or spines. 2. In leaves, the open spaces between the finest veinlets.
aril, adj. **arillate** An outgrowth surrounding a seed, specifically developed from the funicle.
aristate An apex terminating in a long, slender bristle.
armed Plants or plant parts provided with spines, thorns, or prickles.
ascending Rising at an angle greater than 45° but less than 90°.
asymmetrical Structures that are neither radially nor bilaterally symmetrical; having no identifiable symmetry; in Orchidaceae, structures that are unequal-sided (e.g., not bilaterally symmetrical).
auricle, adj. **auriculate** A lobe, often ear-shaped, at the base of some leaves or petals.
awn A bristlelike part or appendage.
axial General term for elongate, more or less cylindrical structures (e.g., trunk, stem, branches, twigs, inflorescence rachis, petiole, receptacle). Compare laminar.
axil The upper angle formed by a petiole (or other structure) attached to a stem; adj. **axillary** Located in an axil.
axis 1. The main stem of a whole plant, compound leaf, inflorescence, or fruit. 2. Central stem of spikelet.
base, adj. **basal, basally** The end of a plant structure nearest to the central axis; the proximal end. Opposite of apex.
berry An indehiscent, usually fleshy fruit formed from a single ovary, containing few to many seeds. Examples are grapes, tomatoes, and kiwis.

biennial Completing the entire life cycle (from seed to seed) in 2 years; the first year typically is devoted to vegetative growth, with flowering and fruit production occurring in the second year. Compare annual, perennial.
bilabiate 2-lipped; a bilaterally symmetrical corolla in which the petals or corolla lobes form an upper and lower lip.
bisexual Having fertile, functional stamens and pistils in the same flower.
bract A reduced, sometimes scalelike leaf associated with a flower or inflorescence.
bractlet A subsidiary bract, usually smaller in size and/or placed higher in the inflorescence.
branchlet Subsidiary branches of a plant or inflorescence.
bristles Stiff, flexible hairs. *See also* awn.
bulb, adj. **bulbous** An underground storage organ composed of specialized, reduced leaves or scales attached to a basal plate; growing from or producing bulbs.
buttress Planklike flanges formed at the trunk base of some trees. Buttresses develop from surface roots.
calyx Collective noun for all the sepals. The outermost whorl of a typical flower; the floral envelope.
calyx tube Sepals united into a single structure that may be tubular, cup-, bowl-, or otherwise shaped.
cane Non-specific term for elongate herbaceous stems, as of blackberries *(Rubus),* orchids, or grasses.
capitate Pinhead-shaped.
capsule A dehiscent, usually dry fruit, that opens at maturity along 1 or more lines. Capsules develop from ovaries consisting of 2 or more carpels. Compare follicle.
carpel, adj. **carpellate** A foliar, ovule-bearing unit of a pistil/ovary. Simple pistils consist of 1 carpel; compound pistils consist of 2 or more carpels.
cartilaginous Having texture like gristle; tough but not bony.
caruncle An outgrowth from the seed coat near the hilum, often fleshy or oily. Compare aril, sarcotesta.
caryopsis The fruit of grasses, essentially an achene formed from a superior ovary.
cataphylls Rudimentary leaves that may be present at base of petioles of normally developed leaves, or covering apical or axillary buds.
catkin A spikelike inflorescence of tiny, crowded, usually petal-less flowers. Catkins are found in oaks, birches, and willows.
caulescent Plant with an obvious stem.
cauliflorous Inflorescences developed on the trunk or main branches of trees.
chaff, adj. **chaffy** Thin, papery bracts or scales found in inflorescences of some Asteraceae, Chenopodiaceae, etc. In Myrtaceae, chaff my be sterile ovules or aborted seeds found among fertile seeds in a capsule.
channeled, channel-shaped U-shaped in cross section, like a gutter or channel.
chartaceous Having a texture like parchment or stiff paper.
chlorophyll The green pigment plants use to carry out photosynthesis, by which light energy is converted to carbohydrates.
ciliate Margins with eyelash-like hairs.
cincinnus A modified cyme in which the axis (usually) coils in a spiral, with flowers developing along the outer side only. Also called a helicoid cyme or scorpioid raceme. In Zingiberaceae the axis does not always coil, but the inflorescence is still technically a cincinnus.
circumscissile A capsule opening by a horizontal line around the fruit, the top coming off as a lid.
cladode A flattened main stem bearing chlorophyll and resembling a leaf. An example is Christmas cactus.
cladophyll A flattened twig or branchlet bearing chlorophyll and resembling a leaf. Examples are asparagus-fern and some acacias.
claw The abruptly narrowed base of some sepals or petals, resembling a petiole.
cleistogamous Small, closed, self-fertilized flowers, as in some violets and many other plants; they develop mostly on or under the ground.
climber A plant that does not develop an erect, self-supporting stem, instead growing upward by tendrils, roots, petioles, or twining stems.
coherent Clinging together but not fused.
columnar Tall and slender like an architectural column.
coma 1. A tuft of hairs found on some seeds or fruits. 2. A tuft or rosette of bracts at the apex of an inflorescence, such as the pineapple.
compound inflorescence Complex inflorescences in which the side branches are themselves composed of cymes, racemes, spikes, umbels, panicles, etc.
compound leaf Leaf divided into 2 or more leaflets.
compressed Flattened from side-to-side. Compare depressed.
cone (bot. strobilus) Reproductive structure consisting of sterile bracts and fertile scales densely arranged around a central axis. Cones are found in (among other plants) equisetums, selaginellas, cycads, and many conifers, while inflorescences resembling cones occur in many flowering plants, such as costus, some gingers, aphelandra, and composites.
conical Shaped like a cone—broad at the base, tapering to a sharp point, and circular throughout in cross section.
connective Filament or tissue connecting 2 cells of an anther, usually noticeable only when enlarged.
convolute Sepals or petals rolled in bud with their margins overlapping in a consistent pattern. Also, cotyledons that are much folded and crumpled inside the seed.
cordate 1. Heart-shaped. 2. Base with 2 rounded lobes separated by a sinus.
corm A solid, swollen, usually subterranean part of the stem used for storage, such as the “bulb” of *Crocus* and *Gladiolus.*
corolla Collective noun for all of the petals.
corona Extrafloral organs arising from the corolla or stamens, such as found in Amazon lilies, spider lilies, society-garlic, and passionflowers.
corymb, adj. **corymbose** A flat-topped or convex inflorescence in which all the flower pedicels arise at different points along the main axis. In a **compound corymb** the side branches (secondary corymbs) all arise at different points along the length of the main axis.
costapalmate A palmate palm frond in which the petiole extends through the blade as a distinct midrib. Opposite of **acostapalmate**, in which such a midrib is lacking.
cotyledons Seed leaves, the first leaves in an embryo, which may appear aboveground at germination or remain inside the seed coat.

