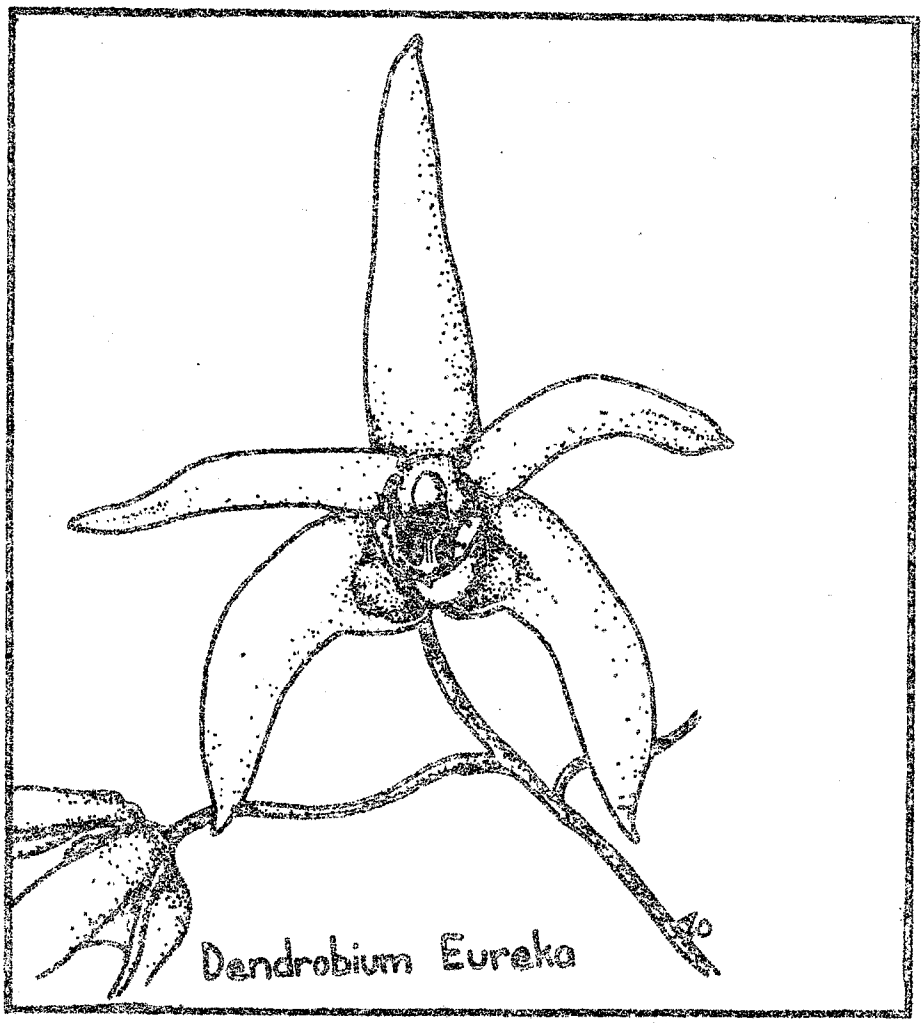
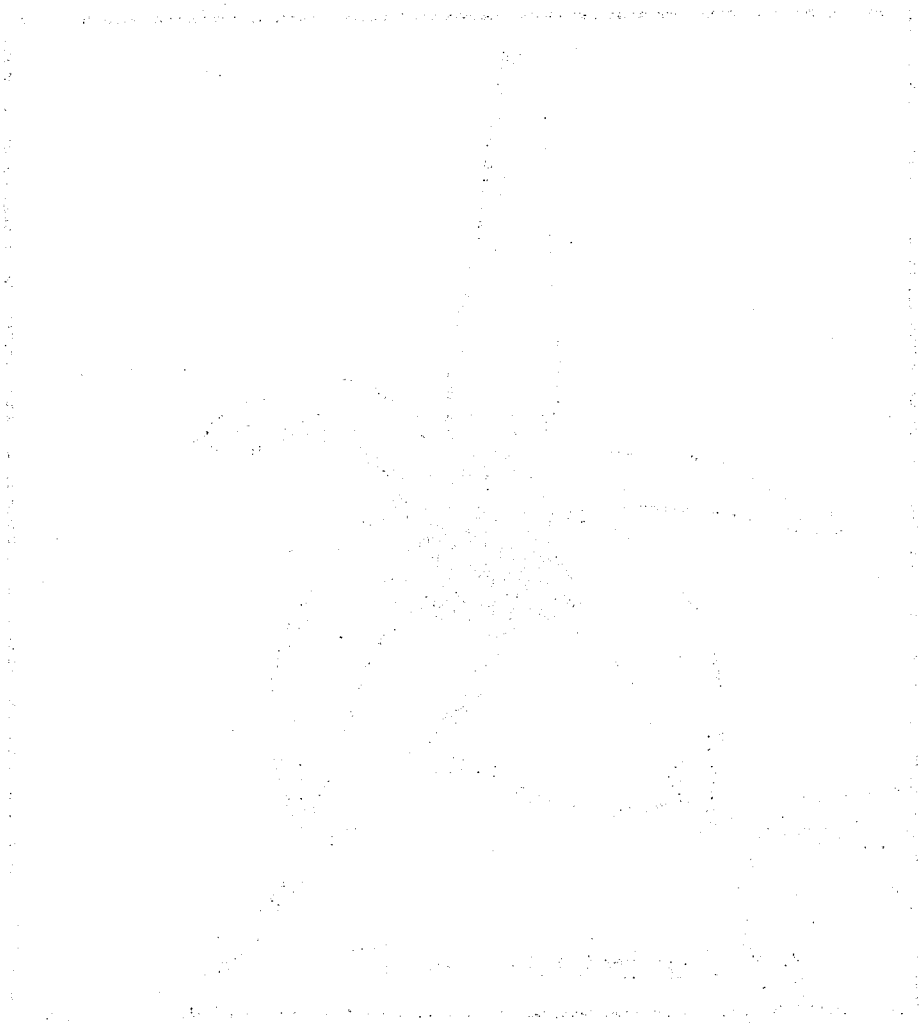
NATIVE ORCHID SOCIETY of SOUTH AUSTRALIA

