

## Dictionary of basic botany terminology

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The purpose of this mini dictionary is to explain any technical vocabulary used in the Notes section for each species, which is likely to be less familiar to the average reader. Simple leaf shapes are shown in light green, compound leaf shapes in dark green. Where a word has multiple common meanings, the one with a botany focus is given.

**abaxial** (ab·ax·i·al) The lower surface of a leaf.

**achene** (a·chene) A small, dry one-seeded indehiscent fruit, that does not open at maturity to release the seed.

**adaxial** (ad·ax·i·al) The upper surface of a leaf.

**actinomorphic** (ac·tin·o·mor·phic) For a flower having radial symmetry. The existence of two or more planes taken perpendicular to the face of the flower which divide the flower into identical halves. See zygomorphic.

**allopatric** (al·lo·pat·ric) Species occurring in separate non-overlapping geographical regions.

**acicular** (a·cic·u·lar) Needle shaped, e.g., for a leaf.

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**alternate** (al·ter·nate) A descriptor for the arrangement of leaves (or flowers) placed singly at different levels along a stem. See opposite.

**angiosperms** (an·gi·o·sperms) The flowering plants.

**anthecology** The study of the relationships between flowers and pollinators.

**anthropogenic** (an·thro·po·gen·ic) Originating in human activity and used in connection with environmental issues.

**annual** (an·nu·al) A plant that completes its life cycle in a single year. All parts of the plant die off in a single growing season. Only dormant seeds link one cycle to the next.

**anther** (an·ther) The pollen producing part of the stamen.

**apetalous** (a·pet·al·ous) Flowers having no petals.

**APG** Acronym for the Angiosperm Phylogeny Group.

**authority** The person (usually a botanist) who is credited with publishing the first valid description and name for a plant.

**autonym** An infrageneric or infraspecific name that is automatically generated.

**awn** A stiff bristle appendage.

**axil** (ax·il) The angle between the upper side of a leaf stalk or branch and the stem from which it is growing.

**axis** (ax·is) A line of symmetry in a plant or part of a plant, e.g., the principal column of an inflorescence.

**basal** (ba·sal) The base of a structure, e.g., basal leaves are formed at the base of the stem.

**basionym** (bas·io·nym) This is the base name and represents the first validly published name given to a genus or species. It takes priority over other names given later for the same species. The currently accepted name is based on this previously validly published name.

**basionym author(s)** The person(s) who first validly publish the name of a species.

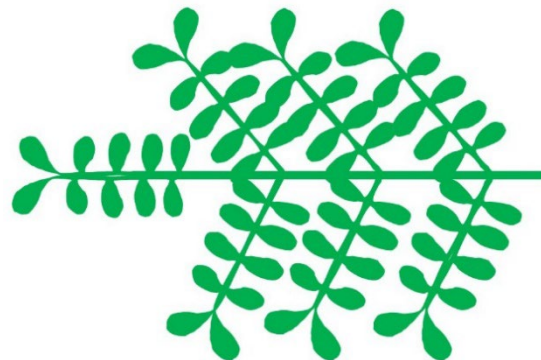
**bellflower** (bell·flow·er) A flower having the shape of a bell.

**berry** (ber·ry) A fleshy fruit, which is indehiscent, with the seeds dispersed through the pulp.

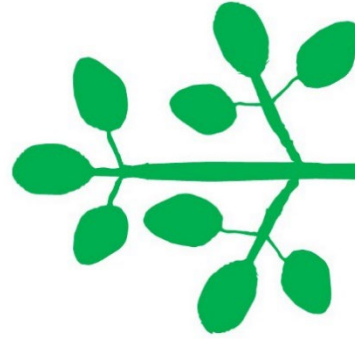
**biennial** (bi·en·ni·al) A plant that has a two-year life cycle, with vegetative growth the first year followed by flowering in the second year.

**binomial** (bi·no·mi·al) The shortened form for binomial name. The botanical name of a plant (more generally the scientific name of an organism) in two parts. The first part of a plant name is the genus, the second part is the species. Names are Latinized with the genus capitalized and the species name all lowercase, even if it arises from a proper noun, such as a person or place. Both names are italicized. It is scientific custom to follow the plant name with the name of the first individual, to describe the plant. Usually this is taken to mean the first individual to scientifically publish their observation.

**bipinnate** (bi·pin·nate) Compound leaf with primary pinnate divisions that are themselves pinnate. Also called 2-pinnate.



**biterminate** (bi·ter·nate) With three parts and each part divided into three. Also called 2-ternate.



**bract** A modified leaf often associated with a flower that is usually smaller but may be larger than the foliage leaves and located below the calyx. Bearing bracts is termed bracteate and lacking bracts is termed ebracteate.

**bulb** A spheroidal portion of the stem that is usually underground, with roots from the lower surface and a stem forming from the upper surface.

**calyx** (ca·lyx) All the sepals of a flower.

**capitulum** (ca·pit·u·lum) A flower head composed of many florets arising at approximately the same level and surrounded by a ring of bracts (involucre). The overall superficial appearance is that of a single flower. This is a characteristic of flowers in the Aster (Asteraceae) family.

**carpel** (car·pel) The female reproductive organ of a flower, a unit of the gynoecium, the female sex organs. It usually consists of ovary, style, and stigma.

**cauline** (cau·line) Leaves attached to above ground stem, in particular, on the upper part of the stem.

**cilium** (cil·i·um) (pl. **cilia**) A fine hair that arises from the margin of an organ, for example an eyelash.

**ciliate** (cil·i·ate) Having a fringe of hairs on a margin.

**cladistic analysis** (cla·dis·tic) A method of classification of biological organisms into groups based on hypotheses of traits of recent common ancestry.

