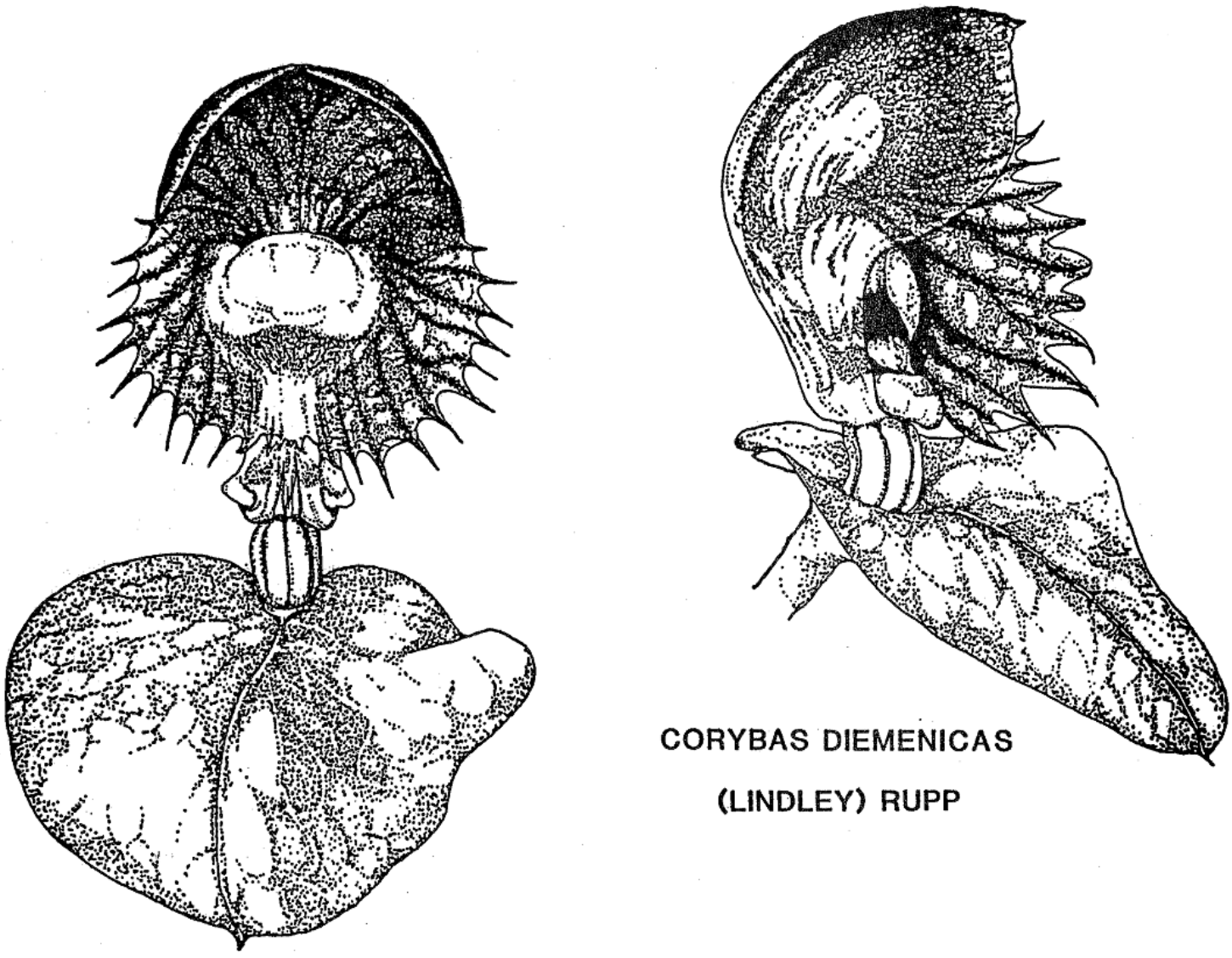
NATIVE ORCHID SOCIETY

of

SOUTH AUSTRALIA INC.

JOURNAL



CORYBAS DIEMENICAS

(LINDLEY) RUPP

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NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA INC.

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 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.

ALL NATIVE ORCHIDS ARE PROTECTED PLANTS IN THE WILD. THEIR COLLECTION WITHOUT WRITTEN GOVERNMENT PERMIT IS ILLEGAL.

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NOSSA INC.,
P.O. Box 565,
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Price 60 cents

NEXT MEETING

Tuesday, 27 June, 1989, at 8.00 p.m. - St. Matthews Hall, Bridge Street, Kensington.

