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of the
Native Orchid Society
of
South Australia Inc

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NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA

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www.nossa.org.au.

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 of the management committee, no person may represent the Society on any matter. All native orchids are protected 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.

JUNE 2009 VOL. 33 NO 5

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The Native Orchid Society of South Australia meets every 4th Tuesday of the months February -November

NEXT MEETING 23 JUNE 2009

Tuesday, 23 June, St Matthew's Hall, Bridge Street, Kensington. Meeting starts at 8:00 pm. Doors to the hall will be open from 7:15 p.m. to allow Members access to the Library and the trading table.

The speaker for June is Ron Parish, speaking on "Orchids from around the World.

DIARY DATES

Sat 27th June Winter orchids: Myponga at 10am. *Anzybas, Acianthus, Diplodium*
Wed. July 15th Morialta and Waterfall Gully: meet at Morialta at 10am
19th -20th September Spring Show
Sunday 29th November Annual BBQ

NEXT COMMITTEE MEETING

Thurs, 25th June at the home of Bodo Jensen**.** Meeting commences at 7:30 p.m.

MAY MEETING

Plants Benched
Epiphyte Species: *Dendrobium bigibbum* (7 plants)*; Dendrobium lihocola* (5 plants)*; Liparis reflexa.*
Epiphyte Hybrids: *Dendrobium* Avrils Gold.
Terrestrial Species: *Acianthus pusillus*; *Diplodium alatum; Diplodium laxum; Diplodium obtusum*; *Diplodium robustum; Diplodium truncatum.*
Terrestrial Hybrids: *Pterostylis revoluta* x Rogoff; *Pterostylis* x Furcillata; *Pterostylis* x Toveyana.

Judging Results

Open division species	**Grower**
1st *Liparis reflexa*	Steve Howard
2nd *Dendrobium bigibbum*	Bodo Jensen
3rd *Dendrobium bigibbum* 'Mitchell x Beauty'	Bodo Jensen
Open division Hybrids	
1st *Dendrobium* Avrils Gold	P & M Hockey
No 2nd or 3rd	
Open division Terrestrial species	
1st *Diplodium laxum*	Les Nesbitt
2nd *Diplodium truncatum*	Les Nesbitt
3rd *Diplodium laxum*	M & L Guy
Second division Terrestrial species	
1st *Diplodium robusta*	Janet Adams
2nd *Acianthus pusillus*	R & R Lawrence
3rd *Acianthus pusillus*	R & R Lawrence
Open division Terrestrial Hybrid	
1st *Pterostylis* x Toveyana	M & L Guy
2nd *Pterostylis* x Toveyana	Les Burgess
3rd *Pterostylis revoluta* x Rogoff	Les Nesbitt

Popular vote results

Open division Epiphyte species		
Dendrobium bigibbum		Bodo Jensen
Open division hybrid		
Dendrobium Avrils Gold		P & M Hockey
Open Division Terrestrial species		
Diplodium laxum	equal place	Les Nesbitt
Diplodium truncatum	equal place	Les Nesbitt
Second division Terrestrial species		
Diplodium robustum		Jan Adams
Open division Terrestrial Hybrid		
Pterostylis Trunkfish		Les Burgess
Plant of the night		
Diplodium laxum		Les Nesbitt

Plant commentary on Terrestrials given by Les Burgess & on Epiphytes by Reg Shooter

MAY SPEAKER

Andrew Moriarty gave a talk which he entitled "My Hill". He gave a well thought out Power Point presentation showing many aspects of the hill behind where he lives near Kersbrook. He commenced with some history of the block, then many of the native plant species present, the orchids of which there is a good diversity including the rare *Arachnorchis rigida*, some orchids rescued from Kuitpo and finally management and weeds. [Cathy Houston]

FOR YOUR INFORMATION - NOSSA NEWS

N.O.S.S.A. FIELD TRIPS

NOSSA Survey Park for 2009

NOSSA Survey Park for 2009 is Porter Scrub CP, south of Gumeracha (between Lobethal and Gumeracha). The gate to the mountain top park is on Maidment Road at its intersection with Lihou Road. There are plenty of tracks to walk.

