

ORCHIDS IN NEW ZEALAND



May-June, 1978

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NEW INDUCED POLYPLOID CYMBIDIUMS

by Mervin E. Dunn, Valley Orchids Pty. Ltd. Australia.

There are in cultivation today two distinct forms of some Cymbidium orchids. The two forms having been derived from the same single seed, have the same genes. They carry the same names but this may soon be altered by a proposed ruling of the International Orchid Nomenclature Committee. The difference between the two forms is ascribed by science to a variation in the ploidy of the plants: those of one form having double the ploidy level of the other form. Into one group can be placed the plants having 40 chromosomes in each of their cells, the diploids, designated 2N. Into the other group can be placed those plants having 80 chromosomes in their cells, the tetraploids, 4N. There also exist some tetraploid plants bearing the same grex name as do their diploid siblings. Again the scientific difference between the two groups of plants is the ploidy level of their cells.

But to those of us who hybridise or grow Cymbidiums, or who show or judge their flowers, or who buy or sell their blooms or even the plants themselves, the scientific difference between the two forms is not the end of it. There is a world of difference between the flowers of the plants of the two groups; one group's flowers being vastly superior to those of the other group. Just what these differences are, and by what degree one group's flowers and plants are superior to the other; how these improved plants are determined, and the effects they will have on the Cymbidium industry, are of paramount importance to every Cymbidium fancier in the world today.

Visual comparison of the tetraploid and diploid flowers of the same cultivar shows that the tetraploid flower is bigger than the diploid flower from similarly cultured plants. The overall dimensions of the flower are bigger, the petals and sepals are wider, the lip is wider, and the column is wider. The shape of the flower is accordingly improved. It is nearer to the ideal show-bench shape. The tissue of all parts of the tetraploid flower is thicker than that of the diploid flower: the colour is thereby

intensified and the flower is more beautiful. The texture of the tetraploid flower is also improved by the better reflection of light from the heavier substance, the spike and flower stems are heavier and stronger, giving a better 'set' of the flowers. In every feature of the flowers observed in show-bench judging — shape, colour, size, texture, substance and arrangement — the tetraploid's flowers are superior to the diploid's flowers. As well the tetraploid's flowers have a longer life both on and off the plant, with or without water. They are more robust; they suffer less damage from handling and packing and they travel better. Tetraploids are vastly superior flowers.

Tetraploids have been produced in several ways:

1. From diploid parents by the natural chance of an undivided (2N) pollen grain joining an undivided (2N) ovule. This way is thought to have produced, to name a few: Alexanderi 'Westonbirt', Pauwelsii 'Compte de Hemptinne' and Early Bird 'Pacific'.

2. By a normal (2N) pollen grain of a tetraploid (4N) parent joining an undivided (2N) ovule of a diploid parent, or vice versa. Probable examples are: Valya Craig 'Judy' (4N), Wallara 'Golden Glow' (4N), Vieux Rose 'Dell Park' (4N).

3. By cross pollinating tetraploids. Many of today's good orchids were produced in this way. We have:

White—Pearl Balkis (all clones that were bred from the tetraploid Pearl Easter and a tetraploid Balkis).

Yellow—Bud March (Balkis (4N) x Shiraz (4N)).

Pink—Valley Flower (Sheba (4N) x Twelfth Night (4N)).

Green—These are very rare—we know of but one of a good green colour—Valley Gold 'Reynella' (Dorama 'Fairfield' (4N) x Bud March 'Rosetta' (4N)). Both parents are recognised yellows.

4. By an undivided cell (or cells) of a diploid protocorm proliferating into a plant, or into further protocorms and then into plants. Examples are Wyanga 'Elanora' (4N), Durham Castle 'Mem. W. W. Kavanagh' (4N), Cariga 'Canary' (4N).

Man is in a hurry: so to increase the range of colours of the tetraploids, and to spread their flowering times, he has turned to a method of artificially inducing tetraploid plants from diploid protocorms, and I might add, hexaploids (6N) from triploid (3N) protocorms. It has been found that if diploid protocorms are exposed to certain chemicals, the chromosomes of their cells will continue to multiply by doubling their numbers, but the cells themselves will not divide under the influence of the chemical. On removal of the chemical, the cells resume their division process. Many cells will now contain four times their previous number of chromosomes, and after division, twice the number. Diploid's cells will now be tetraploid cells, and will continue to divide and form only new tetraploid cells. The length of time the cells are subjected to the chemical, and the rate of multiplication of chromosomes during the period of cell division inactivity, will determine the number of cells converted from diploid to tetraploid, and to octoploid and even to duo-octoploid status.

Of the several chemicals which have the desired effect on protocorm cells, the concentrate of an extract from the Crocus plant, colchicine, is the most readily available and the cheapest. Dosages, time of application and methods of use of colchicine have been published, so that in this record of observations it is necessary merely to state that we have, following these recommendations, produced from diploid (2N) protocorms: tetraploid (4N), octoploid (8N), and duo-octoploid (16N) plants: and from triploids (3N) hexaploids (6N).

