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# ORCHIDS IN NEW ZEALAND



March-April, 1977

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## HOW MUCH FOOD DOES THE ORCHID REQUIRE?

by Russell Martin

The answer to this question of food requirements differs greatly, depending upon the origin of the answer. If it comes from a manufacturer of a food or fertilizer, the more you use, the more he is pleased, providing your plant does not die. The excess feed not required by the plant, is washed out of the pot with each watering enabling you to watch your money go down the drain. An experienced grower may advise a reduced rate of the same fertilizer due to his past experience and the desirable results from smaller concentrations of feed. The only one in the position to adequately answer this question remains silent, although I have repeatedly asked for this exclusive answer . . . "Has anyone yet met a talking orchid?" . . .

A plant pathologist who formulated Aquasol always imparted to his students the importance of feeding. He stressed "a little and often" rather than feeding with the full strength solution. It must be remembered, a plant can only absorb food in a soluble state, and in the past, all fertilizers of a soluble nature, not used by the plant immediately, were washed and leached out of the mixture within three months. With the advent of an entirely new type of fertilizer under the trade name of Magamp—a by-product of desalination of salt water—a new concept of feeding has emerged. Magamp is referred to as a "slow release fertilizer", due to the fact that it is very slowly soluble. This means, that each time water passes the granules of Magamp in the mixture, a small amount of soluble food is made available to the roots. On each succeeding watering, this process takes place for the next 12-18 months, this being the period during which time Magamp remains active in the mixture.

With regular weak feeding throughout this 12-18 month period received in constant strength, plant growth is greatly increased.

In the past, full strength solution was available upon addition of new fertilizer and this concentration diluted rapidly due to the highly soluble nature of the fertilizer, and rapid leeching with subsequent waterings.

Although my plants have not as yet given me a verbal answer, the result of Magamp fertilizer is clearly indicated by their strong clean healthy growth as is evident throughout the glass houses. Since introducing Magamp to the collection some three years ago, we have completely eliminated the black tip on the Cymbidium leaves, which for many years, has been an irritating factor difficult to eradicate. Magamp is used at the rate of one teaspoon per 20 cm pot, or 1.5 kilos to the cubic metre, added to the mixture and mixed thoroughly.

Plants that have been potted for 12 months or more can have an addition of Magamp after this period, by removing the top 3 cm of old mix, adding the required Magamp and topping up with new mixture.

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## CULTURAL NOTES FOR CYMBIDIUM ORCHIDS

continued by Norm Porter 443 Te Moana Rd., Waikanae

If only a few plants are to be watered it is almost impossible to soak the plants with one quick watering as the surface tension of the dry compost actually repels water until it is damp again therefore it is far better to damp the top of the pots down, leave them for a while and then come back and give a thorough soaking some time later, by then the top of the compost will be quite damp and the water will soak well in.

**Light:** Light is another very important factor in the growing and flowering of Cymbidiums. A general rule for flowering size plants is to give sufficient light so that the foliage is a yellowish light green rather than a deep green. Deep lush green leaves are caused by too much shade which although will give beautiful foliage, the results will be little or no flowers. The ideal amount of shade is best achieved by growing the plants in a shade house covered with 30% shade cloth. The house can be constructed with a pipe or wooden frame with the shade cloth stretched over it. The sides of the shade house should be covered up to a height of around 45-60 cm with asbestos or corrugated iron, this will keep out ground draught and ensure that the floor does not dry out too quickly and so lose humidity which is so vital to healthy growth. To ensure added humidity polythene laid on the floor of the shade house and covered with sawdust creates the right conditions, once it is thoroughly wet it rarely dries out.

**Pests:** Fortunately Cymbidiums are worried by very few pests and diseases, therefore for a few plants a good combination rose spray that contains fungicide, miticide and insecticide would be suitable, say sprayed once a month. For a larger collection a good safe spray would be Malathion W.P., all seasons or white oil and a fungicide such as Zineb. There are many more powerful combinations that can be used but in the main they are dangerous to apply while the one above is a well tried and proven one, if applied at regular intervals. However, when the flower

buds emerge from the flower sheath, this spray should be discontinued as it will damage the buds. To control caterpillars, mites, etc., during the flowering season Kelthane W.P. in conjunction with a rose dust applied through a dust gun or puffer pack will take care of most pests. The rose dust should be applied every two weeks throughout the flowering period.

**Potting:** Young Cymbidiums in 7, 10 and 12 cm pots need to be potted into larger sizes every 6-12 months while small and then every 2-3 years when mature until they reach a size where the container is full of bulbs or too large to handle. They can then be divided into clumps of at least 3-4 green bulbs, to ensure plants of a large enough size that will establish quickly again in the new compost and flower the following season. After dividing the plant, the root system should comfortably fill the pot and then the compost shaken and lightly worked in around the roots until the pot is full and the plant quite firm. The size of the pot the division will go into is determined by the amount of roots on it, never by the size or number of bulbs. Beck's Orchid Mix should never be used directly from the bag as it is too dry. For best results it has to be dampened down with water and turned over several times. If only a small amount is required a wheelbarrow could be used to turn it over in, or if say several sacks are to be used they could be turned over on a slab of concrete and left for several days till it is damp and fluffy. Never use the mix while it is wet and sticky as it won't flow in and around the roots while potting.

