

ORCHIDS IN NEW ZEALAND



NOVEMBER/DECEMBER 1981

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ORCHIDS IN NEW ZEALAND

Volume 7, No. 3

Published bi-monthly.

Nov—Dec

OFFICIAL PUBLICATION OF THE ORCHID COUNCIL OF NEW ZEALAND — ISSN 0110-5256

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Annual Subscriptions, including postage: New Zealand \$5.50; Surface rate: overseas, \$NZ7.00.

Advertising Rates: Available on request.

All manuscripts, photographs, news items etc. to reach Editor six weeks prior to publication. Views and opinions expressed by contributors are not necessarily those of the Orchid Council of N.Z.

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Cover photo: Cym. Tapestry 'Red Duke' (Khyber Pass x Voodoo). This plant was exhibited by Smithers & O'Dowda at the 1980 National Conference and won the prize for the Best Red *Cymbidium*. Photo by courtesy of Mr A.B. Porter, Australia.

Don't tell us we know... the photo is upside down.

Growth and Development

P.C. Tomlinson — Wellington Orchid Society

Many people are growing a selection of orchids which come from diverse natural habitats. It is the aim of growers to recreate the plants' natural conditions in their glasshouses as far as is practically possible in order that maximum growth and flowering can be obtained. It is of assistance to consider individually the factors which are essential for plant growth to take place when environmental factors relevant to one particular plant are being considered.

A break-up of growing conditions to individual factors can also assist in providing a means of analysis if a plant or group of plants is not achieving the growth expected. Obviously the specific requirements of all plants cannot be met artificially, and some genera are more tolerant of conditions different from those experienced naturally than others. Conditions in even a small glasshouse can, however, vary quite markedly from one part to another, and it is often possible to select a position that more closely re-creates the requirements of an individual specimen, if care is taken. An understanding of the requirements of plant growth can assist in this management.

Growth and development:

Growth of a plant basically involves an increase in size, whereas development represents a change in the type of growth.

During the spring, we are all familiar with the new shoots appearing, and increasing in size over subsequent months. At a certain stage this vegetative growth will slow down, and development take place which involves flowering and fruiting. A plant's requirements can vary during the stages of dormancy (during winter) growth and development, and certain

environmental factors are involved in the control of the stages. A basic understanding of this can assist in the obtaining of maximum results from the plants owned.

Factors essential for plant growth and development:

For strong healthy growth and development to take place, the following essential environmental factors must be present:

- a Suitable temperatures.
- b Adequate moisture.
- c Sufficient light.
- d Adequate air (oxygen and carbon dioxide present in suitable amounts).
- e A supply of the required mineral salts.

These factors will be considered individually.

(a) Temperature

This is commonly described as the master factor of plant growth, although moisture and light levels are so closely interwoven it is often difficult to separate them entirely.

Certain plants require a relatively narrow range of temperatures for optimum growth, and if this is not provided, difficulties can occur. Other plants can, however, withstand substantial variations although aspects of growth may be affected. The seasonal variation in temperature will also affect growth,

as there will generally be a period when temperatures are conducive to maximum growth. Seasonal variation is also important in regulating plant development, e.g. warm spring conditions will bring about vegetative growth, with often cooler autumn temperatures necessary to initiate flowering, although other factors are also involved.

Temperature variation throughout the day and night, and its associated relationship with humidity (air moisture) also forms an essential, although complex, characteristic of an environment.

(b) Moisture

This is a factor of major significance in setting plant growth. Moisture involves not only water freely present in the growing media permeated by the roots, but also water vapour present in the air (as previously noted, this factor is closely related to temperature, variations in temperature significantly affecting the amount of water vapour present.)

The supply of water in whatever form can be subject to seasonal variation and this aspect often has an important bearing on both plant growth and development.

(c) Light

The effect of light on plant growth and development covers a number of areas:

- The level of photosynthesis carried out.
- Affects the direction and proportions of growth.
- Heat effects.
- Effects of alteration of light and dark on the life cycle.

It will be well known that 'white' light is a blending of light of

different colours or wave lengths. The different portions of the light spectrum have different effects on plant growth. The red/orange/yellow section is most concerned with photosynthesis; the blue/ultra-violet section affecting direction and proportion of growth; the infra-red wave lengths most significantly affecting temperatures.

Light of the shorter wave lengths (i.e. UV) is more easily filtered out of daylight by cloud mist or glass than light of the red/infra-red sector. In different situations therefore 'daylight' in fact can comprise different proportions of the colours or wave lengths of light. In high mountains the light has a relatively high UV content, as less of the UV portion of the spectrum has been filtered out by dusty air. Plants in the higher altitudes are generally more compact in growth. Plants grown in glasshouses will tend to be more 'leggy' because the glass keeps out a greater proportion of the UV light.

In a glasshouse the heating effect of the sun arises through direct sunlight being able to penetrate the glass, but the reflected heat of a different wave length being less able to pass through, results in the heat being retained, increasing the internal glasshouse temperature.

It is apparent from the above that the materials used in glass house construction can have a significant effect on conditions created inside the structure. Therefore, the colour and nature of the materials used must be carefully considered. It is worth noting that many of the plastic materials available have different light transmission characteristics which can affect plant growth, and particular care must be exercised to ensure that

satisfactory results can be obtained from the materials chosen.

The intensity (or brightness) of light will have a considerable effect on the rate at which the plant can complete the photosynthesis process. Generally the greater the light, the faster photosynthesis takes place, although if in its natural habitat a plant is conditioned to weak light, brighter light will not increase the rate.

