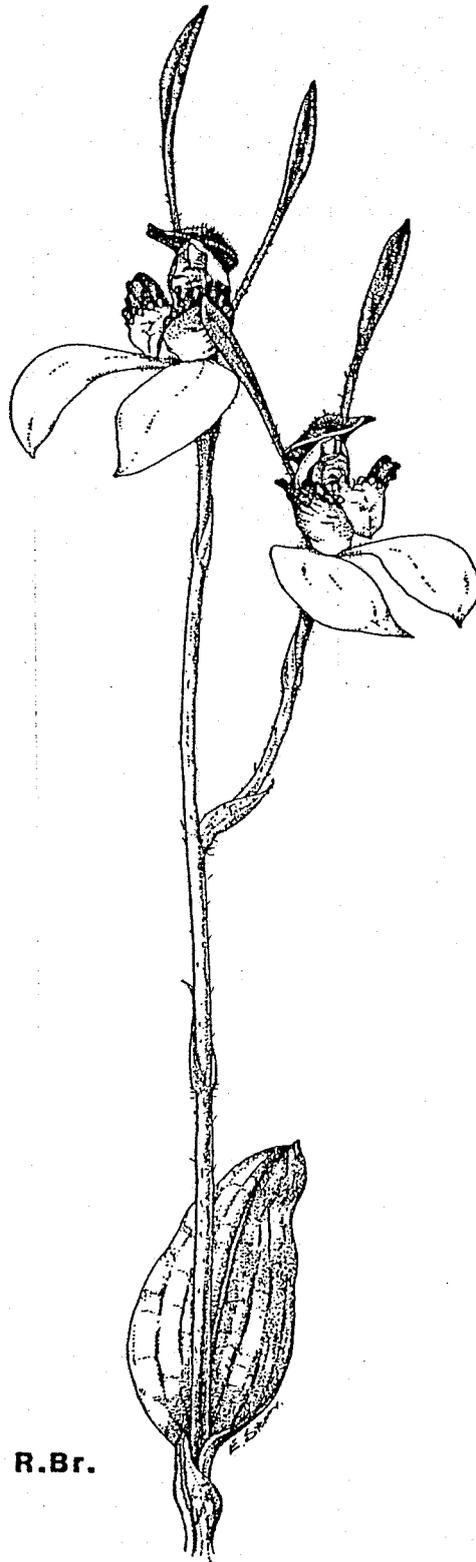


NATIVE ORCHID SOCIETY
of
SOUTH AUSTRALIA INC.

JOURNAL



Caladenia menziesii R.Br.

Registered by Australia Post
Publication No. SBH 1344

Volume 10, Number 8
September, 1986

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NEXT MEETING

Tuesday, 23 September 1986 at 8 pm
St. Matthews Hall, Bridge Street, Kensington

Guest speaker for the evening will be that well known orchid identify, Mr Ted Gregory, discussing Australian native epiphytes with particular emphasis on the species Dendrobium kingianum, D. X delicatum. Ted is an experienced and entertaining speaker and an interesting, educational evening can be assured.

After the meeting we will gather for light refreshments and members are asked to bring a basket supper. Remember this meeting is at the end of Orchids Australia '86 and we can expect a number of interstate and overseas visitors to attend.

NEW MEMBERS

Mrs C. Clarke
Mr & Mrs M. Maxwell
Mr N. Padbury

REPORT OF THE AUGUST GENERAL MEETING**INCREASING ORCHID COLLECTIONS: ARTIFICIAL TECHNIQUES****PART 1**

Orchids in the wild are increasingly threatened by civilisation. Clearing for agriculture, forestry or pasture, suburban development, grazing and deliberate illegal collection from protected areas are all reducing the numbers of orchids in the wild.

Anything which can be done to reduce the removal of plants from the wild is to be encouraged if there are to be any orchids left other than in cultivation. Any processes then, which generate orchids in significant numbers and at low cost, so as to minimize the "need" for persons to collect from the bush, must have merit. There are several useful processes whereby orchids can be produced in quantity even by the average hobbyist. Some other methods are available which involve a degree of laboratory technique (though even this is within the grasp of the average individual.)

In increasing an orchid collection there are four possibilities to be explored:

Firstly it is possible to produce more of the same plants from existing plants.