JOURNAL





NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA

J O U R N A L

Vol. 5 No. 11

December, 1981

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NEXT MEETING

WHEN: Tuesday 23rd February, 1982 at 8.00 p.m.

WHERE: St. Matthews Hall, Bridge Street, Kensington.

No N.O.S.S.A. Meeting will be held in December or January.

THE

PRESIDENT AND COMMITTEE

WISH EVERYONE

A MERRY CHRISTMAS AND A

HAPPY NEW YEAR

Tuber Bank details appear on the last page.

NEW MEMBERS

Mrs. M.C. Burton
Mrs. M.M. Noble
Mrs. R.M. Howe

LAST MEETING

Number Present: 66.

The last meeting for 1981 turned into an informal and most enjoyable evening. Although we had no official guest speaker for the evening,

we were treated to a first class extended segment on the culture of Orchids by Mr. Randall Robinson, a young horticulturist from the U.S.A., who is on a three year Eric Young Scholarship. He is at present visiting all the main Botanic Gardens throughout Australia and Papua/New Guinea. Randall spoke on potting, fertilizing, propagation and many other aspects of Orchid culture. He also cautioned on the over-use of some fungicides, as certain types can kill Orchids through continuous use.

A very knowledgeable and entertaining speaker, and we wish him every success in his chosen career.

The President was pleased to hand out four Cultural Certificates - these were awarded for excellence in culture and can be won by any member who has grown a Native Orchid worthy of such a certificate as laid down in the By-Laws.

They were awarded to:

Harold Goldsack for his Pt. baptistii x cucullata
Bob Bates for his Pt. longifolia
L. & R. Moore for their Den. Bardo Rose
G.J. Nieuwenhoven for his Cal. catenata

Congratulations to the growers.

There was a fine display of plants benched in both Epiphytes and Terrestrials, the latter contained a number of swamp species and plants from Queensland.

Plant Commentary

Terrestrials: R. Bates
Epiphytes: G.J. Nieuwenhoven

Terrestrials:

Chiloglottis cornuta
Cryptostylis subulata - one small plant and one large pot with 17 spikes, "magnificent".
Orthoceras strictum
Calanthe triplicata
Microtis unifolia
Microtis parviflora
Prasophyllum australe
Spathoglottis sp.
Spiculea sp.
Diuris emarginata
Pterostylis biseta - two pots.
Spiranthes sinensis
Phaius tancarvilliae - grown from seedling, 2 spikes.

