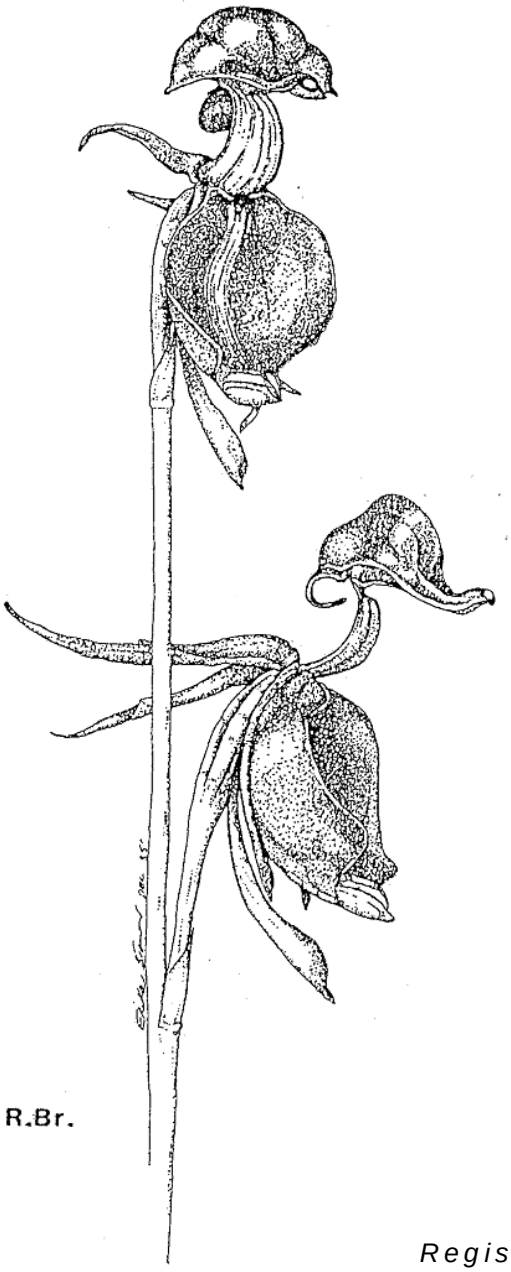
NATIVE ORCHID SOCIETY

of

SOUTH AUSTRALIA INC.

JOURNAL



Caleana major R.Br.

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NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA Inc.

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NEXT MEETING

Tuesday, 24 February 1987 at 8pm
St. Matthews Hall, Bridge Street, Kensington

Les Nesbitt will speak on Australian Terrestrial Orchids.

NEW MEMBER

Mrs R. Taplin, Fairview Park.

NOTICE OF ANNUAL GENERAL MEETING 1987

The Annual General Meeting of the Society will be held in St. Matthews Hall, Kensington at 8.00pm on 24 March 1987. At this meeting all offices of the Committee (except 2 committee persons) will become vacant.

Nomination forms to fill these vacancies are available from the Secretary or at the February General Meeting. Completed forms must be in the hands of the Secretary 21 (twenty one) days before the election.

W.K. Harris, Secretary

FRONT COVER: CALEANA MAJOR R. BR.

The subject on our front cover for 1987 has once again been drawn by Erica Stonor. It is, as you can see, a beautiful rendition of *Caleana major*. We are lucky indeed to have been allowed to reproduce it on our front cover this year. Thank you. Erica and may your association with us be a long one.

As a token of our appreciation, Erica Stonor has been made a Honorary Member for 1987.

LIBRARY

We are looking for a person to take over the duties of Librarian. No previous experience is necessary, and it is an excellent way to meet a lot of our

members. Please approach the President or Secretary at our next meeting if you are willing to be involved.

ANNIVERSARY OF NOSSA

This year NOSSA celebrates its 10th Anniversary. Special arrangements are planned for our April meeting, with a gift for all members present that night. Do not miss this evening of Native Orchid nostalgia, you may have to wait another 10 years if you do. We are hoping to see as many of our foundation members as possible that night.