creeper Plant with horizontal trailing stems that root freely along their length, or sometimes a climber that clings by adventitious roots.
crisped Irregularly curled and rolled, like parsley leaves.
crown 1. Structure in Asclepiadaceae flowers formed by fusion (and strong modification) of stamens with pistil. 2. A collective term for the branches and foliage of a tree or shrub, or the foliage rosette of a fern, cycad, or palm. 3. Tuft of bracts at the apex of a pineapple. 4. Basal portion of a herbaceous plant where stem meets roots, sometimes represented by a thickened structure at or below soil level.
crownshaft An extension of the trunk in some palms formed by the tubular, sheathing petiole bases.
culm sheath In bamboos, the sheath enclosing an emerging shoot (culm), falling away as the shoot elongates.
culm The stem of grasses and bamboos, usually hollow except at the swollen nodes.
wedge-shaped (bot. cuneate) 1. Triangular, with the attachment at one of the points. Compare triangular. 2. Base narrowed to a point.
cupule Cup- or bowl-shaped involucre at the base of some fruits (acorns, some palms) formed by the persistent perianth or bracts.
cyathium Specialized inflorescence characteristic of euphorbias, in which reduced, unisexual flowers are crowded within a gland-bearing involucre.
cylindrical Tubular, circular in cross section and with parallel sides.
cyme (bot. dichasium) A cluster of 3 flowers, the center bud opening first, with a lateral bud on either side. In compound cymes the lateral flowers may be replaced by secondary or tertiary cymes.
deciduous 1. Falling off, not persisting. 2. Plants that lose all or nearly all of their leaves are deciduous, a relative condition in the Hawaiian climate.
decumbent Stems lying flat on the ground, the tips upturned.
decurrent With one part extending onto another, forming a ridge or wing of tissue, as a leaf blade base that extends down along the petiole or a petiole that extends onto a stem.
deflexed Downturned.
dehiscent Opening at maturity, usually along predetermined lines in the walls of the structure (e.g., anthers, capsules); sometimes used for things that break open irregularly (i.e., shatter).
depressed Flattened vertically, from top to bottom. Compare compressed.
dicotyledon Member of the Magnoliopsida (formerly Dicotyledonae), the subclass of Angiospermae having 2 seedling leaves.
diffuse Loosely branching and spreading, forming an open crown.
digitate Lobed, veined, or divided from a common point, like the fingers of a hand.
dimorphic Having 2 distinct forms, as in juvenile and adult leaves, or unisexual flowers.
dioecious With staminate and pistillate flowers produced on separate plants. Strictly speaking, flowers are unisexual/bisexual, while plants are monoecious/dioecious.
disc 1. A swollen or elevated, often nectar-producing structure found in some flowers, developed from various floral organs. 2. The receptacle of composites (Asteraceae). 3. Swollen tips of tendrils, as in flame vine or some Vitaceae.
disc flowers In a composite head (Asteraceae), the central florets with radially symmetric corollas and no strap-shaped appendages.
discoid A composite flower head (Asteraceae) composed entirely of disc flowers.
disc-shaped Shaped like a classical discus; a flattened plate.
distal, adj. **distally** The end away from the point of origin or attachment. Compare proximal.
distichous 2-ranked, having parts arranged in 2 rows along an axis and lying in one plane.
distinct Separate, free; not fused or adhering to one another.
diurnal Occurring during daylight. Compare nocturnal.
domatia Tiny pockets, pits, or tufts of hairs in the axils of secondary veins on leaves, which are inhabited by mites, bacteria, insects, etc. Presence of domatia on leaves can be useful in identifying plants.
downy-hairy Covered in short, soft hairs, like a child's cheek.
drip-tip, alt. **caudate** A tail-like appendage on the apex of leaves or aroid spathes.
drupaceous Resembling a drupe without fitting the botanical definition for one.
drupe An indehiscent, fleshy or dry, usually 1-seeded fruit, the seed enclosed in a stony endocarp (a pyrene). Examples are cherry, mango, olive, and coconut.
drupelet (dim.) Small drupe; one segment from an aggregate fruit such as a raspberry or blackberry.
elliptic, also **ellipsoid** (the 3-dimensional equivalent) Oval, broadest at the middle, tapering symmetrically to rounded ends.
embryo The rudimentary plant inside a seed.
emergent With parts rising above the water's surface from a plant growing underwater.
endemic Native to one geographic locality and nowhere else. Compare indigenous, introduced, naturalized.
endocarp The inner layer of the fruit wall, often hard, fibrous, stony, or otherwise resilient.
entire With margins that are continuous, whole, not in any way indented.
eophyll The first true leaves following germination, transitional between cotyledons and mature leaves. In palms, the seedling eophylls can be useful for identification.
epicalyx A whorl of bracts below the calyx. *Hibiscus* and some other Malvaceae have an epicalyx.
epiphyllous Borne on a leaf.
epiphyte, adj. **epiphytic** A plant that grows upon the trunk or branches of another; often loosely used for any plant that grows elevated and not rooted in the ground, such as on rocks, walls, poles, etc. Compare hemiepiphyte.
equitant Arranged in flat fans with overlapping bases, as in the leaves of some oncidiums and various Iridaceae.
escape A cultivated plant gone wild.
ethereal oils Aromatic oils produced in the bark, twigs, leaves, and other parts of many Lamiaceae, Rutaceae, and Zingiberaceae, among other plants.
evergreen Retaining leaves throughout the year. Compare deciduous.