Epiphytes:

Dendrobium Gouldii x lineale kui blue
Dendrobium chieno-discolor x dicuphum
Dendrobium cucumerinum
Dendrobium johannis
Dendrobium wassellii
Dendrobium canaliculatum - two plants.
Dendrobium canaliculatum var. nigrescens - one plant.
Dendrobium monophyllum - three plants.
Dendrobium discolor

Epiphytes (Continued)

Dendrobium fleckeri
Dendrobium antennatum
Vanda tricolor
Liparis nugentae
Cymbidium suave
Plectorrhiza tridentata
Cymbidium canaliculatum var. sparksii
Dendrobium sulphureum - New Guinea
Dendrobium vexillarius s.sp. uncinatum - New Guinea

FIELD TRIP

There will be a Field Trip on the 26th December to look for Orthoceras strictum and Dipodium punctatum. Meet at 2.00 p.m. at the Gumeracha Oval, Gumeracha.

DIURIS PUNCTATA FROM SEED — Les Nesbitt

Several years ago I noticed a Diuris seedling leaf growing in a pot of Cymbidium Lowio-Grandiflorum, which, because it is a slow growing primary hybrid, does not get repotted often. I assumed from the long grass-like leaves the following year that the seedling was just another D. longifolia plant, so I let it be.

Imagine my delight when two purple flowers with long ventral sepals appeared this year. It was Diuris punctata. I have tried to grow this species from seed without success for many years, in pots and by flasking. I pollinated the flowers so that the seed will fall back into the Cym and give me a whole crop of D. punctata next year (hopefully).

Is a fungus present in the Cym which will stimulate D. punctata seed, or is it just that moist sheltered conditions are provided? Does it really matter as long as it works? I can't wait for next winter to see what happens.

D. punctata is easy to grow and flower but is very hard to get because it seldom multiplies on its own. It can be made to increase by such methods as removing tubers after flowering, or by cutting dormant tubers in half so that each piece has half of the shoot. The species is very variable in size, shape and colour. The large purple forms are very attractive.

Variety albo-violacea has been saved from the edge of extinction by growing seed with fungus cultures. If you can get some seed try sowing it around your Cymbidiums or Dendrobiums.

DIURIS - A LOOK BELOW THE SURFACE — R. Bates

Information about the tubers of our Australian terrestrials is often scanty and misleading so that unless one is growing many species in cultivation or digs up plants in the bush the concepts of tuber shape, growth and reproduction will be largely unknown.

The tubers of Diuris are often quite large; they come in various shapes but all are brittle and not covered by any protective sheathing. The top or growing point of the Diuris tuber is always close to the surface compared to the tubers of say Caladenia or Prasophyllum.

Generally tuber shape is constant for each Diuris species, although in cultivation tubers are often larger and more elongate than those in the bush. As a rule those species with long snake-like tubers have a rapid

rate of vegetative increase, whilst those with short, thick or palmate tubers seldom produce more than one tuber annually.

The long thin tubers of Diuris longifolia, D. brevifolia and D. emarginata will shoot at both ends. These tubers in the bush lie almost horizontally just below the surface. This is the way they should also be placed in a pot when cultivated. In cultivation it is not unusual to find tubers 1 cm in diameter and 40 cm long, coiled like thick strands of spaghetti all around the inside surface of the pot. Because these tubers are so brittle, they are best handled only after the soil has been washed away with a slow jet of water. A few tubers will still snap, but not to worry, both pieces will shoot. (If the soil in the pot is left until it is very dry before repotting, the tubers will be less brittle).

Although species with short tubers like D. punctata and D. tricolor seldom increase vegetatively under natural conditions the grower can get at least 100% increase annually by removing the new tubers in October and repotting; most plants then produce another new tuber.

Because they transmit the capacity for rapid vegetative increase to their progeny the long tuber species are the ones used most often in hybridising; generally being crossed with a more floriferous species.

The recent studies of tuber shape and reproduction in Diuris have proved valuable for the taxonomist. In 1978 the S.A. endemic, Diuris brevifolia was reduced to a variety of the similar flowered D. sulphurea but since then it has been realised that as the tubers of D. brevifolia and D. emarginata are long and 'comma' shaped or snake-like, while those of D. sulphurea are short, conical or finger shaped, that D. brevifolia is more closely related to D. emarginata. As further evidence to support this conclusion, it has been observed that both D. brevifolia and D. emarginata produce 2 - 3 new tubers from the top of the old tuber whilst D. sulphurea increases vegetatively by producing new tubers at the ends of the 'roots'. For these reasons (and others) D. brevifolia is no longer treated as a var. of D. sulphurea.