Old defoliated back bulbs can be removed and potted up in a 10 cm pot, placed in a warm position and in due time will produce a shoot which will grow and with repotting into a larger pot each year, should reach a size large enough to flower in 3-4 years. If one has bottom heat, such as a propagator, up to 18 months can be saved to flowering time as with a little bit of heat the propagation will grow much faster.

A **hair hygrometer** is a superior type of instrument and the better ones can be adjusted both for zero error (as above) and for the degree of movement. A bundle of hairs changes its length with changes of humidity and this is used to move a pointer over a scale.

Both the spiral and the hair hygrometer can drift away from a correct reading. They can be set accurately with the aid of a ventilated or aspirated hygrometer (or psychrometer) but they can also be set fairly reliably by another method. Place the instrument in a saucer on a dinner plate and cover it with an inverted bowl. Pour water into the edge of the dinner plate until it flows right round and the bowl is seated in water to prevent the movement in or out of air. Leave it at least half an hour after which time the hygrometer should be reading 100 per cent although with most instruments a reading between 95 and 105 would be reasonable. If you wish to do a further check make up a saturated solution of sodium chloride by dissolving common salt in water until it will absorb no more. Use water about blood heat. Then repeat the earlier test, using the saturated salt solution instead of tap water and the meter should read 75 per cent. It will not matter if you use iodised salt. It is reasonable to set the instrument to read correctly at this value if you can as it is within the range commonly experienced inside the house.

Instruments which depend on the evaporating power of the air are called **psychrometers** and contain two thermometers one of which has the bulb surrounded by muslin kept wet by a wick dipping into water. The temperature of the wet bulb depends partly on the rate of air flow over it (up to a certain value when it becomes constant) and this introduces an uncertainty into the measurement. A British Standard Specification for these says ". . . the error . . . of this instrument is unlikely to exceed 10 per cent relative humidity unless the air is very dry." However provided clean wick and muslin are on the wet bulb and distilled or rain water is used the errors are generally much less

and this is, in fact, the method used by the N.Z. Meteorological Service for their routine observations. Also, provided you use the clean cloth and water the readings can never drift further away from correct values. You are however placing great reliance on the **difference** between the two thermometers. You may improve the accuracy of the instrument by immersing the whole end with the two thermometer bulbs in water, well stirred, for two or three minutes. Any difference in the readings can then be applied as a correction to the observations. An error in the difference is far more important than an error in actual temperature when you are measuring humidity.

To eliminate the uncertainty about rate of air flow the thermometers can be ventilated or aspirated. In a **whirling psychrometer** they are in a frame which is whirled rapidly in the hand. Different tables are used to give the humidity and errors should not exceed 2 or 3 per cent.

### Humidity and Frosts

Frosts are unlikely with either warm or moist air. A special type of wet and dry bulb psychrometer can be used to give frost warnings. What this instrument does is warn you that the air is in a suitable state to permit a frost. You will still need a clear sky and little wind. In other words, if the Frost Predictor says "Safe" a frost is unlikely unless a cold front goes past and changes the type of air. If the predictor says "Frost" listen to the forecast and watch the wind and the cloud cover. They will be the final deciding factors.

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**Cover photo:** This species is one of a series of what could be described as "miniature" slippers found associated with predominantly limestone areas. *P. concolor* was the first of this brachypetalum group found and was introduced into cultivation in 1864. Natural distribution is in the Maulmine, Burma and Cambodia regions. Photo by courtesy of Mr. G. Fuller.



# HUMIDITY

by C. G. Green, MSc., 7 Arapiko St., Johnsonville, Wellington 4.

Humidity often causes confusion because it can be expressed and measured in a number of different ways.

Briefly, the humidity is the amount of water in the atmosphere. It is in the form of an invisible vapour. The atmospheric pressure is due partly to the oxygen, partly to the nitrogen etc. and partly to the water vapour. The humidity can therefore be expressed as the **water vapour pressure**. The water vapour pressure cannot exceed a certain definite value which increases with temperature. When, at a certain temperature, the water vapour pressure reaches that definite value the atmosphere is said to be **saturated**. If the water vapour pressure exceeds the saturation value the excess will separate out as dew, frost, fog or cloud. If air is cooled this value of maximum water vapour pressure will decrease, until it reaches the level where it is the same as the water vapour pressure actually existing. The air is then saturated. If it is cooled further, dew, frost, fog or cloud will form. This temperature is called the **dew point** and is another way of specifying the humidity.