exocarp Outer layer of the fruit wall, which may be leathery, tough, or otherwise different in texture from the inner layer.
exotic Introduced from another place; not native to the locality where presently found.
extra-axillary Beyond or outside of the axil.
family A taxonomic category that includes 1 or more genera. Family names have a capital initial letter and end in -aceae; they are not italicized.
fascicle, adj. **fascicled**, alt. **fasciculate** Dense clusters (as of flowers) or bundles (as needles, leaves).
felted-hairy With matted, tangled hair like felt.
fertile Bearing reproductive organs. Compare sterile. Whole plants, branches, leaves, stamens, pistils, and fruits may be fertile or sterile.
fibrous roots Having many fine, branching roots without a strong central one or any enlarged storage roots. Compare taproot.
fibrous With loose, woody fibers, and thereby often tough.
filament The stalk of the stamen, terminated by the anther.
fleshy Succulent.
flexuous Pliant, supple, flexible, or sometimes more or less zigzag in shape.
floral tube (bot. hypanthium) A compound structure formed by the fusion of the basal portion of sepals, petals, and stamens.
florets Tiny, often reduced and simplified flowers that make up inflorescences of groups such as grasses, composites, aroids, and palms.
follicle Dehiscent, dry or leathery fruit produced by a simple pistil and opening along one side.
forma The lowest botanical category; the smallest variant of a plant species to be recognized with a scientific name.
free Separate, neither clinging to nor fused with similar or different kinds of plant parts. Compare united, coherent.
free-floating Aquatic plants not rooted in the bottom, such as hornwort or floating ferns.
frond Often a large, finely divided leaf, usually applied to ferns and palms. In Lemnaceae, the frond describes the whole plant body: leaves, stem, and scales (prophylls), but excluding the roots.
funicle The stalk of an ovule by which it is attached to the ovary wall.
gall Abnormal growth of a plant part induced by an insect, mite, or infectious organism.
gall flower Atrophied pistillate flowers of the fig; pollinating fig wasps lay their eggs within the ovaries , where their young develop.
gametophyte The generation of a plant that bears the sexual organs, producing sexual reproductive cells that unite to form a sporophyte plant. Compare sporophyte.
geniculate Abruptly bent, like a knee.
geniculum The node of a stem.
genus A taxonomic category that includes 1 or more species. Genus names are italicized or underlined, have a initial capital letter, and, when combined with a specific epithet, make up a binomial or scientific name.
glabrous Without hairs or glands.
gland Strictly speaking, a secreting structure, but often used loosely for any glandlike body. The presence, distribution, shape, size, and number of glands can be useful in identifying plants; adj. **glandular** Having or bearing secreting organs or glands.
glandular hairs 1. Hairs that are gland-tipped or entirely glandular. 2. A mixture of glands and simple hairs.
glaucous A surface coated with a whitish bloom that rubs off when handled. Grapes, plums, head cabbage, and mature winter melon are examples of glaucous plant parts.
globose Spherical, a perfect 3-dimensional circle.
glochids Minute barbed spines or bristles, often borne in tufts, present in many cacti. *See also* areole.
glossy Shiny. Opposite of dull, matte.
glumes Two chaffy, sterile bracts borne at the base of most grass spikelets.
granular Texture like fine granules; gritty.
ground cover Low-growing plants that spread horizontally, used in landscapes to hide bare soil, provide color, prevent erosion, and allow an unobstructed view above them.
gymnosperm A class (Gymnospermae) of vascular plants having ovules (and later the seeds) borne exposed (not inside a closed ovary).
gynobasic Having attachment at the base of the ovary rather than at the apex or side.
gynophore A stalk in the center of a flower that raises the pistil above the receptacle, especially in the Capparaceae and Sterculiaceae.
half-inferior In flowers, when the sepals/petals are attached midway around the ovary, the ovary is said to be half-inferior to the perianth. Compare inferior, superior.
hastate Shaped like the head of a halberd, more or less arrowhead-shaped with basal triangular lobes that diverge nearly at right angles to the petiole.
hastula In some palmate palm fronds, a flange of tough material on the upper side of the petiole where it joins the frond blade.
head, headlike (bot. capitulum) A contracted, dense spike usually with tiny, crowded flowers.
hemiepiphyte, adj. **hemiepiphytic** A plant that germinates on the ground, grows along it toward a tree (or other vertical surface), then climbs toward light, often undergoing a distinct change in appearance once climbing begins. Flowering occurs after the plant reaches a height where bright sunlight is available.
hemiparasitic A plant capable of photosynthesis but partly dependent on nutrients absorbed from other plants. Sandalwoods are an example of such partly-parasitic plants.
hemispherical Half a sphere, divided through the center.
herb, adj. **herbaceous** 1. A plant, either annual or perennial, lacking woody tissues. 2. adj. **herbaceous** Having exclusively non-woody parts. Also used for new growth on woody plants that has not yet become woody. 3. In general use, herbs are often plants used in cooking or medicine, regardless of whether the source plant is a tree, shrub, or herb in the botanical sense.
hesperidium A modified berry with thick, often leathery, outer skin, divided into sections by internal septa, and having pulp formed from juice-filled hairs that are among the largest in the plant kingdom. Citrus fruits are hesperidia.

heterosporous Producing spores of 2 distinct types, as in some selaginellas.
heterostyly, adj. **heterostylous** Condition in which stamens and styles vary in length among flowers on different plants of the same species, a means for promoting cross-pollination because fertilization is only successful between flowers of 2 different stamen/style lengths.
hexagonal Six-sided, usually evenly so.
hilum, adj. **hilar** Seed scar indicating the point of attachment of the funicle.
hip Fruit characteristic of roses, consisting of an urn-shaped floral tube enclosing an aggregation of follicles.
homotropic Leaves on the plant all formed alike. Compare antitropic.
hyaline Translucent when viewed in transmitted light, or transparent.
hypanthium, pl. **hypanthia** *See* floral tube.
hypocotyl The area between the cotyledons and the root of a plant. The "corm" of a cyclamen is actually a swollen hypocotyl.
hypostomatic Having stomata only on the underside of the leaf.
imbricate Overlapping, like shingles on a roof.
in- Prefix indicating "not."
indehiscent Not opening at maturity.
indigenous Occurring naturally in one geographic area as well as in others. Compare endemic, introduced.
induplicate Folded or rolled inward. In palms, induplicate leaflets have the midrib at the bottom, the blades arranged in a V-shape.