According to Lawler (1981) the tubers of Diuris species were commonly eaten by aborigines and were one of the food plants collectively referred to as yams. The tubers of D. longifolia are in fact juicy and slightly sweet.

Diuris tubers are more rot resistant than those of most other terrestrials. This is evidenced by the fact that in nature they often harbour small grubs and in cultivation the broken ends usually grow again.

References:

Lawler, L.J., "Ethnobotany of Australian Orchids" in Proc. of Orch. Symposium, Sydney (1981).

Nicholls, W.H., Orchids of Australia (1969).

Weber, J.Z., and Bates, R., The Orchidaceae, in J.M. Black Flora of S.A. Vol. 1 3rd Ed. (1978).

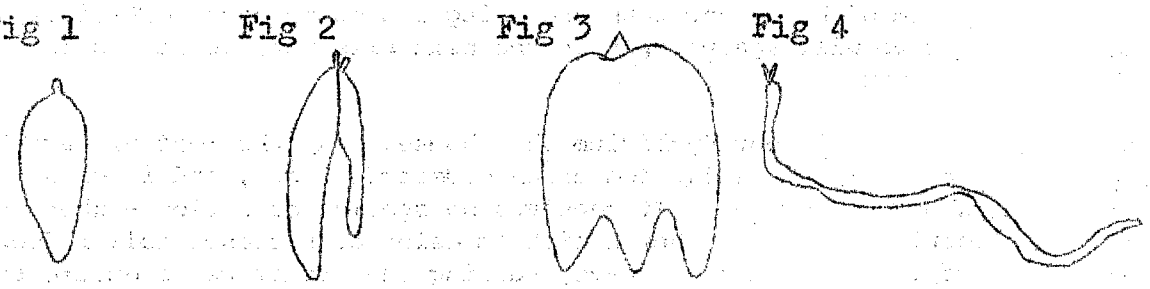
DENDROBIUM 'BARDO ROSE' L. & R. Moore

Dendrobium 'Bardo Rose' is the man-made hybrid, crossing Dendrobium falcorostrum with Dendrobium kingianum. It was first registered in 1961.

We purchased our plant in 1979, it was then in a 7" black plastic pot. We repotted it into an 8" pot in our Cymbidium mix, three parts by volume graded pinebark (which had been treated with blood and bone), one part by