MEETING CHANGES

Changes to our format of monthly meetings are planned to start in February.

One new item will be a Help Table. Members may bring in problem plants, whether cultural or disease etc. problems are present or just identification is needed. One of our committee members will discuss relevant problems and with help from the audience try to solve them.

POPULAR VOTE

Slight changes will be made here, concerning method of voting. A full explanation will be made at our next meeting.

EDITORIAL MATERIAL

In common with other societies, we are always looking for input of our members to your Journal. We value your contributions greatly and know a lot of knowledge is stored in those minds of yours about orchids. No Shakespearean greatness is required to contribute, just a few lines to record your experience growing your treasures, or even interesting field trip finds shared with us. Is anyone growing, for instance, *Oberonia* species successfully, or *Taenio phyllum*? Some of our bulbophyllums perhaps or anything else obscure or common? Then please take out some paper now and sit down and write a few lines about them, we would like to know how it is done. Who knows, you may even learn a bit more from others.

A few guidelines -

Tell us where it came from, what it is mounted on, where do you grow it i.e. glasshouse, warm, cold, shadehouse, what position, high, low, shaded, bright light. How often watered, daily, weekly? Fertilizer, some people do, others don't, do you, how often and what kind? How much has it grown since acquiring it, and most importantly does it flower? Terrestrials grow in pots of course, as do some epiphytes, tell us what kind of pot, clay, plastic, potting mix, does it multiply? How often is it watered? Is it grown under a cover?

You will no doubt think of some things to add yourself. It is amazing once you start how interested you get, please have a go.

This month perhaps we could start with *Oberonia*, next month *Bulbophyllum*. Send your articles to George Nieuwenhoven or hand them in at our meetings. If further encouragement is required, see me at our meetings, I would be pleased to discuss it with you.

Editor

FIELD TRIPS FOR 1987

April 26 - Hindmarsh Valley.

July 12 - Warren and Hale Conservation Parks.

August 30 - *Pterostylis cucullata* special.

September 27 - Spring Gully Conservation Park via Seven Hill.

October 25 - Mt. Crawford area (Wongalere, Sandy Creek).

November 8 - Duck orchid special - Cox Scrub Conservation Park, to look for *Paracaleana* aff. *nigrita* and *Caleana major*. -

November 22 - Fiona Woolcock's property, Parawa.

Wanted - Leaders for most of these trips. Contact Bob Bates on 251 3450.

The 1988 Bi-centenary Field Trip Program will take a different slant, as we intend to have several visits to one of the newest and largest national parks near Adelaide; Scott Creek Conservation Park, to enable a serious survey of orchid species present.

S.G.A.P. NEWS

The annual plant sale will be held on 28-29 March 1987 at their headquarters, Edmund Street, Unley.

POPULAR VOTE - *DIURIS EMARGINATA* 'BUTTERY'

Diuris emarginata 'Buttery' was the popular vote winner at the November meeting, because it was very tall and had lots of large showy flowers. This species comes from swampy areas in W.A., where it grows amongst grasses and reeds. The 250mm (10") plantainer contained 12 flowering plants and 10 non-flowering plants. The flower stems grew to 1040mm tall, that is over a metre in height, to get the 4-6 flowers per stem above the swamp vegetation. The flowers are long lasting, 2-3 weeks for individual flowers, and there are some flowers in the pot for about 6 weeks because they open progressively. Each plant has 3 disease resistant leaves and 3 bracts. The tubers are long and thin and shoot on both ends, although only the thick end produces a flowering plant. 'Buttery' multiplies quickly, at a rate of about 2.5 per year. I have called the clone 'Buttery' because the flowers have the colour and texture of butter. Several members have plants and it will not be long before this very desirable clone is widely distributed. It's only fault is that the very tall stems catch the wind and need to be supported to bring into

meetings. I grow 'Buttery' in my standard terrestrial mix (45% sand, 40% soil, 15% peatmoss). Like most Diuris it seems to prefer a heavy mix and plastic pots. Keep it watered until Xmas.