Mr Noel Lothian, Patron of the Society and a former Director of the Botanic Gardens, will be the guest speaker.

COMING FIELD TRIPS

Reminder and Correction: and The "Corybas unguiculatus Special " is on this Sunday, June 25. Meet Kangarilla Store, 12.30 p.m. (Flat ground, short walk.)

Newland Head Conservation Park: Saturday, July 23. Meet at Park entrance adjacent Waitpinga Beach at 11.00 a.m. (Hiking distance about 5 km, some rough country, splendid views.)

We still urgently require a new Editor. Experience is not necessary. It involves attending committee meetings and taking a few notes at monthly meetings. Typing is not involved in the job. Please contact our Secretary. EDITOR

Those members wishing to order a copy of Wally Upton's new book should see the Secretary at the next meeting. A good discount will be available if five or more copies are ordered collectively. NEW BOOK

Tuber Bank Convenor for next Summer. No experience necessary. Previous Convenors will be happy to advise. Loads of fun! Lots of interesting new friends to be made. Please see the President next meeting. WANTED

MAY MEETING

PLANTS ON DISPLAY:

Terrestrials*: Pterostylis longipetala, P. truncata, P. cocinnea, P. pedoglossa, P. abrupta, P. vittata, P. obtusa, P. pulchella, P. ophioglossa, P. concava, P. alata, P. dolichochila, P. bicornis, P. angusta, P. russellii, P. baptistii, P. rogersii, P. x toveyana, P. x furcillata, P. abrupta x rogersii, P. ophioglossa x rogersii, Eriochilus cucullatus, Corybas pruinosus*.

Epiphytes: *Dendrobium bigibbum, D. bigibbum x dicuphum* (Merritt Island), *D. bifalce x tetragonum, D.* Hilda Poxon, *Cadetia taylorii, Bulbophyllum macphersonii, Prasophyllum parvifolium.*

POPULAR VOTE:

Terrestrials: *Pterostylis abrupta*, grown by Mr Les Nesbitt.

Epiphytes: *D.* Merritt Island, grown by Mr R. Shooter.

RESULTS OF JUDGING:

Terrestrial Species - *Pterostylis abrupta*, grown by Mr Les Nesbitt.
Terrestrial Hybrid - *P. abrupta* x *P. rogersii*, grown by Mr Les Nesbitt.
Epiphyte Species - *Cadetia taylori*, grown by Mr L. Chambers.
Epiphyte Hybrid - *D.* Hilda Poxon, grown by Mr L. Burgess.

COMMITTEE BRIEF

The Management Committee meeting was held at the President's residence on Friday, 26 May, with all members present except Mr G. Carne. A number of issues were discussed including:

1. A recommendation that NOSSA establish a cash grant of $4000 to the Adelaide Botanic Gardens to enable a number of specimen plants of Australian native orchids to be displayed in the new conservatory.

2. The donation of an extensive collection of reference material to the Society by the family of the late Mr Harold Goldsack. These works will be included in the NOSSA library and details of the reference material will be published in the Journal.

3. The annual September NOSSA show will be held at the Mitcham Girls High School and publicity posters and banners are to be produced.

Should any member have any issue which they would like considered by the Management Committee please contact any committee member.

D. R. Butler

SHADEHOUSE VISIT

Saturday - August 12

Saturday, August 12 has tentatively been set aside as a date. A further announcement will be made in the July Journal.

MAY JOURNAL

Our apologies for the non-inclusion of the article "The Genus *Eriochilus*". You will find it in this issue instead.

