

Orchid 'Dictionary'

In the wonderful, weird, and wacky world of orchids, a number of terms are used. Some are proper scientific terms with a very specific meaning, while others are industry (greenhouse or garden) terms, with a meaning specific to the orchid world.

AOS = The American Orchid Society

RHS = The Royal Horticultural Society in the UK, which registers the names of new hybrids.

Orchid genus names are often abbreviated. The full list of abbreviations currently extends to more than 30 pages, it can be looked up on the internet.

Taxonomy

All plant species are identified with 2 latinized names:

Genus : 'family' name (**Genera** in plural)
capitalized & italicized

Epithet : 'individual' name, species/hybrid ID
While species ID is always a single word, hybrid ID can be multiple words (where letters+spaces may total maximum 30).

Species : *lower case, italicized*

Hybrid : *Capitalized, NOT italicized*

GreX : Long story:

In most plant families, such as *Hemerocallis* (daylily), each hybrid plant from the same seed pod, can be given an individual & different name (= GreX).

In the orchid family, all plants with the same parentage are considered the same GreX, even with reciprocal breeding:

C. labiata x *C. tigrina* = **C. Victoria-Regina**
C. tigrina x *C. labiata* = **C. Victoria-Regina**
same = **C. x victoria-regina**

Since this primary hybrid also appears in nature, natural hybrids are identified with an 'x' between the genus & epithet, and the epithet is written with all lower case letters.

Individual plants with special characteristics can then be identified by adding a cultivar name (also called 'garden name'), which is only recorded/known to the individual grower. If the plant eventually receives an award from a recognized judging authority, the cultivar name becomes official. In the previous example, in 2019 the **AOS** granted one award to a plant from this GreX:

C. Victoria-Regina 'Doña Maria' AM/AOS

Since then, '**Doña Maria**' is the recognized name for divisions of this specific plant.

Orchids have few genetic barriers on breeding, so we can create hybrids with plants from different genera. These are identified with a contraction of the parental

genera:

Cattleya labiata x *Laelia anceps*

=> **Laeliocattleya Liptonii** (aka Lc. Liptonii)

This can be expanded to 3 genera:

Laelia anceps x *Rlc.* Pink Empress

=> **Rhyncatlaelia Empress Pride** (aka Ryc. E.P.)

Once 4 or more genera are involved, an artificial genus name is created (always ending in 'ara'). This is done occasionally for 3 genera combinations also:

Rhynchobrassoleya Golden Tang x *Encyclia* Cindy

=> **Johnlagerara Goldacin** (aka Jol. Goldacin)

Duplicate GreX Names

1. In the early days of manual GreX registration (1860's to 1920's), some mistakes were made:

- In some cases different names were accepted for the same parent combinations. Only the first registration is valid (later registrations become synonyms).
- In some cases the same GreX name was accepted twice for different parents. Here the year of registration is added to create individual ID.

2. Modern taxonomic changes, such as when *Laelia purpurata* became *Cattleya purpurata* and *Sophrontis coccinea* became *Cattleya coccinea*, have caused previously distinct GreX names to become duplications. To distinguish between the different parentages, the year of registration is added to the GreX name, for example:

(*Laelia cinnabarina* x *Sophrontis coccinea*)

Was **Sopholaelia Psyche**

Now ***Cattleya* Psyche (1902)**

(*Laelia Latona* x *Laelia tenebrosa*)

Was **Laelia Psyche**

Now ***Cattleya* Psyche (1904)**

Generation Identification

This is information generally of interest to breeders only. Example:

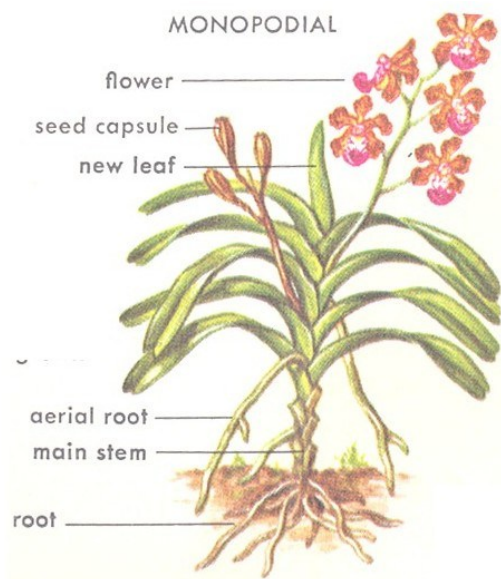
Paph. [Desdemona (1914) x *Paph.* Tania]

= *Paph.* Hellas This is the **F1** generation

Later, *Paph.* Hellas was self-pollinated, which created a new generation, also identified as *Paph.* Hellas. To distinguish, select plants from this generation, such as ***Paph.* Hellas 'Sunset'**, carry the **F2** designation. The generational identification is not recorded by the RHS or anyone else.

