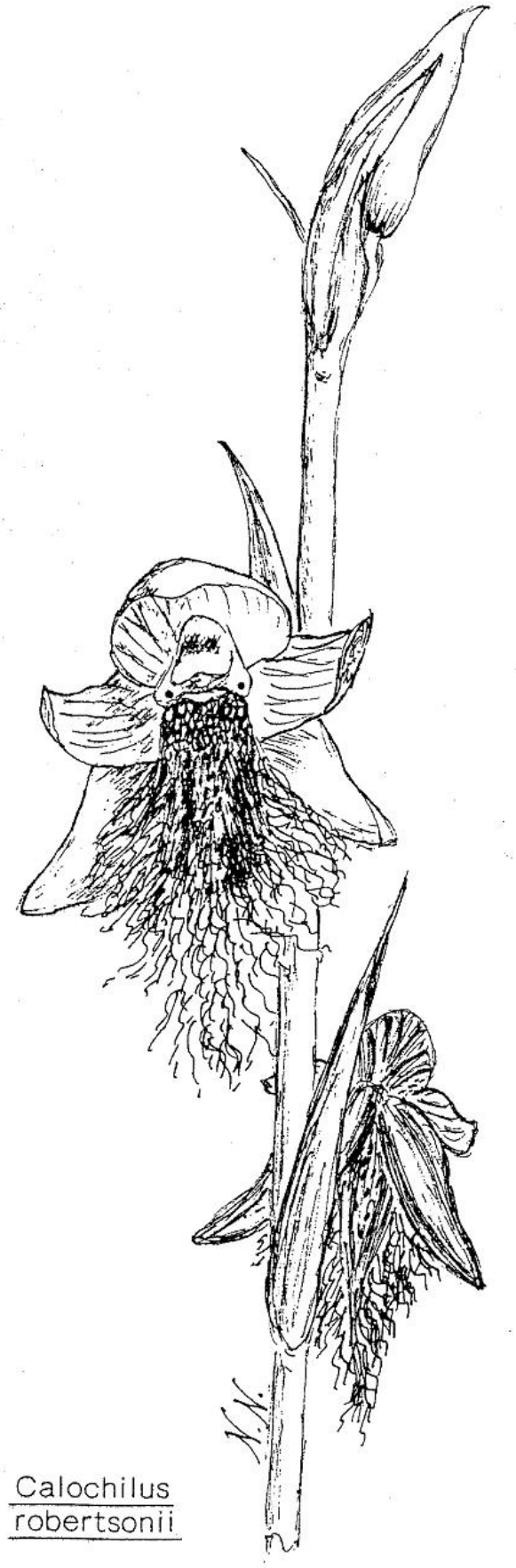

Calochilus robertsonii

NATIVE ORCHID SOCIETY of SOUTH AUSTRALIA INC.

JOURNAL

AUGUST 1991

Volume 15, No. 7.

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NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA INC.

The Native Orchid Society of South Australia promotes the conservation of native orchids through cultivation of native orchids, through preservation of naturally-occurring orchid plants and natural habitat.

Except with documented official representation from the Management Committee of the native orchid society of South Australia, no person is authorised to represent the society on any matter.

All native orchids are protected plants in the wild Their collection without written Government permit is illegal.

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NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA INC.

JOURNAL

August 1991 Vol. 15, No. 7.

CONTENTS

NEXT MEETING

When: Tuesday, 27 August, 1991 8.00 p.m.
Where: St Matthews Hall, Bridge Street, Kensington.
Why: Mr Les Peters will talk on the Scott Creek Conservation Park.

NOSSA ANNUAL SPRING SHOW

The annual NOSSA Spring Show will be held Saturday 21 and Sunday 22 September, 1991, at the Mitcham Girls High School. Please give serious consideration to exhibiting your plants to make this a successful event for the Society. Details pages 70, 71.

PORT PIRIE VISIT

Members intending to go on the bus trip to Bruce Mules' nursery at Port Pirie on August 25, should be at the Prospect Oval Gates on the Main North Road, Prospect (adjacent to the Northern Community Hospital) before 9.00 a.m. Arrangements have been made for limited off street parking. The bus departs at 9.00 a.m. SHARP and our approximate time of return will be 6.00 p.m.