In creating tetraploids from diploids it is expedient to be able to determine just which plants are tetraploids as early as possible in the plant's life. The practice of counting the chromosomes in the cells is a long, tedious expensive exercise; the results of which are often inconclusive. A simpler yet extremely

accurate method has been devised. It involves measuring the length and/or breadth of the guard cells to determine their (the cells) volume.

The cells of tetraploid plants, to contain the doubled number of chromosomes, are twice the volume of the diploid plant's cells. This is borne out by observation that the volume of the tetraploid flower is double the volume of a diploid flower produced from similar culture. A small part of the extra volume is accounted for by the extra overall width of the tetraploid flower. A somewhat greater portion of the extra volume is accounted for by the greater width of each and every part of the flower: the tepals, the lip, the column and the flower's stem. But the greater part, by far, of the extra volume is incorporated in the thicker tissue of the tetraploid flower.

It can be shown mathematically that the volume of a sphere is proportional to the cube of the diameter, and that to double the volume the diameter has to be increased by the cube root of 2, which is approximately 1.25. Another way of putting this is to say that the diameter must be increased by about 25% if the volume of the sphere is to be doubled. As the cells of plant tissue may be regarded as roughly spherical in shape, this same reasoning can be applied to them. If the cells of a tetraploid are double the volume of those of a diploid, then their diameter should be 25% greater, and this can readily be tested. Cell sizes are not usually easy to measure, but there are, on the surface of plant leaves, large cells called 'guard cells' around the stoma, or pores through which the leaf breathes, and these can easily be seen and measured in an optical microscope.

Looking at the guard cells found on the underside of a Cymbidium leaf, under a magnification of 900 diameters, we have measured their length at 32 microns in the case of diploids, and at 40 microns in the case of tetraploids. Remembering that the volume is proportional to the cube of the diameter of a sphere, then $32 \times 32 \times 32 = 32,768$, while $40 \times 40 \times 40 = 64,000$. In other words the volume of the guard cells in the tetraploid are roughly

twice the volume of those of the diploid. These figures also show the expected 25% increase in the diameter of the guard cells in the known tetraploid, and it is reasonable to suppose that this increase is similar for all cells.

I have measured guard cells in Cymbidium seedling and mericlone plants after colchicine treatment, at 50 and also 63 microns. These represent an increase of 25% on the tetraploid size, and a further 25% on the figure of 50, as can be seen from the table below. I feel justified in regarding these plants as octoploids and duo-octoploids respectively. These plants of higher ploidy are growing but slowly and will probably be slow to mature.

Actual measurement (Microns)				
	32	40	50	62
Calculated measurement (x 1.25)				
	40	50	63	
Ploidy				
	2N	4N	8N	16N

The fact that tetraploid plants can be induced from diploid plants will revolutionise the Cymbidium industry the world over. The advent of large numbers of tetraploids in the full colour range, and flowering throughout the whole season from ultra early to very late, will affect all sections of the Cymbidium orchid industry: hybridising, growing, showing, judging, packing, freighting, storing and marketing.

Hybridising: Initially hybridists will turn to inducing tetraploid plants from the protocorms formed from the seed of diploid parents. In later years, when banks of high quality tetraploid stud plants have been produced, the crossing of diploid plants will be superseded by the use of tetraploid parents. The creation of triploids (by crossing together diploid and tetraploid) will largely be superseded by the improved tetraploids. Plant propagators will induce tetraploids from the apical meristem tissue of today's best diploids, and when the new tetraploid forms exist in sufficient numbers, culture of the diploid forms will be discontinued in all but the lowliest of collections. Confirming that the new orchids are tetraploids, we have in cultivation today many thousands of tetraploid plants bred from no less than 50 different induced tetraploids, crossed one with another and with many recognised

tetraploids, such as Balkis clones. Random checks of stomata guard cell sizes and chromosome counts confirm that all are tetraploids.

Growing: The longer lasting qualities of the tetraploids, together with their ability to better withstand long distance transport, will give economic advantages to growers situated on the world's 'Cymbidium Belts', where the plants can be grown and flowered without recourse to additional heating or cooling of the natural climate-seaboards on the 35th parallels of Latitude and at higher altitudes in lower Latitudes, in both the Northern and Southern Hemispheres. Entrepreneurs who are first to replace their present stocks of diploid and triploid plants with the improved induced tetraploids will win the markets with better quality flowers and will receive greater rewards in the way of higher prices for their blooms.

Showing: Not only are tetraploid flowers superior to diploid flowers on the show bench, they also last a lot longer in show condition. Accordingly, earlier flowering varieties which will certainly be open in time for shows, will be grown for showing at pre-determined dates. The bigger range of colours in the induced tetraploids compared to the bred tetraploids will in future see champion ribbons adorning brightly coloured Cymbidiums whereas in the past the champion title has been the preserve of white flowers.

Judging: The ploidy of the plant should be of no concern to orchid judges. However standards to which Cymbidiums are judged should alter as more and more tetraploid flowers are shown. Emphasis will shift from shape to colour and from size and number to substance. The hybridist will set the fashions — judging standards will follow.

