

Glossary of botanical terms used in the Orchidaceae

Within the definitions, *italics* indicate terms that are defined in this glossary. Adapted from the glossary in Pridgeon, A. M. et al. (eds.). 1999–. Genera Orchidacearum, 1–. Oxford & New York: Oxford University Press.

- adventitious** – applied to roots that do not rise from the radicle but from the stem, etc.; also applied to embryolike structures in a seed that arise from outside the true embryo and often abort.
- androclinium* – see *clinandrium*.
- anther bed* – see *clinandrium*.
- anther canal** – narrow basal part of anther enclosing the *caudicle*.
- anther cap** – a lid formed from the dry outer wall of an anther.
- aseptate** – without a *septum*.
- auricle** – a small lobe or ear, applied to the *lip*; also a small lateral outgrowth on the anther.
- autotroph** (adjective **autotrophic**) – a plant that produces its own nutrition by means of photosynthesis, containing chlorophyll and hence green.
- bract** – a frequently leaflike organ (often very reduced or absent) subtending a flower, inflorescence, or partial inflorescence in its axil, sometimes brightly colored.
- bursicle** – a purselike or pouchlike structure enclosing the *viscidia*.
- calceolate** – slipper-shaped.
- callus** (plural **calli**) – a waxy, fleshy, or other protuberance, as on the *lip*.
- calyculus** – a small cup or circle of bractlike structures outside the *sepals*, e.g., in *Lecanorchis*.
- cataphyll** – a scalelike leaf, often referring to the first such leaves on a shoot.
- caudicle** – an extension of tissue derived from the anther and connecting the *pollinia* to the *stipe* or, in orchids without a *stipe*, directly to the *viscidium*.
- caudiculate** – with *caudicles*.
- claw** – the conspicuously narrowed base of an organ; in the orchids usually applied to the *lip*, but can also be applied to the *sepals* or *petals*.
- clinandrium** – the portion of the orchid *column* underneath the anther.
- column** – an organ of the orchid flower representing the fusion of filaments and style.
- column foot** – an extension at the base of the *column* in some orchids, to which the *lip* and sometimes the lateral *sepals* are attached.
- column wings** – distinct wings on the column of some orchids; these are not “column arms” or *stelidia*.
- conduplicate** – folded together lengthwise with the adaxial surfaces facing each other (e.g., a leaf).
- disk** – usually in orchids the area between the lateral lobes in the basal half of the *lip*, the place where the *callus* is usually placed, or sometimes the removable part of the *rostellum* projection.
- dorsal sepal** – referring to the apparently upper *sepal* of a flower; in the majority of orchids this is actually the lower sepal because the flowers are *resupinate*.
- dropper** – a storage organ, primarily a swollen root, but with a bud and some stem structure at the base; it may push down into the soil and form a tuber, placing the plant lower in the soil.
- ecaudiculate** – without *caudicles*.
- elastoviscin** – a highly viscous product of the degeneration of a limited number of tapetal cells keeping pollen together in orchid *pollinia*.
- elaters** – spiral thickenings or hairs which help to disperse spores or seeds, often by hygroscopic action.
- epichile** – terminal lobe of a *lip* that is differentiated into a *hypochile*, sometimes a *mesochile*, and an *epichile*.
- epigeal, epigeous* – see *terrestrial*.
- epilithic* – see *lithophytic*.
- epiphyte** (adjective **epiphytic**) – a plant growing on another plant as its substrate, but not parasitic.
- equitant** – 2-ranked *conduplicate* leaves or bracts with overlapping, clasping bases.
- foliage leaf** – an ordinary, fully developed, and functioning leaf.
- gynandrium, gynostemium* – see *column*.
- gullet** – interior of a conical orchid flower, which the pollinator enters, as in most species of *Dendrobium*.
- hamulus** – a type of *stipe* representing the recurved apex of the *rostellum*.
- heteranthonous** – flowering from special shoots that do not produce *pseudobulbs* or *foliage leaves*.
- heteromycotroph** (adjective **heteromycotrophic**) – a plant that is a *mycotroph* as part of its method of nutrition, usually with inadequate photosynthesis and hence often not green; a facultative mycotroph.
- holomycotroph** (adjective **holomycotrophic**) – a plant that is a *mycotroph* as its sole method of nutrition, without chlorophyll and hence not green; an obligate mycotroph. This condition has often been erroneously referred to as *saprophytic*.
- hypochile** – basal lobe of a *lip* that is differentiated into a *hypochile*, sometimes a *mesochile*, and an *epichile*.
- hysteranthonous** – when an apical inflorescence is produced after the *pseudobulb* and leaves on the same shoot. The inflorescence develops on the top of a fully developed pseudobulb with a fully grown leaf or leaves.
- keiki** – in orchids, a distal vegetative branch of the main stem, which ultimately grows roots and separates.
- labellum* – see *lip*.
- lip** – the median, modified petal of an orchid flower.
- lithophyte** (adjective **lithophytic**) – a plant that grows on rock as its substrate.
- massula** (plural **massulae**) – a mass or packet of pollen grains in *sectile pollinia*.
- mentum** – a spurlike or chinlike extension of the flower composed of the variably united *column foot*, *lip*, and lateral *sepals*.
- mesochile** – the middle lobe of a *lip* that is differentiated into a *hypochile*, sometimes a *mesochile*, and an *epichile*.
- monopodium** (plural **monopodia**, adjective **monopodial**) – referring to a growth habit in which new leaves develop from the same meristem or growing point as all previous leaves; cf. *sympodial*.
- mycorrhiza** – the association of fungi and roots of higher plants, often termed a *symbiosis*.
- mycotroph** (adjective **mycotrophic**) – a plant that obtains part or all of its nutrition from organic substances provided by fungi. See also *heteromycotroph* and *holomycotroph*.
- naked pollinia** – *pollinia* of orchids that lack *caudicles* and other elements of the *pollinarium*.
- operculum* – see *anther cap*.
- palea** – flat or terete moveable appendages attached by a threadlike base, found on the *sepals* and *petals* of certain species of *Bulbophyllum*.
- peloric** – an unusual actinomorphic form of a flower that is normally zygomorphic.

