



FLORA OF AUSTRALIA

Flora of Australia Glossary — Ferns, Cycads, Conifers and Vascular plants



Australian Government
Department of the Environment and Energy



A main glossary for the *Flora of Australia* was published in Volume 1 of both printed editions (1981 and 1999). Other volumes contain supplementary glossaries, with specific terms needed for particular families.

This electronic glossary is a synthesis of all hard-copy *Flora of Australia* glossaries and supplementary glossaries published to date. The first *Flora of Australia* glossary was compiled by Alison McCusker. Mary D. Tindale compiled most of the fern definitions, and the conifer definitions were provided by Ken D. Hill. Russell L. Barrett combined all of these to create the glossary presented here, incorporating additional terms from the printed version of Volume 37. This electronic glossary contains terms used in all volumes, but with particular reference to the flowering plants (Volumes 2–50).

This glossary will be updated as future volumes are published. It is the standard to be used by authors compiling future taxon treatments for the *Flora of Australia*. It also comprises the terms used in *Species Plantarum — Flora of the World*.

Alternative terms

For some preferred terms (in **bold**), alternative terms are also highlighted (in parentheses). For example, **apiculum** is the preferred term, and (=apiculus) is an alternative. Preferred terms are those also used in *Species Plantarum — Flora of the World*.

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Flora of Australia Glossary — Ferns, Cycads, Conifers and Vascular plants**A**

abaxial: of the side or surface of an organ, facing away from the axis, e.g. the lower or dorsal surface of the lamina. *cf.* **adaxial**.

abscission: the normal shedding from a plant of an organ that is mature or aged, e.g. a ripe fruit, an old leaf. *adj.* **abscissile**.

acarodomatia: domatia adapted to provide shelter to beneficial mites.

acaulescent: lacking an aerial stem or trunk. *cf.* **caulescent**.

accessory fruit: a fruit, or group of fruits derived from one flower, in which the conspicuous, fleshy portion develops from the receptacle and is shed with the true fruit(s) attached.

accrescent: continuing to increase in size after maturity, as the calyx of some plants after flowering.

accumbent: of the orientation of an embryo, with the radicle lying against the edges of the two cotyledons.

achene: a dry, indehiscent fruit formed from a superior ovary of one carpel and containing one seed which is free from the pericarp (often applied, less correctly, to the one-seeded fruits of Asteraceae). *cf.* **cypsela**.

acicle: a slender, stiff, needle-like prickle. *adj.* **acicular**.

acicular: stiff and needle-like.

aciculate: finely scored on the surface, as if scratched by a pin.

acrodromous: of leaves, with two or more primary or strongly developed secondary veins running in convergent arches towards the apex. Arches not recurved at base. *cf.*

brochidodromous, eucamptodromous, semicraspedodromous.

acropetal: arising or developing in a longitudinal sequence beginning at the base and proceeding towards the apex. *cf.* **basipetal**.

acrophyll: an adult lamina on the high-climbing portions of some ferns in *Lomariopsis* and related genera. *cf.* **bathyphyll**.

acroscopic: facing or pointing towards the apex. *cf.* **basiscopic**.

acrostichoid: of sporangia, densely covering the abaxial surface of the fertile frond, as in *Acrostichum*, i.e. not in distinct groups; of ferns, having the sporangia arranged as above.

acrotonic: of flowering seasonal growth units (seasonal shoots), producing leaves below the inflorescence, *cf.* **basitonic**.

actinomorphic: of a flower or calyx or corolla, radially symmetrical; symmetrical about more than one plane passing through the axis of the flower. *cf.* **peloric, zygomorphic**.

aculeate: prickly.

acumen: a long, tapering point.

acuminate: tapering gradually to a protracted point.

acute: terminating in a distinct but not protracted point, the converging edges separated by an angle less than 90 degrees.

adaxial: of the side or surface of an organ, facing towards the axis, e.g. the upper or ventral surface of the lamina. *cf.* **abaxial**.

adnate: fused to an organ of a different kind, e.g. applied to a stamen fused to a petal. *cf.* **connate**.

adventitious: arising in abnormal positions, e.g. roots arising from the shoot system, buds arising elsewhere than in axils of leaves.

adventive: introduced to an area recently. *cf.* **introduced, naturalised**.

aerenchyma: tissue incorporating large, gas-filled spaces interspersed with the cells in a characteristic pattern.

aerophore: a localised outgrowth associated with ventilation, as in *Cyathea*.

aestivation: the arrangement of sepals and petals or their lobes in an unexpanded flower bud. *cf.* **vernation**.

aggregate fruit: a cluster of fruits formed from the free carpels of one flower. *cf.* **syncarp**.

- alate**: winged.
- albumen**: = endosperm.
- alete**: used of a spore which forms alone, i.e. not in diads or tetrads, and hence lacks the laesura characteristic of monolete and trilete spores.
- allantoid**: sausage-shaped.
- allopatric**: of distributions of two taxa or populations, having different ranges of distribution. *cf.* **parapatric**, **sympatric**.
- alternate**: of leaves or other lateral organs, borne singly at different heights on the axis; of floral parts, on a different radius, e.g. describing the position of stamens with respect to petals. *cf.* **opposite**.
- alternitepalous**: of floral parts, inserted alternately with the tepals.
- alveolate**: pitted or honeycombed on the surface.
- amphistomatic**: bearing stomata on both upper and lower lamina surfaces. *cf.* **hypostomatic**.
- amplexicaul**: of a leaf base, stem-clasping.
- anadromous**: a type of venation in which the first set of veins in each segment of the frond originates from the acroscopic side of the midrib, as in *Polystichum australiense*. *cf.* **catadromous**.
- anastomosing**: of veins, forming a network or reticulum.
- anastomosis**: fusion to form a network, e.g. of veins in a leaf blade.
- anatropous**: of an ovule, inverted so that the micropyle faces the placenta.
- anauxotelic**: applied to inflorescences, parts of inflorescences or to axes that do not end in a flower, and in which growth does not continue beyond the flowering region, *cf.* **auxotelic**.
- androdioecious**: having bisexual flowers and male flowers, on separate plants.
- androecium**: the stamens of one flower collectively.
- androgynophore**: a stalk bearing both the androecium and gynoecium of a flower above the level of insertion of the perianth.
- androgynous**: having male and female flowers in the same inflorescence.
- andromonoecious**: having bisexual and male flowers, on the same plant.
- androphore**: a stalk bearing the androecium.
- anemophilous**: pollinated by wind.
- angiosperm**: a seed-bearing plant whose ovules, and hence seeds, develop within an enclosed ovary. *cf.* **gymnosperm**.
- angustiseptate**: with narrow partitions, *cf.* **latiseptate**.
- anisophyllous**: having leaves unequal in size and shape at any one point along a branch. *cf.* **isophyllous**.
- anisotomous**: dichotomies resulting in unequal branching. *cf.* **isotomous**.
- anisovalvate**: when the two valves of a sporangium are unequal in size. *cf.* **isovalvate**.
- annual**: a plant whose life span ends within one year after germination. *cf.* **biennial**, **perennial**.
- annular corona**: raised fleshy tissue, usually in a ring, on the corolla around the base of the staminal column but not closely adnate to it.
- annular**: arranged in or forming a ring.
- annulus**: a ring; in ferns, the elastic ring of cells, forming part of the sporangium wall, that initiates dehiscence.
- anterior**: of floral organs, on the side of the flower farthest from the axis. *cf.* **posterior**.
- anther**: the pollen-bearing part of a stamen. *cf.* **filament**.
- antheridium**: the fertile organ of a male gametophyte or the male organ of a bisexual gametophyte, in which male gametes are formed. pl. **antheridia**. *cf.* **archegonium**.
- anthesis**: the time of opening of a flower.
- anthocarp**: a false fruit consisting of the true fruit and the base of the perianth, as in Nyctaginaceae.
- antipetalous**: inserted in front of the petals; opposite the petals.
- antisepalous**: inserted in front of the sepals; opposite the sepals.

- antrorse**: bent, and pointing towards the apex. *cf.* **retorse**.
- apetalous**: without petals.
- apical**: of a placenta, at the top of the ovary.
- apiculum** (= apiculus): a short, abrupt, flexible point at the apex of a pinna or pinnule. adj. **apiculate**.
- apocarpous**: of a gynoecium, consisting of two or more carpels which are free from one another or almost so.
- apogamous**: applied to pteridophytes in which a sporophyte develops from gametophyte cells other than a fertilised egg.
- apogamy**: the state of being apogamous.
- apomict**: a plant that produces viable seed or spores without fertilisation.
- apomorphic**: of a character, derived. *cf.* **autoapomorphic**, **pleisiomorphic**, **synapomorphic**.
- appendage**: a structure arising from the surface or extending beyond the tip of another structure.
- appressed**: pressed closely against a surface (or another organ) but not united with it.
- aquatic**: living in or on water for all or a substantial part of the life span (generally restricted to fresh/inland waters).
- arachnoid**: composed of fine tangled hairs like a cobweb.
- arborescent**: resembling a tree (applied to non-woody plants attaining tree height and to shrubs tending to become tree-like in size). *cf.* **dendroid**.
- archegonium**: the fertile organ of a female gametophyte or the female organ of a bisexual gametophyte, in which female gametophytes are formed. pl. **archegonia**. *cf.* **antheridium**.
- arcuate**: curved like a bow.
- areole**: a space between the threads of a net; in Cactaceae, a cluster of hairs/spines/bristles borne at the node of a leafless stem; in Mimosaceae (for example), a distinct, oblong or elliptical area on the face of a seed, bounded by a fine line; on leaf laminas: the space bounded by the finest veins. adj. **areolate**.
- aril**: a structure partly or wholly covering the testa of a seed and formed by expansion of the funicle. adj. **arillate**.
- aristate**: having a stiff, bristle-like awn or tip.
- aristulate**: having a small awn.
- article**: a segment of a jointed stem, or of a fruit with constrictions between the seeds.
- articulate**: jointed; having joints where separation may occur naturally; of a stem, having nodes.
- ascending**: growing erect after an oblique or semi-horizontal beginning.
- asexual**: not forming part of a cycle which involves fertilisation and meiosis.
- asperous**: rough to the touch.
- asperulate**: slightly rough to the touch.
- attenuate**: tapering gradually; of pinnae, with sides narrowed concavely to the apex or to the base.
- auricle**: an ear-shaped appendage at the base of a lamina, pinna, pinnule or corolla lobe. adj. **auriculate**.
- autapomorphic**: of a character, derived and unique to a given taxon or monophyletic group. *cf.* **apomorphic**, **synapomorphic**.
- autochthonous**: of the inhabitants of a region, original; earliest known; (applied to an element of the Australian flora rich in endemics and believed to have been evolving in Australia for a long period of time).
- autotrophic**: independent of other organisms in respect of organic nutrition; able to fix carbon dioxide, by photosynthesis, to form carbohydrates. *cf.* **epiphyte**, **parasite**, **saprophyte**.
- auxotelic**: applied to inflorescences, parts of inflorescences or to axes that do not end in a flower, and in which growth continues beyond the flowering region, *cf.* **anauxotelic**.
- awn**: a bristle-like appendage, e.g. on the tip or back of the lemma of a grass floret.

axil: the angle between a leaf or bract and the axis bearing it. adj. **axillary**.
axile: on an axis; of a placenta, on the central axis of the ovary.
axis: a stem, (commonly used for the main stem of a whole plant or of an inflorescence).

B

baccate: berry-like; of seeds, having a succulent or pulpy testa; of fruits, having the seeds embedded in pulp.
baculate: of a spore, having pillar-like processes, always longer than broad and higher than 1 μm .
barbed trichome: a trichome with terminal or lateral retrorse projections, each projection being a barb.
barbellae: short, straight, stiff hairs or barbs.
barbulae: in *Scaevola* (Goodeniaceae), outgrowths on the margin of the wings or in the throat of the corolla, sometimes with apical hairs or papillae.
basal: at the base; of a placenta, at the base of the ovary.
basifixed: attached at or by the base, e.g. of anthers, by the base of the connective. *cf.* **medifixed, versatile**.
basipetal: developing, in sequence, from the apex towards the base. *cf.* **acropetal**.
basisropic: facing towards the base. *cf.* **acroscopic**.
basitonic: of flowering seasonal growth units (seasonal shoots), producing no leaves (but sometimes some bracts) below the inflorescence, *cf.* **acrotonic**.
bathyphyll: a basal lamina in some high-climbing ferns in *Lomariopsis* and related genera. *cf.* **acrophyll**.
beak: a prominent terminal projection, especially of a carpel or fruit.
berry: a fleshy or pulpy indehiscent fruit with the seed(s) embedded in the fleshy tissue of the pericarp. *cf.* **drupe, pyrene**.
biennial: a plant whose life span extends for more than one but less than two years after germination. *cf.* **annual, perennial**.
bifacial: of leaves, flat or channelled with distinct adaxial and abaxial surfaces. *cf.* **unifacial**.
bifid: divided, for about half the length, into two parts. *cf.* **bipartite**.
bifoliate: of plants, having two leaves.
bifoliolate: of leaves, having two leaflets.
bigeminate: in two pairs; of pinnate leaves, having only two pairs of pinnae.
bilabiate: two-lipped, e.g. of a corolla in which fusion of an anterior group and a posterior group of petals extends beyond the top of the corolla tube.
bilamellate: consisting of two plates or lamellae.
bilocular: having two cavities.
bipartite: divided, nearly to the base, into two parts. *cf.* **bifid**.
bipinnate: of leaves, twice pinnately divided. *cf.* **pinnate, tripinnate**.
bisculptate: of spores, with two different elements in the ornamentation, which cover the entire surface, as in the spores of some species of *Pyrrhosia*.
biseriate: arranged in two rows or whorls.
bisexual (= hermaphrodite): bearing both male and female organs together, e.g. on the same gametophyte or in the same flower.
biternate: twice ternate, the three pinnae each divided into three pinnules.
blade: the expanded part of a leaf or petal. *cf.* **lamina, limb**.
bole: the trunk of a tree, below the lowest branch. *cf.* **canopy**.
bordered pit: a pit in which the margin projects over the thin closing membrane, as in coniferous wood.
brachyblast: a short lateral branch; a spur shoot.
bract: a leaf-like structure, different in form from the foliage leaves and without an axillary bud, associated with an inflorescence or flower.