Packing, Freighting and Storing: The induced tetraploids' superior substance will allow the blooms to be packed without padding and without water. Considerable savings in freight charges will be possible. Their long lasting qualities will allow more to be freighted by road, rail and ship, instead of almost exclusively by air as at present. Longer storage life will allow flower purchases in bigger quantities, with all the advantages of bulk buying.

PHALAENOPSIS SEEDLINGS

Ph. NORMAN PETERSON 'LONGSHOT' x
FRANK GOTTBURG 'DEE' FCC/AOS.

Huge whites with tall sprays.

Ph. SPRING SHOWER 'ORIEL' x SPRING
SHOWER 'GEORGIANA'.

Large whites, very good shape.

Ph. DARLEEN 'RED LIP' x SPRINGFLUSH

Whites to whites with red lip.

Dtps. PUEBLO JEWEL 'GERTIE' AM/AOS x
Dtps. JASON BEARD AM/AOS.

5" whites with bright red lips.

Ph. ANN MARIE BEARD x EAGLE.

Productive dark pinks.

Ph. DARYL BEARD x AMBOINENSIS.

Greens to chartreuse.

Ph. PINK PEARL 'PINKY' x ZADA 'PINKY'.

Very good productive pinks.

Ph. ZADA.

Large pinks.

Ph. BARBARA MOLER No. 2 x BARBARA
MOLER 'SPECKLES'. Limited supply.

Yellows.

Ph. BARBARA MOLER x BUTTERBALL. Limited
supply.

Yellows.

Ph. BARBARA MOLER 'TOP NOTCH' x BAR-
BARA MOLER 'KISMET'. Limited supply.

Yellows.

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Pink. VALLEY FLOWER 'CHERRY RIPE'.	\$10.00	
Red. SENSATION 'KIMBERLEY'		
AD/AOC.	\$10.00	
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Red. TAPESTRY 'RED DUKE'.	\$10.00	
Yellow. VALLEY GEM 'PICARDILLY'.	\$10.00	
Orange. WILON 'TROPIC SUNSET'.	\$7.50	

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Natural Gas Heating for the Orchid House - A Warning

by Roger Cooper, Lower Hutt.

Natural gas should be the ideal fuel for glasshouse heating. It can be burnt in an open flame, or unflued burner inside the house and is thus 100% efficient. The waste products—carbon dioxide and water vapour—are both needed by plants and promote rapid growth. However, whereas natural gas heating is excellent for encouraging vegetative growth, there is a trap for the orchid grower.

I installed a Shilton 2700 natural gas (open flame) glasshouse heater in my glasshouse (6m x 2.8m) in September 1974. The house is insulated with PVC sheet inside the wooden glazing bars and inside air circulation is maintained by four small fans (using old gramophone motors) running off an isolating transformer. I grow a fairly wide range of orchid genera and have a mixture of species and hybrids. With the gas heater all plants grew well and threw flower spikes regularly.

However, flowers appeared to age prematurely. Flowers of *Cattleya* hybrids were noticeably short-lived seldom lasting for more than one or two weeks and others, e.g. *Eria coronaria*, *Maxillaria nigrescens* also aged prematurely. A few *Cattleyas* suffered sepal-wilt, the sepals turning brown and withering immediately after the flower had opened; this disorder was rare, however.

A more worrying effect was seen in some *Cattleyas*, but was noticeable in *Phalaenopsis* and *Dendrobium phalaenopsis* hybrids and varieties; flower buds suddenly withered and dropped when grown to only about half or three quarters full size. *Paphiopedilum* flower buds similarly turned brown and withered when about half grown. In a few plants, e.g. *Oncidium flexuosum*, *Dendrobium nobile* hybrids, antelope *Dendrobiums*, *Epidendrum ibaguense*, flower life was normal.

The flowering problems were much less noticeable in summer than in winter, disappearing altogether during January and

February. Being a newcomer to orchid growing I naturally suspected cultural problems as the cause. The four fans were installed and watering, feeding, shading and external ventilation were varied. Spraying with fungicide (including systemics) were tried. The net result was a slight improvement only.

With the onset of winter this year (it's hard to say just when summer ended) the flowering problems became very bad. By this time all variables but the gas had been eliminated as the cause. A 1 kilowatt electric fan heater was therefore installed in place of the gas heater for a trial period. The effect was immediate and spectacular. Bud drop ceased and flowers stayed open and the glasshouse was suddenly filled with flowers. No other changes were made and there is little doubt that the gas heater was causing the problem.

The heater had been previously checked to ensure that the gas was burning completely, that air vents were clear and that the thermostat was working properly. It seems that there is something in the combustion gases that affects the flowers. In the U.S.A. flowering problems, particularly sepal wilt, are known to be caused by trace amounts of ethylene gas in the glasshouse atmosphere (Northern, 1970). Sepal wilt in *Cattleyas* in particular is linked with trace amounts of ethylene gas (one part in 300,000,000 to 500,000,000) and is prevalent during periods of smog and in glasshouses with open flame gas heaters.

Ethylene gas is used commercially for ripening fruit, e.g. bananas, and it may have similar effects on some flowers. It is uncertain that it could cause buds to wither, but it seems probable to me that either this or a similar gas in the exhaust from the gas heater has been causing the problem.

