Orchids
IN NEW ZEALAND

Volume 15—No. 2
March/April 1989

1889-1989 — 100 Years of Cymbidium Hybridising

1989 RAFFLE

Syd Wray, orchid grower, Conzed Vice President, expert raffle organiser, has done it again!

There is a very tempting raffle to raise money to prepare for our World Orchid Conference, in September, next year.

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TICKETS: $1.00 each **CLOSING DATE:** 31st May, 1989

DRAWN: 21st June, 1989 **RESULTS PUBLISHED:** 27th June, 1989

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NEW ZEALAND ORCHID SOCIETY

VOL. 15 No. 2 **MARCH/APRIL 1989**

CONTENTS

ILLUSTRATIONS

FRONT COVER

Cymbidium erythrostylum 'magnificum'

This rare and beautiful species was not found until early this century by Micholitz, collector for Sanders, in Indo-China, now called Vietnam. It is early flowering, and this characteristic is useful in breeding.

The spike should extend horizontally from the plant but unfortunately the platemakers omitted to read clear instructions, and this was the one plate not checked on by the printers before printing. Our combined apologies for the distracting spike angle — please rotate cover clockwise 90° for a better view.

Photographer: Bob Goodger.

BACK COVER

Gastrodia cunninghamii, G. sesamoides

Photographer: Bob Goodger.

Cogito's Diary

Bill Fransen

Things that were "On" in the "Off" Season

Some orchid enthusiasts managed to keep their fellow fanciers interested and fully committed during the so called off season in December and January. Not only did they organise interesting outings and events for (and with) their own Society. They also attracted many people from other areas. Some of these events have become annual get-togethers that we look forward to attending on a regular basis. One is the now annual native orchid excursion at Iwitahi in early December. In mid January there is the also yearly "Summer Orchid Display" in New Plymouth.

Iwitahi Re-Visited

On 4th December we again sought out this incomparable orchid habitat in the Waimihia Forest. About one hundred orchid fanciers from the top-half region and further afield enjoyed the privilege of finding and identifying over twenty different species. Most of these can be found in any of the 5 ha stand of *Pinus nigra,* close to the old logging camp. The camp lies just off the left hand side of the Napier-Taupo Road, about 23 kms from the Highway 1 turn-off at Taupo.

We owe everything to the enterprise and interest of people like Max Gibbs, Trevor Nicholls, Ken Scott, and many others. The receptiveness of the Timberlands B.O.P. management in recognizing the area's uniqueness, and their forthright generosity to turn a 5 ha block into a native reserve, deserves our applause. The area which surrounds the reserve is also being carefully managed so that it is not going to be an oasis in an otherwise barren desert. Max Gibbs and friends must have spent a lot of time bringing all this to fruition. They still spend time regularly transplanting certain species into the reserve so that in future it will act as a nursery for areas to be felled and re-planted.

What characteristics make stands of Black Pine into an orchid wonderland is not quite clear. It is doubtful that such a variety and concentration of native orchids can be found in any other temperate region (I have since been told that up to 50 species can be found in small areas near Wellington - I stand corrected!). Whether it is the elevation, the humidity, the bed of Black Pine needles (in preference to any other?), the more open canopy, the presence or absence of certain minerals, or all these factors combined, can only be guessed at.

The area has much more than just orchids. Within half an hour of arrival someone identified the call of a Long Tailed Cuckoo in the area adjacent to the camp. Later in the day we heard the native (N.I. only) Whiteheads. Their calls seemed to be coming from all around us, yet I could not see one. They cast their call like a ventriloquist. There was also plenty of evidence of wild pigs. They root up large areas I thought in the successful search of orchid tubers, but someone claimed that they were after the famed truffles. I always thought that these occurred in symbiosis with oak-tree roots. Perhaps there are different kinds. Orchid tubers must be present in their millions — some species are for sure. I found a plant which was obviously a daisy and in a group like ours there's always someone who correctly identifies whatever is found. It was a native mountain daisy *Celmisia gracilenta.*

THE ORCHIDS WE FOUND

The Bearded Orchid — *Calochilus robertsonii.* When parking the car in the shade of a stand of blue-gum trees in the old logging camp car park we were "tout suit" told that we were dangerously close to the camp's pride and joy, the Bearded Orchids! So, red-

faced we reversed a respectable distance. We later also found these along the grassy roadside on the way to the reserve. Apparently the only other recorded finds of this rare beauty are in the turf of the Rotorua racecourse, the Kaimanawa ranges, and at Kaiteriteri near Nelson.

The Slender Forest Orchid — *Adenochilus gracilis.* My first encounter with this one was when I found a lady in our party kneeled in front of one. She seemed un-sure. I took a look and announced that to me it looked like a funny looking Caladenia. She, with pointing index finger: "but it has . . ." Me, determined to show that I knew what I was talking about: "Yeah, but Caladenias show a great deal of variety." She: "But Caladenias have a single . . .". Me "I wonder whether this is an *iridescens,* the flower seems to have good substance but the petals and sepals have a more scattered arrangement". She (demanding): "Look at the leaves". Me: "The leaves?". She: "Yes, this plant has **two** leaves, while Caladenias have only one straplike basal leaf". Me: "I see what you mean, I . . ." At this point someone walked by, took a gander, and announced: "that is an *Adenochilus gracilis."* I hastily looked it up in my Johns and Molloy and was soon praising my party member's powers of observation. Me and my big mouth! Obviously I'd met with a kindred spirit. Someone who didn't change her mind until proven wrong. Later I established that *A. gracillis* is hairless while Caladenias are "sparsely clad with fine hairs". Like my old Granddad used to say: "You're not going to be right very often if you daren't be wrong now and again". Trouble is that one wasn't the only mistake I made that day.

The Odd-Leaved Orchid — *Aporostylis bifolia.* This name somehow sounded familiar! We found it, but not in flower, apparently this is another Caladenia look-alike, except that the leaves though in pairs are hairy (not hard to remember when I think of the synonym). We found two forms side by side, one with and the other without spots on the leaves. Nobody has so far bothered to give one a varietal name so that we know what we are talking about without mentioning spots.

The Caladenias — We found *C. lyalii, C. catanata,* an un-named variety, and another two that were "maybe" *C. iridescens,* and *C. carnea.* The status of some is so far uncertain but will hopefully be established soon. There are enough specimens of each kind around to be found regularly.

Considering that many of the species we found have only a short flowering period it makes one wonder how many more there are that are overlooked because they flower at a different time.

The Bird - or Ant Orchid — *Chiloglottis cornuta,* and *C. gunnii.* Of *C. cornuta* we literally found thousands if not millions of plants. Some were still flowering but most were past that stage. They were everywhere. On top of fallen logs and up to one metre high on the bark of standing pine trees.