Plant Structure & Segments

Monopodial : Grow UP on a stem (*Phalaenopsis* & *Vanda*)



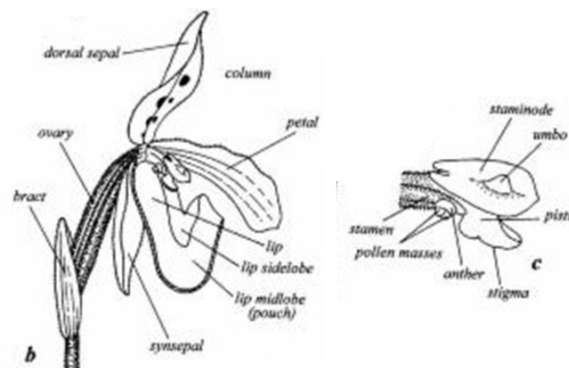
Once the plant reaches a certain height, it will start to produce basal **keikis** (plantlets with a separate stem) from the base.

In Cyripediaceae (*Cypripedium*, *Mexipedium*, *Paphiopedilum*, *Phragmipedium* & *Selenipedium*) the flower structure differs some:

The 3rd petal (lip) has become a pouch

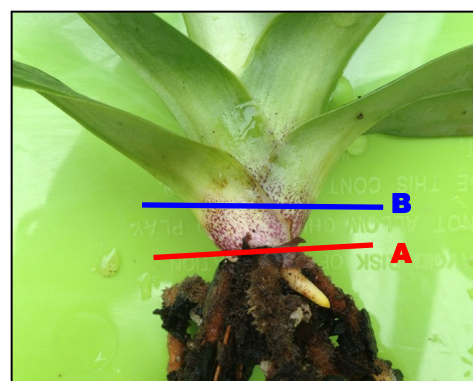
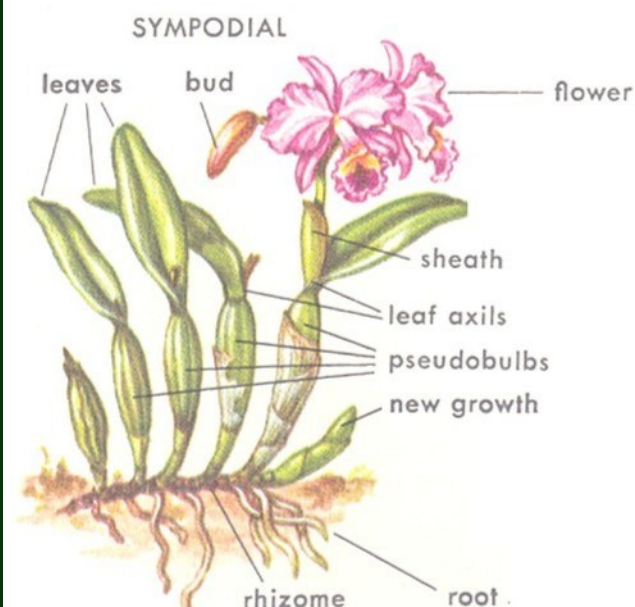
The upper sepal is enlarged (= the dorsal sepal)

The two lower sepals have fused (= the synsepal)



This group is also very particular about being repotted at the right depth into the potting mix. Both *Paphiopedilum* & *Phragmipedium* need to have the root crown $\frac{3}{8}$ " below the surface of the potting mix:

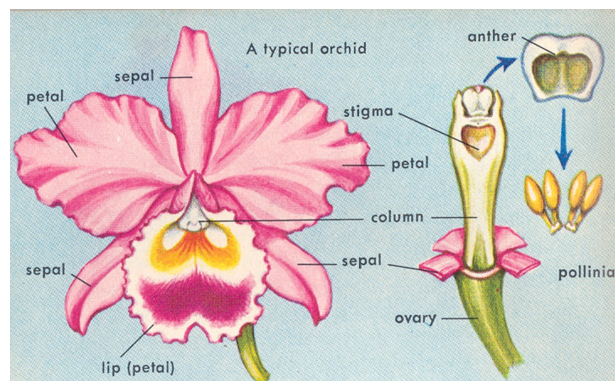
Sympodial : Grow FORWARD with new growths



A: Root Crown

B: Potting Mix

Flower Structure



Chromosomes

In some orchid families the number of chromosomes is uniform, such as 21 pollen & egg in the broader *Cattleya* family; making breeding easy across *Cattleya*, *Encyclia*, *Epidendrum*, *Laelia*, etc.