It will be well known that plants manufacture their own food for immediate growth, or stored for future use. Green plants are able to utilise the sun's energy, transforming this by means of the green chlorophyll (which is mainly in the plant's leaves), producing food. Photosynthesis combines carbon dioxide from the air with water to form sugars, oxygen being given off as a by-product. This essential process can be affected by the amount and quality of light reaching the plant, and is therefore a significant factor influencing the amount of growth and production.

Light can also influence the direction and proportions of plant growth. Parts of a normal plant will grow towards the major light source, i.e. the stem will grow upwards. Other parts, such as the roots, will always grow away from the light. Under weak light conditions leaves will generally be long and flaccid, but with bright conditions smaller parts will be produced, of more robust structure.

It is worth noting that generally there will be greater heat where strong light is involved, as these two factors are closely associated. Thus a glasshouse is shaded in the summer, not only to reduce the light

levels, but also, and often more importantly, to reduce the heat.

Growth and flowering of most plants are greatly affected by changing the relative periods of daylight and darkness. The seasonal changes of day and night periods affects flower bud initiation when associated with seasonal temperature variations. When artificial light is used to increase growth of small plants, care must be taken that mature plants are not affected, as the normal flowering sequence can be interfered with. This fact is however sometimes utilised by commercial growers to control the flowering times of plants, even to the extent of producing flowers out of season.

(d) Air

There must be adequate supplies of fresh air to enable photosynthesis and plant respiration to be completed. Related to air supply is humidity, which can be critical for many plants.

Fresh and moving air can also be essential with regard to ensuring plant health by helping create conditions under which diseases have difficulty in becoming established. Many bacterial and fungal conditions will become readily established under still stale air, especially if humidity is high and temperatures are not at optimum levels for the plants involved.

(e) Mineral Salts

The adequacy of supply of mineral elements is also an essential factor affecting plant growth. Fertilisers are involved in ensuring this aspect is met satisfactorily, and readers are

referred to previous articles* covering this subject in greater detail. It is however worth noting that it has been shown that 16 elements are essential for plant growth to take place. Nine elements are required in significant amounts. Carbon, hydrogen and oxygen are generally readily available from air and water. The six elements — nitrogen, phosphorus, potash, sulphur, calcium and magnesium — are, however, often present in less than adequate amounts and for optimum growth many have to be specially supplied. There are in addition a further seven elements required in minute quantities, which are usually available naturally, or made available when the more

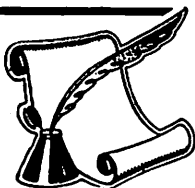
significant fertilisers are being supplied. These elements are iron, manganese, boron, zinc, copper, molybdenum and chlorine. The absence or shortage of any one element will affect plant growth, the actual influence being discussed in greater detail later in this article.

It is appropriate to note that while the factors essential for plant growth and development have been considered individually, there is often a close and complex relationship between them in the natural environment. If one factor is being altered artificially it is important to ensure that detrimental effects are not being created elsewhere.

To be continued.



LETTER TO THE EDITOR



Sir,

Money magazine reports an Oregon greenhouse owner who was fed up with heating bills that were costing him over \$1000 a month. He came up with an idea that is "saving him a lot of lettuce." His alternative heating system generates about 180,000 BTU per hour, about 10 to 15 times what is needed to heat an average sized home. The system? A herd of 350 rabbits, with a normal body temperature of 101.5 degrees generates the heat. Although he spends \$15 a day on care and feeding, he saves.

Do rabbits eat orchids?

Yours sincerely,
IAN M. ST. GEORGE

John Easton Award—1981

The John Easton Premier Award for the most outstanding contribution to the culture and promotion of orchids in New Zealand was presented at the Hawkes Bay Orchid Society show this year to:

GRAEME BOON
and
PAMELA BOON

The abovenamed are editors of Orchids in New Zealand and are members of the Taranaki Orchid Society.

This award is administered by the Hawkes Bay Society.

To date the recipients have been:

1977 Albert H. Blackmore, Auckland
1978 Tom French, New Plymouth
1979 George Fuller, New Plymouth
1980 Herbert J. Poole, O.B.E., Lower Hutt

Garden in Kapiti

*with Stan Hookway
Courtesy of The Kapiti Observer*

GOLDEN COAST SEMINAR

Once again a magnificent flower show was held at the Southward Car Museum on Saturday and Sunday, July 25 and 26, this time the subject being orchids.

On Saturday, demonstrations on potting, soil mixes, division of plants and general cultural procedures were given for Cymbidiums, Cattleyas, Paphiopedilums and Odontoglossums by members of the orchid society.

A chart displayed right temperatures needed by established plants of different varieties. This is essential for beginners awareness of optimum temperatures.

This show was considered by some members to be the best display ever to have been presented by any orchid society in this country. Despite wet weather conditions on Saturday, the attendance — well over 1000 — was very good.

On Sunday, the weather was warm and sunny and the attendance well exceeded that of Saturday. This show was presented by the Golden Coast Orchid Society who had every reason to be proud of their tremendous efforts. Such shows demand many hours of hard work and months of intensive preparation. This show will have stimulated many residents with the desire to grow orchids in their homes and glasshouses and the best way for beginners to learn is to join their local horticultural or orchid society.

Membership fees are extremely low and the talks are most informative.