There is no special day to visit, although we will include it in our Sun-orchid special to Lobethal at the end of October. NOSSA members are invited to visit any time to list and photograph the orchids they see. An incidental visit at the end of May revealed *Eriochilus* and midge orchids in flower so we expect there will be plenty of other orchids in season. R. Bates Field trip Coordinator" Anyone interested in helping on this survey should ring me on 82515251.

NOSSA is also surveying Wirrabara Forest in the Flinders Ranges but it is nice to have a local park near the City to survey for those not prepared to travel so far!
R. Bates"

Field trips in June-July

Weeding activity

Enquiries: Cathy Houston, ph: 83567356

June 27th: meet Myponga shops at 10am. We will be looking for greenhoods, mossie orchids and helmet orchids. Be prepared for walking in the wet. Lunch in the local bakery.

Enquiries: Contact Bob Bates

Wednesday July 15th **Morialta and Waterfall Gully**: meet at Morialta at 10am

The Next NOSSA judges meeting will be **Saturday 27 June** at 18 Cambridge St Vale Park at 9.30am.

I have a disc of ANOS awards to be viewed.

There will be no meeting in early July because of clashes with other orchid winter shows.

EXCITING NEWS

A new population of the Critically Endangered Hindmarsh Valley Greenhood (*Pterostyils bryophila)* has been discovered on private land near Victor Harbor. This discovery is very important because it extends the known range of this extremely rare endemic species. It also means it is no longer restricted to the Hindmarsh Valley.

ARTICLES/ITEMS FOR THE NEXT JOURNAL
Closing date is Friday 10th July

Terrestrial Tips for July

Les Nesbitt

July is traditionally cold, cloudy and wet. Hail storms are a possibility so ensure your terrestrials cannot be hit and cut to pieces by hailstones. Pots can get too much water this month and become waterlogged. I fill my pots to the rim with mix so that excess water runs off. A very open mix allows water to run through and out the drainage holes but needs more watering in summer to prevent tuber shrivel. Good air movement over the pots helps dry off the leaves on the drier days to kill off the rots. Move pots if drips are boring holes in them. Plants can take full sun at this time of year as there is no chance of burn.

It is too cold to deflask in July. It is better to wait until at least mid August.
Corybas are showing and some have buds inside the unrolling leaves, which indicate they are likely to be in flower by month end. *Pterostylis foliata* is poking through at last at the same time as the *Corybas*. These species remain below ground until the winter cold and wet has surely arrived. *Pterostylis nana and Ptst. sanguinea* bloom this month. There will be no buds on *Pyrorchis nigricans* or *Leptoceras menziesii* unless the dormant tubers were treated last summer.

All healthy plants should be up by the middle of July. Plants not up are probably dead. Apparently empty pots can be knocked out to try to establish the cause of death. White starchy blobs indicate that the tubers shrivelled up in summer/autumn. Black slime or no sign at all means the tubers have rotted away. If the tubers are still there but have no shoots, the shoot has been broken off or rotted. Pot them up again as they can possibly make new tubers without making a leaf this year.

Keep a look out for slugs, snails and grubs. They just love orchids, especially the rare ones. July is the time for winter shows. Visit one or two. There are always interesting natives tucked away amongst the exotic orchids. You might find something interesting on the trading table if you are early enough.

The lovely image of *Pheladenia* in the May electronic journal was by June Niejalke. June made this composite picture from two separate clumps of these blue fairies.

GASTRODIA SESAMOIDES VISITED BY BEES

Cath & Malcolm Houston

On a warm spring afternoon (maximum 29°C) the authors visited Kuitpo Native Forest to observe and photograph *Gastrodia sesamoides.* The perfume exuded from these flowers was very apparent, even from a distance. There were many flowers at the height of their blooming time, some standing as individuals, others were in groups, sometimes with as many as 50 in a group.

