Native Orchid Society of South Australia Inc.

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NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA INC.

P.O Box 565,
UNLEY S.A 5061

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

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

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NATIVE ORCHID SOCIETY

OF SOUTH AUSTRALIA INC

MAY 1996 Vol. 20. No. 4 JOURNAL

MAY MEETING

Tuesday, 28th May 8.00 pm; at St Matthews Hall, Bridge Street, Kensington Bruce Mules will speak on his favourite Epiphytes. Doors to the hall will be open at 7.15 pm for those wishing to borrow books from the library or take in items for the trading table.

DIARY DATES

May 26th Pterostylis obtusa field trip.
June 8th Last day for journal articles.
June 23rd Conservation Group - Belair.
Aug 10-11th Conservation Group Excursion - Potters Scrub.
Sept 26-30th Third Australasian Native Orchid Conference and Show - Flinders University. Hosted by NOSSA.

COMMITTEE MEETING

To be held at 7.30 pm Friday May 31st at the home of Ron Robjohns, Edmund St., Unley.

ON THE BENCH

Terrestrials: *Corybas hispidus, Eriochilus cucullatus* (2), *E. helenomos, Pterostylis revoluta, P. truncata* (2).

Epiphytes: *Bulbophyllum macphersonii, B. nanica, B. weinthalii, Dendrobium* Hilda Poxon, *D.* Ku-Ring-Gai, *D.* Debbie McFarlane x *tetragonum* x *falcorostrum, D.* Star of Gold.

George Nieuwenhoven gave the commentary on the Terrestrials

Reg Shooter spoke on the Epiphytes.

POPULAR VOTE:

Terrestrials: *Pterostylis truncata* grown at the Rogers House

Epiphytes: *Dendrobium* Debbie McFarlane x *tetragonum* x *falcorostrum* grown by S & B Meszaros.

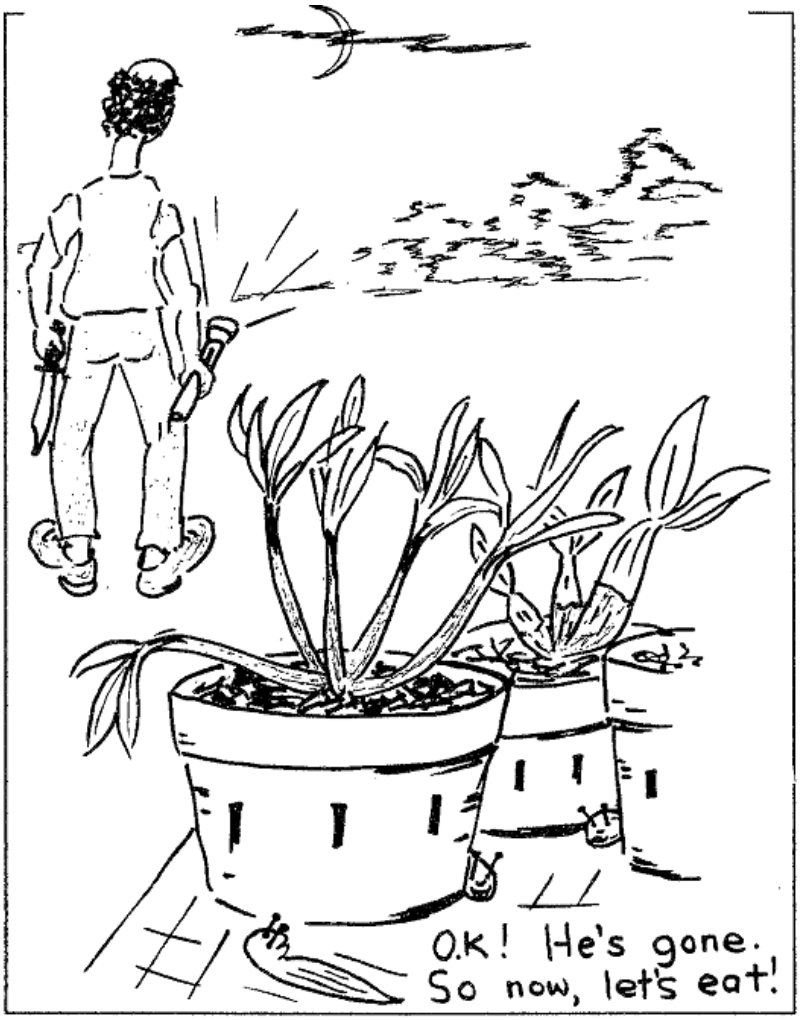
COMMENTATORS CHOICE:

Terrestrial Species: *Pterostylis truncata*

Epiphyte Species: *Bulbophyllum weinthalii*

Bulbophyllum nanicum was a species new to most of us. It actually comes from highland rainforests of New Guinea. The *Corybas hispidus* is becoming a 'regular' at April meetings. It comes from Victoria's north east which has just had record Feb - April rains. South Australian Corybas won't even germinate for one or two months yet!

Thanks to Thelma O'Neil for the cartoon.



COMING FIELD TRIPS

Sunday 26th May 11 am. *Pterostylis obtusa*
Meet at the Myponga turn-off from the Willunga-Mt Compass Road. Bring a picnic lunch and hope this not often seen orchid will be found.

Sunday 23rd June *Corybas unguiculatus* A repeat of a very successful trip held last year. Details next journal.

CONSERVATION EVENTS FOR 1996 by KAREN POSSINGHAM

June 23rd, (Sun) Belair monitoring project - 10am meet Information Centre.

August 10th/11th Potters Scrub/*Pterostylis arenicola* trip.
(Sat/Sun) Birgitte has arranged a weekend on the Coorong. Event with the Threatened Plant Action Group and NOSSA to control Bridal Creeper. Accommodation at Noonamena Lodge is FREE! (BYO food and sleeping bags). Contact Karen 364 0671 if interested.

August 25th (Sun) Belair monitoring project combined with *Pterostylis cucullata* inspection.

September 15th (Sun) Scott Creek threatened orchid population monitoring. 10am car- park. Native Conservation Society.

October 5th/6th Gum Lagoon survey. An opportunity to locate *Thelymitra* (Sat/Sun) *epipactoides*. Details to be confirmed.

October 13th (Sun) Belair monitoring project,

November 10th (Sun) Kuitpo - *Monadenia* weeding (monitoring) and duck orchid survey. 10am car-park.

November 17th (Sun) Grange Golf course - weeding.

December 8th (Sun) Belair monitoring project.

ANNUAL DINNER: This was held at the Buckingham Arms on May 3rd and was our best attended yet. There was a superb smorgasbord, convivial company and some in depth Orchid discussion.

JOURNAL ARTICLES: We are short on original articles of all kinds. We also need photos of society events and personalities!

NOSSA SURVEY FOR 1996

This year the society is surveying the orchids of Totness Conservation Park. This park straddles the Mt Barker Freeway just before the Mt Barker turnoff. It is not well known for its orchids and we have never had an excursion there despite it being just 20 minutes from Adelaide.

It does however have the typical Adelaide Hills orchids and these have not previously been mapped in this park. If you wish to help, ring Bob Bates who is co-ordinating the survey. A full day excursion is likely in August.

EXCURSION REPORT: MOUNT COMPASS SWAMP BOARD WALK by B.G.

We met at the gate to the board walk which was set up only 2 years ago as a Mount Compass Area School project. Over 5000 separate boards were used to construct the walk, through dense swamp thickets and reeds. There are bird hides to study the emu wren and markers to accompany the brochure. As our guide's car had 'broken down' we were on our own but the orchids grew right on the edge of the board walk. Not a lot of them - just a few pink *Spiranthes*, a *Cryptostylis* and half dead *Microtis parviflora*, The swamp is not in its natural state so these orchids had to be survivors! We argued about some *Thelymitra* seed pods and reached the conclusion that they were *Thelymitra cyanea*, the veined sun orchid, and one of the most restricted orchids in South Australia as it grows only in a few swamps within 10km of Mt Compass!

