



The **WAITAKERE ORCHID CLUB INC.**

Orchid Culture in New Zealand

\$3.00



You can successfully grow and flower these common genera:
Cattleya Alliance • Cymbidium • Dendrobium • Disa • Masdevallia
Odontoglossum • Oncidium • Paphiopedilum • Phalaenopsis

Growing Orchids in New Zealand

Third edition published in 2008 by the Waitakere Orchid Club Inc.

Editor: Dennis Chuah

Front cover pictures: (top-right most) *Dendrobium kingianum*

From the left: (top row) Blc Greenwich 'Killarney', Paphiopedilum Macabre, Dendrobium Impact (middle row) Masdevallia Rubicon, Cymbidium Beauty Fred '60', Vuylstekeara Cambria 'Noyo' (bottom row) *Dendrobium chrysopeterum*, Doritaenopsis Etherege Princess 'Raleigh', Brassolaeliocattleya Mildred Hellingsworth 'Golden Girl'

This booklet is written by members and friends of the Auckland Orchid Club to help you grow beautiful orchids, and to dispel the common misconception that orchids are hard to grow. The following two sections will guide you through successful orchid culture. "Basic Requirements" covers the basics of orchid culture, and "List of Orchid Genera" lists commonly available genera and their specific needs.

Introduction

The orchid is a very diverse family of plants, with over 20000 catalogued species, it is the largest family of flowering plants. Most species are found in Asia. In one mountain alone, Mount Kinabalu in Malaysia, there are over 750 species!

Growing orchids is a very rewarding exercise. A number of genera and varieties are available today that will provide flowers pretty much all year long. A few, such as Phalaenopsis (moth orchid), even have attractive bold foliage and make good house plants.

Basic Requirements

All plants require the correct amount of light, air, water, food and warmth to grow, and orchids are no exception. Most orchids in cultivation are epiphytes (lives on trees) or lithophytes (lives on rocks), and have a common need for good drainage. Most are grown in pine bark which is specially processed to remove bits of wood and cambium (the twisty pieces of bark). You can either buy bark at most garden centres in the form of a proprietary mix, or from most orchid clubs and orchid shows. Never plant these orchids in soil or in ordinary potting mix.

Light

Orchids are accustomed to grow under tree canopies and will usually require some shading from the midday sun. This can be achieved by placing the plants on a patio where a roof or eave shades from the midday sun; or for indoor plants, next to an East or South-West facing window. For those with more than a few plants, it is worthwhile to invest in a shade house.

Orchids that live higher up in the tree canopy usually require more light than those that live lower down. If a plant looks lush, with possibly elongated leaves or stems, it usually means it is not getting enough light. On the other hand, if the leaves look yellowish or grows a reddish tint, it is an indication that the plant is getting too much light.

Orchids need the correct amount of light in order to flower, but too much will place the plants under stress and may burn the foliage. The right amount of light will result in good looking plants that flower well.

Air

Plants that live up in trees have a steady supply of fresh air in the form of breezes and the wind blowing through their leaves, stems and roots. For plants that are grown outdoors or in a shade house, the normal flow of air is sufficient, but for plants grown indoors, it is important to keep windows slightly open to allow good air circulation, without being draughty in Winter. Shade houses that normally get wrapped up in plastic during the Winter will benefit from a small circulating fan, and make sure the door is opened on fine days to allow for a change of air.

Watering and Feeding

Orchids require regular watering when they are growing. For most, this is usually during the warmer months of Spring, Summer and Autumn. Water the pot well, making sure that all the bark is thoroughly wet and allow the water to flow out the bottom of the pot. The movement of water through the bark displaces the stale air inside the pot and draws fresh air to into the pot when it drains out. Never sit the pot in a saucer of water as the roots will rot.

Amongst orchids, Cymbidiums and Phalaenopsis hybrids are gross feeders. Species orchids, on the other hand, tend to require much less food. Some orchids store food in a specialised stem called a pseudobulb. It is preferable for these orchids to be fed at every watering. A little, often, is best.

Those orchids that have very little storage will require watering more often. Some orchids require a dry resting period to initiate flowering. Keeping plants dry enough in winter can not be achieved in Auckland's climate unless you provide a roof over your plants.

Detailed watering requirement for each genera is covered in the "Commonly Available Orchids" section.

Warmth

Orchids are found on all continents except Antarctica, and have adapted to most habitats. Those that come from high altitude forests are very adept at tolerating

the cold, while on the other end of the scale, those that come from balmy tropical rain forests prefer to be kept in conditions that resemble their original home. In general, orchids are divided into three broad hardiness categories.

Cool growing orchids can be grown in Auckland without additional heating. Most will withstand quite low temperatures in the Winter, as long as they are kept dry. Correspondingly, cool growing orchids are the easiest to grow.

Intermediate growing orchids will grow in the Summer just like cool growing orchids, but require some heat over the Winter. This can be provided, for example, by bringing the plants indoors, using a heating pad or with the aid of a greenhouse.

Warm growing orchids require warm conditions all throughout the year, and are best grown in a heated green house or conservatory.

Pest and diseases

Healthy growing plants in ideal situations are relatively disease resistant, so adjusting your growing area to suit your plants will pay dividends. Spider Mite attacks in the summer if plants are too dry, overhead sprinkling can help prevent infestations. If spider mite is a problem leaves develop a lack lustre appearance with a silvery sheen on the underside. Spray with miticide or if you prefer you can use the biological approach and introduce predator mite available from Veg-Gro outlets.

Garlic snail can attack the roots and will stunt the growth particularly of small seedlings, they eat the growing tip out of the roots and sometimes shoots as well. Mesurool spray or pellets are useful but do not inhale or handle without protective clothing, Mesurool is very toxic to humans and other animals.

Slugs and snails will chew on young shoots and flower buds. Control them with bait.