Small native bees were observed flying around groups of flowers. They were seen visiting the flowers between the hours 4p.m. to 5:15p.m. South Australian summer time. An individual would enter a flower and remain inside for a varying length of time. Sometimes it emerged almost immediately, on other occasions it would be inside for up to a minute or more. The insect was small enough to turn around inside the tubular flower, because it would then be seen to emerge head first under the labellum and usually leave quickly. It was hoped they may be pollinators although their small size did not seem likely for that. It is believed that occasionally one was seen with pollinia on its back. None were observed with pollinia by one author. However, there was a suggestion of yellow towards the back legs. When the bees stayed inside for a longer time they could be seen to be "working" on the front underside of the labellum with their mandibles. Taking advantage of one such insect staying longer it was scrutinised with a x10 magnifying hand lens. The bee appeared to have some pollen on its back legs. Bates in Orchids of South Australia (2008) says that rewards are provided in the form of fine sugary pseudo-pollen produced from the labellum callus. The bees had a black head and thorax with a medium-bright red abdomen which had suffused dark bands around it. The legs were dark with the hind ones being brownish and very hairy.

At about the same time a large black wasp was observed "visiting" *Arachnorchis tentaculata* of which there were about fifteen in flower, many of them still being fresh. There were four or five which had obviously been visited before, as seen by the broken hinge on the labellum or in one case the broken stem of a double flowered specimen. This wasp was seen to "visit" about ten times but on no occasion did it alight on the flower for more than a couple of seconds and towards the end it did not alight at all, merely flying close over the flower and then departing. The visits were broken up by varying time intervals during which time the wasp had flown away. It is believed that this was a wasp which had visited flowers before and been duped into pseudo-copulation and was now more wary of the flowers, but still attracted every so often by the allemone of the orchid.

On a warm day such as this, there is obviously still plenty of insect activity around orchid flowers at a relatively late time in the afternoon.

Reference: Bates, Orchids of South Australia, 2008, 2nd Edition. N.O.S.S.A.

The bees on the photographs are *Exoneura* sp. (Anthophoridae: Xylocopinae), common name reed bee. Identified from the photos by Remko Leijs, Entomologist at the South Australian Museum

Amazing midge orchids of the Nullarbor

R. Bates

Until 2009 the westerly distribution of midge orchids *(Corunastylis*) in South Australia was thought to stop well before Ceduna on the west coast. No collections at the state herbarium are from further west than about Venus Bay.
That has changed following a recent trip to the Nullarbor Plain (April 28th-May 4th) after a wetter than average summer-autumn period.

As the country is mostly cleared our first stop was made well west of Ceduna on the highway before Penong at a small patch of mallee on calcareous soils. About twenty midge orchids growing with grey daisy *Cratystylis* sp. The flowers were tiny, maroon suffused with green, the segments with white edging and matched with the undescribed *Corunastylis* sp Intermediate in the orchids of south Australia CD.

We headed on 150km further west down the highway, past Nundroo and the Yalata Aboriginal lands and stopped at the Red-gate track south to the Head of Bight sand hills about 40 km from Nullarbor Roadhouse. Just in from the gate itself in very powdery limestone dust were plenty of midge orchids, most finished but those still in bloom were the same as those near Penong; and there were more at the roadside picnic area further west. By now we were really excited as we were finding midge orchids more than 200km west of where they had previously been seen.

The next day we enjoyed whale watching from the Bunda cliffs and were on the Nullarbor proper, eventually making it to the Border Village without finding any more midge orchids. The mallee near the border is known to have two greenhood orchid species ie *Hymenochilus pisinnus* and an *Oligochaetochilus.* I suspect there are midge orchids too but we were doing the tourist thing and visiting more coastal cliffs and sand-hills. We did however see about a dozen species of plant not in the latest census of South Australian Plants including a few undescribed ones.

On the fourth day we tried some of the tracks north to the scattered communications towers and near one of these a few midge orchids in seed. We had now extended the known range of *Corunastylis* in SA by 500km.

On the way back to Ceduna we made many more stops and found many more midges. Our most productive site was on a hill on the coast track west of Coorabie. Here we found two species flowering together right by the roadside. One was the same as the maroon *C.* sp Intermediate, the other was even smaller with red and green flowers similar to C. *tepperi* but of quite a different shape. See image above.