Secondly it is possible to produce entirely new plants from seed which is germinated and grown into seedlings.

Thirdly it is possible to purchase plants - but that purchase depends on either the first or second possibility listed above to generate saleable plants.

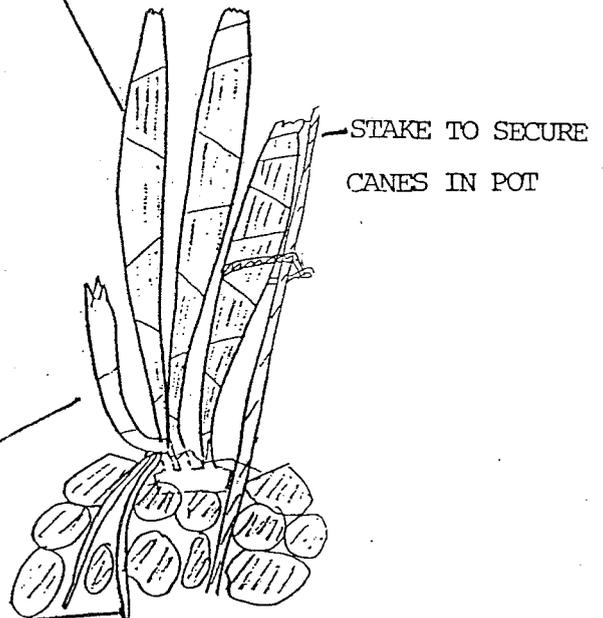
Fourthly it is possible to increase one's collection by admiring someone else's collection or by "putting the hard word" on a fellow grower - but again this more or less depends on the first or second possibilities listed above.

Hence, essentially, there are two absolutely basic ways with which an orchid collection can be increased:

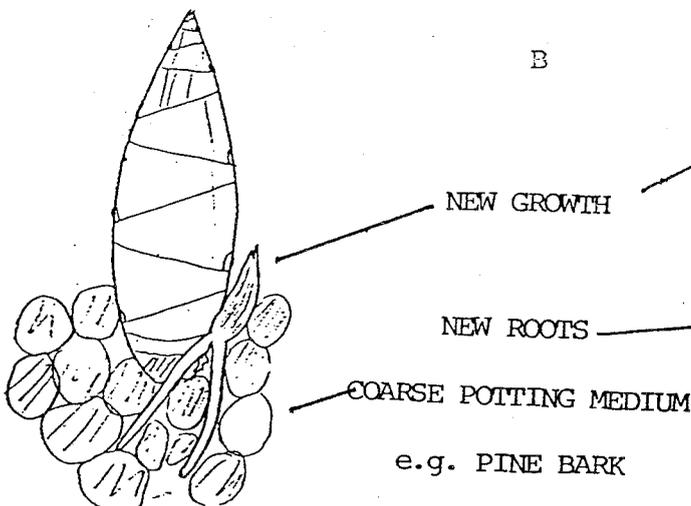


A

OLD DORMANT GREEN CANES
e.g. DENDROBIUM FALCOROSTRUM



B



e.g. PINE BARK

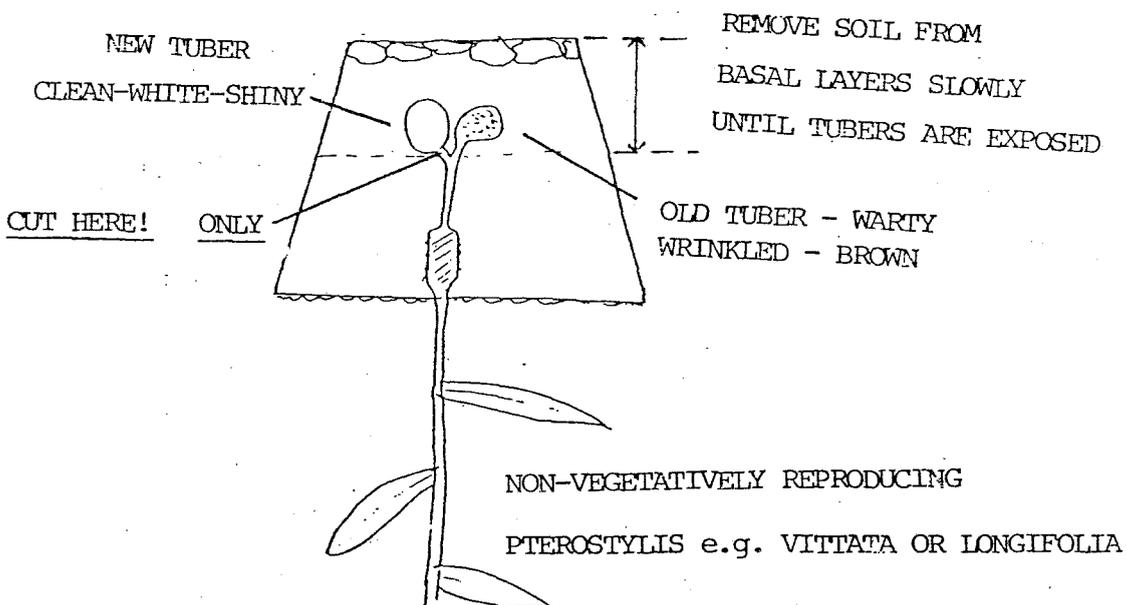
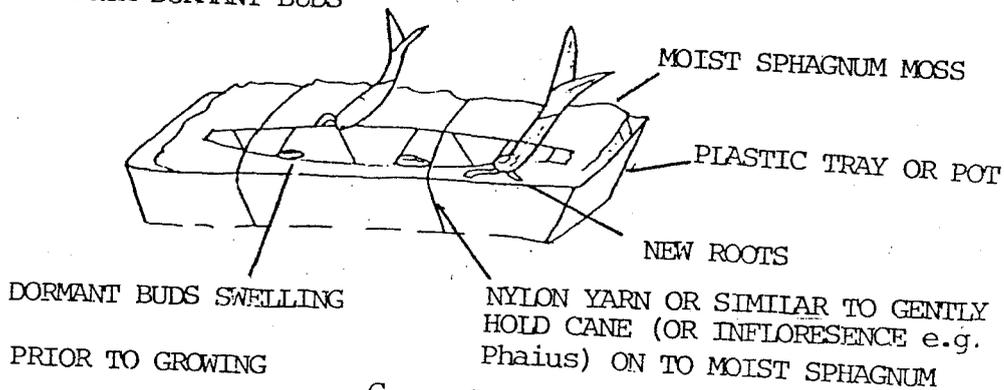
DORMANT BACK-BULB

e.g. CYMBIDIUM CANALICULATUM

A. Production of plants identical to an existing plant; several possibilities exist:

- (1) Division of existing plants: This simply involves taking a plant of reasonable size and dividing it into 2 or more separate pieces. Each piece should comprise some active canes or pseudobulbs together with some live older tissue. Such new plants are simply smaller versions of the original larger plant.
- (2) Where a plant forms kei-kei's, it is possible to remove the kei-kei's when they have sufficient root system and plant them into compost similar to supporting the source plant (see Diagram A).
- (3) Dormant back bulbs or old canes may also be potted and more often than not will sprout new growth from one or more dormant eyes. Native cymbidiums and dendrobiums will reproduce themselves this way (see Diagram B).