Virus can be transferred from one plant to another by using cutting equipment on different plants. Never use communal secateurs or the like even to cut flower spikes. There is currently no cure and diseased plants (and their pots) need discarding.

Use the preventive approach to control scale, as the insects are most active in their juvenile stage and you are least likely to notice them until a major infestation occurs. Spray with oil and insecticide combined in October and February but do not spray when flower spikes have buds showing as it will cause the flowers to be deformed.

List of Orchid Genera

Cattleya Alliance

By Beryl Calder

In the cattleya alliance there is a broad range of differing plants, all of which have their own beauty. It is a fascinating genera to grow, some very large down to quite tiny. I think most times of the year I would have something in bloom.

Air: Shade cloth on the sides of the house, and on the roof in some cases is fine until the cold weather arrives and then some comfort is needed. This is usually in the form of plastic sheeting, used as blinds or curtains, bubble plastic is another option to retain heat, keeping in mind that air circulation is most important, fans are a useful tool both summer and winter.

Light: Keep the roof clean of debris, some plastic roofs deteriorate and from time to time need replacing. All plants need light, some more than others, and to some extent, it is a matter of trial and error. 35% shade cloth is suitable for most cattleyas. When the growth becomes soft and not standing upright, light needs to be increased.

Water: During the summer it is easy, as the temperatures are hot, and over watering is difficult. I water ever second or third day. Pick up the pot if in doubt, if heavy and the top of the bark is damp, *don't* (possibly the roots are not in good condition), if the pot is light, water thoroughly. Cattleyas on slab material will need watering every second day, and once a week a good soaking submersed in a bucket. All orchids need misting at least once a day, preferably twice in the heat of summer.

Winter is a vexed question, a common query is how many times a week do you water? When a frost looks likely, not a good idea. When it is cloudy and cold for days on end, hard! The theory with cattleyas is to let them dry out pretty much, and then water. Large pots may only need water every couple of weeks, while small ones may need it every seven days.

Feeding: Cattleyas are not gross feeders, so the theory should be a weak solution of fertiliser at each watering, with one watering per month with no fertiliser to flush the pots out of salts. A bit the same as humans, I think our plants like a



Blc Greenwich 'Killarney'

variety, so I use Guano, (on babies) fish fertiliser, Dyna-Gro and Larsens orchid food all in rotation – *Not all at once!*

People have their favourite fertiliser, there are lots of alternatives, Phostrogen, Alaska, etc., but use a weak solution.

Warmth: Cattleyas are cool, intermediate and warm growing, perhaps some need more heat than others, but mine have to survive at under 10°C. I do use a small fan heater when I think we may have a frost, but even then the house will only get to about 8°C. It is then that the benefit of keeping them a bit on the dry side will pay benefits. Air circulation is most important in Winter and Summer.

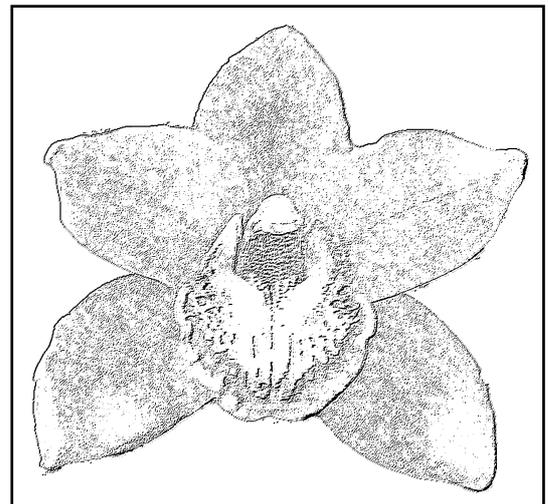
Potting: Any plant that is not in flower which is actively growing and need repotting, do so. It relieves the pressure when we have to pot at the finish of flowering. Materials vary. Palm peat is excellent for newly deflasked seedlings, following that small plants, small pots, small bark No. 2, larger plants, No. 3. Most important, *do not overpot cattleyas!* They will continue to grow when potting is long overdue, but the quickest way to kill them is to over pot and over water. I grow mostly in plastic pots, but clay has its place, a plant that needs extra care I pot in clay, and if it has holes in the sides just watch those roots go. For a plant that is really poorly, I put in sphagnum moss to encourage root growth but do not keep too damp in Winter.

Cymbidium

By Roy Neale of Leroy Orchids

I believe cymbidium orchids are staging a comeback in popularity and well they should as they have a lot to offer and are particularly easy to grow in Auckland. The recent trends in breeding have led to smaller plants with a greater variety of colours and flowering time extended from May – December.

Air: Spring, summer and autumn get as much air circulating around your plants as nature provides, shade cloth around the sides of your growing area is all that is required but in winter we tend to ‘wrap’ our shed in plastic to help keep out the winter chills and frosts. Make sure you open



Cym. Leroy's Mountain 'Zena'

doors on fine winter days to allow a change of air, a small fan keeping air moving is a useful tool.

Light: Look at the colour of your foliage, a lush green colour indicates insufficient light and plants that are unlikely to flower, a light green – yellow coloured foliage is good, too much sun and plants will look terrible but will probably flower well, reaching a happy medium is the answer. You will need to protect your plants from full midday sun in summer and in autumn and early winter shade white flowers when buds are developing or they will get staining on their flowers, red colours need full sun at this stage.

Water: During the growing period from spring to summer, water, water, water, the more the better, at least once a day. For busy working people watering after work in the cool of the evening is fine in summer, and will even encourage spike initiation. In winter watering is greatly reduced, just when the pots are nearly dry give a good water and then leave probably for about a week. In their natural habitat, mostly in the foothills of the Himalayas, cymbidiums get heavy monsoons in the summer months and dry, cold winters.