indusium, pl. **indusia** Outgrowth of the blade surface forming a covering over the sori (spore sacs) in some ferns.
inferior Beneath, below. In flowers, if sepals and petals are attached to the apex of the ovary, the ovary is inferior to the perianth. Compare half-inferior, superior.
inflated Bladdery, having a loose-fitting outer covering.
inflorescence The flower-bearing part of a plant, usually with 2 or more flowers but sometimes reduced to a single flower.
infra- Lat. prefix "within."
infrageneric (Hybrids) produced between 2 (or more) species belonging to the same genus.
inserted Attached, as a staminal filament's point of fusion with the corolla or receptacle.
internode The part of a stem or axis between 2 nodes.
interpetiolar Between the petiole bases of 2 opposite leaves.
intramarginal vein A vein just inside the margin of a leaf blade or other structure, often formed by the fusion of secondary veins.
intrapetiolar Located in the axil between a petiole and the stem.
introduced A species brought by humans, deliberately or accidentally, to an area where it does not occur naturally. Compare endemic, indigenous.
invasive Species capable of spreading without human assistance into natural habitats and displacing species native there.
inverted Turned over, with the top side down, or end-for-end.
involucral bracts Bracts that comprise an involucre.
involucre One or more whorls of reduced leaves (bracts) borne close below an inflorescence, as in composites.
involute Leaves rolled inward in bud. Compare revolute.
irregular, **irregularly** Not symmetrical.
irregularly symmetrical Describes flowers that are neither bilaterally nor radially symmetrical, having no clear symmetry, such as a canna.
jaculators Hardened, hook-shaped structures on the inner fruit wall of various Acanthaceae.
labellum 1. Perianth part that is larger and often colored differently from the rest, as in the lip of orchids or hedychium gingers. 2. Sterile stamens that are fused and petal-like in some Costaceae.
laminar General term for flattened, bladelike structures (e.g., leaves, bracts, sepals, petals). Compare axial.
lanceolate Shaped like the point of a lance, much longer than broad, widening above the base and tapering to the apex.
lateral Toward the side, away from the center. Compare medial.
latex Milky sap, sometimes sticky or rubbery upon drying.
lax With open branching, loose. Opposite of dense, crowded.
leaflet(s) Secondary leaves, the components of a compound leaf.
leaf-opposed Having a structure such as an inflorescence or tendril opposite a leaf and at the same node.
leathery (bot. coriaceous) Texture of leather, thick yet somewhat flexible, tough.
legume A fruit type, dehiscent along 2 sides and formed from a 1-carpellate ovary; a common name for plants belonging to the family Fabaceae (alternatively Leguminosae) having such a fruit type.
lemma In grasses, the lower of 2 bracts that enclose a single flower and comprise a floret.
lenticels Pale warty bumps on twigs, branchlets, and sometimes fruit that permit gas exchange between internal tissues and the atmosphere.
liana A woody, usually high-climbing vine, often from tropical regions.
ligule, adj. **ligulate** 1. An outgrowth at the top of the leaf sheath in some grasses and gingers; it may be membranous, fringed, hairlike, or tubular. 2. A strap-shaped corolla of composite flowers. *See also* ray flower.
limb The distal portion of a corolla tube, which may be entire or variously lobed.
linear Long and narrow, with parallel sides.
lip 1. In flowers of many Lamiaceae, Acanthaceae, Scrophulariaceae, etc., the corolla lobes are arranged in an upper and lower lip, resulting in a distinct bilateral symmetry. 2. Used more or less interchangeably with *labellum* (q.v.) for the enlarged, showy, colored perianth part of orchids and gingers.
littoral Of, relating to, or growing in or near the shore, especially the sea.
lobes Segments or divisions of laminar structures (leaves, petals, etc.) divided about halfway or less.
loment An elongate fruit that breaks cross-wise between the seeds.

lyrate Pinnately parted, with an enlarged terminal lobe and smaller, rounded lower lobes.
mealy (bot. farinaceous) Surface appearing as if dusted with corn meal.
medial Towards the center. Compare lateral.
membranous, alt. membranaceous Texture like a thin, flexible membrane.
mericarps The segments making up a schizocarp (q.v.).
mesic Characterized by a moderate amount of moisture; damp, moist.
mesocarp The middle layer of a fruit wall, which may be dry and fibrous (coconut, almond), fleshy and juicy (peach, cherry), or oily (olive, avocado).
misapplied name A scientific name that has been used for the wrong species; a case of mistaken identity.
moniliform Shaped like a string of beads.
monocarpic Flowering and fruiting only once before dying. While annual herbs are, by definition, monocarpic, even tropical perennial plants, such as some palms, flower just once then die as soon as the fruits ripen.
monocot, monocotyledon Member of the Liliopsida (formerly Monocotyledonae), the subclass of Angiospermae having 1 seedling leaf.
monoecious Bearing staminate and pistillate flowers on the same plant.
monopodial Growth form in some orchids that has one main axis of growth with little or no lateral branching. Compare sympodial.
monotypic A plant family comprising a single genus, or a genus comprising a single species.
mucilage, adj. mucilaginous A sticky gum or gelatinous material produced by some plants, notably members of the Malvaceae.
mucronate An apex that is rounded and terminates abruptly in a short, sharp point (mucro).
multiple fruit (bot. syncarp) A compound fruit formed from the fused ovaries of several flowers on a common axis. Examples are mulberry, *noni,* pineapple, breadfruit, and ironwood.
mycorrhiza, adj. mycorrhizal A symbiotic relationship between the mycelium of a fungus and the roots of a seed plant.
native Occurring naturally in a place; indigenous.
naturalized Introduced and showing the ability to reproduce either sexually or vegetatively and to spread without human assistance.
nectar guides Markings on the petals directing a pollinator toward the nectaries.
nectary, pl. nectaries, alt. nectary glands A gland that secretes nectar, located in a flower (floral nectary) or elsewhere on the plant (extrafloral nectary), such as on a leaf blade, petiole, or stem.
needlelike (bot. acicular) Shaped like a sewing needle.
netted, netlike (bot. reticulate) Having veins that form an interconnecting network.
nitrogen-fixing nodules Small growths on the fine roots of legumes, ironwoods, and a few other kinds of plants in which bacteria live that are capable of "fixing" gaseous nitrogen in a chemical form that the plant can absorb and use.
