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ORCHIDS IN NEW ZEALAND



May-June, 1977

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- | | | |
|--------|--|------|
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Today's and tomorrow's champions are from colchicine treated flasks.

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EDITORIAL

With this issue we complete two years of publication. The Editorial staff have done their best not to set a pattern, but rather a varied selection of articles. The 'Letters to the Editor' column was instituted for readers to give their views on the magazine, such as layout, type of article and readers enquiries. To date there has been a limited response and it is assumed that everyone is satisfied with the publication. However, suggestions are still welcome and will be acted upon where possible. There have been few 'readers enquiries' which is a good sign as it shows that societies have been carrying out their duty instructing new members. Some associate editors have done more than their fair share of work, others have not — no more need be said on this matter.

Two societies, Gold Coast and Manawatu, have recently donated substantial sums of money to the magazine fund to be used for cover photos. In both cases they have been asked to forward colour transparencies of their own choice to be selected for the cover. Thank you Gold Coast and Manawatu.

It is donations such as this that help to keep our expenses down thus enabling the subscription to remain reasonably static. It is hoped that other societies financially able will follow suit.

POVERTY BAY-EAST COAST SOCIETY

Out on a Limb

Gisborne is the headquarters of the Poverty Bay-East Coast Orchid Society. Have you been to Gisborne? What! That place is a bit out on a limb I hear you say? — Isolated? Off the beaten track? Well, true our railcar service has been terminated and our air service schedule "rearranged" but our roads are good — and interesting to the discerning eye. Already we have found a dozen native orchids, easy once you know what to look for.

Formed just two years ago our Society consists of about 120 members. We are fortunate to have had some of the best growers and exhibitors in N.Z. as speakers at our meet-

ings. At the end of our first year we staged our first Orchid Show, rather ambitious, but with the enthusiasm and active participation of all members, a huge success.

Focal point of the show was a bridal scene, and following this theme invited garden clubs and florists to exhibit accordingly.

The second year has brought a degree of maturity to most of us, helped by Orchid Council of New Zealand, and Society magazines, and overseas publications, world travelled guest speakers and indeed members' own research. May we add you haven't lived unless you've been on a field trip or a bus trip with your society.

In no time the spring show has loomed up again. The focal point this time was a garden fountain playing in a pool made from heavy duty polythene draped over a large tractor tyre. Banked around the "pool" were quarry stones, ferns, native orchids and some Paphiopedilums. Flanking the pool was our horseshoe shaped display table containing miniature Cymbidiums. (Our display table is made of four arcs 3 feet wide. These can be assembled in a variety of ways.)

On the stage Cattleyas, Phalaenopsis etc. were quite at home in a small glasshouse loaned and erected by the local agent. Miniature Cymbidiums and ferns arranged in tiers filled the remainder of the stage, with the whole backdropped by large pongas. In spite of the late season members maintained our high standard and earned the congratulations of the N.Z.O.S. president.

Well 1977 will roll on with new adventures into the Orchid world for all of us, and when it is time for our next Spring Show in September, why not come and join us on our limb. The view is good from here.

TARANAKI ORCHID SOCIETY NEWS

The society has been having a very busy half year. Our monthly meetings are popular as shown by the wide variety and numbers of plants on display.

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MINIATURE CYMBIDIUMS -

Their Development and Their Culture

by Syd Monkhouse, Adelaide Orchids, P.O. Box 1, O'Halloran Hill, South Australia.

Contrary to general belief, the culture of miniature Cymbidiums is the oldest known orchid culture in the world. Far from being a new craze, we find the miniature Cymbidiums being the almost entire subject matter of the first orchid book written by a Chinese scholar named Kin-sho, more than 1,000 years ago.

Only seven Cymbidium species have been responsible for the present day large flowered hybrids. A large number of small growing, and small flowered species can be added to these seven species, thus it is easily seen that a much greater variety of colour and also form and growth can be obtained in producing small flowered Cymbidiums.

Probably this gives us our first point in favour of minis.

From the first recorded miniature crossing, which was species C. 'lowianum' x C. 'tigrinum' registered by R. I. Measures as Low-grinum, in 1903, and the second hybrid Langleyense (C. 'devonianum' x C. 'lowianum') registered by Veitch in 1911, there was evidently no great result as very few hybrids featuring miniature Cymbidiums were registered until after World War II. In 1942, Alexander crossed the Chinese miniature species C. 'pumilum' with C. 'insigne' and created Cym. Minuet. The advent of C. 'pumilum', a small flowered, small growing Cymbidium really revolutionised the miniature field and led to the great surge of popularity of miniature Cymbidiums which still did not really reach "plague" proportions until 1955. Californian orchid hybridists were quick to realise the potential of the min-cym. and well known growers such as Fred Stewart, Dos Pueblos Orchid Co., Mrs. Menninger of Greenoaks, Mrs. Mary B. Ireland and Paul Miller, to name a few of the leaders, made numerous miniature crossings.