- bracteole:** a small bract-like structure borne singly or in pairs on the pedicel or calyx of a flower.
- bristle:** a rigid trichome similar to a pig's bristle which is more than one cell broad at the base.
- brochidodromous:** of leaves, pinnate venation in which the secondary veins do not terminate at the margins but are joined in a series of prominent arches. *cf.* **acrodromous**, **eucamptodromous**, **semicraspedodromous**.
- bulb:** a storage organ, usually underground, made up of a stem and leaf bases, the food reserves being stored in the inner, fleshy leaf bases.
- bulbel** (= bulblet): a bulb arising from another bulb.
- bulbiferous:** bearing bulbils.
- bulbil:** a small, deciduous bulb (or tuber) formed in the axil of a leaf or replacing flowers in an inflorescence, and functioning to propagate the plant vegetatively.
- bullate:** having a blistered or puckered surface; of a leaf surface, prominently raised (like a bubble) between veins.
- burr:** a rough or prickly propagule consisting of a seed or fruit and associated floral parts or bracts.
- buttress:** a vertical flange of tissue protruding from the base of the main trunk of a tree.

C

- caducous:** falling off early. *cf.* **fugacious**.
- caespitose:** growing in tufts.
- callus:** a protruding mass of hardened tissue, often formed after an injury but sometimes a regular feature of the plant, e.g. on the labellum of some orchids and on the axis of the spikelet of some grasses. *adj.* **callose**; *pl.* **calli**.
- calycine:** belonging to the calyx; with a well-developed calyx.
- calyculus:** whorl of bracts immediately subtending the involucral bracts.
- calyptra:** in mosses, a cap-like structure covering or partly covering the capsule and derived from the neck of the archegonium; in a flower (= operculum), a cap formed by fusion or cohesion of perianth parts and covering the stamens and carpels in the bud.
- calyx tube:** a tube formed by fusion or cohesion of sepals. *cf.* **hypanthium**.
- calyx:** the sepals of one flower collectively.
- campanulate:** bell-shaped.
- campylotropous:** of an ovule, orientated transversely (i.e. with its axis at right angles to its stalk) and with a curved embryo sac.
- canaliculate:** with a longitudinal groove or channel.
- canescent:** more or less grey-pubescent, hoary.
- canopy:** the branches and foliage of a tree. *cf.* **bole**.
- capillary:** of hairs etc., very slender.
- capitate:** of an inflorescence, with the flowers unstalked and aggregated into a dense cluster; of a stigma, globose, like the head of a pin; of hairs, having a rounded apical cell.
- capitellate:** shaped like, or aggregated into, a very small head.
- capitulum** (= head): a dense cluster of sessile flowers. *adj.* **capitate**.
- capsule:** a dry fruit formed from two or more united carpels and dehiscing at maturity to release the seeds.
- carinate:** keeled.
- carpel:** an organ (generally believed to be a modified foliar unit) at the centre of a flower, bearing one or more ovules and having its margins fused together or with other carpels to enclose the ovule(s) in an ovary, and consisting also of a stigma and usually a style.
- carpophore:** in ferns, the stalk of a sporocarp; in a fruit, the central axis between the carpels, arising from the receptacle and often persistent, e.g. after mericarps are shed.
- carpopodium:** in Asteraceae, a callus at the base of the achene, providing the attachment to the receptacle.
- cartilaginous:** hard and tough, resembling cartilage.

- caruncle** (= strophiole): an outgrowth of a seed coat, near the hilum.
- caryopsis**: a dry, indehiscent, one-seeded fruit in which the seed coat is closely fused to the fruit wall (characteristic of grasses).
- catadromous**: a type of venation in which the first set of veins in each segment of the frond develops from the basisopic side of the midrib, as in *Lastreopsis marginans* and *L. tenera*. *cf.* **anadromous**.
- cataphyll**: a scale leaf, often associated with a vegetative propagating organ such as a rhizome or perennating bud.
- catenate**: united or linked as in a chain.
- catkin**: a spike in which the flowers are unisexual and without conspicuous perianth.
- cauda**: a narrow tail-like appendage. *adj.* **caudate**.
- caudate**: having a narrow tail-like appendage.
- caudex**: a thick, erect stock or trunk, especially of tree ferns and cycads.
- caudicle**: the thread-like part of a pollinarium that connects the corpusculum with the pollinia, characteristic of Orchidaceae and Asclepiadaceae.
- cauliflorous**: of plants, with flowers (and fruits) borne on a well-developed trunk or major branch. *cf.* **cauline**, **ramiflorous**.
- cauline**: of leaves, borne on an aerial stem; of flowers or fruits, borne on old wood. *cf.* **cauliflorous**.
- cell**: the basic unit of plant structure consisting, at least when young, of a protoplast surrounded by a wall.
- centrifugal**: directed, or developing, from the centre or axis outwards.
- centripetal**: directed, or developing, from the outside towards the centre or axis.
- chaff**: thin, membranous scales or bracts; thin, dry unfertilised ovules among the fully developed seeds of a fruit.
- chalaza**: the part of an ovule to which the end of the stalk (funicle) is attached.
- chartaceous**: thin and papery.
- chasmogamous**: pollinated when the flower is open. *cf.* **cleistogamous**.
- chlorophyll**: pigment(s) constituting the green colouring matter of plants and absorbing radiant energy in photosynthesis. *adj.* **chlorophyllous**.
- chromosome**: a thread-like structure in the nucleus of a cell, containing a linear sequence of genes.
- cilia**: in gametes, spores etc., minute hair-like protoplasmic protrusions whose movement confers motility on the cell; in vascular plants, hairs more or less confined to the margins of an organ. *sing.* **cilium**; *adj.* **ciliate**.
- ciliate**: fringed with hairs.
- ciliolate**: minutely ciliate.
- cincinnus**: a monochasial, cymose inflorescence with flowers arising alternately from one side of an axis then the other.
- cinereous**: ash-grey, as of wood ash.
- circinnate** (= circinate): spirally coiled, with the tip innermost.
- circumsciss**: (to) break open along a transverse line around the circumference. *adj.* **circumscissile**.
- cladode**: the photosynthetic stem of a plant whose foliage leaves are absent or much reduced. *cf.* **phyllode**.
- cladophyll**: a flattened, leaf-like photosynthetic stem not bearing leaves or scales. *cf.* **phylloclade**.
- class**: a major taxonomic rank, between order and division.
- clathrate**: latticed or pierced with apertures like a trellis.
- clavate**: club-shaped.
- claw**: a narrow, stalk-like basal portion of a petal, sepal or bract. *cf.* **limb**.
- cleistogamous**: self-pollinated and setting fertile seed but the flowers never opening. *cf.* **chasmogamous**.
- clone**: a set of organisms produced from one parent by vegetative reproduction.

- coccus**: a one-carpel unit of a schizocarp or lobed fruit, becoming separate at maturity. pl. **cocci**.
- cochlear**: of the arrangement of corolla lobes in a bud, a variant of imbricate aestivation.
- cochleate**: coiled like a snail-shell.
- coenosori**: fused sori.
- cohesion**: the sticking together of floral parts of the same whorl without organic fusion. adj. **coherent**.
- collateral**: situated side by side; adjacent and on the same radius of an axis.
- colleter**: a group or tuft of mucilaginous secretory hairs, often found near the base of the leaf lamina and on the calyx in Apocynaceae and Asclepiadaceae.
- colliculate**: covered with small, rounded or hillock-like elevations (pl. n. **colliculae**).
- colpate**: of a pollen grain, having elongate apertures called colpi (sing. **colpus**). cf. **colporate, porate**.
- colporate**: of a pollen grain, having apertures with pores within colpi. cf. **colpate, porate**.
- columella**: a little column; the central, persistent axis of a schizocarpic fruit; the axis of a cone or cone-like fruit, e.g. in *Diselma*.
- column**: the lower part of an awn in grasses, when distinctly different in form from the upper part; a structure in Orchidaceae (= gynostemium) and Stylidiaceae, extending above the ovary of a flower and incorporating stigma, style and stamens; in Asclepiadaceae a structure formed by the fusion of the stamens only (= gynostegium).
- coma**: a tuft, especially of hairs on a seed. adj. **comose**.
- commissure**: a join or seam; the interfacing of two fused carpels in an ovary; in *Pellaea*, a ±continuous marginal sorus formed when laterally expanded fertile vein endings coalesce.
- complicate**: of leaves, the lamina (or part of the lamina) folded upon itself.
- compound**: of a leaf, having the blade divided into two or more distinct leaflets; of an inflorescence, made up of an aggregate of smaller inflorescences.
- compressed**: flattened in one plane, either dorsally (bringing the front and back closer together) or laterally (bringing the sides closer together).
- concolorous**: coloured uniformly; of leaves, the same colour on both surfaces. cf. **discolorous**.
- conduplicate**: folded together, with the fold-line along the long axis, e.g. of cotyledons in a seed.
- cone**: in gymnosperms and club-mosses, a group of sporophylls arranged compactly on a central axis; (loosely) in Casuarinaceae, a woody multiple fruit incorporating the bracts and bracteoles associated with the flowers; (loosely) in *Petrophile* and other Proteaceae the semi-woody multiple fruit made up of nutlets in the axils of closely imbricate floral bracts which become woody.
- conflorescence**: a compound inflorescence consisting of two or more unit inflorescences, in which the main axis does not end in a flower but the axes of the branches do so.
- conform**: similar in shape to an earlier mentioned organ (e.g. in Thelypteridaceae, conform terminal pinnae are shaped like lateral pinnae).
- connate**: fused to another organ (or other organs) of the same kind. cf. **adnate**.
- connective**: the part of an anther that connects the lobes.
- connivent**: coming into contact; converging.
- contorted**: see convolute.
- convolute**, (see **aestivation**): of the arrangement of corolla lobes in a bud, a form of imbricate aestivation in which each segment has one edge overlapping the adjacent segment, like a furled umbrella.
- cordate**: of a leaf blade, broad and notched at the base; heart-shaped (in two dimensions).
- cordiform**: shaped like a heart (in three dimensions).
- coriaceous**: leathery.
- corm**: a fleshy, swollen stem base, usually underground, in which food reserves are stored between growing seasons; in *Isoetes*, the condensed stem, which may be 2–5-lobed.
- corniculate**: bearing, or terminating in, one or more small horns.

- corolla:** the petals of a flower collectively.
- corolline corona:** fleshy ridges or outgrowths of tissue attached to the corolla tube, usually in the lobe sinuses.
- corona:** a ring of tissue arising from the corolla, perianth or filaments of a flower and standing between the perianth lobes and the stamens.
- corpusculum:** the central part of a pollinarium, characteristic of Orchidaceae and Asclepiadaceae.
- cortex:** the region of a stem or root surrounding the vascular cylinder but inside the epidermis.
- corymb:** a racemose inflorescence in which the pedicels of the lower flowers are longer than those of the flowers above, bringing all flowers to about the same level.
- costa:** a rib; a midrib or midvein (when it is the only vein).
- costate:** ribbed
- costule:** the midrib of a pinnule or segment of lower order, except the central vein of an ultimate segment which is usually termed the midrib.
- cotyledon:** the primary leaf (or one of two or more primary leaves) of an embryo.
- crenate:** with small, rounded teeth; scalloped.
- crenulate:** minutely scalloped.
- crispate:** with curled hairs.
- crisped:** curled.
- cristate:** *in ferns*, having a tasselled margin to the fronds.
- crown:** the part of a tree or shrub above the level of the lowest branch.
- crownsheath:** in palms, a conspicuous cylinder formed by the tubular base of leaf sheaths at the top of a stem.
- crustaceous:** brittle.
- cryptocotular:** mode of germination in which cotyledons remain enclosed within the seed.
- cryptogam:** (literally) a plant whose sexual reproductive parts are not conspicuous; a plant that produces spores, not seeds, in its sexual reproductive cycle; among vascular plants, ferns and fern allies. *cf.* **phanerogam**.
- Ctenitis-hairs:** articulated hairs with dark red septae, as in *Ctenitis*, *Lastreopsis* and allied genera (Dryopteridaceae).
- cucullate:** hooded; hood-shaped.
- culm:** an aerial stem; in grasses, sedges, rushes, etc., the stem bearing the inflorescence.
- cuneate:** wedge-shaped, e.g. base of a pinna.
- cupular:** cup-shaped.
- cupule:** a small cup.
- cupuliform:** nearly hemispherical, shaped like a cupola (dome).
- curvinerved:** with curved parallel veins.
- cushion, floral:** a swollen floral axis on which several small flowers are borne.
- cuspidate:** tapering into a sharp, rigid point.
- cyathiform:** cup-like.
- cyathium:** an inflorescence of unisexual flowers surrounded by a cup of involucre bracts, as in *Euphorbia*.
- cyelic:** of floral organs, several borne at the same level on the axis; whorled. *cf.* **spiral, whorl**.
- cymbiform:** boat-shaped; describing pollen with a single linear pore.
- cyme:** an inflorescence in which each flower, in turn, is formed at the tip of a growing axis and further flowers are formed on branches arising below it. *adj.* **cymose**. *cf.* **raceme**.
- cymule:** a diminutive cyme, usually few-flowered.
- cypsela:** a dry, indehiscent, one-seeded fruit formed from an inferior ovary. *cf.* **achene**.
- cystolith:** a stalked structure growing from a cell wall into the cell cavity, encrusted with calcium carbonate.