**clasping** A situation where a leaf base partially or fully surrounds a stem.

**cleistogamous** (cleis·tog·a·mous) Flowers that are self-fertilized without opening.

**cluster** (clus·ter) A collection of things of the same kind, e.g., flowers growing in close proximity to one another.

**colonial** (co·lo·ni·al) For plants (or animals) living in colonies.

**coma** (co·ma) A tuft of hairs at the end of some seeds.

**composite flower** (com·pos·ite flow·er) A member of the composite family, i.e., the Compositae or Asteraceae family. The flower heads are composed of many small flowers called

florets. The head may have ray florets, disk florets, or both ray and disk florets as occurs in flowers like the daisy.

**compound leaf** (com·pound) Composed of two or more usually similar parts (leaflets).

**conifer** (co·ni·fer ) A cone bearing plant.

**connation** (con·nat·ion) The fusion of organs of the same type, e.g., for leaves or for petals.

**conspecific** (con·spe·cif·ic) Belonging to the same species. For example, *Antennaria parlinii* subsp. *fallax* and *Antennaria parlinii* subsp. *parlinii* are conspecific taxa.

**cordate** (cor·date) Heart shaped, e.g., for a leaf.



**corm** A bulb-like swollen subterranean stem, with roots from the lower surface and buds from the upper surface.

**corolla** (co·rol·la) The petals of a flower, either separate or united together, usually forming a whorl within the sepals and surrounding the reproductive structures, the stamen and pistil.

**cuneate** (cu·ne·ate) Wedge shaped, e.g., for a leaf .



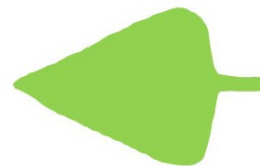
**cypsela** (cyp·se·la) A type of dry one-seeded fruit formed from a bicarpellary ovary.

**deciduous** (de·cid·u·ous) For trees or shrubs that shed their leaves (often annually), or flowers that drop their petals. Literally, falling from at a particular time or growth stage.

**decussate** (dec·us·sate) Opposite leaf pairs are arranged at 90 degrees to the pairs above and below.

**dehiscence** (de·his·cence) Splitting open at maturity, e.g., a fruit releasing seeds or an anther discarding pollen.

**deltate** (del·tate) Triangular shaped, e.g., for a leaf.



**deltoid** (del·toid) Shaped like the Greek capital letter delta, triangular shaped, e.g., for a leaf.



**depauperate** (de·paup·er·ate) Lacking or deteriorated in quality; poorly developed.

**dichotomous key** (di·chot·o·mous key) A tool used to aid in identification of species by requesting replies to a series of questions, which by design, have only two choices at each step.

**digitate** (dig·i·tate) Leaflets in the form of a spread hand, like palmate but with narrower leaflets.



**dimorphic** (di·mor·phic) Having two distinct forms, e.g. a plant with dimorphic leaves has two distinct types of leaves on the same plant. See monomorphic.

**dioecious** (di·oe·cious) Plants which have separate staminate (male) and pistillate (female) flowers, and the two flower types do not occur on the same plant. See also monoecious.

**disc floret** (also appears as **disk floret**), (disc flo·ret) The small tubular florets that form the central disc of a composite flower, e.g., the yellow disc florets for *Leucanthemum vulgare* (Ox-eye Daisy). For rayless flowers, e.g., *Tanacetum vulgare* (Common Tansy), the head is completely formed from disc florets.

**ecotype** (ec·o·type) The variation within a species that occurs in a distinct geographic habitat.

**elliptic** (el·lip·tic) Having the shape of an ellipse, e.g., for a leaf.



**endangered** (en·dan·gered) An endangered species, plant, or animal, is one that is at risk of extinction in the near future over a major portion or all of its range. See also *threatened* and *special concern*.

**entire** A leaf margin that has no teeth or lobes.

**ensiform** (en·si·form) Having the shape of a sword blade, e.g., for a leaf.

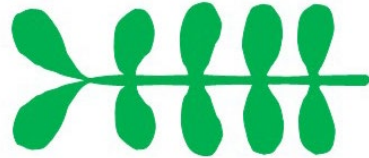
**ephemeral** (e·phem·er·al) Enduring for a very short time.

**epithet** (ep·i·thet ) In biology, the second part of a species name in binomial nomenclature, e.g., in botany, the specific epithet of *Anemone americana* is *americana*.

**ethnobotany** (eth·no·bot·a·ny) The scientific study of the relationships between humans and plants, and most commonly refers to the study of indigenous peoples' knowledge of plants. This includes the use of plants for food, medicines, shelters, religious, and other uses.

**etymology** (et·y·mol·o·gy) The process of tracing the origin of a word, e.g., determining the origin of individual taxon names.

**even-pinnate** (even·pin·nate) Having an even number of leaflets (with no terminal leaflet). Also called paripinnate and sometimes unipinnate.



**ex** Appears in the citation of the authority for some species when a publishing author of a taxon name attributes that name to a previous author who did not validly publish the name. For example, *Bidens connata* Muhlenberg *ex* Willdenow (Purple-stem Beggarticks) has the American botanist Gotthilf Muhlenberg as the proposer of the name, but he did not validly publish this name or a description of the plant. The proposed name was later validated when published by the German botanist Carl Ludwig Willdenow, who is the authority for this species.

**extirpated** (ex·tir·pated) Local extinction of a species in a given geographic region, but the species still exists elsewhere.

**f.** Used as an abbreviation for the taxonomic rank forma, e.g., *Achillea millefolium* f. *albiflora*. Also used to denote son of (Latin *filius*) or the daughter of (Latin *filium*), when giving the authority name for a species, e.g., *Cornus alternifolia* Linnaeus f., here the f. denotes Carl Linnaeus' son, whose name was Carl Linnaeus.

**facultative** (fac·ul·ta·tive ) Having one characteristic occasionally, but not restricted to this, e.g. the description of wetland ratings where a plant may or may not be found in a particular environment. See obligate.

