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A.S.G.A.P. INDIGENOUS ORCHID STUDY GROUP
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The following article is reprinted from "Australian Native Orchids" by Leo Cady & E.R. Rotherham.

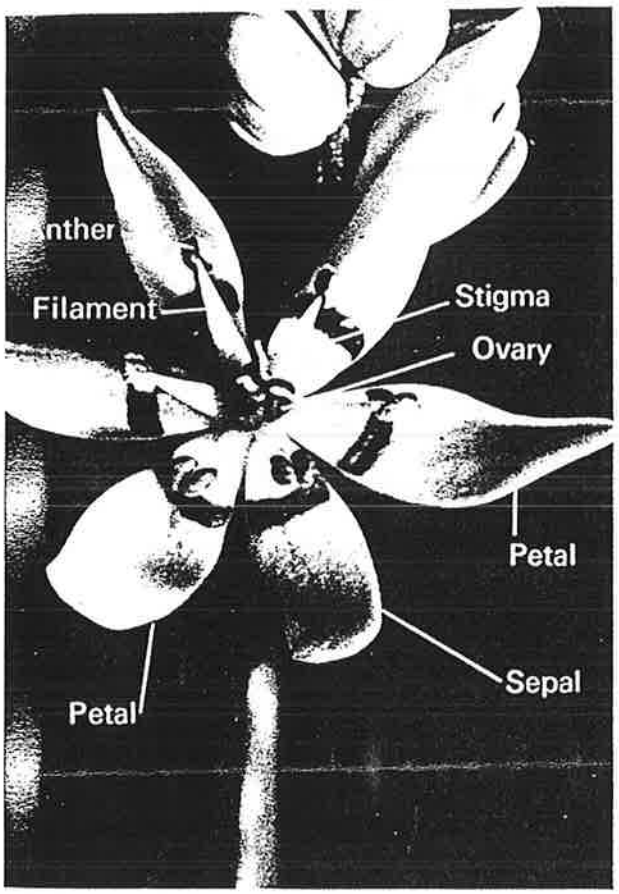
THE ORCHID FLOWER

THE FLOWERS OF ORCHIDS are separated from their nearest relation the lilies (Plate 1) in the following way. The lily, as with the orchid, has six floral appendages, three sepals outside three petals. In the lily all six segments are generally similar in shape, but in orchids the dorsal or upper petal is modified radically and is given the special name of labellum (little lip). It is often referred to as the orchid's 'tongue', and in many cases it is attractively coloured and ornamented with various types of hair and channels, or glands. During its development the flower of the orchid, in contrast to that of the lily, twists round 180 degrees so that what is actually the dorsal petal (labellum) comes to take up a ventral (or lower) position. Thus compared to the lily the orchid flower as you view it is actually upside-down.

The reproductive parts of the lily consist of six male structures called stamens, each consisting of a filament or stem portion, topped by a pollen-bearing anther. These stamens surround the pistil, or the female reproductive structure, which consists of a base or ovary which contains the embryonic seeds and an elongated projecting style, topped off by the stigma, which receives the pollen from the male structures. In the orchid flower there is only one fertile stamen, which is fused to the pistil to form the column. In most Australian genera the column is usually a slender structure, the apex containing the anther cap, beneath which are the pollen masses, usually of various shapes. The grains of pollen are held together by elastic-like filaments and the pollen masses are then called pollinia. In some genera these pollinia can contain a strap-like appendage called the caudicle, which in turn is attached by a viscid disc to a beak-like projection called the rostellum. Situated immediately below the rostellum and of various shapes is the stigma or stigmatic plate where the pollinia or some pollen grains must be placed to fertilise the ovary. The ovary is immediately below the column and is said to be inferior (below the flower). Inside this ovary are found the ovules or embryonic seeds, in vast numbers.

Fertilisation occurs after the pollen grains are placed on the sticky stigma. The grains germinate and grow, sending a tube down inside the column until it enters one of the ovules, thus effecting fertilisation. After a given period, from a few days in *Epipogum* to many months in *Cymbidium*, the ovules ripen and the capsule splits to liberate the seeds. In some genera e.g. *Corybas*, the seeding stem is greatly elongated to aid the dispersal of seed. Orchid seeds are extremely small and light and can be carried hundreds of miles by winds.