D

- deciduous:** falling seasonally, e.g. of the leaves or bark of some trees. *cf.* **evergreen.**
- declinate:** angled downwards or forwards. *cf.* **decurved.**
- decompound:** more than once compound.
- decrecent:** gradually decreasing in size, e.g. lower pinnae of *Christella* species.
- decumbent:** spreading horizontally but then growing upwards.
- decurrent:** extending downwards beyond the point of insertion, e.g. of a leaf lamina extending downwards to form a flange along the petiole.
- decurved:** angled downwards and curved or curled. *cf.* **declinate.**
- decussate:** in opposite pairs, with successive pairs borne at right angles to each other.
- definite:** of a constant number; of stamens, twice as many as the petals or sepals, or less; of an inflorescence, ending in a flower or an aborted floral bud.
- deflexed:** bent abruptly downwards. *cf.* **inflexed.**
- dehiscent:** breaking open at maturity to release the contents.
- deltoid (= deltate):** triangular with the sides of about equal length.
- dendritic:** of a trichome, with branches arising along the main axis, i.e. tree-like.
- dendroid:** tree-like in form but not in size. *cf.* **arborescent.**
- dentate:** of margins, toothed.
- denticle:** a small tooth; in *Coprosma* (Rubiaceae), thick papillate tubercles on the margin of the interpetiolar stipules.
- denticulate:** finely toothed.
- depressed:** flattened as if pressed down from the top or end.
- determinate:** of growth or branching, with a bud or flower terminating the growth of the main axis; of an inflorescence, see **definite.**
- dextrorse:** turned towards the right. *cf.* **sinistrorse.**
- diadelphous:** having the stamens united into two groups, or all but one united in a group and one free. *cf.* **monadelphous.**
- diaphanous:** extremely thin and transparent.
- dichasium:** a cymose inflorescence with opposite branching below the flower which terminates each axis. *cf.* **monochasium.**
- dichlamydeous:** of a flower, having two whorls of perianth parts. *cf.* **monochlamydeous.**
- dichotomous:** forking into two approximately equal branches resulting from division of the growing point.
- diclinous:** having the stamens and the carpels in separate flowers. *cf.* **monoclinous.**
- dicotyledon:** a flowering plant whose embryo has two (rarely more) cotyledons (seed leaves). *cf.* **monocotyledon.**
- dictyostele:** a stele with large overlapping leaf gaps.
- didymous:** borne in pairs; of anthers, having two lobes, with scarcely any tissue connecting them.
- didynamous:** of an androecium, consisting of four stamens, two being distinctly longer than the other two. *cf.* **tetradynamous.**
- digitate:** branching from the axis or stalk like the fingers of a hand.
- dimidiate:** appearing to be halved, as when half an organ is so much smaller than the other that it seems absent. In *Adiantum*, applied to pinnules in which the basiscopic lamina is reduced. The pinnule therefore appears ±rectangular or trapeziform rather than flabellate.
- dimorphic:** having two different forms; in ferns, especially of fronds. *cf.* **monomorphic.**
- dioecious:** having the male and female reproductive structures on separate plants. *cf.* **monoecious.**
- diplecolobous:** of cotyledons in a seed, twice folded transversely.
- diploid:** having two of the basic sets of chromosomes in the nucleus. *cf.* **haploid, polyploid, tetraploid, triploid.**
- disc floret:** an actinomorphic flower in Asteraceae. *cf.* **ray floret.**
- disc:** a plate or rim of tissue, derived from the receptacle of a flower, occurring between whorls of floral parts.

- discolorous:** of different colours; of leaves, having the two surfaces different in colour; variegated. *cf.* **concolorous**.
- dissepiment:** a partition (septum) within an ovary or fruit, derived by fusion of adjacent carpels.
- distal:** remote from the point of origin or attachment. *cf.* **proximal**.
- distichous:** arranged in two rows on opposite sides of a stem and thus in the same plane.
- diurnal:** of flowers, opening only during daylight hours.
- divaricate:** widely spreading.
- division:** the major taxonomic rank within the Plant Kingdom. Alternative name for phylum.
- domatia:** small structures on the lower surface of a leaf in some woody dicotyledons, located in the axils of the primary veins and usually consisting of depressions partly enclosed by leaf tissue or hairs. *sing.* **domatium**.
- dorsal:** of a lateral organ, (relating to the side) facing away from the axis, i.e. the 'back'; of a thallus, facing away from the substratum. *cf.* **ventral**.
- dorsifixed:** attached at or by the back.
- dorsiventral:** having structurally different upper and lower surfaces. *cf.* **isobilateral**.
- dorsiventral:** having structurally different upper and lower surfaces.
- drupe:** a succulent fruit formed from one carpel, having the seed(s) enclosed in an inner stony layer of the fruit wall. *adj.* drupaceous (which is often used to mean drupe-like but not strictly a drupe). *cf.* **berry**, **pyrene**.
- duplicate:** folded twice.

E

- echinate:** bearing stiff, stout, prickly hairs; of a spore, spiny.
- edaphic:** pertaining to the soil.
- eglandular:** without glands.
- elaiosome:** an appendage of a seed, usually rich in oil, attractive to fauna (especially ants) and hence an aid to dispersal by such fauna.
- elaters:** in *Equisetum*, an appendage of the spore which aids in dispersal.
- eligulate:** lacking a ligule.
- elliptic:** oval in outline, widest at the centre.
- emarginate:** having a broad, shallow notch at the apex.
- embryo:** a young plant contained within an archegonium or seed.
- embryo-sac:** a large, multi-nucleate cell in which an egg nucleus is formed and fertilised, and in which an embryo begins to develop.
- emersed:** of leaves, flowers, etc., rising above the surface of water in which the plant is rooted.
- enation:** an epidermal outgrowth.
- endemic:** having a natural distribution confined to a particular geographical region.
- endocarp:** the innermost layer of the wall of a fruit; in a drupe, the stony layer surrounding the seed.
- endosperm:** nutritive tissue in a seed, in angiosperms triploid and formed in the embryo sac after fertilisation, in gymnosperms haploid and derived from the sterile portion of the female gametophyte. *cf.* **perisperm**.
- ensiform:** sword-shaped.
- entire:** having a smooth margin, not dissected or toothed.
- entomophilous:** pollinated by insects.
- epaleate:** of a receptacle, without palea. *cf.* **paleate**.
- ephemeral:** short-lived.
- epicalyx:** a whorl of bracts, just below a flower, looking like a second calyx.
- epicarp:** the outer layer of the wall of a fruit, i.e. the 'skin'. Also known as the exocarp.
- epicormic:** of buds, shoots or flowers, borne on the old wood of trees (applied especially to shoots arising from dormant buds after injury or fire).
- epicortical:** on top of the bark, i.e. outside the bark.

- epidermis:** the outermost layer of cells of an organ, usually only one cell thick. adj.
epidermal.
- epigeal:** of germination, having the cotyledon(s) emerging from the seed coat and becoming photosynthetic. *cf.* **hypogeal.**
- epigynous:** of floral parts (especially stamens), attached above the level of insertion of the ovary, and arising from tissue that is fused to the ovary wall. *cf.* **hypogynous, perigynous.**
- epimatium:** expanded ±fleshy seed-bearing bract scale in certain conifers, especially some Podocarpaceae.
- epipetalous:** borne on the petals.
- epiphyllous:** growing on leaves, e.g. the vegetatively derived plantlets of some Crassulaceae; of bryophytes, lichens, fungi, growing upon leaves but not parasitic on them.
- epiphyte:** a plant growing on, but not parasitic on, another plant (often loosely applied to plants, such as orchids, that grow on vertical rock faces). *cf.* **autotrophic, parasite, saprophyte.**
- episepalous:** of stamens, borne on the sepals.
- equilateral:** of stamens, with anthers regularly spaced around the style.
- equitant:** of a leaf, folded in half along the midline so that the adaxial surface disappears from view, and overlapping the edges of a similarly folded leaf on the opposite side of the stem (at least at the base).
- eremean:** belonging to regions of low, irregular rainfall.
- erose:** of a margin, finely and irregularly eroded or incised.
- eucamptodromous:** of leaves, pinnate venation in which the secondary veins do not terminate at the margins but which gradually diminish inside the margin, connected to the superadjacent secondary veins by a series of cross-veins without forming prominent marginal loops. *cf.* **acrodromous, brochidodromous, semicraspedodromous.**
- eusporangiate:** of ferns, having sporangia with walls more than one cell thick. *cf.* **leptosporangiate.**
- evergreen:** bearing green leaves throughout the year. *cf.* **deciduous.**
- excentric:** to one side; off centre.
- excurrent:** having the vein extend beyond the apex of a segment as a mucro.
- exindusiate:** lacking an indusium.
- exine:** the outer layer of the wall of a pollen grain or spore (or second layer, if perine is present).
- exocarp** (= epicarp): the outer layer or “skin” of the wall of a fruit.
- exserted:** protruding, e.g. of stamens with respect to a corolla tube.
- exstipulate:** without stipules.
- extrafloral:** of nectaries, not within the flower.
- extrastaminal:** outside the stamens.
- extravaginal:** of a shoot, arising from an axillary bud which breaks through the sheath of the subtending leaf.
- extrorse:** of anthers, opening away from the centre of the flower. *cf.* **introrse.**

F

- facultative:** of parasites, optional. *cf.* **obligate.**
- falcate:** sickle-shaped.
- false veins:** rows of thickened cells in a leaf/leaflet which are not part of the vascular system, as in some genera of the Hymenophyllaceae.
- family:** a group of one to many genera believed to be related phylogenetically, usually clearly separable from other such groups; the major taxonomic group between genus and order.
- farinaceous:** containing starch grains; mealy; resembling flour.
- fascicle:** a cluster, adj. **fasciculate.**

- fastigate:** with extensive lateral branching and no clear single leading branch.
- favulariate:** of a surface, finely ribbed, the ribs separated by zig-zag furrows.
- fenestrate:** having small window-like openings or translucent areas.
- ferruginous:** rust-coloured.
- fertilisation:** the union of male and female gametes.
- filament:** the stalk of a stamen; a thread one or more cells thick. *cf.* **anther**.
- filiform:** thread-like.
- fimbriate:** of a margin, fringed with long slender hair-like processes (called **fimbriae**).
- fimbrillate:** minutely fimbriate.
- fistular:** hollow throughout its length.
- flabellate** (= flabelliform): fan-shaped.
- flaccid:** limp; tending to wilt. *cf.* **turgid**.
- flagelliform:** long and very slender, like a whip-lash.
- flexuose** (= flexuous): bent from side to side in a zig-zag form.
- floccose:** bearing tufts of soft, tangled, woolly hairs which tend to rub off and adhere in small masses.
- floral:** belonging to or associated with a flower.
- floret:** a grass flower, together with the lemma and palea that enclose it (often also applied to the individual small flowers in Cyperaceae and Asteraceae).
- Florin ring:** a distinct raised ring around stomatal openings of *Podocarpus*, formed by raised subsidiary cells that are differentiated from other epidermal cells.
- flower:** the sexual reproductive structure of the angiosperms, typically consisting of gynoecium, androecium and perianth and the axis bearing these parts.
- foliaceous:** leaf-like.
- follicle:** a dry, dehiscent fruit formed from one carpel and dehiscing along the line of fusion of its edges.
- forb:** a non-woody plant other than a grass, sedge, rush, etc. *cf.* **herb**.
- form:** superficially resembling; e.g. umbelliform (inflorescence resembling but not truly an umbel).
- foveate:** pitted.
- free:** of floral organs, not fused or united with other similar organs.
- free-central:** of placentation, with the ovules borne on a free-standing central placenta within the ovary.
- frond:** a leaf, especially of a fern, cycad or palm, including the lamina and the stipe or petiole.
- fruit:** the seed-bearing structure in angiosperms, formed from the ovary after flowering.
- frutescent:** becoming shrub-like (woody).
- fruticose:** shrub-like.
- fugacious:** falling or withering away very early *cf.* **caducous**.
- fulvous:** dull yellowish brown or yellowish grey.
- funicle** (= funiculus): the stalk of an ovule.
- fuscous:** dusky.
- fusiform:** spindle-shaped, i.e. narrower at both ends than at the centre.

G

- gamete:** a cell or nucleus that fuses with another, of opposite sex, in sexual reproduction.
- gametophyte:** a plant, or phase of a plant's life cycle, that bears gametes during the sexual life cycle. *cf.* **sporophyte**.
- gamopetalous:** see **sympetalous**.
- gamophyllous:** having the leaves or perianth segments united by their margins, at least at the base.
- gamosepalous:** having the sepals united by their margins, at least at the base.
- gemma:** a bud or bud-like organ capable of reproducing the plant. pl. **gemmae**.
- gemmiferous:** bearing asexual buds or bulbils.