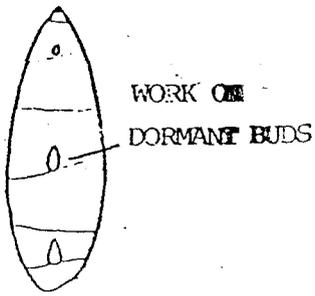
NEW SHOOTS ARISING
FROM DORMANT BUDS



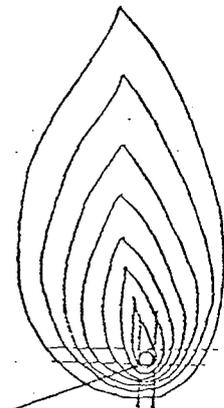
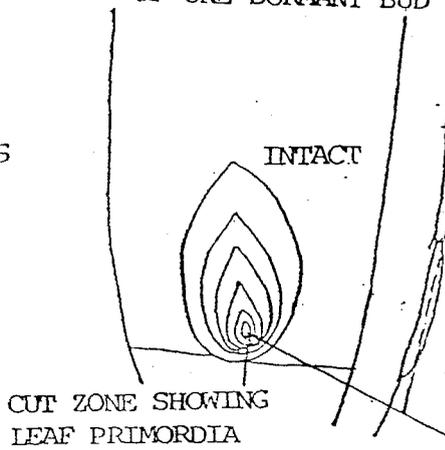
- (4) Occasionally one may find the root system and base of a Dendrobium cane has rotted leaving only a dormant intact upper cane. It is possible to remove the rotting section (cut at locations, away from the rot until no sign of infection is seen, a dust of sulphur or fungicide at the cut will probably be beneficial). The remaining cane can be laid on damp sphagnum moss, preferably held down securely, in a warm and humid place where after a time one or more nodes will sprout and eventually produce replicas of the original plant. The use of commercially available "Kei-kei grow" paste may be beneficial (see Diagram C).
- (5) Some species, particularly Phaius, will produce new plants from nodes along their flower stems. In this case, the green flower stem (with flowers removed) is laid upon moist sphagnum moss in warm humid conditions) whereupon some nodes sprout and produce new plantlets genetically identical to the plant from which they were derived.
- (6) In the case of terrestrial orchids which do not normally vegetatively reproduce by production of additional tubers, it is possible to remove the plant in its intact soil mass from the pot and to work carefully removing the bottom most layers to find the original old tuber and the new tuber. The new tuber can be carefully removed without damaging the union between the old tuber and the plant. Once this has been done the new tuber may be potted in a separate pot to wait until the next growing season or may be repotted, along with the old plant and tuber. Usually the old tuber and plant will produce a second new tuber, hence the grower can produce two tubers instead of the usual one. The process can sometimes be repeated producing upwards of 3 new tubers from the one original plant. Instead of letting such a plant become dormant the grower needs to keep the pot moist and cool in order to extend the growing time of the plant to produce a sizeable new tuber. This technique works well for Pterostylis such as P. vittata, P. longifolia, P. plumosa etc. and for Diuris and some Caladenia. The process can be performed only when a new tuber has formed and this is generally toward the end of the flowering period and after, but before the plant has gone to dormancy (see Diagram D).
- (7) Laboratory mericloneing - Here a selected plant can be reproduced to provide anything up to 1 million plantlets, genetically identical to the source plant. The technique involves surface sterilisation of one or more dormant eyes on a back bulb (e.g. Cymbidium) or cane (e.g. Dendrobium) or, I suspect, even the inflorescences of some genera especially Dendrobium. The plant tissue is surface-sterilised using dilute sodium hypochlorite ("White King") under sterile conditions (see Diagram E1). Then, under a microscope the operator, using sterile instruments and wearing sterile gloves, removes the tissue layers until a tiny sphere of unlayered tissue is detected at the centre of concentric rings of differentiated tissue. The tiny sphere (about 1/64th inch in diameter) is the origin of all layers of tissue around it and is called the "meristem" (see Diagrams E2-E4). The meristematic tissue is then aseptically removed and placed either on to solid culture medium (see Diagram E5) or into shaken liquid culture medium (depending on the genus of the orchid involved) and placed under light where it begins to grow. Once it has reached a predetermined size the tissue (E6) is removed from its medium under sterile conditions and cut into 2-4 pieces (E7) which are placed into fresh liquid medium (E8) which is either revolved or gently agitated; each new piece of tissue continues to grow as a shapeless lump of tissue (E9) and is in (E10) turn cut, aseptically, into several pieces which are again returned to fresh revolved or agitated medium (E11). This process is repeated until the desired number of pieces of tissue have been produced. At this time the pieces of tissue