Feeding: The easiest method is to use slow release fertilizer applied in August and December. We recommend Osmocote 3-4 month formula. Once the weather starts warming the fertilizer will be released gradually when you water and reduces the risk of burning roots with excessive fertilizer. You will need about a teaspoonful to a 7" pot, less for smaller pots and more for bigger, sprinkled over the surface of the pot.

Warmth: Cymbidiums are cool growing.

Potting: Non flowering plants are best potted at the end of winter and flowering plants whenever they have finished flowering. Small plants can be potted on at any time of year when they are in active growth and look as if they are too small for their pot. Graduate the size of bark according to the size of the plant, small plants need fine bark, we use No. 2, then progress to a mix of No. 2 and No. 3 and finally as the plants reach flowering size we use straight No. 3. Big plants may only need repotting every 2-3 years, make sure you remove and discard any back bulbs when repotting. Do not use an excessively large pot, it is better to repot twice with a slightly larger pot each time than to put a small plant in a big pot.

Flowering: When you see spikes developing, protect from slugs and snails by wrapping the stem in cotton wool. Stake your spike and tie as required to keep the stem straight if it is an upright variety. Do not stake upright, spikes that are naturally arching or pendulous. Do not move the plant from a cold to a warmer position until at least the first flowers are open or you may cause the buds to drop.

Working by the Seasons.

Winter. Water about once a week or when pots are looking a little dry, do not fertilise. Protect plants from cold and severe frost. Make sure all shade cloth is removed and consider wrapping plastic around your house to protect from cold and wind. Stake spikes as they emerge and retie as necessary. Apply osmocote at the end of August.

Spring. Increase your watering to at least alternate days and more often if weather is warmer. Consider applying shade cloth by November.

Start repotting at the beginning of spring and aim to have it completed before summer.

Spray for scale.

Summer. Water, water and more water to mimic their natural environment. Watering in the evening is fine and may help to encourage spike initiation as it will reduce the temperature of your plant overnight. Damping down in the heat of the day can help reduce the risk of spider mite but you may need to consider spraying as well.

Remember your second fertilizer application.

During February apply a solution of dried blood to your plants to encourage new growths to develop which will be on schedule to flower the following year.

Second spray for scale at the end of summer.

Autumn. Repot small plants prior to winter. Tie spikes as they appear. It takes about 10 weeks from when you first see the buds out of the sheath until flowers are fully open, during this time keep your plants in the same position and do not move inside until several flowers are fully open.

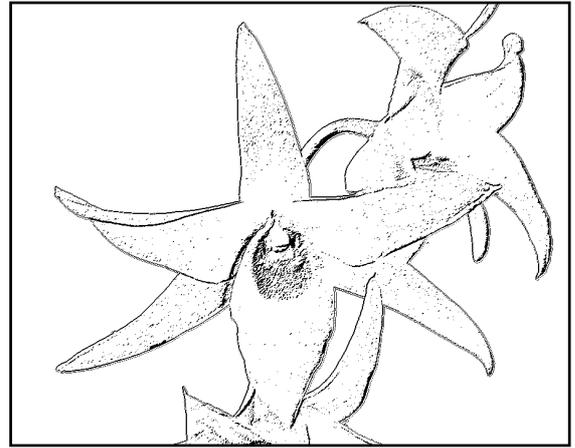
Dendrobium

By Dennis Chuah

Dendrobium is a very large and varied genus of orchids, with some 1000 species, spread across a large geographic region from India to South East Asia, to Papua New Guinea, Australia and New Zealand. Dendrobiums are divided into 6 groups, according to their cultural needs. This guide discusses two common groups, Dendrobium and Phalaenathe, plus the Australian natives.

Dendrobium Group

The Dendrobium group comprises of *Dendrobium nobile* and similar species, and their hybrids. *Dendrobium nobile* is a very variable species found in a number of elevations across most of South East Asia. Its pseudobulbs are long, slightly trailing, and resemble canes.



Dendrobium Cassiope

The flowers appear along the leaf axils on the canes, sometimes singly or in groups of 2-4. The colour ranges from pure white through to mauve and purple, most with a dark purple patch in the centre. Some varieties are very fragrant.

Most grow in deciduous forests and have adapted to the wet and dry seasons influenced by the annual monsoon winds. These forests have very wet and humid summers followed by a short period of cool dry winter. During the dry season, the plant loses its leaves but the canes are far from dead, and the dry rest triggers the leafless canes into flower, just as the wet season is starting to get underway. *Do not* cut off leafless canes.

Warmth: Grow these cool, but keep away from frosts. In the Summer, grow them outdoors but in the Winter, move the plants under the eaves of the house for some added protection from the weather.

Watering and Feeding: New canes begin to grow in the Spring, after the flowers have faded. Inside the pot, new roots are also forming and growing. This is the time to start watering the orchid. Apply a six month slow release fertiliser, such as Osmocote. Gradually increase watering as the weather warms. In the Summer, water once every two days, or if it is very hot and windy once a day.

A dry rest period in the Winter is required for flower bud formation. Watering should be greatly reduced towards the end of Autumn, or observe when growth on the canes starts to slow down. In the Winter, the plants should only be watered fortnightly. It is normal for the plants to lose leaves at this time. Humidity is beneficial and this can be achieved either by growing several plants in close proximity, or standing the pots on top of pebbles inside a wide tray of water. Make sure the bottom of the pot is clear of the water.

Air: In their natural environment, the monsoon rain buckets down but usually only last a short while and there is plenty of wind to dry out the roots. Good air circulation is very important. Overseas, these Dendrobiums are grown in either

terracotta baskets or wooden slat pots. If plastic pots are used, holes can be drilled on the sides to increase air circulation.