Two methods are used by orchids to induce pollination: first, the use of an insect agent, which is the commonest method; second, self-pollination. In most cases self-pollinating plants rarely open their flowers except in hot, humid conditions. The column is similar in both cases except that the pollinia in the self-pollinating species become friable in the early bud and scatters pollen onto the stigma before the flower opens, whereas the pollinia in the cross-pollinating species remain together in their groups, attached to the viscid disc for easy removal.



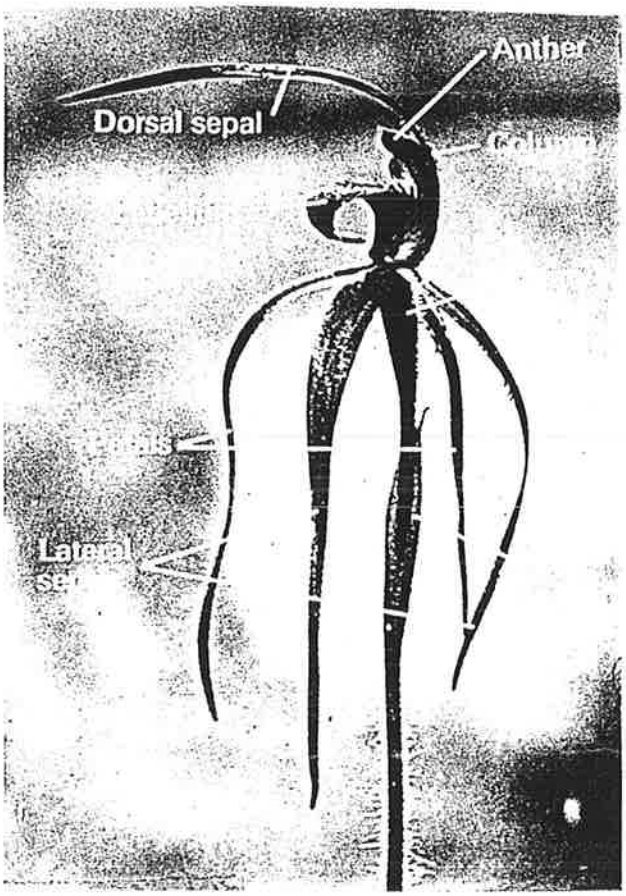


Plate 1
Anguillaria dioica EARLY NANCY
A widespread, spring-flowering native lily.

Plate 2
Caladenia patersonii v. concolor RED SPIDER ORCHID
Though of limited Victoria and New South Wales occurrence, many floral features of orchids in general are depicted in this flower.

The Australian White Moth Orchid

by L. P. Butt

MANY strange and fascinating orchids have been brought out of the North Queensland jungles, but none so outstandingly beautiful as Australia's only species of the genus Phalaenopsis, the Mount Spec orchid.

This delicately beautiful variety of the Phalaenopsis Amabilis is becoming increasingly rare. In fact I have been informed that no specimens have been found for quite a number of years.

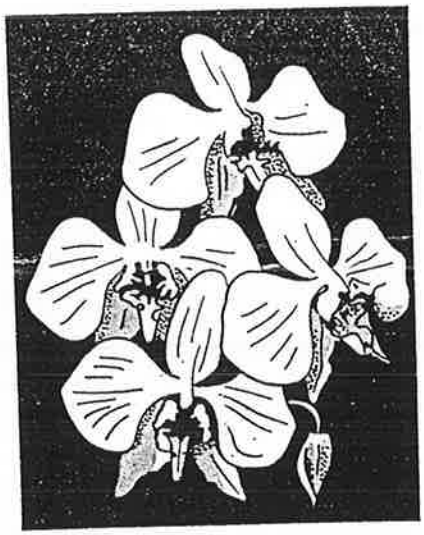
Although it was found primarily on Mount Spec, specimens have also been discovered at Bambaroo, Ingham, Mt. Bartle Frere and the vicinity of the Mossman River.