**falcate** (fal·cate) Having the shape of a sickle, e.g., for a leaf.



**family** In the classification of organisms the taxonomic rank above genus and below order. The genera of the family share some common trait(s).

**fan-shaped** Having the shape of an open fan, e.g., for a leaf.



**filiform** (fil·i·form) Threadlike, e.g., for a leaf or other structure.



**filament** (fil·a·ment) A thread-like stalk of a stamen that supports the anther.

**flabellate** (flab·ell·ate) Fan-shaped, e.g., for a leaf.



**flat cluster** Where all the flowers in a cluster appear in an approximately horizontal arrangement.

**floret** (flo·ret) A small flower, in particular, the small flowers (either ray or disk) comprising the flower head of, for example, a composite plant.

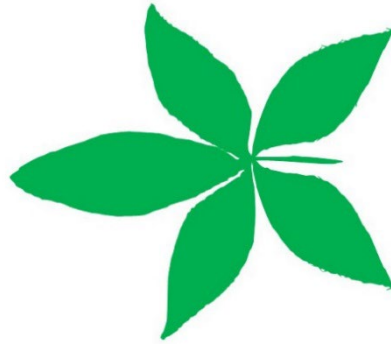
**flower** In botany, the sexual reproductive part of the angiosperms. See also: bellflower, composite flower, irregular flower, perfect flower, pistillate flower, imperfect flower, staminate flower, and tube flower.

**FNA** Acronym for Flora of North America (and the associated website at [floranorthamerica.org](http://floranorthamerica.org)).

**3-foliolate** (3·fo·li·o·late) Trifoliolate, compound leaf with three leaflets.



**5-foliolate** (5·fo·li·o·late) Compound leaf with five leaflets.



**forb** Any herbaceous plant, that is, one composed of non-woody material, and excluding the graminoids, the grass-like species.

**form** (Latin *forma*) In botanical nomenclature the taxonomic rank below variety. The abbreviation f. is used e.g., *Actaea pachypoda* f. *rubrocarpa*, or the unabbreviated word is employed, e.g., *Lythrum salicaria* forma *glabrum*.

**fruit** A mature fleshy or dry ovary enclosing one or more seeds.

**FW** Acronym for Flora of Wisconsin (and the associated website at Online Virtual Flora of Wisconsin Home).

**GBIF** Acronym for the Global Biodiversity Information Facility. A web-based information resource, particularly useful for validating pollinator names.

**GCC** Acronym for the Global Compositae Checklist. A searchable database for plants in the Compositae (Asteraceae) family.

**genus** The taxonomic rank below family and above species. Plants commonly have a scientific name in one of the three formats: genus species, genus species subsp. subspecies, or genus species var. variety, where subsp. and var. are the common abbreviations to indicate subspecies and variety, respectively.

**glabrous** (gla·brous) Without hairs.

**glabrate** (gla·brate) Almost glabrous, i.e., almost hairless.

**gland** In botany, any structure that generates a secretion.

**hastate** (has·tate) Having a triangular shape like that of a spearhead, e.g., for a leaf.



**heliotropism** (he·li·ot·ro·pism) The property of some plants having parts able to bend or turn in response to light. For example, sunflowers in early growth orient in the direction of the sun.

**heterophyllous** (het·ero·phyl·lous) Having leaves of different forms on the same plant or stem.

**heterotypic synonym** (het·er·o·typ·ic) An unaccepted scientific name which is based on a different type specimen than that used to provide the currently accepted scientific name.

**herbaceous** (her·ba·ceous) Plants that do not develop woody stems or branches.

**hirsute** (hir·sute) Covered with coarse stiff hair.

**homotypic synonym** (ho·mo·typ·ic) An unaccepted scientific name which is based on the same type specimen that was used to provide the currently accepted scientific name.

**hyaline** (hy·a·line) Thin, colorless; translucent or transparent.

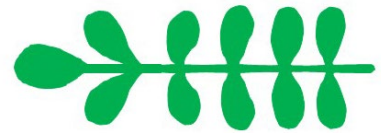
**hypanthium** (hy·pan·thi·um) A cup-like or tubular structure forming a receptacle for the basal portions of the floral parts.

**IAPT** Acronym for the International Association for Plant Taxonomy. This group produces the ICN.

**ICN** Acronym for the International Code of Nomenclature for algae, fungi, and plants. The ICN supersedes the **ICBN**, the International Code of Botanical Nomenclature. The version presently in use is the Shenzhen 2018 Code (from the XIX International Botanical Congress in Shenzhen, China).

**IL** Acronym for Illinois Wildflowers (and the associated website).

**imparipinnate** (im·pari·pin·nate) Pinnate with a terminal leaflet. Also called odd-pinnate and sometimes unipinnate.



**imperfect flower** A flower lacking either male or female parts is called imperfect. A flower with male and female parts is referred to as a perfect flower.

**incurved** Curved inward.

**indeterminate** (in·de·ter·mi·nate) A type of inflorescence where the lower flowers open first while the stem growth continues. Also used to refer to stems or inflorescences which have no terminal bud that terminates growth.

**IPNI** Acronym for the International Plant Names Index. An online database of accepted plant names, authorities, native and introduced plant ranges, and synonym names.

**indehiscent** (in·de·his·cent) Staying closed at maturity, e. g. a ripe fruit not breaking open to release the seeds.

**inflorescence** (in·flo·res·cence) The array of flowers on the floral axis. Also used to denote the entirety of the flower head of a plant.

**infructescence** (in·fruc·tes·cence) A group of fruits obtained from an inflorescence.

**infraspecific** (rank) (in·fra·spe·cif·ic) The ranks below species, e.g., subspecies, variety, subvariety, forma, and subforma, with abbreviations subsp., var., subvar., f., subf., respectively.