At any time the actual water vapour pressure can be expressed as a percentage of the maximum possible water vapour pressure at the same temperature. This value is the **relative humidity**. It is particularly useful because it gives an immediate indication of the evaporating power of the air. If the relative humidity is low the air has a great capacity for absorbing moisture. Clothes will dry rapidly on the line. If the relative humidity is high certain substances will extract water from the air. A number of your fertilizers will become damp. Caustic soda will dissolve in a pool of water. If the relative humidity is often above 80 per cent in your home you are likely to have trouble with mould on walls and ceilings.

The relative humidity is not usually the same inside as outside. Outside the humidity

is generally highest in the early morning, and on a calm, dewy or frosty night can reach 100 per cent. As the day wears on the sun warms the ground and this heat is transferred to the air which is therefore warmed so that the maximum possible water vapour pressure increases. The actual water vapour pressure also increases a little by evaporation from plants, water etc. but (except on dull windy days) this is much less and so the relative humidity decreases during the day and increases again towards evening. On a dull windy day little of the sun's heat reaches the ground and what does is quickly swept away by the wind. There is little heating and the relative humidity does not change much.

## The Measurement of Humidity

Many vegetable and animal substances expand or contract with changes in humidity. Certain chemicals change colour. The "Weather House" with the little man and the little lady depends on the twisting of a piece of catgut. You sometimes see little pottery figures. One was a Red Indian, his apron treated with chemicals, and below was the legend "Apron blue, sky is too. Apron pink, weather stink." Such devices are known as **hygroscopes**.

Measuring instruments which give a quantitative value to the humidity usually depend on hairs, paper, gold beater's skin or the evaporating power of the air.

A **spiral hygrometer** has a spiral of metal like the hairspring of a watch to which is bonded a strip of paper. The paper changes its length with changes in humidity and the spiral coils and uncoils moving a pointer over a dial. This type is commonly used in conjunction with a domestic barometer. The only adjustment possible is to shift the pointer relative to the scale which can usually be done by inserting a small screwdriver through a hole in the back.

After a plant has been divided into a clump of at least 3-4 green bulbs and potted up in damp compost it should be kept in a warm slightly shaded position. The compost should not be watered, but only dampened down on top of the pot for 3-4 weeks; this will give the roots a chance to heal and recover from their shock of being divided. If the compost is too wet through too much water the plant has no reason to send out roots to look for moisture as it has enough already. It will sulk and possibly take years to get established and flower again. More divisions are lost through watering too often than any other cause. Any cuts where the plant is divided or back bulbs taken off should be sealed to stop rot getting in, with Sulphur, Copperox, or tar (Flinco). After dividing, the green bulbs will shrivel a bit but this is quite normal, particularly with green flowering varieties.

Small plants in 7, 10, 12 or 15 cm pots can be potted on in the spring into larger size pots as long as they have a good root system. If not they can go back into the same size pot or even smaller, to encourage roots.

**Flowering:** In autumn when the flower spikes start showing buds coming out of their flower sheath they can be brought into the glasshouse, porch, verandah, or car port but not inside the home as many plants are lost by bringing them in the house too soon, as night temperatures above 12°C (55°F) will cause the buds to yellow and fall off. However once the buds are open it is quite safe to bring the plant inside the home. If they are to be flowered in a glasshouse or out in the open a little shade is necessary to stop the sun fading the colour of the blooms. For clearer and stronger colour in flowers, shading plays an important part. Greens and whites should be heavily shaded, creams, lemons, blush and light pinks slightly shaded, while yellows, roses, orange, brown and red need full sun to bring out the colour, although these colours will need to be shaded once they are fully open.

The flower stem should not be left on the plant too long, say two weeks after the last flower is open, and as spikes take some 2-3

weeks to open, this will give quite a long time to admire them. If left too long, too much strength will be taken out of the plant with the possibility of no flowers the following season. After the flower stem has been cut off and put in a vase the plant can be moved outside, if danger of frost is over, to the position where it will grow during the summer, either in a shade house or under a tree, otherwise it should stay in the glasshouse or go back under the porch, verandah or car port, till the weather warms up.

**General:** Cymbidiums grow well out of doors in mild areas all year round but must be protected from frosts. Best results are obtained if plants are brought under cover to protect the flowers. If no cover is available a piece of polythene tacked on a frame and fixed over the plants to keep the worst of the rain off is sufficient. Plants should never be grown inside the home as conditions are too stuffy and dry, but outside in a sunny, open, airy position that gives maximum sun all day. When growing plants outside under a tree, ensure the plant is well off the ground by standing it on a brick or piece of concrete. This will discourage slugs, worms, etc., from finding their way through the drainage holes. Also plants when grown under open spreading trees must not be placed right under the tree up against the trunk, but kept out under the outer perimeter of the branches where they will get direct but broken sunlight.

Most important of all, Cymbidiums need cool nights in summer to initiate flower spikes, with a drop of 11°C between day and night temperature if possible. This cannot be achieved in a closed-in porch or glasshouse with little ventilation, that is closed up for the night.