nocturnal Occurring during nighttime. Compare diurnal.
node Joints in a stem where leaves, tendrils, inflorescences, or other parts are attached. Compare internode.
nomenclature An international system of standardized Latin names used in biology for the classification of plants, microorganisms, and animals.
non-indigenous, non-native Species not native to an area but introduced there by humans.
nut An indehiscent, 1-celled, 1-seeded fruit with a hard or bony fruit wall. Acorns, hazelnuts, and pecans are examples.
nutlet A small nut, often used for fruits of the Lamiaceae.
ob- Lat. prefix indicating inversion, or rotation by 180°. Thus ovate turned 180° becomes obovate. Similar pairings include conical/obconical, lanceolate/oblanceolate, cordate/obcordate, and so forth.
oblique Slanting, asymmetrical, unequal-sided.
oblong Lozenge-shaped, longer than broad with parallel sides and rounded ends.
obscurely Indistinctly, not clearly or obviously present.
obtuse Bluntly pointed, with an angle greater than 90° at the apex.
ocrea A sheath around a node formed by the fusion of 2 stipules, characteristic of many Polygonaceae.
offsets General term for small plantlets produced by vegetative means, including suckers, pups, offshoots, etc., borne at the base of a plant, on the leaves, inflorescences, stems, or in the axils.
-oid Gk. suffix indicating similarity, likeness. It also signifies 3-dimensional shapes (ov*oid*) rather than 2-dimensional ones (ov*ate*).
operculum The lidlike cap that detaches from a circumscissile (q.v.) capsule.
opposite Situated in pairs directly across from each other at the same node, as leaves of some plants; situated directly in front of (on the same radius as) another organ, as sttamens opposite the petals.
orbicular Approximately circular in outline.
ostiolar scales Tiny bracts around the ostiole of a fig which close off the opening until the fig is ripe.
ostiole In figs, the opening at the apex through which tiny pollinating wasps enter.
ovary The basal part of the pistil containing the ovules; the immature fruit.
ovate Egg-shaped in 2-dimensional outline, the attachment at the broad end.
ovoid Egg-shaped in 3-dimensional form.
ovule Structure that contains the female sex cells inside one or more protective layers; the ovules reside inside an ovary (flowering plants) or on a scale of a cone (gymnosperms). Fertilization of an ovule by male sex cells from a pollen grain leads to development of a seed.
pachycaul Swollen-stemmed; often characteristic of plants from desert habitats, such as cacti, succulent euphorbias, the baobab tree, and desert-rose, among others. *See also* succulent.
palea In grasses, the upper of 2 bracts enclosing a single floret.
palmate Having parts arranged like the spread fingers radiating from the palm of a hand.
panicle, adj. paniculate Branched inflorescence in which the first flowers open at the base and the apex continues elongating.
papery (bot. chartaceous) Having texture like thick writing paper or parchment; firm yet flexible.

papilla, pl. **papillae**, adj. **papillose, papillate** Minute, pimplelike outgrowths from a surface.
pappus A tuft of hairs, bristles, scales, or other material on the apical end of the ovary/fruit of some Asteraceae.
parasite An organism that lives on or in another, to the harm or detriment of the latter.
parthenocarpic adj. Produced without fertilization of ovules by pollen. Fruits that have been produced without fertilization of the ovules can be recognized by the absence of seeds. Bananas, navel oranges, and some papayas are examples of edible fruits produced parthenocarpically.
pedately lobed A variant of palmate lobing in which the basal pair of lobes are again divided. Pedate refers to the appearance of a bird's footprint.
pedicel The stalk of one flower in an inflorescence.
peduncle The stalk of a cluster of flowers, or of a single flower when it is all that remains of an inflorescence.
peltate A laminar structure with its stalk's point of attachment inset from the margin.
pendent, pendulous Hanging downward.
pepo A specialized berry formed from an inferior ovary, with a leathery skin (the rind) and an interior not divided by septa, characteristic of the Cucurbitaceae.
perennial Surviving for more than 2 years or growing seasons. Compare annual, biennial.
perfoliate A sessile leaf having the base of the blade united around the stem, which appears to pass through the leaf blade.
perianth Collective term for sepals and petals (calyx + corolla), especially when these are not easily distinguishable from one another (e. g., tepals).
perisperm A type of food reserve in some seeds that differs in origin from endosperm.
persistent Remaining attached, not deciduous.
petal One of the separate parts of the corolla.
petaloid Petal-like, resembling a petal in texture, color, and shape.
petiole, adj. **petiolate** The stalk of a simple leaf or the common stalk of a compound leaf. Contrast sessile.
petiolule, adj. **petiolulate** The stalk of a single leaflet in a compound leaf.
phalanges In *Pandanus* fruits, a group of fused carpels that separates as a unit from other such units, all of which comprise a compound fruit.
photosynthesis, adj. **photosynthetic** The chemical process by which green plants convert carbon dioxide and water into carbohydrates using chlorophyll and other specialized pigments, with sunlight as the energy source.
phyllode A flattened green petiole that takes the place of a true leaf.
pinna, pl. **pinnae**, dim. **pinnule** A primary division of a pinnately compound leaf, which may consist of 1 to many leaflets.
pinnate With parts arranged like the vanes of a feather (i.e., in 2 opposite rows along the length of a central axis).
pistil The female organ of a flower comprising the stigma, style, and ovary. Compare carpel.
pistillate flower A unisexual flower with a functional pistil; stamens may be present and sterile, or absent altogether. *See* staminate flower.
pistillate symbol /f/. Bearing unisexual flowers with pistils only; sometimes equated with *female*.
pistillode A sterile pistil, sometimes present in staminate flowers.
placentation The arrangement of ovules inside an ovary.
plinerved Having the first pair of secondary veins enlarged and arising from the midvein above the base of the blade. A characteristic of many Melastomataceae.
plumose Feathery, plumelike, having long, soft hairs.
pod A dry, dehiscent fruit containing one or more seeds developing from a single carpel, usually dehiscing along 2 sutures. See legume.
pollinia Coherent masses of pollen that are shed as units, found in many orchids and the Asclepiadaceae.
