Journal of the Native Orchid Society of South Australia Inc

Caladenia latifolia

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NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA

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The Native Orchid Society of South Australia promotes the conservation of orchids through the preservation of natural habitat and through cultivation. Except with the documented official representation from the Management Committee 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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JOURNAL OF THE NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA INC.

NOVEMBER 2002 Vol. 26 No. 10

CONTENTS THIS JOURNAL

NEXT MEETING 26 NOVEMBER 2002

Tuesday, 26 November, St Matthew's Hall, Bridge Street, Kensington. Meeting starts at 8:00 p.m. Doors to the hall will be open from 7:15 p.m. to allow Members to return Library Books and set up goods for the Annual Auction. Bring your unwanted plants and other goods. The Xmas raffle will be drawn so get your tickets early. This is the last meeting for the year. Bring a basket supper to share at the Christmas supper.

DIARY DATES

November 21st "Intrigue in an endangered sexually deceptive orchid" Dr. S. Topa
Petit talk at Mawson Lakes campus of the Uni. of Sth Aust. at 6:30pm
24 November George Abell: *Sarcochilus* special shade house visit
1 December Annual BBQ at Wally & Shirley Walloscheck's.
25 February 2003 First meeting for 2003
18-21 Sept. 2003 16TH Australian Orchid Council Conference Adelaide.

NEXT COMMITTEE MEETING
Wednesday 4th Dec. at the home of David & Rosemary Hirst. Meeting commences at 7:30 p.m.

TREASURER. We are still in need of a Treasurer.

OCTOBER MEETING - Plants Benched

Terrestrial Species:; *Caladenia cardiochila; Caladenia caudatus; Caladenia tentaculata* (3 plants);*Caladenia verrucusa; Chiloglottis platyptera; Chiloglottis trapeziformis* (2 plants,); *Chiloglottis truncata; Glossodia major* (2 plants, one white); *Diuris sulphurea* (3 plants); *Pterostylis baptistii; Pterostylis biseta; Pterostylis curta; Pterostylis pedunculata; Pterostylis pusilla; Pterostylis rufa; Phaius tankervilliae; Prasophyllum pallidum Thelymitra nuda* (WA); *Disa bracteata*. -
Terrestrial Hybrids: *Diuris* Dragonfly; *Diuris* Mule; *Pterostylis* Cutie 'Harold's Pride'; *Pterostylis* Jack Warcup; *Pterostylis* Jumbuck x *ovata*; *Pterostylis* Zeigelara; *Pterostylis* sp.
Epiphyte Species:. *Dendrobium kingianum* (8 plants- one white, one 'Linda'); *Dockrillia linguiformis; Dockrillia schoenina* (2 plants); *Dockrillia striolata* (4 plants); *Sarcochilus hartmannii* (8 plants - one 'Red hart')
Epiphyte Hybrids: *Dendrobium* Annes Rainbow Surprise; *Den*. Graeme Banks; *Den*. x *delicatum*; *Den*. Gillian Leaney; *Den*. *speciosum* x Star of Dawn; *Den*. Yondi Brolga; *Den*. unknown (2 plants); *Dockrillia* Duffy; *Sarcochilus* Bon Bon; *Sarcochilus* George Colthrup x (Melba x *hartmannii*); *Sarcochilus* Sweetheart 'Shirley Temple'.

Judging results
Terrestrial Species
1st *Caladenia tentaculata* grown by Wally Walloscheck
2nd *Pterostylis rufa* grown by Les Nesbitt
3rd *Glossodia major* grown by Wally Walloscheck
Terrestrial Hybrids
1st *Diuris* Dragonfly grown by Les Nesbitt
2nd *Pterostylis* Jack Warcup grown by Les Nesbitt
3rd *Pterostylis* Cutie 'Harold's Pride' grown by Les Nesbitt

Epiphyte Species
1st *Sarcochilus hartmannii* grown by Rick Pankoke
2nd *Sarcochilus hartmannii* grown by John & Bev Gay
3rd *Sarcochilus hartmannii* grown by Rick Pankoke
Epiphyte Hybrids
1st *Dendrobium* Yondi Brolga grown by Russell Job & Edda Viskic
2nd *Dendrobium* x *delicatum* grown by Russell Job & Edda Viskic
3rd *Sarcochilus* George Colthrup grown by Rick Pankoke
Plant of the Night
Caladenia tentaculata grown by Wally Walloscheck

Popular Vote Results
Epiphyte Species: *Dendrobium kingianum* grown by Wally Walloscheck
Epiphyte Hybrid: *Dendrobium* Yondi Brolga grown by Russell Job & Edda Viskic
Terrestrial Species: *Caladenia tentaculata* grown by Wally Walloscheck
Terrestrial Hybrid: *Diuris* Dragonfly grown by Les Nesbitt

Commentary on Epiphytes by John Gay
Commentary on Terrestrials by Peter McCauley

Judging Classes: next Judges meeting: Saturday 7th December.