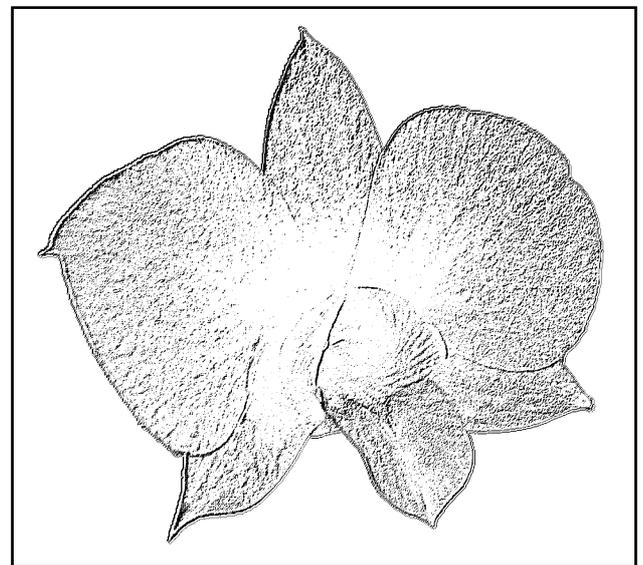
Light: Dappled shade is best or grow them in a shade house, or on the South side of the house, away from the midday Sun. In the Winter, when most of the leaves have dropped, the plants can withstand more light.

Repotting: These plants do not have extensive root systems, so it is best to under pot. An eight inch (20cm) shallow pot is sufficient for most mature plants. Use smaller pots for correspondingly smaller plants.

Repotting should be done once every 2-3 years, or when the bark is starting to break down. Repotting is best done in the Spring, when the plant is starting to make active growth. Use No. 3 bark. All old rotting bark, along with dead roots should be removed.

Phalaenanth Group

Dendrobium phalaenopsis grows in Northern Queensland, but this group also encompasses other *Dendrobium* species that grow in Northern Australia and Papua New Guinea. The “canes” are stiff and usually upright, with a tuft of 3-6 leaves. The flower spikes usually appear on new canes but old canes can also flower, up to 3-4 times. Flower colour and shape varies but most have large flat petals. The flowers can appear at any time of the year, from Spring to Autumn, and last a long time.



Dendrobium Impact

Warmth: These are tropical plants and most require either warm or intermediate conditions. However, they are quite adaptable and make good house plants, as long as a night time minimum of 15°C can be maintained. Some growers recommend that a night / day temperature difference of 10°C, i.e., 15°C at night and 25°C during the day. Persistent low temperatures may cause leaf drop.

Light: Good light level is important for good flowering. If grown in a shade house, 35-50% shade cloth is adequate. Low light levels can cause flower buds to turn yellow and drop off.

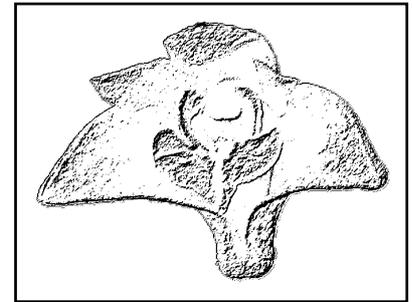
Water and feeding: This Dendrobium does not like to be kept too dry. In the Winter, water once a week and the Summer, twice a week. Feed with a balanced fertiliser, at a quarter of the manufacturer's recommended rate weekly.

Repotting: Repot every 2-3 years using No 3 bark. It is best to repot when new canes are starting to grow. This is the time when the plant is growing new roots and will very quickly fill the pot with roots.

Australian Natives

A few cool growing Dendrobiums from the East Coast of Australia do not fall into the six groups but are commonly grown. The two species discussed here are *Den. kingianum* (now called *Thelychiton kingianus*, but is still sold as Dendrobium), and *Den. speciosum*.

They are a mostly lithophytic (grow on rocks), and have a stout tapering pseudobulb with a tuft of 2-6 leaves. The leaves persists on the pseudobulbs for many years. In the case with *Den. speciosum*, the pseudobulbs can attain immense proportion, up to 1 meter long!



Dendrobium kingianum

One to several flower spikes appear at the top of the pseudobulb in the Spring. The flower spikes of *Den.kingianum*, each contains a few flowers, but with *Den. speciosum*, each spike can contain over 100 flowers! Flower shape, size and colour varies and there are a number of hybrids available with large attractive flowers.

Warmth: These are cool growing plants but keep away from the frost. In their native habitat, the sun heats the rocks that they live on. The rocks act as heat stores that slowly imparts heat to the plants long after the sun has set. You can emulate this by growing them in black plastic pots, standing on concrete or stone. *Den. speciosum* will appreciate some extra warmth in the Winter, and can be brought indoors.

Light: The Aussie natives require more light than most orchids. Dim light is the usual cause of poor flowering. Most varieties can tolerate some amount of direct sun light.

Watering and feeding: In the summer months, water once or twice a week, or when the bark is dry. In the Winter months, water once a fortnight, or none at all if kept outdoors where the plant can get rained on. Some varieties of *Den. speciosum* that originate from more Northern latitudes require bright light and a dry rest in winter to flower well. Feed in the spring with a 6 month slow release fertiliser, such as Osmocote.

Air: Good air circulation will prevent fungal rots. If plants are brought indoors to over winter, it is important the plants get good air circulation. Leave windows open with a small gap.

Repotting: Repot every 2-3 years in the Spring after the flowers have faded, using No 3 bark.

Common Attributes

Pests: Scale insects can be a problem and are best rubbed out with cotton wool soaked in methylated spirits. In the spring aphids, can suck and deform flower buds. They can be controlled with repeated sprays of weak soapy water.