Please bring your own Cut lunch and a cup - tea and coffee will be provided. Wear your name tag. For those who have not paid their $10 deposit to confirm their booking should pay it as soon as possible to Jan or Graham Burford who have the list of names. The $4 will be collected on the bus.

Please check with Jan-or Graham Burford (telephone 45 3085) for seats.

PLANTS BENCHED JULY MEETING

Terrestrials

Acianthus collinus
A. exsertus (x 2)
Caladenia deformis
C. rigida
Chiloglottis truncata (x 2)
Diuris abbreviata
D. palustris (x 2)
Lyperanthus suaveolens
Pterostylis baptistii
P. barbata
P. concinna
P. curta
P. cycnocephala
P. hildae
P. ingens
P. Joseph Arthur
P. mutica
P. nana (x 3)
P. aff. *nana* (x 2)
P. Nodding Grace (x 2)
P. plumosa
P. russellii

Epiphytes

Bulbophyllum (unknown)
Dendrobium Aussie 'Starlight'
D. Aussie Zest x *D.* Ellen
D. Blushing Sun
D. Ellen var. Bobbin
D. Essie Banks (x 2)
D. Golden Fleck
D. Hilda Poxon (x 3)
D. Hilda Poxon 'Colossus'
D. gracilicaule
D. Kathryn Banks
D. kingianum silcockii
D. Manning
D. Rosella Blush
D. Star of Dawn
D. Star of Gold (x 2)
D. Star of Gold x *gracilicaule*
D. teretifolium
Liparis reflexa

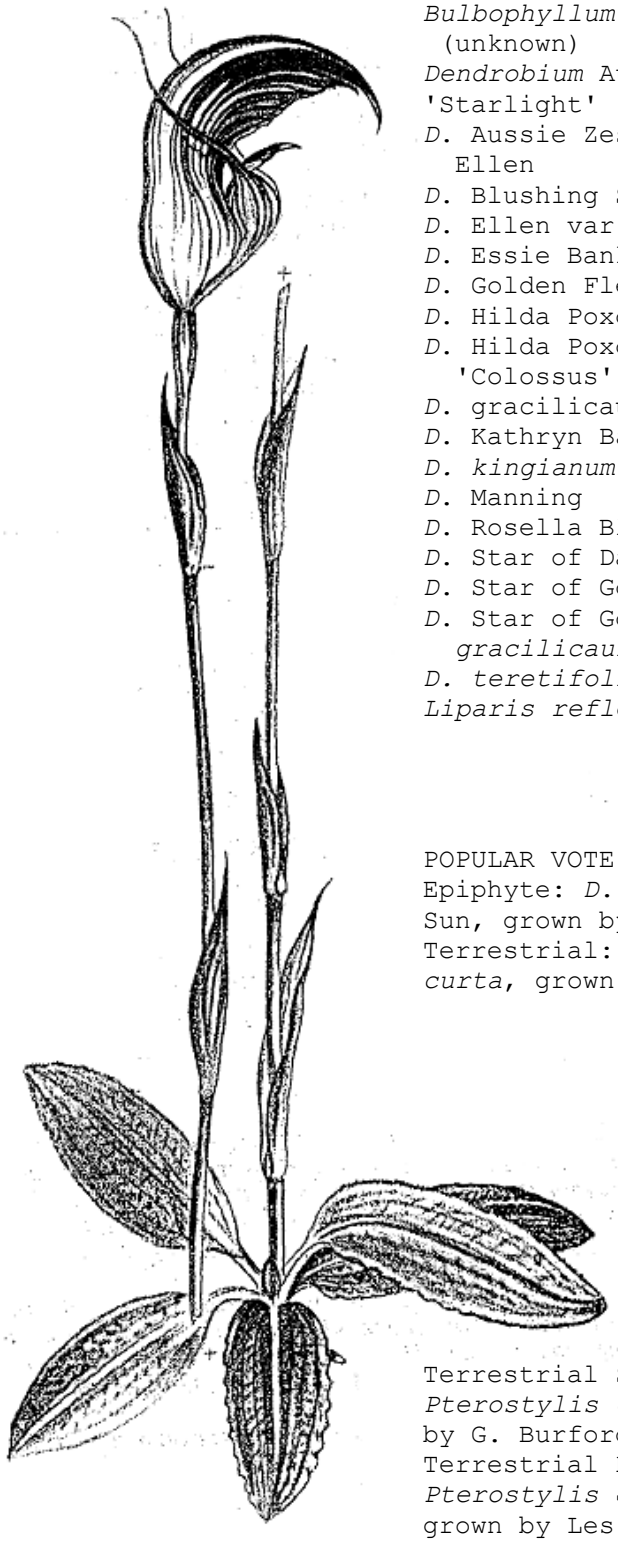
COMMENTARY AND JUDGING:

Epiphytes
- Bruce Mules
Terrestrials
- Bob Bates

POPULAR VOTE -
Epiphyte: *D.* Blushing Sun, grown by Bruce Mules
Terrestrial: *Pterostylis curta*, grown by G Burford

RESULTS OF JUDGING

Epiphyte Species: *Bulbophyllum*, grown by E. Viskic.
Epiphyte Hybrid: *Dendrobium* Blushing Sun, grown by Bruce Mules.



Pterostylis baptistii

Terrestrial Species: *Pterostylis curta*, grown by G. Burford.
Terrestrial Hybrid: *Pterostylis* Joseph Arthur, grown by Les Nesbitt.

ORCHID OF THE MONTH

Dendrobium macropus ssp. *gracilicaule*

R.T. Robjohns

This species derived its name from "gracilus" meaning slender and "caulis" meaning stalk - referring to the slender pseudobulbs. It is found from Kiama in eastern New South Wales to the Bloomfield River in the south east of Cape York Peninsula in Queensland. It has one of the widest ranges of habitats of any of our epiphytic orchids, growing in the light coastal scrubs, the dense rainforests and, in the tropical areas, on the tablelands.

With such a variation in altitude (from near sea-level to about 1200 metres) it follows that there is a wide variety of hosts, even occasionally growing as a lithophyte on rocks.

D. macropus ssp. gracilicaule

The stems are long, thin and cylindrical, to 1 cm thick, and from 20-60 cm in length with 3-6 ovate to lanceolate, terminal leaves, 5-13 cm long and of rather thin, leathery texture.

The racemes are short (5-12 cm) and bear 5-14 small, cup-shaped flowers of a dull or light yellow colour having the outer sepals lightly to heavily blotched or spotted with a brown or red-brown. Occasionally they are found a brighter yellow and without blotching.

The flowering season is from July to September.

D. macrobus ssp *gracilicaule* must surely be one of the hardiest and easily cultivated of our Australian epiphytic orchid species as it is adaptable to almost any conditions. I have it growing and flowering on cork, hardwood slabs, paperbark limbs and in a pot, but I think it is better If it is mounted. It receives 50%-60% shade and occasional foliar fertiliser. I protect it from frost but the cold does not affect it.

It does not flower from first year stems but will flower from mature stems for several years, even after they are leafless. Although most racemes are terminal or near, I have had racemes, occurring from nodes halfway along a leafless cane.

Orchid of the Month (contd.)

There are two natural hybrids, i.e. *D.* x *suffusum* and D. x *gracillimum*. *D.* x *gracillimum* is a natural hybrid between *D. macropus* ssp. *gracilicaule* and *D. speciosum* in which the features of *D. macropus* ssp. *gracilicaule* are dominant in the flower while in *D.* x *suffusum*, the natural hybrid between *D. macropus* ssp. *gracilicaule* and *D. kingianum*, *D. kingianum* is the dominant parent.

There are over 50 registered hybrids in which *D. macropus* ssp. *gracilicaule* has been used at least once and from these we see that *D. macropus* ssp. *gracilicaule* is a very dominant species in shape, size and colour, both in the flower and plant form.

NEW MEMBER

Mr Scott Carpenter of Torrens Park, S.A.

QUOTE FOR THE MONTH

"The chance of an orchid falling over in the car is directly proportional to its prize potential."

from Orchid Wise, by Roger Rankin.