FOR YOUR INFORMATION - NOSSA NEWS

SHADE HOUSE VISIT
Sarcochilus special: Sunday 24 November
Meet 1:00pm at George Abell's 20 Sinclair Ct, Old Reynella (8387 7246).

LIBRARY BOOKS
Please return Library Books at the November meeting for stocktaking.

FOR SALE ORCHIDS OF AUSTRALIA by W.H. Nicholls $300.00.
Contact Bill Dear on 8296 2111

NEW BOOK:
Orchids of Australia by J.J. Riley and D.P. Banks. !50 orchids are treated in this volume of 308 pages which is the first of what is expected to be a series. The illustrations are superb and of the standard featured in W.H. Nicholls' monumental 'Orchids of Australia'. An improvement is having the text and a distribution map appearing opposite the illustrations of each species. However I do have some criticism of the layout though as the authors treat only a selection of species from a number of genera. This may appeal to those with only a passing interest in orchids but if more volumes eventuate covering more or all of Australia's 1200 species it will mean resorting to several volumes at once if one wishes to compare species of the one genus. Also the recent name changes to some *Caladenia* species have not been incorporated. Overall it is excellent but with a price-tag of $120 the book may well be destined to become yet another collectors item. [Ed.]

NEW MEMBER
NOSSA members and the committee welcome new member Phil Diamond of Queensland.

ANNUAL AUCTION XMAS RAFFLE AND SUPPER
November meeting. Your unwanted orchids, tubers and other plants, pots and potting mix, books and bric a brac could be another persons treasure. Bring them along to the auction and share the fun.
Members can still bring their donations to the meeting for the Xmas raffle. Final chance to buy raffle tickets - one dollar each.
Bring a plate of supper to share.

TUBER BANK - 2002-2003
We again appeal to all terrestrial growers to check their pots and assess what excess tubers they may have. Please consider donating these to our NOSSA tuber bank as we would like a record number of species this year. Any numbers large or small will be welcome. Please advise Malcolm at 15 Naomi Tc., Pasadena or Phone 8276 7350 by Nov. 26 'h. The final list with order form will be published in the December journal.
Thank you in anticipation M.J. Guy

ANNUAL BARBEQUE
At Wally and Shirley Walloscheck's Cherry Gardens home.

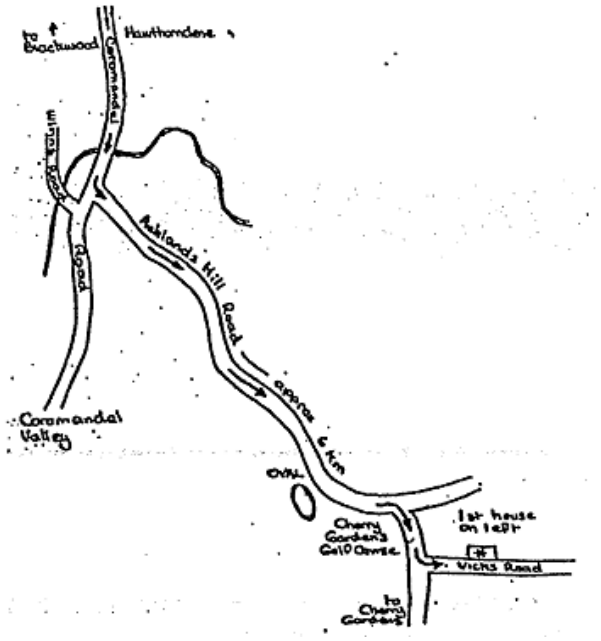
Sunday 1st December at 11:30am.

NOSSA will be providing the meat.

Bring: a salad or dessert to share and $2.0o donation.

Also bring your chairs, folding table, plates, eating utensils and drinks inc. tea-bags/coffee, sugar & milk. Hot water will be provided.