Les Nesbitt

ORCHID ADVENTURES ON KANGAROO ISLAND

In the South Australian Flora (1986) only fifty orchid species are listed for Kangaroo Island. That number seemed to me to be far too low when one considers that in parts of the Adelaide Hills as many as fifty species can be found in an area as small as $10km^2$. With the vast diversity of habitats to be found in Kangaroo Island's $1000km^2$ plus, a figure of about 70-75 species would seem more realistic. As part of Flinders Chase National Park was burnt out in January 1986, and the winter and early spring rainfall was above average, the decision was made to spend a weekend on Kangaroo Island collecting. The weekend was a resounding success.

After a ferry crossing in which I and several other passengers were drenched by a huge wave crashing over the deck, a first stop was made at Noleen Ridleys in American River. Here I was shown slides she and her husband had taken of orchids on the island. Six were new records - *Cryptostylis subulata*, *Caladenia* aff. *reticulata*, two unnamed *Corybas*, and green forms of *Spiranthes* of probably K.I. origin. Another new record if it could be verified. It was becoming obvious that the orchid flora of Kangaroo Island had hardly been studied.

The next morning (Nov. 1) I awoke to the carolling of magpies and the sound of Cape Barren geese. This was followed by an inquisitive kangaroo poking its nose into my tent, which I had pitched on the banks of the Rocky River. A quick search for orchids revealed plenty of *Gastrodia*, the cinnamon bells, and *Caladenia carnea* and *C. filamentosa*, the blood red form which grows only on Kangaroo Island.

The wildlife at Rocky River was marvellous, in the misty morning light great numbers of kangaroos, wallabies were feeding on the grassy flats, with here and there an emu, platypus splashed in the pools and overhead koalas slept jammed in gum-tree forks.

I had arranged to meet Ida & Garth Jackson for lunch (Ida is well known for her books "Kangaroo Island Wildflowers" & "Kangaroo Island Orchids"). On the way to meet them a stop was made at a roadside swamp, where not one but two bearded orchids 'new' to the island were seen, *Calochilus paludosus* and *C. campestris*, growing together in soggy peat.

After lunch it was decided we would use Garth's four-wheel drive vehicle to explore rough tracks in the burnt section of the park. This proved more difficult than expected, as we bogged the vehicle at the first creek crossing and took 3 hours to dig it out. We returned to the main track and visited a small lagoon where we found hundreds of *Microtis orbicularis* both in and out of the water. Another new record for the island. Other orchids here include *Pterostylis plumosa* and *Thelymitra pauciflora*. Another exciting discovery was

made just on dusk. As we watched a group of wallabies of all sizes they were joined by a small marsupial of different shape, a rat kangaroo or potoroo. As far as I could make out these had not been officially recognised for Kangaroo Island.

Next day even more orchid discoveries were made. I camped next to the burnt out upper section of the Ravine de Casoors (Casoors = cassowaries in reference to the now extinct K.I. miniature emu). An early morning hike revealed thousands of fine orchids *Caladenia menziesii*, *Lyperanthus nigricans*, *Prasophyllum elatum* & *Thelymitra fuscolutea*. *Caladenia* aff. *huegelii* & C. *pusilla* were also located, the latter another new record!

The Ridley's met me at Pandana for morning tea and visited the creekside location of *Cryptostylis* where leaves of what was probably *Microtis parviflora* (not recorded for K.I.) were located together with *Calochilus robertsonii*. After showing my hosts the *Calochilus campestris*, *C. paludosus* & *T. mucida*, which they were keen to photograph, we moved on to a sandy swamp on Heath's farm at Mt. Taylor. This swamp contained about 1 million *Microtis atrata* and as we were returning to the cars we made a most exciting discovery! Tiny black and orange duck orchids with short purple leaves grew on the fire break around the swamp - *Paracaleana* aff. *nigrita*! We had verified that this much talked about species really did grow in South Australia.

Time was now running out but two more stops revealed an unnamed spider orchid (*C.* aff. *reticulata*), *C. dilatata, Th. luteocilium, Pterostylis pedunculata* and *P. nutans*.