PTEROSTYLIS PEDOGLOSSA

Prawn Greenhood

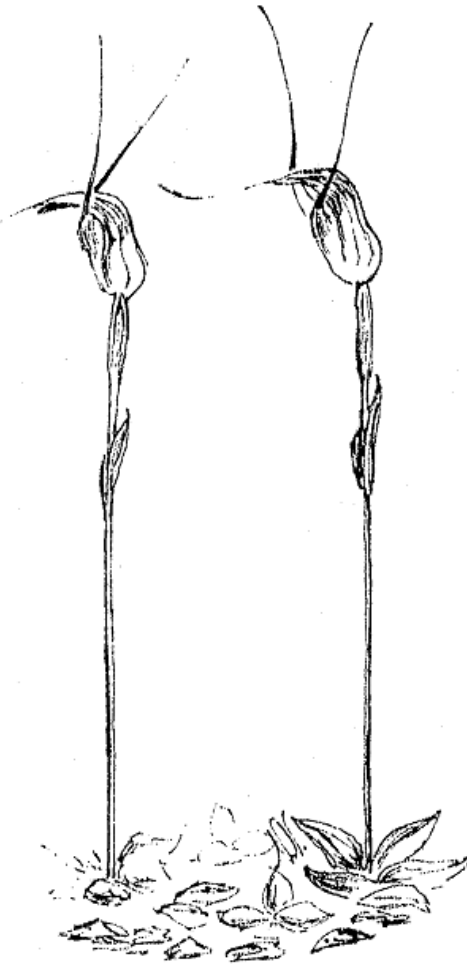
One of our more delicate little greenhoods, this gem is not the easiest species to grow well. It occurs in N.S.W., Victoria and Tasmania. Flowering occurs in Autumn.

It is somewhat unusual in that it comes up in late summer, produces a rosette and proceeds to put up a flower about May in cultivation in South Australia. In its natural habitat it is said to flower between March and July.

It forms a colony which can be large, although my experience in cultivation is that it is difficult to bring through our hot summer. Keeping it damp while dormant would rot the tubers so it probably enjoys a cool rest period, not unlike the coastal conditions in nature. A cool cellar would do nicely.

Tubers are not often available but if you can get hold of a few you are sure to enjoy the flowers when it bursts into bloom.

G.J. Nieuwenhoven



Pterostylis pedoglossa

WAYNE HARRIS - SECRETARY 1984-87

It's always a sad occasion when the Society loses one of its members, particularly when it's one who has worked so hard furthering the interests of Australian native orchids as Wayne Harris. No, Wayne has not died, just moved to Queensland (some would say there is not much difference!!!). Wayne was not a high profile performer, preferring to work in the background. He was a committee member for one year (1983-84), then when that long-serving Secretary Roy Hargreaves retired from the position Wayne took over. Roy's was a hard act to follow and the Society was extremely lucky to have such a replacement as Wayne, who, in his quiet way took over the reins without a hitch, serving as Secretary from 1984-87.

The Society had had a perennial problem getting articles typed for the Journal and Wayne arranged, with minimum expense, to get that done. He organised a venue for committee meetings which would be the envy of any Society and he could always be relied upon to have agendas, minutes, etc., available as required.

I do not want to give the impression that Wayne's interests were confined to the administrative side of the Society, he was a successful grower and exhibitor of all kinds of orchids. His main interest is in species and I am sure that he will continue to pursue that hobby in full, perhaps even to the extent of writing of his experiences in his new environment for our Journal.

The Society wishes Wayne, his wife Jean and their two children all the very best in their new home.

Reg Shooter

POPULAR CHOICE - *DENDROBIUM* MERRITT ISLAND

Dendrobium Merritt Island was selected by members as the popular choice at the meeting on 23 May. It is the type of orchid that asks to be loved, with its tall, stately pseudobulbs and long arching symmetrically arranged racemes of lilac flowers.

D. Merritt Island is an interesting hybrid being a mating of Australia's two phalaenanthe section dendrobiums, *D. bigibbum* and *D. dicuphum*.

D. bigibbum is, of course, the well known lovely Cooktown Orchid, indigenous to northern Queensland and New Guinea. *D. dicuphum* (more correctly known as *D. affine*) is to be found in the northern parts of the Northern Territory and northern Western Australia. The flowers of *D. affine* are similar in shape to *D. bigibbum* but much smaller. The petals and sepals are white with a dark purple labellum. This dark labellum is very dominant in hybrids, using *D. dicuphum* as a parent. I have several crosses of dicuphum all of which have this dark attractive labellum.

Both species have long racemes of up to 20 flowers so it is reasonable to expect the hybrid to produce the same. The plant exhibited had two spikes, only one in flower. This had exactly 20 flowers or to be more correct 14 flowers and 6 buds which have subsequently opened and look a picture in the glasshouse. Yes, I'm afraid that to grow and flower this hybrid successfully you will need some protection and a little heat in the winter - minimum of 12°C, better if it's 15°C.