Of all miniature crossings registered to date, over 70% have been made in California, but we hope to very soon change this!

THE MINI is useful practically solely as a

pot plant. A pot of mini can be used as a house plant or office decoration but is of little use as a cut flower, firstly because it does not keep very well when cut and secondly, it is a bit too small in bloom for floral work.

There is an enormous future for this type of plant with the great increase of high rise housing and a natural desire to have growing plants that are decorative even if no garden is available. I can see the day when pots of minis will be as plentiful and more useful than pots of cyclamen. In the pot plant type mini I include the other Japanese and Chinese miniature species besides 'pumilum' that have been sparsely used in breeding such as C. 'ensifolium', C. 'simulans', plus other species such as C. 'chloranthum' from Malaysia, C. 'suave' and C. 'canaliculatum' from Australia, and C. 'suavissimum' from the Indo-China border.

The first named species also have a second important property — the ability to produce spikes in warm tropical regions. This quality must be considered in further broadening the popularity of minis and it is not hard to anticipate that this property will be handed down to future generations of both minis and novelties.

Other warm growing and flowering species that can and will be used, but that may influence somewhat larger plant growth than is desired are:- C. 'canaliculatum', C. 'madidum', C. 'atropurpureum', C. 'simulans', C. 'finlaysonianum', C. 'pubescens' and C. 'bicolor'.

We will look forward to flowering hybrids from such species so that their breeding potential can be assessed.

The lovely little Chinese and Japanese species must be seriously considered even though their flowers have a very definite forward clasping habit of petal. These are:- C. 'hoosai', C. 'kanran', C. 'virescens', C. 'Niveo-marginatum' and C. 'gykouchin', plus the hybrid C. Oiso.

These species are cute and quaint with such attractive miniature plant growth that the Japanese actually have exhibitions of plants without flowers.

The other added bonus from these species is probably the most attractive perfume found in the orchid world. This feature is also handed down to the hybrids.



JEAN BRUMMITT
(devonainum x eburneum)

The novelty Cymbidium has quite a different use. Here we have a plant that can be reasonably large. It produces heavy textured, long lasting blooms in a very wide range of colours and, although some novelties can be used as a plant for decoration, their greatest value is in the cut flower trade. Hybridisation in this field was possibly first introduced by the Polymins — the crossing of a miniature species (a diploid) with a large tetraploid, which naturally results in a larger growing plant with larger blooms than the diploid crossing. The next step is the crossing of a mini hybrid with a standard Cymbidium; this has been commonly called a "second generation" miniature. These crossings naturally produce a larger growing plant with larger blooms. Of course hybrids between large growing species and standards also produce plants too big to come into the mini classification and these too, must be classified as novelties but they should be classified into a sub-section called First Generation Novelties. Incidentally, first generation novelties often come from species such as C. 'madidum' and C. 'tigrinum' which flower at any

time of the year and give rise to another very desirable trait to be encouraged in the novelty section.

From here on we embark on what we feel is the truly exciting prospect of crossing novelty with novelty, and novelty with miniature. Here we feel, will evolve the true breed of genuine perfectly shaped novelties, stabilised in size of flower, with better arrangement of spikes, superb texture, the widest range of colour yet imagined in the Cymbidium world, and the heaviest producer of flowers of marketable quality. Exporting of flowers is still a profitable business in Australia, but it is getting harder with increased freight, higher packing charges and all costs up. Now, with the novelty, we can produce a flower of much better carrying properties than its larger brothers, much easier to pack, more popular with florists everywhere, and in twice as many sparkling colours. Add to this a tougher flower that does not bruise very easily, lasts just as long, packs twice to three times more flowers for the same airfreight — the plant takes up half as much room as a standard cym — for twice the production and it is easy to appreciate the potential of our true novelty breed. Of course, miniature and novelty cym. breeding is still in its infancy and, when contemplating the field, I begin to wish that I could live for another 100 years.

The types of Cymbidiums described above are grown in exactly standard Cymbidium conditions which for us are as follows:- The plants grow under 50% shade cloth in a very airy sunny position. They do not want to be close to buildings or fences, which of course restrict both sun and air and often add too much summer heat. Remember Cymbidiums all love plenty of sunlight but WITHOUT HEAT.

We pot all of our cym. in our mixture consisting of 40% German Peat Moss, 20% Rice hulls, 20% sand and 20% Isolite. To this we add a small amount of slow release fertiliser. The great advantage of this mixture is that it will not rot down and remains always in an open free draining condition, even though plants are out in all winter rains. We do not have to remove this potting medium during regular potting-on and we can also completely control our feeding to give us top results.

they help to keep down pests, soil borne and otherwise.

Fertiliser I use but only during the growing season in the form of dilute foliar feeding.