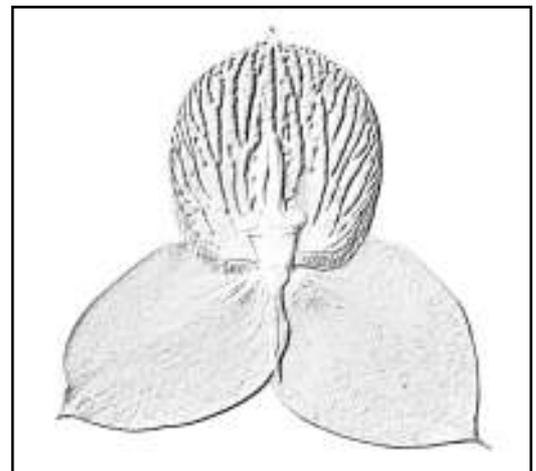
Kei Kei's: The nobile group and *Den.kingianum* tend to grow baby plants along the length of old pseudobulbs. These are known as kei kei's, from the Hawaiian word for babies. Kei kei's are weak growths and should be removed at the first opportunity. If the removed kei kei's have a few roots attached, they can be potted up and grown on as small plants.

Some varieties produce more kei kei's than others, but most will grow a few. Too many kei kei's is a sure sign that the plant is not growing well. Plants that have been growing in insufficient light levels will grow kei kei's instead of flowering. Plants that have root rot will also tend to grow lots of kei kei's.

Disa

By Ron Maunder of Paradise Orchids

Cultivated disas originate from wild plants growing amongst sedges along cold mountain stream banks of South Africa. They are terrestrial orchids and grow from underground tubers. Large plants will send out short stolons (underground runners) and grow new tubers / plants at the end.



Disa uniflora 'Rondel'

Air: They should be grown where there is continuous air movement. If grown outdoors, the natural breeze or wind is sufficient, but if grown in a shade house, a fan can be used to aid air circulation.

Light: Shade of around 50% is fine if you have high sunshine hours and clear skies but it may need to be reduced in winter if you have dreary cloudy winters. Certain species such as *D. racemosa* need full light to flower.

Medium: Most hobby growers grow disa in finely chopped sphagnum moss. The moss holds a lot of water and is able to keep the roots moist for several days between waterings. Re-ground poly-styrene foam may be added to the moss to improve aeration and to stop it from packing down too much. (1-2 parts moss to 1 part foam). Disas may also be grown in peat / pumice sand (or coarse sand, perlite) mix – 1 part peat, 4 parts sand, or in composted bark fines.

Each year, after the old plant has flowered and died down, around February / March, carefully remove the old plant from the pot and repot the new shooting tubers. Discard the old plant as it will not grow again. Small plants can be grown in a community pot until the next year.

Water: Save rain water and use it to water the disas. Alternatively you can use tap water that has been allowed to stand overnight to reduce the chlorine content. **Never** allow the plants to dry out. The leaves should preferably be dry before nightfall as prolonged wetness of the crown can cause rotting.

One way to water small numbers of plants is to use the wick method. Fit the plants onto a deep tray, say, about 3-4 inches (75-100mm) deep. Dip a strip of old tea towel or other cloth into the tray and let it hang over the side. The bottom of the cloth must hang below the base of the tray.

When the plants are watered, fill the tray with 1-2 inches (25-50mm) of water and remember to wet the cloth. This will set up a capillary / siphoning action that will empty the tray in a few hours. This emptying helps keep the tray clear of algae growth as well as helps draw air into the pots. If grown in moss, you only need to water the plants once every few days.

Feeding: Fertiliser can be applied to the pot or tray with your watering from time to time. It should always be weak About one quarter strength is sufficient. 100ppm to 200ppm is OK.

Temperature: Disas are cool growing and care should be taken so that their tubers do not exceed 25°C. In very hot weather, live wet sphagnum moss packed around plants will keep them cool. They can tolerate only very light frosts on the leaves. Some form of heating must be provided if you experience heavy frosts. Alternatively a fan can be used in the shade house to keep the air moving and stop frosts from settling.

Pests and Diseases: Caterpillars, slugs and snails will sometimes be a problem. Acephate (the active ingredient in Orthene or Shield) or another suitable insecticide will put paid to caterpillars, thrips and aphids but should be kept off the flower buds to avoid distortion. Use Mesurol baits control slugs and snail, but they are quite poisonous.

Fungus gnats (resemble sand flies) are a problem with some growers and can introduce rots to the stem bases of Disas. If you notice them about they will probably be living in the blue green algal slime on the top of the potting mix. A spray after dark with aerosol fly spray will wipe them out but more may hatch and repeat sprays may be necessary. Blue green algae and fungus gnats do not seem to be a problem with growers who cover the surface of the pots with 12mm-20mm (half to three quarter inch) of pebbles or crushed stone. This creates a dry surface which also retards the growth of moss and liverworts.

Fungus and bacterial rots often strike Disas. Acidic water, good air movement and fresh tray water monthly keep most of these problems at bay. Drenching with trichoderma friendly fungus (eg. "Root Shield" or "Tri-D25") can protect Disas and other orchids from some root rots. Other natural remedies such as garlic spray, cinnamon and grapefruit seed extract are worth trying.

When using any chemical spray you should check to see that it is safe to use on Disas. Be warned! Some will cause great damage. You should ask another Disa grower first or do a test on one plant. Always follow the directions on the packet as to what protective gear to wear, mixing etc. Always wash off the chemical residues from the leaves a few days after spraying, and certainly before you handle them with bare hands.