Diuris tubers: Shape and increase patterns

Fig 1 Fig 2 Fig 3 Fig 4



D. Maculata D. palustris showing tuber increase D. Punctata D. longifolia

Fig 5
D. sulphurea showing new tubers on ends of roots

Fig 6
D. brevifolia showing tuber increase

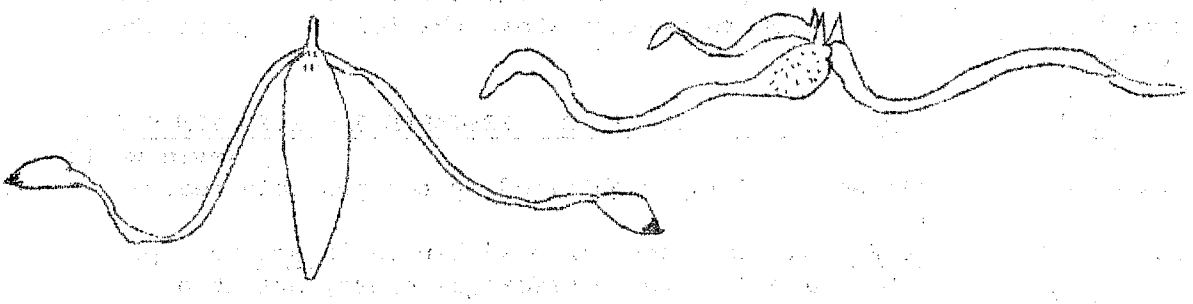


Fig 7 D.longifolia tuber shooting both ends

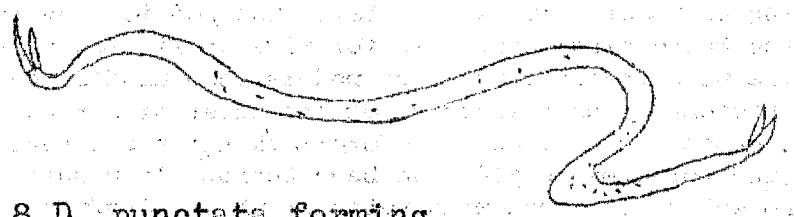


Fig 8 D. punctata forming cluster of new tubers after replanting

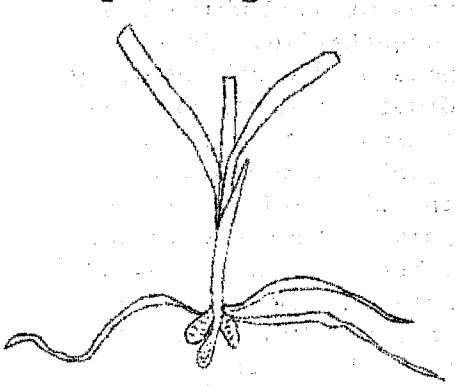
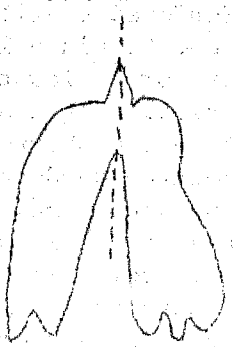


Fig 9 D. punctata tuber suitable for cutting into 2 tubers



volume peatmoss, a little shell grit and similar amount of B & B (a pelletised form of blood and bone and being a slow release fertilizer), and this year we will again repot in the next size pot, as it has now distorted its pot.

The plant is grown in our Cymbidium shadehouse. On the roof we have 80% black sarlon and on the walls 40% green elderardo cloth, and is on a bench 15" above the ground. It receives no special attention - when the Cyms are fertilized with either a fish emulsion or nitrosol foliar feed, it also receives its share. However, during the summer we do ensure that it is kept moist, receiving thorough waterings, where possible, with rain water at least three times a week, and during the day receiving frequent overhead spraying to ensure that the foliage does not dehydrate.

This year, we believe the sudden weather change from a cold, wet winter to a week of comparatively warm sunny days, induced the plant to open more uniformly than usually. This year it flowered with 47 spikes with approximately 480 individual flowers. The spikes this year all flowered together, and held the flowers upright above the foliage, as in other years.

FLASKING - OR PROPAGATION OF ORCHIDS IN A RELIABLE FASHION FROM SEEDS

Kevin Western

Now we need sterile seed. This is obtained by two possible means:-

1. GREEN POD TECHNIQUE. Seed contained within an intact seed pod is sterile. Such a pod is taken before ripeness, but at a suitable age that the seed is at a reasonable state of maturity (this varies from species to species). Here one cuts the pod from the plant and sterilizes the exterior of the pod by scrubbing with a toothbrush (soft bristle) all over the external surfaces using metho or White King/water. The pod is then left to soak in the White King/water brew for five to fifteen minutes in the sterile work environment. The pod is then handled by tweezers to prevent re-contamination of the exterior surfaces again by our hands, etc. (Note - before working in the tent one's hands and forearms should have been thoroughly washed, first with soap and water, and then with metho or White King/water to significantly decontaminate the skin).

2. DRY SEED TECHNIQUE. Dry seed from open pods or seed which has been stored dry, is almost certain to be non-sterile. This can be rendered sterile with about 90-99% chance of success by using the one to six dilution of White King and water and soaking the seeds for at least five and up to fifteen minutes in the solution, in a sealed container, shaking gently throughout. (Note - the shorter the time of soaking in White King/water, the better the seeds are, but some wogs may survive too; the longer the soaking time, the less seeds survive, but there is a higher chance of all wogs having died - the balance must be found by experience). The seed will, usually, either float or sink. If it floats it can be removed from solution (in the sterile tent) by means of a sterile wire loop or glass rod, and can be transferred directly to the flask(s) of medium. Try to disperse the seed, so added, with the small amount of fluid usually lying atop the media - this dilutes the White King and spreads the seed over the surface of the medium. Reseal the flask and label it.

NOTE: Even after scrubbing and decontamination, one's hands are probably not sterile. Hands or fingers should be kept as far as practical away from vital sterile areas e.g. seed, lids of flasks, necks of flasks and

active points of equipment. It is wise, during lengthy procedures, to occasionally re-decontaminate hands and forearms in White King/water.