Like most dendrobiums it does best in a smallish pot. The compost can consist of pine or fir bark, charcoal, isolite beads, pebbles or a mixture of any of them. I am often asked what compost I use and find it difficult to answer as I use whatever I have handy at the time. I believe the compost is only used to hold the plant upright and to retain a moist atmosphere around the root area (I'm talking here of epiphytic orchids of course) and really any material that is not toxic can be used. You may of course have to adjust your watering and feeding routine depending on the material used, some is more water retentive than others and over watering is anathema to any orchid.

D. Merritt Island is a rewarding orchid to grow as the flower lasts up to 6 weeks in good condition. The second of the two spikes on my plant is just opening up and should be in full flower for the June meeting. On mornings such as this when the temperature outside is struggling to reach 12°C and is drizzling light rain, it is a pleasure to shut myself in the glasshouse and experience a little of the tropics with *D.* Merritt Island.

Reg Shooter

THE GENUS *ERIOCHILUS* R.Br.

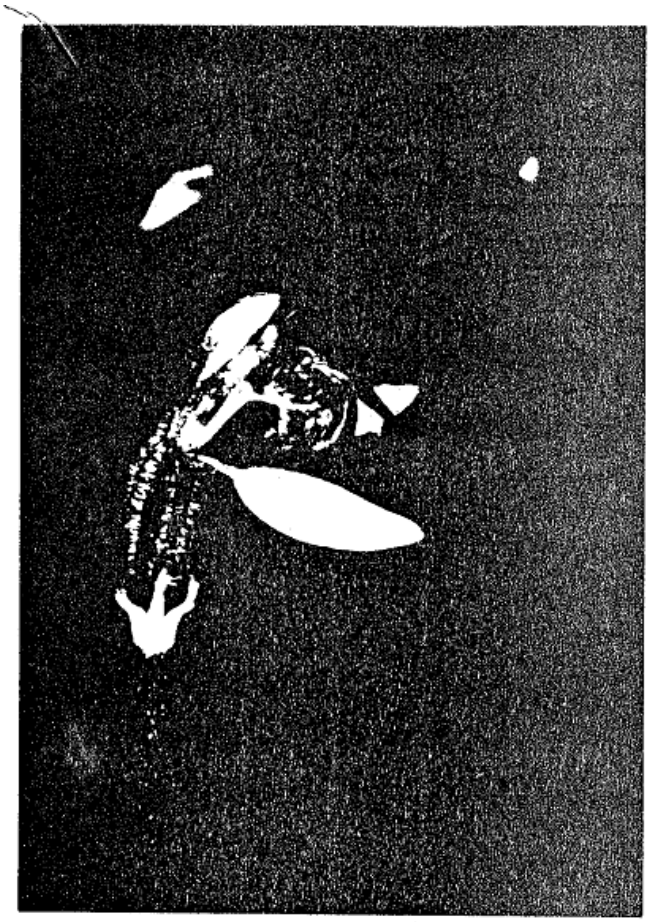
There are several common names given to this small genus of temperate Australian terrestrial orchids. In Western Australia they are bunny orchids, both pink and white. This name is sometimes used for the eastern species too, but more often these are called "parsons bands" or "parson in the pulpit". Have you ever looked closely at the flowers of *Eriochilus cucullatus* and seen the excited parson, his mouth open, his hands raised exhorting the congregation to attend to their spiritual needs; his white robes billowing below his short fat body!

Most of us would be quite familiar with the common autumn flowered *E. cucullatus* of the Adelaide Hills. The flower pops up out of the ground before the leaf appears. Where it gets the strength to push through hard ground even without rain is one of natures small miracles. The leaf, when it does come through, is

The Genus *Eriochilus* R.Br. (contd.)

a simple, leathery affair, about 2-3 cm long, dark green, ridged and bristly above, smooth and purplish below. One often hears the question on spring field trips: "What is this little orchid that never flowers?" I'm afraid that many people in Adelaide believe that orchids flower only in the spring and never look for them in other seasons.

There are several enigmas involving the genus. They seldom are grown yet are easy to cultivate, adding a neat splash of white or pink in the drab April/May months.



Eriochilus scaber being pollinated by native bee.

Denbarker Oct. '84

Eriochilus are best cultivated in small pots of bush loam and, as noted by Don Wells at the last NOSSA meeting, it is one of the few orchids which produce seed in June which can be sprinkled on pots and give rise to seedlings the same spring. Eriochilus normally produce a single tuber per year but it is possible to pull off tubers in spring and repot plants to get extra tubers. There are also clones which do increase vegetatively to form neat little clumps - these are really worth getting hold of.