It was impossible for me to count the thousands of lovely blooms on display but to hazard a guess it would be in the region of seven or eight thousand. Many Cymbidiums, with gorgeous long sprays of beautiful blooms, together with Dendrobiums, Laelias, Odontoglossums, Oncidiums, Paphiopedilums, Cattleyas, Epidendrums, Miltonias, Odontiodas, Phalaenopsis, Vandas, Ascocendas and Odontonias, were there, together presenting a spectacular display reminiscent of oriental beauty. Several nurserymen offered trade displays and sale of plants.

The president, Mr W. Ross-Taylor, presented for public viewing a supremely beautiful Cymbidium Angelica 'Golden Maidstone.' Other outstanding displays of Cymbidiums were Lunagrad 'Elanora', Sylvia Miller 'Golden Rod,' Lucense 'Goliath,' Terama 'Anaru,' Angelica 'Spekle,' Angelica 'Advent,' Pharoah 'Ngatotoia' and Budd March 'Rossetta.'

The centre show benches displayed an orchid masterpiece depicting many varieties in all shades of gold. The beauty of this centre piece was simply awe inspiring.

May I offer sincere congratulations to all responsible for presenting such a successful and exciting show.

SOME NATIVE ORCHIDS OF THE NORTHERN RIVERS, N.S.W.

by Percy H. Sheaffe

(continued)

So we come to the one which has held special interest for me — *Sarc. Hartmanii*. It was in the early 1950's that I was invited to join a friendly orchid enthusiast in a trip to Blue Knob, to search for this very rare orchid. I must admit that I had searched by myself in other places for some time without success. But the result of this expedition soon showed up my ignorance. Blue Knob stands some 650m high with the North-West wall near vertical, but covered with scattered eucalypt trees, and long grass, the latter providing the only means of "hanging on" while climbing. About $\frac{2}{3}$ way to the top there is a rim of rock, and it was here that we eventually stood and gazed in awe and amazement at the beautiful plants of *Sarc. Hartmanii* that grew in abundance, with their roots in the crevices, some times a metre long, and the dying flowers reminding us of the real beauty just about finished.

It was a most unlikely place, in full blaze of the sun, obviously watered only by dew and occasional showers, yet these plants were really flourishing. I gathered five plants, one particular specimen from a bare sun scorched exposed rock, but it was this particular plant which later grew into a large specimen carrying 150 flower spikes each year. I had planted it in a wire basket, with staghorn peat as a growing media. Two other plants were put into pots and placed among my *Cymbidiums*, with much less spectacular results.

I also gave one plant to the late G.D. Bridgland of Mullumbimby, which he grew and divided into five plants,

losing all in a robbery some years later. I also gave one plant to my good friend the late Jim Mackinney Senr, which gained many prizes for him in Sydney suburban shows, and which no doubt later passed to his son, well known Jim Mackinney of Sunnybank, Queensland.

My best plant eventually reached huge proportions, and as mentioned above, produced 150 flower spikes annually. It was in this condition when I took it to the Regional Orchid Conference at Port Macquarie, having been invited to present a paper on "The Elusive *Hartmanii*." I took the plant along to demonstrate, but that was its last public appearance, as soon after it completely collapsed and I only recovered a couple of small growths, which have done nothing since. Other growers have had similar experiences with this orchid, particularly Mr Bruce Chick of Murwillumbah, who once had many fine plants, but now admits being unable to grow one successfully.

There is an interesting sequel to my visit to Blue Knob. Having submitted an article to *The Australian Orchid Review*, I received a letter from the editor seeking details of the locality, for "Botanical Reasons," and hazarding a guess that it was on the Northern slopes of the MacPherson Ranges. Not wishing to tell the world where it was, even for botanical reasons, I replied No, and left it at that. Now of course, it is common knowledge that the superior form of *Sarc. Hartmannii* does come from Blue Knob, and is known as Blue Knob *Hartmanii* far and wide. I was recently told that it was advertised

in USA under that name at \$30 a plant.

I revisited the site once since, but saw only a few isolated plants, which could not be reached, even with the aid of ropes, but because of the rugged nature of the mountain side, particularly the steepness, I swore never to return. But I believe it is only this extreme inaccessibility which may ensure the survival of Blue Knob Hartmanii in its home site.

There are certainly other areas where this particular orchid may be found, some of them quite close to Blue Knob, but all plants which I have gathered from these locations have been quite inferior some of

them almost resembling *Sarc. Fitzgeraldii* in growth habit.

I have mentioned just a few of the very interesting orchids which grow in this North Coast region. There are many more such as the three varieties of native *Cymbidium*, two at least, *Madidum* and *Suave*, being quite common. Then there are the *Bulbophyllums*, and *Monophyllums*, etc., not to mention the *Phaius* and *Calanthes* which were once common all along the coast, the latter also growing along the creeks of the rain forests. One could go on and on.

What more do you need to be convinced that this is really "The Lucky Country."

'Orchid Growing's Easy, Southland Grows 'em All'

'Orchid growing's easy
Or so they say up north,
Where you find orchids down the
garden

Or hanging round the porch.

But down in Sunny Southland
It is quite a different tale,
With ever-escalating costs
of Oil bills — And hail!

Away in far-off places
the best blooms go on Show,
Don't we deserve some Medals
Just to make them grow?

For we have a keen Society
Like a sophronitis in the snow,
And though we have our troubles
We coax the things to grow

We often find in Winter
When the snow and ice set in,
That animals break in for warmth
A seal, the odd penguin.

They cause substantial damage
As they smash the glasshouse
panes,
And as we venture through the snow

We find they've let in all the rains!
But there's always Spring in
Southland,
When land and orchids bloom,
And with our mail-order catalogues,
We are forced to find More Room.