MAGNIFIED VIEW OF ONE DORMANT BUD

FURTHER MAGNIFIED



CYMBIDIUM BACKBULB OR NEW YOUNG GROWTH WITH LEAVES STRIPPED OFF

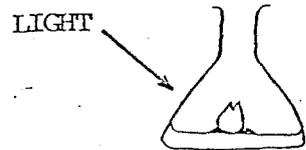
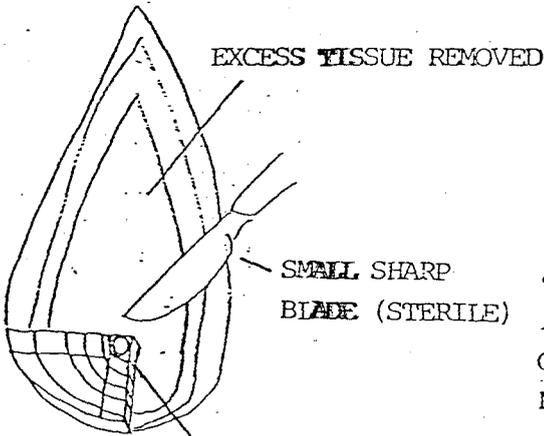


E1

E2

E3

EXCISED MERISTEMATIC TISSUE



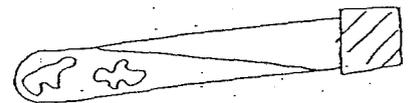
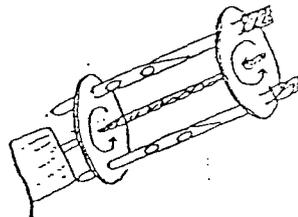
E5

MERISTEMATIC TISSUE GROWS AND BEGINS TO DIFFERENTIATE TO FORM A SMALL PLANT

TISSUE PIECES TRANSFERRED ASEPTICALLY TO TUBES OF STERILE LIQUID MEDIUM AND ROTATED

E6

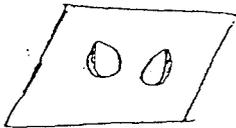
E4



E8

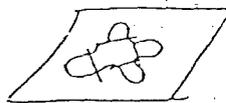
E9

CUT INTO 2-4 PIECES UNDER STERILE CONDITIONS

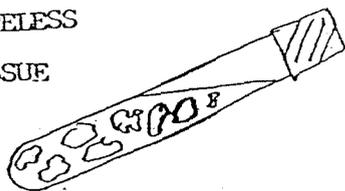


TISSUE MASSES CUT INTO SEVERAL SMALLER PIECES

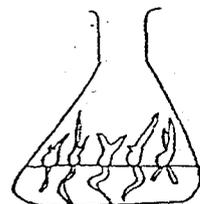
E10



NUMEROUS SHAPELESS MASSES OF TISSUE



E11



WHEN FINALLY PLACED ON TO SOLID MEDIUM TISSUE PIECES DIFFERENTIATE TO PRODUCE SMALL PLANTS

E12

are not cut but are placed in flasks of solid medium of a formula intended to grow the tissue lumps into plants comprising leaves and shoots (El2). After a period of time the pieces grow into plantlets large enough to be deflasked and grown in pots of compost and eventually become large enough to flower. The majority of plants so produced will be precisely identical to the source plant, unless the process have been continued for so long that a mutation occurs and is reproduced extensively to result in many plants which are in some way unlike the source plant. It must also be remembered that some characteristics of certain clones are only apparent due to maturity of that plant.

(to be continued)
K. Western

PLANTS BENCHED:

A. EPIPHYTES

Dendrobium aermulum, D. x delicatum (kestevenii) x D. Star of Gold, D. "Ellen", D. "Ellen" (D. kingianum var. alba x D. tetragonum var. giganteum), D. "Ellen" x D. speciosum, D. gracilicaule, D. gracilicaule var. howeanum x D. tetragonum var giganteum, D. kingianum x D. "Ellen", D. kingianum x D. "Hastings", D. kingianum x D. moorei, D. "Rosella" (D. Pee Wee x D. tetragonum), D. speciosum, D. teretifolium, D. teretifolium var. aureum, D. "Wonga". Sarcochilus falcatus and S. "Melba".

B. TERRESTRIALS

Caladenia cairnsiana, C. carnea, C. catenata, C. coerulea, C. filamentosa, C. fitzgeraldii, C. gemmata, C. latifolia, C. menziesii, C. patersonii var. suavolens, C. patersonii x C. dilatata, C. patersonii x C. latifolia, C. rhomboidiformis C. rigida, C. toxochila, Chiloglottis x prescottiana (C. gunnii x C. trapeziformis), C. trapeziformis, Corybas sp., Diuris maculata, D. palustris, D. pedunculata, D. "Pioneer", Glossodia minor, G. major, Pterostylis concinna P. curta, P. "Cutie", P. erythroconches, P. furcata, P. "Nodding Grace", P. nutans, P. pedunculata, P. plumosa, P. plumosa x P. baptistii, P. pyramidalis, P. recurva, P x toyveana, P. "Velvetine" (P. x ingens x P. "Cutie").