Despite being very common they have been poorly studied biologically and taxonomically. (We do know that they are bee-pollinated.) Until recently only three species were recognised but David Jones describes six species in his book Native Orchids of Australia (1988). Now I believe there may be as many as a dozen taxa. The odd thing about these is that all have remarkably similar flowers. It is, in fact, easier to recognise most species from their leaves!

The six currently recognised species are:

E. dilatatus and *E. multiflorus* (both multi-flowered species from Western Australia which have the leaf of the scape not on the ground. *E. multiflorus* has an ovate leaf; *E. dilatatus* an elongate one. We have seen both on display at NOSSA meetings. But we have also had on display a third unnamed Western Australian species with leaf up the stem. This has only 1-3 flowers and grows on granite outcrops right next to the previous two species. In cultivation all three retain their distinctive characteristics.

E. scaber and *E. tenuis* (which are the only known spring flowered members

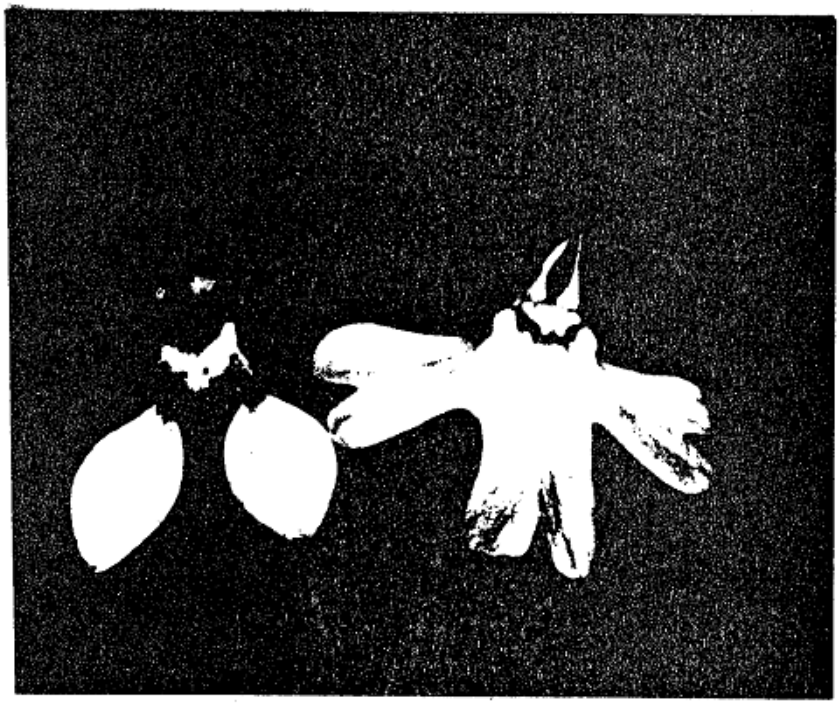
The Genus *Eriochilus* R.Br. (contd.)

of the genus) have little furry flat-on-the-ground leaves. *E. scaber* is pink, *E. tenuis* has white flowers and is one I have never seen. (See picture of *E. scaber* and pollinator.) Both are Western Australian.

The two (named) eastern species are *E. cucullatus* and *E. autumnalis*, both autumn-flowered with white petals. *E. autumnalis* has a little hairy leaf and dwarf stems. According to David Jones *E. cucullatus* has a "smooth to shiny, glabrous leaf". If this is the case then our bristly, ribbed-leaf Adelaide Hills taxon is not *E. cucullatus* in the strict sense.

But there are un-named eastern species too. There is the brilliant pink summer flowered, alpine taxon (seen on display at a NOSSA meeting last year).

Even in South Australia, there are different forms, some of which may prove worthy of specific or sub-specific standing. My research into the form from peat bogs near Mt Compass shows that the leaf appears with or before the flower, that not only does it lack the ribs and bristles of the first form but that the leaf never gets half as big as the forest form. Biologically they must be different as, besides flowering earlier, the peat bog race has not been successfully transferred to cultivation! We also have in South Australia a smooth, shiny-leaved form from granite outcrops. In cultivation this remains the same and even under the best conditions it stays a dwarf plant, whereas the Adelaide Hills or forest form can get very tall and have two or three flowers. Then there is the coastal limestone form which always has a single flower on a very tall scape. Where this form fits in with the others I do not know.