- geniculate:** bent abruptly like a knee joint.
- genotype:** the total complement of hereditary factors (genes) acquired by an organism from its parents and available for transmission to its offspring. *cf.* **phenotype**.
- genus:** a group of species believed to be related phylogenetically and usually clearly separable from other such groups, or a single species without close relatives; the major taxonomic rank between species and family. pl. **genera**.
- geophyte:** a plant whose perennating buds are buried in the soil.
- gibbous:** usually of a calyx or corolla, with a large hump or pouch-like swelling.
- glabrate:** glabrous, but obviously having previously had an indumentum.
- glabrescent:** becoming glabrous.
- glabrous:** without hairs or scales.
- gland:** a structure, within or on the surface of a plant, with a secretory function.
- glandular:** bearing glands; functioning as a gland.
- glaucous:** blue-green in colour, with a whitish bloom or lustre (as in the juvenile leaves of many *Eucalyptus* species).
- globose:** nearly spherical.
- glochid:** a barbed hair or bristle.
- glomerule:** a small compact cluster. adj. **glomerulate**.
- glumaceous:** glume-like, tending to be chaffy or membranous in texture.
- glume:** a bract in the inflorescence of a grass, sedge, rush or similar plant.
- grain:** a fruit characteristic of grasses (= **caryopsis**); pollen grain: a microspore of a seed plant, or the partially developed gametophyte formed from it.
- granulate:** of a surface, granular.
- guard cells:** the two cells that open and close the stomata to allow gas exchange.
- gymnosperm:** a seed-bearing plant with the ovules borne on the surface of a sporophyll. *cf.* **angiosperm**.
- gynobasic:** of a style, arising near the base of the gynoecium, e.g. between the lobes of the ovary.
- gynodioecious:** having bisexual flowers and female flowers on separate plants. *cf.* **gynomonoecious**.
- gynoecium:** the carpels of a flower collectively.
- gynomonoecious:** having bisexual and female flowers on the same plant *cf.* **gynodioecious**.
- gynophore:** a stalk bearing the gynoecium above the level of insertion of the other floral parts.
- gynostegial corona:** in Asclepiadaceae, collective term for the staminal and interstaminal coronas, both of which are associated with the gynostegium. See **interstaminal corona**, **staminal corona**.
- gynostegium:** in Asclepiadaceae, a structure formed by the fusion of the stamens. *cf.* **column**.
- gynostemium:** in Orchidaceae, a structure formed by the fusion of the androecium and the gynoecium. **column**.

H

- habit:** the growth form of a plant, comprising its size, shape, texture and orientation.
- habitat:** the environment in which a plant lives.
- hair:** an elongate single-celled or multi-celled outgrowth from the epidermis, without vascular tissue.
- half-inferior:** of an ovary, partly below and partly above the level of attachment of the perianth and stamens.
- halophyte:** a plant adapted to living in highly saline habitats; a plant that accumulates high concentrations of salt in its tissues.
- haploid:** having a single set of chromosomes in the nucleus (i.e. having each gene locus represented only once). *cf.* **diploid**, **polyploid**, **tetraploid**, **triploid**.

- hastate**: spear-shaped; of a leaf blade, narrow and pointed but with two basal lobes spreading approximately at right angles.
- haustorium**: an absorbing organ through which a parasite obtains chemical substances from its host.
- head**: see capitulum.
- helicoid**: coiled; of a cymose inflorescence, branching repeatedly on the same side. In *Adiantum*, applied to anadromous fronds in which basal basicopic pinnae are well-developed (i.e. pinnate), but corresponding acroscopic pinnae are reduced to simple pinnules. The stipe thus appears to branch dichotomously into two helically curved rachises, with pinnate pinnae apparently arising from their upper sides. *cf.* **scorpioid**.
- hemiparasite**: an organism which lives on and derives part of its nourishment from a different organism, and is partially self-supporting. *cf.* **parasite**.
- hemisaprophyte**: a plant which obtains its nutriment partly from dead organic matter and partly from photosynthesis. *cf.* **holosaprophyte**, **saprophyte**.
- herb**: any vascular plant that never produces a woody stem. *cf.* **forb**.
- herbaceous**: not woody; soft in texture; midway in thickness between membranous and coriaceous, usually applied to the lamina, sometimes to the entire habit of herbs.
- hermaphrodite**: = bisexual.
- hesperidium**: a fleshy indehiscent fruit derived from a single pistil, with an outer leathery rind and septate interior, e.g. *Citrus*.
- heteroblastic**: having the adult parts of the plant (especially the leaves) distinctly different in form from the juvenile parts; with two or more distinct kinds of shoot. *cf.* **homoblastic**.
- heterogamous**: producing flowers of two or more kinds with respect to their fertile organs, e.g. male and female or bisexual and female. *cf.* **homogamous**.
- heteromorphic** (= heteromorphous): of two or more distinct forms.
- heterophyllous**: having leaves that are not uniform along a branch, e.g. in *Huperzia*, with long leaves in the lower portions and smaller reduced leaves distally. *cf.* **homophyllous**.
- heterosporous**: producing two kinds of spores (male and female, or microspores and megaspores). *cf.* **homosporous**.
- heterostylous**: species in which flowers are similar except that the stigmas and anthers are held at different levels relative to each other, because style length differs between plants. *cf.* **homostylous**.
- hilum**: the scar on a seed coat at the place where it was attached to its stalk during development.
- hirsute**: bearing coarse, rough, relatively long hairs. *cf.* **villous**.
- hispid**: bearing short, stiff, hairs or bristles.
- hispidulous**: minutely hispid.
- hoary**: covered with a greyish layer of very short, closely interwoven hairs.
- holosaprophyte**: a plant which obtains its nutriment entirely from dead organic matter. *cf.* **hemisaprophyte**, **saprophyte**.
- holotype**: a single specimen or illustration designated by the author of a plant (or animal) name, at the time of original publication, which fixes the application of the name; the 'voucher specimen' of a name. *cf.* **isotype**, **type**.
- homoblastic**: with one kind of shoot. *cf.* **heteroblastic**.
- homogamous**: having flowers of only one kind. *cf.* **heterogamous**.
- homophyllous**: with all leaves uniform along a branch. *cf.* **heterophyllous**.
- homosporous**: producing only one kind of spore in the sexual reproductive cycle, and hence one gametophyte which produces both male and female gametes. *cf.* **heterosporous**.
- homostylous**: species in which the flowers have stigmas and anthers held at the same level relative to each other on all plants. *cf.* **heterostylous**.
- host**: an organism on which a parasite lives and by which it is nourished (also applied, loosely, to a plant supporting an epiphyte).
- hyalescent**: becoming translucent.

- hyaline**: translucent, almost like clear glass.
- hybrid**: an offspring of genetically different parents (in a Flora, usually applied where the parents are of different species).
- hydathode**: water- or mineral-excreting pores at the ends of some veins, e.g. in Grammitidaceae and some Davalliaceae.
- hygroscopic**: absorbing water (and undergoing movements or changes brought about by changes in water content).
- hypanthium**: a cup or tube bearing floral parts above the base, and often above the top, of the ovary of a flower, e.g. in many Myrtales. *cf.* **calyx tube**.
- hypocotyl**: the part of the stem of an embryo or young seedling below the cotyledonary node.
- hypodermis**: a clearly differentiated layer of cells below the epidermis.
- hypogaeal**: of germination, having the cotyledon(s) remaining within the seed coat. *cf.* **epigeal**.
- hypogynous**: of perianth segments and stamens, arising below the level of insertion of the ovary (often applied, loosely, to a flower in which the sepals, petals and stamens are inserted below the ovary). *cf.* **epigynous**, **perigynous**.
- hypostomatic**: bearing stomata on one leaf surface only, usually the lower or abaxial surface. *cf.* **amphistomatic**.

I

- imbricate**: of perianth parts, having the edges overlapping in the bud. *cf.* **valvate**.
- imparipinnate**: having an uneven number of pinnae, by virtue of having one terminal pinna. *cf.* **paripinnate**.
- incised**: cut deeply, sharply and often irregularly (an intermediate condition between toothed and lobed).
- included**: enclosed, not protruding.
- incrassate**: thickened; of a pollen grain, with thickened margins around the apertures.
- incumbent**: of the orientation of an embryo, with the cotyledons lying face to face and folded downwards beside the radicle; of anthers, lying against the inner face of the filament.
- incurved**: bent or curved inwards or upwards; of leaf margins, curved towards the adaxial surface.
- indefinite**: variable in number; numerous; of stamens, more than twice as many as the petals or sepals; of an inflorescence, not terminating in a flower (i.e. having a continuing, terminal growing point).
- indehiscent**: not opening at maturity.
- indeterminate**: of an inflorescence, when the floral axis is not terminated by a flower, ie a racemose inflorescence. *cf.* **monopodial**.
- indumentum**: the epidermal appendages, e.g. hairs or scales, collectively.
- induplicate**: folded inwards so that the outer faces of the margins are in contact.
- indurated**: hardened.
- indusiate**: bearing an indusium.
- indusium**: tissue covering the sorus of a fern, either a specialised organ or the incurved margin of the lamina; a hollow pollen-cup surrounding the stigma in Goodeniaceae.
- inferior**: of an ovary, at least partly below the level of attachment of the other floral parts. *cf.* **superior**.
- inflexed**: bent sharply upwards or forwards. *cf.* **deflexed**.
- inflorescence**: the group or arrangement in which flowers are borne on a plant.
- infraspecific**: of lower taxonomic rank than species.
- infructescence**: the grouping or arrangement in which fruits are borne on a plant.
- insectivorous**: catching, and ostensibly feeding on, insects.
- inserted (on)**: attached to; arising from.
- integument**: a covering; one of the outer layers of tissue of an ovule.

- intercalary inflorescence:** an inflorescence that either arises in an internodal position, or one originally terminal but ceasing to be so when vegetative growth subsequently resumes from the stem apex.
- intercalary growth:** extension or growth from an intercalary meristem, i.e. neither from the apex nor the base.
- intercalary:** between two points.
- internal hairs:** in leaves of *Isoetes*, projections into the lacunae.
- internode:** the portion of a stem between the level of insertion of two successive leaves or leaf pairs (or branches of an inflorescence).
- interpetiolar:** of stipules, between the petioles of two opposite leaves. *cf.* **intrapetiolar**.
- interrupted:** of an inflorescence, having the flowers unevenly distributed along the axis, with conspicuous gaps.
- interstaminal corona:** in Asclepiadaceae, fleshy lobes, often connate into a tube, attached to the base of the staminal column in the interstaminal areas. see **gynostegial corona**.
- intramarginal:** situated inside but close to the margin, e.g. of a vein in a leaf.
- intrapetiolar:** between a petiole and the subtending stem. *cf.* **interpetiolar**.
- introduced:** not indigenous; not native to the area in which it now occurs. *cf.* **adventive, naturalised**.
- introrse:** of anthers, dehiscing towards the centre of the flower. *cf.* **extrorse**.
- involucel:** involucre of bractlets surrounding a secondary inflorescence such as the base of an umbellule.
- involucre:** a group of bracts enveloping a condensed inflorescence; a layer of tissue enveloping particular structures, e.g. an archegonium in Bryophyta, sporangia in Hymenophyllaceae.
- involute:** rolled inwards; of a leaf, with the margins rolled towards the adaxial surface. *cf.* **revolute**.
- irregular:** see **zygomorphic**.
- isobilateral** (= isolateral): having structurally similar upper and lower surfaces. *cf.* **dorsiventral**.
- isophyllous:** leaves equal in size and shape at any point on the branch. *cf.* **anisophyllous**.
- isotomous:** having all dichotomies resulting in equally thin branches. *cf.* **anisotomous**.
- isotype:** a specimen which is a duplicate of the holotype, i.e. part of the same collection. *cf.* **type**.
- isovalvate:** having the two valves of a sporangium equal in size. *cf.* **anisovalvate**.

J

- juvenile:** of leaves, formed on a young plant and different in form from the adult leaves.