The above technique is well suited to most epiphytes and a few terrestrial native orchids. The remainder of the terrestrial orchids are difficult to grow by the above system. This is because their seed is stimulated to grow in nature by some factor(s) which arise from infection by a suitable fungus and which are not present in ordinary nutrient media. For these orchids the medium used is oats or potato starch solidified with agar and ph adjusted to 5.2 to 5.5.

Green pod or dry seed technique may be used (Green Pod preferably). Now the essential difference appears:- Orchid plants gain their nutrient from fungi which infect sections of the underground portions of the plant. Sections of these portions are taken and examined under 15 to 45 x magnification microscopy to detect fungi. Any fungi found are grown on a fungal support medium. The fungi grown are then tested with seed from the species of orchid from which the fungus was obtained. If the correct fungus has been obtained, then the orchid seed will germinate and grow. In this situation we are duplicating nature in a flask. This is called SYMBIOTIC CULTURE, as compared with the sterile non-fungus culture for epiphytes which is referred to as ASEPTIC CULTURE. In either case, the flasks should be maintained under low light conditions until seed germination has occurred when a situation providing good indirect sunlight is used or artificial lighting with fluorescent lights could be employed (16 hours on - 8 hours off). Temperatures of 65°F to 75°F are OK.

Once seedlings are sufficiently large or when terrestrial orchids have produced tubers, they can be removed from the flask, washed reasonably free from medium and planted in suitable soil or mix, known to be appropriate to the particular species of orchid. Care must be taken to "harden" the new seedlings up and to avoid harsh windy, sunny or drying conditions.

After a short period under such conditions the young plants can be gradually exposed to normal growing conditions and hopefully grow and flower to reward all the effort that has gone into their production.

For those who would like to grow orchids from seed, but find the above techniques somewhat daunting, it is possible to sow seed on the soil or in the pot of one of the parent plants. Here one hopes that the fungus supporting the orchid in its pot or growing site will invade the seed and start it growing. One then hopes that conditions of moisture and protection are such that any germinated seed may survive and grow into a healthy plant. This technique works reasonably well for a number of native terrestrials.

Concluded.

FIELD TRIP TO PORTLAND, VICTORIA - 31/10/81 TO 2/11/81

R J. Markwick

During Victoria's Melbourne Cup holiday weekend, about a dozen or so N.O.S.S.A. members and visitors joined a somewhat larger group of A.N.O.S. - Victoria members for excursions to orchid habitats near Portland. We counted ourselves privileged to enjoy the company of this enthusiastic group, and to have Colin and Dorothy Woolcock as our guides. The knowledge of the local orchids and habitats possessed by this delightful couple must surely be unsurpassed.

Slide evenings were held on Saturday and Sunday in the convivial atmosphere of a Portland Motel. Colin Woolcock's superb photographs

of Western Australian orchids, in particular the spectacular Caladenias and beautiful Thelymitras, captivated the Saturday evening audience. Colin's interesting commentary was supplemented by informative comments offered by Mark Clements who had joined the group for the weekend. Several individuals presented slides on the Sunday evening. A Victorian enthusiast presented slides of northern New South Wales and Queensland orchids. Bob Bates showed slides of South Australian orchids including most of the endemic species, and Gerald McCraith (Vic) presented slides taken during his trip to South Africa for the World Orchid Conference.

Owing to the great number of species seen during the course of the weekend, only the names of noteworthy plants are recorded in this account of the field trips.

On the Saturday afternoon, the first area visited was an industrial area at South Portland, where the ALCOA development site has possibly wiped out the last surviving colonies of the beautiful Caladenia hastata (W.H. Nicholls, ut C. patersonii var.) H.M.R. Rupp, which resembles C. patersonii but has magnificent blackish coloured clavate tepal endings. Willis has C. hastata grouped with C. reticulata, but the general opinion among the experts is that Nicholls and Rupp were more correct in their determinations, and that this plant may even deserve species status. Only one specimen in bud was located outside of the perimeter fence, and its location had already been marked. Some tubers and seeds have been legally removed from the devastated area in an endeavour to prevent the extinction of the species. It is encouraging to learn that Mark Clements hopes to propagate C. hastata from seed produced by plants flowered at the National Botanic Gardens, Canberra, and that plants possibly belonging to this species have been found near Anglesea, Victoria.

The next stop was at coastal scrub and heathland south-west of Portland near Cape Nelson. Perhaps the most interesting orchids seen here were Pterostylis plumosa, and uniformly crimson flowers of Caladenia filamentosa, a form morphologically indistinct from those growing at Monarto, South Australia.