Buds are apparently affected at an early stage of formation in some plants. A plant of *Dendrobium phalaenopsis* had been in spike

for a month at the time of change to electric heating in my house, the buds dropping as they developed in sequence from the proximal to the distal part of each raceme. Only those buds smaller than one quarter of their full-grown length, at the time of change of heating, eventually developed and flowered.

The answer to the problem is either to use a vented gas heater, or change to another form of heating. It is a pity as the open-flame gas burner was an efficient and cheap method of heating, and venting it will inevitably mean loss of some of the heat in flue gases and a corresponding drop in efficiency.

Reference: Northern, Rebecca Tyson; 1970. Home Orchid Growing (third Edition). Van Nostrand Reinhold.

ORCHIDS IN ART

Are you an artist? Or do you have friends who are? If so, you will be interested in the North Shore Orchid Society's Painting Competition to be held in conjunction with their Spring Show in October of this year. The subject will be an orchid or orchids, which must be included in the painting either singly or as part of the picture. The first prize will be \$100 cash and the opportunity also to sell your painting if desired.

Often people ask where they can buy a painting of an orchid, they seem to be practically non-existent and prints are rarely obtainable in New Zealand. It is hoped that members of Orchid Societies will help artists by giving them the chance of visiting their orchid house to view and study the object as this competition will be open to everyone, and not all are orchid growers.

Painting from slides and photographs will also be permissible and more detail of conditions will be contained in a brochure sent out to all Societies. For any further copies or information please write to the North Shore Orchid Society, P.O. Box 33-493, Takapuna, Auckland. We are confident that this competition will open a new field of interest in the wonderful world of Orchids and hope others will feel the same.

ORCHID TOUR TO HAWAIIAN ISLANDS

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Here is a unique opportunity for orchid lovers to see the most beautiful cluster of islands on earth, and at the same time visit the 39th Annual Orchid Show in Honolulu, where 29 Orchid Societies combine to exhibit massive displays of orchids. Highlights of this exciting tour are:-

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Ten Favourite Cymbidiums

by Frances and Norm Wood, Palmerston North.

Having had a request for a list of our favourite Cymbidiums we would consider the following, not necessarily in the order stated, as our favoured ten.

We find it quite a task to list so few from our collection of over five hundred different clones, which all have their own special appeal. However, to be appealing and listed as favourites, they must have colour, reasonable to good shape, good growth and spike habit, with reliable flowering qualities.

Well, here goes.

ROSANNA 'PINKIE' FCC/RHS

Pure white, lightly pink marked lip, of good round form. Lovely flower and slightly arching spike.

DELROSA 'THE KING' FCC/AOS

Large pure white, bright red dotted lip markings, 12-15 flowers on straight spike.

LILLIAN STEWART 'APRIL BLUSH' HCC/AOC

White, pink blush, lightly marked lip. Perhaps not as full as some. Tremendous, slightly arching spike of up to 25 flowers. A reliable clone.

MARY ANN 'LISA'

Rose pink with crimson spotted lip markings. Nice rounded shape, tall arching spike with 18 to 22 flowers. Blooming late — Oct. - Dec.

HAMSEY 'THE GLOBE'

Outstanding light red with attractive broad banded lip. Good spike habit, 12 flowers.

BALTIC 'AM'

A good green with spotted maroon marked lip. Particularly attractive if grown pendulant. 12-14 flowers.

WYANGA 'ELANORA' HCC/NSW, AD/NSW

Top quality dark green pure colour, beautiful yellow lip. Flowering June to September.

CORAKI 'HADFIELD GOLD'

Brilliant golden yellow, faint red vein in sepals and petals, red markings on lip. Nicely balanced flower, semi arching spike 12-15 flowers. Mid season.

MAZATLAN x ALNWICK CASTLE.

A seedling flowered several years ago. Var. 'Golden Glo'. A big, full rounded rich golden flower with attractive rose lip markings. Straight spike habit. 15 flowers. Very striking. **ROBIN 'ROCHELLE'**

A pink flower of good form with a broad banded scarlet lip. Semi arching spike of 12 flowers. Eye catching.

There are others we could mention but have chosen these ten as our current favourites.

1980 CONFERENCE

The Executive Committee of the North Shore Orchid Society, hosts for this event, have now formed sub-committees to handle all aspects of the Conference. Management, Social, Conference, Financial, Publicity, Show and Tours sub-committees have already done a lot of groundwork and there have been two meetings with the Orchid Council to exchange and discuss ideas.

A preliminary letter outlining our plans has already been sent to all societies and replies to date are full of encouragement. As this is the first-ever National Orchid Show to be held in New Zealand, our hopes are that all societies will participate by staging their own displays at Ellerslie. We intend to show our overseas visitors just what we can do!

The four day Show, opening on Thursday, 16th October, will be preceded on the Wednesday evening by a cocktail party for registrants. Judging of the displays and plants will also take place on the Wednesday, and the Show is to be fully competitive. On the Friday evening we have arranged a Maori hangi at St. Stephen's College, Bombay, some 30 minutes South of Auckland, and official social events will conclude with a banquet on the Saturday night. Local and N.Z.-wide tours will be arranged.