Max Gibbs pointed out that a lot of orchid colonies occur beside fallen branches or logs. He explained that the seeds borne on air currents drop to the ground when arriving in the lee-side still air. Seeing that air currents flow in various directions on different occasions the colonies are found on any side of a log. We also viewed the site where last year Tauranga's Lorna Grey found *C. gunnii.* Some part of the old colony was still there, carefully covered with bird netting. Max Gibbs had transplanted most of the colony to the new reserve where we found them well established. We did not find any flowering this year. *C. gunnii* is known to occur in two other places in New Zealand, namely the Hanmer Forest Park and in the Richmond Range Forest Park. Again proof of the uniqueness of our reserve at Iwitahi.

The Spider Orchid — *Corybas acuminatus, C. trilobus,* and an un-named variety with a similar leaf shape to *C. trilobus* but with scribbly brown

markings, and *C. macranthus. C. acuminatus* is recognized by its pointed leaf — we did not find it flowering. *C. trilobus* is easily recognised by its leaves also. We did find a few remnants of its spidery flowers but they were past their best. *C. macranthus* has an oblong leaf with a blunt end, we did not find any of them flowering either. I suspect that the species *C. cryptanthus* will also occur at Iwitahi but that it is easily overlooked because of its lack of leaves and its flowering habit which keeps it virtually buried in the forest floor litter.

The Potato Orchid — *Gastrodia minor,* was pointed out to us by Max Gibbs who transferred it to the reserve. These, like *Corybas cryptanthus* have no chlorophyll and are very unobtrusive. That were flowering nicely.

The Onion Orchid — *Microtis unifolia,* occurs New Zealand wide and is probably the most common of all our orchids. One would not even suspect it to be an orchid until it is pointed out. We found plenty of them along the roadsides leading to the reserve.

The Leek Orchid — *Prasophyllum colensoi,* is also found all over New Zealand. We found it flowering along the roadsides.

The Greenhood Orchids — *Pterostylis banksii, P. banksii* var. *patens, P. cardio-stigma, P. graminea,* are the ones we found but there are more species present in the area. *P. cardio-stigma* can be recognized when not flowering by the gradually broadening leaves, from tip to base. It does not narrow towards the base as in most other species. At the base it clasps the stem. The *Pterostylis* species have some of the largest flowers of all our native orchids.

The Sun Orchids — We found *Thelymitra decora, T. longifolia,* and *T. pauciflora* but more occur at Iwitahi. Most of them grew along the roadsides but we found them under the pine trees as well. They do not open their flowers unless exposed to bright sunshine. Briefly, *T. decora* has lavender-blue spotted flowers. *T. longifolia* and *T. pauciflora* have fewer flowers and are also the most common of the Thelymitras. *T. longifolia's* flowers are white to pinkish and *T. pauciflora* has pink to bluish flowers and the yellow collar on the column has a cleft in it.

Apparently some of the Sun Orchids can look a bit like *Calochilus robertsonii* while still in bud. One can be mistaken for the other and it is possible that we were viewing more *C. robertsonii* that we were aware of when walking along the grassy roadsides. This is, according to Max Gibbs, because the leaves of older *T. longifolia* plants show markedly stronger development than those of the younger plants. The older leaves look remarkably like those of *C. robertsonii.*

Iwitahi was fun.

The Summer Orchid Display in New Plymouth

Having decided that this year we should make the effort, it turned out to be one of the most entertaining orchid events in years. The show, in a brand new facility in Pukekura Park, displayed many orchids that so far I'd only read about. I must admit that there were also quite a few species that I didn't know existed.

The orchid people of New Plymouth really laid it on. Morning and afternoon teas, lunches, and a tremendous banquet in the form of a smorgasboard type of pot luck tea in the "Bowl of Brooklands". There must've been all of 150 people availing themselves of the above and the plentiful drinks of all kinds, served by willing hands.

Afterwards we criss-crossed the Pukekura Park's lanes and by-ways, visited the fernery, the begonia-cum-orchid house, and other unique green houses. The Park was illuminated in all the colours of the rainbow. The waterfall had coloured lights showing through curtains of water, the colours changing

every minute or so. The effect was magnificent. The large fountain also was a sight to behold, again with changing colours and patterns of illumination providing a stunning display. Most of the Park's walkways had cleverly mounted and disguised lights turning the whole into a fairyland. Half of the New Plymouth population as well as us orchid enthusiasts were there. The boating lake had illuminated stars mounted way above it. The wooden red painted bridges increased the wonderland feel of the place. The many rowing boats on the water had large hoops with mounted lights fitted to each one. Many of the boats obviously contained whole families. The atmosphere was tremendous with people stopping in groups to admire the vistas and pointing out special features to each other. Many were the "ohs" and "ahs" from young and old. I'm no spring chicken and have seen a few sights, but not much to equal this.

We didn't require much rocking to fall asleep that night. We'd been on our feet all day. On the Sunday morning we visited the City Council Parks and Reserves greenhouses. We saw plenty of orchid plants, as well as anything that is sown, propagated or divided in this kind of set up. We followed this up with visits to a few hobby greenhouses (follow the Tauranga bus). The high standard of culture and the diversity of the collections was sublime. Apart from the local very friendly and hospitable people we met many out-of-area fanciers from anywhere between Whangarei and Blenheim.

We'll be back next year!!

Something about pots

This may be an anti-climax after all the above. One of the more important items in orchid culture are the pots that we put our plants in. Most flower pots are just that, pots for flowers. The majority of makes are totally unsuitable for orchids. Many a time I've brought an orchid plant into the lounge to enjoy its flowers more fully. A crockery dish is put under it. We don't want water stains on the furniture, do we? A bit of a puddle on the plate? Surely, that happens to all plants all the time, doesn't it? Yes, but orchid roots **rot** in water. Especially if there are not slits up the sides of the pot to let the air in. Such pots form an air-tight seal around the base, even if there is only a little glistening film of moisture visible around the bottom of the pot.

One of the first things I got into the habit of doing was to tip out all surplus water. I also drilled holes in the sides of pots that were particularly bad. Then I started placing more stones and broken shards in the bottom of pots. I also used more coarse bark, polystyrene "beans" and the likes in the bottom half of pots. Remember that I am an inveterate over-waterer! Next I started using deeper dishes half filled with gravel underneath the offensive pots. The latter practice is a must in any event, and I pour off surplus water.

Lately, I came across a couple of pots that had been "doctored". Someone had cut triangular sections out of the sides at the bottom. I was pleased to see that someone was on the same wave-length as myself, except that this person had gone a bit further. I looked at the little sawbench I have and soon found that the 200 mm blade will nick beautiful slots out of the bottom corners of any plastic pot without trouble. I recently did my entire stock of pots and will do the rest as I re-pot or pot on. Wire mesh benches in the greenhouse are helpful, but sooner or later most plants finish up in the house on a crockery plate. Watch it!

Keep on keeping things cool and airy right into autumn but watch the warm growers.