K

- karyoevolution:** evolutionary change in the chromosome set, expressed as changes in number and gross structure of the chromosomes; (more broadly), evolutionary relationships between taxa as indicated by karyotype differences.
- karyotype:** the gross morphology of the chromosome set, described in terms of number, length, centromere position, etc.
- keel:** a ridge like the keel of a boat; in Fabaceae, a boat-shaped structure formed by fusion of the two anterior petals of a flower.
- keeled:** of leaves, petals or bracts, folded and ridged along the midrib.
- Kingdom** (= regnum): the most inclusive taxonomic rank recognised by the *International Code of Nomenclature for algae, fungi, and plants* (some authors have used the informal rank of Domain above that of Kingdom).
- kwongan:** low sand heath or sand plain sclerophyllous vegetation common in south-western W.A.

kwongkan: see **kwongan** (alternate spelling)

L

labellum: a lip; in Orchidaceae, the distinctive median petal that serves as an alighting platform for pollinating insects; in Zingiberaceae and Costaceae, a (usually showy) structure derived from petaloid staminodes.

labium: an outgrowth above the sporangium which partially or wholly covers the ligule.

lacinate: slashed into narrow, pointed lobes.

lacrymiform: tear-shaped, i.e. more or less ovoid or obovoid.

lacuna: a gap or cavity, of *Isoetes*, within the leaves. plural **lacunae**.

laesura: a ridge which surrounds the apertural slit (through which the gametophyte germinates) in spores of Polypodiophyta; the shape of this ridge reflects the type of spore alignment in the tetrad. pl. **laesurae**.

lamella: a thin, plate-like layer; middle lamella, the layer between the walls of two adjacent cells.

lamellose: composed of or arranged in layers or thin plates.

lamina: the blade of a leaf or 'blade' of a frond. *cf.* **blade**.

lanceolate: of a leaf, about four times as long as it is broad, broadest in the lower half and tapering towards the tip.

lanuginose: woolly.

latex: a viscous fluid exuded from the cut surfaces of the leaves and stems of certain plants.

latiseptate: with broad partitions. *cf.* **angustiseptate**.

latrorse: turned sideways, i.e. not towards or away from axis; of anthers, opening laterally, i.e. towards adjacent anthers.

leaf gap: a point in the stele at which the vascular supply to a leaf is attached.

leaflet: one of the ultimate segments of a compound leaf.

lectotype: a specimen or illustration selected from among those cited with the original description to serve in place of a holotype where the holotype is missing or destroyed, or where no holotype was designated; isolectotype: a duplicate of the lectotype. *cf.* **type**.

legume: a fruit characteristic of the families Mimosaceae, Caesalpiniaceae and Fabaceae, formed from one carpel and either dehiscent along both sides, or indehiscent; in particular, such a fruit that is grown as an edible crop; a crop species in the family Fabaceae.

lemma: in a grass floret, the lower of two bracts enclosing a flower.

lenticel: a loosely-packed mass of cells in the bark of a woody plant, visible on the surface of a stem as a raised powdery spot, through which gaseous exchange occurs.

lenticular: shaped like a biconvex lens.

lepidote: covered with small, membranous scales.

leptosporangiate: of ferns, having sporangia with walls only one cell thick. *cf.* **eusporangiate**.

liane: a climbing or twining plant (usually applied to woody climbers).

lignified: woody, due to the deposition of lignin in cell walls.

lignotuber: a woody swelling at the base of the shoot system below or just above the ground, containing adventitious buds from which new shoots develop if the top of the plant is cut off or burnt (common in the shrubby eucalypts ('mallee') and in many other fire-tolerant Australian shrubs).

ligulate: bearing a ligule; strap-shaped.

ligule: a strap-shaped structure; a membranous or hairy appendage on the adaxial surface of a leaf, especially in grasses, at the junction between sheath and blade; a small adaxial appendage near the leaf base in some pteridophytes, e.g. *Isoetes* and *Selaginella*; the corolla limb in ray flowers of Asteraceae.

limb: the upper, free, spreading portion of a corolla or perianth that is connate at the base; the expanded portion of a sepal or petal above the claw. *cf.* **blade**, **claw**.

linear: very narrow in relation to the length, and with the sides parallel. *cf.* **lorate**.

linguiform: tongue-shaped.

lithophyte: a plant that grows on the surface of unweathered rock. adj. **lithophytic**.

lobulate: having small or indistinct lobes.

loculicidal: of the dehiscence of a fruit, along lines coinciding with the centres of loculi. cf. **septicidal**.

loculus (= locule): an enclosed compartment within an organ, e.g. an ovary, an anther. pl. **loculi**.

lodicule: one of a pair of tiny scales in a grass floret, between the lemma and the fertile parts of the flower, which may be reduced perianth segments.

lomentum: a legume having distinct constrictions or lines of abscission between the seeds and breaking into one-seeded segments when mature.

lorate: of leaves, strap-shaped (moderately long with the two margins parallel). cf. **linear**.

lumen: the cavity of a plant cell.

lunate: crescent-shaped.

lyrate: deeply lobed, with a large terminal lobe and smaller lateral ones.

M

macrospore: = **megaspore**.

mallee: a growth habit in which several woody stems arise separately from a lignotuber (usually applied to shrubby eucalypts); a plant having the above growth habit; vegetation dominated by such plants.

mammillate: having small nipple-shaped projections.

manoxylic: having secondary wood of a loose texture with discontinuous xylem and a large proportion of included parenchyma.

marcescent: withering without falling off.

marginal: occurring at or very close to the margin.

massula: group of microspores enclosed in a hardened mucilage. pl. **massulae**.

medifixed: attached by or at the middle, e.g. of anthers, with filament attached at the middle of the connective. cf. **basifixed**, **versatile**.

medullated protostele: a protostele in which the xylem has a core of non-vascular tissue.

megagametophyte: a plant body or cell lineage, formed by vegetative growth of the megaspore, that produces the female gametes of a heterosporous plant.

megasporangium: the larger of the two kinds of sporangia produced in the sexual life cycle of a heterosporous plant. Produces megaspores. cf. **microsporangium**.

megaspore: the larger of the two kinds of spores produced in the sexual life cycle of a heterosporous plant, giving rise to the female gametophyte. They may be monomorphic as in *Selaginella*, or polymorphic as in some *Isoetes* species. cf. **microspore**.

megasporocarp: a sporocarp containing megasporangia. cf. **microsporocarp**.

megasporophyll: a specialised leaf upon which (or in the axil of which) one or more megasporangia are borne.

meiosis: the two-stage division of a diploid nucleus, occurring once in every sexual life cycle, in which gene recombination occurs and the number of chromosomes characteristic of the sporophyte plant is halved prior to the production of gametes.

mellitophily: an insect-flower pollination syndrome involving bees.

mentum: in Orchidaceae, a spur formed by extension of the base of the column.

mericarp: one segment of a fruit that breaks at maturity into units derived from the individual carpels. cf. **schizocarp**.

meristele: the portion of a stele received by each leaf.

meristem: growing regions of a plant in which cells that have retained their embryonic characteristics, or have reverted to them secondarily, divide to produce new cells.

-mery: the number of parts per whorl that characterises a particular flower (generally constant for the perianth whorls and less often for the whorl(s) of stamens also). adj.

merous.

- mesocarp**: the fleshy portion of the wall of a succulent fruit inside the skin and outside the stony layer, if any, surrounding the seed(s).
- mesophyll**: photosynthetic tissue of a green plant; of vegetation, characteristic of moist habitats and with soft, fairly large leaves predominating; a leaf with an area within the approximate range 20–180 sq. cm.
- microgametophyte**: a plant body or cell lineage, formed by vegetative growth of the microspore, that produces the male gametes of a heterosporous plant.
- microphyll**: a small leaf.
- micropyle**: a small canal through the integument(s) of an ovule, persisting as a pore in the seed coat.
- microsporangium**: the smaller of the two kinds of sporangia produced in the sexual life cycle of a heterosporous plant. *cf.* **megasporangium**.
- microspore**: the smaller of the two kinds of spores produced in the sexual life cycle of a heterosporous plant, giving rise to the male gametophyte. *cf.* **megaspore**.
- microsporocarp**: a sporocarp containing microsporangia. *cf.* **megasporocarp**.
- microsporophyll**: a specialised leaf upon which (or in the axil of which) one or more microsporangia are borne.
- midrib**: the central, and usually the most prominent, vein of a leaf or leaf-like organ. *cf.* **costa**.
- monadelphous**: of stamens, united by their filaments into one bundle. *cf.* **diadelphous**, **syngenesious**.
- moniliform**: cylindrical but constricted at regular intervals like a string of beads.
- monocarpic**: flowering and fruiting only once during its life span.
- monochasium**: a cymose inflorescence with the branches arising singly. *cf.* **dichasium**.
- monochlamydeous**: of a flower, having only one whorl of perianth parts. *cf.* **dichlamydeous**.
- monoclinous**: having male and female reproductive organs in the same flower. *cf.* **diclinous**.
- monocotyledon**: a flowering plant whose embryo has only one cotyledon (seed leaf). *cf.* **dicotyledon**.
- monoecious**: having the male and female reproductive structures in separate flowers or organs but on the same plant. *cf.* **dioecious**.
- monolete**: of a spore, bilateral, having a single straight scar.
- monomorphic**: of uniform shape and size. *cf.* **dimorphic**.
- monophyletic**: derived from a single ancestral line. *cf.* **polyphyletic**.
- monopodial**: of growth, with a persistent terminal growing point producing many lateral organs successively; of a stem, growing in the above manner. *cf.* **indeterminate**, **sympodial**.
- monosulcate**: a type of spore with a single germination pore or furrow.
- monotypic**: containing only one taxon of the next lower rank, e.g. applied to a family containing only one genus. *cf.* **polytypic**.
- morphocline**: a graded series of character states of an homologous character.
- morphology**: the form and structure of an organism or part of an organism; the study of form and structure.
- motile**: actively moving; self-propelled.
- mucilage**: slimy material exuded by certain plants or plant organs. *adj.* **mucilaginous**.
- mucous**: slimy.
- mucro**: a sharp, abrupt terminal point. *adj.* **mucronate**.
- mucronulate**: with a very small mucro; diminutive of mucronate.
- multiplanar**: of divided leaves, with the lobes held in several to many planes.
- muri**: low ridges.
- muricate**: rough on the surface; covered with short, hard tubercles or hard outgrowths of the epidermis.
- muriculate**: rough with minute, short, hard points.
- muticous**: pointless, blunt, awnless.

mycorrhiza: a symbiotic union between a fungus and a plant root.

N

naked: of sporangia, not covered by an indusium; of seeds, exposed on the surface of a sporophyll (not enclosed within an ovary); of flowers, without perianth; of protoplasts or gametes, not bounded by a cell wall.

naturalised: introduced and reproducing itself without human assistance. *cf.* **adventive**, **introduced**.

navicular: boat-shaped.

nectary: a gland that secretes nectar. *adj.* **nectariferous**.

neotype: a specimen or illustration selected to serve in place of a holotype, where all of the material on which the name was originally based is missing or destroyed; *isoneotype:* a duplicate of the neotype. *cf.* **type**.

nerve: = **vein**.

nest-fronds: specialised, shield-like, basal fronds in some ferns (e.g. *Platycerium*) which accumulate leaf-litter.

neuter: sterile, e.g. of flowers in which neither the androecium nor the gynoecium is functional in reproduction.

nocturnal: of flowers, opening only at night.

node: the level (transverse plane) of a stem at which one or more leaves arise.

nodosity: in *Adiantum*, a callus or swollen node, often lacking normal colouration, where a pinna or pinnule stalk arises from a rachis.

nomen illegitimum: a name which, at the time of its publication, was superfluous (because it included the type of an earlier name which should have been adopted) or had already been applied to another plant; *abbrev.* **nom. illeg.**

nomen nudum: a name published without a diagnosis or description of the entity to which it was applied, and without reference to either; *abbrev.* **nom. nud.**

nomen rejiciendum: a name rejected in favour of a 'nomen conservandum'; *abbrev.* **nom. rej.**

nomen conservandum: a name of a family, genus or species that has been formally accepted under the *International Code of Nomenclature for algae, fungi, and plants* as the correct name contrary to the usual principles of botanical nomenclature; *abbrev.* **nom. cons.**

nucellus: the central tissue of an ovule, within which the megaspore mother cell is formed.

nut: a hard, dry, indehiscent fruit formed from two or more carpels but containing only one seed.

O

ob-: a prefix signifying the opposite or inverse of.

obconical: cone-shaped but attached at the narrower end.

obcordate: of a leaf blade, broad and notched at the tip; heart-shaped but attached at the pointed end.

oblanceolate: similar in shape to lanceolate but attached at the narrower end.

obligate: of parasites, unable to survive without the host. *cf.* **facultative**.

oblique: of a leaf or leaflet, larger on one side of the midrib than on the other, i.e. asymmetrical.

obloid: a three-dimensional shape, with short, parallel sides and rounded ends, as if composed of two hemispheres linked together by a short cylinder.

oblong a two-dimensional shape, having the length greater than the width but not many times greater, and the sides parallel.

obovate: similar in shape to ovate but attached at the narrower end.

obovoid: similar in shape to ovate, but attached at the narrower end.

obsolescent: non-functional but not reduced to a rudiment.

- obsolete:** reduced to a rudiment, or completely lacking. *cf.* **rudimentary**, **vestigial**.
- obtuse:** blunt or rounded at the apex, the converging edges separated by an angle greater than 90 degrees.
- ochrea:** a sheath, formed from two stipules, encircling the node in Polygonaceae.
- ontogeny:** the development of a single organism, i.e. the sequence of stages through which it passes during its lifetime.
- operculum:** in a flower, a cap formed by fusion or cohesion of perianth parts and covering the stamens and carpels in the bud, becoming detached at maturity by abscission; especially in Eucalyptus, see **calyptra**.
- opposite:** of leaves or other lateral organs, borne at the same level but on opposite sides of the stem; of floral parts, on the same radius. *cf.* **alternate**.
- orbicular:** circular or nearly so.
- order:** a taxonomic grouping of families believed to be closely related (sometimes a single family with no apparent close relatives); the major taxonomic rank between family and class.
- orthostichous:** arranged in regular vertical rows on a stem or axis.
- orthotropic:** mode of growth of vertical branches or leading shoots, especially in conifers where lateral (plagiotropic) branches may have different morphology.
- orthotropous:** of an ovule, erect so that the micropyle points away from the placenta.
- ostiole:** an opening or pore, e.g. at the apex of a fig.
- ovary:** the basal portion of a carpel or group of fused carpels, enclosing the ovule(s).
- ovate:** a two dimensional shape, like a section through the long axis of an egg, and attached by the wider end.
- ovoid:** egg-shaped (in three dimensions).
- ovulate:** with ovules.
- ovule:** a structure in a seed plant within which one or more megaspores are formed and which develops into a seed after fertilisation.
- ovuliferous:** bearing ovules, e.g. applied to scales in a megasporangiate cone in gymnosperms.
- ovulode:** sterile structures on the placenta.