Because of unusually high numbers of mosquito's this season also remember the Aerogard.



ROLES FOR TISSUE CULTURE ENTHUSIASTS AND HOBBYISTS IN MODERN ORCHID CONSERVATION
by
KEVIN WESTERN

Tissue culture of native Australian epiphytic orchids is quite common in the eastern states both at a hobbyist level and at a commercial level. Most frequent genera involved though are epiphytic orchids such as *Dockrillia, Dendrobium, Sarcochilus* and allied genera and *Cymbidium*.

The terrestrial, native orchids are another matter. I know only of work such as in Western Australia at King's Park & Botanic Gardens by Kingsley Dixon and associates. This is ground breaking work. They have successfully cloned *Diuris* at least from inflorescences and they are seeking ways of reliably finding the mycorrhizal fungus needed by the orchid's seed to germinate and hoping to find the means to effectively reintroduce or spread endangered native, terrestrial orchids back into their habitat so that they will become self-maintaining. In Victoria there is an interesting situation where tissue culture based work is being carried out both at Government and at hobbyist level with some level of cooperation between the two groups. The hobbyist level is quite extensive and well organised with numerous people utilising and working together at the one private household laboratory. Information sharing and research is playing a major role in their successes. There is also some work at a Government level in extracting and using mycorrhiza to germinate and maintain their rare and endangered orchids but not as extensively as in W.A. In South Australia I know only of Les Nesbitt and Peter McCauley and myself working with Australian native terrestrial orchids as hobbyists and realise there is some activity at a mycorrhizal level within Uni S.A. by Sophie Petit and there may be more that I am not aware of. I am also aware that there is some activity in extracting mycorrhiza in New South Wales and assume that there are some attempts to do symbiotic germination and

growth of their terrestrial orchids and one could assume that the Canberra Botanic Gardens may still be active in the field too.
From my business dealings and associations with interstate terrestrial growers it is apparent that there are numbers of very active hobbyists growing terrestrial orchid species and hybrids that have been obtained from tuber banks, rescue digs and from seed raised and flask raised material.

FROM THE BRINK OF EXTINCTION
Recently in N.S.W. a new species, namely *Pterostylis hians*, was seen and recognised as undescribed. Accordingly specimens were taken for herbarium collection, artist drawing, study and description by David Jones. A small amount of the material used for artist drawings was then distributed to extremely competent hobbyists such as Helen Richards in Victoria and some individuals in NSW. This was a fateful event as a bush fire raged through the habitat area and *Pterostylis hians* has not been seen in the wild since. Helen Richards sent seed from her plants to me. They were duly sown and germinated and have grown very well and have even flowered in flask. They do well and make quite large tubers in the flasks. I have been encouraging those growers with plants of *P. hians* in NSW to interbreed with their specimens to maximise the gene pool in the seedlings that we will raise in flask. I had no idea at the time of original sowing that the species was extinct apart from captive plants. There is a lesson to be taken from that set of circumstances - *Pterostylis hians* would be absolutely extinct except from a few maintained specimens. We have just sent quite a number of flasks back to NSW for return to the wild and to extend captive plant numbers

In Victoria, *Diuris fragrantissima*, once commonly known as 'Snow in the Paddocks', later officially named *Diuris punctata* var. *albo-violaceae*, then *D. fragrantissima*, was once extremely common in what has since become suburban Melbourne. Its range was the Keilor Plains from 20km north-west of Melbourne to 30km south-west of Melbourne. Once they were absolutely innumerable, appearing almost as a carpet of flowers in open grass land. Nicholls observed that it was becoming rare by 1934 and by 1951 it was thought to be in peril of extinction. By 1970 only 5 populations remained. It is currently known in the wild from one highly vulnerable location near a railway line and parking area that is now fenced off and variously there may be from none to 3 plants to be seen in a given season. The site is managed but it is not an assured option for guaranteed survival of the species as it may not continue to reproduce or survive there and the site may not be worth the effort of management
Since about the 1970's there have been several attempts to artificially raise seedlings for return to suitable safe locations including an attempt by Mark Clements in the early 1980's. Mark successfully raised reasonable numbers by symbiotic techniques and had material distributed to competent terrestrial growers in several states. The specimen that I received thrived for about 3-4 years but was lost when I became too busy to properly attend my collection. It may have fared better had I known how absolutely rare the species was even at that point in time. I wonder if anyone still has a plant of *D. punctata* var. *albo-violaceae'* from that period.
Legal collections were taken from the last remaining colonies and the 2 pots were placed in the hands of the Zoo [Melbourne] where some staff had great horticultural expertise and where Colin Knight repotted them in 1995 by which time there were about 100 pots. The zoo grew them extremely well but had the foresight to distribute some pots amongst extremely competent growers to further insure the on-going survival of the species and its gene pools. They still exist. It was hoped that these plants would form a core from which to breed seedlings for introduction back to the wild once the knowledge base existed to guarantee successful return to chosen wild locations. Earlier attempts to return *Diuris*