E. scaber with pink bladderwort (exhibiting possible floral mimicry)

Denbarker Oct. '84

We don't have *E. autumnalis* in cultivation here in Adelaide. It is restricted to coastal N.S.W. and Queensland. I would love to hear from any N!S.W. readers who would like to swap tubers next summer of the tiny *E. autumnalis* for our large Adelaide Hills form of *E. ? cucullatus*. And, by the way, local readers please keep passing in your observations on this genus in South Australia. (Thanks George and others!)

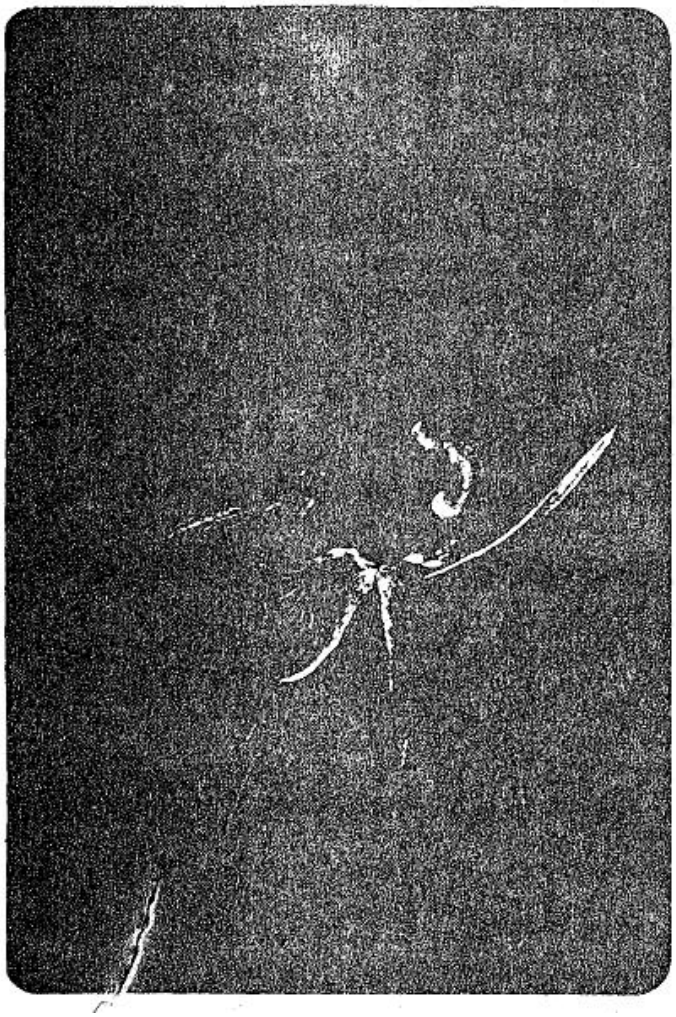
Bob Bates

ORCHID POLLINATORS COLLECTION AT THE STATE HERBARIUM: NEW ADDITIONS

About ten years ago a collection was begun at the State Herbarium, Adelaide, of insects which had been observed pollinating native orchids. These insects are kept, together with the flower on which they were captured, in alcohol and glycerine in small spirit bottles and labelled with date and location of collection.

The collection built up very slowly until about three years ago. Until that time insect specimens were identified at the South Australian Museum but, as there were no experts on bees, flies or wasps (the usual orchid pollinators) at the Museum, identification was tentative only. In 1987 it was decided to send collections to Mr C. Brown of the Biological and Chemical Research Institute in N.S.W. Dr Brown is an expert on thynnid wasps. The collection now assumed considerably more value as the insects were able to be identified to species level (even though in many cases these were undescribed species).

The study of closely related orchid species took on an extra dimension. Where two very similar orchid species could be shown to be pollinated by quite different wasps, we could now show that they were indeed genetically isolated species. In all states collection of thynnid wasps on *Caladenia, Chiloglottis* and *Drakea* in particular was stepped up by workers such as Rod Peakall (now N.S.W.), Steve Hopper and Andrew Brown in Western Australia and Col Bower in N.S.W. The results are clearly showing that *Caladenia, Drakea* and *Chiloglottis* species each tend to be pollinated by only one species of wasp largely specific to only the one orchid species, although there are some anomalies!



Thynnid wasp on labellum of *Caladenia plicata*

Male thynnid wasp investigates pheromone source on glandular clubs of *C. plicata*

Orchid Pollinators Collection (contd.)