Progress reports on the Conference will appear in each issue of this publication and all societies will be kept informed as arrangements are formulated.

If you know of overseas orchid friends who might be interested in joining us, it would help immensely if you could suggest to them now, that they visit us in 1980.

PUKEKURA CORNER

by George Fuller, N.D.H. (N.Z.), Curator Pukekura Park, New Plymouth.

Epidendrum cochleatum L.

The genus *Epidendrum* comprises a range of orchids of extreme diversity from straggling 'reed stems' to those that are compressed and even succulent-like. The species that we are concerned with is about the middle of the range and could be likened to the average *Cattleya* in general size, growth and flowering habit. The clean, tapered and sometimes pear-shaped pseudobulbs are up to 20cm. tall, topped by leathery leaves approximately 5cm wide, pointed and 35-40 cm long in strong specimens

The "upside-down" blooms about 7 cm. across (if expanded) occur on an elongating stem arising from the apex of the pseudobulb



and not surprisingly have earned the species its common name of 'the octopus orchid'. The dangling sepals and petals are pale green to yellow and the labellum is purple-black on the outside, striped green and purple on the inside. (Cochleate means shell-shaped, in reference to the labellum).

Natural distribution seems to be very extensive from Mexico and Southern Florida through the West Indies and Central America south to Brazil. Although this embraces warm tropical regions *E. cochleatum* does not demand high temperatures and is well accommodated in intermediate conditions which in this locality means a glasshouse with minimal winter heating, none in summer.

Culturally it does not seem to have extreme requirements and should be within the scope of most to flower successfully provided the basics of water and feed are ample during growth periods and limited during dormancy.

A few facts are particularly noteworthy. The year of introduction is given as 1787 and this species is thought to be the first epiphytic (tree dwelling) orchid to flower in European cultivation. Our plant has, over the past four years, been recorded as being in flower every month of the year except September and October. The reasons for this incredible everlasting flowering period are numerous. Individual blooms are very long lasting and produced in succession on a spike which continues to elongate for months.

For those wishing for a virtually perpetual flowering orchid with relative ease of cultivation and a full share of curiosity plus historical interest, *Epidendrum cochleatum* is a good starter.

COVER PHOTO: *Dendrobium aggregatum* var *Marjus*, by courtesy of J. G. JACKSON of the Manawatu Orchid Society. A dwarf growing species, native to North East India, flowering in the spring or early summer. Apologies for the inverted photo on last issue's cover.

CULTURAL NOTES

by Bruce Douglas

Here we are, like it or not, into the first two months of the calendar winter. In the Bay of Plenty area, as in so many others, it is only a short time back that we were complaining about the heat. How quickly we change!

I am so glad to know that each and every one of you readers has fully prepared for this period. It makes this job of note writing so much easier. You have no drips in the glass-house, the right amount of shading when required, heating working like a charm, and so on. What topics are left for me to write about?

As most will have Cymbidiums, dare I ask if you have any more spikes than last year. No! Well then I guess you had the optimum spikes for last year. No! Surely you do not have less?? May I suggest that you use some of your winter evenings to read up about Cymbidiums, their needs, their original habitat, what makes them flower etc. etc. Don't get confused because one book or grower says this and another says that. **THERE IS NO CONFUSION IN ORCHID GROWING.** Each authority knows what he is saying. The trouble is we do not. So ask yourself all sorts of questions about your reading material or what you are told. Was the author speaking of his Cymbidium growing experiences in Fiji, Dunedin, U.S.A. or England or ? Each experience would be different. Then potting mixes, type of house, strength of sun, temperature, humidity etc. would be different again. If you don't look for such points and answer them in your mind, it is you and you only who will be confused. I admit that if you are a beginner in the game of orchid growing it is not so easy.

Your Cymbidium spikes will be elongating now. Tie them up a little at a time as they grow. They are quite brittle so more than a little bending may crack them. What a lovely sight it is to see an erect spike with well spaced flowers not twisted in any way.

Did you know that many orchids we grow come from a two season climate. They grow in the wet season and rest when it is the dry season. In New Zealand our plants rest in the winter be they orchids or otherwise, **NOTE**

resting dry in their natural habitat and wet here in New Zealand. Therefore I suggest you could well have some protection over them for the winter, as well as an open mixture. Should they be wet at the roots and a hard frost comes you could well be in for trouble with rotting as well as frosting. During this period and the next one it is far better to keep your plants on the dry side. This goes of course for all orchids, not just Cymbidiums. It becomes good policy to lift each pot and feel its weight — heavy if wet; light if dry. **DO NOT WATER** if you have any doubts about the plants need for this.

Frosts are a big problem for some of our growers who can get up to -7°C . How's that you other lucky folk! With this possibility plants must be dry and remember Cymbidium spikes frost before the plants. However the plants will stand a few degrees if they are in the right condition.

Although I am saying 'keep dry' don't allow the air to become over dry. If you do, red spider becomes a problem. These little insects rasp the leaves and leave a silvery especially under the leaves, something similar to thrip damage. If you get them, spray and damp down with a light misty spray early in the day and so allow the plants to dry before nightfall.