- petal** – any of the whorl of flower parts generally just inside the *sepals*, usually colorful and showy.
- pollinarium** (plural **pollinaria**) – the functional unit of pollen transfer in orchid pollination, consisting of two or more *pollinia* (sometimes with *caudicles*), often a *stipe*, and a *viscidium*.
- pollinium** (plural **pollinia**) – a coherent mass of pollen grains.
- proteranthous** – when an inflorescence is produced before the *pseudobulb* and leaves on the same shoot. The inflorescence develops on the top of a vegetative shoot, of which the leaf or leaves and the terminal internode are not yet developed.
- protocorm** – the ephemeral structure resulting from the germinated orchid seed and from which the first true shoot and root differentiate.
- pseudobulb** – the variously thickened portion of an aerial orchid stem.
- pseudoindefinite** – (of orchids) denotes a stem that grows indefinitely although the plant retains the *sympodium* and produces new shoots at the base.
- pseudopollen** – a mealy, farinose, pollenlike deposit, e.g., on the *lip* in some orchids.
- pseudoraceme** – a specialized leafless apical portion of the stem bearing inflorescences.
- pseudoterminal** – when an inflorescence is apparently terminal, but is actually axillary on a very short terminal internode that is usually concealed by small *bracts*.
- resupinate** – with the pedicel twisted so that the *lip* is always in the same position (usually at the bottom of the flower) regardless of the position of the inflorescence.
- rhizome** – the indeterminate stem or system of stems of many plants, such as *sympodial* orchids, which successively give rise to new shoots and flowers, often horizontal or underground but sometimes appressed to branches or rocks.
- rostellum** – part of the median stigma lobe of orchid flowers.
- rostellum remnant** – the often cleft or 2-lobed part of the *rostellum* that remains after the *viscidium* has been removed by a pollinator.
- rupicolous* – see *lithophytic*.
- saprophyte** (adjective **saprophytic**) – deriving its nourishment, in whole or part, from decaying organic matter. Often used incorrectly for a *heteromycotroph* or *holomycotroph* that lacks chlorophyll. Fungi are true saprophytes.
- sectile** – referring to *pollinia* comprising several “packets” connected by *elastoviscin*.
- sepal** – any of the outermost whorl of lower parts, often as colorful and showy as the *petals* in orchids.
- septum** (plural **septa**, adjective **septate**) – a partition, e.g., in the *spur* of the *lip* of some orchids.
- sinker* – see *dropper*.
- spur** – a saccate or tubular extension of the *lip* (or other floral parts) in many orchids, often containing nectar.
- stelidium** (plural **stelidia**) – a discrete arm or projection borne on each side of the *column*, near the apex, middle, or base, often slender and elongated; e.g., in *Bulbophyllum* and *Dendrochilum*; usually interpreted as staminodia (sterile anthers).
- stipe** – a *pollinium* stalk derived from the *rostellum*.
- stipes* (plural *stipites*) – see *stipe*.
- superposed** – placed on top of each other or at opposite ends.
- symbiosis** – an ecological relationship between two different organisms in which both obtain mutual benefit.
- sympodium** (plural **sympodia**, adjective **sympodial**) – a discontinuous main axis, where the stem is made up of a series of superposed branches, these imitating a single main axis: each new shoot developing from an axillary bud on the previous shoot unit; stem, where growth is, continued not by the main stem but by lateral branches; prevalent in monocots; sympodial inflorescences include the dichasium, rhipidium, cincinnus, and false umbel.
- synanthous** – when *pseudobulb*, leaf, and apical inflorescence are produced together.
- synsepal** – a floral part formed by the partial or complete fusion of two or more *sepals*.
- tegula** – a *pollinium* stalk consisting of the modified epidermis of the *rostellum* and possibly also subtending layers of cells.
- terrestrial** – growing on the ground.
- tuberoid* – see *dropper*.
- velamen** – the spongy outer layer of an orchid root, consisting of dead cells at maturity.
- viscarium* – see *viscidium*.
- viscidium** (plural **viscidia**) – the sticky portion of the *rostellum*, which is often connected to *pollinia*.