So many new orchid records in one weekend, and we had only scratched the surface. There is surely a lot more to be found on Kangaroo Island yet.

R. Bates

OBSERVATIONS ON THE POLLINATION OF *ERIOCHILUS CUCULLATUS* IN THE ADELAIDE HILLS

There are many questions to be asked in regard to the pollination of any orchid species. These include:

1. What is the pollinating agent or agents and how specific are they?

2. What is the attractant (or attractants)?

3. How is the pollinator positioned to effect pollen transfer and what are the mechanics of this transfer?

4. What degree of outcrossing is achieved?

5. Under what weather conditions and at what time of day does pollination usually occur.

6. How do the various flower characters match the pollination strategy and mechanisms of pollination?

Most people who are interested in orchid pollination, like to predict what insects are likely to be pollinators for any species where these are not already known (although it is not a good idea to have these predictions published, as they could prove embarrassing!).

It is quite safe for me to say now that I had guessed that *Eriochilus cucullatus*, the widespread and common Parsons-bands orchid of the eastern states, would be pollinated by native bees. After all, Rica Erickson ("Orchids of the West", 1965) had already described in her marvellously poetic style, how the very similar Western Australian species *Eriochilus dilatatus* was pollinated by bees.

Observations

During the NOSSA field trip of 3/5/86, several members were fortunate in observing at Kuitpo near Adelaide, native bees pollinating *Eriochilus cucullatus* (see report by D. Reece). Under cool sunny conditions in mid afternoon at least fifty visits by the bees to *Eriochilus* flowers were observed, and actual pollen transfer witnessed on about 10% of these visits. The bees were observed to land chiefly on the orchid labellum and, with little hesitation push their heads into the tube formed by juxtaposition of the labellum and column; using the pubescent surface of the lip to gain the foothold necessary to force the labellum down far enough to achieve this (see photo). For a charming account of the mechanics of pollen transfer see Erickson (1965).

The bees had the pollia firmly attached to their frons. Of the many individuals it was noted that the larger specimens were more likely to effect transfer of pollen. Several were captured and identified by E.G. Matthews (Adelaide Museum) as belonging to at least two species of *Holictus*. All of those captured were females. Mr Matthews (pers. comm.) noted that *Holictus* bees are often gregarious and it was not unusual to see several species working the one area.

The main attractant seemed to be the glossy white sepals which faced the sun in such a way as to give maximum reflection. Perfume in *E. cucullatus* is rather faint but detectable under warm conditions as 'honey like' nectar is probably present in small amounts but was not readily recognisable.

Outcrossing is achieved in almost every case as the bees did not probe the same flower twice. In most cases plants were single flowered and little evidence was seen of vegetative cloning.

Flower features could be said to be very simply designed, the petals small, vestigial, now functional?, the lateral sepals larger and advertising the flower, labellum furry to give a foothold, just large enough to be an effective landing platform, with some red guiding markers and yellow 'nectary' base with only minute amounts of nectar so as not to hold the bee longer than necessary, and finally the cucullate dorsal sepal just broad enough to afford some protection to the column below.

A curious feature of the plant of our autumn flowering species, the leaf develops later. Under dry conditions the flowers open almost as soon as the scape emerges from the soil. The scape continues to elongate as flowering progresses, and is covered with bristly, glandular, protective hairs. It is quite noticeable that plants growing in full sun are more frequently pollinated than shade plants (about 50% as opposed to 10%), the shade plants are always much taller.

And so, our several questions asked at the beginning of this article are answered.

References

Bates, R. (1986): Observations on the Pollination of Eriochilus scaber, Bull. W.A. Nat. Orch. Group (April issue).
Erickson, R (1965): "Orchids of the West" (Pollination of "Eriochilus dilatatus).
Reece, P. (1986): Kuitpo Forrest Field Trip, J. NOSSA 10: 43-44.