My own observations show that during wasp baiting exercises a number of different wasps may be attracted to the general area by a single orchid species but that usually only one species of wasp actually lands on the flower and assumes a position which ensures transfer of pollinia. It is only these "true pollinators" that are captured and sent for identification.

Listed below are some of the wasps and the orchids they were captured on.

Arthrochilus huntianus: Neozeleboria sp. nov. (N.E. Vic.)
Caladenia cardiochila (S.A.): *Aeolothynnus* sp. nov. (Mt Boothby)
C. caudata: *Lophoceilus villosus* (Tasmania)
C. corynephora (W.A.): *Lestricothynnus modestus* (Nornalup)
C. aff. *dilatata* (coastal N.S.W.): *Thynnoides gracilis* (Newcastle)
C. aff. *dilatata* (inland N.S.W.): *T. mesoplenralis* (Albury)
C. aff. *dilatata* dwarf (S.A., Vic. and N.S.W.): *Lophocheilus anilitatus* (Penola, Anglesea, Orange)
C. aff. *dilatata* pale yellow clubs (S.A.): *Zaspilothynnus* sp. nov. number 5 (Sandy Creek)
C. stricta: *Thynnoides* aff. *pugionatus* (red thorax) (Parsons Beach)
C. tentaculata (S.A., Vic.): *T. pugionatus* (dozens of collections from three states)
C. reticulata (S.A.): *Phymatothynnus nitidus* (Sandy Creek and Manning)
C. aff. *reticulata* (S.A.): *Phymatothynnus pygidialis* (Parsons Beach)
C. aff. *magnifica* (Vic.): *Tachynomia* ? *moerens* (Deep Lead)

*Some interesting patterns are emerging from this small number of species of *Caladenia* studied.

1. The few *Caladenia* of the *dilatata* complex I tested are pollinated by species of three different wasp genera.
2. The pollinators of just two *Caladenia* of the "*reticulata*" complex are of different species.
3. The one species of the "*C. dilatata*" complex which has been studied in great detail, namely *C. tentaculata* has attracted the same wasp species at over 20 different sites in Victoria and South Australia indicating a strong specificity in the orchid-pollinator relationships.

Chiloglottis trapeziformis: *Neozeleboria cryptoides* (Warrumbungles)
Ch. aff. *gunnii*: *N. sexmaculata* (New England area)
Caleana major: sawfly *Pterygophorus* (N.S.W.)
P. aff. *patens* (N.S.W.): *Paralastor* sp., *Gasteruption* sp., *Lobium* sp.

*As shown with these and many other *Prasophyllum* tested the wasps which visit leek orchids are not at all specific!

We still have a long way to go as pollinators have been captured on less than 30% of South Australian orchid species and in some genera, i.e. *Pterostylis*, none of the flies (fungus gnats) caught have been identified. My thanks to Graham Brown for identifying all of the above-mentioned wasps!

Bob Bates

CONSERVATION NEWS

.From the Highways Department: Highway One between Tailem Bend and Meningie is to be re-routed to the east of Tailem Bend Forest Reserve. The Highways Department has taken consideration of the two populations of the endangered *Pterostylis arenicola* in this reserve and these will not be disturbed.

PHOTOGRAPHING NATIVE ORCHIDS:

Lighting the Subject, the Natural Way

One of the biggest problems facing a close-up photographer is getting enough light onto the subject to keep exposure times short (sufficient to "freeze" any movement of the subject), and allow a small enough aperture to be used to obtain sufficient depth-of-field. As lens extensions get longer and exposure corrections become greater, more light is needed. Since our orchids are generally quite small, the problem is to concentrate sufficient light onto them.

Lighting for orchid photographs should be soft if the true colours and textures are to be shown. Direct sunlight is not good because it tends to produce excessive contrast which can "burn out" textural details. Furthermore, problems with reflected ultra-violet light can cause blues to be rendered as shades of violet. (The use of a skylight filter is helpful in these circumstances) The natural light of an overcast day is, however, ideal for outdoor shots, and a subject in shade can be better lit by reflecting light from a white card or some other reflective surface. Different kinds of reflectors produce different effects. Side lighting or back lighting can be used to enhance textural details. Orchids can look very effective photographed against the light as many are translucent.

It may not be generally realized by natural light photographers, but it is a fact that the colour of the sunlight varies during the day. As a result, blue, green and purple flowers, are best photographed in the mornings, while reds, yellows, and oranges are best reserved for late afternoons. If you abide by these guidelines the colour saturation of your orchid photographs will be greatly enhanced. Remember to avoid strong direct sunlight. If possible, use the softly diffused and natural lighting of a cloudy day, where colour saturation is at a peak.