6 Wedgewood Place
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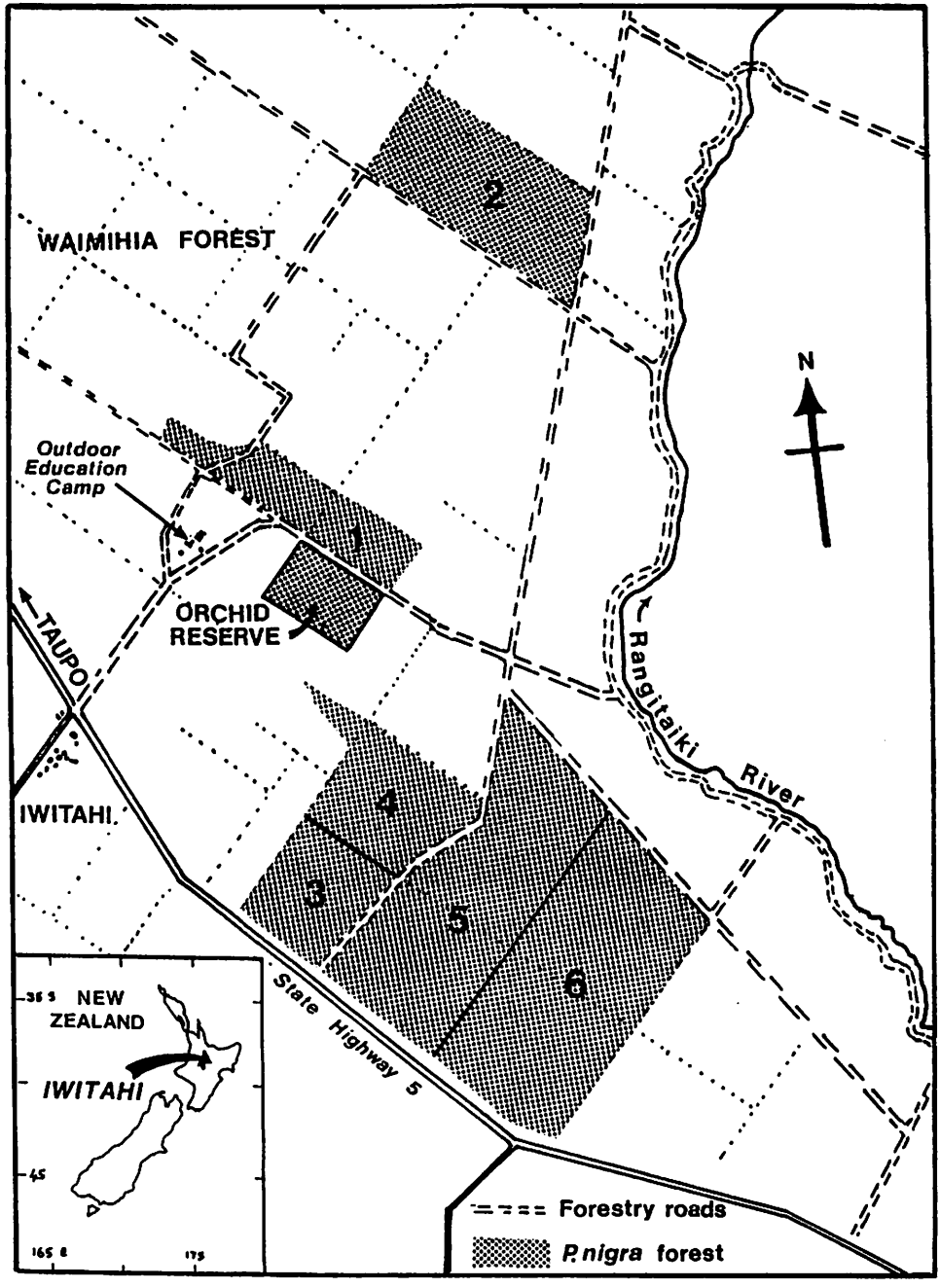

Figure 1: LOCATION OF THE IWITAHI ORCHID RESERVE
Near Taupo, New Zealand.

Report on the Native Orchids at Iwitahi

Max Gibbs, Taupo Orchid Society

Since 1985, the native orchids growing under and around the stands of tall *Pinus nigra* planted in 1933 at Iwitahi have been a source of great interest to the Taupo Orchid Society and members of the New Zealand native orchid group. The setting aside of a block of the *P. nigra* as a native orchid reserve by Timberlands BOP in August 1987 was heralded as a first for New Zealand and showed the concern that Timberlands has for the environment and the native flora and fauna of New Zealand.

On 5th and 6th December 1987 a native orchid forum was held at Iwitahi centred on the reserve area and surrounding *P. nigra* forest. The forum was attended by more than 70 people from throughout New Zealand and included such well known native orchid enthusiasts as Chris Ecroyd, Bob and Beryl Goodger, Bruce Irwin, Jean Jenks, Doug McCrae and Ian St. George. Two West German native orchid enthusiasts arranged their New Zealand holiday to attend the forum. Without exception everyone was impressed with the display of native orchids, their abundance and variety in their adopted habitat under the exotic forest. It was also generally agreed that the Iwitahi site is one of the most important native orchid finds in New Zealand.

The area has the only known colony of the orchid *Chiloglottis gunnii* in the North Island and has a large colony of another rare orchid *Calochilus robertsonii.* During the forum 27 species of native orchids were recorded for the area including the road margins as well as under the pines. A further 5 or 6 distinct varieties or forms of some of these species were also found adding to the interest and the enjoyment of the forum.

During the two day forum the reserve area and adjacent stands of *P. nigra* were systematically searched to prepare a complete species list for Iwitahi. Seven areas of pine were searched and in general the species list for each area was similar although population densities varied considerably depending on the light regime which in turn depended on the apparent vigour of the host forest. Figure 1 is a map of the areas covered during the forum. Area lists as well as the combined species list are presented in Table I.

Particular attention was paid to the areas outside of the reserve and less common native orchid species were marked for later transplanting into the reserve area and Taupo Botanical Gardens. First attempts at transplanting these orchids were made the weekend after the forum. Sites for planting the transferred orchids were selected by physical habitat and light regime. Care was also taken that the fungal layers in the pine litter being moved were aligned with the ambient layers in the reception areas. Subsequent inspections found the transplanted orchids to be in good condition and still apparently vigorous. However, whether they survive the summer drought remains to be seen and the success or failure of the venture will only be known when the orchids flower next spring.

During the forum, concern was expressed that the size of the reserve was too small to be self sustaining for any length of time once the adjacent tall pines had been removed. It was felt that the importance of the area should be stressed in the hope that a larger area might be withheld from logging or that a margin of tall pines be granted a delay in logging to provide a buffer zone which would substantially improve the life of the reserve area and its native orchids.