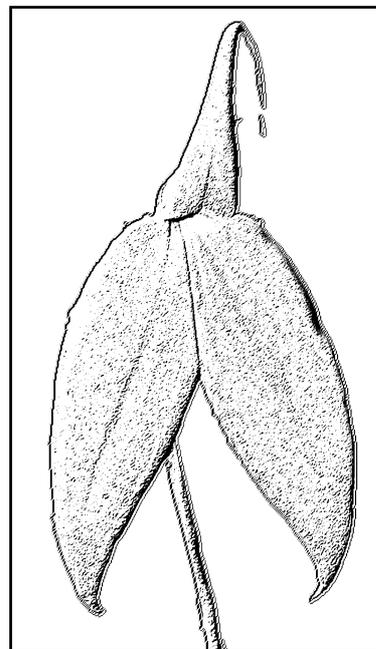
Masdevallia

By Glenys MacRae

This genus was discovered and named by Ruiz and Pavon in Peru between 1780 - 1790, dedicated to Dr Jose Masdevall, a Spanish botanist and physician.

Masdevallia belongs to the Pleurothallidinae, a very large sub-tribe of plants, numbering over 300 species. Most grow epiphytically in the higher-altitude areas of Mexico, Brazil, Columbia, Ecuador and Peru.

Masdevallias do not produce pseudobulbs, instead they have thick leaves, which spring directly from a creeping rhizome. The flowers grow from the inside of the leaf base and are often brilliantly coloured. The structure of the flower is in contrast to that of many orchids as the sepals are very large in comparison with other parts of the flower.



Masdevallia Rubicon

Light: A cool house with plenty of shade and fresh air during the summer months provides the ideal environment. Masdevallias do not like high light as the leaves easily burn and dry out. Very humid conditions will stress the plants.

Water: Water every one to two days during summer to prevent roots from drying out. Reduce watering over the cooler months to once a week during winter.

Feeding: Feed once a week. Masdevallias flower at various times during the year, the majority in spring and summer, but they will vary from grower to grower. Therefore, a feeding programme similar to cymbidiums can be used. Fertilize with a liquid food such as Bio-Plus.

Feed Spring mix from Aug – Jan

Feed Winter mix from Feb – Aug

Do not use slow-release fertilizers or slow-release pellets.

Warmth: Masdevallias grow cool. They are good for unheated greenhouses, but don't allow plants to freeze during winter.

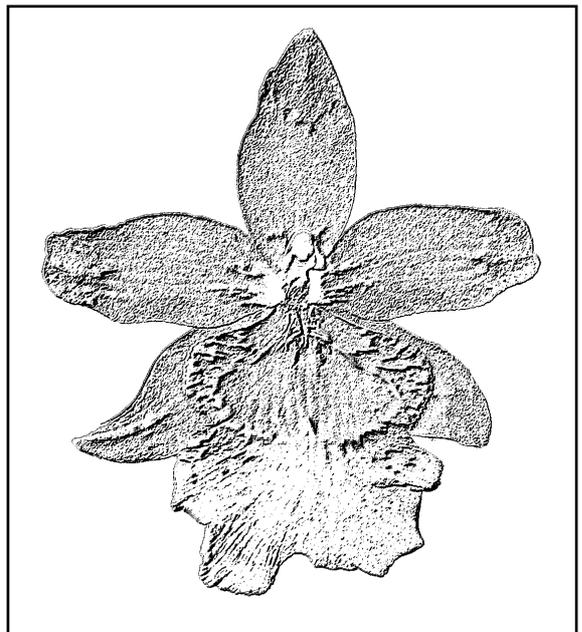
Repotting: Repot when plants are actively growing either in spring or autumn. Avoid repotting mid summer or mid winter as the extremes in temperature may stress the plants. A stressed plant will drop its leaves. Use No. 2 bark. The base of the leaves should be just below the rim of the pot.

Odontoglossum / Oncidium

By Lee Neale of Leroy Orchids

Odontoglossums or Odonts as they are commonly called are a species which are native to Central and South America where they grow high in the Andes, virtually on the equator.

Oncidium is a genus related to Odonts, and also grow naturally in South America, albeit at lower elevations. The flowers of some species resemble little dancing girls and sometimes these orchids are known as "Dancing Girl Orchid". Their culture is similar to odonts except that Oncidiums require warmer conditions, particularly in winter.



Vuylstekeara Cambria 'Noyo'

Temperature: The altitude of approx. 1,500 – 2,750 m (5,000 – 9,000ft) ensures a cool moist environment with a temperature range of 5 – 32 ° C. Odonts do better if a minimum night temperature of 10° C is maintained in winter and in summer the optimum high is 21°C. Plants survive outside these levels but only if they are for short periods.

Oncidiums can be over Wintered indoors.

Light: Odonts will tolerate winter sunlight without shading but in summer need to be shaded at least 60%. If the leaves turn a red /bronze colour your plant is getting too much light.

Air: These plants need good air circulation at all times. A fan is essential unless you have a very open, breezy growing area.

Watering and Feeding: High in the Andes the rainy season is almost continuous with mist at night keeping the plants moist. In summer odonts need watering frequently, daily at least, this can be done morning or evening with misting during the day as well to help keep the temperature down. In winter, water less but the mix should never get bone dry. Odonts grow year round and do better if fed frequently, every watering, from early spring to late autumn but use ½ the strength that is recommended by the manufacturer, give a variety of preparations to ensure all trace elements are delivered.

Flowering: Odonts do not have a ‘flowering season’ but tend to flower every 10 months. The quality of the flower changes with the season with the poorest quality flowers produced in summer. Some growers remove spikes that form from Oct – Dec so as not to stress the plant by flowering in the summer months.