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## CULTURAL NOTES

by Bruce Douglas

March-April Cultural notes! Why, I have not had my Christmas dinner yet. But then, our Editor has his important job to do and after him the printer etc. So up comes March-April and for my part in too much of a hurry.

What sort of a growing season have you had? In the Bay of Plenty we had a cool spring and I saw in the "N.Z. Herald" (Auckland Area) they had something the same. So your plants could have been slow starting and you may have experienced more root rot than usual. Then comes your growing time and I trust it was every bit of that. Now with these two months you have a sort of rounding off period before the colder weather comes along.

**GENERAL:** You should be a bit careful when watering, especially in April as I am sure that an early frost could be waiting to pounce on the unsuspecting grower. Talking about frosts, what about having those heating units checked over bright and early before everyone wants that electrician and you have to wait. Oh, by the way, another reason; should you need any parts they may take longer to procure in this economic climate. Another important point at this time of the year; stand in your glasshouse during heavy rain and mark where any drips come through. These can then be fixed more or less at your leisure and before they become troublesome.

**FEEDING:** At this time of the year (or maybe a little earlier) some growers alter their feeding programme for their Cymbidiums. Should you not be sure what to do under your conditions talk it over in your Society meetings. Remember all the answers given, both good and bad and then look for some principle behind their opinions. I suggest you "apply" those principles to your conditions—Never "do" what you are told with out a good reason in your mind.

**SHADING:** Keep your eye on this from now on and depending on your area and the season, it may become necessary to remove a little of the shading. A hard bristle broom pushed up and down should do the trick, if you have used the right "whiting". However

a word of warning, don't be too hasty for it just may turn out to be an Indian Summer and then you may have to put some shading back late in the season. As long as you don't get a heat build up you may find it surprising just how much sun some orchids will stand (e.g. Cymbidiums and certain Dendrobiums).

**PESTS:** You may forget them but I am certain they never forget your orchids. Any slight build up at this stage may mean an over wintering population ready to breed and pounce in spring just as your prize flowers open, so keep after them. Many times I have seen a late infestation of caterpillars turn up within a very short time and leave an area like the "Wreck of the Hesperus". This of course applies more to soft leaved orchids (Lycaste and Calanthes etc.) rather than Cattleyas and such like.

Do you know the first signs of red spider? If you do not have the right cultural conditions you could get caught. Here is a check list on some other pests you may care to look for—slugs, snails, aphids, worms, slaters and others such as the weta, written about a short time back.

**FUNGUS DISEASES:** Keep all areas clean and tidy and this goes for pests also. Sprays help a lot but unless you clean up after you I don't see so much point in spraying. I would say winter is the time to have a springclean. Remember overgrown lost plants at the rear of the glasshouse (or elsewhere) as they may be the ideal breeding place for several pests—not the least being greenfly for the transfer of virus.

**REPOTTING:** Ideally this should have been done earlier but some folk do autumn pot and in fact for some species some advocate it. Talk it over in your Society.

**FLOWER SPIKES:** CYMBIDIUM: This period could well be close to the pride and joy of these past months as spikes show and elongate. However should some plants have made up lovely strong growths and by say the end of March show no sign of a spike, they may, in some cases be encouraged to do so if the pots are allowed to remain on the dry side for a week or two—but do not over do it.





*Cattleya x guatemalensis* T. Moore  
'wischhuuseniana' Rchb.f.

The group name (or, more correctly, group epithet) may be in a modern language in which case it begins with a capital and is printed in plain type, e.g. *Cymbidium* Sensation, *Phalaenopsis* Star of Amboina. Or it may be in Latin, more particularly if the plant is a natural hybrid, in which case it is treated as a specific epithet but preceded by an x sign, e.g. *Dendrobium x gracillimum*, a natural hybrid between *Dendrobium speciosum* and *Dendrobium gracilic-aule*. Rarely we find a compounded name, e.g. *Phalaenopsis x Sumabilis* for the cross between *Phalaenopsis sumatrana* and *Phalaenopsis amabilis*. These are undesirable due to confusion with compounded generic names. They were given prior to the adoption of rules and, although retained, they will in most cases phase out as improved forms become more popular.

### The Naming of Cultivars

A cultivar is selected from a species or a grex for desired qualities such as colour, size or texture of the flowers. It is propagated by division or mericloning, with the result that all individuals are really only parts of one original plant.

A typical cultivar name is *Cymbidium* Sensation 'Imperial'. It comprises the name of the genus, followed by the name of the grex and lastly the cultivar epithet. Since January 1959 all new cultivar epithets, e.g. 'Imperial' are distinguished by being in a modern language, by beginning with a capital and, if following a botanical or common name, by being enclosed in single quotation marks. However, quotation marks are omitted if the cultivar epithet comes first. As mentioned earlier, the cultivar epithet may be attached either to a botanical name or to a common name. In orchids those common names which are in general use are derived from botanical generic names and we find that customarily these are still printed in the type used for generic names in order to distinguish them from grex names and cultivar names.