There is little doubt that the conditions at Iwitahi are ideal for the growing of native orchids. Their development into such large colonies is also most likely

TABLE I

Native orchid species found at Iwitahi and under selected areas of mature *Pinus nigra*. (Areas numbered as per Fig.1)

Species	Area Found						
	Roadside	Reserve	1	2	3	4	5	6
Adenochilus gracilis		a	a	a	a	a	a	a
Aporostylis bifolia		a	a	a	a	a	a	a
Caladenia catenata		c	c		a	a	c	c
iridescens		r	u	r	r	u	r	r
lyallii		c	c	c	c	c	c	c
Calachilus robertsonii	u		r					
Chiloglottis cornuta		a	a	a	a	a	a	a
gunnii		t	r					
Corybas acuminatus		t	r	r	r			
macranthus		t				r	r	
trilobus		a	a	a	a	a	a	a
Earina mucronata		r	r					
Gastrodia cunninghamii		t			r	r		
minor		r	r		c	c	c	c
Microtis parviflora	r							
unifolia	a	u				u	u	u
Orthoceras strictum	r	r	r			r		
Prasophyllum colensoi	r							
Pterostylis alobula			r					
banksii		r			r		r	
cardiostigma		u	u	u	u	u	u	u
sp. (unnamed)		r	r			r	r	
patens		u	r	r		u	u	u
Thelymitra decora		c	c	c	c	c	c	c
longifolia	c	u	u			u		
pauciflora	c				r	r		
venosa (1985)	*							

a = abundant **c** = common **u** = uncommon
r = rare **t** = transplanted in 1987 * = not found in 1987

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due to the lack of competition under the *Pinus nigra* compared to the adjacent less compact pine species which have all developed heavy undergrowth. Few native orchids were found under these other pines and these were mainly the road side orchids such as *Microtis unifolia, Thelymitra longifolia* and the occasional plant of *Chiloglottis cornuta* which so dominates the *P. nigra* forest.

It was suggested that the tall pines were acting as an aerial trap to airborne orchid seed as well as providing the ideal growth conditions of fungal-rich acid compost for that seed to germinate. The colony of *Chiloglottis gunnii* almost certainly developed from the chance arrival of a single airborne seed most probably from Australia. It is truly remarkable that after travelling such a

distance the seed landed in a suitable habitat to germinate. Most of the other orchids in the forest probably arrived in a similar manner but as seed from orchid colonies within New Zealand. Population densities of all orchids are highest within 50-100 metres of a road or fire break but over the years they have spread throughout the forest to form the almost continuous carpets of native orchids we see in spring.

A curious exception to the spread of native orchids is the *C. gunnii* colony. From the size of the colony, it has been present for at least 10 years and possibly as long as 30 years, yet this orchid was found in only one place. *C. gunnii* obviously produces seed otherwise the colony would not have developed to its present size. This suggests that some other factors are regulating the spread of this orchid. For this reason only part of the *C. gunnii* colony was transplanted into the reserve area and then into several different locations rather than just one. The failure of these transplants to continue to grow would indicate that a specific growth factor is present at the original site and it would be extremely important to preserve that part of area 1 (fig. 1) to allow the colony and its habitat to be studied.

The effect on the native orchids of changing the host forest species from *P. nigra* to *P. radiata* is unknown. It is hoped that the preservation of part of the *P. nigra* forest habitat of the native orchids will allow the orchids to rapidly recolonise the newly planted areas of *P. radiata.* In this way the development of large colonies of orchids may not take another 50 years and a unique collection of New Zealand native flora will not be lost.

Foot note:

In addition to the native orchids, the tall pines at Iwitahi are the summer home for a range of native and exotic birds. Apart from the Chaffinch and Goldfinch, small birds such as the Tomtit, Robin and Grey Warbler abound. During the forum a Morepork, Whitehead and several Long Tailed Cuckoos were seen and the call of the latter was heard in the evening.

Another find under the *P. nigra* was the presence of large numbers of truffles. These were being systematically harvested by small animals and possibly birds.

15 Rahui Street
Taupo

CONZED AGM

ACCOMMODATION CHANGES

Since the information in our last issue was published the Marlborough Orchid Society has found that horses trample all over orchids! Arrangements which had been made for block bookings at Bing's Motels fell through when a Trots meeting organised by the local Harness Racing Club was planned for the same weekend.

Alternative arrangements have been made at St. Andrew's Lodge, on the outskirts of town, with a tariff of $30.00/person/day, for bed and breakfast. Early bookings for air travel from Wellington are necessary. Society secretaries have additional travel information.

Closing Dates

for copy to the Editors:
Vol. 15, No. 4 : **20th May**
Vol. 15, No. 5 : **15th July**

Closing Dates

for advertisements to
W. J. Deed Printing Ltd.,
16 Bowen Street, Waiuku:
Vol.15, No. 4 : **16th June**
Vol. 15, No. 5 : **11th August**

The Japan Prize International Orchid Show

A. Easton

There is something sinfully refreshing about leaving New Zealand in the heat of February and dropping into the Northern Hemisphere and an early Spring orchid show. Such was my good fortune when in February, I was invited to visit Japan, all expenses paid, to judge the inaugural Japan Prize International Orchid Show.

This was a show modelled on the 12th World Orchid Conference but held in the Tokyo Dome, locally known as the "Big Egg". I was interested to note that the show was organised by leading commercial growers in conjunction with major sponsors like Shiseido. Geyserland Orchids, with substantial assistance from our Japanese agents, Mukoyama Orchids, were able to enter a display and even won a bronze medal. For the first time ever we were compensated for entering a display, the reimbursement amount to nearly NZ$1,000. Unfortunately we were totally let down by Tourist and Publicity so although the 13th World Orchid Conference got substantial exposure, New Zealand got practically nothing.

Judging commenced with breakfast in a box — Bento it was called and for my taste quite forgettable. Then we judged the displays which had been entered in various size and content categories. The object of the exercise was to select the three best overall displays without finalising the exact order of placings. Just prior to the opening this final judging was made by a panel of celebrities from the media and the major sponsors. Although I didn't rank the top three displays in their order there was considerable merit in this format and fairly one would have to say the top three displays were very close in quality. Amusingly, the prize for the best display was a new $50,000 car and yes, you guessed it, a Society display won. I imagine they won't have any problem in finding candidates for President at the A.G.M.!

We broke for lunch around noon — another Bento box! Ned Nash was starting to get rebellious and demand real food. Then we split into new teams to judge plants of various genera, which were not in the displays but had been placed in a special area of the show. Maybe it was because of the language barrier but this part of the show seemed to go very slowly. We spent time looking at every entry, even the obvious losers before coming to a decision. After each group had picked out their best of sections, these plants were assembled and all the judges got to vote on the 30 or so plants ranking them from 1 through to 30 in order of preference. Grand Champion was a Santa Barbara hybridized pink *Lycaste* Koolena, winning for its lucky owner over NZ$10,000.