Figures

The following figures are provided to illustrate some of the terms defined in the glossary and to show examples of habit and morphology in the five subfamilies of the Orchidaceae. The figures were redrawn from previously published drawings by:

Eleanor Catherine *in*: Cribb, P. J. 1997. The Genus *Cypripedium*. Portland, Oregon: Timber Press. *Cypripedium yunnanense* (p. 200, fig. 30).

Judi Stone *in*: Pridgeon, A. M. et al. (eds.). 1999, 2003. Genera Orchidacearum, 1, 3. Oxford & New York: Oxford University Press. *Apostasia wallichii* (1: 100, fig. 2.1) and *Erythrorchis altissima* (3: 312, fig. 219.1).

Susanna Stuart-Smith *in*: Pearce, N. R. & Cribb, P. J. 2002. The Orchids of Bhutan [Flora of Bhutan, 3(3)]. Edinburgh: Royal Botanic Garden Edinburgh and Royal Government of Bhutan. *Ponerorchis chusua* (p. 135, fig. 36, as *Chusua pauciflora*), *Cryptochilus luteus* (p. 366, fig. 88), *Cleistoroma linearilobatum* (p. 510, fig. 113), and *Diploprora championii* (p. 516, fig. 114).

Gunnar Seidenfaden and Povl Juul *in*: Seidenfaden, G. 1978. Orchid Genera in Thailand, 6. Dansk Botanisk Arkiv, 32(2). *Goodyera procera* (p. 24, fig. 8h).

Various artists, after Richard Eric Holttum *in*: Seidenfaden, G. & Wood, J. J. 1992. The Orchids of Peninsular Malaysia and Singapore. Fredensborg: Olsen & Olsen. *Spathoglottis plicata* (p. 15, fig. 2), *Vanda* ‘Miss Joaquim’ (p. 18, fig. 4), and *Dendrobium crumenatum* (p. 22, fig. 6).