fragrantissima to the wild would now be regarded as somewhat laughable - one such attempt involved taking seedlings from flask in summer and then proceeding to water them to death. We are fairly sure now that it is better to deflask actively growing plants from flasks in late March or April to May depending on the year then just leave it to the seedlings and nature to survive and grow.
There are other very endangered orchids that the Victorian Government Environmental organisations, ANOS Vic, and hobbyists alike are aware of. This puts pressure on various people to do something but it is difficult to be absolutely certain what is the best option. An example is the plight of at least one species of *Caladenia*. It is clearly unwise to collect such plants as their survival in long-term artificial cultivation has generally been appalling. On the other hand, a *Caladenia* species has vanished while everyone pondered what to do about them. It was not collected to oblivion, rather its habitat and numbers became so reduced that it simply perished.

What are we to do? Should we do anything?
I think that since Europeans came on the Australian scene with agriculture, horticulture, stock raising and urbanisation we have rendered so many habitats useless to plants and animals that we have a duty to do something WORTHWHILE AND EFFECTIVE to save them.
I think that when a species is down to three known plants it is essential to pollinate one of them with pollen from the other two and to cryo-preserve a portion of that seed for all time until the skills exist to guarantee successful management of the seedlings. The risk exists that the pod parent may be killed but in my experience most terrestrial orchids carry pods without causing harm to the plant. It has to be better than absolute oblivion with not even seeds for hope of a new generation at any point in time. It is conceivable that all three plants could be pollinated naturally. If so it may be wise to pollinate one plant and collect its seeds anyway. The plants need to be caged to avoid browsing by rabbits, kangaroos or whatever and protection from grubs or caterpillars may be an issue. A light, fine, porous fabric bag needs to be placed over the near-ripe pod to reliably catch the seed when the capsule ripens. Attempts should be made to grow some of the collected seed by returning it around the parent plants in about March - May of the following season. It may be that there have been no pollinators present in the near past so no seed pods had been formed. This will start a natural increase in their numbers. Some seed may be put into synthetic woven fabric packs and be buried in the soil near the orchids. Later in the spring it can be lifted to see if the correct mycorrhizal fungus for seed germination is present as there will be germinated protocorms or small plantlets in the packs if the correct mycorrhiza were present. The opportunity would also exist to sacrifice such a protocorm or plant to extract the mycorrhiza and maintain the fungal strain in pure test tube culture for future tissue culture seed and seedling raising activities as this will lead to the creation of goodly numbers of seedlings with high potential for return to safe wild locations.

Often our terrestrial orchids rely on mimicry of another flower to attract their pollinator. Some Caladenia's are thought to mimic local native flowering shrubs and so it is advantageous to have those plants present as they attract the pollinators to the area whereupon some unwittingly become orchid pollinators. Without the presence of the attractor plants, the probability of natural pollination is very much reduced. By re-introducing the attractor plant species we may expect to have a strong positive effect on pollination rates of the orchids in the wild. Conversely, in orchid populations where there are no attractors, it may be prudent to involve carefully controlled artificial pollination and seed collection.
This must only be done by officially authorised experts or hybrids may inadvertently be produced.

The Caladenia's [*Arachnorchis*] pose a specific problem in that they are not at all easy to maintain in artificial culture with present skills and knowledge. I suspect we must learn how to NOT water them and how to closely copy essential factors such as soil dryness and moisture or lack of moisture states throughout the entire year before we can reliably maintain at least a reasonable proportion of the Caladenia's. Remember they have survived, left alone for eons in the wild despite droughts, floods and all other extremes as well. The problem I see is that our pots can become too wet and then not dry out quickly enough. Even excellent drainage leaves pots far too wet for too long for the Caladeniae. I suspect most people do not let the pots dry out in summer as the bush soil would. I firmly believe that really deep pots or styrene foam boxes at least 30 - 45 cm depth and about 20 or more cm diameter filled with their favourite soil type or a mix of 90% coarse sand & 10% peatmoss is ideal. All that is needed then is to water minimally at the right times and to let the system dry out entirely for most species during the dry season and we should regularly and reliably be able to maintain the Caladeniae.