**introduced** (in·tro·duced) In botany, plants brought from elsewhere into an area where they are not native to the new geographic region. This delivery could be deliberate or by accident.

**involucre** (in·vo·lu·cre) A ring or whorl of bracts surrounding an inflorescence.

**invasive** (in·va·sive) An invasive species is one that is non-native to a geographic region and usually grows quickly and spreads in an aggressive fashion, and has the potential to cause harm, either to native plants, environmentally, economically, or to human health. *Alliaria petiolate* (Garlic Mustard) and *Centaurea stoebe* (Spotted Knapweed) are examples of local invasive species.

**irregular flower** Used with four common meanings: (1) Not actinomorphic. (2) A flower capable of being divided into only two equal parts (by a vertical plane). See zygomorphic. (3) Flowers which cannot be divided into two equal halves (by a vertical plane), hence the term asymmetric. (4) Sometimes used to denote situations where flowers on a whorl show variations in appearance.

**isonym** When the same type is used to provide a taxon with an identical name by different authors publishing at different times, then the name is referred to as an isonym, with the first published isonym having priority.

**ITIS** Acronym for the Integrated Taxonomic Information System. A web-based information resource, particularly useful for validating pollinator names.

**key** A taxonomic tool employed to help in the identification of families, genera, species, or lower taxa, and based on qualitative and quantitative observations of morphological characteristics. See dichotomous key.

**labellum** (la·bel·lum) Also called the lip, is the petal situated between the lateral petals in the orchid and some lesser-known families. It serves as the landing platform for pollinating insects.

**lanceolate** (lan·ce·o·late) Having the shape of the head of a lance. e.g., for a leaf.



**leaflet** A leaf-like part of a compound leaf.

**leguminous** (le·gu·mi·nous) Bearing legumes, the two-valved fruit that develops from a single carpel.

**ligulate** (lig·u·late) Strap-shaped, e.g., for a leaf or for the ray florets of a composite flower.



**linear** (lin·e·ar) Long and narrow shaped, e.g., like a blade of grass.



**lingulate** (lin·gu·late) Having the shape of a tongue, e.g., for a leaf.



**lip** See labellum.

**lobed** Division of an organ, particularly for a rounded part, e.g., lobes on a leaf.

**lomentum** (lo·ment·um) A fruit developed from a single carpel, and at maturity breaks into one-seeded segments.

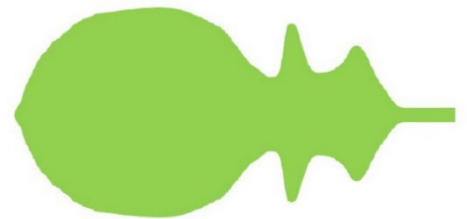
**lorate** (lor·ate) Having the shape of a thong or strap, e.g., for a leaf.



**lunate** (lu·nate) Crescent-shaped, e.g., for a leaf.



**lyrate** (ly·rate) Pinnately divided leaf with a large terminal lobe and smaller lateral lobes.



**margin** The edge of a structure. E.g., the perimeter of a leaf.

**MBG** Acronym for Missouri Botanical Garden (and the associated website at [missouribotanicalgarden.org](http://missouribotanicalgarden.org)).

**monoecious** (mo·noe·cious) Plants which have separate staminate (male) and pistillate (female) flowers, and the two flower types occur on the same plant. See also dioecious.

**monomorphic** (mon·o·mor·phic) Having one form, e.g. monomorphic leaves all have the same basic form on a plant. See dimorphic.

**morphological** (mor·pho·log·i·cal) Relates to the form of plants, as opposed to the anatomy.

**MP** Acronym for Missouri Plants (and the associated website at Missouriplants.com).

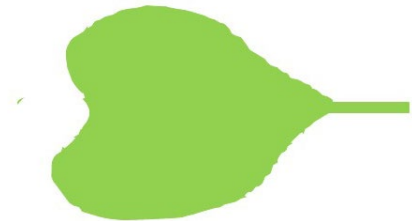
**mycorrhiza** (my·cor·rhi·za) The beneficial association of fungi with the root of plants. Sometimes used in the broader sense of a close association of different organisms, which may or may not be mutually beneficial. E.g., *Monotropa uniflora* (Indian Pipe), which lacks chlorophyll, depends on decaying organic matter and associated fungi.

**native plant** Plants indigenous to or occurring naturally in a given geographic region over an extended period of time. In the US, the time period considered extends beyond the arrival of European settlers.

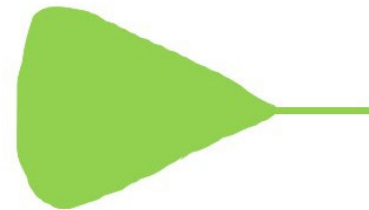
**naturalized** (nat·u·ral·ized) A non-native plant that does not need human intervention to reproduce and maintain itself over time in an area where it is not native.

**node** The point on a stem where one or more leaves emerge.

**obcordate** (ob·cor·date) For a leaf with a reversed cordate shape, inversely heart-shaped; attached to the stalk by the pointed end.



**obdeltoid** (ob·del·toid) For a leaf with an inversely deltoid shape; triangular shaped, with the apex of the triangle attached to the stem.



**oblanceolate** (ob·lan·ce·o·late) For a leaf with an inversely lanceolate shape, much longer than wide with the widest portion near the tip.

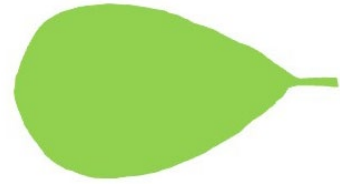


**obligate** (ob·li·gate) Having a required characteristic, e.g. a plant requiring a wetland environment to survive. See facultative.