The event was more a social gathering than an orchid hunt. We knew that we couldn't expect too much at this time of year but as we were staying locally overnight we rang 'Gary Guide' for instructions. He sent us to the Emu Wren Swamp at Tooperang, to a private heritage area on Cleland Road and to Yundi lower swamp.

At the first site we found 80 cm tall white *Spiranthes* with labella having the appearance of ice crystals in the early morning light! There were more *Cryptostylis* here too.

On to Cleland Gully and in 'roo cropped rush tussocks in moss the tiny *Genoplesium ciliatum*. The first we had ever seen so we were excited. They were popping up under seed capsules of *Thelymitra holmesii* and buds of the swamp form of *Eriochilus cucullatus*.

Our final stop was at Yundi lower swamp near the banks of the River Finniss. In permanently wet sites almost bare mounds of sedges jutted out of the mud stirred up by cattle. On these grew the weird greenhood *Pterostylis* aff. *aphylla*. Compressed green fleshy flowers on fat stems only 4 to 5 cm high (these elongate after flowering). Apparently this species flowers only 10 to 14 days after the scape emerges, flowers last only 2 to 4 days and the pods split to release seed a month later at about the time leaf rosettes appear! Totally weird but that's the fascinating world of orchids.

Orchids seen:
Cryptostylis subulata (A,B,C); *Genoplesium ciliatum* (C); *Microtis parviflora* (A,D); *Pterostylis* aff. *aphylla* ,*Spiranthes sinensis* (A,B,D); *Spiranthes* aff. *sinensis* (white) (B).

Buds seen:
Eriochilus sp. (C)

Seed seen:
Thelymitra cyanea (A); *T. holmesii* (C)

(A=Board Walk; B=Tooperang; C=Cleland Gully; D=Yundi)

FIELD TRIP REPORT: GENOPLESIUM SPECIAL by LARRY LEADER
April 21st, 1996

The hills looked bare and dusty as we coasted down to Monarto South on the cool morning of April 21st. An interesting plant near the post office was *Ecballium*, the squirt melon. We amused ourselves touching the fruits which ejaculated their seeds with quite explosive force.

Our first stop was made 4 km south of town in mallee-broombush - native pine woodland which had been rolled 20 to 30 years earlier and allowed to regenerate. We were instantly successful in finding a thriving colony of the mallee midge orchid *Genoplesium nigricans* with its green flowers and contrasting purple-black labellum. This find was followed up with a second *Genoplesium* species, *G.* aff. *rufum* with narrow dull-coloured flowers growing with *Eriochilus*.

We moved on to Ferries MacDonald Conservation Park. The area was extremely dry and very few poor looking *G. nigricans* were seen but we did see our third *Genoplesium* - the red flowered *G.* aff. *rufum* "short segments". Our most exciting find was a 40 cm long scaly, legless reptile which members tried to pat despite the fact that this reptile was poking its tongue out at us. If you think we were crazy trying to touch such a creature think again. This was the rare and beautiful legless lizard *Delma fraseri* (Australia's largest legless lizard).

We dodged a shower and drove to the southwest corner or the park to look at a colony of the mallee form of *Eriochilus cucullatus*, some with pink-tinged flowers set almost at ground level. We met a really prickly character here, an echidna - no-one tried to pat this beauty.

We drove on, over dusty roads to Strathalbyn where a picnic lunch was had on the bank of the river,

After an aborted attempt to locate Ashbourne Conservation Park we drove to Scott Conservation Park where the best patches of Autumn orchids ever seen drew oohs and aahs of admiration. Thousands of *Genoplesium rufum* mixed with *Eriochilus cucullatus* and spectacular *Leporella fimbriata*. Other wildlife here consisted mostly of three or four species of *Myrrnecia* - stinging ants!

Our final stop was made at Cox's Scrub Conservation Park where we took the loop track looking for seed pods of the duck orchid *Paracaleana triens*. We found none but there were leaves of *Pyrorchis* and more flowers of *Leporella*.