Travelling cross-country to Telegraph Road, we visited a patch of scrubby heathland which had suffered a recent burn. Notable plants found here were Prasophyllum elatum in flower, and Caladenia patersonii var. suaveolens which is a delightful greeny-yellow form of the species with exceptionally fragrant flowers endemic to coastal heathlands of the Portland area.

The last area visited was the Bats' Ridges Faunal Reserve where interest centred on many robust specimens of Pterostylis foliata, all past flowering and developing fat seed pods; and flowers of Caladenia reticulata displaying unusually flattened calli on the labellum.

Sunday morning saw a convoy of vehicles headed for Mount Clay north-east of Portland. Here, the first stop at Sawpit Picnic Ground uncovered many lovely pink flowers of Caladenia catenata growing along a forest track. Also present were flowers of Caleana major and Prasophyllum patens var. odoratum, and buds of Paracaleana minor and Gastrodia sesamoides. Further along the road buds of Thelymitra fuscolutea were noted.

In a damp depression in heathland along Woolwash Road, we were shown the largest colony of Thelymitra flexuosa known to be growing in the area. Unfortunately they were all past flowering. The consolation prize was the discovery of several flowering specimens of Calochilus robertsonii. Further along Woolwash Road we stopped at a woodland area where a number of stately Thelymitra aristata grew. Although the time was 11.15 a.m.

and there was not a cloud to be seen in the sky, it was still too cool for the flowers to open.

Several kilometers away, we stopped again to walk to a swampy area. To the delight of everyone and particularly the photographers present, a superbly fresh flower of Calochilus paludosis was discovered. An exceptionally handsome specimen of Thelymitra ixioides was located nearby.

From here we proceeded to the Surrey Ridge Picnic Ground where, despite the earpiercing noise from what must have been thousands of Cicadas in the tree tops, we had lunch. Just before we left the picnic ground Bevan Mahar drew attention to flowers of Caladenia angustata, which proved to be a new record for that location.

Scrub-land along Coffeys Lane, burnt by a wildfire in early 1980, harboured flowers of Caladenia menziesii, and, at last, because the afternoon temperature had warmed sufficiently, flowers of Thelymitra aristata. The flowers which attracted everyone's attention, however, were lovely bright pink specimens of the Black-tongue Caladenia, Caladenia congesta. Although only the first few flowers for the season had appeared, they were much admired and subjected to a great deal of attention from the shutter-bugs.

The last official stop for the day was at the Surrey River crossing on Willis Swamp Road where Pterostylis falcata was growing in profusion, even beneath the water, as was illustrated by Bob Bates who waded in to raise a plant or two above the surface in order to demonstrate just what an aquatic plant this species is. Our guide indicated that there were probably many thousands of Pt. falcata growing along the river in this vicinity. At this juncture the group broke up, and people went their individual ways for the rest of the afternoon.

The Bridgewater Lakes area west of Portland was numbered among the locations visited on Monday. It was here that flowering specimens of Pterostylis cucullata were found in a small colony on land leased for grazing. During a re-visit to the forest area explored on Sunday, a lone specimen of Thelymitra canaliculata was uncovered in low scrubland, and Calochilus campestris was found flowering in swampy ground.

No doubt the N.O.S.S.A. members who attended would wish to join me in expressing thanks to our Victorian hosts for their congenial company, and in particular to Colin and Dorothy Woolcock without whose carefully planned leadership this extraordinarily interesting weekend would not have been nearly so successful in terms of species found.

A list (possibly incomplete) of the orchids seen follows:-

Flowers

Caladenia angustata
C. catenata
C. congesta
C. filamentosa
C. menziesii
C. patersonii var. suaveolens
C. reticulata
Caleana major
Calochilus campestris
C. paludosis
C. robertsonii
Glossodia major
Microtis unifolia
Prasophyllum elatum

Buds

Caladenia hastata
Gastrodia sesamoides
Paracaleana minor
Thelymitra fuscolutea
T. pauciflora

Past Flowering

Acianthus caudatus
Acianthus sp.
Diuris longifolia
D. maculata
Pterostylis foliata
Pt. nutans

Flowers (Continued)

P. patens var. odoratum
Pterostylis cucullata
Pt. falcata
Pt. longifolia
Pt. plumosa
Thelymitra aristata
T. canaliculata
T. ixioides

Past Flowering (Continued)

Thelymitra carnea var. rubra
T. flexuosa
T. longifolia

Basal Leaves

Corybas sp.
Lyperanthus nigricans

METHODS AND MADNESS OF AN ORCHIDOLOGIST R.C. Nash

Another need that you can report on is the result of any test you may make on the cultivation notes I am giving. Small things, but all interesting. Other small items that are of interest include any alteration in plant performance if you change the growing spot in your garden, change the housing, try different containers, a new potting method, and I am sure you can think of others that I have not mentioned. Even failures can be of great interest. Usually people do not tell if things went wrong, for they often think this will count against them. To tell is being honest, besides being of great help to others - you yourself may receive the help wanted.

