

Orchids of the Cloud Forest

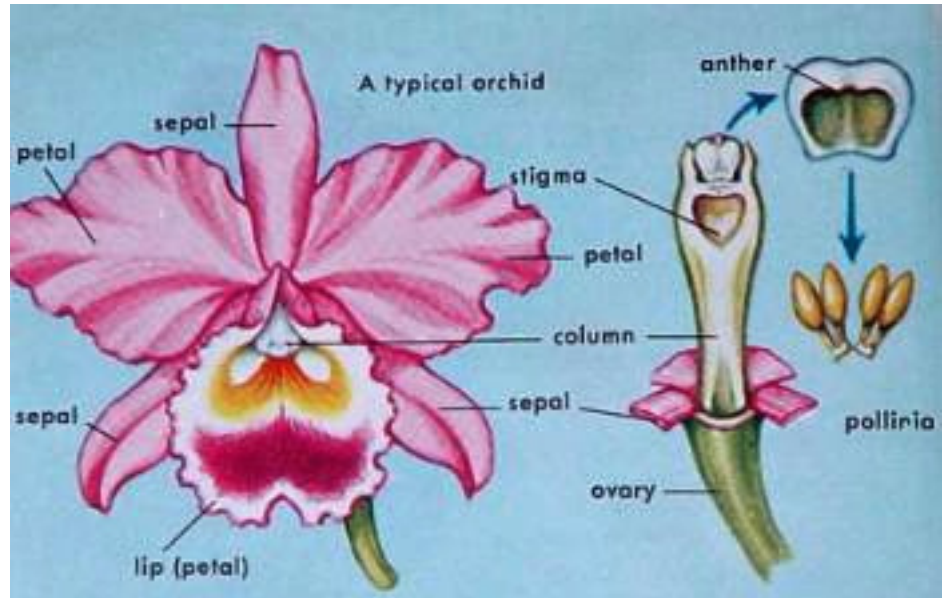
Cloudbridge Nature Reserve - Nature Notes No. 15

The Secret Orchids of Cloudbridge

Orchids are plentiful alongside the trails in the forests of the Chirripo valley — but they are easy to miss, since many are tiny, some live high in the trees, and they may not be in flower. Here are some guidelines for identifying the flowers, and a little information about these beautiful plants.

What makes an orchid distinctive?

All orchids have 3 petals and 3 sepals (outer segments). One of the petals, the lower, more attractive one, is modified; it is called the lip or labelum. In some orchids some of these parts are reduced or fused. The two lateral sepals of *Paphiopedilum* are fused, for example. The petals and lip of *Masdevallia* are greatly reduced and the sepals are broadly joined, giving the flowers a distinctive triangular or tubular shape. There are some plants which bear flowers greatly resembling orchids in this arrangement of flower parts.



Orchid Organs

To truly identify an orchid as such, one must look at the reproductive parts, the stigma (female) and the anthers (male). These are separate in most flowers, but fused in orchids; the structure bearing reproductive parts is called the column. It sits atop the lip, as shown in the diagram.

The Family

An orchid is a member of the largest and most advanced blooming plant family. Over 25,000 species have been described, and over 70,000 artificial hybrids have been produced by crossing wild and cultivated forms.



Above and Below

Many orchids are epiphytes (air plants, growing up in the trees) and some are terrestrial. Epiphytic orchids are not parasites: the host tree is simply a good place to live. They feed off water and dust and nutrients which accumulate around their roots.

Cloud forests have the biggest number of epiphytes, among them orchids. Up to 1500-1700m the number of epiphytes increases, then it starts to decrease. At 2000-3000m this forest resembles some of the forests in temperate climates. In those places conditions are very similar in different spots (on the soil level and on the tree trunks) and epiphytes often grow on soil or stones. In some place orchids overwhelm tree trunks and branches.

In these mountain forests, conditions change considerably with altitude. The higher one gets the smaller the trees get and fewer species there are. Rainfall quantity at first increases, then decreases. The maximum falls on the middle part of the mountain. Temperature decreases the higher you get. Vertical gradient changes from 0.4 to 0.7 C for 100 meters. Day temperature amplitudes are high, whereas seasonal are small. As it gets more cloudy humidity increases, but there is less and less light. In mountain forests there is always fresh air circulation. Here one finds orchids that thrive in cooler conditions – Odontoglossums, Miltonias, Masdevalias, Oncidiums, and Dendrobiums.



Orchids in Costa Rica

At right is Costa Rica's national flower — the stunning orchid Guaria Morada, *Cattleya Skinneri*. Out of the 1,360 species of orchids that grow in Costa Rica, 386 of them are found nowhere else in the world. Almost all of them are epiphytes. Costa Rica, in fact, provides much of the world's supply of cultivated orchids. We encourage observation, and we'd love help with identification — but please don't remove them.