For like our northern counterparts
We have the orchid-growing bug,
And when that lovely flower blooms
We display it at the Club.

Who says you can't grow orchids
Below Lat. 45°?
One trip up to Auckland
And we scooped up prize by prize!

And that was after travelling
Sixteen hundred weary k.s,
We breed them tough in Southland
So we'll be back another day!

Oncids and Phalaenopsis
Catts and Dendrobis tall,
Cymbids and Cyripediums
Sunny Southland grows 'em all!!

*by the Murhiku Muse
Southland goddess of poetry*

The Genus *Odontoglossum*

by Phil Mayhead — New Plymouth

The *Odontoglossum* genus has long been a favourite with those growers who have the facilities to grow cool house orchids. Indeed, the grace and beauty of a well grown *O. crispum* would be hard to surpass in the company of any flowering plant.

First of all, let us have a look at what constitutes an *Odontoglossum*.

They are small to medium sized plants, usually growing epiphytically on edges of clearings in cool rain forests where there is plenty of air movement. The pseudobulbs are typically connected by very short rhizomes but some species have long rhizomes; thin, fibrous roots, one or two, rarely three leaves on top of the bulb, the side 'leaves' are actually bracts to protect the developing bulb and the flower scapes, and then the new growths. The following details of the flower structures are more or less copied from Veitch.

The sepals are spreading and free, the lateral ones rarely united at their bases.

The petals are generally of the same size as the sepals, but sometimes broader.

The lip is parallel to the column at the base, and sometimes adnate to it; the intermediate lobe or limb is either spreading or deflexed, and is furnished with a fleshy crest near the base.

The lip bends away at right angles to the column at the crest.

The column is club-shaped, often elongated, usually narrow at the base, sometimes expanded into a membraneous wing on each side, or into auricles at the apex, or is wingless.

Pollinia two, connected by a stipe to a viscid disc.

The name *Odontoglossum* is compiled from *odontos* or *odontos*, meaning tooth and *glossa*, meaning tongue (the labellum or lip). This "toothed-tongue" of course refers to the teeth like projections on the crest near the base of the lip.

The *Odontoglossum* genus was founded by Humboldt and Kunth in 1815 upon a species found by Humboldt near Jaen, in Northern Peru, and described as *O. epidendroides*. Sadly, this species

has never been in cultivation and appears extinct.

The two closest genera in a botanical sense are *Oncidium* and *Miltonia* and all three have been confused very much in the past and even now there is no final solution.

These three genera are in the sub-tribe *Oncidiinae*, more commonly called the *Oncidium Alliance* and other important genera in it include *Ada*, *Brassia*, *Cochlioda*, *Leochilus*, *Macradenia*, *Rodriguezia*, *Trichocentrum*, and *Trichopilia*.

How many *odont.* species are there? I have been keeping lists of names for some years, and have 109 at present, but this is continually changing as new magazines and books give synonyms, name changes, genera changes, etc. This total includes all "Mexican" ones, a good number of these are now placed in new genera by well-meaning botanists, and taxonomists, leaving only 50 or 60 still valid as true *Odontoglossums*. Actually, all *odonts* found North of Panama Canal in Central America are termed "Mexican," and all South American species are called "Colombians" even too species not found in those particular countries, this is quite convenient and practical as the cultural

requirements of the two groups are quite different.

Here are some of the new genera that the Mexicans have been relocated into:

Cuitlauzina — *pendula* (syn *citrosium*)

Oncidium — *cariniferum*, *cimiciferum*, *confusum*, *costatum*, *hastilabium*, *laeve*, *reichenheimii*, *stenoglossum*, *zebrinum*.

Osmoglossum — *egertoni*, *pulchellum*.

Otoglossum — *arminii*, *axinopterum*, *brachypterum*, *brevifolium*, *chiriquense*, *coronarum*, *hoppii*, *weberbaueranum*.

Rossioglossum — *grande*, *insleayi*, *powellii*, *schlieperianum*, *splendens*, *williamsianum*.

Symphyglossum — *distans*, *umbrosum*.

As you can see, three main groups of Mexicans yet to get their "marching orders" are the *apterum*, *cervantesii*, *krameri*, *rossii* group; the species based on the *bictonense*, *uro-skinneri* group, and the *cordatum*, *maculatum* lot.

Even the botanists fail to agree on some of these shifts. For instance, A.D. Hawkes put *O. stenoglossum* and *laeve* to *Miltonia* in his "Encyclopedia of Cultivated Orchids" (*laeve* as *M. laevis*) but in a recent American Orchid Society bulletin *O. laeve* has been placed in the *Oncidium*. *O. cariniferum* was also placed in the *Oncidium*, yet the very similar growing plants of *uro-skinneri* and *bictonense* were left.

Why? And isn't the *Oncidium* mixed up enough?

Never mind, for our purposes they are still *Odontoglossums*, for registrations and all horticultural usage.

The habitat of the odont species is quite a limited one, in that they are found usually only on Mountain slopes facing the Pacific, mostly at altitudes of 1,500m—2,500m (5,000—9,000 ft).

The most Southerly species found is *O. compactum*, at 20° South in the high Andes of Southern Peru and as we come North following the Andes Mountain chain the numbers increase quickly in Northern Peru, Ecuador, with the centre of distribution being in Colombia. The Eastern arm of the Andes that reaches into Nor-West Venezuela is populated with some odont. species as well.