Orchids seen: A: Monarto B: Ferries Mac C: adjacent Scott Conservation Park D: Cox's Scrub

In flower: *Eriochilus cucullatus* mallee form (B); *E. cucullatus* hills form (A,D); *Genoplesium nigricans* (A, B); *G. rufum* (C,D); *G.* aff. *rufum* 'short segments' (B); *G.* aff. *rufum* 'long segments' (A); *Leporella fimbriata* (C,D).

In seed, leaf or bud: *Acianthus pusillus* (C); *Caladenia filamentosa* (seed) (B); *Microtis* species, (C); *Pyrorchis* (C,D); *Pterostylis* species (C,D); *Thelymitra* (seed) (A,C,D).

Members present: 10.

SOME MORE THOUGHTS ON FIRES AND FLOWERS PART ONE by WINSOME & LES MCHUGH

During April's meeting discussion touched on stimulating flowering in terrestrials. With this article we will look at ways this can be achieved. Firstly we will look at each method individually.

• Bananas - involves storing dormant tubers in plastic bags with unripe bananas which give off ethylene gas triggering flowering. A well known method which I personally have not had success with but others have. It can be a bit messy but remembering to take out tubers seems to be the only downfall.

• Aspirin - dissolving aspirin in water and pouring onto pots. John Peace has successfully used this method. It is very easy to do and quick for a large number of pots.

• Burning Pots. - Western Australian growers use this method with good results. To quote one grower "pots are buried one inch below the soil surface and covered with a couple of inches of pine needles." This helps keep the tubers cool and from drying out. During February/March he burns the needles and digs up the pots after the first rains. Labour intensive but the closest method to what happens in the bush. We have tried this method this year, details later.

• Fire Water - another Western Australian idea. Smoke from leaf litter is bubbled through water creating a soup of ash and dissolved gasses. The water is then poured onto pots. Again can be messy but something I observed last autumn could apply to the aspirin and this method. While looking at some scrub which was burnt two months previously the area still smelt heavily of smoke. Visiting after the first good rains the smell was gone. Where had all the scent gone? Well washed onto the soil of course. Could this washing in be as critical as the fire itself and are the mycorrhizal fungi stimulated? We are also trying this method.

• Bee Smoker - again a Western Australian idea, boy have they been busy over there. Details are sketchy but the method seems to involve leaf litter smoke applied directly onto dormant tubers using a bee smoker.

PART TWO NEXT MONTH.

CONGRATULATIONS to Les & Winsome McHugh on the birth of their first child Natasha Beth on May 1st,

CONGRATULATIONS also to the other Les (Nesbitt) and his wife on the birth of their first child, Eric.

GOVERNMENT PRINTERS HANDBOOK SELLOUT

The office of the South Australia government printers recently offloaded a million dollars worth of its handbooks and these have appeared in bookshops all over Adelaide at ridiculous prices. The 360 page Mosses of South Australia for example is selling at $1.95. Orchids of South Australia is available at $14.95 ie half price!

AN ECOLOGIST'S VIEW OF *MONADENIA BRACTEATA* IN SOUTH AUSTRALIA

by ANN PRESCOTT

I am a professional ecologist. I have been involved in the campaign to eradicate the African Weed-Orchid *Monadenia bracteata* from the Adelaide Hills. Why did I choose this action?

Ecology is the scientific study of what organisms and individuals exist in the natural world, and how and why these different organisms interact. This, in turn, is used to develop some basic principles about natural systems and to be able to predict what will happen if we make changes to it, based on such information as we can gather. I would like to outline the processes and the information that I used to make the decision about what I would do with respect to *Monadenia bracteata* in South Australia.

The Process

There are several major threats to the long term survival of our native orchid species under current European land use practices. The most damaging is clearing and changing the land use to agriculture. A second is the grazing pressure of introduced animals on native scrub and a third of these is competition for resources between native species and species brought here by Europeans. Let me expand.

Of these three threats, clearing. grazing and competition, it is competition which is of most concern with *Monadenia bracteata*.