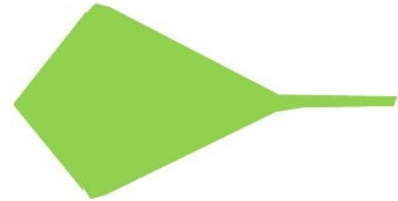
**oblong** (ob·long) Longer than broad, rounded at each end with roughly parallel sides, e.g., for a leaf shape.



**obovate** (ob·o·vate) Inverse ovate; egg-shaped leaf with the narrower end at the petiole (leaf stalk).



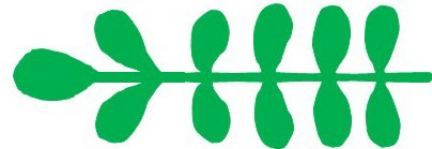
**obtrullate** (ob·trul·late) Inverse trullate; resembling a trowel blade with the two longer sides meeting at the base.



**ochrea** (och·re·a) (alternative spelling: **ocrea**) A tube-like covering formed when stipules fuse together to form a sheath at the nodes of a plant.

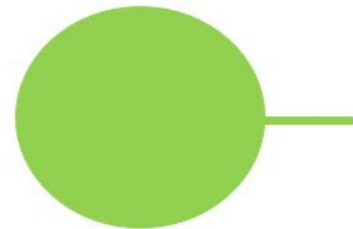
**ocreola** A secondary ocrea, usually referring to those of the inflorescence and peculiar to the Polygonaceae.

**odd-pinnate** (odd-pin·nate) Pinnate with a terminal leaflet. Also called imparipinnate and sometimes unipinnate.

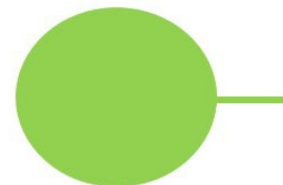


**opposite** Two leaves (or flowers) arranged at the same level, with one leaf (or flower) on each side of the stem.

**orbicular** (or·bic·u·lar) Circular or rounded, e.g., for a leaf shape.



**orbiculate** (or·bic·u·late) Circular or rounded, e.g., for a leaf shape.



**oval** (o·val) Broadly elliptical, e.g., for a leaf shape.



**ovary** (o·va·ry) The lower part of a carpel of a flower containing one or more ovules.

**ovate** (o·vate) Egg-shaped, e.g., for a leaf, with the leaf widest below the middle.



**ovule** (ov·ule) A part of the ovary, which after fertilization develops into a seed.

**palmate** (pal·mate) All the leaflets arising from the end of the leaf stalk and resembling an open hand.



**palmatifid** (pal·mat·i·fid) For a leaf shape that is approximately palm-shaped or hand-shaped with the lobes extending about halfway to the base.



**palmatisect** (pal·mat·i·sect) For leaves that are approximately palm-shaped or hand-shaped with the lobes extending close to the petiole.



**pandurate** (pan·du·rate) Shaped like a fiddle, e.g., for a leaf.



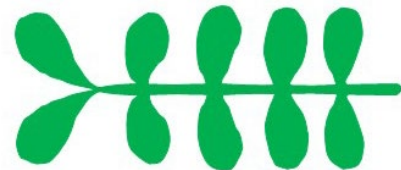
**papilla** (pa·pil·la) A small projection from part of a body, such as a plant part.

**papillate** (pa·pil·late) Having one or more papilla.

**pappus** (pap·pus) Used with two meanings: (1) A tuft of hairs on some fruits, especially the achenes of members of the aster family, which aid the aerial dispersal of seeds. (2) A specialized calyx composed of a ring of hairs, scales, or awns, occurring mostly for plants of the Asteraceae family.

**parasitic** (par·a·sit·ic) A plant that grows on another plant and obtains sustenance from it.

**paripinnate** (par·i·pin·ate) Having an even number of leaflets (with no terminal leaflet). Also called even-pinnate and sometimes unipinnate.



**parted** Commonly employed to describe a flower appearance, e.g., 5-parted, to signify the flower has the appearance of having 5 petals, when in fact some (or possibly all) of the petals are in fact sepals. This can be particularly advantageous for the beginning naturalist, and when the sepals have some color other than green.

**pedate** (ped·ate) Lobed or divided like palmate, but with the lower lateral lobes again cleft or divided.

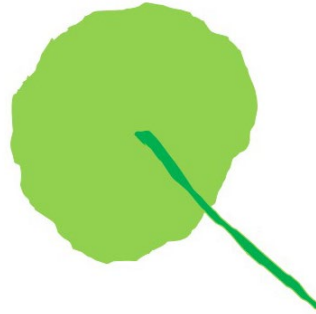


**pedicel** (ped·i·cel) A stalk of an individual flower.

**peduncle** (pe·dun·cle ) The stalk of an inflorescence.

**pellucid** (pel·lu·cid) Allows the passage of light, translucent or transparent.

**peltate** (pel·tate) A rounded leaf where the petiole attaches near the center of the lower surface instead of the base.



**perennial** (pe·ren·ni·al) A plant that lives for a number of years (three or more). For some perennials, the upper part of the plant will die off over winter and the plant regenerates from the root system, whereas other perennials will maintain their leaves through all the seasons.

**perfect flower** A flower with male and female parts. A flower lacking either male or female parts is called imperfect.

**perfoliate** (per·fo·li·ate) When the bases of two opposite stemless leaves join around the stem, giving the appearance that the stem has grown through a leaf blade. Such leaves are referred to as perfoliate leaves. For example, *Eupatorium perfoliatum*, see side figure.



**perianth** (per·i·anth) The outer non-reproductive parts of a flower, comprising the sepals (calyx) and the petals (corolla).