A more difficult undertaking that needs to be carried out is the investigation into the release of nutrients from various organic materials amongst the various species. Do we have any reader who has any ideas as to how this work should be carried out? If there is, then how about something on this to the Editor.

I am not finished yet. Are fertilizers and chemical "foods" useful in terrestrial orchid culture? How do we find out? Lots of questions but this is what good plant culture is about. Maybe you too have questions, then ask them, that is what the Society and this Journal are for. I think after that the Editor will shoot me. Well, if you think I am being cheeky, and not a member too, please remember I have seen a lot in the terrestrial orchid business in my time. I think this gives me the right to stir up a few questions, etc.

There are other things that I would like to bring before you, such as plant breeding, etc., but these must wait for I have procrastinated long enough on the species, so here we go at long last I can hear you say.

For the starter I recommend that species which Robert Brown made the type for the genus viz Pterostylis curta. This species is very common in cultivation, being one of the easiest to grow, as well it is also one of the larger flowered and multiplies freely. You have two varieties to choose from, in reality one is probably a sub-species of the other. The smaller eastern Australian plant is the type, while our larger Mount Lofty Range plant would be the sub-species. Both have qualities which could make them good show plants, especially enmass. In my experience of Pt. curta (from now on I will abbreviate the generic name after giving it once in full) I have found that this species will grow under a multitude of conditions and only really fails when exposed to salt laden coastal conditions. Here at Blackwood I find it does well in either full shade or a situation where it will receive direct sunlight. The eastern plant prefers more direct sunlight than the local plant. Cold wet conditions do not seem to worry the local plant over much, in fact it seems to need such treatment to bring the best out of it.

Continued next month

NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA

TUBER BANK ORDER FORM

DECEMBER, 1981

POST TO: MR. DON WELLS,
86 PITMAN ROAD,
WINDSOR GARDENS,
SOUTH AUSTRALIA 5087

Circle those Lot Numbers that you wish to order.

Mark (Subst) against those Lots you would like if your first choice is not available.

LOT NO.		LOT NO.	
1.	Pterostylis curta	19.	Pterostylis cucullata
2.	Pterostylis nutans	20.	Pterostylis cucullata x baptistii
3.	Pterostylis nana	21.	Caladenia deformis
4.	Pterostylis nana (bush form)	22.	Caladenia dilatata (Mallee)
5.	Pterostylis curta x nutans	23.	Caladenia menziesii
6.	Pterostylis pedunculata	24.	Caladenia latifolia
7.	Pterostylis concinna	25.	Corybas diemenicus
8.	Pterostylis vittata	26.	Acianthus reniformis
9.	Pterostylis scabra robusta	27.	Acianthus exsertus
10.	Pterostylis aff. alata ex Moorlands	28.	Microtis unifolia
		29.	Prasophyllum autumn flowering (Mallee)
11.	Pterostylis truncata	30.	Chiloglottis trapeziformis
12.	Pterostylis hildae	31.	Lyperanthus nigricans
13.	Pterostylis ophioglossa	32.	Diuris palustris
14.	Pterostylis x ingens	33.	Diuris maculata
15.	Pterostylis falcata	34.	Diuris longifolia
16.	Pterostylis obtusa	35.	Diuris sulphurea
17.	Pterostylis ingens x curta	36.	Diuris pedunculata
18.	Pterostylis aff. decurva	37.	Diuris punctata

PRICE: $1.00 per Lot

Cheque/Money Order (made payable to N.O.S.S.A.) enclosed for $.....
for ..... Lots.

Lots will have from 1 to 10 tubers, dependent on supply and demand. Some are in very short supply, and a first come first serve basis must apply.

Please print name and address clearly as it will be used for return of tubers.

NAME .....

ADDRESS .....

.....

..... POST CODE .....