P

- pachycaul:** thick-stemmed, sparingly branched and \pm succulent, with a massive parenchymatous pith and cortex and relatively little secondary wood.
- palea:** in a grass floret, the upper one of the two bracts enclosing a flower; in Asteraceae, vascularised scales on the receptacle, subtending some or all of the florets. Often membranous or chartaceous, sometimes enclosing achenes and dispersed with them, or fused into burrs (see *Xanthium*).
- paleate:** clothed with scales; of a receptacle, bearing palea, *cf.* **epaleate**.
- palmate:** of a leaf, divided into several leaflets which arise at the same point.
- palmatifid:** of a leaf, deeply (but not completely) divided into several lobes which arise (almost) at the same level. *cf.* **palmate**, **pinnatifid**.
- palmatinerved:** of leaves, palmately nerved, i.e. with the (main) nerves radiating from one basal point.
- palmatisect:** a condition intermediate between palmate and palmatifid, with the green tissue of the lamina completely divided into several segments, but the segments not fully separated at the base.
- palynology:** the scientific study of pollen.
- pandurate:** fiddle-shaped.
- panicle:** a compound raceme; an indeterminate inflorescence in which the flowers are borne on branches of the main axis or on further branches of these.
- paniculate:** indeterminate and much branched.
- pantoporate:** of a pollen grain, with rounded apertures all over the surface.

- papilla:** a small, elongated protuberance on the surface of an organ, usually an extension of one epidermal cell. adj. **papillose**.
- pappus:** a tuft of hairs on a fruit; in Asteraceae, a tuft (or ring) of hairs or scales borne above the ovary and outside the corolla and possibly representing the calyx.
- parapatric:** of distributions of two taxa or populations, having non-overlapping but contiguous ranges. *cf.* **allopatric**, **sympatric**.
- paraphyletic:** a group of taxa derived from a single ancestral taxon, but which does not contain all the descendants of the most recent common ancestor.
- paraphysis:** sterile filaments occurring in the fruiting bodies of non-vascular plants, e.g. among the sporangia of some ferns; apically expanded staminal filaments, e.g. in Cleomaceae. pl. **paraphyses**.
- parasite:** an organism living on or in a different organism and deriving nourishment from it. *cf.* **autotrophic**, **epiphyte**, **saprophyte**.
- paratype:** a specimen or illustration, other than the holotype, isotype or one of the syntypes, that was cited with the original publication of a name. *cf.* **type**.
- parenchyma:** plant tissue consisting of mature, living cells that are relatively unspecialised in function.
- parietal:** attached to the margins of a structure; of placentation, having the ovules attached to placentas on the wall of the ovary.
- paripinnate:** having an even number of pinnae by virtue of having a pair in the terminal position. *cf.* **imparipinnate**.
- partite:** divided, almost to the base, into segments (commonly applied to a style or leaf).
- pectinate:** comb-like.
- pedate:** of a palmate or palmately-lobed leaf, having the lateral segments divided again.
- pedicel:** the stalk of a flower or a sporangium. adj. **pedicellate**.
- peduncle:** the stalk of an inflorescence; in ferns, the stalk of a sporocarp, e.g. in *Marsilea*. adj. **pedunculate**.
- pellucid:** transparent.
- peloric:** actinomorphic, of a flower which, from its taxonomic context, would be expected to be zygomorphic, e.g. in Orchidaceae. *cf.* **actinomorphic**, **zygomorphic**.
- peltate:** of a leaf, having the stalk attached to the lower surface of the blade, usually at or near the centre, not to the margin; umbrella-shaped (can be inverted; also applied, in the same sense, to other stalked structures).
- pendulous:** drooping; of ovules, attached at the top of the ovary and hanging downwards from an apical placenta.
- penicillate:** pencil-shaped; tufted like an artist's brush.
- penninerved** (= penniveined): having conspicuous lateral veins divergent from the midrib and lying approximately parallel to each other.
- pentamerous:** of a flower, having five segments in each perianth whorl, and usually five in each whorl of stamens also.
- pepo:** a fruit with firm skin, pulpy interior, many seeds and a single locule; species epithet for a group of cucurbits including squash, zucchini and some pumpkins and gourds.
- perennate:** maintain a dormant, vegetative state throughout non-growing seasons.
- perennial:** a plant whose life span extends over more than two growing seasons. *cf.* **annual**, **biennial**.
- perfoliate:** of a sessile leaf or bract, having its base completely wrapped around the stem.
- perianth:** the calyx and corolla of a flower, especially where the two are similar.
- pericarp:** the wall of a fruit, developed from the ovary wall.
- perigynous:** of perianth segments and stamens, arising from a cup or tube (hypanthium) that is free from the ovary but extending above its base. *cf.* **epigynous**, **hypogynous**.
- perine:** an outer (perisporial) spore wall, present in some families and genera of ferns. *cf.* **exine**.
- peripheral fibre strands:** multicellular fibre strands which strengthen the periphery of the leaf in some *Isoetes* species.

- perisperm:** nutritive tissue in an angiospermous seed, formed from the nucellus. *cf.* **endosperm.**
- perispore:** the folded membrane of most spores, forming an ornamental external covering.
- persistent:** remaining attached to the plant beyond the expected time of falling, e.g. of sepals not falling after flowering.
- petal:** a member of the inner whorl of non-fertile parts surrounding the fertile organs of a flower, usually soft and coloured conspicuously.
- petaloid:** like a petal; soft in texture and coloured conspicuously.
- petiole:** the stalk of a leaf.
- petiolule:** the stalk of a leaflet.
- phalange:** a bundle comprising several structures fused together; a group of connate carpels, e.g. in Pandanaceae.
- phanerocotular:** mode of germination where cotyledons emerge from the seed and above ground.
- phanerogam:** (literally) a plant with conspicuous reproductive parts; a plant reproducing by seeds. *cf.* **cryptogam.**
- phenotype:** the physical characteristics of an organism; the outward expression of characteristics conferred on an organism by its genotype. *cf.* **genotype.**
- phloem:** the tissue in the conducting system of a plant through which metabolites (products of chemical reactions in the plant) are transported.
- phyllichnium:** in Casuarinaceae, the ridge of a branchlet segment; pl. **phyllichnia.**
- phylloclade:** a very leaf-like, photosynthetic stem of a plant whose true leaves are much reduced. *cf.* **cladophyll.**
- phyllode:** a leaf whose blade is much reduced or absent, and whose petiole and rachis have assumed the functions of the whole leaf. *cf.* **cladode.**
- phyllopodium:** an outgrowth from the stem to which a stipe is articulated.
- phyllotaxy:** the arrangement of leaves on a stem (when spiral, often expressed quantitatively as the fraction of the circumference of the stem that separates two successive leaves).
- phylogeny:** the evolutionary development of a plant group, i.e. its derivation from its ancestors and the relationship among its members. adj. **phylogenetic.**
- phylum:** an alternate name for division, the major taxonomic rank below Kingdom.
- pilose:** hairy, the hairs soft and clearly separated but not sparse.
- pinna:** a primary segment of the blade in a compound leaf. pl. **pinnae.**
- pinnate:** of a lamina, divided into pinnae; once-compound, with the pinnae (leaflets) arising at points along the rachis. *cf.* **bipinnate, tripinnate**
- pinnatifid:** cut deeply (but not to midrib) into lobes that are spaced out along the axis (of the leaf). *cf.* **palmatifid, ternatifid.**
- pinnatipartite:** of leaves, pinnatifid, where the lobes pass beyond the middle (or are within the middle third) and the parenchyma is not interrupted.
- pinnatisect:** pinnately dissected down to the midrib but having the segments confluent with it.
- pinnule:** a leaflet of a bipinnate leaf, i.e. ultimate segments of the lamina.
- pistil:** a free carpel or a group of fused carpels.
- pistillode:** a sterile pistil, often rudimentary.
- pit:** of a cell wall, a small hollow or depression.
- pith:** the central region of a stem, inside the vascular cylinder.
- placenta:** a region, within an ovary, to which ovules are attached.
- placentation:** the arrangement of placentas, and hence of ovules, within an ovary.
- plagiotropic:** mode of growth of lateral branches, growing horizontally away from the leading shoot and maintaining a different morphology, especially in conifers.
- platyspermic:** describing flat and bilaterally symmetrical seeds.
- plesiomorphic:** of a character, ancestral or primitive. *cf.* **apomorphic.**
- plicate:** folded back and forth longitudinally like a fan.

- plietesial**: monocarpic but living for several years before flowering.
- plumose**: like a feather; with fine hairs branching from a central axis.
- plumule**: the portion of an embryo that gives rise to the shoot system (as distinct from the root system) of a plant. *cf.* **radicle**.
- pluricellular**: having many cells, as in some hairs.
- pneumatophore**: an air-vessel; an organ containing aerenchyma; in particular, a root of a mangrove plant, growing above the substratum.
- pod**: a leguminous fruit.
- podium**: a foot-stalk or stipe. adj. **podiate**.
- pollen presenter**: of many Proteaceae, a structural modification, usually a swelling, of the style around or below the stigma which enables pollen, shed in the bud, to be retained.
- pollen**: the microspores of seed plants; the powdery mass of microspores shed from anthers.
- pollen-grain**: a microspore of a seed plant, or the partially developed gametophyte formed from it.
- pollen-sac**: a cavity, in an anther, in which pollen is formed.
- pollinarium**: the complex structure found in flowers of Asclepiadaceae and Orchidaceae where the pollen masses of the two adjacent anther-lobes (thecae) are united for dispersal as a unit. The pollinarium consists of two pollinia, attached by caudicles to a central corpusculum. pl. **pollinaria**.
- pollination**: the transfer of pollen from the male organ, where it is formed, to the receptive region of a female organ, e.g. from anther to stigma.
- pollinium**: pollen-mass, the aggregation of all the pollen of one anther-lobe (theca) into one unit for transfer in pollination. pl. **pollinia**.
- polygamodioecious**: with bisexual and male flowers on some plants, and bisexual and female flowers on others.
- polygamomonoecious**: with bisexual flowers and unisexual flowers of both sexes on the same plant.
- polygamous**: having bisexual and unisexual flowers on the same or different plants.
- polymorphic**: having more than two distinct morphological variants.
- polypetalous**: with free petals. *cf.* **sympetalous**.
- polyphyletic**: composed of members that originated, independently, from more than one evolutionary line. *cf.* **monophyletic**.
- polyploid**: having more than two of the basic sets of chromosomes in the nucleus. *cf.* **diploid, haploid, tetraploid, triploid**.
- polytypic**: containing more than one taxon of the next lower rank, e.g. applied to a family containing more than one genus. *cf.* **monotypic**.
- pome**: a fleshy (false) fruit, formed from an inferior ovary, in which the receptacle or hypanthium has enlarged to enclose the true fruit.
- porate**: of a pollen grain, with rounded apertures (called pores) only. *cf.* **colporate, colpate**.
- poricidal**: of anthers or capsules, opening by pores.
- porrect**: of a trichome, having branches spreading more or less horizontally from the top of an erect stalk.
- posterior**: of floral organs, on the side of the flower nearest to the axis. *cf.* **anterior**.
- praemorse**: appearing bitten off at the end.
- prickle**: a hard, pointed outgrowth from the surface of a plant, involving several layers of cells but not containing a vein.
- process**: as part of a plant, a projecting outgrowth or appendage.
- procumbent**: trailing or spreading along the ground but not rooting at the nodes.
- proliferous**: able to reproduce vegetatively from the shoot system, e.g. by stems rooting at the nodes (as in *Conostylis*); producing plantlets on leaves or fronds (*Pteris*) or in the inflorescence (*Isolepis*).
- propagule**: a structure with the capacity to give rise to a new plant, e.g. a seed, a spore, part of the vegetative body capable of independent growth if detached from the parent.

- prophyll**: a leaf formed at the base of a shoot, usually smaller than those formed subsequently.
- prostrate**: lying flat on the ground.
- protandrous**: having the male sex organs maturing before the female; of a flower, shedding the pollen before the stigma is receptive. *cf.* **protogynous**.
- prothallus**: a gametophyte body, especially in bryophytes, ferns and related plants.
- protogynous**: having the female sex organs maturing before the male; of a flower, shedding the pollen after the stigma has ceased to be receptive. *cf.* **protandrous**.
- protostele**: a simple primitive type of stele having a solid central vascular core.
- proximal**: near to the point or origin of attachment. *cf.* **distal**.
- pruinose**: having a whitish, waxy, powdery bloom on the surface.
- pseudanthium**: a compact inflorescence of several to many small flowers which simulates a single flower.
- pseudo-**: false; apparent but not genuine.
- ptyxis**: pattern of folding and rolling shown during leaf development.
- puberulous**: covered with minute, soft, erect hairs.
- pubescent**: covered with short, soft, erect hairs.
- pulverulent**: appearing as though dusted over with powder.
- pulvinate**: cushion- or pad-shaped, resembling a pulvinus.
- pulvinus**: a swelling at the base of the stalk of a leaf or leaflet, often glandular or responsive to touch.
- punctate**: marked with dots, depressions or translucent glands.
- punctulate**: minutely dotted.
- pungent**: ending in a stiff, sharp point; having an acrid taste or smell.
- pustulate**: covered with small pustule- or blister-like elevations.
- pustule**: a blister-like prominence, often in which a sorus occurs. *adj.* **pustulate**.
- pyrene**: the 'stone' (endocarp plus seed) of a succulent fruit. *cf.* **berry**, **drupe**.
- pyriform**: pear-shaped.