Northern Peru is the home of *O. cristatum*, *trilobum* and *hallii*, Ecuador has popular ones like *cirrhosum* and *edwardii*; in Colombia the beautiful *crispum* from around Bogota, *luteo-purpureum*, *odoratum*, *pscatoraei* and *triumphans* and Venezuela includes *constrictum*.

The low-lying land around the Panama Canal means there are no odonts found there, but as we go further North the tall, Mountain ranges appear again and a few species start to make their appearance, *O. oerstedii* being one of the first. The species become more numerous as we go through Costa Rica, Nicaragua, Honduras, El Salvador, and Guatemala, until we reach the area of greatest concentration in the mighty Plateau of Southern Mexico, but as the ranges decrease in altitude about the 20°N latitude so we reach the limit of distribution. *O. maculatum* and *cervantesii* are amongst the most Northerly known.

In such a widespread area, we can only briefly generalise on the weather conditions, but for our purposes it breaks down to two major classifications.

For the Northern species, (i.e. the Mexicans) found from Panama to Mexico, there is at the high altitudes usually two seasons, a wet one (Summer) and a dry cold one (Winter). The length of the dry season varies of course from place to place. The dry period often has

daily morning mists, this period is also brighter than the wet season. All Mexican odonts follow this seasonal pattern. In the Spring-Early Summer growth starts and the new bulbs make up over Summer to Autumn.

Flowering takes place at different times depending on the species, so we have *O. pendula* in early Summer, on the new growth, *O. grande* in late Summer on half-matured bulbs, *uro-skinneri* in Autumn on almost completed bulbs. *O. rossii* in the Winter on mature bulbs and so on. The length of the resting period varies from species to species depending on the locality found, ranging from almost 6 months in *O. grande* to only a few weeks at most for *O. bictonense* and *pulchellum*. On the other hand, the Colombian species of the Andes are subject to no major seasonal changes at all. The high 'Andean Mist Forests' as they are known are remarkable in their almost constant temperatures of between 10°C and 20°C. These Forests are perpetually swept by rain, mists and fogs, leaving all the odonts and indeed everything else in a more or less permanent wet state.

Flowering with most Colombian species takes place as the bulb is almost mature, in the case of *O. crispum* for instance there is about 9—10 months between flowering. This results of course in these species flowering at different times of the year, and in a large tree we could find plants in all stages of development. In cultivation however there is usually a flush of bloom in Spring if many plants are grown of the same species.

This, then, is the key to growing these two groups in cultivation. The Mexicans can be subjected to quite warm temps during the growing season, but must have that resting period during the Winter, being kept just moist. They do better if they can be rested in an intermediate house

that is used for the *Cattleya* group. My plants of *O. grande* and *insleayi* have not done well this last 2 or 3 years and I think it is because they have got too cold in my house.

Those growing *O. grande* well always seem to grow them intermediate in the Winter. During Summer you can put them outside in the shade.

On the other hand, the Colombians must be kept cool during the Summers, and anything over 30°C is bad news for them, and similarly to keep them growing during the winter some method should be used to keep them snug, around 10°C minimum. This applies to most hybrids as well, as these are bred from just a handful of the Colombians. Watering is constant, in that there is no dry period of rest, however great care to prevent overwatering is essential during cold periods as this leads to the roots rotting.

The mix used is immaterial, as long as it has the usual orchid requirements of being free-draining, yet capable of retaining some moisture. I use Beck's mix, with chopped growing sphagnum and charcoal added (sieved to get rid of dust particles) for the Colombian species and hybrids, and usually leave out the sphagnum for the Mexicans.

I crock the pots, using scoria or broken clay-pot pieces but I have noticed a trend to leave out the crocks when pine bark mixes are used. Plastic pots are best if using a pine bark mix, but for the mix I suggested earlier clays or cedar boxes are equally good.

Another main point to remember in growing odonts in cultivation is the amount of fresh air these plants must have.

There is much literature available in the growing of odonts and much more I can write on but that is outside the limits of this brief look

at one of the more interesting genus belonging to the Orchidaceae.

The future of the odont is very bright particularly in the intergeneric field where crosses made with *Oncidium*, *Brassia*, *Miltonia* and *Aspasias* have resulted in man-made hybrids of wide appeal, such as *Wilsonara*, *Odontocidium*, *Vuyistekeara*, *Odontobrassia*, *Beallara*, *Aspoglossum*, *Aliceara*, *Colmanara*, etc and of course some very good crosses resulting from the successful matings of the Colombian hybrids with such Mexican species as *O. rossii*, *cervantesii*, *bictonense* and *cariniferum*.

These plants are proving to be adaptable to various temperature ranges and can often be grown cool or intermediate, with the advantage of surviving in localities that have hot summers, areas where the Colombians fail.

Orchids in Singapore

by Murray Ashbridge, *Rotorua*

Orchids create an impact on any visitor to Singapore, and that beautiful city, with its tiled footpaths, elegant buildings, and abundance of trees, still means different things to many people. However, to an orchid fancier, Singapore means much more than a cursory glance at the perpetual abundance of a variety of orchids.

National Flower Week celebrated in late July, was organised by the

Ministry of Culture to launch the selection of an orchid as Singapore's national flower. En masse at the new Changi Airport, in hotel foyers, shops and even on the streets, the purple to rose pink tonings of *V. Miss Joaquim* abounded everywhere. The promotion was aimed to familiarise both tourist and local alike, with the national flower.