NEW MEMBERS GROUP
NEXT MEETING

See notice for Port Pirie visit, page 61.

NEW MEMBERS GROUP
REPORT ON LAST FUNCTION

Sunday June 30 saw a good number meet at the home of Gordon Brooks. Gordon spent some time talking to the group on both his fertilisers and mixes and the reasons for his preferences, and also of the need for careful pot choice. He shared his observations of orchids in their natural habitat, and his preference and interest in growing *Dendrobium speciosum* was obvious. Gordon explained his reasons for the positioning of different orchids in different parts of his shadehouse. We had time to split into small groups and browse through his glasshouse, shadehouse and sales area. He is very pleased that some of his own crossings are flowering this year for the first time. Our thanks to Gordon for sharing his knowledge with us.

THE FLASKING OF ORCHIDS

Kevin Western

(Continued from NOSSA Journal, July 1991.)

FLASKING IS A PROCESS WHEREBY MORE ORCHIDS ARE PRODUCED

There are two (perhaps three) options:

1. seedlings
2. clones
3. "genetically engineered" plants?

SOME DEFINITIONS

Before proceeding it is necessary to define some terms which will follow -

SEEDLING -

Every flowering plant whether wild, 100% cultivated or cloned has its origin at some point in time as a seedling. Each seedling is a new and unique plant arising from the sexual reproduction process of flowering plants and formed as a result of the union of pollen (male sex cells) and ova (female sex cells).

Advantages
- seedlings may combine and display the best features of two parent plants. Selective and intelligent breeding should make this a reality in at least a reasonable percentage of the offspring from crosses.

Occasionally desirable characteristics show up in offspring which were present but not visible in the parent plant(s). (It must be remembered ,that each plant carries both pollen and ova and so may be self-pollinated.)

Seedlings offer a real and controllable chance to generate improved plants.

Disadvantages

- generally only a smallish percentage of the offspring from a cross are significant advances and an improvement (horticulturally) on either or both of the parents. While providing different and largely acceptable and worthwhile offspring, only the best offspring should be considered for inclusion in further breeding programs. To sum up, you have to be lucky to obtain one of the gems from a crossing and it is wise to breed-on only with the better offspring.

The Flasking of Orchids (contd.)

CLONES

A clone should be an exact genetic duplicate of the original plant from which it was generated or arose.

Clones include:
 * divisions
 * struck back-bulbs or canes
 * keikeis
 * "mericlones"

It can be expected that clones will be identical (when mature) with the original piece of plant from which they were derived. This will be so unless some chance mutation or gene-duplication mistake has occurred.

Advantages of clones
- plants of excellence or rarity can be identically reproduced at affordable prices, in large quantities for all who desire them and at affordable prices. This may be significant from a conservation, commercial or hobbyist viewpoint.

Disadvantages -
* The process only duplicates and existing plant.
* Mutation may occur and this is usually disadvantageous.

Occasionally useful mutations arise when:
 2N plants become 4N
 some fertile clones from a reluctant or non-breeding plant
 some useful colour changes have been reported
 we can produce virus-free plants from infected starting stock

GENETIC ENGINEERING

As I understand it, genetic engineering implies the artificial addition of selected, foreign genes by micro-manipulation techniques into seedlings or clones. This area is currently beyond the scope of my knowledge.

FLASKING

What we are attempting to do in "flasking" is to duplicate what happens in nature under controlled conditions. We must therefore observe and understand what happens in nature to be able to gain more control.

Because time is limited and because cloning is not extensively applied to Australian native orchids I have restricted the remainder of this presentation to seed sowing.

The Flasking of Orchids (contd.)

The Flasking of Orchids (contd.)

Mature plants produce flowers which give rise to pollen (male sex cells) and ovaries which contain egg cells.

Specific insects tend to be enticed to the flowers which are so constructed that the insect unwittingly collects the pollinia and on visiting another flower is likely to leave that pollen on the female receptor of another flower.

(We perform the pollinating process using a match or toothpick.)

If the pollination is successful, hormones from the pollen mass halt the normal degenerative processes and the pod begins to develop.