If all this sounds too much of a bind, I must confess that I discovered accidentally that Thelymitra venosa will grow like any other Thelymitra and flower. Most Thelymitras are very prone to leaf rot and the like if kept wet in cool or humid weather, so mine are kept on the dry side for safety. You can imagine my surprise on seeing a pot of Thelymitra longifolia in full bloom, which were actually Thelymitra venosa.

I hope some of you will make the effort to grow this lovely plant, you'll be glad you did, when you see your first flowers.

We need space for new seedlings.

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Phalaenopsis Jiminy Cricket x P. Lady Ruby. Large whites marked pink and tan.

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Tom and Pat French

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Dendrobium Nobile Notes

by BRUCE DOUGLAS

Dendrobium nobile and its types grow in a wet and then dry climate area. I grew them tropical during the Summer and then placed them outside under glass protection (this was in Auckland and an almost frost free area) during Winter. Watering was kept to a minimum until buds swelled and showed themselves to be buds. This way I had very few growths coming from the stems—which I believe to be caused by them being grown too warm and too wet.

Some new growers are often confused by the term "resting Season". Basically it is just the season when, being cooler and drier, growth is nil or almost so. Many of the orchids we grow from (or are hybrids from) the tropical zone, though with altitude they are perhaps even cool growing. Within these areas the climate is more a two season one than we have. If you can grasp the significance of this point it could help your growing over the more difficult months.

Thelymitra Venosa

W. J. FORREST, 19 Fairview Place, Te Puke, Bay of Plenty.

Thelymitra venosa is to me, one of the most beautiful of all terrestrial orchids. While it is, or was relatively common throughout New Zealand, it is becoming less obvious with the draining of the remaining swamps, its natural habitat. To make matters worse, because it requires rather specialised conditions, it is fairly difficult to cultivate.

Like all Thelymitras it grows from a tuber which can reach up to three centimetres long by 12 mm wide. In my experience it seems to multiply fairly freely, making several new tubers each year. This is the reason why you see it growing in clumps. Growth starts below ground in early spring but the shoot does not appear above for many weeks. It has a single leaf usually narrow, but up to 1 cm wide in large tubers. A channel runs down the middle of the leaf and the top few centimetres are often bent down. In young plants the leaf is more like an onion leaf. The flower spike stands well above the leaf, its actual height depending on location, but I've seen them up to 50 cms tall.

The flowers which appear from mid December to late January are blue in colour. Dark 'veins' run through the petals and give the plant its name. Each flower varies from about 15 mm to 40 mm but usually round 25 mm. Young plants have one to two flowers, old tubers can have as many as a dozen.

Thelymitras usually need hot sunny days to open their flowers which is why they are called 'Sun orchids'. Thelymitra venosa in my experience will open at lower temperatures than most Thelymitras and moreover will stay open, even on dull days.

As flowering ceases the plant sends out long thick white roots up to 15 cms from the main stem and on the ends of these grow new tubers, a point to remember if lifting the plants.

Where do they grow? Swamps are the favoured locality at over 1000 metres in the North Island down to sea level in Southland. The best plants I have ever seen, were growing

in dead sphagnum thrown out of ditches by a digger but in Southland this year they were growing in dry tussock on the edge of a lagoon, in very wet peat swamps and in damp country beloved of the cushion plant Donatia. In Canterbury they are quite common in swamp in the Arthurs Pass area and I found them at over 1000 metres in swamp on the tops of poor rhyolite hills.

In Southland they were flowering in their thousands but not for much longer as machinery has made it possible to drain the remaining swamps to sell the peat. I noticed that sheep seem to eat the top of every plant while ignoring other orchids like Chilodactylis, Aporostylis and Caladenias which were there in even larger numbers.

Once you've seen these magnificent flowers you will want to grow them, but how? Here I can offer suggestions as to how I grow them and how I would grow them if I had the facilities. Best of all, if you have a swamp from which you can keep the stock out, then naturalise them. Next best, a garden pool or boggy area. They should do well, but remember that many so called bog plants don't grow in standing water, rather it must be kept damp, but the plants are above the water table or else the water is moving from higher to lower ground in which they grow.

For those like me who have to make do with pots, I use a moisture retaining but free draining mix of peat moss, coarse sand and leaf mould over adequate drainage. A wide pot or small tub, remembering their habit of running out long roots. They also seem to grow quite well in loose packed dead sphagnum but it needs renewing each year, or in live sphagnum in undrained pots. Care is needed with this method to keep the right amount of water in the tub. Put them out in the rain as it will flush out surplus salts etc. for you. I grow water loving plants with mine such as Drosera (Sundews) or Utricularias (Bladderworts) as these occur naturally with Thelymitra venosa and I believe rightly or wrongly, that

Feeding is done with Peters Fertiliser. We use Orchid Special N.P.K. 18:18:18, during our growing season from July to November. When buds begin to initiate we switch feeding to the low nitrogen flower promoting Blossom Booster of N.P.K. 10:30:20. This feeding begins in December through to June. Controlled fertiliser, potting medium and light conditions give optimum results. The soluble fertiliser is applied by watering can or proportioner each fortnight throughout the year using one tea-spoonful of fertiliser per gallon of water. If in doubt, don't; is the rule to follow in fertilising.