Botanically known as Phalaenopsis amabilis bl. var. rosenstromii, it grows in heavy jungle country in ravines and gorges running into mountains or on the lower slopes of mountains.

All Phalaenopsis are called Moth orchids because of the similarity of the flower shape to that insect. The Australian species is no exception and is one of our finest orchids, which will stand inspection with any collection of exotic plants of the same genus. The white blooms are about 2 to 3 inches in diameter.

The cultivation of P. rosenstromii is not always easy and sometimes it has a tendency to die off after a couple of years. The growing and flowering of this plant has often been successful however, and to any who may happen to acquire such a plant, the cultural instructions are as those given for all phalaenopsis. Each grower of this genus seems to have his individual ideas of growing them, but according to the late Murray Cox, the compost should be primarily pieces of charcoal with a topping of osmunda fibre. The base of the plant should be kept clear of the mixture so it is suggested that a small wedge of hardwood be fitted across the top of the pot. The Moth orchid can be secured to this and the osmunda fibre brought up to and around it. Copious watering in the summer months is very beneficial.

Warmth and moisture seem to be essential to successful growth of any Phalaenopsis so I would suggest that rosenstromii be kept out of temperatures below 45 degrees. To own a phalaenopsis rosenstromii is to treasure it always, for it is one of the many indigenous orchids that give proof to the statement that even without the hybridist our orchids are worthy items in any collection.



Phalaenopsis amabilis bl. var. rosenstromii
(Illust. by R. Heidemann)

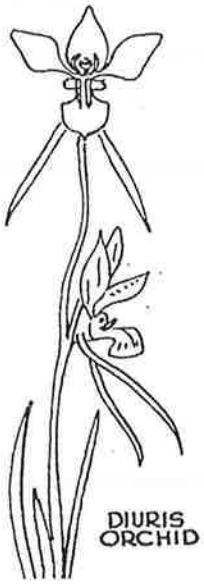
Author's note:

I would like to express my thanks to Mr. Alick Dockrill of Cairns for supplying information on the natural habitat, etc., of Phalaenopsis rosenstromii.

Queensland DIURIS

"Double tail" Orchids

by L. P. Butt



Last month we discussed briefly the beautiful ground orchids of West Australia. Queensland, like most of the Australian States, also has a large distribution of the terrestrial members of the orchid family.

Unfortunately, the average gardener knows little or nothing of them, so a great section of our wild flora is neglected, quite often to be destroyed by bulldozers and graders clearing land for home sites.

Several very energetic study groups are now busy trying to determine the possibilities of cultivating these orchids in home gardens, and thus preserve the species.

The two basic needs for these orchids are good drainage and adequate protection from the noonday sun. The main thing to watch when potting native terrestrials is to use plenty of rough river sand and a supply of broken crocks in the base of the pot.

For the genus Diuris, which includes the W. Australian donkey orchid, a tip on the correct mixture is given by N.S.W. authority, Leo Cady. Mr. Cady's mixture is 50% black sand, 40% peat moss, and 10% leaf mould and crushed charcoal.

As Diuris grow from a small tuber, correct cultivation is to keep moist during Spring and Summer, and allow to dry out slowly in the dormant season.

Diuris, or double tail orchids, grow throughout Queensland, and the predominant colour seems to be various shades of yellow.

Leaves and stems of all Diuris are grass like, and tend to go unnoticed when not in flower. The bloom, however, is quite distinctive, the unique shape of both sepals and petals forming 'rabbit ear' shapes with two flowing tail formations from the base of the bloom.

Here are a few of the better known Diuris which also occur in other States apart from Queensland:

Diuris aurea, "the golden Diuris", flowers golden yellow with brown markings, flowering period August to October.

Diuris punctata, "the purple Diuris", flowers lilac to rose-purple, delicately beautiful, flowering period August to December.

Diuris pedunculata, "Golden Moth Diuris", golden yellow flowers with orange marking; there is also a larger variety than the type. Flowering period September to January.

Diuris maculata, buttercup yellow blotched dark brown, flowering period July to September.