Individual pollen grains grow pollen tubes down the column towards the ova permitting fusion of the pollen's gene nuclei with that of the ova. The result is an immature seed which matures with time.

As the seed is produced and ripens the pod enlarges with its expanding contents.

It is ideal to take the pod at this time for laboratory work.

Eventually, when the season is right, the pod is fully mature and begins to split. Seed escapes from the split to be carried from the 'parent plant by the wind or falls to the ground.

If we are too late in harvesting a "green pod", it is possible to harvest the "dry seed".

A few lucky seeds will be carried to a location on a tree or on the decaying wood of a broken branch or to a patch of soil where just the right symbiotic or mycorrhizal fungus is growing. When this happens the fungus attempts to engulf and consume this tiny fragment of organic matter but as it enters the seed its activity stimulates the seed to germinate and control the fungus which it uses, at least at first, to obtain the food it needs to grow from.

(to be continued.)

IF IT IS MEANT TO BE

At the March meeting, Don Wells took the opportunity to tell us his views about the future of our precious orchids. He told of our grandchildren being able to see native orchids only in the collections of backyard growers, and that we need (rightly) to encourage our new growers.

Here are some thoughts on the problem -

Don's vision will become reality if we all stand idly by and let it happen. But because we can all take as much action as is open to us, we can prevent the bleak prospect of plants trapped in pots in someone's backyard as a curiosity.

If it is Meant to be ... (contd.)

Don pointed out that land is still being cleared although it should not be happening. Native Vegetation Clearance Control legislation has a few things in it that we could all use to turn the tide.

It is against that law to increase stock numbers on uncleared land above the average stock numbers for the previous 5 years. (Unfortunately many real estate agents in the hills do not advise potential buyers of this restriction.) This means that if the owner of uncleared land wants to put stock in, we can prevent it or ensure that no increase in damage occurs by reporting the situation to the Department of Environment and Planning. 23 acres of excellent open woodland was saved this way when an innocent enquiry was made to the Department about a neighbour's intention to get a horse.

There are other smaller actions we can take that make a better future for our wildflowers. We can learn how to pollinate the orchids we come across on our walks to ensure the lonely ones get a chance to retain their viability and increase numbers locally. This could be done as a matter of course on field trips.

The most urgent problem that each of us can fight is WEEDS. We must acknowledge that there are many unwelcome plants in our State. Some may actually look quite attractive, being escapees from our gardens, but be aware of the fact that they will overwhelm our scrub and its smaller plants - especially our roadside verges - in a much more complete and insidious way than ad hoc land clearing.

The way we can all help is to know our horror species, such as watsonia, 3-corner garlic (onion weed), pampas grass, yellow *Euryops abrotanicifolia* daisy, boneseed, montpelier and English broom, olive trees, soursobs, bridal creeper, blackberries, various introduced grasses and gorse - for starters!

By removing these weeds from the areas of least infestation when out on our walks and as an ongoing project, we can all help keep our scrub in the beautiful way it is supposed to be. There are some good books around on the Bradley Method of weeding to help us.

Another way that we can fight the problems is to put our money to good use, by supporting the conservation groups who can achieve some things we may not be able to do. Filsell Hill was saved in 1985 by using the money that people had contributed by donation or bequest, to the general cause of saving the good land that is left, via the National Parks Foundation.

In addition the Australian Conservation Foundation is currently running an Endangered Species Fundraising Appeal. Donations to both these organisations are fully tax deductible. Just adding our membership to active groups gives extra weight to the voice for moderation in our rush towards massive numbers of extinctions of plants and animals.

The last but not least thing, is to promote the conservation cause by the example we set - as individuals and as a society.

I was concerned at last year's show when my friend asked me if people had dug up plants especially for the show. It was not convincing to say that should never happen when a few pots looked as though that is exactly what happened. If the plants were obtained from a rescue dig, the pots should have that sad message attached to educate our members and visitors of the destruction going on out there. We are all fed up with finding neat, frequently with spade blade edged holes where we know an orchid once lived. We must keep our eyes open on our country drives, and if we find someone digging up orchids or wildflowers, get their registration number, make a detailed note of what they are doing and contact the Wildlife Protection Branch and the culprits may well find they have stolen a very expensive plant or two.