**petal** (pet·al) A single segment of the corolla of a flower.

**petaliferous** Flowers having or bearing petals.

**petiole** (pet·i·ole) A leaf stalk.

**petiolate** Having a stalk or petiole.

**petiolule** (pet·i·o·lule) The stalk of a leaflet in a compound leaf.

**petiolulate** Having a petiolule, i.e. a leaflet having a stalk.

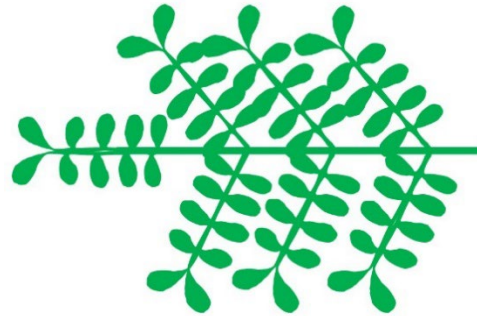
**phenology** (phe·nol·o·gy) The study of the timing of seasonal natural phenomena, e.g., leaf development, flowering, fruiting, and other aspects.

**phyllary** (phyl·la·ry) One of the individual bracts of the involucre that surround or support the head of a composite flower in the Asteraceae family.

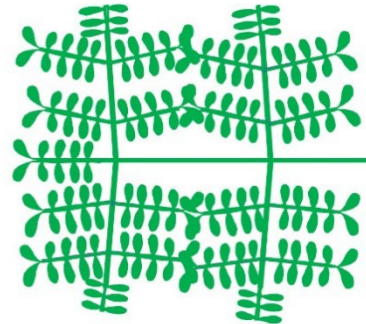
**phylogeny** (phy·log·e·ny) The pattern of relationships between plant species (organisms in general) resulting from the differences that evolved during history.

**pinnate** (pin·nate) Compound leaf having a number of leaflets on a common stalk.

**2-pinnate** 2-(pin·nate) Compound leaf with primary pinnate divisions that are themselves pinnate. Also called bipinnate.



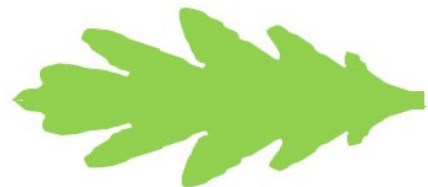
**3-pinnate** (3-pin·nate) Compound bipinnate with the secondary leaflets also pinnate. Also called tripinnate.



**pinnatifid** (pin·nat·i·fid) For a pinnately divided leaf, with lobes whose incisions extend about a quarter to half-way to the midrib (the middle vein of the leaf).



**pinnatipartite** (pin·nati·par·tite) For a leaf with lobes whose incisions extend half to two-thirds to the midrib (the middle vein of the leaf).



**pinnatisect** (pin·nati·sect) For a leaf with lobes whose incisions extend approximately to the midrib (the middle vein of the leaf).



**pistil** (pis·til) The female reproductive organ of a flower, consisting of the stigma, style, and ovary. The term is used to mean either (1) a single free carpel, referred to as a simple pistil, or (2) to a group of fused carpels, referred to as a compound pistil.

**pistillate flower** (pis·til·late flow·er) A flower containing one or more pistils and no stamens, also referred to as a female flower.

**pod** A dry dehiscent fruit that contains one or more seeds.

**pollination** (pol·li·na·tion) The transfer of pollen from the male anther to the female stigma in the angiosperms to allow fertilization.

**POWO** Acronym for the Plants of the World Online database. This is a searchable database of all known scientifically described plant species, relying on a global consensus of experts.

**prairie** (prai·rie) An expanse of level or undulating grassland, commonly without trees. The term is typically used to describe the grassy plains of North America.

**protologue (protolog)** (pro·to·logue) Denotes the description details of the type specimen used for the initial publication of a taxon name.

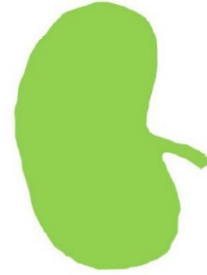
**proximal** (prox·i·mal) Located near the point of attachment.

**raceme** (ra·ceme) An indeterminate inflorescence with the flowers pedicillate, that is, stalked.

**racemose inflorescence** (ra·ce·mose in·flo·res·cence) The growing region at the tip of the flower stalk continues to produce new flower buds during growth and the oldest flowers are at the base of the stalk.

**ray floret** In a composite flower head, the strap shaped florets, which are small individual flowers, that form the ray.

**reniform** (ren·i·form) Kidney-shaped, e.g., for a leaf.

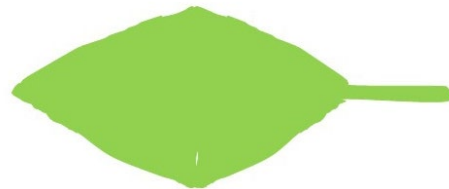


**regular flower** A flower that is actinomorphic, that is, radially symmetric.

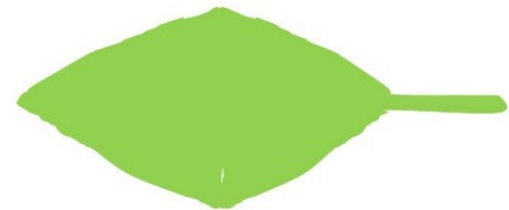
**resupinate** (re·su·pi·nate) Something that appears upside down or inverted. In the orchid family, for example, *Galearis spectabilis*, the flower is resupinate, with the lower petal facing downward, as an aid for pollinators.

**rhizome** (rhi·zome) A root-like stem growing horizontally, commonly underground, which puts out buds and adventitious roots.

**rhombic** (rhom·bic) Diamond shaped, with approximately four equal sides, e.g., for the shape of a leaf. More generally, a quadrilateral with only opposite sides of equal length.



**rhomboid** (rhom·boid) Diamond shaped, with approximately four equal sides, e.g., for the shape of a leaf. More generally, a quadrilateral with only opposite sides of equal length.