Various simplified forms of naming cultivars are also correct according to the rules, but they are not recommended for orchids.

### Conclusion

Names can give much information in a condensed form and those applied according to the rules are recognised internationally. Now that we have an export and import trade in orchids, it is essential that those involved become familiar with the rules. No doubt we will have to adjust to name changes for a while, but we must remember that the Cultivated Code is relatively new (1969) and it takes some time for new information to be disseminated and for new rules to be adopted universally. More detail regarding the naming of orchids can be obtained from the "Handbook of Orchid Nomenclature and Registration", published by the International Orchid Commission on Classification, Nomenclature and Registration. A new edition has been prepared and is available from the Royal Horticultural Society, London.

## PUKEKURA CORNER

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



*Odontoglossum pulchellum* Batem ex Ldl.

This dainty species from Mexico or Guatemala has found its way into many collections and never fails to draw attention. In addition to its attractive flowering habit it has a pleasant perfume. It is often referred to as the "Wedding-Bell Orchid" since the pure white 3 cm wide blooms, with a dash of yellow in the centre, are arranged in pendant fashion on a very slender wiry stem, up to 30 cm tall.

The growth requirements bring this species within the scope of most enthusiasts since it is classed as a "cool" grower. In frost free areas it could probably be grown in a protected shade house or unheated glasshouse but would need winter heating in the south. I have seen it growing in a wide range of

potting materials but the proverbial "open mix" is an essential requirement. A topping of sphagnum moss, seems to be a desirable addition. Pseudobulbs 5-8 cm long are produced in a manner which soon gives an impression of congestion but this is a normal condition and the temptation to either overpot or frequently divide should be resisted.

The plants can be subjected to a good deal of light. Too much will reveal itself as a bleaching of the foliage to a pale green, although this can also happen as the result of root loss due to poorly drained mix or over-watering during the phase of limited growth.

Our plants bloom in July & August with the fleshy flowers showing up well amongst the slender foliage, but I share the feeling of many that, with their labellums uppermost, they give the impression of being upside-down. They certainly have little resemblance to the majority of the *Odontoglossum* species. This would no doubt have some bearing on the fact that reference will sometimes be made to this species under the synonym of *Osmoglossum pulchellum* Schltr.

### CLASSIFIED ADVERTISEMENTS

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

Wanted to buy; Paphiopedilums, species and hybrids, flowering or near flowering plants or divisions. Also Cattleyas and allied genera of the same size. J. S. C. Wood, 53 McPhee St., Dannevirke.



# A MODERN DAY ORCHID HUNTER

## PART 2

by Ron Maunder, Te Puna

One Saturday when we were idle, waiting for materials to come up in the weekly boat from Vila 144 kilometres south, I decided that Sunday was the day. I packed a light rucksack with plastic bags, labels, raincoat, two bottles of cordial, some biscuits and my camera. Next morning I set off at 5.45 a.m. For a while it was downhill to the coast so I jogged along only to have one bottle of raspberry cordial leak down my back. I passed overgrown coconut plantations, vegetable gardens and wild banana, mango and breadfruit trees until I arrived at the coast with its coral reef and active volcanic islands 16 kilometres off. I hurried through the village of Moriou as the villagers were stirring, with the dogs barking and following me down the track.

About an hour later I reached Nivenou and had to shake hands with everyone in sight, a frustrating local custom! They all wanted to know where I was bound and when I said 'big fella mountain' they laughed and raised their eyebrows. Several villages later I got a ride in the local co-op Toyota and was taken to the end of the "road" at Tavio. We had picked up many villagers en-route and one chap was a teacher going to his home around the coast. When he heard of my mission he said he knew of a hunter living in Tavio who went hunting on Mt. Pomare. Soon I met Daniel, a wild looking chap with unruly black hair and beard and clad only in red nylon beach shorts. Yes, he would take me. I didn't bother to ask how long we would be away. I waited while Daniel bought some tobacco sticks from the trade hut and packed his shoulder pandanus kit. We set off with Daniel leading, his kit dangling on the end of a battered single barrel shot-gun slung over his shoulders and a bush knife in his right hand. Behind and around him trotted five skinny yellow dogs. We hurried along round a large ironsand bay walking on the beach and as I struggled to keep in front