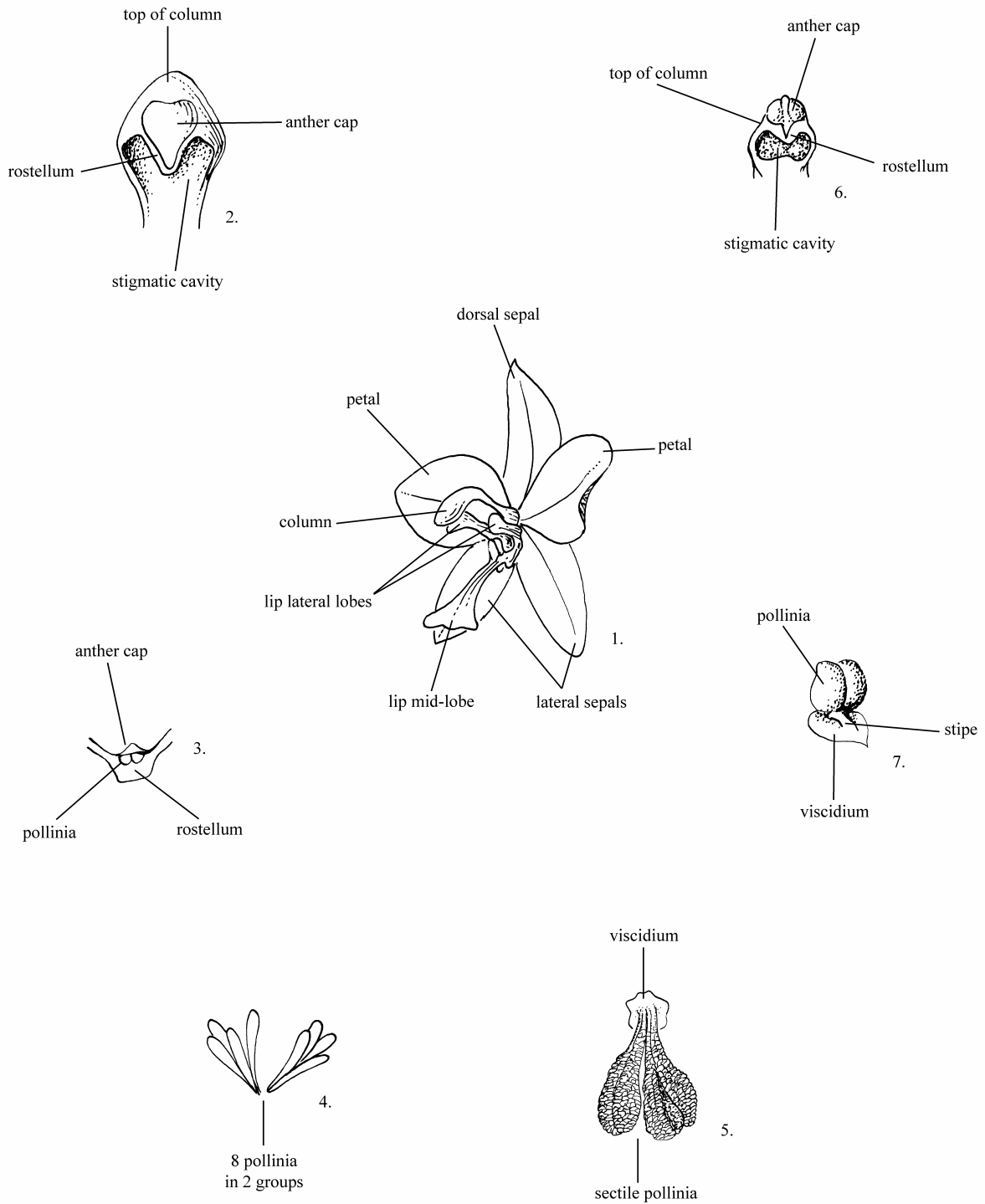


Figure 1. 1–7. Flower structure in the Orchidaceae. 1–4. *Spathoglottis plicata*. 5. *Goodyera procera*. 6–7. *Vanda*.