polyembryonic Some seeds, as in mango and *Syzygium,* contain multiple embryos rather than just one.
polymorphic Having more than one form. Used both when variation is discrete and distinct "morphs" are recognizable, as well as when variation is continuous and discrete units are impossible to recognize.
pome Indehiscent fleshy fruit whose outer part is more or less soft, with a papery or cartilage-like endocarp enclosing the seeds. The fleshy part arises from a swollen receptacle instead of from the ovary. Examples are apples and pears.
prickles, adj. **prickly** A sharp-pointed outgrowth from the outer layers of any plant part. Examples include prickles of roses and lantana.
prop roots, alt. **stilt roots** Adventitious roots (q.v.) growing from the trunk or branches of a woody plant or the stem of an herb. Their function is to anchor and support the plant.
prostrate, alt. **procumbent** Stems (including tips) flat (horizontal).
proximal The end nearest the point of origin or attachment. Compare distal.
pseudo- False. Plant structures may appear to correspond to a certain concept but not fit the technical definition. For example, some inflorescences may appear to be terminal in position but actually emerge from an axillary bud very near the apex; such an inflorescence is called *pseudoterminal*.
pseudobulb Thickened stem of some orchids, solid and borne above ground.
pseudostem Used in describing the stems of bananas and other massive herbs, where the overlapping leaf sheaths form a "trunk" that is quite different in structure from the true stems of herbaceous or woody plants.
pteridophyte A member of the division Pteridophyta of vascular plants, having roots, leaves, and stems but lacking flowers and seeds, reproducing instead by spores.
pubescent Bearing hairs of any type.
pulvinus, adj. **pulvinate** A region of specialized cells in the petiole that controls leaf movement. Legumes typically have a pulvinus (prominent swelling) at the petiole base; many Marantaceae have a pulvinus, indicated by a prominent swelling, near the apex of the petiole where it joins the blade.
pyrene Pit, stone; the hard endocarp of a drupe enclosing 1 or more seeds.
quadrangular, also **4-angular** Squared, having 4 sides of more or less equal length and right angles for corners.
raceme, adj. **racemose** Inflorescence without branches, in which flowers are individually stalked and the oldest (first to open) flower is at the base.

rachis The central axis of a compound leaf or inflorescence.
radial With parts spreading from the center like spokes of a wheel.
radiate A composite flower head (Asteraceae) with ray flowers around the margin and disc flowers in the center. In cultivars the head may be composed entirely of ray flowers.
rame An unbranched grass inflorescence in which the spikelets are paired at each node, typically one sessile, the other pedicellate; characteristic of the grass tribe Andropogoneae.
ranks Rows, series.
ray flowers In a composite head (Asteraceae), the florets found along the margins with a strap-shaped corolla.
receptacle 1. In a single flower, the enlarged or elongated stem apex on which the floral parts are arranged. 2. In composites and heads (capitula) in general, the receptacle corresponds to an inflorescence axis that bears numerous florets rather than a single flower.
recurved Bent or curved downward or backward.
reflexing Abruptly bent or curved downward or backward.
reniform Kidney-shaped.
reproductive shoots Shoots that produce reproductive structures such as sporangia, cones, or flowers. Compare vegetative shoots.
resin Sticky, often aromatic compounds exuded by plants, especially when wounded. Resins are apparently oxidized from essential oils.
resupinate Twisted 180°, as the ovary (and flower) of most orchids; upside down.
reticulate Netted, covered with a network of lines, forming a netlike pattern.
retuse With a small terminal notch in an otherwise rounded or obtuse apex.
revolute Leaves rolled outward in bud, or margins rolled under (abaxially), hence outward. Compare involute.
rhizoid Rootlike, a structure that resembles and functions as a root but is different anatomically; found in lower plants such as ferns and fern allies (e.g., *Psilotum*).
rhizome, adj. **rhizomatous, rhizomatose** A horizontal stem, usually growing on or below the soil surface, distinguished from a root by the presence of nodes, buds, and scales.
rhombic diamond-shaped; a parallelogram with angles that are not right angles.
ribbonlike Elongate, slender, flexible, with parallel sides, like a ribbon.
root hairs Fine outgrowths from epidermal root cells that are able to absorb water and dissolved nutrients from the tiny spaces between soil particles.
roots Anchoring and absorbing organs, usually growing downward and developing underground. *See* adventitious roots, buttresses (buttress roots), fibrous roots, prop (or stilt) roots, succulent (succulent roots), taproot, and tuberous root.
rosette Leaves arranged in a close spiral, either near the ground or terminating a stem.
rotate Wheel-shaped; a corolla having a flat limb spreading at right angles to a short tube.
ruminate Mottled in appearance, with dark and light irregular markings. In seeds of some Arecaceae and Annonaceae, the light-colored endosperm is mottled by dark intrusions from the seed coat.
saccate Bag-shaped; having a distinct pouch.
sagittate Shaped like the point of an arrow.
salver-shaped, alt. **hypocrateriform** Having a slender, elongate tube and a flat limb, abruptly spreading at right angles to it.
samara, adj. **samaroid** Indehiscent winged fruit, as of the maple *(Acer)* and ash *(Fraxinus).* Several legumes have fruits that resemble samaras.
sap A nonspecific term for liquid exuded from broken or wounded plant tissue.
scabrid (dim.) Slightly rough.
scabrous Rough-textured.
scales, adj. **scaly** 1. Reduced leaves or bracts. 2. Flattened, multicellular hairs, often pressed close to the surface and overlapping, as in ferns.
scalloped (bot. crenate) Margins indented, the lobes rounded rather than pointed.
scape bracts Bracts enclosing the inflorescence in Iridaceae, Liliaceae, and other monocots, borne at the apex of the scape. *See also* spathe bracts.
scape, adj. **scapose** A leafless, frequently elongate, inflorescence stalk, sometimes bearing scales or bracts and 1–many-flowered.
scarious Thin, dry, translucent, like brittle waxed paper.
schizocarp, adj. **schizocarpous** A dehiscent fruit separating at maturity into 2 or more 1-seeded segments (mericarps).
scurfy Surface coated with flaking scales like dandruff or peeling, sunburnt skin.
secondary veins A series of veins that branch from the midvein (in dicots) or from the parallel veins (monocots).
secund Having leaves or flowers all arranged on the same side of the axis.
seed coat The outer protective layer of a seed.
segmented Divided into segments or member parts.
segments The individual lobes of a structure that is divided but not truly compound.
semi- Prefix “partly, incompletely.”
sepal One of the separate parts of the calyx (q.v.).
sepaloid Resembling a sepal.
septum, pl. **septa**, adj. **septate** Partitions or cross walls inside stems, fruits, or other parts.
serrate Sharp-toothed, with even teeth like a saw blade.
sessile Not stalked; one structure seated directly on another.
sheath A more-or-less tubular structure surrounding a plant part.
shrub, adj. **shrubby**, dim. **shrublet** A much-branched woody plant without a single trunk.
sickle-shaped (bot. falcate) Having a flat, curved shape, like the blade of a sickle.