For the most part, genera such as *Corybas, Diuris, Pterostylis, Thelymitra* and, to some extent, the *Calochilus* are modestly easy to raise from tissue culture raised seedlings grown without symbiotic mycorrhizal fungi. They are often seen for years in the collections of the fastidious and competent hobby growers with only a few of the species in each genus proving to be uncommonly difficult to keep. The Caladeniae [*Caladenia, Glossodia, Elythranthera, Eriochilus* etc.] are generally very easy to germinate and grow in sterile tissue culture from seed but generally prove to be all but impossible to deflask and maintain in pot culture so this is a major problem confronting their artificial conservation. This makes them particularly vulnerable to extinction at the moment as we are not reliably successful at cultivating and maintaining mature plants at the moment let alone progressing from deflasked seedlings to mature plants. Having said that, we have seen cases where Caladenia's that were taken during rescue digs have been and are being maintained for very long times [up to 10 and more years] before being lost. Generally the losses happened as a result of temporary neglect by or illness or absence of the competent grower so programs of care that are reliably successful in maintaining such genera or species must be clearly documented in stepwise and complete fashion for others to be able to copy and manage them.
I REPEAT THAT IT SEEMS CLEAR THAT WE MUST LEARN HOW NOT TO WATER THE CALADENIAE.

With respect to the *Pterostylis, Corybas, Diuris, Thelymitra,* it seems that a significant number of hobbyists throughout Australia who collectively have the required knowledge to reliably maintain most species of those genera and who could probably manage to learn how to grow and maintain those, at the moment regarded as difficult if they had the opportunity. That is if they had flasks of seedlings to work with. This is where the tissue culture laboratories, the government environmental bodies and the hobbyists could amalgamate their skills to become an effective force for the guaranteed long-term survival of our orchid species. The process begins with the proper, legal collection of seed from either captive or wild plants. By 'collected properly', I mean either as green pods taken near maturity but before they are ready to open and expedited to a laboratory to arrive unopened and undamaged so it will be sown without delay on to correct germinating medium to assure that there is a very high likelihood of germination. 'Properly collected' may also apply to so called 'dry seed'. In this case we are talking about pods that have split open and still contain seed. In this case the seed must be removed from the seed pod as soon as possible. The pod should be put in a place where it will dry out as quickly as possible so that fungi and bacteria do not have the opportunity to grow on the moist pod

remains and subsequently infect the seed thus making it impossible or at least difficult to get sterile seed for sowing in tissue culture. The dry seed should then be gotten to the tissue culture laboratory as quickly as possible and should then be stored refrigerated or should be quickly sown on to germinating medium.
This is where hobbyists with collections of identified orchids with provenance details or authorised government environmental personnel are the key. They need to code and record the seed lot with details about the parent plants, genus, species, variety, provenance etc. and these details then need to become a part of the permanent laboratory record to assure complete, accurate and continuous traceability of the data.

The tissue culture laboratory must maintain and extend these records and must insure that completely accurate labels are generated from mother flask to final replates. A KEY ELEMENT IS ACCURATE, CONTINUOUS TRACEABILITY. The laboratory must produce deflaskable plants ready at the ideal time of year to be passed on to hobbyist / specialists who have the skills, experience and environmental conditions needed to deflask, raise and maintain the new plants in sanitary conditions to avoid the introduction of pathogens or pests to those collections. They must also maintain fastidiously accurate labelling and records so that the orchid seedlings or clones continue to be accurately identified in accordance with the original data provided by the source of the seed.

In this way there would be an eventual progression to the point where sufficient numbers of accurately identified new plants would exist and suitable knowledge of their management would be gained to start a program of re-introducing the tissue culture-raised seedlings or clones back into appropriate natural locations for them. It would be ideal if we could find how to re-introduce them to their habitat direct from the flask as this would eliminate the likelihood of introducing pests or pathogens. I have done this now on a few occasions with *Diuris* and with *Thelymitra* on patches of my own property. Several such plants survive to date.
The idea is to deflask plants of good size and stature into a location near an existing plant of the same genus early in winter. I like to do so just before or when it is forecast to be likely to rain on and off for 2 or more days. By the time it stops, they seem to be quite durable. I think *Pterostylis* would be ok this way also but they are prone to being eaten by some pest in my location so they don't work for me but they can easily be deflasked into sphagnum moss in pot culture.