PLANT COMMENTARY:

Commentary on the Epiphytes was given by Russel Job who noted that the range and intensity of colours in plants benched had increased dramatically since recent past months. Russel noted that Dendrobium Rosella ([D. bigibbum x S. tetragonum] x D. tetragonum) had an unusual growth habit indicating that the plant neither wanted to grow upright like D. bigibbum nor pendant like D. tetragonum and that the plant was growing as if in a state of confusion. In examining a plant of D. Ellen x D. kingianum, it was noted that the D. kingianum influence was extremely dominant. Russel noted also that Sarcochilus "fitzhart" (S. fitzgeraldii x S. hartmanii) was an extremely variable hybrid, stating that even siblings from the same crossing were often quite dissimilar.

Commentary on the terrestrial orchids was given by Les Nesbitt who drew attention to the fact that the Autumn to Winter type of Pterostylis, namely the cauline forms were becoming a minority with only P. recurva and P. erythroconches representing the cauline forms. He further noted that the "Spring-flowering" forms were beginning to be seen; namely Caladenia, Diuris

as well as the predominance of "rosette" forms of Pterostylis. Les noted that Diuris "Pioneer" (a crossing made and registered by Les) was a progressive flowerer and had a fairly broad range of flowering time. Caladenia menziesii rated quite a comment. Discussion from Les & the membership, indicated the decided advantage of the use of bananas and/or banana skins to provide ethylene to induce this particular shy-flowering species to produce flowers in cultivation.

K. Western

POPULAR VOTE (epiphyte):

Dendrobium

The plant that won this month's popular vote was Dendrobium Rosella, the parentage of which is D. Pee Wee x D. tetragonum. This choice tends to indicate the popularity of this line of breeding because last month the winner was D. Pee Wee (D. bigibbum x D. tetragonum). The further infusion of D. tetragonum is quite obvious in D. Rosella, both in plant habit and flower form. The pseudobulbs tend to be four sided and one of a semi-pendulous nature, the leaves are very much influenced by D. tetragonum. The flowers are decidedly more spidery than Pee Wee and the labellum is all tetragonum. The colour of course comes from the D. bigibbum parent.

The flowers are very large measuring 9cms from tip of dorsal sepal to bottom of lateral sepal. The cross was registered by Cannon in 1983 and in a stroke of genius was named D. Rosella which aptly describes the overall appearance of the flower with its deep purple tipped sepals and petals suffusing through various hues of lilac to the cream and purple labellum. The overall impression of a raceme in full flower is indeed like a flock of Eastern Rosellas in flight.

The raceme consists of up to a dozen flowers and are produced over a number of years from the same pseudobulb in the same way as D. tetragonum, unfortunately they are not long lasting, usually collapsing within 10 to 14 days but if grown under optimum conditions, and that means a warm glasshouse in Adelaide, the plant will produce flowers more than once a year.

The plant benched is grown in a warm glasshouse however, I believe it will grow and flower under cooler conditions such as a cold glasshouse or a sheltered shadehouse protected from the cold, wet conditions of our winters.

It is grown in a 13cm squat pot although the morphology of the plant indicates it would prefer to be grown mounted, however, I have very little success with mounted plants (I tend to neglect the watering in the summer), but I am sure that any grower who can give the attention required would be rewarded for their efforts.

My plant is growing in a mixture of seedling grade firbark with a little very coarse gravel (about 20%). The roots of D. Rosella are very fine, like D. tetragonum and I feel they need a finer compost than some other species which have coarser root systems.

The plant needs a decided rest period between the maturation of the pseudobulbs and the production of flower buds, about 6-8 weeks around May and June. During this time very little watering is required, just enough to prevent shrivelling of the pseudobulbs.