silique An elongate dehiscent fruit characteristic of some Brassicaceae and Capparaceae, in which 2 valves split away from a persistent septum, around which the seeds are arranged.
silky (bot. sericeous) Having the sleek, smooth texture or appearance of fine silk; covered in soft, fine, appressed hairs.
simple 1. A leaf not compounded into leaflets. 2. An unbranched inflorescence or hair.
sinus The space between 2 lobes.
sorus, pl. **sori** Clusters of fruiting bodies of ferns, usually located on the underside of the frond.
sp. (sing.), **spp.** (pl.) Abbreviation for species.
spadix The inflorescence in aroids, a thick, often fleshy spike that is surrounded or subtended by a bract (the spathe).
spathe, alt. **spathe bract**, adj. **spathaceous** The bract(s) surrounding or subtending a flower cluster or spadix. *See also* scape bracts.
species The fundamental taxonomic category. Species names are italicized or underlined, begin with a lower case letter, and are in Latin or have been Latinized from another language. *See* binomial.
spherical Globose, round like a basketball.
spicate Arranged in a spike.
spike An unbranched inflorescence like a raceme except that the flowers are not stalked (sessile).
spikelet 1. In grasses, the basic floral unit, consisting of florets (reduced flowers) and their associated bracts. 2. A secondary spike, one unit of a compound inflorescence that is spicate in structure, as in some Lamiaceae.
spine, adj. **spiny**, **spinose** A sharp-pointed part derived from a leaf petiole, midvein, lateral vein, or stipule. Examples include cactus and *kiawe* spines.
sporangium, pl. **sporangia** In ferns, a spore case, the spore-bearing structure, often consisting of a capsule borne on a stalk and opening by a ringlike annulus.
sporocarp A cluster of sporangia covered by an indusium, found in the ferns *Azolla* and *Marsilea.*
sporophyll A leaf that bears spores. Also, in fern allies such as *Equisetum* and *Selaginella,* the specialized leaves massed in cones (strobili) on which spores are produced.
sporophyte In ferns and flowering plants, the generation of plant that produces spores, which develop into the gametophyte generation. Compare gametophyte.
stamen, adj. **staminal**, **staminate** The pollen-bearing organs of seed plants.
staminal column A compound structure formed by the fusion of staminal filaments into a single unit. A hibiscus flower, for example, has a prominent staminal column.
staminate flower A unisexual flower in which stamens are present and fertile, while the pistil is vestigial or absent. Compare pistillate flower.
staminate, symbol /m/. Bearing unisexual flowers with stamens only; sometimes equated with *male.*
staminodes Sterile stamens, either vestigial or fully developed but not producing viable pollen.
stellate Star-shaped; hairs with 3 or more arms radiating like rays of a star.
stem The leaf- and flower-bearing axis of a plant, in contrast to the root-bearing axis. Plants with obvious stems are said to be **caulescent** (stemmed) and those without an obvious stem (such as rosette plants) are **acaulescent** (stemless).
sterile Not producing reproductive structures; often used for plants in vegetative growth.
stigma Portion of the pistil on which pollen is received.
stipitate Borne on a short stalk.
stipitate glands Glands with a slender, elongate stalk and enlarged, glandular apex.
stipule, adj. **stipular** One of a pair of appendages at the base of a leaf petiole.
stolon, adj. **stoloniferous** A horizontal shoot growing along the surface of the ground, producing new plants at the tip; a runner.
stomata, alt. **stomates** (sing. **stoma**) Microscopic pores in the leaves through which gases are exchanged. Typically, stomata are concentrated on the undersides of leaves, although in aquatic plants with floating leaves they are present on the upper side, and in some gymnosperms *(Nageia, Podocarpus)* they occur in equal numbers on both sides.
stone A large pyrene. Historically, fruits such as the peach, apricot, plum, and cherry were called “stone fruits” for their bony endocarps.
strangler Growth form of some tropical plants *(Clusia, Ficus)* that begin life as epiphytes on tree branches, eventually sending roots down to the ground. The roots encircle the trunk of the host tree, crushing the vascular tissue, while the crown of the strangler overtops that of the host, shading it out. In time, the host tree dies and the strangler takes its place in the forest canopy as a free-standing tree.
striate With fine longitudinal lines, channels, or ridges.
style Portion of the pistil connecting stigma to ovary.
sub- Prefix of approximation, meaning nearly, almost, a little more or less than. For example, *subcircular* means nearly circular, and *subglabrous* means almost glabrous.
submarginal vein Same as intramarginal vein.
submerged Growing entirely beneath the surface, as aquatic plants in water.
subsp., pl. **subspp**. Abbreviation for subspecies.
subspecies A taxonomic category lower than a species, usually distinguished by its morphology, physiology, and often its geographic isolation.
subulate Wedge-shaped, broadest at the base, tapering gradually toward the apex.
succulent Often thickened or swollen with a fleshy or juicy interior. Plants from dry habitats are often succulent, an adaptation for water storage. **Stem succulents** (pachycauls) have swollen stems; **leaf succulents** have fleshy, enlarged leaves; various other organs (roots, hypocotyl, tubers, etc.) may be similarly succulent in texture.
superior Above, over. In flowers, if the sepals and petals are attached at the base of the ovary, the ovary is superior to the perianth. Compare half-inferior, inferior.