R. Bates

A TOURISTS GUIDE TO ORCHIDS IN TASMANIA IN EARLY SUMMER

There is little doubt that early Summer is the optimum time to visit the 'Holiday Isle', for that is the time of fair weather, as well as the peak of the wildflower season. Yes, there are still plenty of orchids to be seen and mostly they are common at the most scenic spots.

Our first excursion was to Mt. Wellington, which gives fantastic views of Hobart. We picnicked at 'The Springs' with Pat Palmer, the local orchid expert. Within ten minutes we had found hundreds of *Pterostylis scabrida*, *Chiloglottis gunnii*, *Ch. cornuta* and *Caladenia lyallii*. On the cleared picnic ground itself we saw the hybrid between *Thelymitra venosa* and *T. pauciflora* (of course *alpinum dubia*, both parents were also found nearby) and on the roadside itself *Pterostylis dubia*, a greenhood I had long waited to see. Further up the walking track were *Prasophyllum*, *Pterostylis decurva* and *Gastrodia*. All this on the day after Christmas!

The next day we headed down to the Freycinet Peninsula to see Tasman's Arch, the Tessellated Pavement, Eagle Hawk Neck, the Devils Kitchen and the old convict settlement at Port Arthur. Just out of Murdunna a large patch of

swampy heath can be seen. We stopped there and located *Prasophyllum brevilabre*, *P. australe*, *Cryptostyllis subulata*, *Dipodium punctatum*, various *Microtis* and more *Thelymitra venosa*. There were reports of a marvellous hybrid between *T. venosa* and *T. ixioides*, the flowers having both brilliant spots and stripes! Unfortunately they had finished flowering. To compensate we collected a couple of the local *Caladenia dilatata* and set them up at Eagle Hawk Neck in the sand hills. Within minutes they were being zapped by black thynnid wasps with white markings. As these *Caladenia dilatata* and their pollinators looked quite different from their Adelaide Hills equivalents we were sure they were different species (be warned, it is the Adelaide Hills spider orchids that will suffer a name change, not the Tasmanian ones).

Our third day included a visit to Mt. Field National Park and the exquisite beauty of Russell Falls, tree fern glades, myrtle forest and alpine lakes, all within a few kilometres of each other and less than two hours from Hobart. It is in this area that Tasmania's only endemic orchid genus *Townsonia* abounds, both in the myrtle (*Nothofagus*) forest, on moss covered fallen logs and around Lake Dobson under the giant heath *Richea pandanifolia*. (*Townsonia viridis* is common at other tourist attractions too. At Waldhein Chalet near Cradle Mountain and near Lake St. Clair it should be looked for in damp places under myrtle). We were lucky enough to see the *Townsonia* flowers being visited by fungus flies.

The next two days were spent near Devonport on the north coast (Tasmania is so compact that one can drive from Hobart in the south to Devonport in the north in just a few hours).

As orchid guides in the north, we had Grant Smith and Barry Dudman of Burnie, and Peter Tonelly of Latrobe, all well-known local experts. Barrie took us to a location where all three Tasmanian bearded orchids grew together. We saw at least fifty albino *Calochilus paludosis* with silvery Father Christmas beards as well as pure white *Thelymitra venosa* (and some blue *T. venosa* without veins).

Our final day was spent in the Mole Creek area which is famous for its caves, wildlife parks (yes, you are allowed to pat the Tasmanian Devils), and forests. Here we saw duck orchids, *Caleana major* and leafless leek orchids. *Prasophyllum flavium*, a most exciting discovery was made - a single sun orchid plant with the lowest flower *Thelymitra circumsepta* and the next flower *T. retecta*, living proof that these two are really one and the same species. *Thelymitra circumsepta* is locally known as a weed all along roadsides in western Tasmania.

One orchid we did miss was the epiphyte *Sarcochilus australis*, which can still be found flowering at Christmas.

Tasmania may be small but it is jam-packed with exciting scenery, interesting places and plenty of orchids too, certainly too much to be seen in one week.