One fascinating section of the show was the class for fragrance which was divided into oriental and occidental types of orchids. Katsuhiko Tokuda, Senior Perfumer at the Shiseido Product Research Laboratory was the judge in charge of this section and plants were placed in clear glass cylinders for fragrance evaluation. The winners were displayed in the same cylinders for the duration of the Show and long queues formed to catch a whiff of the champions.

Another interesting experience was to meet Hiroki Sato, a university teacher and botanical artist of worldwide renown. As we proceeded with the ritual exchange of business cards he asked me — which one would you like? I then realised his business cards were all one of a kind, hand drawn and coloured. Evidently they take about 20 minutes each to prepare and Mr Sato indicated he had spent 6 hours the previous evening getting his cards ready.

One returns with many memories of Japan. It has rapidly become a major

world orchid centre with many of the world's finest orchids rapidly appearing in Japanese collections. The blending of traditional and ultra modern elements in the show reflected the contrasts that are today's Japan. Mukoyama Orchids had a silver scaffolding of new cymbidiums reaching to the sky and Hanajima Orchids encased their finest plants in a mesh woven from stainless steel. Yet in the same show there were traditional Japanese forest scenes with humble terrestrial cymbidiums and calanthes poking out of the forest leaf litter. Among the Japanese orchid growers there is a tremendous interest and reservoir of goodwill for our upcoming W.O.C. and at this stage over 400 plan to attend. If you make an effort to get to know some of these visitors you will find that an interest in orchids will easily cross barriers of language and culture. Among the younger Japanese growers like Harry Nagata, Susuma Furuya and Roy Ohba there are some real hard cases. And in the senior echelon men like Gauda, Isao Muramatsu and Dr Kimura are orchid growers of immense knowledge and worldwide experience.

I hope the Japan Prize International Orchid Show becomes an annual event and am looking forward to welcoming our Japanese friends in Auckland next year.

A. Easton
Geyserland Orchids
Rotorua

Masdevallia Magic

N. C. Miller

A get-together for Masdevallia enthusiasts was held at the Marist Centre, Tuakau, on the weekend of 17th-19th February, 1989.

Some 70-80 people attended - just a nice number - anymore and it would have seemed crowded.

The weekend was organised by L. and R. Orchids, and featured as the guest speaker, Marguerite Webb from J. and L. Orchids, U.S.A.

For those who stayed for the whole weekend, the accommodation was a little spartan but this was compensated for by excellent catering.

After dinner on Friday night, Marguerite gave an illustrated talk on new Masdevallia species — some 250 have been described since 1970 and many of these are very attractive.

Saturday morning was devoted to a prolonged and very interesting discussion on culture. An interesting point that came in for a lot of comment was the widespread use of N.Z. Sphagnum moss by overseas growers. It hasn't really caught on here — perhaps it's the price that puts the locals off.

Lunch was followed by an eagerly patronised sale of plants and flasks from J. and L. Orchids — many treasures found new homes.

Saturday afternoon featured a review of Masdevallia hybrids, a discussion of the judging of this genus (a pity so few of our Orchid judges were present) and a look at that fascinating and wonderful genus, Dracula.

On Sunday, Marguerite gave a further illustrated talk, this time looking at the natural habitats of the Pleurothallidae, South America — a fascinating look at a part of the world most of us know very little about. This was followed by a "Mystery Tour" with prizes (yours truly won a bag of cow manure!) and lunch.

The whole event was voted a great success. The concept is one which could well be adopted by devotees of other genera — but make sure you have a good caterer.

Te Akau Road
R.D.4, Rotorua

20. Thomas Frederic Cheeseman (1846-1923)

Ian St. George

Born at Hull in Yorkshire, T. F. Cheeseman came with his parents to Auckland in 1853. An enthusiastic, largely self-taught botanist, he made a survey of the Waitakere ranges, which he published in 1872 as *On the Botany of the Titirangi District of the Province of Auckland.*

In 1874 he followed his friend Thomas Kirk as secretary-curator of the Auckland Institute and Museum, a post he held for the next fifty years. He built up a large and comprehensive private herbarium which forms the basis of the present collections in Auckland.

In 1900 he was asked by the government to write the *Manual of the NZ Flora,* which was published in 1906. A handbook in the Hooker tradition, his careful, coherent account of the flora was most interesting and very useful. He followed this in 1914 with two volumes of *Illustrations of the NZ flora* in collaboration with W. Botting Hemsley of Kew, with drawings by Matilda Smith. A second, enlarged, rearranged but not greatly altered edition of the *Manual* was published posthumously in 1925. He added *Townsonia* to the orchid genera, and a number of new species.

Cheeseman's sisters were skilled artists: Clara wrote magazine articles and a novel; Emily (Emma) learned taxidermy and prepared bird specimens for him at home — the Auckland Museum has a collection of twenty-three of her botanical watercolours and pen drawings. Thirteen are of orchids — spare, disciplined, straightlaced, stylised but botanically accurate and very beautiful works. Instead of fleshing out the plants (as Fanny Osborne did) she makes elongated willowy images, delicate and understated: they deserve better recognition.

In the second edition of his *Fertilisation of Orchids - the various contrivances by which orchids are fertilised by insects* (pages 88 and 90), Charles Darwin quoted T. F. Cheeseman's observations on the fertilisation of *Pterostylis alobula* and *Acianthus sinclairii.*

Darwin had been shown one of Cheeseman's papers by J. D. Hooker ("On the fertilization of the New Zealand species of *Pterostylis". Transactions of the N.Z. Institute, 1873;* vol V, p 352). It shows an illustration of *Pterostylis alobula,* annotated "T. F. Cheeseman del. J. B. lith." (drawn by T. F. Cheeseman, the lithographic plate carved by John Buchanan). Cheeseman's drawing is in fact an exact copy of his sister, Emily Cheeseman's, painting of the same plant.

I am indebted to E. D. Hatch for permission to reproduce his biographical sketch of T. F. Cheeseman from New Zealand orchids - natural history and cultivation *(New Zealand Native Orchid Group, 1989).*

45 Cargill Street
Dunedin

Plate 1: *Pterostylis alobula,* monochrome lithograph drawn by T. F. Cheeseman and carved by John Buchanan, from *TNZI 1873.*

Plate 2: *Pterostylis trullifolia,* watercolour by Emily Cheeseman, reproduced courtesy of the Auckland Institute and Museum.