To maintain realism, I prefer to photograph orchids in their natural environment. However, movement caused by wind, and increased exposure times, can combine to prevent the more extreme close-ups unless flash lighting is used, and this opens up a whole new ball-game. Some purist photographers even advise against using flash for flower portraiture, because, depending on the surface reflectivity of the plant, the instantaneous burst of intense light will sometimes cause glare which results in undesirable, unnatural white spots

R.J. Markwick

BOOK REVIEW

Victorian Orchids in Habitat: An Aid To Their Identification, by Margaret E. Dacy

This book is a twenty year gallery of orchid portraits photographed splendidly and assembled with accurate descriptions in intricate detail. A labour of love, the colour photographs in their natural habitat are wonderful. There are examples of coexistence in some like the tongue orchids (*Cryptostylis*) and the swamps. The lizard orchid (*Burnettia cuneata*) in the *Melaleuca* thickets of the Otways and leafless saphrophytes like the Stringybark associated hyacinth orchid (*Dipodium*) are other examples.

The diagrams of the columns and labella are drawn to scale using a binocular microscope and are extremely fine. The 24 terrestrial and three epiphytic Genera are each introduced and the numbers of endemic species are discussed. The habitat locality is mentioned for Australia, New Zealand or worldwide as

Book Review (contd.)

for *Spiranthes*. The known pollinator is identified where it affects Genus or Species. Every species is also given an intensive descriptive portrait. Flowering period, fragrance and reproductive tendencies are outlined. The magnificent line drawings of the floral differences of the sexual appendages make it a very valuable aid to the identification of species found in the wild. The book's size may preclude its inclusion in the bushwalker's backpack.

The excellent photographs are well interspersed at the end of each 16 pages of written and line drawing segment. This adds to the level of interest and ease with which the book can be read and enjoyed. Each photo has well labelled captions on location and flowering month. Other similar species with which confusion may arise are also discussed.

A glossary of terms, classification of Victorian orchids based on Dockrill and Willis and an Index of Common and Scientific names are also included. Such a sensitive, scientific approach to orchidology has been accented in this book. The need for conservation of habitats is even more emphasised. As man grows into the 21st century and we are made to realise that we are responsible for its destruction or preservation by the attitudes by which we live and consume. The author mentions that *Plectorrhiza tridentata*, the Tangleroot Orchid is an epiphyte of the N.S.W. and Victorian border Howe Ranges and that its supporting trees of Lillypilly are now being cut down for paper pulp.

This book is highly recommended for your further study and/or sheer visual entertainment and can be borrowed from our NOSSA club library.

E. Viskic

UNNAMED CALADENIAS

In the April 1987 NOSSA Journal it was suggested that about 100 new orchid species would be described from Australia in the next ten years. That estimate has now been revised.

If we look at a single genus (in this case *Caladenia*), we see that as many as 100 new taxa will be described for this genus alone. Take just one species for example: *Caladenia dilatata* in the last year has become four species (namely *C. falcata, C. stricta, C. tentaculata* and *C. dilatata*) in the next ten years we can expect at least 20 taxa to be recognised in this complex alone. Much of the field work has already been done: distribution of the various taxa mapped, their different pollinators captured. It really only remains for the actual describing and naming to be done.

Interestingly some present sections of *Caladenia* will become separate genera. It is already generally accepted that *C. menziesii* would be better treated in the monotypic genus *Leptoceras* R.Br. as *Leptoceras menziesii*, but within 10 years we may see as many as six genera in what is now *Caladenia*. Some workers are also keen on naming the more distinctive hybrids. If this happens one will need a phenomenal memory to catalogue all the new names, especially when one considers that species in the different sections of *Caladenia* hybridise freely, i.e. *C. latifolia* crosses with *C. patersonii*. If *C. patersonii* is placed in a different genus to *C. latifolia* then this hybrid becomes an intergeneric! If it is named then we have a situation similar to the *Glossodia major* x *Caladenia deformis* muddle where we already have three names: Caladenia x *tutelata* x *Glossadenia tutelata* and x *Calasodia tutelata*. What then if *Caladenia deformis* is placed into a new genus? Well, in that case none of the four epithets above will apply and a brand new one will have to be coined! And, Yes, it is likely to happen.

M. Phillips