We plant all of our orchids in plastic pots but, at least with the miniatures, don't overpot. Just give the plant enough room for one to two years' growth, and plan on making your maximum size for a mini or novelty, a 20 cm pot. Once the plant fills this pot, the wisest procedure is to break it up and start again.

The miniatures are sometimes difficult to strike from backbulbs but they certainly grow well from mericlones.

Increasing the ploidy of a miniature or novelty does not appear to be a very wise procedure as the resulting blooms are too large for use as cuts or for breeding.

Miniature cym. are often irregular in germination therefore many crossings are made and often only a small number produce good results. We are using the very best miniatures and novelties in our breeding programmes and the following are some of our successful parents:

GIDGET 'ZUMA' — Deep plum of very round shape. Used in many combinations with reds and deep burgundies.

AMESBURY 'FRANK SLATTERY' — Excellent showy round green with lightly marked lip. Combined with other top minis such as **O'Halloran Hill 'Congo'**, a deep chocolate and **'Lynette 'Maya'**, a fawn.

(DAG x WOODHAMSIANUM 'CONCOLOR') a delightful concolor green used with other pure colours such as **Wyanga 'Hampton'** and **Sleeping Beauty 'Golden Queen'**.

PELLEAS 'MONTEREY BAY'. A tall spiking red of top shape with **Katydid 'Caramel'** — a chocolate brown and **Showgirl 'Heloise'**, a pretty tan with pink lip.

NANCY MAXWELL 'SHIRLEY' — a champion small red with **SENSATION 'MELITA'** — a deep red, **Xmas Beauty 'St. Francis'** for early reds and pinks. **KING ARTHUR 'SALVADOR'** a bright golden bronze with **Lustrous 'Betty'** for early blooms.

OISO — a tiny Japanese primary hybrid with the brilliant yellow novelty **Mary Pinchess 'Sunbeam'**.

CLARENDON — a perfectly shaped yellow-green with the beautiful green **Amesbury 'Frank Slattery'**.

The above short listing includes some of our best seed producers.

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PALMERSTON NORTH

No. 9 An-Lao 'Hamiltonian'

Another large flower opening a biscuit colour and maturing to mushroom pink. Tall arching spikes and very free flowering, 2 years from a bulb. One for the any other colour show bench where it has been a winner.

No. 10 Sylvia Miller 'Serendipity' BC/CSA HCC/AOS

I'm not an enthusiast for the smaller ones but this 2nd generation does something for me. Probably the tall spikes of over 20 yellow flowers with a pink lip. I think it deserves its placing.

That is my list of favourites for this year and I'll admit it could be entirely different even next year, but that is orchid growing.

Editor — you allowed Tom French further comment and mine is in reference to a plant he added. Tristran Kobb 'Liquid Amber', this one is a beauty, a dark polychrome with an iridescence that gives a plum colouring when viewed from the side. When we first flowered it a visiting florist described it as the most fantastic florists flower she had seen. Unfortunately plants of this one are still in short supply.

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Cultural Notes

by Bruce Douglas

What a thing to say at the start of these notes —these are the first two of the three Winter months.

This period brings in one of the quietest times for you in regard to the glasshouse. But don't think you can have all that extra time watching television because if you do you will be extra busy in Spring.

TEMPERATURES: These must now be dropping unless you still have an "Indian Summer". Obviously there will be greater differences in some areas compared to others. You will have to be the one to decide knowing your local conditions, but make sure you close up your glasshouse early enough in the afternoon to build some warmth to carry over into the night. Cymbidium plants can, of course, stand several degrees of frost but their flower spikes can not and if you grow Cymbidium flowers, why take risks.

SHADING: If you are using a whitewash or paint and kerosene mixture you should be watching to see that enough has weathered away to give ample light inside and so ripen growths. Should your shading be of blind or shade cloth this can be adjusted depending on the days being cloudy or bright. If you have this type of shading you have a bonus in that you use same to obtain partial frost control. Best results are obtained if the blinds have a (say) 15 cm-22 cm gap between them and the glass. Some growers tack polythene up inside their glasshouse. This acts in a similar way to double glazing and also helps to channel away excess moisture due to condensation.

WATERING: If in doubt, don't.

PESTS: If you have done your homework you should have little trouble during this period. However one slug or one aphid can be just like a rabbit in spring time.

VENTILATION: During this colder spell glasshouses are often closed down and left that way. Plants like fresh air and where possible you should open your bottom vents even if you have to have the side and top vents closed. By doing this you trap the warm air and still let a little fresh air in at the base.