In summary there is a very concise idea for us all to apply to conservation. It was Rob Campbell, speaker at last year's Greening Australia Conference, who

If it is Meant to be ... (contd.)

said he lived by the ethic something along the following lines, "If it is meant to be, it is up to me."

If each of us adopt the active responsibility for the preservation of our orchids and other wild treasures, the future picture can be much brighter.

C.H.

NOSSA SHOW

- PHOTOGRAPHIC COMPETITION

Open to all members - 35 mm slides only. To be judged by a top photographic expert. Prizes for 1st and 2nd in each category.

Three categories - Close up single flower (macro)
Wild Orchid in situ
Cultivated plant

Slides must be handed in at next meeting.

(Also required: prints and posters for display at the NOSSA Show - contact Gerry Carne on 332 7730.)

NOSSA SPRING SHOW 1991

COMPETITIVE SECTIONS

Les Nesbitt, Registrar

Plants may be staged on trestles in the hall, in floor displays or in table top displays. Table top displays will be allotted an area of about 1 square metre on a trestle. Table top displays suit small orchids or growers who have only a few plants.

Foliage plants can be used as well as any attractive material to hide the pots such as logs, pebbles, bark, etc.

(1) All plants are to be benched by 10.00 a.m. on Saturday, 21 September. The hall will be open from 4.00 p.m. to 9.00 p.m. on Friday, 20 September, to allow exhibitors to set up.
(2) Plants which are not for judging must be marked with a ribbon (which will be available on the set up days).
(3) A label must be attached to each exhibit clearly showing the correct name of the plant and the exhibitor's number (available from the Registrar).
(4) Plants must have been grown by the exhibitor for at least 6 months before the Show.
(5) Hybrids include natural hybrids.

The judging will take place between 10.00 a.m. and 12 noon Saturday, 21 September. The A.O.C. judging standards will be used. NOSSA awards should be lodged with the Registrar. No

NOSSA SPRING SHOW - Competitive Sections (contd.)

prize money will be awarded, but Class winners will be acknowledged in the Journal. Champions will receive a card.

The Society will accept no responsibility for any loss, damage or infection suffered by any plant exhibited at the Show. All possible precautions against these happenings will be taken. Stewards may remove any plants suspected of disease or pest infestation.

All orchids will remain on display to the public on Saturday, 21 September and Sunday, 22 September. Plants are to be removed at 5.00 p.m. on Sunday, 22 September.

SCHEDULE

Champion Native Orchid of the Show - ANOS Medal.
The Roy Hargreaves Trophy (Best Terrestrial Species or Hybrid).
Ira Butler Award (Best Hybrid)
Champion Terrestrial Species (from classes 1-5, 8).
Champion Terrestrial Hybrid (from classes 6-8).
Champion Epiphytic Species (from classes 9-12, 16).
Champion Epiphytic Hybrid (from classes 13-16).

Class	Description (1st and 2nd prizes in each class)
1	*Caladenia* or *Glossodia* species
2	*Diuris* species
3	*Pterostylis* species
4	*Acianthus, Chiloglottis, Corybas, Cyrtostylis* species.
5	Terrestrial species other than in classes 1-4.
6	*Pterostylis* hybrid
7	Terrestrial hybrid other than in class 6.
8	Specimen terrestrial - species or hybrid.
9	*Dendrobium kingianum*
10	*Dendrobium* speciosum
11	*Dendrobium* species other than class 9 or 10.
12	Epiphytic species other than *Dendrobium*.
13	Epiphytic hybrid - cream or yellow.
14	Epiphytic hybrid - pink or red.
15	Epiphytic hybrid - any other colour including white.
16	Specimen epiphyte - species or hybrid.
17	Best Table Top display.