suture A groove or line on a fruit indicating a natural point where it will split open when ripe; or, in some fleshy, indehiscent fruits (plums, peaches) the groove indicates the union of carpel edges that do not open at maturity.
sword-shaped (bot. ensiform) Shaped like the blade of a sword.
symmetric, symmetrical Having the property of correspondence in size, shape, and relative position of parts on opposite sides of a dividing line or median plane, or about a center or axis. Compare asymmetrical.
sympodial Growth form in some orchids in which each new shoot terminates in a leaf and/or flower. Growth resumes when a lateral branch develops and forms another new shoot. Compare monopodial.
synangia The spore-producing structure of some ferns and fern allies (e.g., *Psilotum*) produced by the fusion of clusters or rows of sporangia.
syconium A hollow, specialized multiple fruit of a fig, in which flowers and ultimately the achenes are borne on the inside of a receptacle-like peduncle.
synonym In scientific nomenclature, a name rejected in favor of another because of nomenclatural technicalities or an earlier date of publication.
taproot A persistent, well-developed primary root. Compare fibrous roots.
tardily Belatedly, not promptly, only after a period of time has passed.
tawny Tan-colored, yellowish brown.
taxa, sing. **taxon** A collective term for taxonomic groups regardless of rank. For example, families, genera, species, or subspecies are all taxa.
taxonomy, adj. **taxonomic** The science of identifying and naming organisms, in this case plants.
temperate Area or region between the tropic of Cancer and the Arctic Circle and between the tropic of Capricorn and the Antarctic Circle, characterized by a seasonal climate with warm to hot summers and cold winters; plants or animals originating in this climate. Contrast tropics.
tendril An elongated, often twining organ, derived from a leaf, stem, or inflorescence, by which a plant climbs or clings.
tepal General term for floral parts that cannot be distinguished as sepals or petals. Examples of flowers with tepals include tulip, onion, and many Iridaceae.
terete 1. Cylindrical, more or less round in cross section. 2. Smooth, not marked by grooves, pits, ridges, angles, or wings.
terminal At the upper tip; apex; distal end.
terrestrial Growing on land. Compare aquatic, epiphytic.
tertiary venation The third-order veins that branch off from secondary veins.
thorn A sharp-pointed branch. Examples are pyracantha, Natal-plum.
thyrse A panicle of panicles—a complex, branched inflorescence in which structure can be difficult to discern.
toothed, alt. **dentate** Margins indented, the lobes pointed.
translator Elongated structure connecting pollinia from 2 adjacent anthers, found in flowers of most Asclepiadaceae.
tree A woody plant with a single main trunk and an elevated crown. Trees are often tall.
triangular Having 3 sides, the attachment on one of the sides. Compare wedge-shaped.
trigonous Having 3 sides or faces.
truncate Abruptly ending, as if cut off at the end.
tuber A thickened storage stem, often (but not always) underground. **Lignotubers** are more or less woody tubers that are typically long-lived, resistant, and able to regenerate above-ground shoots after fire or drought.
tuberculate Having a warty surface; covered in small rounded bumps.
tuberous root A swollen, fleshy root used by the plant for storage. It resembles stem tubers.
tufted Having tufts or clumps of leaves that emerge from the ground. Examples include various lilies, mondo-grass, and tuberose.
tunic A loose, membranous covering of a bulb or corm.
twiner Twisting around a fixed central axis.
umbel, adj. **umbellate** Inflorescence type in which all the flower pedicels arise from the same point at the apex of the main axis. In a **compound umbel**, the peduncles supporting side branches (secondary umbels) all arise from a common point on the same main axis.
umbelliform Resembling or shaped like an umbel.
umbo A conical projection from the outer, exposed end (apophysis) of a cone scale in a gymnosperm seed cone.
unarmed Lacking prickles, spines, or thorns.
undulate Wavy, either horizontally or vertically.
unilateral One-sided.
unisexual Having either stamens or pistils (not both) present and functional.
united The joining or fusing of various plant organs. The fused organs may be of the same type, as petals fused to form a corolla tube (connation); or of different types, as sepals, petals, and stamen filaments fused into a floral tube (adnation).
utricle An indehiscent, 1-seeded fruit with a bladdery, loosely fitting fruit wall. Compare achene.
valve 1. The pieces into which a capsule separates when it opens at maturity. 2. Small flaps on anthers of some Lauraceae that open to release pollen; adj. **valvate** 1. With edges touching but not overlapping in bud. 2. Having valves.
var., pl. **vars.** Abbreviation for variety/varieties.
variegated Having discrete markings of different colors.
variety 1. A taxonomic category lower in rank than subspecies. 2. In general usage, variety is often used imprecisely and loosely for what are strictly known as species, varieties, forms, and/or cultivars.
vegetative shoots Leafy shoots that do not produce reproductive structures (sporangia, cones, flowers). Compare fertile, sterile.
veins Threads of conducting tissue, especially those visible in leaves, petals, or other plant parts.
verticil 1. A single (false) whorl of flowers in a verticillaster. 2. A whorl of 3 or more parts at a node.
verticillaster A typically elongate inflorescence in which paired, nearly sessile cymes surround the axis in what appear to be whorls; characteristic of many Lamiaceae.

vestigial An imperfectly developed remnant of what was once a fully developed, functional organ.
vine A plant whose stem requires support and which creeps along the ground or climbs by means of tendrils or by twining.
viscid Sticky or glutinous.
warty, alt. **tuberculate** Covered in small, rounded bumps.
waxy Having a smooth surface like wax.
weed (noun) A plant growing out of place.
whorled With 3 or more leaves (or flowers) at a node.
wind-pollinated (bot. anemophilous) Pollination effected by airborne pollen grains rather than insects or other agents.
wing 1. A thin, flat extension or projection from the side or tip of a structure. 2. One of the 2 lateral petals in a papilionaceous flower.
woody Having tissues that are hard due to the presence of lignin, a chemical that cross-links long fibers of cellulose in the cell walls, making them more rigid and strong. Herbaceous plants have only cellulose fibers without lignin cross-links, hence they are non-lignified and not woody.
woolly-hairy Covered in long, curly, tangled hairs, like a sheep's fleece.
xerophyte, adj. **xerophytic** Adapted to life in a dry (xeric) habitat, or to survive periods of drought.
zygomorphic Bilaterally symmetrical; divisible into 2 equal halves along only a single plane. Compare actinomorphic.

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