We probably also need to learn about and consider introducing the plant species that is the natural attractor for the orchid's pollinators. This will be important if the re-introduced seedlings are to be naturally pollinated when they mature and flower. Further, natural pollination would tend to insure that only true species seedlings get to produce seed. Before all this can happen, we must get our orchids into tissue culture in the first place and maintain them until we have the practical knowledge base to know just what each needs in the wild. Many species will flower in flask and I am sure we can aseptically pollinate them to continue to produce generations in flask for as long as is needed.

All this is not 'Pie in the Sky'. It is already happening in Australia. Seedlings of two extremely endangered terrestrial orchid species have already been raised in tissue culture and sent back to the states from whence they came. Further the official government departments have enlisted the expertise of competent hobbyists to help successfully deflask and raise them. I suspect that formal, effective return of these two species to the wild is at most two seasons away.

A major problem that I have seen is that the researchers have referred to scientific texts when determining how to successfully go about a process they have had no personal

experience with. The problem then is the degree of applicability of the process chosen. I have seen technology and conditions applied that might do well when deflasking a *Phalaenopsis* or *Sophronitis* that comes from warm, steamy conditions. However when applied to a species of Australian terrestrial orchid whose seedlings would naturally emerge in late winter to early spring where temperatures range from 2 - 30° C or more whilst they are growing and where conditions oscillate from cold, still and humid to warm, windy and dry, one cannot hope for success from the likes of a mist tent. Again it is obvious that there is significant need for cooperation and interaction between the boffins and the experienced hobbyists. Once this happens in earnest, real progress will begin:

To take this to the 'Nth' degree, I am certain that we could easily raise and permanently maintain and breed on from both *Rhizanthella gardneri* and *slateri* in artificial culture if the symbiont fungus and seed was made available. I was with Jack Warcup on the day he inspected his *R. gardneri* project and discovered near 100% germination and survival. Such an event may well be powerfully compelling enough to encourage those making decisions about funding to look more favourably at endangered orchid projects. It is my fond hope that one day we will see extensive cooperation between all concerned to keep our orchids from the brink of extinction.

ORCHIDS IN THE CBD - A CORRECTION — David Hirst

Last month I reported on some orchid's growing by Parliament House on King William Street. They are now flowering (at 13 Nov. with lower flowers dried off) and it turns out that they are a *Microtis* sp. not *Prasophyllum* as I had assumed because of their proximity to those that were around the Festival Theatre.

A WEEK ON KANGAROO ISLAND - 23-28 September 2002 — Thelma Bridle

Kangaroo Island (KI) is the second largest island off the Australian coast at 440,000 hectares. The island has spent various geological time periods connected to the mainland resulting from changes in sea level and has been separated continually for only the last 10,000 years. There is an endemic plant list for the island numbering about 20 species, but none of these are orchids. This is due to the prevailing west to east wind which tends to carry the fine, light orchid seed from Kangaroo Island to the mainland and not vice versa. However, the separation from the mainland has caused orchid forms on Kangaroo Island to be modified and a number of these appear more akin to Western Australian forms, which may be due to orchid seed travelling from WA on the prevailing wind or perhaps the type of development which occurs in species with isolation from a larger genetic pool.

NOSSA felt it was time to investigate this island. Ken Bayley chartered a bus, Barb Bayley organised an itinerary and made bookings. Noleen and Allan provided local knowledge from their many years spent on KI and 13 orchid enthusiasts from Adelaide, Port Lincoln and WA joined the tour and spent 6 days looking for orchid species. Many sites were visited ranging from Conservation Parks to short roadside stops. Thus species have been collated into convenient divisions of the island (see map), roughly following soil types. As a number of species (10) were found outside conservation parks, this raises the question of vulnerability for the future. *Caladenia ovata* was far better represented at an unprotected site, where 12 plants were located, than in the Beyeria Conservation Park, with only one plant found. *Prasophyllum* species were very few in conservation parks and

Calochilus robertsonii, two forms of *Pterostylis nana* and *Eriochilus cucullatus* were all outside protected areas. Surprisingly, some roadside locations, which appeared very similar to some on Fleurieu Peninsula with regard to soil type and vegetation, were devoid of orchid species.
One of the first orchids to be located was *Caladenia sanguinea*. This blood-red species appears to be unique to KI. The labellum colour does vary between completely red to mainly white. Flower stems also range from about 7 to 20cm with petals and sepals less droopy than those of the white-flowered *C. capillata*, a species that was not found as frequently on the island. On Seal Bay Road, a form with cerise petals and sepals with a pale labellum appeared much the same as plants found in the mallee of the mainland eg Perponda.