PLATE 2

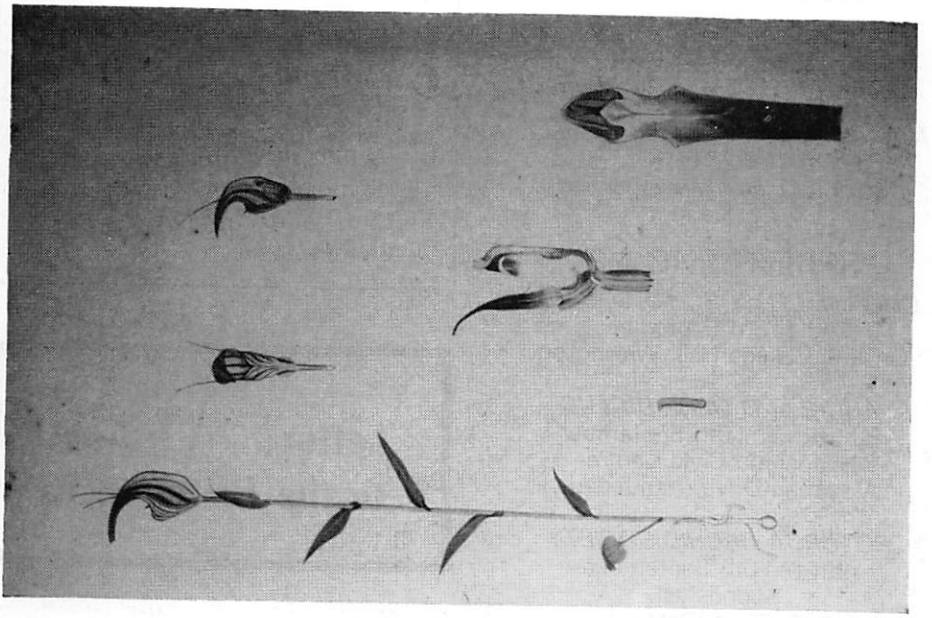
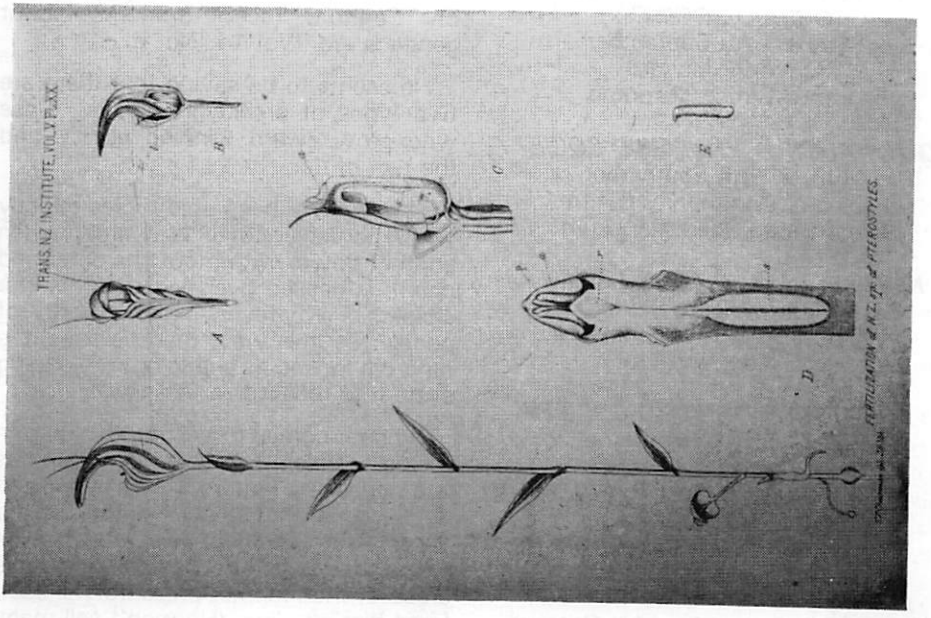


PLATE 1



1989 Show Dates

WINTER SHOWS

WELLINGTON ORCHID SOCIETY
17th & 18th June
St. Orans College, Wellington

NEW ZEALAND ORCHID SOCIETY
7th, 8th, 9th July
Mt. Albert War Memorial Hall
Auckland

SPRING SHOWS

CAPITAL CITY ORCHID SOCIETY
2nd & 3rd September
Onslow College Hall, Wellington

AUCKLAND ORCHID CLUB
8th, 9th & 10th September
Henderson Civic Centre
Alderman Drive, Henderson

ROTORUA ORCHID SOCIETY
9th & 10th September
Soundshell
Lake Road, Rotorua

POVERTY BAY EAST COAST ORCHID SOCIETY
16th & 17th September
Archery Club Hall
Disraeli Street, Gisborne

SOUTH AUCKLAND ORCHID SOCIETY
16th & 17th September
Papakura Community Centre
Great South Road, Papakura

NEW ZEALAND ORCHID SOCIETY
22nd, 23rd & 24th September
Mt. Albert War Memorial Hall
Auckland

CANTERBURY ORCHID SOCIETY
23rd & 24th September

WELLINGTON ORCHID SOCIETY
23rd & 24th September
Horticultural Hall, Lower Hutt

HAWKES BAY ORCHID SOCIETY
29th, 30th September, 1st October
Centennial Hall, Napier

Alistair MacLeod

We were very sorry to learn that Alistair MacLeod, of MacLeod's Exotic Orchid Nurseries, died recently in an accident.

South Island growers in particular will miss his contribution to New Zealand Orchid growing.

Our sincere sympathy to his family and orchid growing acquaintances.

Letter to the Editor . . .

Dear Editors,

I would like to make some comments on Cogito's recent remarks about genetics etc. (Vol 14, No. 6).

He seems to be saying that there are two types of orchid growers — those who grow award winning plants, and the rest of us.

I have never been able to see exactly why a particular flower is awarded when another flower with more character and charm is passed over because it is star shaped or whatever. If the majority of people feel this way, then perhaps it is time we looked at changing the judging system to reflect this feeling.

When it comes to wishful thinking on the part of plant breeders, I feel that this is a necessary feature of the hybridizer. After all, if the breeder drifts too far away from the species, or gives extravagantly hopeful descriptions of his crosses, then market pressure will soon force him into line. (He won't sell many plants!).

The number of good plants has always been low, but overall the quality of the plants has been better than the species, which is what keeps breeders going (and growers too). Hybrids are more tolerant of poor growing conditions than species, and make it easier for hobby growers to enjoy orchids.

I am a bit confused about the addition of genes by using plants with long pedigrees to breed from. My understanding of genetics is that each parent provides half of the chomosomes in the offspring and the seedling finishes up with two lots of all the genes required for a plant. The dominance or recessiveness of each set of genes then controls what the plant and flower look like. Obviously the further away from the species that we go, then the greater the chance of recessive genes appearing in the seedlings, and since we didn't see the effects of these genes when they were inhibited, the plants may finish up with undesirable characteristics, and certainly unexpected ones.

My confusion increases when I try to work out what happens when two tetraploids are crossed. Are there four sets of genes fighting it out, or are there two lots of two sets? Why does a tetraploid have a shorter spike and fewer flowers than the same plant in diploid form? And why do Cattleyas seem to hybridize quite readily even though one parent may be a pentaploid and the other one a tetraploid, and cymbidiums go all sulky when there is a triploid in the cross?