R. Bates

TERRESTRIAL ORCHIDS AND POTTING MEDIA -AN ALTERNATIVE

The two most popular mixes for growing terrestrial orchids in southern Australia require the addition of a quantity of "bush soil". For many people these mixes are impracticable because they involve collecting this component from the hills area and require some preparation before being incorporated in the mix (Nesbitt, ANOS Vic). Certainly these mixes work well with most genera and species, and the mix described here is a suitable alternative for some genera, particularly certain species of *Chiloglottis, Diuris* and *Pterostylis*.

For the past two years I have experimented with commercial general purpose potting mixes, available from any garden centre or supermarket. The characteristics of these mixes, and all brands are for our purposes very similar, are:

a) They are free draining, yet retain adequate moisture.

b) They have a substantial organic component; peat moss and partially composted fine pine bark.

c) A pH which is slightly acid.

d) They have low quantities of added fertiliser.

I have tested these mixes with twenty five species in the genera, *Caladenia* (1), *Chiloglottis* (1), *D*iuris (4) and *Pterostylis* (19). The results are listed in the accompanying table.

Before discussing these, some comment on my growing conditions may be relevant. I live in the Mitcham Hills district and the plants are grown under 50% shadecloth, in 10 inch or 5 inch squat pots. No crocking material is used and the pots are topped with a layer of chopped pine needles. During winter the plants receive whatever rain that falls. In summer the pots are covered after repotting, but are kept slightly moist. The reason for covering the pots is that they are in a shadehouse environment where epiphytes are watered in summer by an overhead sprinkler system. Watering commences towards the end of February.

The winter of 1986 was particularly wet with 95 mm, 302mm and 158mm being recorded at Blackwood during June, July and August respectively, and this pattern continued through to December. Despite this, few problems were encountered and an examination of the results confirms that tuber increase was reasonable and in line with what might be expected for these species.

Modifying the mix by the addition of extra coarse washed river sand available from some nursery suppliers - perlite or isolite, could be substituted, is easy if you want less water retention or better drainage. I used a modified mix with two species of *Diuris*, *D. brevifolia, D. sulphurea*, both with 50/50 coarse sand and commercial mix and *C. latifolia*, 60% coarse sand, 40% potting mix. *D. brevifolia* and *P. rogersii* yielded the lowest tuber increase and the reasons are not entirely clear but *P. rogersii* is not a prolific tuber producer.

In summary commercially available general potting mixes produce acceptable tuber increases in many of the commonly available species of terrestrial orchids. The mix has the following added advantages:

a) It is readily available in a number of different size packs.

b) It is relatively cheap, but not as cheap as free bush soil!

c) It is easy to use; if you need more drainage or less water retention simply add a percentage of inert drainage material - washed coarse sand, perlite or isolite.

d) Provided that there is no evidence of disease, you can re-use the mix.

I am confident that the mix will also support colonies of species in the genera *Acianthus, Corybas, Cyrtostylis, Eriochilus* and *Microtis*.

More difficult species in *Caladenia, Glossodia, Thelymitra* and the "*rufa*". group in *Pterostylis*, will need to be incorporated into the experiment before the general applicability of these mixes is fully tested.

W.K. Harris

Species	No. Tubers Planted	No. Tubers Harvested	%Increase
Caladenia latifolia	20	36	180
Chiloglottis trapeziformis	26	84	323
Diuris brevifolia	20	24	120
D. laxiflora	5	8	160
D. pedunculata	8	23	287
D. sulphurea	20	50	250
Pterostylis baptistii	15	26	173
P. concinna	20	50	250
P. cucullata	20	62	310
P. curta	20	75	375
P. decurva	20	84	420
P. aff. decurva	20	65	325
P. fischii	20	74	370
P. hildae	20	45	225
P. nutans	18	70	389
P. ophioglossa	23	30	130
P. ophioglossa var. collina	30	83	277
P. pedunculata	17	76	447
P. reflexa	17	74	435
P. rogersii	3	3	100
P. scabra var. robusta	17	38	224
P. stricta	20	65	325
P. x. toveyana	20	82	410
P. truncata	20	60	300