Allow all the fresh air to circulate that you can without dropping your temperature. Because hot air rises, don't open the top vents unless on a warm day. Should you do so the hot air will just rise and disappear. Open only your bottom vents on cool days (possibly only on the lee side) and keep all other vents tight shut. This is the way to trap and retain your warm air.

For those who do not have outside protection, where necessary put your plants on a porch or if small, inside and preferably in the kitchen, toilet, bathroom or laundry. Here they will receive humidity from the cooking etc. which is quite a help. Your lounge is not a good room for with a fire or some other form of heating the air becomes very dry, quite foreign to plants that come from a forest or bush.

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Regional Panel No. 2: D. Bell, M. Clark, Mrs. Betty Cullen, J. Dixon, I. D. James, R. Maunder, P. Wyatt.

Regional Panel No. 3: Mrs. Pam Boon, G. Boon, G. Bruce, T. French, Mrs. Barbara Watkins, R. Watkins, W. H. Whittaker.

Regional Panel No. 4: F. R. Askin, Mrs. Kath Black, P. Brookfield, J. G. Jackson, G. A. Maney, Mrs. Janet Mendoza, N. W. Porter, R. Wilkins, M. Wilton, N. G. Wood, L. Wyatt.

LYPERANTHUS

by Jim Forrest, Te Puke

A genus of some ten or eleven species, only one of which is found in New Zealand. The rest belong to Australia and New Caledonia. It gets its name from the Greek *lyperos*, mournful, *anthos*, a flower. The flowers usually dry black, thus giving it, its generic name.

Lyperanthus antarcticus is found from the central North Island to the far south. Usually it grows in very damp peaty places and at high altitudes, descending to sea level in the far south.

It is not a large plant and seldom exceeds 15 centimetres in height. Two, sometimes three leaves are found spaced along the stem.

The flower is the easiest means of identification. Yellowish green in colour with dull red brown spots, it stands at right angles to the stem.

The tubers are smallish and like *Chilodictis*, grow at some distance from the stem.

This plant is not easy to grow in my locality but by giving a well drained peat leafmold mix and keeping as cool as possible in winter it grows and flowers for me. The Australian species are really quite unlike ours and while they grow quite readily, getting them to flower is another matter.

CLASSIFIED ADVERTISEMENTS

This section is for the use of amateur growers only. Trade your surplus back bulbs and divisions for profit and pleasure. Please reply direct to the addresses given as no correspondence will be entered into by the Editor or magazine staff. Fifty cents for each advertisement, limited to 18 words.

WANTED: Division *Coelogyne bufardinae* and *Angulocaste*, *Bulbophyllum*, *Anguloa*, *Odontoglossum crispum*, any division Cool and Intermediate to Warm house orchids. C. Mitchell, 33 Bomford St., Blenheim. Will pay freight.

Impressions of the 9th World Orchid Conference

by E. O. Campbell

A highlight of the orchid world came early in 1978 with the holding of the 9th World Orchid Show and Conference in Bangkok. Registrations, said to exceed 2000, made the gathering a very large one. One hotel was taken over entirely as the venue for the conference but as well people stayed in other hotels throughout the city.

The Show was held in the country at the Rose Garden and was opened in a colourful ceremony by the charming, young, Crown Prince of Thailand who was accompanied by the equally charming Princess. The grounds were extensive and included a lake and plantings of trees and shrubs. For the Show the orchids were displayed outside under the trees except for the floral arrangements which were indoors. In Bangkok at this time of year there is no rain and no wind.

The only drawback was the distance from the city. For the opening we were transported in buses, with a motor cycle and traffic car escort to clear the road and police stationed all along the route to ensure that it was kept clear of other traffic. Even so the trip took an hour with another hour allowed for assembling at the starting point. On any other occasion the trip took 2½ hours one way and, with 50,000 people at the Show, it was impossible to see much of the flowers even if you managed to get to the grounds. That was a disappointment to many as there were some beautiful blooms.

Tropical orchids and species orchids predominated. Remarkable was the increased size, firm texture and clear colouring of many of the newer cultivars. Much interest was aroused by the display of *Disa* species from South Africa and a collection of species orchids from Madagascar. The Palmgarten, Frankfurt, displayed many *Paphiopedilum* species as well as more colourful cultivars.

Since many of the Conference sessions ran concurrently one had to select what promised to be of greatest interest. Most of the talks were illustrated by very beautiful slides. One

remembers the remarkable range of colour and form now available in genera such as *Lycaste*, *Calanthe*, *Miltonia* and *Odontoglossum*; and pictures of orchid species of places such as Papua-New Guinea, India, Malaysia, Japan, Australia, Africa and Madagascar.

The Conference closed with an open-air, buffet-style banquet at the Rose Garden when we were entertained with traditional Thai music and dancing, fashion parades and fireworks. Awards were made by Prof. Rapee Sagarik, representing the Orchid Society of Thailand, to Prof. R. E. Holttum (Great Britain), Dr. Kahn Jalavicharana (Thailand) and Prof. R. Kamemoto (Hawaii). Mr. George Alphonso representing the Orchid Society of South East Asia presented awards to Dr. Yeoh Bok Choon (Malaysia), G. W. Dillon (United States) and Prof. Rapee Sagarik (Thailand).