A MODERN DAY ORCHID HUNTER

FINAL

by RON MAUNDER, Te Puna

On the way down I collected a few Calanthes, Daniel got his pork and before too long he stopped and pulled out a torch. Still no food and we had passed the bamboo. I was becoming weak and thirsty by this time and found myself tripping and lurching along even though Daniel showed up the roots with his torch. We finally reached the Votlo track and not until we arrived at the village would Daniel stop. Here he scaled a coconut palm and cut down some green coconuts which he deftly decapitated with his bush knife. I drank three dry without a break and pulled out my only food — a packet of water crackers! But alas I nearly choked. My saliva had dried up and the biscuits stuck all around my tongue so Daniel had to open another coconut. Off again towards the crashing surf of the coast. I had my torch out now and my legs were like jelly as I plodded along after Daniel's light. At last we made the beach and signalled to others up at Tavio by flashing our torches. At 9 p.m. we walked in to Tavio, 12 hours after leaving it.

Daniel immediately sat down in the men's hut and helped prepare kava, a drink containing a drug which makes the participant sleepy. I declined the cup offered me but sat down on a seat some woman brought me. Before too long I was taken to a forty-four gallon drum of water nearby and given a quart mug to wash with. I wasn't too tired as not to notice how the drum was filled with water. Bamboos split in half, length-wise and with the dividing walls removed served as an aqueduct. When water was required someone went upstream and put in the first piece of bamboo so water flowed down it into the next piece which underlapped the first and so on until it flowed into the drum.

A bamboo bed had been prepared for me in the guests hut with a beautiful white mosquito net provided and I was left in peace.

Next morning I was up at 6 a.m. and able to photograph Mt. Pomare before saying farewell and paying Daniel for his efforts and the

bed. I climbed on the back of the Co-op Toyota which luckily was still at Tavio and we lurched off through the pandanus trees so common in this part of the island.

To conclude on an orchid note I should mention that on our return to Vila, Herr Bregulla was as good as his word. He took possession of the red Dendrobium having heard mention of its existence but never having collected it. For all I know it may now repose in some pickling solution in the Kew Herbarium. Two days before I left he drove up and emptied a "mountain" of orchids outside the hostel where we were staying. They had been dipped and had all the necessary paperwork with them. On the morning of departure I managed to buy from a Chinese shopkeeper a large carton which had held an electric stove and began cramming it with plants. The journey was not uneventful as the plants were held at Nandi Airport and locked in a wire enclosure overnight where confiscated fruit was kept in rubbish tins.

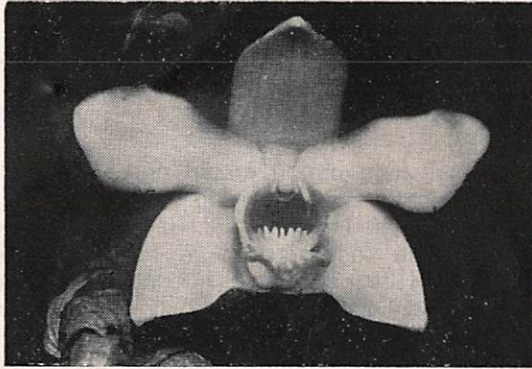
This no doubt was the cause of a one hour delay in Agriculture Inspection at Mangere as the two officers and I searched every plant for red ants — two of which had accompanied the plants into New Zealand.

The plants have nearly all flowered and done well but practically all are unnamed as yet. I hope to be able to make another trip to the New Hebrides within the next few years to renew my quest for the red Dendrobium and perhaps climb some of the much higher and less accessible peaks of the other islands.

Cover photo: Sophronitis grandiflora, a miniature of the Cattleya alliance from Brazil. This plant has had a dramatic influence colour-wise in the mixed breeding of the alliance. Photo by courtesy of Mr. George Fuller, New Plymouth.

PUKEKURA CORNER

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



Chysis bractescens Ldl.

Back in 1968 when the Park collection was being built up to give variety around the initial donation of Cymbidiums, I found Chysis bractescens offered and made no hesitation in adding it to the collection, for it is a once seen, never forgotten species. The choice was well justified for I don't think the plant has ever failed to produce its cluster of up to 10 waxy white blooms each October. The plant with its cylindrical, club-shaped pseudobulbs with alternating leaves is an attraction in itself.

This orchid is a native of the Mexican-Guatemalan area from where it is said to have been brought into European cultivation about 1837.

Our plant is treated as a true epiphyte thriving in strips of treefern fibre arranged vertically in a container. This method allows for a fairly complete drying out in the dormant period after all growth is made up and all leaves are shed. It is grown near the glass in the warm house. When growth is rapid, feeding can be carried out to increase the size of the pseudobulbs but this should be discontinued when dormancy approaches. Temperatures can be lowered to advantage at this stage.

The short flower spike emerges from between the bracts of the new growth and

develops very rapidly. The flowers are about 7 cm across, white or cream with yellow in the labellum and sometimes have dashes of purplish-maroon on the lip or its ridges. They also have an aromatic fragrance and are very long lasting.