of the shot gun barrel I felt like Tom Sawyer with Huckleberry Finn beside him. Half an hour later we left the beach and zigzagged up a cliff to a plateau above. From here we took a branch track which turned towards the interior and the mountain which I had not yet glimpsed, as it was always covered in low cloud. The track was evidently used to get across the broadest part of the island and by the Tavio villagers who came once a year to the now deserted village of Lemon where some of them had lived and had coconut plantations. Daniel rarely spoke unless questioned and didn't even ask why I wanted to go up "big fella mountain". I gathered he hunted wild cattle and pigs on its slopes, whenever he felt like meat. By the time he announced Pomare and pointed off the track into the undergrowth I was dying of thirst. I had one plastic bottle of cordial and knew I risked all sorts of illnesses if I drank water from the village or jungle. Coconut water was my only option I had been told. The going was slower now as Daniel hacked his way through the dense vines and undergrowth. In slave like fashion he cleared everything up to 2 metres so I hardly had to stoop or scramble. I looked for terrestrial orchids as it was quite dark in this dense area. After a while I saw several Jewel orchids but I realized it was useless collecting them as they would collapse in a few minutes. I also realised we wouldn't get far at the rate we were going so I said to Daniel "you no make road Daniel" He grinned and then we set off at a better pace. From time to time he pointed out stinging bushes to avoid and a peculiar wooden looking toadstool colony which always housed a nest of stinging ants. The trees abounded with creepers and hoyas. Occasionally I saw a colourful plant resembling a caladium or a fascinating palm about 1.6m high with 1m wide umbrella-like fronds but rarely did I see any epiphytic orchids.

# THE NAMING OF ORCHIDS

Ella O. Campbell of Massey University

**Cyperocymbidium = Cyperorchis x Cymbidium.**

A hybrid between three genera sometimes receives this type of compound name, for example **Brassolaeliocattleya = Brassavola x Laelia x Cattleya**. But often, because of the unwieldy result, the new name is formed as described for hybrids between 4 genera (see below), for example **Holttumara = Arachnis x Renanthera x Vanda**.

A hybrid between four or more genera is named for some person distinguished either in Botany or in Horticulture with the suffix -ara attached, for example **Huntara = Arachnis x Euanthe x Renanthera x Vanda x Vandopsis**.

The names of hybrid genera may be further distinguished by being printed as **x Cyperocymbidium**. Personally I consider this is helpful to beginners, but in practice the x is usually omitted. Certainly the names of many genera are so well known that compounded names are usually recognisable and in other cases the suffix -ara is itself distinctive.

### 3. The Naming of Hybrids between Species or Subdivision of Species in Orchids.

Hybrids between some species of orchids are made with relative ease and are often made repeatedly. The resulting plants are not identical but form a group, technically known as a grex (Latin for swarm or flock). All hybrids between the same two parent species receive either a formula or one group name. It has a rank equivalent to that of a species. The formula is printed either in the form **Dendrobium tetragonum x Dendrobium discolor** or as **Dendrobium tetragonum x discolor**. When a group name is used it may be clearly distinguished in various ways. The ways recommended for scientific papers are the most distinctive but a simplified version is more acceptable to the orchid world. Only those customarily used for orchids are mentioned here.

### 1. General Notes.

In families other than orchids, hybrids between species occasionally form naturally but very rarely form between genera. Several examples of species hybridisation occurred in New Zealand and in North America after large-scale logging and burning of forest and scrubland. To prove that a particular plant is a hybrid, botanists create artificial hybrids by crossing the suspected parents. This is done by transferring pollen of one to the stigma of the other and growing the resulting seeds. Often the natural and artificial hybrids are indistinguishable.

In contrast to the situation in other families, at least until recently, most of the hybrids in orchids are man-made and hybrids between genera, as well as between species, are frequently possible. Some of these hybrids could not form naturally, for example where pollination is dependent on insects which visit only one of the parents. However, in practice it has been found most confusing to attempt to separate natural from artificial hybrids. After much discussion it has been agreed that all hybrids will be covered by the Botanical Code.

### 2. The Naming of Hybrid Genera in Orchids

Hybrids between genera in orchids are shown either by a formula e.g. **Renanthera coccinea x Rhyncostylis gigantea** or by the formation of a new name. The new names follow the rules of the Botanical Code for genus names and so are nouns with Latin endings. However, they differ from genus names in their manner of formation.

If the hybrid is between two genera, it receives a compound name derived from the parental generic names, for example



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**THOUGHT FOR THE PERIOD:** Have you found any new (to you) native orchids? Seems to me many folk are becoming very interested in this aspect of orchid growing without joining an Orchid Society. From this comes the thought, what have you done personally to preserve our native orchids?

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## CYMBIDIUM NOTES

by Gordon Maney

### April

This is a very important month: flower spikes are showing up in quantity because the buds are set between December, January and February therefore feed each week with an increase of nitrogen such as Atlas Fish Emulsion until the end of April. While there is still good growth it not only helps with the quality of the flowers but also with the new growth for next season.