Once flowers spikes are initiated a little more water can be given, but

observe the compost and do not allow to become saturated. After flowering has finished, around late August, early September, keep an eye open for new growths. As with all Dendrobium the developing growths are prone to rotting by injudicious use of water which can lodge in the emerging 'fan' of leaves and will quickly rot. Once the new growths are clear of the compost and the leaves have commenced to unfurl full watering can be introduced, making sure that compost remains damp at all times during the growing season. I hardly ever fertilize any of my native epiphytes, D. Rosella is no exception, it only receives one or two light feeds of a nitrogen based fertilizer per year.

Several of the native orchid nurseries have this hybrid for sale, usually as seedlings. One advantage of this cross, as with many of tetragonum crosses, is that it will flower at a very young age, mine flowered the second year out of the flask.

R. Shooter

POPULAR VOTE (terrestrials)

Glossodia Major

There are two species within the genus glossodia, G. major and G. minor. G. major occurs in Qld., N.S.W., Vic., Tas. and S.A. The flowers are usually mauve-purple but variants from dark red-purple to white are common. Massed displays can be seen in Spring in most of the parks in the Mt. Lofty Ranges, but they are especially good in the northern areas such as Parra Wirra Park and Warren C. Park. Strong plants may have 2 or 3 flowers but usually there is a single flower. The common name, 'waxlip orchid' refers to the waxy texture of the mauve and white labellum. Each flower has a sweet perfume which is quite strong in a massed group on a sunny day.

Glossodia major is not an easy orchid to keep in cultivation. It does not multiply or set seed on its own. The tuber is pointed top and bottom and has a light brown silky texture. The covering of the old tuber is very persistent and remains as a skin around the new tuber. These skins gradually build up over the years. They can be peeled off at repotting time and I have counted up to 12 layers on a single tuber, showing that that plant had existed for at least 12 years. As there is virtually no root system the orchid relies on a fungal relationship for food. I recommend a sandy soil mix with a thin layer of scrub rubbish on top. Repot only when necessary, perhaps each five years.

Springtime is a critical period for Glossodia culture. Many plants succumb to tuber rot when they get wet, just as they are about to go dormant. Rain followed by hot weather in October spells trouble each year. G. major is easily raised from seed but the seedlings are difficult to grow on to flowering size.

The plants at the August meeting were rescued from a Sydney building site and sent to me to grow on. They flowered several weeks earlier than local plants. G. major is a popular orchid but we need to learn much more about its culture.

Les Nesbitt

N.O.S.S.A. VISIT TO VICTORIA

On the weekend of October 10th-13th (a long weekend in South Australia), A.N.O.S. (Victoria) will be host to a small group of orchid enthusiasts from the Native Orchid Society of South Australia.

The weekend activities really begin at the Friday night meeting, 10 October, where Geoff Carr will be talking about *Caladenia* in the eastern states of Australia at;

The Royal Horticultural Society Hall,
31 Victoria Street,
Melbourne.

On Saturday there will be a full day field trip to Anglesea, and the Sunday, we will spend on the outskirts of Melbourne - in the outer eastern and north-eastern suburbs (possibly to Belgrave, Templestowe and Warrandyte). We will have a BBQ dinner at Helen and Barry Richards' house in North Croydon on Sunday night. Please contact the Secretary if you intend going.

FIELD TRIP TO SANDY CREEK, 'CORYBAS SPECIAL'

The weather conditions on this day were cool, overcast and some drizzle - ideal for seeing *Corybas*, as the flowers tend to collapse in mild conditions. Six people assembled at Cockatoo Valley and drove off with R. Bates as leader for the day to Sandy Creek Conservation Park, entering the SE corner on foot.

New growth was emerging after the prolonged drought of last Summer and Autumn. Several large colonies of *Corybas* leaves were seen and on looking closer we found that the flower 'buds' on top of the leaves were really mature flowers making this species *Corybas despectans*. The sight was unspectacular, the flowers having every appearance of rats' droppings sitting on the round leaves.

On the edge of the Park we saw a possible hybrid *Corybas* in flower. At this point it should be mentioned that some *Corybas* species have had their botanical names changed or made uncertain. The newly published "Flora of S.A." will be used here. The hybrid was found as a colony of ten flowering plants and closely resembled *Corybas diemenicus* except for the dorsal sepal which was narrow and came to a point at the tip. Some photos were taken.