Competition is a fight between individuals and between species. It is a fight for sufficient resources of sunlight, nutrients, space and water to allow for adequate growth and vigour to produce seeds or tubers for the next generation. There will be a physical limit to the number of individuals or the number of species that can survive in a given area determined by the amount of resources that can be scrounged. Good 'scroungers' will be successful competitors.

Competiton can have three outcomes:

1) the new invader can be unsuccessful and die out

2) the invader and native species jostle for position and both survive in some form in a changed habitat.

3) the invader can make one or more of the original species extinct as they effectively outcompete the native species for resources.

If you cut a cross section through the soil, you see the roots, corms, rhizomes and tubers of plants all co-existing. These tubers and roots etc will be competing for the limited space, water and nutrients available in the soils. If a very aggressive plant such as *Monadenia bracteata* with no 'enemies' in the way of grubs or insect pests which eat it and with no 'special limiting requirements' such as unique mycorrhiza or unique insect pollinators, it will have a competitive advantage. So, instead of increasing the number of orchid species in the Adelaide Hills from 100 to 101, it is just as likely to decrease the number to 70 or 80 as the aggressive species out-competes other orchids.

The Information

Monadenia bracteata clearly has the capacity to spread rapidly and out-compete many other plants. Yes, it is apparently currently more common in grassy paddocks and 'disturbed' areas in the Hills such as previously cleared areas and firebreaks. Others might argue that the first and second of the three competition outcomes is prevailing. That is, *Monadenia bracteata* is noncompetitive in native scrub and is jostling for position in degraded areas.

But lets take the argument a bit further. I ask myself the question, "Would a *Monadenia bracteata* seed in a grassland of introduced grasses germinate the same way in a grassland of native grasses?" As an ecologist I predict that *Monadenia bracteata* will become established in native grasslands, one of the rarest and most biologically valuable types of habitats in South Australia and where some of the rarest orchids and other understory species occur. I must also assume that there is a high probability that *Monadenia bracteata* will make one or more native species extinct by aggressive competition.

Monadenia bracteata has already been found in the close vicinity of nationally declared rare and endangered species such as *Psoralea parva* (small scurf-pea) and *Drosera praefolia* (Tepper's sundew).

I believe that it is irresponsible, on the one hand, to bemoan the demise of the native orchids and natural habitats, particularly those which are rare and endangered, and then to take a 'it doesn't matter' attitude to one of the three major threats to orchids, that of competition.

This is why I have been concerned about *Monadenia bracteata* establishing in South Australia and what motivated me to join the program to eradicate this species before it took hold.

One of the first decisions in an eradication program is to consider whether eradication (rather than a control program) is a viable option. This occurs in at least two cases:

> Option one: when the economic devastation that it could cause makes it imperative to eradicate it. An example would be foot and mouth disease or exotic *Orobanche* (broomrape) species parasitic on economic crops.
>
> Option two: when there are very few individuals so that it would be possible to eradicate it completely with limited resources and/or time, as a precautionary measure.

I spent many many hours, in many locations in the Adelaide Hills during the mid 1980's, looking for the species that are included in my book Its Blue With Five Petals: Wildflowers of the Adelaide Region. I did not see a single plant of *Monadenia bracteata* in the wild during those years. The first Herbarium record was lodged in 1988. So unless information to the contrary was forthcoming, I could reasonably assume that there were a few infestations of a limited size of this weed orchid and that eradication under the second option above was possible.

The methods used in the eradication program and ultimately the decision to undertake the program in the first instance were designed on the information available to ecologists.

The Realities

In locations where eradication work has been carried out for the last four years, I believe that the infestations have been contained, with 95% of plants being pulled or dug before seed set and a shift in plants found, from flowering specimens to juveniles. In these areas, the design of the campaign appears sound and indicates that volunteer time was generally well spent. The fight is being won in these areas.

The following numbers of plants have been dug or pulled. In the 1993 season - 55 267 plants, in 1994 - 51 522 plants, in 1995, 81 928 plants.