FIFTH AUSTRALIAN ORCHID CONFERENCE PERTH

The programme has now been compiled from Sunday 11 September 1977 with the setting up of the show to Saturday evening 17 September 1977 with an informal wind up Buffet Supper and Dance.

Registration fees:

Before June 30—

Double \$40.00

Single \$25.00

After June 30—

Double \$50.00

Single \$30.00

SHOW EXHIBITION DATES

Spring

Poverty Bay-East Coast Orchid Society

9 September, 1977.

10 September, 1977.

Times to be arranged.

Location: Kaiti War Memorial Hall, Gisborne.

TEN FAVOURITE CYMBIDIUMS

by F. Burke, 246 King Street, Whakatane.

Overseas orchid journals have listed various well known orchid growers favourite ten Cymbidiums for years and I have enjoyed reading their choices, but not at anytime until the present did I give a thought as to how they came by their final choice.

The editor's request that I give a thought to the needs of the novice and hobbyist grower presents no problem, as is obvious by their oohs and aahs when visiting our nursery. Generally their requirements of a plant's characteristics are the same as the commercial growers, vigorous growth, free spiking, strong stems of appealing, long lasting flowers, and a good colour range.

As we are primarily concerned in the growing of export flowers, the flowering season of my choice tends to be mid-season to late. With several thousand flowering plants in our nursery we naturally have many favourites and to honestly appraise the orchids listed I consider I must have grown them through to flowering, therefore my choice must come from these and I must ignore the flowers that have caught my fancy in various shows and other nurseries. Even so this is not going to be an easy task. I'm even ignoring three or four exceptional seedlings flowered last season though I'm sure they will be pushing hard for consideration in the future.

No doubt readers will be expecting to see Valley Orchids exclusives among the listings but as I'm confining this listing solely to plants I have flowered they must wait for another year. Valley Orchids plants are in spike here 2½ years from flask and flowers of theirs I have seen (in the flesh) have the necessary qualities. They will make it all right.

Well here goes.

No. 1 Levis Duke 'Bella Vista' SC/CSA

This has to be tops. A large prolific green, can be flowered light to medium green according to the amount of light given. Seems to have a spread of season from early September to November.

No. 2 Guadalajara 'Siesta' BC/CSA

We flowered the first 5 of this one in October 1976 just under 3 years from the time we received the flask from America. While plants are not freely available as yet, it is designed to become one of the most sought after. I would describe it as a large fully formed apricot yellow with a pink lip.

No. 3 Jungfrau Dos Pueblos. SC/CSA AM/AOS AM/RHS

This show winning and highly awarded white must need no introduction. A pure white with pink shading on the bottom of the lip, it is a must for everybody.

No. 4 An-Lao 'Sunrise'

As with the other An-Laos this one came as an unflowered seedling in our original purchase. A strong grower, up to 20 nicely shaped blooms on slightly arching tall spikes. Colour is basically white with deep pink suffusion of sepals very free flowering.

No. 5 An-Lao 'Arawa'

Similar to Sunrise in shape and habit but much more colour. Best described as a light red. The An-Laos have the habit of spreading their flowering season and consistently flowering for 2 years from the same bulb.

No. 6 Levis Duke 'Summer Solstice'

A sister to No. 1 and as the name suggests late flowering. That late in fact that our first four all opened flowers after Christmas 3 years from flask. First one to flower opened 11 large yellow fully formed blooms with no deformity from heat. Very strong growing.

No. 7 Anita 'Robt. Meads'

This is a very deep large green with a large showy lip on tall arching spikes well above the foliage, very attractive.

No. 8 Frank Slattery 'Gay Lady'

Not the form of others listed here but the colour is unique. A Cyclamen pink with a white edge, 5" flowers. Good enough to win on the pink bench N.Z.O.S. spring show a few years ago. One bulb produced 6 spikes over 2 years.

Taranaki Orchid Society

13 October, 1977: 1 p.m. to 9 p.m.
14 October, 1977: 10 a.m. to 9 p.m.
15 October, 1977: 10 a.m. to 4.30 p.m.
Location: St. Joseph's Hall, Devon Street,
New Plymouth.

Wairarapa Orchid Circle

28 October, 1977: 11 a.m. to 9 p.m.
29 October, 1977: 10 a.m. to 6 p.m.
30 October, 1977: 10 a.m. to 4 p.m.
Visitors are welcome
Location: Y.M.C.A. Church Street,
Masterton.

MEASURING LIGHT INTENSITY WITH A PHOTOGRAPHIC EXPOSURE METER

A number of readers have recently made enquiries about the measure of light intensity. Many orchid publications are now going into some detail on this subject and to assist readers the following table should prove of interest.