Perhaps Cogito can explain these things in future articles, (using drawings and avoiding the use of big words of Greek derivation whenever possible,) then his articles would become even more interesting and informative.

Bob McCulloch
18 Davis Crescent
Upper Hutt

Cogito's Comments

Extracts from Bob McCulloch's letter in italics.

I would like to make some comments on Cogito's recent remarks about genetics etc. (You are most welcome).

He seems to be saying that there are two types of orchid growers — those who grow award winning plants, and the rest of us. (You seem to be in agreement? I see plant judging as a kind of fashion. If you are up with the latest fashion you're "in". If not, I feel that many of the old fashions suited individuals better anyway. There are many other reasons why plants win awards, e.g. good presentation and culture.).

I have never been able to see exactly why a particular flower is awarded when another flower with more character and charm is passed over because it is star shaped or whatever. (Your trouble is that you have not been properly conditioned yet, you don't understand!).

If the majority of people feel this way, then perhaps it is time we looked at changing the judging system to reflect this feeling. (I agree, sort of. I don't however rubbish the judging system out of hand. There are too many angles and it is too good an organisation for that kind of attitude.).

When it comes to wishful thinking on the part of plant breeders, I feel that this is a necessary feature of the hybridiser. (I agree. That goes especially for when you and I make a cross. Presumably we don't know so well what we are doing. I wonder very much if the top plant

breeders, Andy Easton excluded, know things all the way when they register a couple of dozen new hydrids in one bang. Some, or rather many new hybrids are sold and are never registered, as many of your own plant labels bear witness of. They do the wishful thinking, and we pay for it!).

After all, if the breeder drifts too far away from the species, or gives extravagantly hopeful descriptions of his crosses, then market pressures will soon force him into line. He won't sell many plants. (By that time it is usually too late. There are many would-be plant breeders going under all the time. I believe that it is a hard hard world unless you manage to establish yourself as a top class man or woman known to sell top-line plants all the time. Market pressures make life extremely difficult for honest breeders because there are so many people who sell rubbish.).

The number of good plants has always been low, but the overall quality of the plants has been better than the species, which is what keeps breeders going, and growers too. (I take your word for it. Good breeders are known to sell a higher proportion of good plants.).

Hybrids are more tolerant of poor growing conditions than species, and make it easier for hobby growers to enjoy orchids. (Again I take your word for it. At my neck of the woods you would be amazed to find how many hobby growers are going in for more and more variety, species included.).

I am a bit confused about the addition of genes by using plants with long pedigrees to breed from. My understanding of genetics is that each parent provides half of the chromosomes in the offspring and the seedling finishes up with two lots of all the genes required for a plant. (Well, here we come to a more technical field. My understanding is that each parent's chromosomes divide and supply half a chromosome each to make a whole in their offspring. The number of chromosomes varies between genera and sometimes even between species within a genus. The number of them so far does not matter. What does matter is that the number and nature of the **genes** carried on each chromosome can vary enormously and more so when different species and genera are crossed. Improvement in breeding used to seen as a reduction in the variabitliy. You weed out all plants with undesirable characteristics and breed on for generations until the desired characteristics are firmly "fixed" and commonly present in all of the offspring. As long as a plant is not crossed it is impossible to change any feature of it very much. That is because the genes to do so are not present. As soon as another species or genus or maybe even a variety is introduced, one has more characteristics present by means of the introduced individual. That is where variability is introduced. The more new individuals that are subsequently used or introduced the more variability there is going to be present in each following generation. This to the point where perhaps we should no longer refer to it as hybridising. Mongrelising sounds ugly doesn't it?)

The dominance or recessiveness of each set of genes then controls what the plant and flower look like. (I'd rather say "controls what **each** plant and flower looks like", because each plant that grows from the same seed capsule can carry significantly different genes.).

Obviously the further away from the species we go, then the greater the chance of recessive genes appearing in the seedlings, and since we didn't see the effects of these genes when they were inhibited, the plants may finish up with undesirable characteristics, and certainly unexpected ones. (You said it! I hope I didn't speak too much Greek).

Bob McCulloch
Bill Fransen

A Plant Breeder's Comments

With Cogito's approval, I also would like to respond to Bob McCulloch and tackle the questions on genetics that he raises.

Fairly, there are two types of orchid growers - those who are content to grow and enjoy their orchids, while there is a smaller group who are challenged to acquire awardable clones and then grow them well enough to gain awards. The cynics will say that even those who fall between these two groups are catered for with cultural awards, where flower quality is overshadowed by evidence of extraordinary growing achievement.

However I cannot let the comment that flowers with "character and charm" are passed over by judges stand unchallenged. Indeed it is exactly this type of flower which will often sway judges into an award score. Many flowers of charm and character, star-shaped as well, gain Awards of Distinction and commercially may prove a very lucrative proposition if propagated for the hobbyist market.

Hybridizers who give "extravagantly hopeful descriptions" for their offerings have been with us for at least a century but one must note that the individuals don't last long. Witness the glossy colour catalogues and hyperbolic utterances of some Australian cymbidium hybridizers in years gone by. Did anyone in New Zealand ever bloom a quality seedling from their offerings?

It is a truism but the number of good orchid plants has never been adequate to supply the demand. However, I believe the percentage of quality seedlings in a cross today generally is quite high. Consider for example the yellow summer bloomings Cattleyas. When I was a boy this group was plagued by flower crippling, susceptibility to virus, spontaneous demise if repotted incorrectly etc. etc. — Any good yellow commanded prices in the order of $250.00 per bulb — three growth minimum division! Today we sell vastly superior plants as blooming pots for about $25 retail. It is the hobbyist growers who have benefitted from the diligent efforts of a few clever Cattleya breeders.

Certainly hybrids are more tolerant of a wider range of growing conditions than species. I have always taken my hat off to successful species growers for in effect they have to duplicate the growing environment of each species as closely as possible.

I am not sure that I can agree with the statement that the further away from the species the hybrid is, the greater the chance of recessive genes appearing in the seedlings. In fact my observations have been that the further away we breed from the species, the percentage of seedlings with what are termed "undesirable characteristics" is lowered. With orchids many characteristics are controlled by more than one gene so we have to use terms like multiple-gene or quantitative inheritance to explain phenomena we observe. In the case of albino or pure-colour cymbidiums, it is a single recessive gene pair (or quartet at the 4n level) which allows expression of the albino colouration. However, colour inheritance in white and pink cymbidiums can only be explained by reference to the term incomplete dominance. Incomplete dominance and multiple-gene inheritance may produce very similar observable effects.