Caladenia tensa ssp. *insularis* is an uncommon greencomb spider orchid on KI. The largest concentration was found around Brown Beach, otherwise scattered. Another scattered species was *C. valida*, only one site having more than a single flowering plant. This species prefers fertile, open woodland.
We were surprised not to find *Pterostylis erythroconcha* in the coastal mallee, but all plants found, with flowers over, appeared the narrower flowers of *P. dolicochila*.

On one roadside corner a couple of *Prasophyllum occidentale* were flowering and a number of similar or other species *Prasophyllum* leaves occurred in the area together with many native and KI endemic shrubs. *Calochilus robertsonii* were quite plentiful and budding here and *Thelymitra luteocilium* was very close to opening in the morning sun. By the time we arrived at our next stop, *T. luteocilium* was in full flower. At this site a rather mis-shapen plant of *T. juncifolia* had one flower open. It took Cathy a while before she managed to find the spots to confirm the diagnosis together with the column appearance. *Thelymitra antennifera* and *T. flexuosa* were encountered frequently, both species freely opening, but not quite fully for us as the weather was a couple of degrees short of ideal. *T. benthamiana* was probably the most common sun orchid found, even in the main street of Parndana, but too early for this species to be other than buds.

Stokes Bay Bush Garden is a three hectare property, where Australian natives, including some orchids have been planted amongst native bushland, to create the most beautiful and naturally appearing site. I would recommend anyone visiting KI not to miss this garden, alive with small birds and colour, and numbered plants and guidebooks to assist in plant identification. As local bushland has been left, a number of orchids flower naturally through the area.

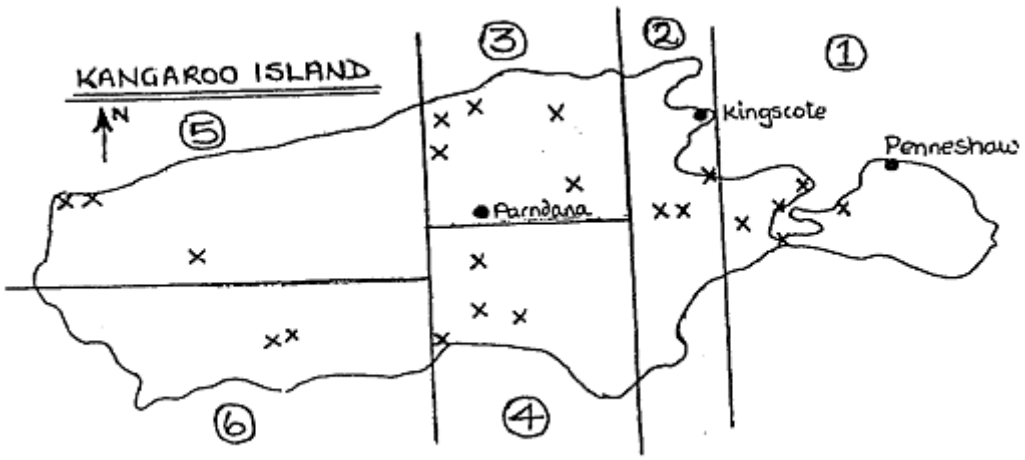
Surprisingly, in a very popular visitor area, there were a number of orchid species growing in the sand hills directly behind Vivonne Bay. *Caladenia cardiochila, C. latifolia* and *C. carnea* were all flowering, with leaves of *Microtis* sp., *Cyrtostylis robusta* and *Corybas* sp located. We drove around the bay to look back from Point Ellen. I went to look at some interesting rock formations, with so much faulting that rocks seemed to be pointing in all directions. Consequently, I was the only member to get drenched and frozen in a sudden hail storm as I battled my way back to the bus.