To measure the intensity of light at any spot in the glasshouse place two layers of blotting paper on a bench. Hold the light meter about 30 cm away from the paper, making sure that no shadow falls in the way of the reading. The conversion table which follows is set for A.S.A. 10 and converts from f. stops at either 1/100th sec or 1/60th sec directly to foot-candles. Where the measurement is given in lux lumens multiply by .092 to obtain foot candles.

EXPOSURE TIMES		
1/100th	1/60th	foot-candles
f 3.5	f 4.5	400
4.0	5.0	500
4.5	5.6	650
5.0	6.3	800
5.6	7.0	1000
6.3	8.0	1300
7.0	9.0	1600
8.0	10.0	2000
9.0	11.0	2400
10.0	12.7	3200
11.0	14.0	4000
12.7	16.0	5200
14.0	18.0	6400

BLACK ROT

by Jim Wood, 53 McPhee Street, Dannevirke.

A plant of Cym Moonshot flowered in August 1976, giving one large spike and one small one. It had been repotted the previous season in a fairly coarse mixture which drained freely.

In October the plant consisted of two back bulbs, three green bulbs and two strong growths, it had other Cymbidiums all round it, standing outside in dappled sunlight. In November one backbulb was discovered to be soft and mushy, the bulk was cut off and dusted with flowers of sulphur. Three weeks later the other backbulb was also starting to get soft and going black. The whole plant was tipped out, the infected bulb cut off with a sterilised knife, dusted with sulphur and repotted in fresh mix.

In checking upon back copies of the Australian Orchid Review, I came across three articles suggesting that the compost was not acid enough, i.e. June 1963, Sept. 1963, Dec. 1965 copies. I used acetic acid in the water for this plant only, by the middle of January one green bulb was infected and soft and removed as above and the plant was drenched with Zineb Z78, double strength. This was done at weekly intervals for three weeks. No luck, I am down to one green shoot in the propagator. Even as I write this I have a feeling that it is not going to survive. This is the first plant I have lost from black rot, any advice from growers of more experience would be appreciated, for if it should happen again, I would like to know if there is anything I could do beyond throwing it into the incinerator.

Editor's Note: While it is understood that Black Rot is more common in Australia than New Zealand, it would be interesting to know if any of our readers have experienced this trouble and what measures were taken for prevention of spread, or cure. Replies will be published.

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GREEN POD CULTURE

by Philip Wyatt, 12 Glamis Avenue, Hamilton.

With the time to harvest seed pods set last season now rapidly approaching, the time old question of when crops up. Once it was a simple matter of just waiting until the pod ripened and split, then collecting the dry seed and sowing it when convenient, within reason, of course. Now, with green pod culture, or ovule culture as it is sometimes referred to, the question becomes a little more complex. To begin to find the answer to this question, it is necessary to go back to articles written during the latter part of the last century.

After pollination takes place, many processes swing into action. Three of them being: 1, pollen tubes begin to form, to carry the donor gametes to the developing ovules; 2, the seed pod commences growth to enable it to contain the thousands of seeds produced; the ovules and the receptor gametes commence development.

We can now see that before the seed is viable there must be a meeting of the two sets of gametes, and the journey is a slow one. It is at this stage that the early researchers provide the valuable clues as to the time it takes to make this journey.

In the light of early knowledge on genetics, orchid breeders could not understand why the crosses they made, and that appeared to be developing normally would suddenly turn yellow and fall off. There was a school of thought that believed that the seed was not being reached by the pollen. So the progress of the growth of the pollen tubules along the column to the developing ovules was followed. By cutting verticle sections of the column and examining them under a microscope for the position of the pollen tubules, the time it took them to travel the length of the column could be ascertained. For *Cattleyas* and *Paphiopedilums* this was found to be 130 to 170 days, or four to five months, depending upon the genera.

Getting back to the problem of when is a green pod ready to harvest, the next step to consider is the time for the gametes to meet and mitosis to occur and for the embryo to

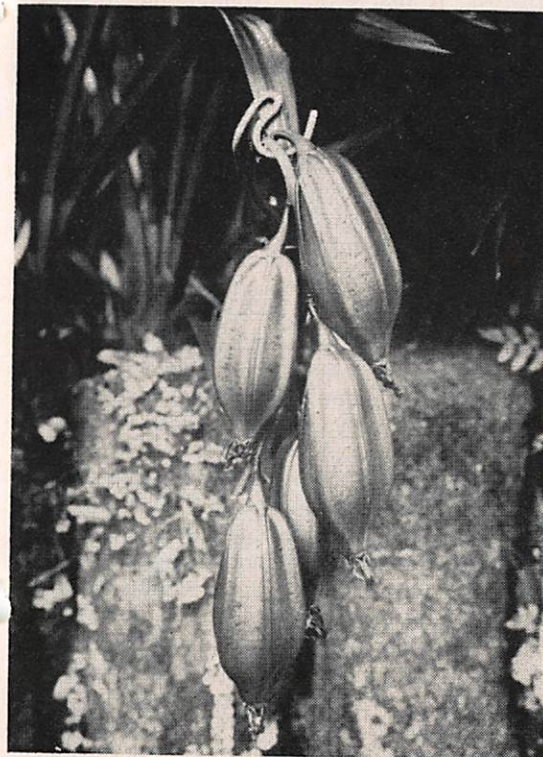
develop to a point where it is able to grow without the environment and nutrition provided by the plant. This would probably take another month or so, making it a total of about five to six months from putting the pollen to the flower until the seed could be ready for harvest. The *Cymbidiums* would possibly take a similar amount of time, but I have not yet unearthed any evidence to substantiate this claim, except from my own experiences. A very good study on ovule culture of *Dendrobiums* has been published, where it was found that the earliest period before viable seed could be obtained was three months, but the quantity of viable seed obtained was much reduced. But maximum viability was reached after only six months growth.