The selection of an orchid to this exalted status is not difficult to understand, but why a *Vanda* and why *Miss Joaquim*? The tourist leis of Hawaii are no stranger to *Miss Joaquim*, but this is hardly a reason because Singaporeans are innovators, not imitators. The explanation is much more historical. In 1893 *Miss Agnes Joaquim* found an orchid in her home garden, that so impressed her that she took it to the Director of the Botanic Gardens for identification, and it was recorded as the first identified natural hybrid between *V. teres* cross *v. hookeriana*, and named in her honour *V. Miss Joaquim*, and later awarded an F.C.C. (R.H.S.)

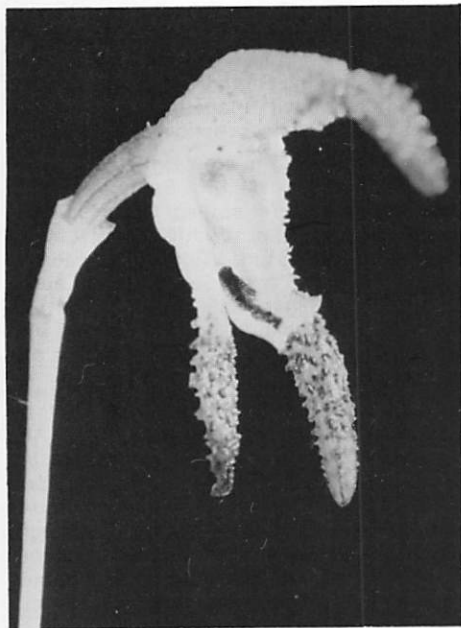
In a country where orchid culture has been developed to such an extent, does this selection, as a national flower, mean that it has qualities that are unique? Not so, and some local growers do not agree with the selection. Their interest is to promote orchids as a cut flower, and this is where *V. Miss Joaquim* fails entirely. Apart from the flower lacking substance, the pollen cap is easily fractured, and when this happens the bloom collapses.

However, a fresh bloom in isolation, or in mass, is a sight to behold.

PUKEKURA CORNER

By George Fuller, N.D.H. [N.Z.],
Curator Pukekura Park, New Plymouth.

Masdevallia eteropthera



I chose this subject because I am so interested in plants which are capable of physical movement to ensure pollination. In so choosing I am exercising literary licence once again because the plant is not in the park collection but was on loan for photographing. The flower will never win an award, but many readers will never the less be fascinated by its peculiarities therefore I take this liberty.

Small, (20mm across) insect-like, hairy, dull yellow with reddish

purple warts and probably difficult to cultivate, *Masdevallia eteropthera* hasn't a great deal to commend it in the 'normal' sense but its ability to respond to outside stimuli places it in a very special category.

My first encounter with a sensitive orchid was in looking after *M. muscava* in the coolhouse range at Sanders (St Albans) Ltd over 30 years ago and I well remember the temptation to incessantly tickle it to see the sharp response as the



hinged lip sprung closed as it would in nature to temporarily imprison a potential pollinating insect. Little did I realise then that this characteristic is shared by at least one group of our New Zealand native orchids, the pterostylis, so we don't need to go far from home after all. Perhaps the slogan for conservation week next year could be 'Tickle a pterostylis!'

In detailed photographic studies of the responses of the motile labellum of pterostylis species I thought I had learnt all the secrets of when and how to tickle but I met my match in this masdevallia.

Having observed the labellum both open and closed and ultimately photographing it open, I assumed that a simple touch would close it and I would have my record of the comparison. Not so. When I deliberately tried to close it I failed completely, despite using all my guile with vibration and changing light and temperature, etc. I am still uncertain of exactly how the labellum of this curious orchid is activated.

Because the warty sepals protrude forward, the problems of photographing the flower in closeup are fairly formidable and I am therefore not very pleased with the standard of the illustrations but one reveals the open labellum with its red central stripe and the other the lower hinged portion reflexed, activated by forces beyond my comprehension.

I am not aware of the exact natural habitat of this little known species but assume it would appreciate cultivation in the cool, moist conditions required for most of the masdevallia group coming as they do generally from the alpine

regions of northern South America. Regardless of its origin, it has a special translucent beauty of its own and a fascination that sets it apart.

O.C.N.Z. AWARDS 1979

Award No. 2/79, 3/79: Min.Cym. Minneken 'Pink Towers' — Mrs D. Chandler — HCC/Cultural Certificate. Dimensions: Natural spread 52mm. Dorsal Sepal Length 38mm, Width 11mm; Lateral Sepals Length 35mm, Width 11mm; Petals Length 35mm, Width 11mm; Lip Length 21mm, Width 15mm. Deep rose pink with magenta lip. Seventeen spikes with 328 flowers open and 236 buds.

Award No. 4/79: Cym. Western Rose x Baltic 'Jubilee King' — Mr F. Burke — HCC. Dimensions: Natural spread 130mm. Dorsal Sepal Length 67mm, Width 45mm; Lateral Sepals Length 65mm, Width 45mm; Petals Length 70mm, Width 35mm; Lip Length 35mm, Width 32mm. Pale green flat flowers with slight red veining. Spotted or barred with crimson to deep in the throat. Two spikes of 7 and 8 flowers.

Award No. 5/79: Cym. Panama Red 'Victoria McDowell' — Mr W. McDowell — AM. Dimensions: Natural spread 115mm. Dorsal Sepal Length 60mm, Width 43mm; Lateral Sepals Length 60mm, Width 45mm; Petals Length 65mm, Width 38mm; Lip Length 35mm, Width 40mm. Red (near RHS Colour Chart 60 B) flowers with size and substance outstanding for this colour category. One cut spike of 15 blooms.