Rosellas on KI are of the crimson variety and a number were busy in the sugar gums at Kelly Hill caves, enlarging and tidying previous nest holes ready for breeding. We did not visit the caves, but walked through the surrounding bushland observing orchids. *Phythophthera cinnamonii* (root rot fungus) is currently quite predominant on the island and in a number of parks footwear cleaning stations had been set up to try to control the spread of this destructive organism. We found that Seddon Conservation Park had the

worst infestation, so we confined our visit here to a short stop. Here we found a *Caladenia* sp. we could not identify, buds way back in the leaf axil and the leaf broad, large, very dark and hairy. A couple of more advanced plants had small flower bud on hairy stems.
The main road to the south of KI has now been bituminised right through to Cape du Couedic and Admiral's Arch making travelling through Flinders Chase National Park easy. A new visitor information centre has recently been completed at Park HQ - so new it was not officially opened until a few days after our visit. Made of local limestone, it houses interesting displays and informative interpretations of KI. The park covers such a large area that little could be explored in two visits, one to the south, mainly for KI highlights such as Remarkable Rocks and Admiral's Arch and the other to the north. A recently instituted two hour walk at Cape Borda revealed a number of orchid species, including our only finding of *Thelymitra azurea*, as it wound through various vegetation types to end at the 'Oval', where former lighthouse keepers kept stock and grew vegetables. Everyone photographed a 60cm Rosenberg's goanna, warming itself in the sun whilst keeping a wary eye on the intruders.

A large number of orchid species along Seal Bay Road kept photographers so busy we abandoned a visit to the Bay itself. Close by, Little Sahara has high, white sand dunes, and behind these, still in sand *Caladenia carnea* were common amongst the ground-cover muntries (*Kunzea pomifera*). There were a number of *C. latifolia* here too, including albinos. A *Genoplesium* seedpod was thought to be *G. nigricans* and the *Pterostylis nana* growing almost on the dunes was a pointed-leaf form.
At Nepean Bay, *Leptoceras menziesii* were flowering freely in colonies of about 100 plants. Growing on limestone under coastal mallee is the only habitat where this species flowers well without fire stimulation.

All too soon our stay on KI was at an end. There is still plenty of KI remaining to search for orchid species eg Dudley Peninsular, much of Flinders Chase, the northwest coastline and wetland areas. We had found 44 species but would like to return to find more species and extend known locations. Many thanks from all participants go to Ken and Barb Bayley and Noleen and Allan Ridley for making this such a smoothly run and rewarding trip.



ORCHID LIST FOR KANGAROO ISLAND -
September 2002

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6
Acianthus caudatus	f	f	f	f	f	f
A. pusillus	fo				fo	
Caladenia cardiochila				f	f	
C. capillata	f			f	f	
C. carnea	f		f	f	f	f
C. deformis	f	f	f	f		
C. latifolia	f	f	f	f	f	f
C. ovata	f	f				
C. sanguinea	f		f	f	f	
C. tensa ssp. *Insularis*	f			f		
C. valida			f		f	f
C. sp.				b	l	l
Calochilus robertsonii			b			
Corybas despectans	s		s	s	s	
C. diemenicus					?l	
C. incurvus	fo					
C. sp.	l	l		l	l	l
Cyrtostylis robusta	fo	l	l	l	l	l
Diuris orientis	f	f	f	f	f	
Eriochilus cucullatus	l					
Genoplesium sp.		l		s?nigricans		
Leptoceras menziesii	f	f	l			
Leporella fimbriata					l	l
Microtis arenaria	f		f			
M. sp.	l	l	l	l	l	l
Prasophyllum elatum		b	l		l	
P. occidentale			f			
P. sp.		l	l			
Pterostylis dolicochila	fo/s			l		fo
P. nana (mallee form)	f	f	f/s		f/s	fo
P. nana (coastal form)	f					
P. nana (pointed-leaf form)				f/s		
P. nana (Hills form)					f	
P. nutans			f		f	
P. pedunculata	f		f		f	f
P. plumosa	f			b	f	f?tasmanica
P. sanguinea	fo	fo	fo	fo	fo	fo
P. smaragdyna	f		f	fo		
Pyrorchis nigricans	f	l	f	l	l	
Thelymitra antennifera		f	f	fo		f
T. azurea					b	
T. benthamiana	b	b	b		b	
T. flexuosa		f				f
T. juncifolia			f			
T. luteocilium	fo/s	f	f	f		f
T. megacalyptra	b		b	b	b	
T. pauciflora	b		b	b	b	b
T. pauciflora 'bracteata'			b			