We looked in several conservation parks but these had no midge orchids at all, thereby proving the local farmers right when they had told us 'national parks are just the shit country that farmers can't use'. Sad but true, our national parks only go part of the way toward protecting our native plants, mostly the same common ones.
We also noted large numbers of wild ponies and Barbary sheep roaming the local parks. At least it made a change from feral goats.

Thanks to Matilda for company on this trip.

GPS readings are available from R. Bates for any-one who wants to photograph these species next April.

Symbiotic Germination of Spider Orchids

Kris Kopicki

Wouldn't it be fantastic to have a pot full of *Arachnorchis* (*Caladenia*) *behrii*? Growing our native spider orchids, or most of our fungus dependent terrestrial orchids for that matter, has proven to be quite a challenge. Having a Maths/ Science/ Engineering background, I'm a problem solver at heart, and for me this is one big irresistible problem waiting to be solved. I am by no means an expert on this subject, having growing native orchids for only 5 years now, I consider myself an amateur. Nonetheless, I thought some of my ideas might be helpful in your propagation of these challenging plants, or at the very least get you thinking.

As a problem solver, I do a lot of research, constantly analysing to find better ways of doing things. While collecting seed from my plants last year I had an idea based on some research that I had read many years ago (see reference). Up until now, I've been using the common practice of sowing seed around parent plants, with frequent misting to promote germination. The results tended to be a bit variable, but germination usually did occur. Germination and plant development seemed quite slow compared with what is possible in laboratories. So what if I applied some of the ideas from the in-vitro research to my own propagation?

The finding of the research that got me thinking was of soil fungi growth being substantially inhibited by exposure to light, even low light. So the surface of a pot is quite an inhospitable place to a soil fungus. So why is this an issue, just bury the seeds right? If you've ever looked at an orchid seed before, you'll notice that they are very fine, like dust. This is because the seed contains very little if any source of nutrient to sustain the young seedling until it is capable of photosynthesising to produce its own

food. A seed that is under the soil requires energy to grow to the surface, only then can it start photosynthesising. The closer the orchid is to the surface, the less energy it will need to expend in getting there. That energy can then be put into protocorm (a fancy name for a mass of cells that will eventually become the plant's tuber) development, creating a larger, healthier plant.

Now remember that an orchid seed has no source of nutrients available at its disposal. The germination process is a complex one, but essentially the cells of the tiny orchid seed are infiltrated by a compatible soil fungus (known as a mycorrhizal fungus), which then supplies the orchid with a source of nutrients. And so the germination process begins.

It occurred to me that I should really be providing conditions that are favourable to the soil fungus pre-germination, then adjusting the conditions to suit the orchid once growth has begun. Essentially I'm growing mushrooms. I should point out that this is not a rigorously checked scientific experiment, it is meant to be a proof of concept. I begun by collecting the soil fungus. This was obtained by removing some of the soil surface from the pots of parent plants, mixing with fresh soil and spreading on the top of the pots to be used for germination. I use a mix of 50% Tea Tree mulch and 50% sandy loam. I've found the Tea Tree mulch gives a good soil PH for our acid loving species. I then dusted the seed on the surface of the pots and watered with rainwater. Two of the pots were placed in my shed, and the other two with the rest of my orchids under normal growing conditions.

The shed provides several benefits to the fungus. As is it enclosed, the pots are not exposed to air movement. This is very desirable for fungus development as the soil retains moisture for longer and the temperatures are elevated during our cold days. This is also helped greatly by the sun heating the walls. Then there is the most obvious benefit of total darkness, leaving the fungus free to roam the soil surface where the seeds lay. I sprayed the surface of pots every morning and evening to keep the soil surface damp, but not soaking wet.

Now the bit you're really waiting for, how did I go? After 7 weeks, the pots grown under normal conditions are not showing any visible signs of seedlings. I'm sure if I looked with a magnifying glass that I may find a few tiny protocorms developing. The pots grown under conditions favouring the soil fungi have seedlings with leaves of around 10mm long. This is quite a substantial difference. These plants have a very big head start before they go into dormancy later in the year, and so you would expect will be much larger and healthier. In turn, this should lead to better survival rates over summer, and shorten the time required to reach maturity, and hence produce those lovely flowers we are all obsessed with.