Award No. 6/79: Miltonia Gekko 'Rosemary' — Mr F. Askin — HCC. Dimensions: Natural Spread 84mm. Dorsal Sepal Length 44mm, Width 29mm; Lateral Sepals Length 48mm, Width 30mm; Petals Length 48mm, Width 40mm; Lip Length 66mm, Width 84mm. White flower. Petals with cerise patch. Lip light cream. Mask blood red outer to orange-gold centre.

Award No. 7/79: Cym. Ayers Rock 'Paradise' — Mr R. Maunier — AD. Dimensions: Natural Spread 111mm. Dorsal Sepal Length 65mm, Width 42mm; Lateral Sepals Length 60mm, Width 40mm; Petals Length 61mm, Width 32mm; Lip Length 43mm, Width 37mm. Brick red flower with cream edging. Labellum heavily barred with blood red. One spike 10 flowers.

The Hidden Ones

by Gordon Sylvester, Wainulomata

While planning a holiday in the South Pacific, I thought to observe the conditions under which the indigenous orchids grew, little realising what I would experience. Firstly, information on orchids native to the islands I intended visiting was out of date, scarce or non-existent. Eventually a check list of species of American Samoa was located (ex. Hawaii, from an as yet unpublished book) along with a French publication by Halle, gave a guide of what to expect. Observation of our own orchids did nothing to prepare me for the wealth of species finally encountered.

We arrived at Nandi early in the evening to be met by a wall of heat and humidity. In the morning the Hotel grounds revealed *Vandas*, *Renantheras* and *Dendrobiums* growing in profusion. The first truly native orchid was spotted growing on the side of a coconut palm about three metres up, it was *Dendrobium striolatum* in flower with a *D. tokai* not far away. In Suva, a quick hunt through the yellow pages yielded three growers with whom we made an appointment to visit on our return in three weeks' time.

Tonga proved to be of very low relief and entirely covered by coconut palms. The familiar *Vandas*, *Renantheras* and *Dendrobiums* were found around the Hotels, Motels and Apartment Houses. The Vava'u group of northern Tonga has some remnant of native forest. *Vanilla* is harvested and flown to the U.S.A. for processing, the start of a self-sufficient industry.

On the third day after our arrival in American Samoa we took a trip into the town and saw native orchids perched on the trees shading a church and *Dendrobiums* flowering by the dock. The more we looked around the more we saw; of the fifty-two species known from the island of Tutuila we spotted about a dozen.

On the island of Upolo in Western Samoa, we were able to hunt orchids. Our host fortunately had a large unoccupied space in the rear of his jeep which we filled, on two occasions, with twenty-two different species from *Tanieophyllum* to *Dendrobium*; all epiphytes. *Spathoglottis pacifica* was also added to the collecting bag, we found this on both islands in road cuttings.

Back in Suva we called on Don Burness where to our surprise, *Dendrobiums*, *Vandas* and other tropicals are grown on fern slabs in the garden. *Phalaenopsis*, *Oncidiums*, some *Laelias* and *Cattleyas* were growing in what could best be described as a humidity house (a shade house with lath sides kept constantly moist), but viewing was unpleasant due to a large population of mosquitos.

Very little seemed to be known about the native orchids at the places we visited, what really struck me was the *Dendrobiums* growing and flowering two metres above the sea and thriving. Generally the humidity is about 70—85 percent and most of the orchids grow on the trees.

AND THEN A GLASSHOUSE

by Mrs Ray Harding, Auckland

A little more than seven years ago my husband, Jack, and I became aware of the existence of Cymbidium orchids. For Mother's Day, 1973, the gift I received was a plant already in spike of Balkis 'Luath' x Lustrous 'Betty' and when the buds opened in August to reveal the creamy yellow flowers the magic of orchid growing started to envelop us. A month later we visited the North Shore Orchid Society show in Takapuna, a small affair in the R.S.A. Hall Annexe, but so exotic we immediately joined the society. Our complete takeover by the orchid cult had begun.

At first it was slow progress as we added one and then another flowering size plant to our collection but we did invest in several growing back bulbs for our future pleasure. We were firm in our determination not to let what was now an absorbing hobby become an obsession. We had paid visits to other orchid lovers' gardens and had seen back and front yards, sunporches and terraces, garages and glasshouses, lounges and even bedrooms groaning with the accumulation which comes from thinking "I simply must have that one." But 'The best laid plans of mice and men' — and somehow as a seedling, mericlone or back bulb was added from here and there so did our rather makeshift backyard shade house seem to be bursting at the seams. By the time my husband retired late in 1977 our lounge and sunroom were hard put to house the plants we had in spike and flower.

Another shade house with polythene cover for winter protection was erected alongside the first. However Jack now had a desire to try his hand at Vandas and I had fallen victim to the charm of Paphiopedilums. As well with beginners enthusiasm, we had shared a flask of Cymbidium seedlings with two others and now

had twenty-four thriving babies to swell our collection. It wasn't long before we realised that each of us had been secretly planning where best to site a glasshouse. A badly sprained foot, I suffered through a fall on our back steps helped solve the problem. We did need new back steps so why not re-design the back of our kitchen area to include a lean-to glasshouse.