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After a few hours the terrain started to rise gradually and we came across deep trenches about 2m deep. These often had to be crossed but sometimes we were able to use them for a while as they were clear of vegetation. Daniel couldn't explain what they were but I later heard these were drainage gutters caused by run-off water during the wet season. At one stage the dogs up ahead got onto a pig and chased it past us but Daniel ignored them even when it was bailed. He just said "plenty pig" and indicated we could get one on our way back. However he did relent when I showed interest and left me with his rifle and bag and ran off to cut its throat. While he was away I sneaked a drink and explored the trees nearby, still no orchids! Daniel returned after a while with a hind quarter which he threaded on a vine and hung up for our return. He cut up some tobacco, rolled it in the palm of his hand and rolled it in a piece of brown paper. It burst into flame when lit and when blown out kept him puffing and sucking for about 10 minutes. Soon the channels disappeared and the way became easier and more open. We passed several huge banyan trees with their hanging roots and on these I saw the red vandaceous orchid seen on the coast. At one stage we came to a small clump of giant bamboo and by making a thin piece into a straw and cutting the side of a large bamboo Daniel showed me how to drink the cool refreshing water inside. Sterile water—I was saved! But what about stopping to eat. Not Daniel, he kept on and on without stopping. Ahead of us we could see the slopes of Mt. Pomare with its cloud cover and down at the coast we could see the reef with active Lepeve beyond. At about 150m I saw my first real orchids, *Calanthe veratrifolia* with old flower stalks standing about 1.2m high. I decided to collect these monsters on the way down as it was getting steeper and no doubt I'd need all my energy to get to the top. As we climbed we passed into a cooler, dripping wet area which I deduced was a cloud forest zone. Soon I was in a land of orchids. It had been worthwhile after all. There were epiphytic orchids all over trees. Tiny *Bulbophyllums* or *Cirrhopetalums* all up the tree trunks in

the dripping moss, huge clumps of *Dendrobiums* along the branches. None were in flower but many had huge pods, some hairy, some shiny and others ribbed. I soon had Daniel up the trees throwing down 'plenty flowers' as he called them. We almost filled my huge pack with *Phretias*, *Oberonias*, *Pholidetas*, *Coe-logynes* and pieces of orchid like plant until I remembered we weren't yet to the grass zone. I shared the rest of my cordial with Daniel and we took off upwards again with a pocket full of plastic bags. Suddenly I saw a red flower before my eyes. A *Dendrobium* with the finest tomato red flower I had ever seen! The plant had obviously been dislodged from above and become hooked up about 2m from the ground where it was now flowering. The flower had a beautiful indigo blue lip and although I searched for half an hour I could find no other specimen. Had I discovered a new species or was it common throughout New Guinea and the Solomon Islands too? I packed it in moss very carefully and headed on upwards. It was hand over hand up the steep slope and even a couple of the dogs who followed us gave up after a while. The trees were sparse and stunted now as fern became our main obstacle. It resembled the hard fern, which blocks disused bush tracks in N.Z. At last at 4 p.m. we reached the top in thick cloud and for the only time in the New Hebrides I felt cold as the damp air whistled over the summit. I collected a few *Dendrobiums* which appeared to be stunted forms of those growing further down and then we hurried back down the mountain. I knew it had taken 7 hours from Tavio and had visions of sleeping out in the insect infested jungle. I had remembered to bring my malaria tablet and made a mental note to take it when I lay down to sleep. Back at the pack I found Daniel had his 'flower' too and when questioned discovered he had collected it from a tree up on the summit. It was good stomach medicine he indicated!

—To be continued



## WHOEVER INVENTED COLCHICINE?

by Syd Monkhouse, Australia

Is it not amazing that once a workable system of plant name and hybridising recording has been established some smart person introduces something to really rock the boat.

Fortunately, the time proven method of recording orchid crossings, as originated by several far sighted orchid hybridists in the late 1800's and carried on in later years by the firm of Sanders and ultimately the R.H.S. is in no danger. However, the advent of meristem tissue culture and now to a much greater extent, the use of colchicine to alter the ploidy of orchid clones has really played havoc with the cultivar names of hybrids and even the varietal names of species.

Taking meristem propagation first—anyone who has raised large quantities of "mericlones" could not help but notice that in the case of some cultivars, odd mericlones do produce flowers quite different to the bulk of the batch. This, the experts tell us, is impossible, but in actual practice it happens, therefore are these odd "sports" to continue to bear the same varietal name as their brothers, even though they are distinctly different? The answer to this question I do not know, the main redeeming feature is that there is only the odd clone that performs in this way therefore perhaps the problem is not very great.

Now we have the advent of the use of Colchicine or some similar means of inducing cell division of orchid plants. This is where the real problem occurs because, theoretically we should be turning diploids into tetraploids, triploids into hexaploids, tetraploids into octoploids and so on. Add to this the fact that some tissue may not be affected at all and just what do we get from a flask of colchicine treated mericlones?

The evidence that I have observed so far comes from the flowering of colchicine treated mericlones of one orchid only—*Cymbidium Lunagrad 'Elanora'*. Maybe not all clones will perform in the same way as our observations prove that this one did, how-

ever they probably will and a real headache has been caused to the orchid world.