When tetraploids are crossed things do get more complicated! Unfortunately there are two types of tetraploids commonly encountered in cymbidium hybridizing — those that are termed natural tetraploids and colchicine-doubled or allotetraploids. If we take the natural tetraploid *Cym. Pauwelsii* "Compte d'Hemptine it is found to contain 80 chromosomes of which 60

are identifiable as originating from *C. lowianum* and 20 originating from *C. insigne. C. lowianum* was the pod parent and something went wrong in meiosis so an egg with three sets of the *C. lowianum* genotype formed. Depending on how this "big egg" formed, there might be a little variation in the three sets but dealing with a species one wouldn't expect much. What is the significance of this information for a cymbidium hybridizer? Well, it explains why *Cym. Pauwelsii* "Compte d'Hemptine is a much better parent of greens than pinks for one thing. Other natural tetraploid cymbidiums in more complex hybrids are Babylon "Castle Hill", Vieux Rose "Dell Park" and Wallara "Gold Nugget."

The converted or allo-tetraploids are increasing in number. By the use of colchicine or merely as the result of letting meristem cultures go stale, a percentage of tetraploids can be produced. These 4n's have four sets of genes which are essentially two pairs of two identicals. Again, without being nitpicking, I must point out these sets may not be completely identical — colchicine is pretty hot stuff — and some breeders will swear that their particular form of a converted tetraploid is better than their competitors. Certainly in my experience with *Cym.* Coraki "Margaret" which we converted in 1974, there are good ones and bad ones. In this case, we treated protocorms and saved only those with the stomatal size which said they were 4n. Some laboratories get their first 4n as evidenced by stomatal diameter and then multiply it which might give more uniform plants but what if they unwittingly picked a bad form at the juvenile stage?

Converted tetraploids tend to have shorter spikes and fewer flowers than their diploid counterparts. This does not always apply to natural tetraploids — growers will recollect that *Cym.* Babylon "Castle Hill" and *Cym.* Vieux Rose "Dell Park" are extremely tall-spiked. One explanation for this phenomenon is that the tetraploid cells are about a ⅓ larger than their diploid counterparts. They divide more slowly so the plants grow more slowly. The flowers are larger so they appear closer together. The flowers are meatier so they incorporate more of everything that must be transported and processed through the internal mechanisms of the orchid plant. In other plant families where higher ploidy levels are encountered, the same observations can be made. Certainly the comment of an Australian seller that "tetraploids are more beautiful" should be seen for what it is — drivel!

One further comment to add as regards the natural tetraploids. Unfortunately the only two surviving clones of *Cym.* Babylon - "Castle Hill" and "Carpentiers", are both tetraploids but all the famous *Cym.* Vieux Roses were triploid as their parentage suggested. Without exception they had the robust tall spikes but when compared to *Cym.* Vieux Rose "Dell Park", they produced them much more freely and grew more vigorously.

Cattleyas do hybridize fairly readily when one parent is a pentaploid and the other a tetraploid but I can't think of one good seedling that ever resulted from such a cross. Pentaploid parents in all genera, except possibly Phalaenopsis, seem to be well avoided. Cymbidiums do not go at all sulky when one parent is a triploid — many breeding lines are built around fertile triploids like Earlyana, Showgirl, Cooksbridge and Lucy Moor to name but a few. But always in these lines of breeding the percentage of useless aneuploids will be high. *(Aneuploids are polyploids with an uneven number of chromosomes Ed.)* Thousands, probably millions of seedlings were raised from Flamingo "Nobilior" a pentaploid cymbidium. Only two - Acapulco "Del Mar" and Marian Lenfestey "Splendens" were worth keeping.

These are the answers of a plant breeder — I am now quite rusty with nearly 20 years since I last sat an exam paper which necessitated any detailed

study of genetics. Let me conclude these observations by really throwing a cat amongst the pigeons. In the January/February 1989 'Orchids in New Zealand' there is a photo of *Cymbidium* Eburneo-lowianum. Although I can see only a little of the plant I am almost certain it is incorrectly labelled for I have yet to see an Eburneo-lowianum without the strong V lip of *C. lowianum* dominating — in fact I can think of no primary hybrid with *C. lowianum* where it does not dominate the lip markings.

One final note. I am sure cymbidium growers all over New Zealand will be sad to hear of the recent passing of Alex Arms. He maintained a wonderfully complete collection of the cymbidium species and together with George Fuller was responsible for a superb display of cymbidium species and early hybrids at the 1985 Wellington Conference.

A. Easton
Geyserland Orchids

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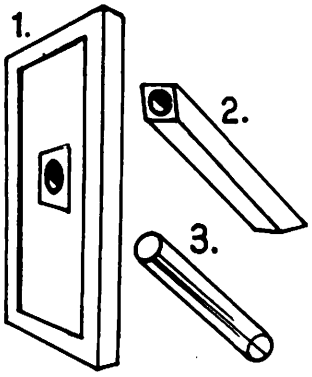

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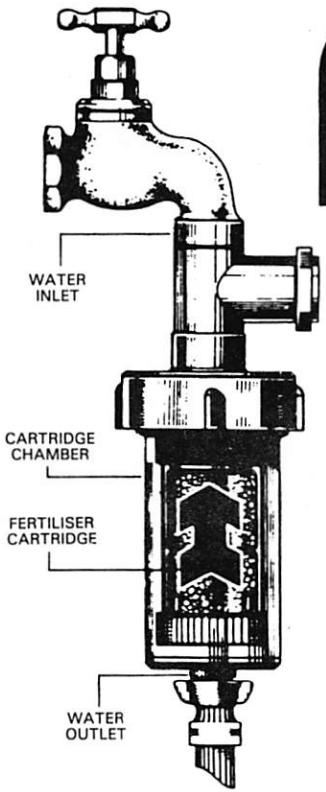

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Fert-O-Mat provides the three main elements N.P.K. in the proportions recommended by both U.S. and N.Z. Orchid experts for orchids (American Orchid Society Bulletin, N.Z. Orchid Review, Department Scientific & Industrial Research, Ministry of Agriculture & Fisheries). Both formula of fertiliser contain essential trace elements.

For best results use Fert-O-Mat with every watering. Quick Green is recommended for spring/summer growth, General Purpose blossom time.

Fert-O-Mat is also highly recommended for use in flower and vegetable gardening. Use Fert-O-Mat and judge the results for yourself.

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PORTRAITS OF NEW ZEALAND ORCHID SPECIES

Gastrodia

This strange genus of orchids has no chlorophyll, the green pigment most plants use to trap the sun's energy so they can make their own food from the nutrients available. Gastrodias need a fungus to obtain their 'ready-made' food from another plant.

Gastrodia sesamoides

Gastrodia cunninghamii

The three N. Z. Species have tall spikes of dull brown flowers, which are very inconspicuous and easily overlooked, amongst forest twigs and ground litter. They often grow under fairly heavy shade.

Gastrodia sesamoides has smooth cream flowers.

Gastrodia cunninghamii has lumpy gold spots on the outside of the flowers.

Photography: Bob Goodger