A sandy lane off nearby Adam's Road was the next location where two more orchid hunters joined us. 80cm high flowering stems of *Pterostylis longifolia* were seen near the cars and an almost open flower of *Diuris maculata*. The attraction was further off the road - a flower of an unnamed *Corybas* resembling *C. despectans* but more open. Close-up photos were taken of the tiny bloom. *Corybas despectans* was found nearby in flower.

The next site visited was a Pine Plantation in Sawpit Gully where two species of *Corybas* were found together with their natural hybrid near a roadside fence. The parents were obviously *C. diemenicus* (formerly *C. dilatatus*) and *C. sp.* (formerly *C. diemenicus*). The hybrid displayed shapes and colours in between those of its parents.

The group then drove along the Para Wirra Road to a site near Goddards Hill. Some *Corybas diemenicus* were found in flower among large yacka bushes and their colour was a deep wine red with sunlight shining through from behind. Nearby was a flowering colony of *Pterostylis robusta* with very short stems, some flowers seeming to sit on the soil. At *Caladenia* resembling *C. patersonii* was in flower bud but due to being at this advanced stage it was likely to be *C. behrii*.

After lunch at Williamstown some people returned to Adelaide having seen almost every Helmet orchid available that day. The leader and two others including the author continued on to Jenkins Scrub near Mt. Crawford. Some evidence was seen there of kangaroos grazing. On the west and SW-facing slopes plenty of *Corybas* was found in flower.

The sixth and final venue was a rocky outcrop on the south side of Watts Gully Road about 300 metres SE of "Copperfields" homestead. After a brief search around the rocks one colony of each form of *Cyrtostylis reniformis* was found separated by a few metres with some outsiders together. The early form had large bright green leaves and was in flower. The late form had smaller grey-green leaves and short stems growing up above the leaf. Both colonies had no sign of hybrids between the two forms suggesting widely differing genes. A specific name could therefore be given to each form. Perhaps the one month gap in their flowering times keeps them apart. Has anyone tried interbreeding these two?

The leader was thanked and the group will certainly know a Helmet Orchid when next seen.

LOCATIONS VISITED, 10 August 1986

- | | |
|--|---------------------------------|
| (1) SE of Sandy Creek Conservation Park. | (2) Sandy Lane, off Adams Road. |
| (3) Sawpit Gully, Pine Grove. | (4) 1km east of Goddards Hill. |
| (5) Jenkins Scrub. | (6) Watts Gully Road. |

All near Williamstown, S.A.

ORCHIDS SEEN

In flower

<i>Pterostylis vittata</i>	1, 2, 4, 5, 6
<i>Pt. nana</i>	1, 2, 4, 5, 6
<i>Pt. robusta</i>	4, 6
<i>Pt. longifolia</i>	2
<i>Caladenia deformis</i>	1
<i>Corybas despectans</i>	1, 2
<i>C. diemenicus</i> (formerly <i>diemenicus</i>)	1, 3, 4, 5
<i>C. sp.</i> (formerly <i>diemenicus</i>)	3, 5
<i>C. sp. aff. diemenicus</i>	1
<i>C. sp. aff. despectans</i>	2
<i>C. diemenicus</i> x <i>C. sp.</i> (formerly <i>diemenicus</i>)	3
<i>Diuris maculata</i>	2
<i>Cyrtostylis reniformis</i> (early form)	6
<i>Acianthus exsertus</i>	1, 6

In flower bud

<i>Caladenia latifolia</i>	1
<i>C. affin. patersonii</i>	4

Past flowering

<i>Leporella fimbriata</i>	2
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In leaf

<i>Corybas unguiculatus</i>	1
<i>Prasophyllum sp.</i>	1
<i>Pterostylis pedunculata</i>	1, 3, 4, 5
<i>Pt. biseta</i>	1
<i>Glossodia major</i>	1, 2, 4, 5, 6
<i>Cyrtostylis reniformis</i> (late form)	6
<i>Caladenia dilatata</i>	1, 4, 5, 6
<i>C. menziesii</i>	1, 3, 4, 5
<i>Calochilus sp.</i>	5
<i>Eriochilus cucullatus</i>	6
<i>Lyperanthus nigricans</i>	1, 2, 4, 5, 6

TOTAL = 28 species, hybrids and forms.