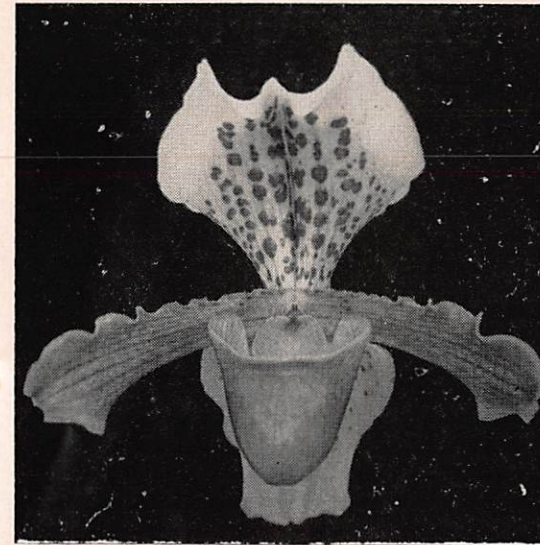
Lunagrad 'Elanora' is a diploid which flowers in Winter. It is a large, open shaped green with red marked lip. Three years' ago the first of my colchicine treated mericlones of this cultivar flowered on small plants. First flowerings produced immense round shaped flowers with much wider petals and sepals than the original and a much broader lip with changed lip markings. They were, indeed, a completely new flower which was far removed from the original. The flower count was down but the plants were small and this was to be expected. During following years, I have observed very many treated clones of this cultivar flowering in different collections and some startling things have happened.

On fully matured plants growing under identical conditions, the number of flowers appears to revert to almost the normal average for the clone. As expected the treated clones still produce the odd plant that has not converted to a tetraploid. The really surprising result is the fact that there is definite variation amongst some of the converted plants with some flowers rounder and fuller than the type as described but some intermediate clones which vary from both extremes. What the technical answer can be I do not know but the practical fact remains that a flask of treated mericlones can produce several different variants of bloom.

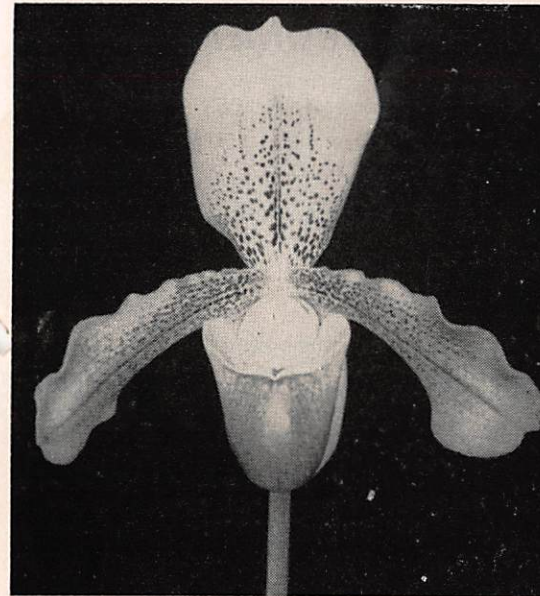
Now comes the big problem—what do we call these new clones that are entirely different from the original?

Some nurseries have put the classic tetraploid indication 4N alongside the cultivar name of converted clones. e.g. Lunagrad 'Elanora' 4N. This, to me, is better than nothing, but still misleading. Unless a chromosome count is taken we cannot say the plant is a tetraploid and what if it has been converted to some other ploidy?

Some growers recommend that the converted clone be given a new cultivar name as it is no longer Lunagrad 'Elanora'. This



*Paphiopedilum insigne* 'Harfield Hall'



*Paphiopedilum isigne*

The above shows the difference in ploidy of a specie which could be artificially created.

argument breaks down because most of the converted clones are identical and what happens if 500 different growers give the same identical clone different cultivar names—Heaven forbid!

Probably the ideal would be for any grower treating a batch of mericlones with colchicine or like cell dividing chemical or process, to flower all of his mericlones and then, when the best has been ascertained, to re-mericlone this one and not release any until this has been done. They could then be given a new cultivar name. Of course, commercial organisations are much too impatient for this suggestion to work.

This is a very real problem to which many orchid bodies are turning their backs and possibly wishing it would go away.

If nothing is done, then the naming of orchids in five years' time when thousands of different colchicine treated clones hit the market, will be a farce. There will be little protection for buyers and possibly a multitude of different means of identification will be formulated to add to the confusion.

At the 1976 Annual Meeting of the Australian Orchid Council, a lead was taken with this problem which would probably be well adopted throughout the orchid world.

The Council adopted the recommendation "All meristem tissue cultured plants that have been treated with colchicine, and including all other treatments too, have the letters C.T. placed after the original cultivar name." This procedure will be followed throughout Australia and, unless other countries can devise a better idea, which we would be pleased to hear about, the suggestion is that the World Nomenclature body and all orchid societies use the same designation. If the letters C.T. worry anyone because they were initially derived from "Colchicine Treated" and certainly many other processes can achieve the same conversion of ploidy, then the C.T. can easily be accepted as meaning "Chemically Treated". Thus the treated clones of the cymbidiums referred to earlier would be Lunagrad 'Elanora C.T.'.

Let us not wait until the naming damage is irreparable—act now!