It was arranged that the 10th Conference will be held in Durban in 1981 and to this a warm welcome was extended.

ORCHID ADVICE

My attention was drawn by Mifanwy Pirie of South Africa to an excerpt from a very old orchid book, "Orchids" by James O'Brien, which is still only too relevant today.

I quote: "It is desirable that an Orchid Grower should endeavour to find out the best methods for his own circumstances and, if the results are satisfactory, that he should adhere to them, for there is no more prolific cause of failure than in continually trying experiments recommended by others."

Thank you Mifanwy, for reminding me of the existence of this little book, published probably in the latter part of last century. Apart from the excerpt quoted, this book contains many words of "orchid wisdom", and through this reminder it was a joy to renew my acquaintance with James O'Brien and his 'Orchids'.

For further information see "The Orchid Review" for October 1977.

"Aspidistra."

SHOW EXHIBITION DATES

WINTER

NORTH TARANAKI

20 May, 1978: 1 p.m. to 5 p.m.
7.30 p.m. Social gathering for members.
LOCATION: Whiteley Hall, Liardet Street,
New Plymouth.

WELLINGTON

16 June, 1978: 11 a.m. to 9 p.m.
17 June, 1978: 10 a.m. to 5 p.m.
18 June, 1978: 10 a.m. to 4 p.m.
LOCATION: Green Room, Wellington Town
Hall.

N.Z. ORCHID SOCIETY

July 6th, 7th and 8th, 1978.

WAIKATO

22 July, 1978: 9.30 a.m.
Details to be advised.

GOLDEN COAST

29 July, 1978: 9 a.m. to 5 p.m.
30 July, 1978: 9 a.m. to 3 p.m.
LOCATION: Paraparaumu Memorial Hall.
Show open to general public Saturday only.
Sunday show and seminar for orchid society members.

SPRING

WHANGAREI

15 Sept., 1978: 12 a.m. to 8.30 p.m.
16 Sept., 1978: 10 a.m. to 5 p.m.
17 Sept., 1978: 10 a.m. to 4 p.m.
LOCATION: Ladies Gardening Club Hall,
Rust Avenue.

POVERTY BAY & EAST COAST

15 Sept., 1978: 11 a.m. to 9 p.m.
16 Sept., 1978: 10 a.m. to 6 p.m.
17 Sept., 1978: 10 a.m. to 4 p.m.
LOCATION: Kaiti Memorial Hall, Wainui
Road, Gisborne.

NEW ZEALAND

Sept. 21st, 22nd and 23rd, 1978.
All visitors welcome to view or compete.

MANAWATU

29 Sept., 1978: 11 a.m. to 9 p.m.
30 Sept., 1978: 10 a.m. to 5 p.m.
LOCATION: All Saints Church Hall, Church
Street, Palmerston North.
Non competitive display.

HAWKE'S BAY

29 Sept., 1978: 1 p.m. to 9 p.m.
30 Sept., 1978: 10 a.m. to 8 p.m.
1 Oct., 1978: 11 a.m. to 4 p.m.
LOCATION: Centennial Hall, McLean Park,
Napier. (Latham Street).
Presentation 'John Easton Award' 1978 will
be held on Saturday, 30 September, in the
afternoon.

SOUTH TARANAKI

30 Sept., 1978: 10 a.m. to 9 p.m.
1 Oct., 1978: 10 a.m. to 9 p.m.
LOCATION: Community Centre, Albion
Street, Hawera.
This will be our first show.

GOLDEN COAST

5 Oct., 1978: 9 a.m. to 5 p.m.
6 Oct., 1978: 9 a.m. to 5 p.m.
7 Oct., 1978: 9 a.m. to 8 p.m.
LOCATION: Coastlands Shopping Mall,
Paraparaumu.
Show is staged in centre of enclosed shop-
ping mall, no charge to the public.

NORTH TARANAKI

5 Oct., 1978: 1 p.m. to 9 p.m.
6 Oct., 1978: 10 a.m. to 9 p.m.
7 Oct., 1978: 10 a.m. to 5 p.m.
LOCATION: St. Joseph's Hall, Devon Street,
New Plymouth.
Set-up: 4 Oct., for all display stands.

NORTH SHORE

6 Oct., 1978: 1 p.m. to 9 p.m.
7 Oct., 1978: 10 a.m. to 6 p.m.
8 Oct., 1978: 10 a.m. to 5 p.m.
LOCATION: North Shore Teachers Training
College.

WAIKATO

6 Oct., 1978: 1 p.m. to 9 p.m.
7 Oct., 1978: 10 a.m. to 5 p.m.
8 Oct., 1978: 10 a.m. to 3 p.m.
LOCATION: Ferrybank Lounge, Grantham
Street, Hamilton.
Setting up on 5 Oct., 6 p.m. to 8 p.m., and
6 Oct., 8 a.m. to 10 a.m.
Competitive show and non-competitive
display.