However, in 1995-96 over 500,000 plants of *Monadenia bracteata* were dug, pulled or sprayed in the Adelaide Hills. It is this years work, in the end, which has made it apparent to me that the original information about the locations of the populations of *Monadenia*

bracteata, the number of infestations, and the size of the infestations available to the ecological community was not the same as the information available in other segments of the community. The infestations were more widespread and more established than oulined at the time the campaign was designed. NOSSA Vol 20(3), 1996 would appear to bear this out.

The Future

Let us assume that the fight against total eradication of *Monadenia bracteata* before it becomes established in South Australia has been lost.

What can we learn from this?

It is important that if other eradication campaigns against threats to native orchids are to succeed in the future, improved communication about ecological processes in one direction and improved transfer of information in the other will be needed.

Not understanding ecological processes and/or not caring about them guarantees that rare and endangered orchid species will continue to become extinct. Do you care? I do!

Editors Note
A recent letter from Jeff Jeanes, author of the book Orchids of Victoria confirms that *Monadenia bracteata* has already been found escaped from cultivation close to Melbourne. Lets hope this infestation can be quickly eradicated as it is at this stage small.

ENDANGERED SPECIES RECOVERY PROJECT by R. BATES
Caladenia behrii, C. gladiolata & *C. rigida*

Work done by NOSSA members in April 1996 includes:

1. Sowing bush collected seed at sites in Scott Creek Conservation Park and raking over sites to improve germination chances this season. (Project officer).

2. On April 28th tubers of all three species (which came from flask germinated seed) were planted in a private reserve at Cherry Gardens. This reserve once had *C. behrii* and *C. rigida* growing on it. A. total of 40 tubers were planted at a site which can easily be managed by the landholder. (Kate Hoskins and Project officer).

3. Continued weed removal and management at the Millbrook *Caladenia rigida* sites, (Pat & Peter Clark).

AUSTRALIAN *DENDROBIUM* NO. 17 by MARK PHILIPS
Dendrobium linguiforme Sw
The name linguiforme means tongue-shaped in reference to the thick obovate leaves.

D. linguiforme is widespread and common all along the east coast of Australia from the Victorian border to Cairns, on trees, rock faces and outcrops. It occurs from sea level to the summits of coastal ranges and is most plentiful in the sandstone belt. It is tolerant of heat, drought and cold, no doubt the leathery leaves help it to withstand the elements. Leaves can desiccate in dry times then fill up with water quickly after rain.

D. linguiforme has beautiful, white, feathery flowers and is both easy to grow and common in cultivation, on tree fern or cork and even in shallow pots of scoria. In Adelaide it is occasionally seen attached to trees and is in flower at the time of our shows. Both the variety *linguiforme* and var. *nugentii* are grown in Adelaide.

Dendrobium linguiforme

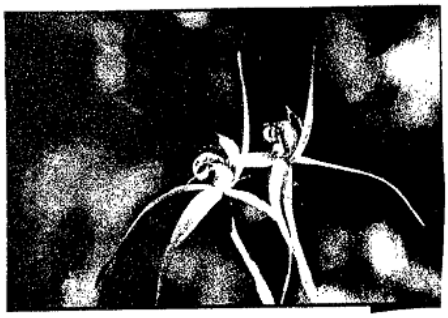
IMAGINE IF WE FOUND A TREASURE IN YOUR BACKYARD ...

Dear Friend of Trees For Life

The White Spider Orchid *(Caladenia rigida - pictured at right)* is precious - and it's yours. Unique to Australia, and nationally endangered, this plant has been found at two of our Bushcare sites. I am writing to ask for your help in saving it.

This is a very tough and beautiful plant. It has evolved over thousands of years in our harsh climate. Human activity is hastening its decline.

All over South Australia, small remnants of bush are fighting for survival. Plants and creatures silently disappear as we build new roads and houses. Introduced pests are gaining a stranglehold. This year, more areas of bush will vanish.



PROTECTED by Bushcare -
White Spider Orchid Caladenia rigida
Photo: Dieter Hofacker