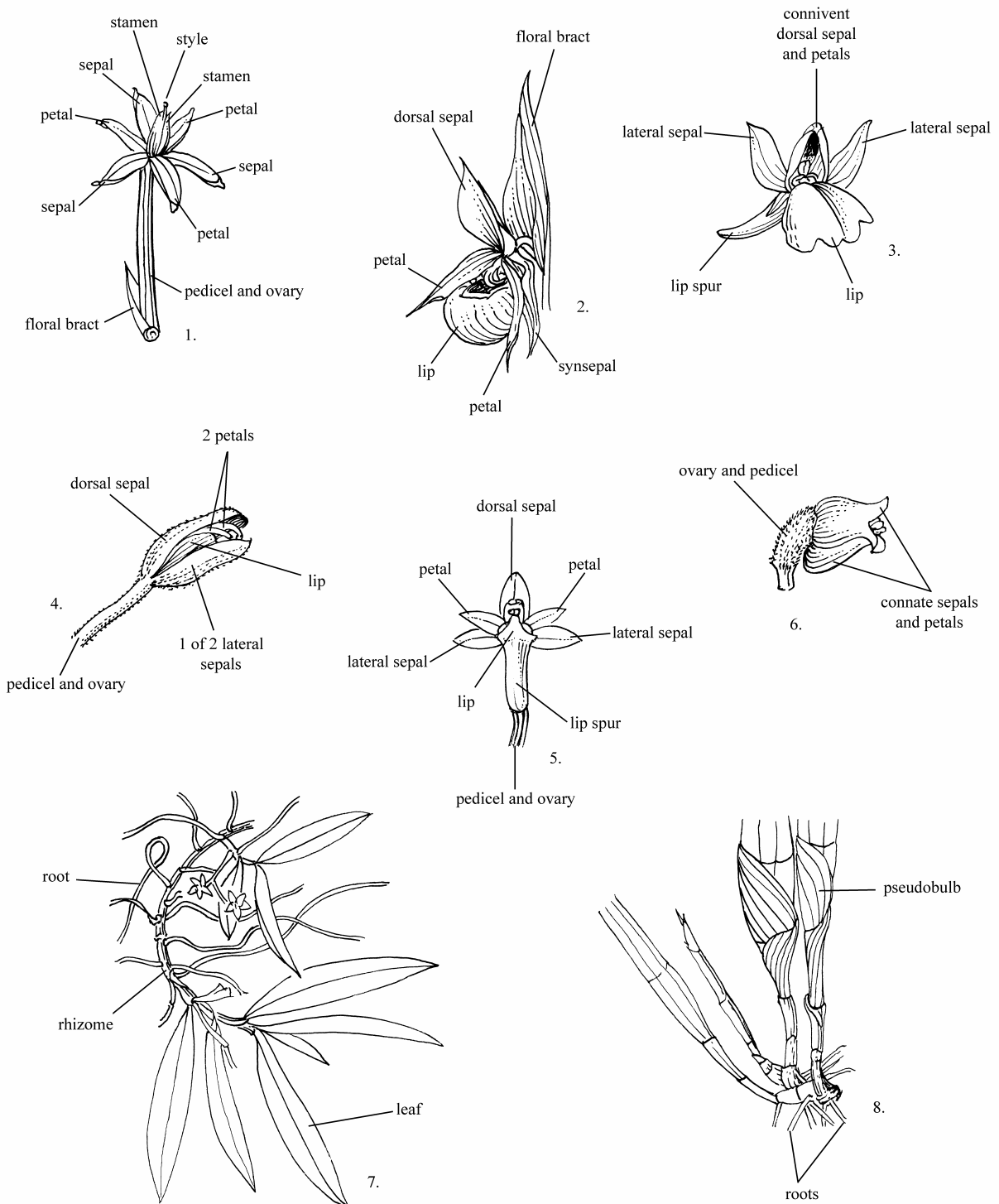


Figure 2. 1–6. Examples of flowers in the five subfamilies of the Orchidaceae. —1. Apostasioideae (*Apostasia wallichii*). —2. Cyripedioideae (*Cyripedium yunnanense*). —3. Orchidoideae (*Ponerorchis chusua*). —4. Vanilloideae (*Erythrorchis altissima*). —5. Epidendroideae (*Cleisostoma linearilobatum*). —6. Epidendroideae (*Cryptochilus luteus*). 7–8. Monopodial and sympodial growth habit. —7. Monopodial (*Diploprora champinii*). —8. Sympodial (*Dendrobium crumenatum*).



Figure 3. 1–3. Examples of plants in the subfamilies of the Orchidaceae. —1. Apostasioideae (*Apostasia wallichii*). —2. Cypripedioideae (*Cypripedium yunnanense*). —3. Orchidoideae (*Ponerorchis chusua*).



Figure 4. 1–6. Examples of plants in the subfamilies of the Orchidaceae. 1–2. Vanilloideae (*Erythrorchis altissima*). —1. Habit. —2. Capsules. 3. Epidendroideae (*Cleisostoma linearilobatum*). 4–6. Epidendroideae (*Cryptochilus luteus*). —4. Habit. —5. Inflorescence. —6. Inflorescence.