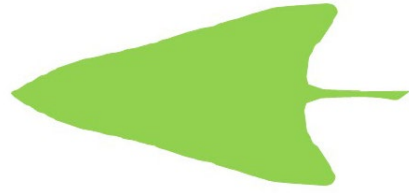
**rosette** (ro·sette) Used with at least two common related meanings in botany: (1) The radial arrangement of a basal cluster of leaves. (2) A rose-shaped arrangement of petals in some flowers.

**round cluster** An umbel with a number of flowers on stalks arising from a common point, with the flowers forming a spherical or rounded shape.

**runcinate** (run·ci·nate) For a leaf shape with incised margins and the lobes or teeth curved toward the base.



**sagittate** (sag·it·tate) Shaped like an arrowhead, e.g., for a leaf.



**samara** (sa·ma·ra) A type of achene, a winged fruit, produced by many trees. The purpose of the wings is to transport the seeds a distance from the parent tree.

**saprophyte** (sap·ro·phyte) A plant (or other organism) that lives on decayed organic matter.

**savanna** (sa·van·na) (also spelled savannah) Used with at least three different meanings. 1. An open tropical or subtropical grassland with scattered drought-resistant trees and undergrowth. 2. A temperate grassland with scattered trees. 3. A treeless plain.

**schizocarp** (schiz·o·carp) A dry fruit formed from more than one carpel that divides at maturity into one-seeded portions.

**secund** (se·cund) Arranged on one side, e.g., the flowers of certain species commonly form on only one side of the flower stem. *Symphytotrichum pilosum* (Awl Aster) is an example, see figure at right.



**sepal** (se·pal) A single unit of the calyx, and often colored green. When brightly colored (other than green) can be confused with petals.

**sericeous** (se·ri·ceous) Silky; covered with soft silky hairs.

**serrate** (ser·rate) With sharp, usually forward pointing teeth, on part of a plant, e. g. a leaf margin.

**serrulate** (ser·ru·late) Minutely or finely serrate.

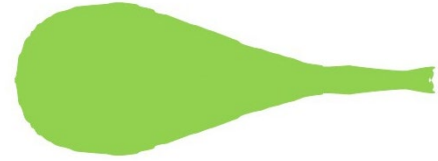
**sheath** A tubular covering of an organ, e.g., the covering at the stem base for some species.

**simple leaf** Simple usually references a single piece, so that a simple leaf is one not further divided into leaflets.

**spadix** (spa·dix) An inflorescence having a spike with small flowers borne on a fleshy stem and usually enclosed in a spathe. E.g., *Arisaema triphyllum*, Jack-in-the-pulpit.

**spathe** A large bract (or pair of bracts), subtending or often enclosing a flower, inflorescence, or spadix. E.g., *Arisaema triphyllum*, Jack-in-the-pulpit.

**spathulate** (spat·hu·late) Shaped like a spatula or a spoon, e.g., for a leaf shape that is broad at the apex and tapered near the base.



**special concern** A species is classified of special concern when it is suspected that there is an issue associated with its population or distribution that might lead it to become threatened.

**species** The taxonomic rank below genus and above subspecies.

**spike** An unbranched indeterminate inflorescence with the flowers being stalkless.

**spur** Used with two common meanings: (1) A tubular projection from the base of a flower, e.g., *Impatiens balsamina* (Balsam) and other species of the *Impatiens* genus. (2) A short shoot from a branch which may bear flowers and fruit.

**ssp.** A common but not recommended abbreviation for subspecies. The recommended abbreviation is subsp.

**stamen** (sta·men) The male reproductive organ of a flower, comprising of a pollen-containing anther and a filament.

**staminate flower** (sta·mi·nate flow·er) A flower with stamens and no pistil, also referred to as a male flower.

**staminode** (stam·i·node) A sterile stamen. Often looks like a stamen with no anther.

**stem leaf** A leaf arising from the upper stem rather than formed at the base of the plant.

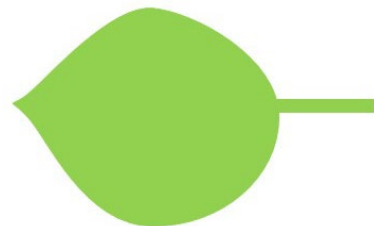
**stigma** (stig·ma) The tip of the style, which is the usually sticky receptive surface for pollen at pollination.

**stipule** (stip·ule) Small leaf-like structures at the base of a leaf.

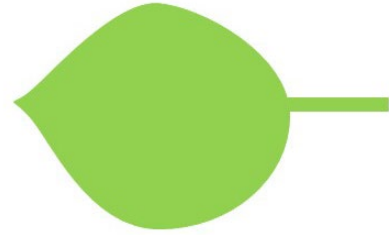
**stolon** (sto·lon) A stem growing at ground level and rooting at the nodes, thus potentially forming new plants.

**style** The elongated part of a capel between the ovary and the stigma.

**suborbicular** (sub·or·bic·u·lar) Approximately circular, e.g., for a leaf shape.



**suborbiculate** (sub·or·bic·u·late) Approximately orbiculate or orbicular; nearly circular or rounded, e.g., for a leaf shape.



**subsp.** The recognized abbreviation for subspecies.

**subspecies** The taxonomic rank below species and above variety. Common abbreviations are subsp. (the recognized form) and ssp. (which is not a recognized form).

**subulate** (su·bu·late) Tapering from the base to the apex; awl-shaped, e.g., for a leaf shape.



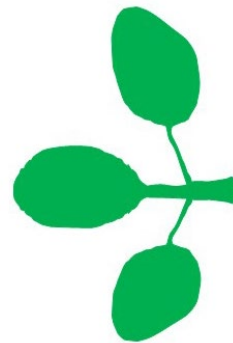
**tautonym** (tau·to·nym) A scientific name where the same word is used for both the genus and species names. This is not allowed according to the rules on botanical nomenclature.