Q

- quadrate**: squarish.
- quincuncial**: of the arrangement of corolla lobes in a bud, a variant of imbricate aestivation.

R

- raceme**: an indeterminate inflorescence in which a main axis produces a series of flowers on lateral stalks, the oldest at the base and the youngest at the top. *adj.* **racemose**. *cf.* **cyme**.
- racemule**: secondary raceme in a compound raceme or umbellate inflorescence.
- rachilla** (= rhachilla): of palms and woody monocotyledons, the lateral or secondary branches of the inflorescence; of a grass spikelet, the axis above the glumes.
- rachis** (= rhachis): a midrib of the lamina, or the axis of an inflorescence or a pinnate leaf; pl. **rachises**. When unqualified, in ferns refers to the midrib of the frond, i.e. the main axis above the lowermost primary pinna. secondary rachis: the axis of a pinna in a bipinnate leaf, or of a branch in a branched inflorescence.
- radial**: applied to a fern rootstock in which the fronds radiate and the roots are borne on all sides of the organ.
- radical**: of leaves, clustered at the base of the stem.
- radicle**: the portion of an embryo that gives rise to the root system of a plant. *cf.* **plumule**.
- radiospermic**: describing radially symmetrical seeds.
- ramiflorous**: of flowers and fruits, borne below the current leaves on recently formed woody branches. *cf.* **cauliflorous**.
- raphe**: the part of the stalk of an anatropous ovule that is fused along the side of the ovule.
- raphides**: needle-like crystals that occur in bundles in the vacuoles of some plant cells.

- ray floret:** a zygomorphic flower in Asteraceae. *cf.* **disc floret**.
- ray:** in woody stems, a radial band of cells traversing the conducting elements; of a compound umbel, one of the first (lower) series of branches of the inflorescence axis.
- receptacle:** the axis of a flower (= torus); in ferns, an axis bearing sporangia and sometimes also paraphyses; in Asteraceae, the basal part of the capitulum or head, bearing the involucre bracts, florets and sometimes palea.
- recurved:** curved or curled downwards or backwards; of leaf margins, curved towards the abaxial surface.
- reflexed:** bent sharply downwards or backwards.
- regular:** see actinomorphic.
- reniform:** kidney-shaped.
- replum:** a longitudinal partition in an ovary, formed between parietal placentas.
- resupinate:** twisted through 180 degrees, e.g. as with the ovary of most Orchidaceae.
- reticulate:** forming a network.
- reticulum:** a network, e.g. of veins. *adj.* **reticulate**.
- retinaculum:** a hook-like structure to which another structure is tethered; in Orchidaceae and Asclepiadaceae, the structure to which pollen masses are attached; in Acanthaceae, the persistent stalk of an ovule.
- retorse:** bent, and pointing away from the apex. *cf.* **antrorse**.
- retuse:** with a very blunt and slightly notched apex.
- revolute:** rolled downwards or backwards; of a leaf, with the margins rolled towards the abaxial surface. *cf.* **involute**.
- rhachilla:** see rachilla.
- rhachis:** see rachis.
- rhpidium:** a compound cyme with the lateral branches developed alternately on one side and then the other.
- rhizoid:** a thread-like, unicellular absorbing structure occurring in the vascular plants, in gametophytes of ferns and some related plants.
- rhizome:** the creeping (often underground) stem, usually growing horizontally, or climbing stem of a fern. *cf.* **runner**, **stolon**.
- rhizophore:** in *Selaginella*, a leafless stem that produces roots.
- rhomboid:** quadrangular, with the lateral angles obtuse.
- rhomboidal:** diamond-shaped or almost so.
- root:** unit of the axial system of a plant which is usually underground, does not bear leaves, tends to grow downwards and is typically derived from the radicle of the embryo. *cf.* **adventitious**.
- rootstock:** a short, erect, swollen structure at the junction of the root and shoot systems of a plant (loosely: the root system).
- rostellum:** in Orchidaceae, a beak-like upward extension of the stigma.
- rostrate:** beaked.
- rosulate:** clustered into a rosette, e.g. of basal leaves of some annual and biennial forbs.
- rotate:** circular and flattened, e.g. of a corolla with a very short tube and spreading lobes.
- rudimentary:** poorly developed and not functional. *cf.* **obsolete**, **vestigial**.
- rugose:** deeply wrinkled.
- rugulose:** covered with minute wrinkles.
- ruminate:** mottled in appearance, e.g. of bark, or of the food reserves in a seed.
- runcinate:** deeply lobed and with the lobes slanted away from the apex.
- runner:** a slender, prostrate or trailing stem which produces roots and sometimes erect shoots at its nodes. *cf.* **rhizome**, **stolon**.

S

- sac:** a pouch or cavity; see pollen-sac, embryo-sac.
- saccate:** pouched or with pouched projections.
- sagittate:** shaped like an arrow-head.

- salverform:** of a sympetalous corolla, salver-shaped, i.e. with a slender tube and abruptly expanded flat, rotate limb (like the corolla of *Primula*).
- samara:** a dry, indehiscent fruit with its wall expanded into a wing.
- saprophyte:** an organism deriving its nourishment from dead organic matter and usually lacking chlorophyll. *cf.* **autotrophic**, **epiphyte**, **hemisaprophyte**, **holosaprophyte**, **parasite**.
- sarcotesta:** the fleshy outer layer of the seed coat in cycads.
- scaberulous:** slightly or minutely rough to the touch, minutely scabrous.
- scabrate:** rough
- scabridulous:** slightly rough; diminutive of scabrous.
- scabrous** (= scabrid): rough to the touch.
- scalariform:** having a ladder-like pattern.
- scale:** a reduced or rudimentary leaf, e.g. surrounding a dormant bud; a thin flap of tissue of epidermal origin, e.g. at the base of a stamen in Simaroubaceae; a thin scarious trichome which is flattened and variously shaped.
- scandent:** climbing.
- scape:** the stem-like, flowering stalk of a plant with radical or rosulate leaves.
- scarious:** dry and membranous.
- schizocarp:** a dry fruit formed from more than one carpel but breaking apart into 1-carpel units when ripe. *cf.* **mericarp**.
- sclereid:** a cell (usually elongated) with a strongly lignified wall.
- sclerenchyma:** mechanical tissue with heavily thickened cell walls.
- scleromorph:** a plant whose leaves (or stems, if leafless) are hard in texture, usually having thick cuticle and containing many fibres. *cf.* **xeromorph**.
- sclerophyllous:** with leaves stiffened by sclerenchyma.
- scorpioid:** of a cymose inflorescence, branching alternately on one side and then the other, with the main axis coiled like the tail of a scorpion. *cf.* **helicoid**.
- scribble:** irregular lines on the bark of some eucalypts, being the old tunnels burrowed by moth larvae between bark layers and exposed when the outer layer falls.
- secund:** with all the parts grouped on one side or turned to one side (applied especially to the grouping of flowers in an inflorescence or stamens in a flower).
- seed:** a propagating organ formed in the sexual reproductive cycle of gymnosperms and angiosperms, consisting of a protective coat enclosing an embryo and food reserves.
- segment:** a part or sub-division of a divided organ; one of a group of similar organs named collectively, e.g. one petal = a segment of a corolla.
- semicraspedodromous:** pinnate venation in which the secondary veins branch just inside the margin, one of the branches terminating at the margin, the other joining the superadjacent secondary vein. *cf.* **acrodromous**, **brochidodromous**, **eucamptodromous**.
- sepal:** a member of the (usually green) outer whorl of non-fertile parts surrounding the fertile organs of a flower.
- sepaloid:** looking like sepals, e.g. of bracts, usually green and arranged in a ring beneath a flower.
- septate:** divided internally by partitions (septa).
- septicidal:** of the dehiscence of a fruit, along lines coinciding with the partitions between loculi. *cf.* **loculicidal**.
- septifragal:** of the dehiscence of a fruit, the valves or backs of the carpels breaking away leaving the septa intact.
- septum:** a partition. pl. **septa**.
- seriate:** in rows or whorls.
- sericeous:** silky; covered with silky hairs.
- serrate:** toothed, with asymmetrical teeth pointing forward, like a saw blade.
- serrulate:** finely serrate.
- sessile:** without a stalk, e.g. when applied to a stigma, indicates that the style is absent, the stigma being 'sessile' on the ovary.

- seta**: a bristle or stiff hair; terminal seta: an appendage to the tip of an organ, e.g. to the primary rachis of a bipinnate leaf in *Acacia*. adj. **setaceous**. pl. **setae**.
- setiferous**: producing or bearing setae.
- setose**: covered with bristles.
- setulose**: covered with fine bristles; resembling a fine bristle.
- sheath**: the lower portion of a grass leaf, clasping the stem; one of the wing-like extensions to the margins of the petiole which wrap around and enclose the stem; closed sheath: one in which the wings are fused to form a cylinder; open sheath: one with a slit on the side opposite to the lamina.
- shrub**: a woody plant less than 5 metres high, either without a distinct main axis, or with branches persisting on the main axis almost to its base.
- sigmoid**: doubly curved in opposite directions like the letter S.
- siliceous**: containing silica.
- silicula**: a short siliqua, not more than twice as long as its width.
- siliqua**: a dry, dehiscent fruit formed from a superior ovary of two carpels, with two parietal placentas and divided into two loculi by a false septum between the placentas.
- simple**: undivided; of a leaf or frond, not divided into leaflets; of a hair or an inflorescence, not branched.
- sinistrorse**: turned towards the left. *cf.* **dextrorse**.
- sinuate**: with deep, wave-like depressions along the margin. *cf.* **undulate**.
- sinus membrane**: the membrane of a depression between adjacent lobes in a pinna, especially in the *Thelypteridaceae*.
- sinus**: a notch or depression in the margin of an organ.
- sobol**: a shoot originating near the ground.
- solenostele (=siphonostele)**: a tubular stele with both external and internal phloem.
- solitary**: of flowers, borne singly, not grouped in an inflorescence.
- soral flap**: the specialised fertile lobe unique to *Adiantum*.
- sorus**: in ferns, a discrete group of sporangia. pl. **sori**.
- spadix**: a spicate inflorescence with a stout, often succulent axis.
- spathaceous**: like a spathe; with a spathe.
- spathe**: a large bract ensheathing an inflorescence.
- spathella**: in some *Podostemaceae*, a closed membranous sac which envelopes the immature flower, rupturing irregularly as the pedicel elongates at anthesis.
- spathulate (= spatulate)**: spoon-shaped; broad at the tip and narrowed towards the base.
- species**: a taxon comprising one or more populations of individuals capable of interbreeding to produce fertile offspring.
- spike**: an unbranched, indeterminate inflorescence in which the flowers are without stalks. adj. **spicate**.
- spikelet**: a unit of the inflorescence in grasses, sedges and some other monocotyledons, consisting of one to many flowers and associated glumes.
- spine**: a stiff, sharp-pointed structure, formed by modification of a plant organ, e.g. a lateral branch or a stipule.
- spinescent**: ending in a spine; modified to form a spine.
- spinose**: bearing spines.
- spinulose**: with small spines.
- spiral**: of leaves or floral organs, borne at different levels on the axis, in an ascending spiral. *cf.* **cyclic**, **whorl**.
- sporangiate**: bearing spores (or pollen).
- sporangiphore**: the stalk of a sporangium; in *Botrychium*, the branched axis bearing sporangia.
- sporangium**: a structure within which spores are formed. pl. **sporangia**.
- spore**: a unicellular or few-celled sexual or asexual reproductive propagule.
- sporocarp**: a fruiting body containing sporangia.
- sporogenous**: of cells or tissues, spore-generating.
- sporophyll**: a specialised leaf-like organ on which one or more sporangia are borne.