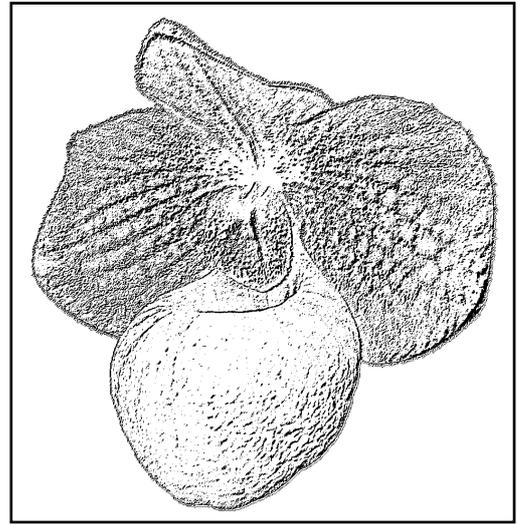
Potting: Odonts have fine roots and prefer a finer growing medium than many orchids. No 2 bark with palm brick fibre in a ratio of 6:1 is a good compost. Repot only when plants are in active growth with a new shoot about 5cm long, do not overpot, allow room for the growth to form its bulb and no more. Jan and Feb are not good months for repotting.

Pests and Diseases: The main gremlin is garlic snails which eat out the new growing tips of roots, control with mesurol. Aphids will attack the flowers, Target or household fly spray (from a distance) will eliminate them. Protect your spikes from slugs and snails.

Paphiopedilum

By Kim Robilliard

The “Slipper Orchids” or “Paphs” are found in their natural habitat across tropical Asia and India, growing at varied altitudes, and in a range of climates. The exotic, richly coloured flowers last for weeks - sometimes months. Ideal for home or indoor growing, slipper orchids have no pseudobulbs, but are made up of fans of attractive green leaves. Once the leaves are fully formed, the flower stem rises each year (usually during autumn to winter) from the centre of the newly developed growth. Slipper orchids can make attractive specimen plants with many flowers if they are allowed to spread into plants with multiple growths.



Paphiopedilum Magic Lantern

Modern complex hybrid paphs usually have big round waxy flowers, but there is a whole range of varied species, both single and multi flowered, and many beautiful novelty hybrids available from your local orchid club shows and club meetings.

Warmth: Paphiopedilums are divided into two temperature groups: warm and cool growers. The attractive mottled-leaf types usually come from the warmer temperature zones and do best with a night temperature not below 15° C. and a day temperature of 24-30° C.

Generally the solid green-leaved types come from the higher, cooler altitudes. They require a night temperature of 8-15° C. and a day temperature of 21-26° C.

Light: Place your Paphs in a medium bright position but protect from mid-day sun. Paphs enjoy the same brightness that African Violets prefer. You can gauge the light intensity by placing a hand about 30 cms above the plant and looking at the shadow cast on the plant. You should see a slight shadow; if it is a heavy shadow then your light levels may be too high, whereas no shadow would indicate a light level that is too low.

Paphs that are growing in too much light will often have pale green, or white-yellow leaves and will mature with smaller growths each year. Flower stems will tend to be short, and the flowers may be small and leathery.

Too little light, and the leaves of your Paph will be relatively dark green in color, overly long, perhaps floppy and lacking substance. Growths will mature slowly, and the plant will take longer to flower than if it were grown in higher light. The

plant may take 1.5 years to mature a growth to flowering size, for example, rather than the expected 10 months. If your Paph has not flowered for several years, but otherwise appears healthy, lack of light is a possible cause.

Watering: Paphiopedilums must be kept constantly moist but not soggy. Over watering in New Zealand's cool winter conditions can cause problems with roots rotting.

Paphs in their natural habitats are usually exposed to high monsoon rain levels during a hot humid summer, and almost drought conditions during winter months. Because of this a fast draining bark mix is required to ensure that the roots don't remain water logged during the colder months.

During the heat of summer Paph plants can be watered every couple of days, but winter watering should be reduced to a maximum of once every two weeks.

If you are not sure, dig down a few cms into the mix, which should be moist, but not really wet. Make sure when watering that the mix is completely drenched. Water should pour freely out the bottom of the pot, and then it must be allowed to drain fully. The pot must never stand in water. From Autumn to Spring care must be taken not to get water into the centre of the leaves. The new flower buds form in the leaf axils and they will rot easily if they are allowed to get cold and damp.

Feeding: Good results may be obtained by using any high nitrogen liquid house-plant fertilizer most of the year. There are many theories in regards to frequency and amount of fertilizer, however paphs are not heavy feeders, so once with every fourth watering seems to keep them happy. Paphs are very sensitive to fertilizer burn. Follow the instructions carefully making sure that your fertilizer mix is not too concentrated. It is better to use a weaker solution if you are in doubt.

Some growers recommend a pinch of blood and bone around the top of the pot after repotting. This certainly keeps the plants happy, however never use any type of dry time-release fertilizer on paphs. The concentration of salts increases as watering is reduced over winter, resulting in burnt roots, and a very sick plant.

Repotting: Paphiopedilums should be repotted every one to two years with a fresh well-draining potting medium, such as no. 3 pine bark. Pumice pebbles or lime chips can be added to assist drainage.

Old bark mix will often look ok on the surface but after a year or two it can be gluggy powder or mud at the bottom of the pot, preventing adequate drainage and not allowing air to get to the roots. If you are not sure, repot your plant anyway. Tipping the plant out of it's pot is really the only way to learn how precise your watering program is. Paphs can be repotted at any time if the year, but usually just after flowering (or just before the start of spring) is the best time.

When repotting remove any soft or rotten roots, healthy roots should be firm, and are usually hairy. The roots will often cling strongly to the sides of the pot so take care not to damage the roots when removing them from the old pot. The new pot size should only just fit the roots. Potting mix will go sour if there is too much spare room and it is important to make sure that the plant is firm in it's new pot. Take care to ensure that the base of the growths are not potted deeper than 1cm in the mix, but they should also not sit too high out of the mix. As a new leaf growth develops, new roots will start at the bottom of the growth. If it is too high above the mix the new root tips will not get sufficient moisture to keep growing, resulting in stress on the plant, and no roots supporting the new growth.