WAIKARAPA

8 Oct., 1978: 11 a.m. to 4 p.m.
LOCATION: Old Folks Hall, Cole Street,
Masterton.
We are holding a Mini Show this year.

WELLINGTON

21 Oct., 1978: 11 a.m. to 9 p.m.

22 Oct., 1978: 11 a.m. to 5 p.m.

23 Oct., 1978: 11 a.m. to 5 p.m.

LOCATION: St. Orans College Hall, High Street, Lower Hutt.

BAY OF PLENTY

Dates to be advised.

LOWER HUTT

Dates to be advised.

WANGANUI

No Show.

MARLBOROUGH

No Show.

OTAGO

No Show.

SEMINAR

The Waikato Orchid Society is holding a one day seminar along with its Winter Show and Social, on Saturday, 22nd July, at the Waikato Motor Hotel.

PROGRAMME

9.30 a.m. Registration and Morning Tea.

10.30 a.m. - 12.15 p.m. Introduction by Tom French.

Breeding programme of Cymbidiums by I. D. James.

Modern Orchid propagation by P. Wyatt.

Export co-operations and their use.

12.15 - 1.30 p.m. Buffet Lunch.

1.30 - 3.00 p.m. Imported plant discoveries by J. Amos of Auckland.

Chemical sprays and their make up, by Don Slade, Massey University.

Native Orchids, by J. Forrest of Te Puke.

3.00 p.m. Closing and Afternoon Tea.

3.30 p.m. Staging of plants.

6.00 p.m. Judging and cocktail hour.

7.00 p.m. Presentations.

7.30 p.m. Dinner and Social to follow

Cost per head for function: \$15.00.

(Cocktails and drinks not included.)

All those interested please register with payment in full by Monday, 10th July, 1978, to:-

The Secretary,
Waikato Orchid Society,
P.O. Box 7101
Claudelands,
HAMILTON.

MY FRIENDS THE CATTLEYA GROUP

by Con Mitchell, 33 Bomford St., Blenheim.

I was very interested in the article by Bruce Douglas Jan.-Feb. 1976, "The Cattleya Group" and thought perhaps anybody growing this genera for the first time might be interested in my experiences. I grow them in the kitchen and lounge. Firstly the house where I live and the plants (which are rapidly taking over the living space) is heated in winter by two space heaters, one of which is on all night during the severe frosts we experience here in Blenheim, so I would maintain a steady night temperature of around 12°C. We have plenty of ventilation by various well placed windows, which can be open top or bottom for the necessary trickle of air movement all the time.

The Cattleyas in the kitchen are housed on shelves (northerly aspect) screened by blinds to control light and are making vigorous growth with flowering buds just appearing.

The lounge dwellers are many and varied. Small seedlings in community pots (plastic ice-cream containers with notches cut in the sides) and large flowering sized plants in bud in various baskets mounted on bricks set on pumice filled trays, kept reasonably moist, some even raised on tiered trays.

I am watering twice a day at the moment as we have been experiencing temperatures of 30°C. (After all, isn't Blenheim the sunshine town!) I also mist twice a day. This room receives morning sun until noon and I adjust the blind during the morning as the heat and light have been very intense this month (Feb.).

Mixes are whatever I can find in the bush in the way of fern fibre, mixed She-oak bark, oak leaves, polystyrene pieces, orchid mix (Smith's, as that was all I could find locally), a lot of Beethoven and a lot of loving care! Plus a tolerant husband who doesn't mind this semi-jungle springing up in the corner of the room where he reads the newspaper now and then. I might add that I have also just flowered a red and white *Miltonia* and *Dendrobium* noble which are in with the *Cattleya* group.

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DR. LLOYD HAWKINSON 'JENNIFER' S/CSA

Another heavy producer of good quality late export flowers. 20-30 cm leaf length \$6.00 each. 10 plants \$40.00, 5 plants \$22.50. Larger quantities by arrangement.

ANGELICA 'ADVENT' AM/AOS

One of the finest early flowering yellows obtainable A very well known variety.

20-30 cm leaf length \$6.00 each 10 plants \$40.00 5 plants \$22.50. Larger quantities by arrangement.

MIMI 'SWEETHEART'

A fine red miniature with an arching spike of well spaced flowers. 20-30 cm leaf length. \$6.00 each.

PENDRAGON 'BROADMORE' B/CSA HCC/AOS

A lemon miniature very free blooming in the early part of the season. Full form and is proving a very fertile parent.

20-30 cm leaf length \$6.00 each.

DAG 'GREEN PRINCES'

A clear sap green miniature with creamy lips and velvety lemon edging 20-30 cm \$6.00 each. 15 cm pots small green bulb and growth \$10.00

GARETH 'BLENHEIM CASTLE'

An outstanding green miniature with shapely blooms. Tall spikes.

15cm pots small bulb and growth \$10.00

The above are samples from our extensive stocks and are available for immediate delivery.

J. S. HANNAH

(Walters Road), R.D. 2, Papakura, N.Z. Phone 84-287 Papakura.

SOLE AUSTRALIAN AGENT FOR:

FEATHERHILL EXOTIC PLANTS

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