- sporophyte:** a plant, or phase of a life cycle, that bears the spores formed during the sexual reproductive cycle. cf. **gametophyte**.
- spur:** a tubular pouch at the base of a perianth part, often containing nectar.
- squamule:** a small scale.
- squarrose:** with spreading and divergent scales or processes.
- stamen:** one of the male organs of a flower, consisting typically of a stalk (filament) and a pollen-bearing portion (anther). adj. **staminate**.
- staminal corona:** in Asclepiadaceae, fleshy outgrowths of tissue, attached dorsally to the staminal column at the base of the filaments or on the backs of the anthers. See **gynostegial corona**.
- staminode:** a sterile stamen, often rudimentary, sometimes modified, e.g. petaloid.
- staminophore:** a band of tissue around the apex of the hypanthium in a eucalypt flower, on which the stamens are inserted.
- standard** (= vexillum): the posterior petal in the flower in Fabaceae and Caesalpiniaceae.
- stele:** the vascular system of rhizome or stem, together with leaf traces.
- stellate:** star-shaped; consisting of star-shaped cells.
- stem:** the main axis or a branch of the main axial system of a plant, developed from the plumule of the embryo and typically bearing leaves.
- stereome:** (in Asteraceae) a central sclerified part of an involucre bract that may be entire or divided in two.
- stigma:** the pollen-receptive surface of a carpel or group of fused carpels, usually sticky.
- stipe:** a small stalk; in ferns, the stalk of a frond; that portion of the midrib of the frond between the rhizome and the lowermost primary pinna.
- stipel:** stipule-like appendage at the base of a leaflet (in unifoliolate leaves, inserted on the petiole, not on the stem). pl. stipellae. adj. **stipellate**.
- stipitate:** stalked; borne on a stipe; of an ovary, borne on a gynophore.
- stipule:** one of a pair of appendages at the bases of leaves in many dicotyledons.
- stolon:** a prostrate or trailing stem that produces roots at the nodes. cf. **rhizome**, **runner**.
- stoloniferous:** having stolons; trailing over the soil surface and rooting at the nodes.
- stoma:** a pore; a pore in the epidermis of a leaf or other aerial organ, providing for gaseous exchange between the tissues and the atmosphere. pl. **stomata**.
- stomium:** a region of dehiscence, e.g. of an anther in flowering plants or the region of a sporangium at which dehiscence occurs and the spores are released. pl. **stomia**.
- stone cell:** a ±isodiametric sclereid.
- stramineous:** straw coloured, pale yellow.
- striate:** striped with parallel longitudinal lines or ridges.
- strigose:** with sharp, stiff, slanting hairs, hair-like scales or bristles which are appressed to the surface.
- strigulose:** minutely strigose.
- strobilus:** a cone-like body, as in the Lycopodiaceae and Selaginellaceae, consisting of sporophylls borne close together on the axis. plural **strobili**.
- strophiole:** see **caruncle**.
- struma:** a cushion-like swelling, e.g. at the apex of staminal filaments in *Dianella*.
- style:** an elongated part of a carpel, or group of fused carpels, between the ovary and the stigma.
- stylopodium:** a disc-like enlargement of the base of the style.
- subulate:** narrow and tapering gradually to a fine point.
- sulcate:** grooved; furrowed.
- superficial:** when applied to sori, those arising from the surface, rather than the margin, of a lamina, pinna or pinnule.
- superior:** of an ovary, borne above the level of attachment of the other floral parts, or above the base of a cup (hypanthium) that is free from the ovary and bears the perianth segments and stamens. cf. **inferior**.
- suture:** a line of junction between two fused organs; a line of dehiscence.
- syconium:** a multiple fruit with a hollow centre, e.g. in figs (*Ficus*).

- sympatric:** of distributions of two taxa or populations, having coincident or overlapping ranges of distribution. *cf.* **allopatric**, **parapatric**.
- sympetalous:** (= gamopetalous): with the petals united by their margins, at least at the base. *cf.* **polypetalous**.
- sympodial:** of growth, without a single, persistent growing point; changing direction by frequent replacement of the growing apex by a lateral growing point below it; of a stem, growing in the above manner. *cf.* **monopodial**.
- syndrium:** an androecium with the anthers of the stamens cohering. *cf.* **syngenesious**.
- syngangium:** a group of fruits fused into a single structure; in ferns, a group of fused sporangia, e.g. in *Psilotum*, *Marattia*. plural **syngangia**.
- synapomorphic:** of a character, derived, and shared by two or more taxa. *cf.* **apomorphic**, **autapomorphic**.
- syncarp:** a structure consisting of several united fruits, usually fleshy. *cf.* **aggregate fruit**.
- syncarpous:** of a flower, having two or more carpels, all fused together.
- synflorescence:** a compound inflorescence; in Asteraceae, an aggregation of capitula which may be variously arranged in cymes, panicles, spikes, etc, or closely fused into a compound capitulum, with or without surrounding bracts.
- syngenesious:** of the stamens of one flower, fused together by the anthers, e.g. in Asteraceae. *cf.* **monadelphous**, **syndrium**.
- synoecious:** with male and female flowers in the same inflorescence.
- syntepalum:** in some Musaceae, a unilaterally split tube formed by the coherence of 3 sepals and 2 petals.
- syntype:** one of two or more specimens cited by the author at the time of publication of a name if no holotype was designated; any one of two or more specimens simultaneously designated as types; isosyntype: a duplicate of the syntype. *cf.* **type**.

T

- tannin:** a complex, aromatic compound occurring in the bark of many shrubs and trees.
- tanniferous:** producing tannins.
- taproot:** the main, descending root of a plant that has a single, dominant root axis.
- taxon:** a group or category, at any level, in a system for classifying plants or animals. pl. **taxa**.
- tendril:** a slender climbing organ formed by modification of a part of a plant, e.g. a stem, a leaf or leaflet, a stipule.
- tenuixinous:** of a pollen grain, with a thin exine.
- tepal:** a perianth segment in a flower in which all the perianth segments are similar in appearance.
- terete:** cylindrical or nearly so; circular in cross-section.
- terminal:** at the apex or distal end.
- ternate:** in groups of three; of leaves, arranged in whorls of three; of a single leaf, having the leaflets arranged in groups of three.
- ternatifid:** of leaves, deeply cut into three lobes. *cf.* **pinnatifid**.
- terrestrial:** of or on the ground; of the habitat of a plant, on land as opposed to in water, or on the ground as opposed to on another plant.
- testa:** a seed coat.
- testiculate:** testicle-like.
- tetrad:** a group of four; four pollen grains remaining fused together at maturity, e.g. in Ericaceae, Epacridaceae.
- tetradynamous:** of an androecium, consisting of four stamens of the same length and two of a different length. *cf.* **didynamous**.
- tetrahedral:** having four sides.
- tetramerous:** of a flower, having four segments in each perianth whorl, and usually four in each whorl of stamens also.

- tetraploid:** having four of the basic sets of chromosomes in a nucleus. *cf.* **diploid, haploid, polyploid, triploid.**
- tetrastichous:** arranged in four regular vertical rows, but not necessarily decussate.
- thallus:** the vegetative body of a plant that is not differentiated into organs such as stems and leaves, e.g. the gametophytes of ferns, and Lemnaceae.
- thigmotaxis:** a response, by movement or growth, to a mechanical stimulus, e.g. the leaves of 'Sensitive Plant' (*Mimosa*), the leaf hairs of *Drosera*, or the tendrils of many climbing plants. adj. **thigmotactic.**
- thorn:** a modified plant organ, especially a stem, that is stiffened and terminates in a pungent point.
- throat:** of a corolla tube, the top, where the tube joins the lobes.
- thyrses:** a branched inflorescence in which the main axis is indeterminate and the lateral branches determinate in their growth.
- tomentellous:** minutely tomentose.
- tomentum:** a covering of dense, matted, woolly hairs. adj. **tomentose.**
- torus:** see receptacle.
- trabecula:** a transverse partition dividing or partly dividing a cavity.
- tracheid:** an elongated closed cell of wood having secondary thickening and conducting water.
- trans-lacunar diaphragm:** a plate two or three cells in thickness, perforated by pores, in the leaves of *Isoetes*.
- translator:** applied to parts of a pollinarium, comprising the central part or corpusculum, and the arm-like structures or caudicles uniting the corpusculum with the pollinia.
- trapeziform:** having four straight unequal sides.
- tree:** a woody plant at least 5 metres high, with a main axis the lower part of which is usually unbranched.
- trichome:** an epidermal outgrowth, e.g. a hair (branched or unbranched), a papilla.
- trichotomous:** branching almost equally into three parts.
- trifid:** deeply divided into three parts.
- trifoliate:** having three leaves.
- trifoliolate:** of a leaf, having three leaflets.
- trigonal:** triangular in cross-section and obtusely-angled. *cf.* **triquetrous.**
- trilete:** of spores, with a three-pronged scar.
- trimerous:** arranged in whorls of three.
- trimerous:** of a flower, having three segments in each perianth whorl and usually three in each whorl of stamens also.
- tripartite:** divided into three parts.
- tripinnate:** of leaves, thrice pinnately divided. *cf.* **bipinnate, pinnate.**
- triplicate:** folded three times.
- triploid:** having three of the basic sets of chromosomes in the nucleus. *cf.* **diploid, haploid, polyploid, tetraploid.**
- triquetrous:** triangular in cross-section and acutely-angled; with three distinct longitudinal ridges. *cf.* **trigonal.**
- tristichous:** arranged in three rows on a stem, each row in the same plane.
- tristylous:** heterostylous species having three style lengths (short, mid, long), the flowers of any one plant having styles of the same length.
- trulliform:** shaped like a bricklayer's trowel, i.e. angular-ovate, broadest below the middle, rhomboid with the two lower equal sides shorter than the upper.
- truncate:** with an abruptly transverse end, as if cut off.
- tuber:** a storage organ formed by swelling of an underground stem or the distal end of a root.
- tubercle:** a small wart-like outgrowth.
- tuberculate:** covered with tubercles.
- tuberous:** swollen; of roots, tuber-like.
- tumid:** swollen; inflated.

tunic: of a bulb or corm, the thin membranous or fibrous outer layers.
turbinate: top-shaped, obconical.
turgid: swollen due to high water content. *cf.* **flaccid**.
turion: an over-wintering vegetative bud or specialised short shoot with modified leaves, arising from the stem, often near ground level.
type: a designated representative (standard) for a plant name. *cf.* **holotype, isotype, lectotype, neotype, paratype, syntype**.

U

umbel: a racemose inflorescence in which all the individual flower stalks arise in a cluster at the top of the peduncle and are of about equal length.
umbellule: secondary umbel in a compound umbellate inflorescence.
uncinate: terminating in a hooked point.
undulate: wavy, i.e. not flat. *cf.* **sinuate**.
unifacial: of leaves, where the adaxial (upper) edge is homologous with the adaxial surface of a dorsiventral leaf and the remainder is derived from the abaxial surface. *cf.* **bifacial**.
unifoliate: having one leaf.
unifoliolate: of a leaf, basically compound, but reduced to only one leaflet.
unilateral: of stamens, with anthers grouped on one side of the style.
unilocular: of an ovary, anther or fruit, having only one internal cavity.
unisexual: bearing only male or only female reproductive organs.
united: fused together.
urceolate: urn-shaped.
utricle: a small bladder; a membranous bladder-like sac enclosing an ovary or fruit.

V

valvate: of perianth parts, meeting edge to edge in the bud, not overlapping. *cf.* **imbricate**.
valve: a portion of an organ that has fragmented; of a capsule, the teeth-like portions into which the dehiscing part of the pericarp splits at maturity.
vascular: specialised for conduction of fluids; vascular plants: plants containing specialised conducting tissues.
vascular bundle: the primary fluid-conducting system of a plant.
vein: a strand of vascular tissue.
velamen: a water-retaining outer layer of the aerial roots of some epiphytes, especially orchids.
velum: a membranous covering; a veil; a flap-like envelope which partially or wholly covers the sporangium in ferns.
venation: the arrangement of the veins in a lamina.
ventral: of a lateral organ, facing towards the subtending axis; of a thallus, facing towards the substratum. *cf.* **dorsal**.
vermiculate: with worm-like projections.
vernation: the arrangement of the unexpanded fronds in a bud.
vernation: the arrangement of unexpanded leaves in a bud. *cf.* **aestivation**.
vernicose: varnished.
verrucose: covered with wart-like outgrowths, warted.
verruculose: covered with closely spaced, minute wart-like outgrowths.
versatile: of anthers, swinging freely about the point of attachment to the filament, which is approximately central. *cf.* **basifixed, medifixed**.
verticil: a whorl or circular arrangement of similar parts around an axis.
verticillaster: a false whorl of opposed cymes.
verticillate: arranged in one or more whorls; a false whorl of flowers in a pair of opposite dense cymes, especially in Lamiaceae.
vesicle: a bladder-like sac or cavity filled with gas or liquid.

vessel: a capillary tube formed from a series of open-ended cells in the water-conducting tissue of a plant.

vestigial: reduced from the ancestral condition and no longer functional. *cf.* **obsolete, rudimentary.**

vexillum: = standard.

villous: shaggy with long, weak hairs. *cf.* **hirsute.**

virgate: with a broom-like habit, more or less densely branched with stiff, more or less erect branches, leaves usually small

viscid: of a surface, sticky; coated with a thick, syrupy secretion.

viscidium: in Orchidaceae, a viscid part of the rostellum which is clearly defined and removed with the pollinia as a unit, serving to attach the pollinia to an insect or other pollination vector.

viscous: of a liquid, not pouring freely; having the consistency of syrup or honey.

viviparous: of seeds or fruits, germinating before being shed from the parent plant.

W

wallum: coastal vegetation on sandy acidic soils, in south-eastern Queensland.

whorl: a ring of leaves, bracts or floral parts borne at the same level on an axis. *cf.* **cyclic, spiral.**

wing: a membranous expansion of a fruit or seed, which aids dispersal; a thin flange of tissue extended beyond the normal outline of a stem or petiole; a lateral petal of a flower in Fabaceae.

X

xeromorph: a plant having structural features usually associated with plants of arid habitats (such as hard or succulent leaves) but not necessarily drought-tolerant. *cf.* **scleromorph, xerophyte.**

xerophyte: a drought-tolerant plant. *cf.* **xeromorph.**

xylem: the tissue, in a vascular plant, that conducts water and mineral salts from the roots to the leaves.

Z

zygomorphic (= irregular): of a flower or calyx or corolla, bilaterally symmetrical, symmetrical about one plane only, usually the plane that bisects the flower vertically along the longitudinal axis. *cf.* **actinomorphic, peloric.**