**taxon** (tax·on) A unit of classification of any rank, e.g., for *Abutilon theophrasti* (species), *Abutilon* (genus), *Malvaceae* (family).

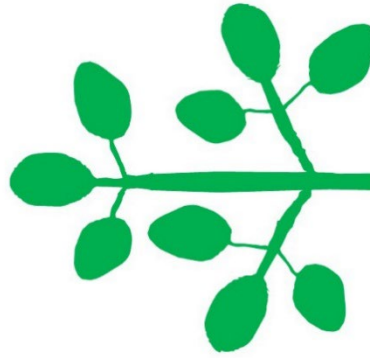
**taxonomy** (tax·on·o·my) The principles of classification. In (systematic) botany, the term is used to include the study of the identification, classification, and nomenclature of plants.

**tepala** (te·pal) One individual part of the perianth, i.e., a petal or a sepal. A useful term when the petals and sepals are indistinguishable from one another.

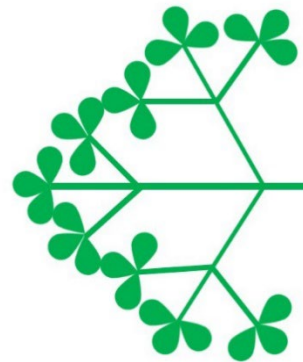
**ternate** (ter·nate) In threes; consisting of three leaflets.



**2-ternate** (2-ter·nate) With three parts and each part divided into three. Also called biternate.



**3-ternate** (3-ter·nate) Three times ternate. The leaf petiole has three branches and each branch divides into three parts which each bear three leaflets. Also called triternate.



**threatened** (threat·ened) A threatened species is one that has the potential to become endangered in the near future over a major portion or all of its range. See also *special concern* and *endangered*.

**thicket** (thick·et) A dense group of shrubs and small trees. Also used to refer to a location where shrubs and small trees grow closely together.

**tomentose** (to·men·tose) A surface densely covered in soft or short fine hairs.

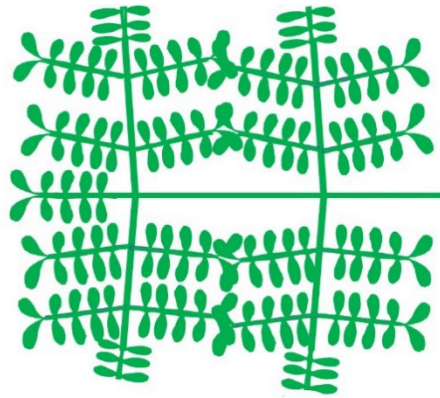
**toothed** The usually small and commonly pointed projections that form on the margin of many leaves and sometimes on other morphological features of a plant. A leaf margin with no teeth is called entire.

**trifoliate** (tri·fo·li·ate) Sometimes used to denote a compound leaf with three leaflets, which is incorrect usage for a compound leaf: see trifoliolate.

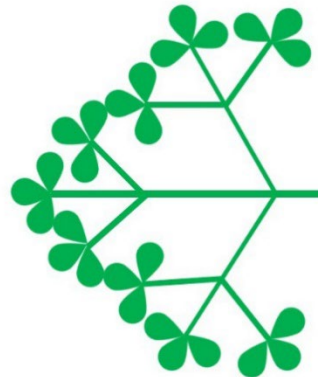
**trifoliolate** (tri·fo·li·o·late) Compound leaf with three leaflets.



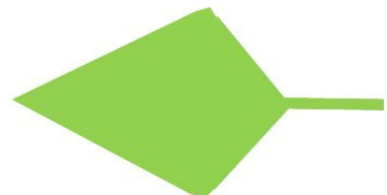
**tripinnate** (tri·pin·nate) Compound bipinnate with the secondary leaflets also pinnate. Also called 3-pinnate.



**triternate** (tri·ter·nate) Three times ternate. The leaf petiole has three branches and each branch divides into three parts which each bear three leaflets. Also called 3-ternate.



**trullate** (trul·late) Having the shape of a trowel blade, e.g., for a leaf shape.



**tube flower** A flower having a tubular or cylindrical shape.

**type** Usually an herbarium specimen from which the description and original publication of a plant name are based.

**umbelliferous** (um·bel·lif·er·ous) Having flowers in an umbel arrangement.

**unplaced name** Binomial names that reference a non-accepted genus, or do not refer to the species concept (i. e. are not in accordance with the ICN), are treated as unplaced. They are not treated as synonyms since a type is unavailable, either missing, destroyed, or never existed.

**USNPGS** Acronym for the U.S. National Plant Germplasm System, a searchable database maintained by United States Department of Agriculture.

**variety** (Latin *varietas*) In botany, a taxonomic classification that ranks below subspecies if present, or species. Plants differ from others of the same subspecies or species in small features such as color, degree of hirsuteness, habit, and so on.

**WCSP** Acronym for The World Checklist of Selected Plant Families. This database together with the WCVP database were transferred to the Plants of the World Online database.

**WCVP** Acronym for The World Checklist of Vascular Plants. This is a searchable database of all known scientifically described plant species, relying on a global consensus of experts. This database together with the WCSP database were transferred to the Plants of the World Online database.

**WFO** Acronym for the World Flora Online.

**whorled** Used to describe three or more leaves that arise at each node. More generally, a ring of organs borne at the same level, e.g., petals.

**wing** Used with different meanings: (1) The two lateral petals of some flowers. (2) A membranous outgrowth of certain fruits and seeds. (3) A flange on a stem.

**zygomorphic** (zy·go·mor·phic) There exists only a single plane taken perpendicular to the face of a flower that divides the flower into two identical halves. See actinomorphic.