References

Cross, R., Royal Botanic Gardens Melbourne, (1997) Ex situ conservation of Caladenia - photoautotrophic micropropagation of Caladenia,
http://www.aff.org.au/Cross_Caladenia_final.pdf

Gerald McCraith AM (1909-2009)

Gerald McCraith AM, one of Australia's best known orchid growers, has died just three months after celebrating his one hundredth birthday. We offer our sympathy to his daughters June and Lois, and to his extended family, which includes seven grandchildren, eight great-grandchildren and three greatgreat grandchildren.

Born on 24 February 1909, Gerald did not have an easy life at first. He was a clever boy, winning a scholarship to Trinity Grammar School at age 14. However his parents could not afford the cost of his uniform and books, and so Gerald left school to work as a grocer's boy. By his early twenties Gerald had a wife (Nell) and two daughters to support. They survived the Great Depression by setting up a travelling library in Essendon, lending detective stories, westerns and romances to borrowers at threepence each per week.

At first Gerald carried the books in a handcart, then (when he could afford to buy them) on a pushbike, and eventually on a motorbike. Gerald spent World War 2 as an RAF signals instructor in Darwin, fortunately having been transferred there whilst en route to Singapore – otherwise he would have spent the war in a Japanese prisoner-of-war camp.

When he was demobilised in 1944, Gerald joined his brother Jack in the rabbit export business that eventually led to their prosperity. From the late 1940s to the mid 1950s McCraith Brothers exported an average of 32,000 rabbits to England each week.

Gerald began growing orchids in 1927, when he was only 18 years old. He bought Australian native Dendrobiums and Sarcochilus from a Victoria Market trader and other orchids from Basil Hodgins' nursery in Essendon.

In 1931 Basil invited Gerald to attend a meeting of the Victorian Orchid Club, which met every second month in those times. About 30-40 members attended the meetings, which were mostly held in an office building in the city. However, on one occasion the usual venue was unavailable, so the meeting was transferred to a garden shed in the Fitzroy Gardens. Gerald could still remember the occasion well ten years ago, because there were insufficient seats available and he had to spend the evening seated on a very cold iron garden roller!

In 1950 Gerald and his wife Nell built their house at 107 Roberts Street in Essendon, where Gerald lived until his death. The first of his two large glasshouses was built at the same time as the residence. Gerald served as President of the Victorian Orchid Club from 1959-1962 and assisted Sir John Hall-Best to form the Australian Orchid Council in 1960. He succeeded Sir John as President of that body in 1963 and played a large part in the organisation of the World Orchid Conference held in Sydney in 1969.

In 1974 Hermon Slade, Gerald and several other orchid enthusiasts founded the Australian Orchid Foundation with the major aim of raising money to support orchid research in Australia. Hermon Slade set the ball rolling with a donation of $10,000, while Gerald decided to raise funds by breeding Odontoglossum hybrids and selling flasks of the resultant seedlings. Over the following 25 years he raised over $70,000 for the Foundation in this way! In 1993 Gerald was made a Member in the General Division of the Order of Australia (AM) for his services to orchids.

Gerald made numerous trips abroad to see orchids in the wild – six trips to Central and South America, four to China and several to Papua New Guinea. Most of these strenuous expeditions were undertaken after he was 80 years old, several of them after he was fitted with a heart pacemaker at age 87. Incidentally, Gerald wore that pacemaker out, and had another fitted in July 2006!

Species orchids were Gerald's great favourites. He had a large and diverse collection, which he regularly showed at the Orchid Species Society of Victoria's meetings until shortly before his death. All those who knew Gerald will fondly remember him.

Brian Milligan

From OSSV (Orchid Species Society of Victoria) Newsletter June 2009 with kind permission to reprint.


Dendrobium Avrils Gold


Dendrobium lithocola


Liparis reflexa

PLANTS BENCHED NOSSA MEETING MAY 2009—photos by Robert Lawrence

Diplodium laxum

Diplodium obtusum

Diplodium robustum

Diplodium truncatum

Pterostylis revoluta x Rogoff

Pterostylis x Furcillata

Pterostylis x Toveyana

PLANTS BENCHED NOSSA MEETING MAY 2009 — photos by Robert Lawrence