In other orchid families the number of chromosomes can vary from species to species, making breeding more difficult; this applies to *Paphiopedilum* amongst others.

For any random plant, a diploid plant (with normal number of chromosomes) is called a **2N**. These plants breed normally.

Tetraploids, whether natural or chemically induced, with a double complement of chromosomes, are identified as a **4N**. These plants typically are more robust and produce larger flowers.

Breeding a **2N** with a **4N** can produce improved flowers, but the offspring is sterile (triploid, or **3N**). Such

plants are a dead end in terms of further breeding.

In recent years some plants with higher chromosome counts have reached the market. I am aware of both **6N** & **8N**; what breeding will be done with these plants remains to be seen.

Where/How does it Grow

Epiphyte : Grows on trees

Lithophyte : Grows on rocks

Saprophyte : Grows underground, no chlorophyll

Terrestrial : Grows on the ground

For most of these terms, there is more to the story than the simple definition.

For **epiphytes**, there is a difference between being attached to a bare branch, versus growing in a thick layer of mosses, ferns and other plants, that are growing on the branch. Orchids generally fall into the latter category, which means they have some reservoir of moisture around their roots even during dry spells.

For **lithophytes**, there is a difference between growing on boulders on an open hillside, and growing on a vertical cliff face under the canopy of a rain forest.

For **terrestrials**, there is a difference between plants growing with their roots in the soil, and those with roots in the leaf litter on top of the soil.

Each of these categories guide us in terms of what potting mix to select for our plants. There are some 'cross-overs'; many *Cymbidium* species are epiphytic, but most will do just fine in pots with a light terrestrial mix (I grow both *Cym. dayanum* & *lowianum* this way).

Meristem/Mericlone/Clone vs Natural or 'Mother' Divisions

The first 3 terms are used randomly by many people, causing some confusion as to what they actually mean. To clarify:

A **meristem** is the cutting, or cell cluster, excised from the original plant you want to mass produce by tissue culture.

After the tissue has been multiplied in the lab, we eventually get small **mericlones** (baby plants), which are copies of the original plant. 99.999% are true copies, but very rarely mutations can occur. This can be:

- Spontaneous conversion to tetraploid (4N).
- Color shift (see Den. Enobi Purple 'Splash').
- Peloric traits in the flower
- Etc.

An example of spontaneous upshift to tetraploid (4) is found in **C. Caudebec**, where a group of mericlones produced from the original **C. Caudebec 'Carmela' HCC/AOS**, turned out to be tetraploid. Waldor Orchids selected one, which was later awarded as **'Linwood' AM/AOS**. Photo shows 'Carmela' on the right, and 'Linwood' on the left, at the same distance from the camera:



'Linwood' is clearly larger, but it does not set as many flowers on each inflorescence. 'Carmela' can do 16+, while the most we have seen on 'Linwood' is 12.

Some people use **'clone'** for mericlones, but technically this is not correct. 'Clone' is used to define a group of identical plants of the same cultivar, irrespective of how they were produced (original divisions and/or tissue culture).

Some very discerning growers prefer to obtain **natural divisions** of superior breeding plants & awarded plants, sometimes called **Mother divisions**. The reason being, that we rarely know whether a meristem was produced directly from a Mother division, or from the tissue of a meristem produced from another meristem. The more steps the tissue is distanced from the original plant, the greater the risk of unwanted mutations.

Lastly a couple of other terms:

Back Bulb (or **BB**) refers to one or more of the older Pseudobulbs being removed from the plant during repotting. BBs can usually be induced to produce another lead; it might take a few years, but eventually you will have another division of the plant.

On occasion such divisions produce a new growth from an unexpected point; here a *Zygopetalum* BB division. In this situation, repot so that the new lead is on the surface.