We live on Auckland's North Shore in central Takapuna and our property reaches down to the shore of Barry's Pt. Estuary, an arm of Shoal Bay. It is a warm almost frost free sunny situation, and though cold winds sweep towards us across the Bay, our sloping section is well sheltered by a belt of Pohutakawa trees along the shore and a block of flats at our rear. The main purpose, we felt, for a glasshouse was to house our Cymbidiums when in flower, to grow Vandas, the cool and intermediate types, and for the comfort of Paphiopedilums in the cooler months. Inevitably we have acquired a few other genera which need a little winter warmth.

The site we chose has the width of the glasshouse facing North East with morning sun all the year. The length runs from North East to South West and as it is shaded by

our home, little afternoon sun reaches it in winter. We decided on a portable gas heater only, as we are supplied with pure natural gas from the mains. The plans drawn up for us by a draughtsman son-in-law fitted our bill and a builder cum engineer recommended by a well known glass-house manufacturer set to work last August to tailor the glasshouse to suit our requirements. As we have a section which slopes from front to back, we have been able to incorporate the underneath of an existing 4m x 2m extension to our kitchen in our glasshouse area, and this serves as storage for mixes, pots and tools. The total area is 6m x 4m with doors each end, three ceiling vents with pulley opening, and ample louvres on the three exposed sides. We accepted the builders suggestion to have a scoria fill topped with pumice and this makes an excellent floor material with a flagstone path from door to door. Our shelves are aluminium and consist of strips to allow ventilation. When we require support for small containers we use old refrigerator shelves atop the aluminium strips. The situation of our glasshouse is such that we come out of our back door onto a glassed in porch, down four steps to the path and then down four gently graded concrete steps into the glasshouse. We have had the back wall of our 4m x 2m kitchen extension reconstructed in glass and aluminium and the glasshouse reaches just halfway up this wall, so that we may enjoy the beauty of our flowering plants on their shelves in the glasshouse while relaxing and dining in the kitchen. On the kitchen side of the dividing glass we have a narrow shelf for Paphiopedilums or other pot plants when in flower. This set up makes our glasshouse a part

of our home rather than a separate entity.

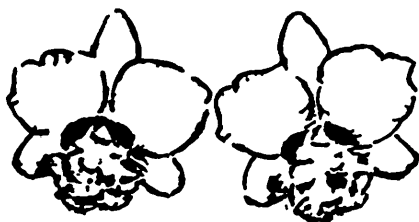
It is now July and as with any new toy, each month, since our glasshouse was finished last September, has been an exciting new adventure. We have checked temperatures and hours of sunshine and taken delight in the improvement of plants which benefit from the extra comfort. Jacks' Vandas have rewarded him with fine flowers and our one Phalaenopsis bore several spikes of flowers in autumn. We have enjoyed Paphs. in bloom for the past four months with more to come, one for the second time since April. Already we are flowering several genera that have previously sulked, *Odontonia*, *Ondontoglossum*, *Brassia verrucosa*, *Sarcochilus hartmanni* and *Cattleya*. For winter warmth we have lined the ceiling of our house with Triglaze, a bubble plastic, fastened in with clips for easy application and removal. Our heater is put on each morning early and again late in the afternoon for about an hour each time, depending on the temperature. We have installed a water tap and a hose but our house lacks the sophistication of a sprinkler system, however it does meet our requirements adequately. There have been no dull dragging days indoors for us this winter, our glasshouse is so easily accessible, bright and comfortable we happily potter our days away. The 'balm' of the glasshouse banishes gloom.

Our plant culture is not very technical and we tend to experiment from time to time with our formula for mix. It is mostly an equal mixture of finely ground bark and pumice with slow release fertiliser pellets and our orchids enjoy a regular low strength

solution of liquid feed. We mostly use Maxicrop but other proprietary lines are given as a change and these tend to vary according to 'specials' offered by retailers. The Paphiopedilums are grown in Becks mix and are fed less often and then only in Spring and Summer. We have our share of problems and 'beasties' but keep sprays to a minimum. I do like to give all plants and pots a regular wash with soapy water and this catches both insects and early fungus or rot before trouble develops. This may sound tedious and boring but in actual fact it is an absorbing occupation as I renew acquaintance with each individual orchid and always find something of interest, especially when spikes are beginning to appear. It has it's moments of horror too such as when I peered into a

sheath on a spike and my eyes encountered a large fierce looking weta. Needless to say I became totally feminine and yelled for my husband to deal with the emergency.

We are still learners but will always be grateful to the many friends we have made in the North Shore Orchid Society who have so generously shared their knowledge with us and allowed us to visit their gardens. We have acquired more knowledge and help from these visits than any other way. We receive a whole lot of pleasure too in giving blooms away and in enthusing others to share this hobby of ours which we find so relaxing and satisfying. The added pleasure of a glasshouse is just the icing on our cake.



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Cymbidium	Cym.	Alison Shaw 'Valentine' AM/AOS January 1981
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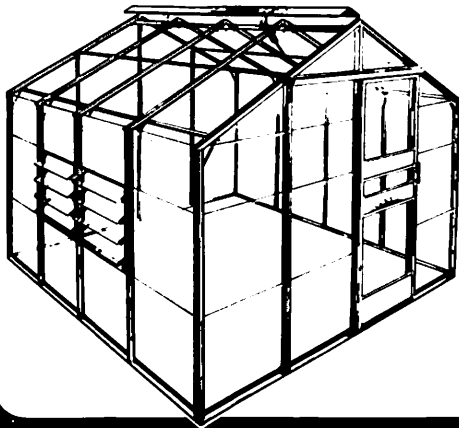
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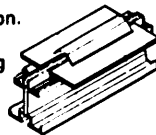
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