VIRUS DISEASE IN A NATIVE ORCHID

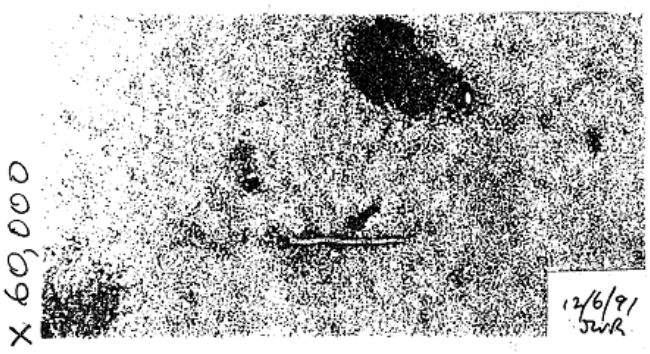
Heinrich Beyrle

Virus disease problems are well known in epiphytic orchids and can cause severe financial setbacks for commercial orchid growers, especially in the orchid cut flower industry. But non-commercial orchid growers should also be aware of the dangers of viruses and take precautionary measures against viruses pervading their collections.

Virus Disease in a Native Orchid (Contd.)

About 25 viruses of orchids are known. One of the most widespread in cultivated orchids is the cymbidium mosaic virus (CyMV) which belongs to the potexvirus group. This orchid virus has possibly been detected in a plant of *Diuris conspicillata* cultivated for several years (see figure), There are no confirmed reports of natural infection by CyMV in wild orchids, neither in Australia or elsewhere. Since the virus symptoms were observed first this year, it can be assumed that the virus was acquired during cultivation. Indeed, native and tropical epiphytic orchids were growing nearby. In this and some other plants of *Diuris conspicillata* growing in neighbouring pots, symptoms of virus disease, as the leaves bearing yellow or necrotic striped or spots, were clearly indicative. But visual symptoms are not always present in virus diseased orchids.

Infected plants often produce normal-looking foliage and reliable diagnosis can only be based on specifically designed techniques. The leaf dip technique had been used for diagnosing this virus, which requires access to electron microscope facilities. Diagnostic techniques such as bioassay, serological techniques or electron microscopy are usually not accessible to the non-commercial orchid grower, neither will it be possible to index every plant. Therefore we must rely on visual symptoms alone. Healthy growing plants, without any foliar or inflorescence symptoms are very unlikely to be infected. Growth depression or abnormalities can arise from many causes and virus infection should be considered as a cause.



Virus particle from *Diuris conspicillata* (arrow). 366nm long. 2% PTA stain (negative).

Possibly CYMBIDIUM MOSAIC VIRUS.

It still remains a mystery as to how these *Diuris conspicillata* plants became infected? CyMV has no known vectors, such as millipedes, mites, nematodes, slugs, snails, aphids or other insects. Pruning tools were not used, neither were tubers cut for vegetative propagation.

There are some measures we can take to prevent viruses from contaminating our orchid collections: routinely dip pruning tools in solutions of virus-inactivating compounds, such as trisodium phosphate and whenever possible use sterilised pots and soil mixes.

For mycorrhiza dependent terrestrial orchids such as *Diuris conspicillata* a small portion of the old potting mix will be enough to inoculate the mycorrhizal fungus into the new pot. Since there is no cure, virus diseased plants should be destroyed as soon as possible. But what to do with virus-infected rare plants or endangered species? Tissue culture methods may have the answer but will require development for orchid studies. Isolation or quarantine measures are possible but will not be a long term solution.

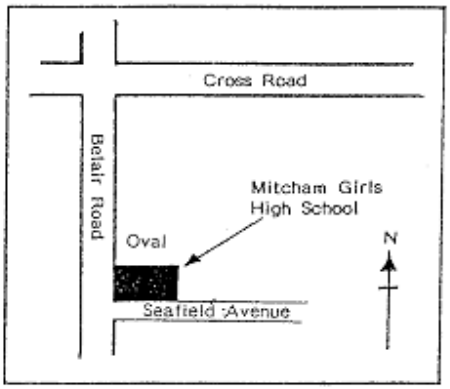
I wish to thank Bob Bates for identification of the plants and John Handles, Department of Crop Protection, Waite Campus, for useful discussion and electron microscopy.

NATIVE ORCHID SHOW

SATURDAY, 21st SEPTEMBER
and
SUNDAY, 22nd SEPTEMBER

12 noon — 5 p.m.

Mitcham Girls High School
Seafield Avenue
KINGSWOOD



ENTRY $1.00

NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA INC.