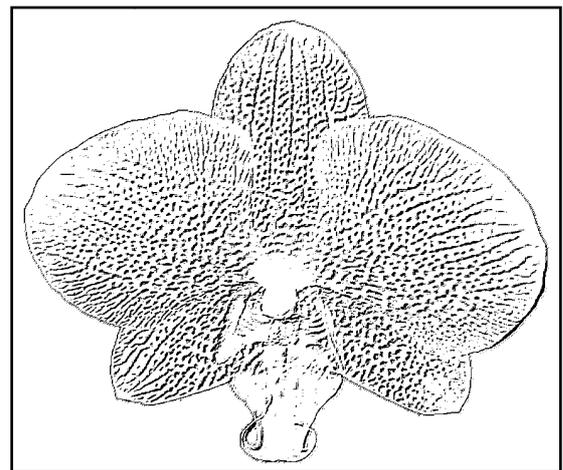
Maintenance: Paphs are generally bug free, although scale and mealy bug will get a hold if given a chance. Remove any dead or yellowing leaves from the base of the plant as they occur, a gentle tug should release it, and may make room for any new roots or growths developing at the bottom of the plant at the same time.

Observe, learn and enjoy. A large part of orchid growing's success is observation. Watch your plant carefully, compare when you see others at shows and meetings. Is your paph happy? Ask for help if you are not sure, better still, bring it along to your local club meeting for advice. Growing paphs is easy. If you stick to the basic rules, you will have a rewarding and exotic plant for years of enjoyment.

Phalaenopsis

By Dennis Chuah

Phalaenopsis, the Moth Orchid, is a genus of about 50 or so species of orchids, found in tropical Asia and down to Papua New Guinea and Australia. Coming from the tropics, they require warmer conditions and grow well as indoor plants. The flowers are a sure talking point but even when not in flower, the bold authoritative foliage is very attractive.



Phalaenopsis Camela's Wild Thing
'Rose Leopard'

The plants usually flower in early Spring and the blooms can last through the Summer. Some varieties will even flower repeatedly on the same flower spike, producing a branch of buds as soon as the previous lot of flowers begin to fade. Some growers think that this takes too

much out of the plant and it may not flower again for some years after that. To prevent this, cut off the flower spike before it has a chance to re-flower. The flowers are traditionally white but pink and red are now available, and some varieties have white petals with a red lip. Yellow is recently available, and is the focus of breeders.

Warmth: Phalaenopsis is a tropical plant and require warm conditions all year round, with high humidity. They make excellent house plants, the warm conditions indoors that we find comfortable, are equally appealing to Phalaenopsis. Humidity can be raised by growing several plants close to each other and/or by standing each pot on top of pebbles in a large tray of water, making sure the bottom of the pots are above the water at all times. You can grow them next to the bathroom window, as long as it is not too bright. The plants enjoys the added humidity whenever someone takes a shower.

Air: Good air circulation is important to keep the plant healthy and free from fungal diseases. While the plants enjoy high humidity, and the leaves can be sprayed on hot days, it is important that any moisture on the leaves has evaporated by the evening, in particular, make sure the crown is dry before nightfall. Leaving windows slightly open will allow good air circulation.

Watering: Phalaenopsis is a monopodial orchid. It has a short stem which continuously grows thick leaves. Thick adventitious roots grow from this stem, seemingly in all directions. They do not grow pseudobulbs, and the only water storage organs are the thick leaves and roots. As a result, they require moisture all year round. Do not let the potting mix dry out completely, but at the same time, do not stand the pots in water – a sure way to rot the roots.

Potting: Small plants are best potted in sphagnum moss, packed to finger tightness. The moss holds a lot of water and fertiliser. Larger plants can be potted in bark, but if moss works for you, there is no reason not to continue using it. Some growers use clear plastic pots; the theory here is Phalaenopsis roots grow better if exposed to light, like in their natural environment.

Feeding: Feed at every watering with a weak balanced commercial fertiliser or use one specially formulated for phalaenopsis, usually available from growers and clubs. Plants grown in bark will require slightly more nitrogen in the fertiliser.

First, thoroughly water the pot with clean water and make sure all water drains away. This ensures that any salt built up is flushed. Then water with the fertiliser solution.

DO NOT use slow release fertilizer pallets, as these can cause salt build up, which will burn the roots.

Light: Phalaenopsis can tolerate fairly low light levels but if the foliage becomes limp and the plant fails to flower, move it to a brighter position.

About the Waitakere Orchid Club

We are a friendly group of orchid enthusiasts who meet on the 1st Tuesday of the month at 7:30pm. We have a display table to show off our plants and a trading table to purchase plants adding to our collection. The meeting usually commences with culture notes, followed by a speaker covering many topics including how to grow our orchids. An extensive library is available for members to borrow books. The meeting winds up with a get together supper. We have two annual shows which are open to the public, and most years, an out of Auckland coach trip.

If you feel like you would like to expand your orchid growing hobby, you are very welcome to come along to our meetings. We meet at the Te Atatu Lions Whitehouse, next to the Te Atatu St. Johns Ambulance Station, Edmonton Road.

Further information is available from Roy Neale (president), ph: 4166737

Our web site: <http://aoc.inetgardens.com>

If you live outside Auckland and would like to contact your local club, go to the Orchid Council's web site to find a directory of clubs:

<http://www.orchidcouncil.co.nz/meetings.html>

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Acknowledgements

The Waitakere Orchid Club would like to thank all contributors for putting into words and sharing their experiences in growing orchids.



Cym. Leroy's Mountain 'Zena'



Dendrobium Cassiope



Odontoglossum Niamay 'Rarda' x
Oratia Parade



Phalaenopsis Shirley Vance 'Jean' x Verlainne'



Paphiopedilum Magic Lantern



Phalaenopsis Camela's Wild Thing 'Rose
Leopard'