In the genera mentioned the pods are normally fully ripened, that is to say, dried and split open, after 12 to 14 months, and up to the mid 1950's this was how long the pods were left on the plants, the seed being carefully collected in a paper bag. Indeed if the seed is to be stored this is the only way to collect it, otherwise it is best to practice green pod culture. For *Dendrobiums* this means harvesting the seed pod six months from the date of fertilisation of the flower, for *Cymbidiums* and *Cattleyas* six to seven months, and *Paphiopedilums* nine months because of their peculiar inhibitory factor. That means then, that the *Cymbidium* you fertilised in September should have its pod harvested in April for sowing, or that *Cattleya* fertilised in April harvested in November.

The advantages of green pod culture have been extolled by many, but are still worthwhile mentioning here. By removing the pod from the plant after a minimum period the plant will recover from the ordeal of holding pods much more quickly, and may not have a break in its flowering cycle. Secondly the seed is sown six to eight months earlier and by the time the seedlings have been out of the flask for a year they can be a full season ahead of those seeds held to maturity — but this may also depend upon the media used for sowing

and replating the seedlings. Another advantage more apparent in the act of sowing, is the removal of one step in handling the seed, it does not need a bath in a hypochlorite solution, a definite time and seed saver.

Of course there are disadvantages with green pod sowing, and to my mind the most important is that the seed cannot be stored for any length of time. The pod may be kept intact for ten days or so between harvesting and sowing but extreme care must be exercised that it is not damaged in any way, as infection may set in and the whole pod lost.



Then for those who cannot bear to wait even six months before they harvest their green pod, researchers recently published an article where the pollinated flower was removed from the plant, the stem carefully cleaned and placed into a nutrient solution, yielding a limited amount of viable seed after two to three months. If this practice could be made more reliable its implications in orchid breeding could be far reaching and very important.

Show Exhibition Dates

WINTER

N.Z. Orchid Society

7 July, 1977: 10 a.m. to 9 p.m.

8 July, 1977: 10 a.m. to 9 p.m.

9 July, 1977: 10 a.m. to 6 p.m.

Staging of plants from noon Wednesday, 6 July, to 6 p.m.

Location: Mt. Albert War Memorial Hall.

Waikato Orchid Society

Winter Show and Social Evening.

23 July, 1977: 7 p.m. to 11 p.m.

Plants can be displayed between 4 and 5 p.m.

Location: Senior Citizens Hall, Clarence St., Hamilton.

SPRING

N.Z. Orchid Society

22 September, 1977: 10 a.m. to 9 p.m.

23 September, 1977: 10 a.m. to 9 p.m.

24 September, 1977: 10 a.m. to 6 p.m.

Staging of plants Tuesday 20th, 2 p.m. to 9 p.m.; Wednesday, 21st September, 9 a.m. to 11 a.m.

Location: Mt. Albert War Memorial Hall.

Manawatu Orchid Society

30 September, 1977: 11 a.m. to 9 p.m.

1 October, 1977: 10 a.m. to 5 p.m.

Non-competitive display.

Location: All Saints Memorial Hall, Church Street, Palmerston North.

North Shore Orchid Society

30 September, 1977: 1.30 p.m. to 9 p.m.

1 October, 1977: 10 a.m. to 9 p.m.

2 October, 1977: 10 a.m. to 4 p.m.

Location: R.S.A. Hall, The Strand, Takapuna.

Waikato Orchid Society

7 October, 1977: 1 p.m. to 9.30 p.m.

8 October, 1977: 10 a.m. to 5 p.m.

Plants can be displayed Thursday evening,

6 October, between 7 and 9 p.m.

Location: Ferrybank Lounge, Grantham Street, Hamilton.

Hawke's Bay Orchid Society

13 October, 1977: 1 p.m. to 8 p.m.

14 October, 1977: 10.30 a.m. to 8.30 p.m.

15 October, 1977: 11 a.m. to 8 p.m.

Location: St. John Ambulance Hall, Southland Road, Hastings.